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National Forests

October 2005

Coeur d'Alene River Ranger District
Twomile Resource Area

Decision Notice

Environmental Assessment issued March 2004
Revised Environmental Assessment issued May 2005

Twomile Decision Notice

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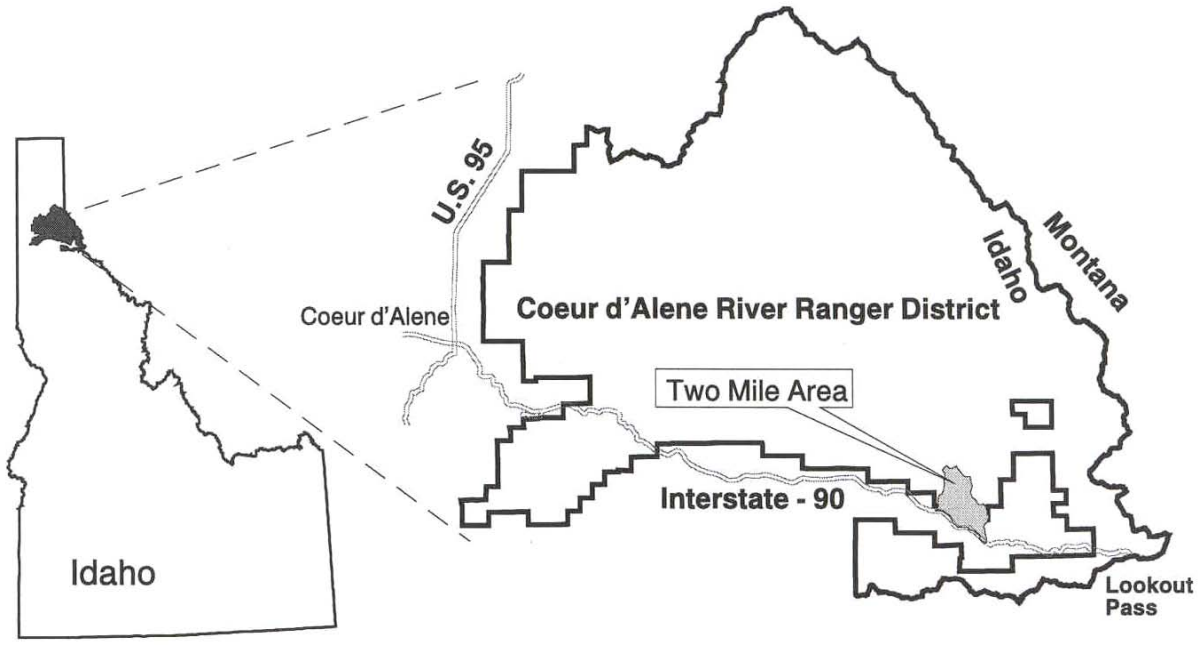
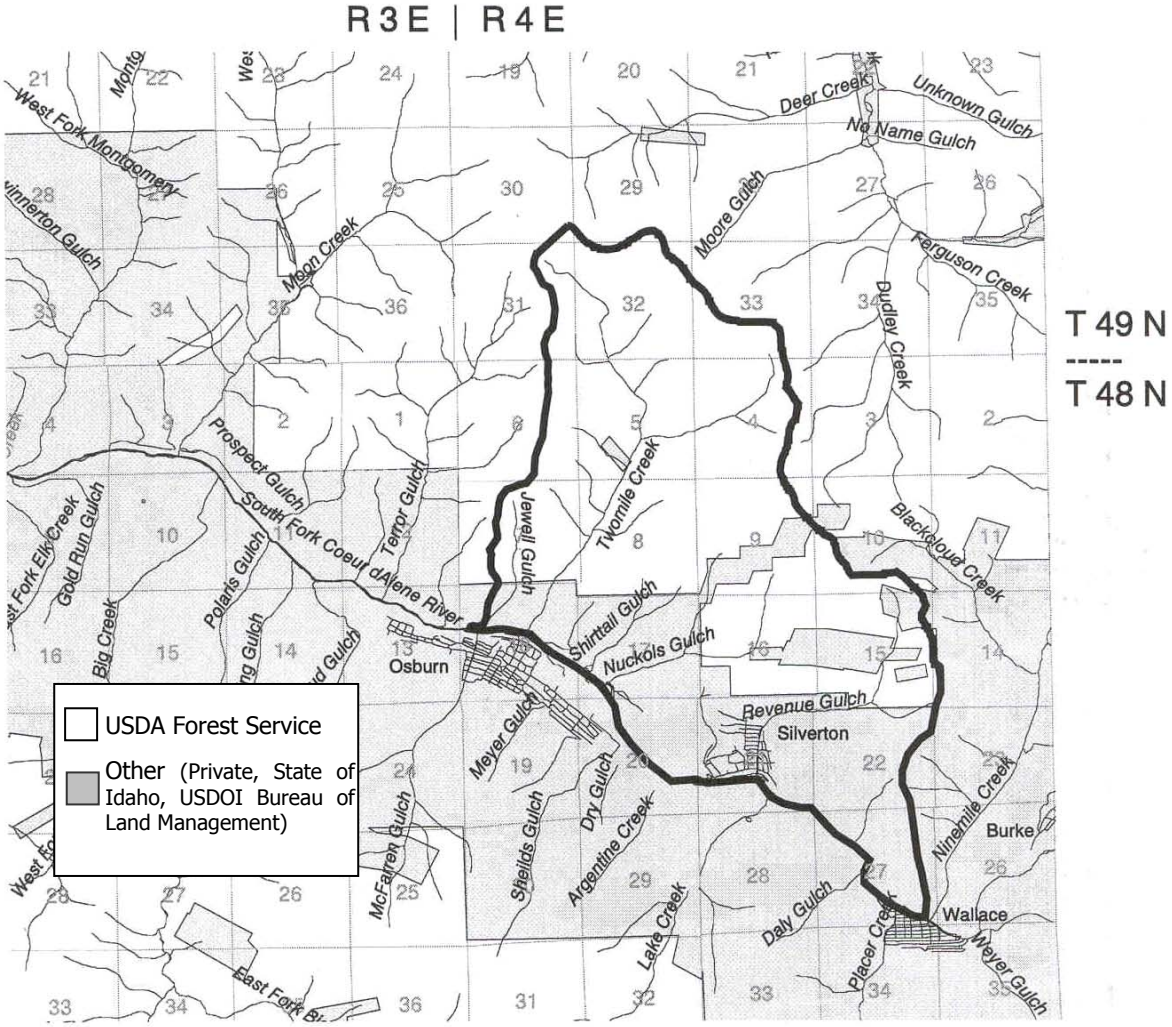
Figure 1. Twomile Resource Area Vicinity Map.





TWOMILE RESOURCE AREA
Decision Notice

Idaho Panhandle National Forests
Coeur d'Alene River Ranger District

Responsible Official:
Ranotta K. McNair, Forest Supervisor

1. Introduction to the Project

1.1. Overview of the Resource Area

The 7,600-acre Twomile Resource Area is located in Shoshone County, Idaho, north of Interstate 90, on public lands administered by the Coeur d'Alene River Ranger District (Figure 1). Approximately 61% of the area is comprised of National Forest System lands, with the remaining 39% under other ownership. The Healthy Forests Restoration Act of 2003 defines the "Wildland Urban Interface" as an area within or adjacent to an at-risk community. The Shoshone County Fire Mitigation Plan used the approach of population density (greater than 50 people living in the area) to define "communities" in Shoshone County. Silverton and Osburn, Idaho are identified by the Fire Mitigation Plan as being communities at risk within an area of initial concern for controlling wildfire hazard (EA, p. 3-38). The Forest Service boundary is just over one-half mile from the community of Osburn and less than 250 yards from the Silverton city limits.

The Twomile Resource Area is located within three major subwatersheds (Twomile, Nuckols, and Revenue Gulch) and one small face drainage (Silverton). None of the streams within the Resource Area are identified as "water quality limited" (303d), nor are any listed for any pollutant (EA, p. 3-67). The Twomile Resource Area does not include any designated wilderness or inventoried roadless areas. There are no grazing allotments within the Resource Area. The Twomile Resource Area includes all or portions of T48N, R4E, sections 4-10, 15, and 16, and T49N, R4E, sections 29-33, Boise Meridian.

1.2. Purpose and Need for Action

Hazardous fuels reduction activities were proposed in the Twomile Resource Area to respond to goals and objectives of the National Fire Plan and Shoshone County Fire Mitigation Plan (Community Fire Protection Plan). The activities in the Twomile Resource Area are designed to reduce fire severity and intensity in the wildland urban interface and to restore fire-adapted ecosystems. Comparison of existing conditions in the resource area and desired conditions from the Forest Plan indicates a need to reduce forest fuel loadings and ladder fuels, which would help to reduce risk of uncharacteristically intense fire and associated risks to life, property, and natural resources; and reduce the danger to fire suppression crews (EA, pp. 3-38, 3-46). The proposed activities are also responsive to recommendations made under the Geographic Assessment for the Coeur d'Alene River Basin and the Interior Columbia Basin Ecosystem Management Project (ICBEMP, 1996, PF Doc. REF-3).

1.3. Project Background and Process

Intent to Prepare an Environmental Impact Statement

In March 2002 a Notice of Intent to prepare an environmental impact statement for the Ponderosa Pine Restoration Area Project was published in the Federal Register (PF Doc. PI-30). We also published a legal ad initiating scoping, and sent a scoping letter to adjacent landowners, other agencies, and those who had indicated an interest in the proposal (PF Doc. PI-32, PI-31). Under the proposal, two areas were under consideration – the Twomile Area and an area identified as the Deerfoot Area. Based on additional information gathered, we later determined that these areas were sufficiently different to warrant separate analyses. Further review led us to the conclusion that there would not likely be significant effects associated with the proposed activities in the Twomile Resource Area; therefore preparation of an environmental impact statement was not warranted (PF Doc. PI-34). The original Notice of Intent was rescinded on April 5, 2002 (PF Doc. PI-34). We notified the public of this change in our May 20, 2002 letter (PF Doc. PI-41).

Public Scoping and the Environmental Assessment

Public interest and input were solicited through the use of area newspapers (legal ads and news articles), the Forests' Quarterly Schedule of Proposed Actions, letters to interested members of the public, meetings with the Shoshone County Fire Mitigation Working Group and the public, and field trips to the area (with the public, elected officials, resource specialists from the Forest Supervisor's Office and the Regional Forester's Office). More detailed information about these scoping efforts and the comments received during scoping were provided in the 2004 EA (pages 2-1, 2-2; and Public Involvement Project Files).

Detailed descriptions of the alternatives, existing conditions, and environmental effects that would occur under each alternative were analyzed and documented in the Twomile Environmental Assessment (EA), which was mailed to the public in March 2004. The EA was available to the public for 30 days review, during which time three comment letters were received (see Appendix A, Part 1; and Project Files, Public Involvement).

Decision, Appeal and Revision

A legal notice was published in the newspaper of record on June 22, 2004, announcing my decision to implement Alternative 2 (the Proposed Action) as described in the EA. The Decision was appealed in August 2004 by three environmental organizations alleging violations of the National Environmental Policy Act, National Forest Management Act, Administrative Procedures Act, Clean Water Act, Forest Plan for the IPNFs, and Idaho Water Quality Standards.

Following administrative review, the decision was affirmed and the appellants' requested relief was denied by the Appeal Deciding Officer for the Northern Region of the USDA Forest Service on September 20, 2004, with the following statement:

> *"I find the Forest Supervisor has made a reasoned decision and has complied with all laws, regulations and policy. After careful consideration of the above factors, I affirm the Forest Supervisor's decision to implement the Twomile Resource Area project. Your requested relief is denied. However, because of the recent 9th Circuit Opinion in Lands Council vs. Powell, I am directing the Forest to delay implementation of this project until further notice."*

The Court of Appeals for the 9th Circuit Court decision affects the analysis and disclosure of environmental impacts. Revisions to the environmental assessment were prepared to document **additional** analysis required by the 9th Circuit Court of Appeals, disclose the results to the public, and assist me in reaching a reasoned and informed decision in light of the additional information. The additional analysis related to:

- *Cumulative effects of past activities*
- *Soils analysis*
- *Limitations of the WATSED model*
- *Accuracy of the database used for old growth calculations*
- *Data used for wildlife and fisheries analyses*
- *Forest Plan fry emergence standard*

Also disclosed were changes that were pertinent to this project since the release of the 2004 environmental assessment. The U.S. Fish & Wildlife Service had updated the list of Threatened, Endangered, and Sensitive species, and the Regional Forester had updated the list of Sensitive species and Forest Species of Concern; therefore, additional analysis was conducted related to these species. In addition, an analysis of the Fire Regime Condition Class (FRCC) was completed for the Twomile Resource Area.

A Revised Twomile Environmental Assessment was issued in May 2005 for public review and comment. The Revised EA was available to the public for 30 days review, during which time four comment letters were received (see Appendix A, Part 2; and Project Files, Public Involvement).

1.4. Issue Identification and Alternative Development

Through public and internal scoping, we identified issues that needed addressed during development and analysis of alternatives (EA, pp. 2-4 through 2-11). A synopsis of how public issues and concerns were addressed is provided (in table format) in Attachment A.

A list of preliminary issues was developed by the project interdisciplinary team using current knowledge of conditions and concerns, and based on public comments received during project development. After consideration, these issues were sorted into 3 categories: key issues (those within the scope of the project and of sufficient concern to drive the development of alternatives to the proposed action; EA, pp. 2-5 through 2-7); analysis issues (important for their value in designing specific protective measures and for comparison of effects; EA, pp. 2-7 through 2-10); and issues not addressed in detail (those already addressed through alternative design or outside the scope of the project; EA, pp. 2-10, 2-11):

Key Issues	**Analysis Issues**	**Issues Not Addressed**
Fire/fuel hazards	Fisheries	Effects of road closures on fire suppression
Resilient forest ecosystem	Soil productivity	Heritage resources
Water yield, peak flow, and sediment yield	T&E wildlife	Roadless areas
Sediment delivery	Sensitive wildlife	Specific fish & wildlife species not affected
Flammulated owl habitat	Old Growth MIS species	
	Big-game MIS species	
	Recreation	
	Scenic resources	
	Finance	
	TES Plants	

Development of alternatives was based on the existing condition of resources, issue and concerns identified by the project team, other agencies, and the public, and designed in response to the purpose and need identified for the project (EA, p. 2-12). A total of four alternatives were considered in detail (the No-Action Alternative and three action alternatives). An additional five alternative concepts were considered but dismissed from further study, because they did not meet the purpose and need for the project and in some cases were inconsistent with Forest Plan direction (EA, pp. 2-30, 2-31).

2. The Selected Alternative

2.1. The Decision

The additional information provided in the Revised EA clearly validates our finding that the Proposed Action would be the most effective approach to meeting the stated purpose and need in the Twomile Resource Area; therefore, I have decided to implement **Alternative 2** (the Proposed Action) as described in the 2004 EA and 2005 Revised EA (please refer to the enclosed Selected Alternative Map).

Under the Selected Alternative, a combination of activities will occur. Hazardous fuels reduction and vegetative restoration activities will occur in response to the purpose and need stated earlier. In addition, watershed rehabilitation and recreation enhancement activities will occur because a need for these activities was identified through scoping and/or information and data collection. The information provided by the 2005 Revised EA verifies that Alternative 2 will best address the needs identified for the Twomile Resource Area.

Activities that would occur under the Selected Alternative are compared briefly to each of the other alternatives considered in detail in the table below. Activities under the Selected Alternative are then described in greater detail. Section 3 provides a discussion of the Selected Alternative in terms of specific resources and concerns; Section 4 provides a discussion of cumulative effects; and Section 5 provides a comparison of the Selected Alternative to the other alternatives considered, by resource issue.

Table 1. Summary comparison of activities proposed in the Twomile Resource Area under each alternative.

Activity	Alt. 1	Selected Alt. 2	Alt. 3	Alt. 4
Proposed Vegetative Treatment (acres)				
Precommercial Thinning	0	32	32	32
Commercial Thinning	0	79	104	0
Group Seedtree Harvest	0	78	78	0
Group Shelterwood Harvest	0	500	507	0
Shelterwood Harvest	0	141	183	0
Underburn/Slash/Rehab (no commercial harvest/yarding)	0	274	274	342
Total acres proposed for treatment	**0**	**1,104**	**1,178**	**374**
Yarding systems (acres)				
Skyline	0	193	97	0
Tractor	0	6	6	0
Helicopter	0	599	769	0
Stream crossings repaired or replaced	0	14	14	14
Helicopter log landings constructed	0	4	4	0
Road decommissioning	0	3.4	3.4	3.4
Road reconditioning (miles)	0	1.2	1.2	0
Road reconstruction (miles)	0	1.4	0.1	0
System road construction (miles)	0	1.9	1.0	0
Estimated timber harvest volume (million board feet – MMBF)	0	4.6	5.7	0
Estimated cunits (CCF – one cunit is equal to one hundred cubic feet)	0	10,700	13,400	0

An additional five alternatives were considered but eliminated from further study, primarily because they did not meet the purpose and need for the project (EA, pp. 2-12 through 2-19, 2-30, and 2-31). These included:

- *An alternative that would focus on dry site stands only;*
- *An alternative that would focus on restoring fire-adapted ecosystems;*
- *An alternative that would focus on maintaining the existing stand structure;*
- *An alternative that would limit openings to less than 40 acres; and*
- *An alternative that would utilize ground-based yarding systems only.*

2.2. Activities That Will Occur Under the Selected Alternative.

Vegetation and Fuels Treatment

As displayed on the enclosed Selected Alternative map, a combination of commercial harvest methods will be used on a total of 798 acres and a combination of other methods (precommercial thinning, prescribed burning/slash/rehab) will occur on a total of 306 acres to reduce the ladder fuels and dense stands that increase the risk of high intensity wildfire. A total of approximately 1,104 acres will be treated. Commercial harvest will focus on removal of tree species more susceptible to insects and disease to restore long-lived seral tree species. In order to effectively treat the wildfire hazards in the resource area yet minimize effects to resources, 75% of the logging will utilize helicopter yarding and 24% will be skyline yarded, with less than 1% (6 acres) of tractor yarding. To facilitate the helicopter yarding, four helicopter log landings will be constructed. The commercial harvest activities will result in an estimated 4.6 million board feet of timber for sale (Table 1).

As part of the hazardous fuels reduction treatment, noncommercial slashing and underburning activities will occur in approximately 75 acres of stands allocated for old-growth management. Unit 28 will be commercially thinned with the use of a helicopter. These treatments will not change the old growth structure or affect the old growth allocation of the stands (EA, pp. 2-15, 3-25, 3-29). Slash generated from the activities will remain on site over the winter, providing time for nutrients to leach back into the soil (EA, p. 2-23; DN Section 3.4, "Features"). After that time, the slash will be subject to prescribed burning, hand piling or chipping to achieve desired fuels reduction objectives. Openings created by the treatment activities will be planted with ponderosa pine, western larch and (on the more moist sites) white pine. These species have a higher resilience to low intensity wildfire and root disease (EA, pp. 2-15, 2-20, 3-31).

In most units, periodic underburns are recommended every 10 to 30 years after treatment to maintain vegetative conditions. However, because the timing and conditions of these underburns cannot be predicted so far ahead of time, any future activities designed to create or maintain the desired stand conditions would be analyzed separately following applicable legal requirements.

Table 2. Specific Unit Information for Vegetation and Fuels Treatment under the Selected Alternative.

Unit	Acres	Vegetation Treatment	Logging System	Fuel Treatment	Estimated % canopy closure before treatment	Estimated % canopy closure post treatment
1	17	slash and burn	none	underburn	70	60
2	40	slash and burn	none	underburn	70	60
3	17	slash and burn	none	underburn	70	60
5	20	group seed tree	skyline	underburn	50	15
6	31	slash and burn	none	underburn	60	50
7	90	shelterwood	helicopter	underburn	80	40
9	51	shelterwood	helicopter	underburn	70	30
10	24	slash and burn	none	underburn	60	50
11	24	burn only	none	burn only	30	25
12	29	group shelterwood	helicopter	underburn	80	20
13	22	slash and burn	none	underburn	50	40
20	13	precommercial thin/ release	none	lop and scatter	50	40
21	46	group shelterwood	helicopter	underburn	50	35
22	28	slash and burn	none	wildlife burn	30	20
23	94	group shelterwood	helicopter	underburn	80	20
25	19	precommercial thin/ release	none	handpile	40	35
27	78	group shelterwood	helicopter	underburn	80	40
28	45	commercial thin	helicopter	underburn	60	40
29	34	commercial thin	27 ac. heli, 7 ac. skyline	lop and scatter	90	50
30	58	group shelterwood	11 ac. heli, 41 ac. skyline, 6 ac. tractor	underburn	70	25
31	63	group shelterwood	50ac. helicopter/ 13ac. skyline	lop and scatter	80	30
32	36	slash and burn	none	underburn	50	45
33	58	group seed tree	helicopter	underburn	80	10
34	25	300' slash	none	handpile	60	60
35	9	100' slash	none	chip	60	50
36a	34	group shelterwood	skyline	underburn	70	20
36b	20	group shelterwood	helicopter	underburn	70	20
37a	10	group shelterwood	skyline	underburn	70	30
37b	25	group shelterwood	skyline	underburn	70	40
37c	17	group shelterwood	skyline	underburn	70	40
37d	16	group shelterwood	skyline	underburn	70	40
37e	10	group shelterwood	skyline	underburn	70	40

Aquatic Restoration & Other Road Related Work

The Roads Analysis Process (PF Doc. TRAN-1) was used to identify and prioritize prospective changes to access in the Twomile Resource Area. Recommendations were made for changes to both roads and trails; these recommendations were built into the proposed alternatives and effects analyzed.

As displayed in Table 3 and on the enclosed Selected Alternative map, a total of 1.9 miles of system road **construction** will allow access to a portion of the stands. All will be on hillslopes and avoid riparian areas. A total of approximately 1.2 miles of **reconditioning** (consisting of brushing and light blading) will occur on existing roads to provide safe access for vehicles and equipment. A total of approximately 1.4 miles of **reconstruction** (consisting of brushing, blading, shaping, and culvert replacement) will occur on existing roads to provide safe access for vehicles and equipment. All currently closed roads that are opened to accomplish the vegetative activities will be closed after project activities are complete.

Table 3. Road-related work under the Selected Alternative.

Activity	Selected Alternative
Road reconditioning (miles)	1.2 miles
Road reconstruction (miles)	1.4 miles
System road construction (miles)	1.9 miles
Helicopter log landing construction	4 sites

One of the four helicopter log landings (shown in the photo below) is near an intermittent stream corridor in lower Twomile Creek watershed (EA, pp. 2-15, 3-73, 3-84, 3-94; PF Doc. AQ-84). When we looked at the site to determine its suitability as a helicopter log landing, we found compacted soil conditions, little to no vegetative growth, a nonfunctioning culvert, and an incised intermittent stream channel that was re-routed and is now located in an unnatural location approximately 50 feet from its original path (EA, pp. 3-73, 3-84, 3-94). In checking the history of the site, we learned it was used for mining waste and for explosives development in the mid-1900s. We tested the soils at this site and found that fine texture soils have lead contamination and could pose a human health risk. Although sample results indicate the level of contamination is just at the threshold of being considered "hazardous" (PF Doc. SOIL-54), the level is sufficient to warrant restoration of the site. As a whole, Twomile Creek is considered to be relatively free of lead contamination. As part of the Twomile project, the contaminated soil will be moved, stabilized, capped and revegetated to eliminate the risk of contaminated soils eroding downstream (EA, p. 3-93). As part of the restoration, the stream channel will be reconstructed and put back in its original location to mimic natural conditions as closely as possible (EA, pp. 2-15, 3-73, 3-97). Using Best Management Practices (such as planting, seeding and mulching to establish ground cover) and adhering to standards and guidelines of the Inland Native Fish Strategy (EA, pp. 2-21 through 2-23) will allow restoration of this site to occur with no expected direct or indirect impacts (EA, pp. 3-94, 3-97). Over the long-term, these activities will result in a full hydrologic recovery, reducing erosion and sediment delivery and resulting in a benefit to water quality in the Twomile Creek drainage (EA, p. 3-97)

Figure 2. Helicopter log landing in Twomile Creek tributary, former site of explosives development and mining waste deposits.

Aquatic Restoration & Other Road Related Work

Continued

There is a slight short-term risk of increased turbidity in the stream during restoration, or if a large precipitation event were to occur within the first year after restoration was complete, before the ground cover is established (EA, p. 3-94). The long-term gain from restoring this site is a full recovery from the detrimental impacts, and restoration of the riparian and hydrological function of the intermittent stream corridor, which would in turn reduce erosion and sediment delivery, resulting in a benefit to water quality in the Twomile drainage (EA, pp. 3-93, 3-97).

As displayed in Table 4 and on the enclosed Selected Alternative map, a total of approximately 3.4 miles of road that is contributing to sedimentation and bedload movement in the Main and East Forks of Twomile Creek is already closed to general motorized use under earlier decisions or closure orders and no longer needed for long-term vehicle access. These road segments will be **decommissioned** to reduce effects to the stream. This includes a total of slightly over two miles of spur roads off Forest Road 271, and one mile of spur roads off Forest Road 424. Decommissioning will also increase wildlife security in the area (EA, p. 3-159).

Decommissioning may include removal of all stream crossings, recontouring of the road prism, introduction of woody debris, and/or revegetation, depending on site conditions (EA, pp. 2-23, AG-5; PF Doc. TRAN-1, pp. 39-43). Brushed-in road segments will not be altered if they do not pose a risk of sediment disturbance.

As displayed in Table 4 and on the enclosed Selected Alternative map, a total of 14 road-stream crossings will be **upgraded or replaced** to further reduce sediment risk (EA, p. 2-12). Drainage structures on open roads used for timber haul 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. 2-23).

Recreation Access Activities

The Roads Analysis Process (PF Doc. TRAN-1) also identified trail repairs for resource protection, increasing the single-track trail system, and expanding the ATV trails system. As displayed on the enclosed Selected Alternative map, trail access will be increased, focusing on reroutes to avoid road intersections and to route around poor trail segments, and with blocks established to prevent ATV's from illegally accessing single-track trails. An estimated 0.4 miles of single-track trail will be added (through rerouting and repair of an existing trail). There are at least five locations where ATV's have encroached upon single-track trail. These will be repaired and blocks established to prevent further encroachment and resource damage (EA, p.3-170). Approximately 9.5 miles of old roads will be added as trails for ATV use, starting in the bottom of Twomile Creek canyon and stretching from Capital Hill to Dago Peak using old logging roads to accommodate ATV travel and link to trails outside the Resource Area. In addition, segments of Roads 271, 424, 953, and 2322 (an estimated 6.5 miles) will be identified for co-use as both road and trail. Signing will be installed to promote safe travel for trail-type vehicles and conventional vehicles. An existing parking site at the confluence of Twomile Creek and the East Fork of Twomile Creek will be improved to provide trail access by spreading a gravel surface over the area to minimize soil impact, and installing signs to direct trail users and to influence care for the land (EA, pp. 1-5, 3-170, 3-171).

Development of system motorized trails and closure of other non-system trails will reduce erosion and sediment delivery (EA, p. 3-99). The trail-related activities are supported by Idaho Parks & Recreation: "We believe that the designation of these old logging roads as ATV trails is a proactive step in trying to provide for local recreation opportunities (Attachment A, Comment Letter #01).

Table 4. Specific watershed restoration activities under the Selected Alternative.

Road	Miles to be decom-missioned	crossings/ culverts to be removed	General road location information
271UB	0.34	2	Twomile Spur UB, in the Lower East Fork of Twomile Creek, involving a segment of encroaching road, an abandoned mine, and 2 stream crossings.
271UBA	0.84	6	East Fork and Twomile Spur UBA. This road follows the upper East Fork of upper Twomile Creek. Involves one abandoned mine and 1 failed culvert.
271UF	0.18	1	A portion of Twomile Spur Road UF (on the east side of the creek), which connects to Trail 102, down to a stream crossing on upper Twomile Creek.
271UF	0.57	1	A portion of Twomile Spur Road UF (on the west side of upper Twomile Creek), upstream of its confluence with the East Fork Twomile Creek.
271UK	0.39	1	Twomile Spur Road UK. A short road in lower Twomile Creek draining, which leads to an abandoned mine adit.
424UN	0.33	3	A portion of Twomile Saddle Spur Road UN, which connects to the main Road 271 near the upper East Fork of Twomile Creek.
424UP	0.69	0	A portion of Twomile Saddle Spur Road UP, in the upper drainage of the East Fork of Twomile Creek, connecting Spur Roads 271-UBA to 424-UPA

Specific activity locations are identified on the enclosed Selected Alternative map.

2.3. Activities That May Occur Under the Selected Alternative.

There are opportunities to accomplish the following additional activities in the Twomile Resource Area ***IF funding becomes available*** (EA, pp. 2-26). 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. 2-26; and by resource as applicable in Chapter 3).

Opportunities to improve aquatic resources through 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 decommissioning activities (EA, p. 2-26; PF Doc. TRAN-1, pp. 37-44 and Map 10). There are approximately 10.5 miles of roads in the Twomile Resource Area that are available for decommissioning but which were analyzed as opportunities rather than as features of the alternatives (EA, p. 2-26; PF Doc. TRAN-1, pp. 37-44 and Map 10). The decommissioning 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 effects of these opportunities have been analyzed and disclosed for forest vegetation (EA, p. 3-28), aquatic resources (EA, p. 3-92), soils (EA, p. 3-119), TES plants (EA, p. 3-201), noxious weeds (EA, Appendix F, p. F-7). The Roads Analysis Process provides documentation of effects to fire/fuels (PF Doc. TRAN-1, pp. 27, 28), wildlife (PF Doc. TRAN-1, pp. 22, 23), and recreation (PF Doc. TRAN-1, pp. 26, 28, 29). The order in which the work is accomplished depends upon the condition and location of these residual roads. Other natural disturbances, such as the flood events experienced in 1996, may dictate future priorities. Additional information regarding the implementation and effects of this type of rehabilitation work is provided in the EA (Chapter 3) for each appropriate resource.

Opportunities to Improve Fisheries Habitat: Surveys conducted by the Forest Service in 2002 identified several potential locations where channel work (specifically road related and/or upgrades) could be accomplished for the purpose of aquatic restoration (PF Doc. AQ-72 through AQ-81, AQ-89). The opportunity exists to upgrade (replace) the two main crossings on Road 271, which would allow for improved fish passage and access to headwater habitat. Another site on Road 271 (near the main channel crossing of Twomile Creek) provides the opportunity to improve fish habitat access. Other continuing opportunities include effectiveness monitoring, riparian road relocation or removal, native fish population genetic analysis, and removal/implementation plans for eastern brook trout.

Opportunities to Improve Wildlife Habitat: Currently, there are road closures within the Twomile Resource Area that are being breached by off-road vehicles, which may be affecting wildlife security. Where it is possible to reinforce existing closures and further discourage use of closed roads, barriers would be modified or reconstructed. These activities would be targeted in those areas where wildlife security is a priority, and where reinforcement of the existing barrier would be effective. Motorized vehicles have pioneered trails within the Twomile Resource Area, creating travel routes that are not sanctioned or maintained by the Forest Service. These pioneered trails may threaten wildlife security, as well as facilitating the spread of noxious weeds throughout the resource area. These pioneered trails would be closed using earth berms and the placement of boulders and logs.

Opportunities to Reduce the Spread of Noxious Weeds: The Lands Council and Ecology Center expressed concern with potential spread of noxious weeds (EA, p. 2-26). Many areas affected by the proposed activities (especially road segments and landings) would likely 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 as 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; PF Doc. NW-2). 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 herbicide treatment in specific areas (EA, p. 2-26).

2.4. Effectiveness of the Selected Alternative in Meeting the Purpose and Need.

As described in the EA (pp. 1-2 through 1-5), the purposes of implementing the activities in the Twomile Resource Area are to:

- **Respond to goals and objectives of the National Fire Plan, which builds upon the premise that reducing fuel levels and using fire at appropriate intensities, frequencies and time of year within fire-adapted ecosystems is key to restoring healthy, resilient conditions; sustaining natural resources; and protecting life and property (EA, p. 1-2).**

  The vegetation and fuels reduction activities described in Section 2.2 are in accordance with the National Fire Plan (EA, p. 3-56). These activities will trend the Twomile Resource Area from Condition Class 3 (which is not consistent with the National Fire Plan) to more closely resemble Condition Class 1, where the fire regimes are within an historical range and the risk of losing key ecosystem components is low (EA, p. 3-56).

- **Respond to goals and objectives of the Shoshone County Fire Mitigation Plan to aid in the protection of communities within the county (EA, p. 1-3).**

  The vegetation and fuels reduction activities described in Section 2.2 will trend the treated areas away from potential fire behavior that could threaten human life and property in the wildland urban interface (EA, p. 3-65).

- **Help move the resource area towards desired future conditions described in the Forest Plan, including reduced forest fuel loadings and ladder fuels, which would help to reduce risk of uncharacteristically intense fire and associated reduced risk to life, property and natural resources, and reduce the danger to fire suppression crews (EA, p. 1-4).**

  The vegetation and fuels reduction activities described in Section 2.2 will help meet the goals of Management Areas 1 and 4 within the Twomile Resource Area, which is consistent with the Forest Plan (EA, p. 3-64). The Selected Alternative also helps develop more cost-effective fire programs by reducing the potential intensities of wildfire in the wildland urban interface (EA, p. 3-64).

- **Be responsive to recommendations made under the Interior Columbia Basin Ecosystem Management Project, including reduced risk to hydrologic and aquatic systems from fire potential, risks to late and old forest structures in managed areas, and risks to forest compositions that are susceptible to insect, disease and fire (EA, p. 1-4).**

  These recommendations can be met by changing the fire regime condition class in the Twomile Resource Area from Condition Class 3 to Condition Class 1 (EA, pp. 3-44, 3-45). Currently, both moist and dry habitat types in the Twomile Resource Area fall into Condition Class 3, which describes areas where fire regimes have been substantially altered from their historical range, the risk of losing key ecosystem components (such as species composition, structural stage, stand age, canopy closure, and fuel loadings) is high, and fire frequencies have departed from historical frequencies by multiple return intervals (EA, p. 3-44; PF Doc. FF-1, p. 8). In areas identified as Condition Class 3, fires are a high risk factor because of their potential risk to human values (public safety and health, property, economies) and natural resource values (watersheds, species composition) (PF Doc. FF-17, pp. 7-8). In Condition Class 1, fire regimes are within an historical range and the risk of losing key ecosystem components is low (EA, p. 3-56). Condition Class 1 areas usually pose relatively low public safety and ecological risks, and need little corrective management (PF Doc. FF-17, pp. 7-8). Under the Selected Alternative, vegetation and fuels reduction activities (described in Section 2.2) will change stand conditions in the Twomile Resource Area to more closely resemble Condition Class 1 (EA, p. 3-56). This change in condition class results in dramatic changes to fire size, frequency, intensity, severity, and/or landscape patterns (EA, p. 3-45).

- **Be responsive to recommendations made under the Geographic Assessment for the Coeur d'Alene River Basin, which recommends that areas such as the Twomile Resource Area be among the highest priority for vegetative, watershed and aquatic restoration; and that harvest methods on drier habitat types include thinning from below, shelterwoods with reserves, and group selection regeneration harvests to restore open stand structures dominated by large fire-resistant early seral tree species, including ponderosa pine and western larch (EA, pp. 1-4, 1-5).**

  The vegetation, fuels reduction, and watershed restoration activities that will occur under the Selected Alternative are consistent with the recommendations made in the Geographic Assessment: As identified in Table 1 and in Section 2.2, aquatic restoration activities will include road reconstruction and decommissioning, and road-stream crossing upgrades or replacement (EA, p. 2-12). Under the Selected Alternative, vegetative treatments will best ensure the vigor and survival of ponderosa pine, while moist habitat types will transition into a combination of western larch and white pine (EA, p. 2-15). Openings created by treatment activities will be planted with ponderosa pine, western larch, and on moist sites, white pine. The prescriptions incorporate existing conditions on the ground, and promote the fire-resistant ponderosa pine and western larch trees while reducing encroaching Douglas-fir and grand fir trees (EA, p. 2-15). As identified in Table 1, vegetative treatments will include precommercial thinning, commercial thinning, group seedtree, group shelterwood, and shelterwood harvests, in addition to a combination treatment of underburning/slash/rehab (no commercial harvest/yarding) (EA, p. 2-12).

2.5. Consistency of the Selected Alternative with Forest Plan Standards, Objectives, and the Desired Future Condition.

Consistency with Forest Plan standards and legal requirements or other policies is provided at the end of each resource section in Chapter 3 (pages 3-28 through 3-33, 3-63 through 3-65, 3-100 through 3-104, 3-119, 3-163 through 3-165, 3-171 through 3-173, 3-177, and 3-185). The Selected Alternative (2) is consistent with all Forest Plan standards and objectives, and will trend conditions in the Twomile Resource Area toward the desired future condition described in the Forest Plan.

2.6. Responsiveness to Public Concerns

Concerns identified through the public involvement and collaboration process (described earlier in Section 1.3) are addressed specifically in Attachment A to this decision notice. Generally, concerns indicate there are three schools of thought:

- **Concern about the risks to homes and property on private ownership as a result of fuel and timber stand conditions on adjacent National Forest System lands (these concerns are raised by adjacent landowners, fire officials, and other land management agencies).**

  Implementation of activities under the Selected Alternative will reduce the level of hazardous fuels and promote healthier conditions in the treated stands, which will trend the treated areas away from potential fire behavior that could threaten human life and property in the wildland urban interface (DN, Sections 2.1, 2.2). The Twomile Resource Area will trend from Condition Class 3 (which is not consistent with the National Fire Plan) to more closely resemble Condition Class 1, where the fire regimes are within an historical range and the risk of losing key ecosystem components (DN, Section 2.4; EA, p. 3-56). This change in condition class results in dramatic changes to fire size, frequency, intensity, severity, and/or landscape patterns (DN, Section 2.4; EA, p. 3-45).

- **Concern that the impacts of the fuels reduction activities would outweigh the benefits (especially in terms of commercial timber harvest), and that trail improvements would result in impacts to natural resources (these concerns were raised by environmental organizations).**

  Based on public comments and agency concerns, we identified several issues that needed addressed during development and analysis of alternatives (EA, pp. 2-4 through 2-11). The analyses included consideration of effects to forest vegetation, fire/fuels, aquatic resources, soils, wildlife, recreation, and scenery, as well as the financial costs and benefits of treatment options (EA, Chapter 3). As stated in Section 8 of this Decision Notice, the activities will occur in a localized area, with implications only for the landscape, drainages and stands in the analysis area. There will be no significant impacts to any resource under the Selected Alternative (EA, Chapter 3). The impacts are within the range of those identified in the Forest Plan. 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).

- **Concern that trails and road access to the Twomile Resource Area continue to provide recreation opportunities (this concern was raised by recreation-based organizations and individuals).**

  The Roads Analysis Process (PF Doc. TRAN-1) identified the need for trail repairs for resource protection, an increase in the single-track trail system, and expansion of the ATV trails system (DN, Section 2.2, "Recreation Access Activities"). Additional trails will focus on reroutes to avoid road intersections and around poor trail segments, with blocks established to prevent ATV's from illegally accessing single-track trails. Development of the motorized trail system and closure of other non-system (pioneered) trails will reduce erosion and sediment delivery to streams in the project area (EA, p. 3-99). These trail-related activities are supported by the Idaho Department of Parks and Recreation (Attachment A, Comment Letter #01).

The Selected Alternative does not address all of these viewpoints equally, nor does it address any one viewpoint to the exclusion of the other two. However, as designed, the Selected Alternative provides a balance of activities to reduce fuel levels and trend forests toward a healthier, more resilient condition over time without significantly impacting resources or uses of the Twomile Resource Area. I find that the benefit of the project activities substantially outweigh the predicted level of impacts documented in the environmental assessment, and that we have been responsive to public concerns to the extent possible.

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

Specific features of the Selected Alternative

Specific mitigation measures

Consistency

Comparison

3.1 Vegetation Management (including Rare Plants and Noxious Weeds)

Features Related to Vegetation Management

(1) Fire-resilient 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 (EA, p. 2-20).

(2) All vegetative treatments will have silvicultural prescriptions 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 (EA, p. 2-20). 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.

(3) 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 (harvest). 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.

(4) Areas of high potential habitat have been surveyed by qualified botanists and other personnel that have had training in botany and sensitive plant identification (EA, p. 3-190). No harvest activity will occur which would adversely affect any known rare plant population. All known populations potentially adversely affected will be buffered from harvest and other project-related activities by a minimum of 100 feet. No commercial harvest activity will occur within riparian habitat. Site-specific surveys have been conducted as necessary for in-stream watershed work in highly suitable riparian habitat. All newly identified Threatened and Sensitive plant occurrences will be evaluated. Specific protection measures will be implemented to minimize impacts to that population occurrence and its habitat. The timber sale contract will include a provision allowing modification of the contract if protection measures prove inadequate, if new areas of plants are discovered, or if new species are added to the list of rare plants.

(5) Prescribed fire ignition will not occur within riparian habitats, although fire may be allowed to burn into riparian areas (EA, p. 2-21). Higher fuel moistures in riparian habitats during prescribed burning conditions would likely limit the spread of any prescribed fire (EA, p. 2-21). To limit ground disturbance, fire line will not be constructed in riparian areas unless needed to keep a burn from getting out of control (EA, p. 2-21).

(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 (EA, p. 2-21). 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. 2-21). To help prevent the spread of noxious weeds and prevent the introduction of new invader species, contract provisions regarding equipment washing will be included in all construction and timber sale contracts (EA, p. 2-21).

Specific Mitigation Measures Designed to Reduce Effects to Vegetation

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 implementation, one or more of the following protective measures would occur:

- *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 for Protection of Endangered Species, and for Settlement for Environmental Cancellation.*

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).

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 (pp. 3-28 through 3-33), implementation of activities under the Selected Alternative is consistent with NFMA requirements and Forest Plan standards related to vegetation management: 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. 3-33). All treatments under the Selected Alternative are silviculturally appropriate and are within the timber and vegetation management practices outlined in the Forest Plan goals, objectives, management direction, and practices (EA, p. 3-33). While treatments are generally even-aged, the objective is to establish stand structures and resiliency such that use of even and uneven-aged systems would be silviculturally sound in the future (EA, p. 3-30). 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 3-33).

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 November 2003 that regeneration openings in excess of 40 acres were proposed (EA, p. 3-32; PF Doc. PI-20). The EA disclosed information about the proposed units that would exceed 40 acres (EA, p. 3-27; PF Doc. VEG-25). A letter requesting approval to exceed the 40-acre opening size was sent to the Regional Forester, and approval has been received (PF Doc. VEG-34). The analysis considered the effects on residual trees and adjacent stands (Chapter 3 of the EA, Forest Vegetation discussion on pages 3-1 through 3-33). 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. 3-28 through 3-30). 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. 3-29). Starting in 2001, the IPNF undertook a comprehensive review of old growth data, and did some new field reviews and stand exams to be sure the stand database is doing the best job possible of depicting current conditions on the ground. This ongoing review, monitoring and updating of old growth inventory results in some changes in old growth stand acres reported in annual Monitoring Reports over the years, in response to changing conditions on the ground and new information. We have completed an extensive validation of data used for analysis and a review of all old growth stands in the Twomile Resource Area (Revised EA, page R2-9). We found the requirement that at least 10% of the forested portion of the IPNF is maintained as old growth has been exceeded (EA, p. 3-29; Revised EA, p. R3-6). The Coeur d'Alene River Ranger District has also exceeded its standard of managing 56,000 acres as old growth.

Our findings have been verified through Forest Plan monitoring (PF Doc. CR-023). Because they have complementary strengths, the IPNF is using two separate, independent tools to inventory and monitor old growth at the Forest-wide scale: 1) Forest Inventory and Analysis (FIA) data; and 2) IPNF stand level map, with old growth status recorded in TSMRS database. These two independent inventories use substantially different sample designs, and are administered and carried out by different people. FIA old growth estimates are based on a statistically sound, systematic sample of the entire National Forest, administered by the Rocky Mountain Research Station in Ogden, Utah. Our stand level map is based upon examination of selected individual forest stands for old growth characteristics. This stand level mapping is carried out by IPNF Ranger District personnel. Evaluating the stand level old growth information with the FIA old growth percentage estimates provides the most comprehensive picture of old growth amounts on the IPNF. The two independent Forest Service old growth inventories produce remarkably similar results: Based on FIA data, the current estimate of the proportion of old growth on the forested portion of the IPNF is **12.85** percent; the IPNF stand level map of allocated old growth is **12.1** percent of forested lands.

The stand level map amount is well within the 90% confidence interval of the FIA inventory (from 10.55 to 15.27 percent). From statistical perspective, at the 90% confidence level, the two numbers are not significantly different. Together, these two inventories offer compelling evidence that the IPNF is meeting Forest Plan standards for the amount of old growth to be retained.

Both of the Forest Service old growth inventory methods and results are fully disclosed and available to the public. FIA design and protocols are public information and are readily available on the FIA website (**http://www.fia.fs.fed.us/**). More detailed reports on methodology for estimating old growth with FIA data are available from the Northern Regional Office of the Forest Service in Missoula, Montana. The entire IPNF stand map and TSMRS database (including stand-by-stand old growth allocations) are available on the IPNF website, and are updated periodically.

Under this decision, approximately 75 acres of allocated old growth in the Twomile Resource Area will be treated with a non-commercial slashing and underburning treatment. Unit 28 will be commercially thinned with the use of a helicopter (Section 2.2). This treatment will not change the old growth structure of these areas; therefore these acres will not have a change in old growth allocation (EA, p. 3-29; Revised EA, p. R3-6).

Based on the above information, I find the Selected Alternative is consistent with guidance provided for rare plants and noxious weeds by the Forest Plan (EA, pp. 3-202 and F-7).

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 in regard to rare plant species. Based on the requirement for surveys and implementation of mitigation measures to protect rare plants, I find that activities in the Twomile Resource Area are consistent with Forest Plan requirements (EA, p. 3-202). There will be no effect to water howellia (*Howellia aquatilis*) because there is no habitat present and no possibility for the species to exist in the Resource Area (EA, p. 3-193). Under the Selected Alternative, treatment will occur in potential habitat identified for the Threatened species Spalding's catchfly (*Silene spaldingii).* Field surveys have been completed in potentially suitable habitat within proposed treatment areas. No Spalding's catchfly populations were found, and low suitability habitat was confirmed (EA, p. 3-198). If occurrences are found during project implementation, protective measures would be designed and implemented as mitigation. US Fish and Wildlife Service reviewed our analysis and determination of effects, and concurred with these findings (Attachment B).

Comparison of Effects to Forest Vegetation under Other Alternatives

Alternatives 1 and 4 would not substantially increase the ponderosa pine, western larch, or white pine in the Twomile Resource Area, nor would these alternatives assist in the basin trend toward historic levels of these long-lived species (EA, pp. 2-34, 3-22). Alternatives 2 and 3, however, would trend stands toward ponderosa pine, western larch, and white pine. Over time, the ponderosa pine, western larch and white pine would contribute to a more resilient overall structure and arrangement of the landscape (EA, p. 2-34).

Alternative 1 (No Action) would have no direct impact on any Threatened, Sensitive or Forest Species of Concern (FSOC) plants (EA, p. 3-194); however, there would be no improvement made to vegetative conditions. No restoration activities would be implemented to restore dry site ecosystems and reduce the risk of high severity stand-replacing fires. Indirectly, there would be an increased risk to sensitive plants and habitat due to the gradual increase in fuel loads over time, and with continuing fire suppression. Suitable rare plant habitat in riparian areas would remain vulnerable to random catastrophic events such as flooding and landslides (EA, p. 3-194). Cumulatively, areas where continued tree mortality results in substantial canopy loss would be at greater risk of weed spread (EA, p. F-6). Stands with higher rates of fuels accumulation would be at increased risk of a severe wildfire, exposure of mineral soils and increased risk of weed spread (EA, p. F-6).

Effects on rare plants under Alternatives 2 and 3 would be similar. The primary difference between the two alternatives is that Alternative 3 would potentially affect 1,019 acres of suitable rare plant habitat, while Alternative 2 would potentially affect 908 acres. However, Alternative 2 includes more ground-disturbing activities than would Alternative 3. Ground-based yarding and new road construction present a greater risk of impacts in the form of soil displacement and in the introduction and spread of noxious weeds than do non-ground disturbing systems (EA, pp. 3-197, F-6).

Density of the stands being burned would decrease only slightly under Alternative 4 (due in part to mortality of the understory trees) to achieve some reduction in fuels (EA, p. 3-22). Re-introducing fire without understory slashing would not restore most stands because of duff and ladder fuel accumulations (EA, p. 3-22; PF Doc. VEG-R25). Alternative 4 would have the least impact to rare plants of all action alternatives (EA, p. 3-197), since no commercial harvest would occur, and fuels treatment would consist mainly of hand slashing and underburning. However, Alternative 4 would also be the least effective of the action alternatives at trending vegetation cover toward the long-lived seral tree species composition, and a smaller percentage of the Resource Area would be treated to reduce the risk of high severity fires that can be detrimental to certain rare plant communities and habitat (EA, p. 3-197). Effects to the spread of noxious weeds would be similar to Alternative 1, since a relatively small proportion of the Resource Area would be treated to reduce the risk of wildfire (EA, p. F-7).

3.2 Fire and Fuels Management

Specific Features Related to Fire and Fuels Management

The Selected Alternative includes fuels treatment using prescribed fire (EA, p. 2-19). 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 will 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. 2-19).

Specific Mitigation Measures Related to Fire and Fuels Management

Based on the effects analysis for the Selected Alternative (EA, p. 3-47 through 3-65), anticipated effects related to fire and fuels management are within acceptable levels; therefore no mitigation measures are necessary.

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

The Selected Alternative is consistent with the National Fire Plan. The Selected Alternative is consistent with the Forest Plan Regarding Fire and Fuels Management. . The purpose and need for the Twomile Resource Area project is in accordance with National Fire Plan strategy to reduce fire intensities and restore forest ecosystem health in the interior West (EA, p. 1-2). Under the National Fire Plan (PF Doc. FF-20), activities focus on wildland urban interface areas to reduce risk to people and

property. There is a high priority to treat areas where human communities, watersheds or species are at risk from severe wildfire (EA, p. 1-2). The Shoshone County Fire Mitigation Plan/Community Fire Protection Plan (PF Doc. FF-36) describes the entire perimeter of the community of Silverton (adjacent to the Twomile Resource Area) as being at high risk to wildfire loss, and recommends, "Federal land managers responsible for the management of adjoining lands should consider forest management activities on the surrounding hillsides targeted at improving forest health and reducing fire risks to the community," (EA, p. 1-3). The Selected Alternative (Alternative 2) was specifically designed to reduce hazardous fuels and improve forest health (EA, p. 2-13). The treatments are designed to affect potential fire behavior adjacent to the rural residences in the Resource Area (EA, pp. 2-14, 3-38).

The Selected Alternative is an important step toward reducing the intensity and severity of fire effects, the costs of potential wildfire, and fire-caused changes in values. Activities would change the stand conditions to more closely resemble Condition Class 1 (stands where fire regimes are within the historical range and the risk of losing key ecosystem components is low). Activities under the Selected Alternative are consistent with and would further the goals of the 10-Year Comprehensive Strategy Implementation Plan to reduce hazardous fuels and restore fire-adapted ecosystems (EA, p. 3-56). Consistent with the Forest Plan, the Selected Alternative will trend the treatment areas away from potential fire behavior that could threaten human life and property in the wildland urban interface (EA, p. 3-65).

Comparison of Effects to Fire/Fuels Conditions under Other Alternatives

Implementation of Alternative 1 would continue the fire behavior trend away from historic conditions, escalating the intensity of a wildfire in the area (EA, p. 2-31), and would be inconsistent with the Forest Plan standard to use fire to achieve management goals according to the direction for Management Areas 1 and 4 (EA, p. 3-64, 3-65). Stands would continue in succession until some sort of disturbance occurs; since fire is excluded from the area, forest insects and disease would dictate the future of the stands under the No-Action Alternative (EA, p. 3-50). In contrast, the activities proposed under any of the three action alternatives would interrupt this trend to varying degrees. Alternatives 2 and 3 would have similar results, reducing fuel accumulations, providing opportunities for the re-introduction of fire-resistant species, and reducing the potential intensity of a fire in the area (EA, p. 2-31, 3-64, 3-65). Alternative 4 would only slightly change conditions, without substantially meeting these objectives (EA, p. 2-31, 3-64, 3-65).

3.3 Aquatic Resources

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 (p. 2-21; Appendix A).

(2) Spot gravelling with approximately 6 inches of gravel will be required at all stream crossings, rolling dips, and in any wet areas (EA, p. 2-22; PF Doc. AQ-8).

(3) 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 (EA, p. 2-21; Appendix B).

(4) Streamside buffers will be applied as prescribed under the Inland Native Fish Strategy 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 (EA, p. 2-22).

(5) To protect fish habitat, commercial timber cutting will be prohibited in Riparian Habitat Conservation Areas (RHCAs) 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 (EA, p. 2-22).

(6) Timing guidelines will be used to reduce impacts to spring spawning and rearing fish, and fish habitat. Instream work will be avoided prior to July 15 each year for added protection (EA, p. 2-22).

(7) 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 (EA, p. 2-22).

(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 (EA, p. 2-22; PF Doc. AQ-8).

(9) 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 (EA, p. 2-23).

Specific Mitigation Measures Designed to Reduce Effects to Aquatic Resources

Based on the effects analysis for the Selected Alternative and the features that will protect aquatic resources, anticipated effects to aquatic resources are within acceptable levels; therefore no mitigation measures are necessary to reduce effects. Electrofishing and fish habitat data collection surveys were conducted throughout the Twomile Resource Area in 2002-03 (EA, pp. 3-81, 3-83; PF Doc. AQ-74 through AQ-80). Some areas previously surveyed could be resurveyed based on the data and intensity of the most recent fish habitat or population surveys, and the risk to sensitive habitat from proposed activities. Should Threatened or Endangered fish species be located during implementation, one or more of the following protective measures would be implemented:

- *Drop proposed units from activity;*
- *Modify the proposed unit or activity;*
- *Implement all applicable INFS standards and guidelines (see Appendix B)*
- *Noncommercial thinning would be conducted using non-mechanized thinning methods (heavy equipment would not be used), with hand piling or lop and scatter prior to burning.*

The maintenance of buffers to protect populations will be administered under the contract (EA, p. 2-27).

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. Considering present and reasonably foreseeable activities (EA, pp. 2-2 through 2-4) with direct and indirect effects, activities under this project will result in an overall net decrease in sediment delivery (EA, Figure 3-AQ-12 on p. 3-9, and p. 3-96). Increases in peak flows would be within the historic range of variability (EA, p. 3-96). This project would not impair beneficial uses within the Twomile Resource Area or downstream in the South Fork Coeur d'Alene River (EA, p. 3-96, 3-104).

A recent report sponsored by the U.S. Environmental Protection Agency (EPA) discusses the history of the Coeur d'Alene mining district and the relationship between the biologic, human, and physical environments in the river basin (National Research Council, Superfund and Mining Megasites – Lessons from the Coeur d'Alene River Basin). The report is the result of a case study to examine EPA's scientific and technical practices in Superfund megasites, including physical site definition, human and ecological risk assessment, remedial planning, and decision making. In relation to land-use practices, the committee concluded, "To the extent that water yield and flooding can be managed through land-use practices, it is important to include these in the schemes designed to protect human and environmental health (National Research Council, 2005, pages 289, 301; PF Doc. DN-R73). We have reviewed a prepublication copy of the report, and find that the aquatics effects analysis for the Twomile project is consistent with the principles of the report. It has been and continues to be our practice to consider water yield and peak flow (which would indicate any risk of potential flooding) as part of our effects analysis. Given the scope and ensuing analysis of the Twomile project, we have determined that there is only a slight potential for any measurable increase in water yield, peak flow, sediment yield, or delay in watershed recovery (EA, pp. 3-86, 3-87). There will be no net increase in metals and sediment (the pollutants of concern) into the water quality limited segment of the South Fork Coeur d'Alene River (from Placer Creek to Big Creek), in compliance with the current TMDL status (EA, p. 3-104).

Activities meet requirements of the Idaho Forest Practices Act (EA, p. 3-104) 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 3-85 through 3-100), and measures outlined in the EA to protect soil and water resources (page 2-21 through 2-23), 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. Based on stream channel types and landtype characteristics, the estimated short-term changes in peak flows, estimated short-term changes in sediment yields, and the potential increases from a rain-on-snow event will not affect stream channel morphology, and will therefore not change fish habitat (EA, p. 3-89). Over the long term, the reduction in sediment yield is expected to benefit survival of individuals and habitat (EA, p. 3-97). Critical habitat has been proposed for bull trout in the Coeur d'Alene River basin, but does not include the South Fork Coeur d'Alene River or its tributaries (EA, pp. 3-81, 3-83, 3-104). The project activities will have no effect on Threatened bull trout (EA, pp. 3-81, 3-83, 3-104). Based on the distribution of species across the Forest, the lack of connectivity between large watersheds, and the limited cumulative effects area, 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. 3-104).

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. 3-104). Based on the analysis and documentation provided in the 2004 EA and Revised EA, I find that implementation of this project meets the requirements of the Recreational Fishing Act (EA, p. 3-104).

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. 3-100 through 3-104). The Selected Alternative is consistent with the standards and guidelines provided by the Inland Native Fish Strategy (EA, p. 3-102, 3-103 and Appendix

B). Specified riparian management goals and objectives have been developed, and Riparian Habitat Conservation Areas (RHCAs) are defined and delineated. Riparian management and Riparian Management Objectives (RMOs) are addressed using site-specific analysis and supportive data, and watershed analyses (EA, Appendix B). On June 2, 2005, I signed a Decision Notice and Finding of No Significant Impact that amended the Forest Plan to modify or remove objectives, standards, and monitoring requirements pertaining to fry emergence success (IPNF 2005; PF Doc. AQ-97). The amendment was implemented because the fry emergence objectives, standards and monitoring requirements that were in the IPNF Forest Plan did not contribute towards meeting the goals of providing sufficient habitat in support of maintaining diverse and viable populations of fish species across the forest as well as did those under the Inland Native Fish Strategy. In addition, because of the limited application of the fry emergence models and their unreliability, and the inability to determine fry emergence success in the field due to high variability affected by multiple natural and human-caused factors, the Forest Service was not able to state with any degree of certainty whether measures of fry emergence success were accurate or precise. Based on this information, I find the Selected Alternative is consistent with the Forest Plan standards for water resources and fisheries.

Comparison of Effects to Aquatics under Other Alternatives

In terms of aquatic resources, Alternatives 2 and 3 would have a similar level of increases in water yield, peak flow, and sediment yield. However, even the greatest effect under these alternatives would indicate only a slight potential for a measurable increase in water yield, peak flow, or sediment yield, or a delay in watershed recovery (EA, pp. 3-86, 3-87). Alternatives 1 and 4 (which have no commercial timber harvest) would not increase any of these conditions above existing levels (EA, pp. 2-35, 3-88, 3-91). Without proposed watershed restoration activities, Alternative 1 would not reduce the risk of sediment delivery from crossing failures (EA, p. 3-88). In terms of the aquatic resource (not considering effects on other resources), Alternative 4 would provide the greatest cumulative benefit in reducing short- and long-term sediment yields, since no roading would occur and the stand treatment would occur without mechanical disturbance (EA, p. 3-96). The thinning activities under Alternative 4 would not impact soils or cause any delay in recovery from past activities, and the aquatic restoration would still be accomplished (EA, p. 3-95).

3.4 Soils

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). On units designated for tractor harvest, planned skid trails will be established at 150-foot spacing to reduce overall soil compaction and displacement. All tractor harvest and wood removal will be scheduled to occur when the soil profile is dry to reduce effects from compaction (Poff, 1996, p. 482; PF Doc. SOIL-42). 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 (EA, p. 2-23).

(2) To minimize erosion and ensure compliance with State water quality standards, all road construction and timber harvest activities associated with the Twomile Resource Area will be completed using Best Management Practices (EA, p. 2-23; 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; PF Doc. SOIL-32). Intermountain Forest Tree Nutrition Cooperative (IFTNC) guidelines will ensure retention of maximum potassium on sites (EA, p. 3-119).

Specific Mitigation Measures Designed to Reduce Effects to Soils

Based on the effects analysis for the Selected Alternative (EA, p. 3-116 through 3-121) and the features that will protect soil resources (described above), anticipated effects to soils are within acceptable levels; therefore no mitigation measures are necessary.

Consistency with Laws, Regulations and Policy Related to Soils

Under the Twomile project, site productivity will be maintained through the use of large woody debris, following the guidelines of Graham et al (PF Doc. SOIL-32). Compliance with IFTNC guidelines will ensure the retention of the maximum amount of nutrients such as potassium in activity areas following treatment. There will be minor disturbances in skyline/cable and helicopter-yarded harvest units and where hand line is constructed around units; however, Forest monitoring indicates these activities result in minor detrimental effects (EA, p. 3-117). Harvest units that are tractor yarded or that have new roads and/or new helicopter log landings have the highest probability of detrimental effects to soils (EA, p. 3-117).

Areas proposed for timber harvest that had past activities were inspected on the ground to verify the existing conditions; all units meet or exceed the Forest Plan standards (Revised EA, page R2-8). Based on the methods, location, and amount of activities proposed under the Selected Alternative, even the greatest cumulative disturbance of an activity area (at 4.8%) would not approach the 15% Regional soil quality standard (EA, p. 3-120, Table 3-SOIL-2). Other than incidental tractor use on a portion of Unit 29, all harvest units will have minor disturbance due to the predominant use of skyline and helicopter yarding (EA, p. 3-118). Road decommissioning under the Selected Alternative will begin to reduce compaction of the soil and

return a portion of the topsoil to the surface, which helps restore soil productivity and decreases hydrologic effects from road surface runoff (EA, p. 3-117; PF Doc. TRAN-1, Table 5.1).

Based on these determinations, I find that 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. 3-119).

Comparison of Effects to Soils under Other Alternatives

No activities would occur under Alternative 1, therefore there would be no new soil disturbance (EA, pp. 2-36, 3-117). 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 (EA, p. 3-117). In the event of a severe fire, there would be a loss of organic matter from the soil, a loss of nutrient availability, and reduced water infiltration, which affects soil productivity (EA, p. 3-117).

Effects to soils under Alternative 2 would be very similar to those under Alternative 3 as a result of timber harvest and roadwork (EA, pp. 2-36, 3-117, 3-118). Based on the location of proposed harvest units, there would be approximately 5.9 acres of previously disturbed soils, compared to 8.1 acres under the Selected Alternative (EA, p. 3-20, Table 3-SOIL-2). Based on the methods, location, and amount of activities proposed under Alternative 3, even the greatest cumulative disturbance of an activity area (3% under Alternative 3, 4.8% under the Selected Alternative) would not approach the 15% Regional soil quality standard (EA, p. 3-120, Table 3-SOIL-2).

There would be little to no effect on soil productivity under Alternative 4, since no commercial harvest or road construction would occur (EA, pp. 2-36, 3-118, 3-119). Risk of indirect effects would be higher under Alternative 1 than under Alternative 4, which provides fuels reduction through prescribed burning and other non-commercial activities.

3.5 Wildlife

Features Designed to Protect Wildlife Habitat

(1) All snags will remain following project activities unless removal is unavoidable or required for safety reasons (ea, P. 2-24). Region one protocol for snag retention (which allows an adaptive approach to local conditions based on a scientific understanding of the disturbance ecology involved) would be met or exceeded (PF Doc. WL-54, p. 3). 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 (EA, p. 2-24).

(2) All roads opened, constructed or reconstructed for the project will be closed with a gate or barrier during project activities to protect wildlife security (EA, p. 2-24; Appendix H). 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. 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 a status of “intermittent stored service” following completion of activities. Please refer to the EA, Appendix H (Transportation), for additional information related to transportation planning.

(3) Prescribed burning would be implemented when bats are absent, or in a manner that would avoid smoke entering adits, to protect roosting bats (EA, p. 2-24). This could be achieved by preventing fire within 400 meters of the extent of a cave or adit when bats are present, unless a site-specific assessment indicates a more appropriate distance to avoid effects of heat and smoke on bats. Areas upslope of cave or adit openings would be protected to prevent erosion and disturbance. Mechanical fire lines would be more than 400 meters from the adits or caves used by bats, unless site plans indicate a more appropriate distance.

(4) Incidental trees charred during prescribed burning operations will be retained on site for black-backed woodpecker habitat (EA, p. 2-24). A qualified wildlife biologist will conduct surveys prior to harvest to ensure protection of pileated woodpeckers and goshawks. The Forest Service’s sale administrator will provide frequent direction to the timber sale purchaser regarding conditions of harvest, and will verify snag retention requirements (EA, p. 2-28).

Specific Mitigation Measures Designed to Reduce Effects to 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 (EA, p. 2-28). 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 (EA, p. 2-28). Any activities within one-half mile of the nest would occur after August 15 and prior to March 1.

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 Twomile Resource Area by reviewing sighting records, planning documents, habitat suitability models, and other sources such as historic records and scientific literature (EA, pp. 3-126 through 3-128). The Coeur d'Alene River District Wildlife Biologist evaluated the Selected Alternative in regard to these wildlife species; findings are summarized in the table below, with further information disclosed in the EA (Chapter 3, Wildlife) and in the Biological Assessment (Attachment B). 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. 3-163 through 3-165). The US Fish and Wildlife Service has reviewed our analysis and determination of effects to Threatened species, and concurred with our findings (Attachment B).

The wildlife analysis utilized vegetation data in determining existing habitat conditions and effects to species. As described in the Revised EA (Chapter 3, "Validation of Data Used in the Forest Vegetation Analysis"), the TSMRS data fields were reviewed, including forest type, habitat type, size class, year of origin, past disturbances, elevation, aspect, slope and species use code (used to label allocated old growth). In addition, stand trees per acre, stand basal area, and tree age were also verified. Based on the review, the existing condition and effects determinations for wildlife did not change. Therefore, 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.

Comparison of Effects to Wildlife under Other Alternatives

A comparison of effects each alternative would have on particular species is provided in the table that follows.

Table 5. Comparison of effects to wildlife analyzed in the Twomile Resource Area.

Species	Comparison of Effects
Threatened & Endangered Species	
Gray wolf	There would be no effect (either beneficial or detrimental) to gray wolves under Alternative 1, since none of the proposed activities would occur (EA, p. 2-36). Activities proposed under the action alternatives would benefit wolf prey species by improving forage palatability and nutrition on winter range. Therefore, activities may affect but would not likely adversely affect gray wolves or their population. Viability would be maintained under Alternatives 2, 3 and 4, since the goal for breeding pairs has been met (EA, p. 2-36, 3-132).
Sensitive Species	
Northern goshawk	Under any alternative, both the amount and quality of goshawk habitat in the Twomile Resource Area would still be low, but the area would continue to provide some forage and nesting habitat in the future (EA, pp. 2-37, 3-128, 3-134, 3-135). There would be no short-term effects under Alternatives 1 or 4. However, over the long term, natural mortality would result in snag and downed log recruitment. Some mature stands would move toward old growth, providing habitat for northern goshawk, but many mature stands would never achieve old growth qualities due to insects and disease (EA, p. 3-134). Under Alternatives 2 and 3, activities would remove younger Douglas-fir and may result in lower canopy closure in the future (EA, p. 3-134). However, treatment sites are harsh and do not provide classic goshawk habitat, so neither Alternative 2 or 3 would reduce the future value of goshawk nesting habitat (EA, p. 3-134). All action alternatives would maintain the mature/old structure above the historic range (EA, p. 134). Since no activities would affect suitable habitat and goshawks are not known to nest in the vicinity, all alternatives would impact individuals but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species (EA, p. 3-135).
Flammulated owl	Since there would be no reduction in suitable or potential habitat under Alternatives 1, 2 or 4, these alternatives could impact individual flammulated owls, but would not trend the species toward listing under the Endangered Species Act (EA, p. 2-34). Although Alt. 1 would retain all suitable flammulated owl habitat over the short-term, nothing would be done to interrupt the trend of decreased canopy closure that would cause the habitat to become unsuitable for the species over time (EA, p. 3-13). Alt. 2 is designed based on a landscape plan to spatially define both capable and suitable flammulated owl habitat in blocks of 300 acres or larger. Three large patches (in the headwaters of Twomile Creek, along the ridge below Dago Peak, and in the headwaters of Revenue Gulch) will be defined for flammulated owl habitat management (EA, p. 2-15). Alt. 3 would reduce suitable habitat by 155 acres for a period of 50 to 100 years, impacting individuals and trending the species toward listing under the Endangered Species Act and viability of the species could not be assured (EA, pp. 2-34, 3-128, and 3-139 through 3-141). Alternative 4 could impact individual flammulated owls due to proposed burning activities, but would not trend the species toward listing since habitat for the species would still be provided over both the short- and long-term (EA, p. 2-19).
Black-backed woodpecker	Since the area provides less than optimal habitat, there would be limited effects to the species under any of the four alternatives (pp. 3-128, 3-143). Although northern Idaho is below the historic range for burned habitat in the landscape (which provides habitat for black-backed woodpeckers), large fires in Montana in 2002 and 2003 have created a source habitat for black-backed woodpeckers in the Northern Rockies. Over the long term, implementation of the District Travel Plan will help protect snags from harvest by fuelwood gatherers (EA, p. 3-143). Over time, precommercial thinning in the Twomile Resource Area will provide larger diameter trees for black-backed woodpecker foraging. In untreated areas, forest pests and diseases will continue to provide foraging opportunities for black-backed woodpeckers (EA, p. 3-143). Adhering to snag guidelines developed in association with the Upper Columbia River Basin project will help to ensure viability of black-backed woodpecker (EA, p. 3-143; PF Doc. WL-41, WL-R52). Therefore, implementation of any alternative may impact individuals or habitat, but would not likely contribute to a trend toward federal listing, or cause a loss of viability to the population or species (EA, pp. 3-143, 144).

Species	Comparison of Effects
Sensitive Species, continued	
Fisher	Under all alternatives, the drier forest habitat types within the Twomile Resource Area would continue to inherently provide less than optimal fisher habitat (EA, pp. 3-128, 3-147). Although the amount of late successional forest (fisher habitat) would not change over the short term under Alternatives 1 and 4, canopy closure in the area would continue to decline over the long-term (EA, p. 2-38). Alternatives 2 and 3 would both have a short -term decrease in late successional habitat, but forested habitat in the future should provide larger diameter trees due to reduced competition (EA, p. 2-38). The alternative management options presented in the EA address the four issues of concern to fisher conservation and management as outlined in "Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Coordinates," (EA, p. 3-147). Viability for fishers would be maintained under the action alternatives because movement corridors are available outside the analysis area, riparian habitats would be restored in the East Fork of Twomile Creek, mature/old age classes have been maintained above the historic range, the fisher is not a legally trapped species in Idaho, R1 snag protocol (exceeding Forest Plan standards) would be implemented; and old growth would be maintained at 10% across the IPNF (EA, p. 3-147).
Wolverine	Based on the unlikely occurrence of wolverine, the absence of denning habitat, the current high recreational use of the area, and the presence of a security area within 7 miles of the project area, all alternatives may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or reduced viability to the population or species (EA, pp. 3-128, 3-149).
Coeur d'Alene salamander	Under any action alternative, stream restoration projects in Twomile Creek could alter currently unidentified habitat, but would improve habitat over the long term. Therefore, any action alternative may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or reduced viability for the population or species (EA, pp. 3-128, 3-151).
Townsend's big-eared bat	Mitigation measures would ensure protection of the bat should it occur within the Twomile Resource Area. Therefore, implementation of any alternative may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species (EA, pp. 3-128, 3-152).
Old Growth Management Indicator Species	
Pileated wood-pecker	No short-term effects would occur under Alternative 1, but this alternative would pose the most risk over the long term to late successional habitat as a result of continued dense stand conditions (EA, p. 3-154). Over time, Alternatives 2, 3 and 4 would result in a trend toward more suitable habitat for pileated woodpeckers, since the proposed activities would increase the distribution of the older ponderosa pine forests used by this species (EA, p. 3-155). Alternative 2 would retain all but 20 acres of pileated woodpecker snag habitat in the Twomile Resource Area, but Alternative 3 would reduce pileated woodpecker habitat by 155 acres as a result of harvest in allocated old growth (EA, p. 3-154). Under Alternative 4, treated units would continue to provide habitat for pileated woodpeckers (EA, p. 3-155). Under all alternatives, activities may impact individual pileated woodpeckers or their habitat, but would not likely contribute toward federal listing or cause a loss of viability to the population or species (EA, p. 3-155).
Big Game Management Indicator Species	
Rocky Mountain elk	Under Alternative 1, there would be a loss of big-game forage over time as existing sapling stands mature, and the vigor of brush continues to decline (EA, p. 3-159). Since watershed restoration and road obliteration activities would not occur under this alternative, there would be no trend toward an improved condition for big-game habitat (EA, p. 3-159). The only reduction in elk habitat potential and security would occur under Alternatives 2 and 3 during activities. However, these would return to the existing levels after activities are completed (EA, p. 3-159). The District Travel Plan will improve effectiveness and size of elk security areas within the Twomile Resource Area by reducing ATV access into portions of the analysis area where there are no current restrictions (EA, p. 3-159).
Other Species	
Nongame	Under Alt. 1, wildlife species associated with ponderosa pine, white pine and western larch forests would remain below historic levels over the long term. Root diseases would continue to add to the number of snags and downed logs (EA, p. 3-161). Alternatives 2 and 3 would have short-term impacts to nongame species through further loss of mature forests and loss of snags. However, over the long term, regeneration of healthy long lived seral species could benefit nongame (EA, p. 3-161). The re-introduction of fire under Alt. 4 would increase habitat for species that depend on dry sites that evolved with fire, but would not regenerate long-lived seral species to the extent of Alternatives 2 and 3 (EA, p. 3-162).

3.6 Recreation

Features Designed to Protect or Enhance Recreational Uses

To protect groomed snowmobile routes, log haul will not be allowed on Forest Roads 271 and 424 between December 15 and April 1 of each year (EA, p. 2-24).

Specific Mitigation Measures Related to Recreation

Based on the analysis (EA, pp. 3-170 through 3-173), there will be negligible effects on recreation opportunities, settings and facilities in the Twomile Resource Area; therefore no mitigation measures are necessary.

Consistency with Laws, Regulations and Policy Related to Recreation

The Selected Alternative is consistent with all recreation standards, goals and objectives identified in the Forest Plan (EA, pp. 3-171, 3-172). The anticipated effects to the recreation resource in the Twomile Resource Area as a result of timber harvest and fuels treatment activities will likely cause some disturbance or interruptions to recreation visitors, but the disturbances will be of short duration and temporary in nature (EA, p. 3-171). Activities will be accomplished using safety standards based on the Forest Service's Health and Safety Code Handbook.

Comparison of Effects to Recreation under Other Alternatives

Under the No-Action Alternative, there would be no change to area trails, recreation developments or opportunities in the Twomile Resource Area (EA, p. 2-41). A large fire in the area might have short-term effects on trail access and maintenance due to falling timber and possible soil erosion. The primary long-term effect of a large fire would be on the scenic qualities of the area. Under Alternatives 2, 3, and 4, the proposed vegetative treatments could have short-term impacts. For example, some trails could be temporarily closed for public safety during implementation of activities. Log hauling on area roads would warrant additional caution from drivers in the area. All of the action alternatives would increase trail access to the same levels as described earlier in this chapter. The increase in additional single-track trail, ATV opportunities and co-use trails would provide safer, more enjoyable opportunities for trail users (EA, p. 3-170).

3.7 Scenery

Features Related to Scenery

There are no specific alternative design features related to scenery management.

Specific Mitigation Measures Related to Scenery

Based on the analysis (EA, pp. 3-174 through 3-177), there will be negligible effects on scenery in the Twomile Resource Area; therefore no mitigation measures are necessary.

Consistency with Laws, Regulations and Policy Related to Scenery

The Selected Alternative is consistent with visual standards because helicopter logging eliminated the need for the introduction of highly visible road excavation. Where roads are constructed, they will either be unseen from the most sensitive viewpoints or will blend in with the visual character of the Twomile area (EA, p. 3-177). There will be no adjustments to Visual Quality Objective boundaries.

Comparison of Effects to Scenery under Other Alternatives

Since no activities would occur under Alternative 1, there would be no short-term effects to the scenic condition of the Twomile Resource Area (EA, p. 2-41). Over the long term, old harvest units would continue to recover tree growth and canopy, softening any unnatural-appearing effects of the past harvest areas. Without fuels reduction activities, the potential for more intense wildfire in the area could bring changes to the scenic condition (EA, p. 2-42). Under the action alternatives, some harvest units and road construction would be visible from the community of Osburn (EA, p. 2-42). However, activities would be designed to meet the particular visual quality standard applicable to each area. Alternative 4 would have fewer visible areas, since no new road construction would occur, and proposed vegetation and fuels treatment would not include commercial harvest.

3.8 Finances

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.

Specific Mitigation Measures Related to Finances

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

Consistency with Laws, Regulations and Policy Related to Finances

Forest-wide goals, objectives, and standards for finances are not specifically addressed in the Forest Plan (EA, p. 3-185). 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 3-184).

Comparison of Effects to Finances under Other Alternatives

Generally, the financial analysis estimates the cost to implement each alternative, and predicts how much of that cost can be offset by revenue generated under each alternative. Predicted costs include planning and sale preparation as well as the actual implementation of activities, based on actual District costs to achieve the same type of work (EA, p. 3-178). Revenue estimates are based on several predicted factors; for example, market values, species and size of trees harvested, total volume offered for sale, the amount of helicopter yarding (which is more expensive than other methods), and the distance timber must be hauled to reach the mill (EA, p. 3-178).

The comparison of alternatives (EA, p. 3-182, Table 3-FIN-4) included costs associated with planning, sale preparation, harvest administration, and engineering administration. Timber sale revenues are not expected to cover these costs under any alternative. Other sources of funding generally include appropriated funding (dispersed to the Forest Service annually by Congress to cover administrative costs and costs of implementing specific types of management activities), grants, and the Idaho Panhandle Resource Advisory Council (EA, p. 3-185). In addition, the purchaser of the timber can accomplish some

activities; bidders take the estimated cost of work they would accomplish into consideration when submitting their bids on the sale. Estimated planning costs for gathering information, conducting analyses and preparing the appropriate documents for this project will cost an estimated $200,000 (EA, pp. 2-42l, 3-182), which is the same under all alternatives. From purely a timber sale viewpoint, all alternatives would be considered below cost (EA, p. 3-180).

Since there would be no activities implemented under Alternative 1, no revenue would be generated by the sale of timber, so the $200,000 in costs will be covered by using a portion of the District's appropriated funds. Alternative 4 would not generate revenue through the sale of timber, but would still incur $200,000 in planning costs as well as costs to implement fuels reduction and watershed restoration activities (an estimated $508,000). The total cost of $708,000 would likely have to be covered through appropriated funding unless grants or other funding sources can be identified.

Alternatives 2 and 3 would be comparable in the cost of planning and implementation (Alternative 2 has more helicopter yarding, but Alternative 3 would treat more area), and the revenues generated. The sale of timber could generate an estimated $1.3 million under Alternative 2; and $1.5 million under Alternative 3. However, the planning, sale preparation and contracts, and implementation of activities would cost all of this and more (an estimated $549,000 more under Alternative 2, and $671,000 under Alternative 3). The remainder of the costs would be covered by appropriated funding unless grants or other funding sources can be identified.

It is important to remember that the objective of this proposal is not to generate revenue, but to accomplish specific resource goals over the long term.

4. Synopsis of Cumulative Effects

In *Lands Council v. Powell*, the U.S. Court of Appeals for the 9th Circuit held that, under the circumstances presented in the case, proper cumulative impact analysis required some cataloging of past projects and their effect on the current project area. Furthermore, such cataloging should provide sufficient detail to allow for analysis of the differences between prior projects and proposed projects, which could provide the information necessary to consider alternatives that might have less impact on the environment. Within the EA we have provided information of relevant past, present and reasonably foreseeable projects/activities that have occurred, are occurring, or are proposed to occur within each of the resource cumulative effects areas examined in this analysis (EA, Chapter 3, by resource; Revised EA, pp. R2-1 through R2-10). Additionally, an adequately detailed discussion of the effects of these past, ongoing, and reasonably foreseeable activities has been provided to promote an informed assessment of environmental considerations and aide in assessing whether one form or another of harvest would assist in meeting the project's purpose and need for action with minimal environmental harm.

The Council on Environmental Quality (CEQ), whose responsibility it is to coordinate federal environmental efforts and work closely with agencies and other White House offices in the development of environmental policies and initiatives, provided guidance to federal agencies on the consideration of past actions in cumulative effects analysis (CEQ Memorandum to the Heads of Federal Agencies regarding Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005; PF Doc. CR-026). CEQ stated that "generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions" (CEQ memo p. 2). Cumulative impact is defined in CEQ's NEPA regulations as the "impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…" (40 CFR 1508.7). CEQ has interpreted this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions (CEQ memo p. 2).

With respect to past actions, during the scoping process and subsequent preparation of the EA, the Forest Service determined what information regarding past actions was useful and relevant to the analysis of cumulative effects. While CEQ found that cataloging past actions and specific information about the direct and indirect effects of a past project's design and implementation could in some contexts be useful to predict the cumulative effects of the proposal, the regulations do not require the Forest Service to catalog or exhaustively list and analyze all individual past actions (CEQ memo p. 3).

The EA has provided a description of known past activities and their effects; however due to the marked difference between past and current land management practices and policies, this analysis did not further aide in assessing whether one form or another of the proposed activities would assist in meeting the project's purpose and need for action with minimal environmental harm. The evolution that has occurred in land management practices (specifically related to roads and timber harvest) is the result of science and our ongoing monitoring actions.

On the IPNFs, early to mid-20th century **road construction activities** focused construction mainly through river valleys, riparian areas, floodplains, and adjacent hillsides. The roads efficiently provided access but decreased the land's effectiveness as wildlife habitat and constricted stream channels, providing a new avenue for erosion and discharge of sediment into streams. Roads on national forest lands often were simply an expansion of existing trails and paths that provided access so that they would accommodate newer equipment and current land uses. In some situations, roads were developed on abandoned railroad beds. In both cases, the location and design were predetermined from the previous use and era. As time progressed, roads were "designed" and located to achieve their primary purpose, which was to provide access and haul product at a minimal cost. In the decades following World War II (1950s –'70s), the road network was rapidly expanded to support the domestic need for lumber in housing construction.

Over the last twenty years, both road design and location have evolved as necessary tools to not only provide efficient access; but also to protect the valuable watershed resources they encroached upon. Forest Service Best Management Practices (FSH 2509.22 Soil and Water Conservation Practices Handbook) have been incorporated into road construction/reconstruction activities on the forest.

Road surfacing (gravel, etc.) was incorporated to not only provide better trafficability; but also to prevent and control erosion from the road surface. Road controls are now being incorporated into designs that reduce the erosive flows in ditches by providing frequent cross-drains to relieve ditch flows, avoid water movement down the road by dispersing the drainage quickly by crowning or outsloping the road surface; stabilize ditches by lining; dispersing drainage water that often carries sediment onto stable, forested slopes before ditches discharge into waterways; and allow new and existing stream crossings to safely pass extreme events (such as a 100-year flood event).

Special construction techniques and designs have been utilized (i.e., full- or partial-benching of roads) to avoid unstable side casting of waste materials; windrowing clearing slash to prevent sediment delivery to streams from construction activities themselves as well as from erosion of road fills and treads that are not yet protected with erosion control vegetation. Some roads now are designed to take advantage of the non-uniformities of the slopes they cross by "rolling grades" and grade breaks to prevent the potential for accumulations of water or excessive ditchflows that have destabilized the road bed or cause surface erosion in the past. Designers and planners develop road networks that avoid highly erosive or unstable slopes utilizing the *land system inventory*, hydrologists, soil scientists, and geotechnical engineers.

Road crossings are being located at more stable sites and crossing designs are now considering water quality and fish passage as primary design criteria, rather than criteria that just account for costs and traffic efficiency. Roads are being located well away from streams and their riparian areas where ever practicable; and the number of crossing sites is being minimized. These features are in stark contrast to past road locations that sometimes resulted in chronic sources of sediments, extended exposure of streams to direct sunlight resulting in temperature elevations, and nearly permanent reductions of the replacement sources of the structural components of streams and aquatic cover, riparian deadfall.

In the past, when a road's utility ended, the road was simply abandoned. These abandoned roads have been a substantial water quality and slope stability issue as they have deteriorated, especially without any maintenance. Current practice is to restore key abandoned or no longer useful roads to a "hydrologically neutral" condition where its remnants are self-maintaining and are no longer disturbing slope stability or the movement of slope water, either on or below the soil surface or the natural functions and adjustments of streams, wetlands, and other water bodies.

Impacts to forest water and soil resources from logging practices and road activities have also been reduced over the past 20 years with the introduction of Best Management Practices (BMPs) and Inland Native Fish Strategy (INFISH) management direction. Based on research studies, current BMPs and INFISH Riparian Habitat Conservation Areas (RHCAs) can reduce sediment yields compared with historical practices (Lee et al 1997, p. 1346, PF Doc. DN-R71; USDA 1995; PF Doc. CR-003).

In 1972, Section 208 of the Clean Water Act Amendments established the regulatory framework for non-point source pollution control thorough use of BMPs. BMPs are defined in Idaho as a practice or combination of practices determined to be the most effective and practicable means of preventing or reducing the amount of pollution generated by non-point sources (IDAPA 20.02.01). BMP monitoring is annually conducted by the forest to validate the implementation and effectiveness of BMPs associated with land management activities. Monitoring results are used to adapt future management actions where improvements in meeting water quality objectives are indicated. Forest monitoring of BMPs indicates that in most cases they continue to function as expected and are meeting their intent (IPNF 2002, 2003; PF Doc. CR-018 and CR-022).

At the time the IPNF Forest Plan was written (circa 1987), the emphasis was on developing a commodity production strategy while minimizing impacts to watersheds and aquatic resources, including fish. The strategy for watershed management was constructed in the Forest Plan as a "maintenance" objective. In some situations, thresholds, or "minimum impact" standards defined the criteria for maintenance. To ensure that watersheds and aquatic resources were maintained during forest management activities, BMPs were applied. Despite the existing forest plan standards and BMPs, the condition of fish habitat on the forest was declining, primarily due to timber harvest and road building activities (IPNF 1992).

In 1995, the Forest Plan was amended to include INFISH management direction (USDA 1995; PF Doc. CR-003), which gave greater protection to aquatic resources, especially riparian-dependent systems. The management direction provided by the INFISH amendment is designed to protect and maintain the structure and function of riparian and aquatic systems. INFISH contains goals for healthy, functioning watersheds, riparian areas, and associated fish habitats; Riparian Management Objectives (RMOs), and performance-based standards and guidelines for land management activities (i.e., timber, roads, grazing, recreation, minerals, fire/fuels, lands, riparian area management, watershed restoration, fisheries and wildlife restoration). Instead of allowing some "acceptable" level of effects on riparian and aquatic systems, INFISH aims to protect aquatic resources from detrimental effects. INFISH gives riparian-dependent resources priority over other resources in the Riparian Habitat Conservation Areas (RHCAs), so that while RHCAs are not "lock out" zones, activities that occur in them must either benefit riparian and aquatic resources or at least "not slow the rate of recovery below the near natural rate of recovery if no additional human caused disturbance was placed on the system" (USDA 1995; PF Doc. CR-003). Incorporation of the INFISH management direction into the Forest Plan has led to improvement in the condition of aquatic resources by offering greater protections to the critical riparian areas. In addition, INFISH allows for and encourages watershed restoration, which has occurred over the last several years across the IPNF. For example, over 1,300 miles of roads have been decommissioned on the IPNF from 1991-2003 (IPNF 2003; PF Doc. CR-022).

As described in Section 2.2 (Table 3), the Selected Alternative includes new road construction (1.9 miles), reconstruction (1.4 miles), and reconditioning (1.2 miles) in the Twomile Resource Area. In addition, specific aquatic restoration activities will occur on a number of road segments, including decommissioning 3.4 miles of roads and removing 14 culverts (DN, Section 2.2, Table 4). Over the long term, these restoration activities will result in a full hydrologic recovery, reducing erosion and sediment delivery and resulting in a benefit to water quality in the Twomile Creek drainage (DN, Section 2.2; EA, p. 3-97). Specific BMPs will be followed during implementation of all project activities, as will standards and guidelines of the Inland Native Fish Strategy (DN, Section 3.3 "Features"; EA, p. 2-21 and Appendix A). Monitoring will occur to ensure BMP effectiveness and compliance with the Inland Native Fish Strategy (DN, Section 5).

Harvest methods and removal of timber products from the national forest has changed substantially over time. Early harvest methods (1950s, '60, and '70) focused primarily on financial objectives of providing low cost wood products. Harvest placement often occurred in the highest volume, easily accessible stands. Timber harvest often occurred within riparian areas and adjacent to streams. Most of the harvest prescriptions were primarily designed to produce healthy young stands with shorter rotation ages.

Modern timber harvest prescriptions and design emphasizes desired conditions of the forest after the harvest. This usually results in the retention of various amounts of trees in a post-harvest stand, addressing objectives that may include wildlife habitat, watershed conditions, hazardous fuels, visual quality, soil productivity, forest health and others. On sites determined suitable for timber production, timber harvest may also produce timber products on a regulated basis while compatible with these other resource objectives and values. Some examples where timber production and resource objectives can be achieved simultaneously are:

- *Reducing tree densities to decrease bark beetle hazard, thereby prolonging the development of the forest and maintaining tree cover;*
- *Managing tree canopies to limit fire spread from the forest floor to the tree crowns;*
- *Developing flammulated owl habitat in ponderosa pine forest through removal of smaller stems crowding larger trees, thereby providing more room to grow for the remaining trees, and open stand conditions favored by the owl;*
- *Designing harvest patterns across the landscape to facilitate wildlife movement, such as providing corridors and preserving travel routes for ungulates. Also, using harvest prescriptions and landscape patterns as part of a wildfire hazard reduction strategy;*
- *Increasing the amount of native western white pine, western larch and ponderosa pine, which generally are insect and disease resilient and are long-lived, as well as increasing western red cedar in valley bottoms, where it historically was more abundant than today;*
- *Using variable retention harvests to meet visual management objectives.*

Other elements of modern harvest prescriptions that address specific resource objectives include retention of snags for cavity nesters, retention of down wood for soil nutrition and wildlife habitat, maintaining sediment filtering vegetation near riparian areas, and maintaining vegetation diversity through hardwood retention and protection of rare plants.

Increased environmental awareness has also lead to improvements in logging systems that we use to remove trees from the forest. Early harvests emphasized cheap, labor intensive logging methods, such as railroad, horse, short-distance jammer systems, and tractor logging. Logging systems were selected primarily by the least expensive method to transport the trees from the forest to the mill. This sometimes involved harvesting on steep slopes, creating excessive soil disturbance and increasing the risk of erosion. Streams were sometimes used as a method to transport logs from the harvest site, causing impacts to the aquatic system and adjacent riparian habitat. Road systems were sometimes dense (10 miles of road per square mile of land area) to facilitate rapid and inexpensive removals, in some cases compromising water quality.

Today's logging systems recognize and reduce the threat of environment harm in a number of ways. Tractor logging generally occurs on slopes 35% or less, and is limited to designated locations, reducing soil impacts. Skyline and other cable yarding systems are used on steeper slopes, greatly reducing the amount of soil disturbance. Increasingly, helicopter logging is used, which extends yarding distances and thereby reduces road densities. In the Twomile Resource Area, 75% of the logging will use helicopter yarding and 24% will be skyline yarded, with less than 1% (6 acres) of tractor yarding (DN, Section 2.1, Table 1, and Section 2.2). A suite of best management practices and forest plan standards and guidelines aids in the development of the least impactive design possible. Monitoring during and after the sale is completed provides a valuable feedback loop that quickly identifies and corrects variances should they occur.

The forest ceased regeneration harvest of allocated old growth stands a number of years ago. Presently, our focus is on maintaining the old growth stands that we have and allocating additional stands for future old growth as they mature. On drier sites, restoration of old growth may include various mixes of prescribed fire, and thinning to restore historic more open old growth stand structures and reduce risk of stand replacing fire. Planting of shade-intolerant, fire-adapted species may also be done if these are in short supply. On these dry sites, our objective is to restore and sustain the old growth by retaining the large old trees, preserving the old growth characteristics, and restoring historic old growth structures and processes (IPNF 2003; PF Doc. CR-022).

In the Twomile Resource Area, fire-resilient species such as ponderosa pine and western larch will be the highest priority for protection (DN, Section 3.1). As part of the hazardous fuels reduction treatment, noncommercial slashing and underburning

activities will occur in approximately 75 acres of stands allocated for old growth management, and one 45-acre unit will be commercially thinned with the use of a helicopter (DN, Section 2.2). Such treatments will retain the old growth characteristics of these stands, and therefore there will be no change in old growth allocation for these acres (DN, Section 2.2; Revised EA, p. R3-6). Activities under the Selected Alternative are consistent with NFMA requirements and Forest Plan standards for vegetation management (DN, Section 3.1, "Consistency").

For the above stated reasons, changes in road construction/reconstruction and maintenance practices; implementation of watershed Best Management Practices and management direction under the Inland Native Fish Strategy; and changes in harvest practices and objectives; we believe that an individual analysis of past projects cannot be clearly compared to analysis of the proposed action. However, the incremental effects of the Proposed Action (when added to the effects of the past, present and reasonably foreseeable actions) are displayed, and provide a complete assessment of cumulative effects.

5. Monitoring

The Selected Alternative is consistent with specific monitoring requirements identified by the Forest Plan (Forest Plan, Chapter IV). 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. 2-29)

(2) Monitoring of Decommissioned Roads: Decommissioned roads will be checked periodically during the first year (and periodically thereafter if no problems are noted) to monitor effectiveness of erosion control, noxious weed control, and wildlife security. (EA, p. 2-30)

(3) Monitoring of Permanent Stream Channel Cross-sections: Cross-sectional profiles, fish presence, and dominant substrate have been measured in Twomile Creek. Measurements would continue to occur on an annual basis following completion of post-treatment activities, to determine whether any changes in stream channel morphology occur as a result of water or sediment yield increases. (EA, p. 2-30)

6. Comparison to Alternatives Considered But Not Selected, by Key Issue

6.1. Comparison of Alternative 1 (No Action) to the Selected Alternative, by Key Issue

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 Twomile Resource Area would occur at this time. Implementation of the foreseeable activities would still occur. I did not select this alternative for the following reasons:

Fire/Fuels	*Direct effects to fire/fuels would be minimal if not absent under Alternative 1, because there are no proposed fuels reduction or stand improvement activities (EA, p. 3-49). The primary effects under this alternative would be indirect and cumulative (long-term) (EA, p. 3-49). Alternative 1 is inconsistent with the Forest Plan standard to use fire to achieve management goals according to the direction in management Areas 1 and 4. The No-Action Alternative would continue the fire behavior trend away from historical conditions, escalating the intensity of a wildfire in the area (EA, p. 2-31). Over time, stands would fall apart, decreasing stand density, increasing surface fuels, and increasing potential flame lengths (EA, pp. 3-51, 3-52). Dry forest stands in the Twomile Resource Area would remain in or further progress into (National Fire Plan) Condition Class 3, which would not be consistent with goals of the 10-Year Comprehensive Strategy Implementation Plan to reduce hazardous fuels and restore fire-adapted ecosystems (EA, pp. 3-50, 3-52). Shade-tolerant regeneration would become established faster and provide a greater chance of lethal fires (EA, p. 3-51). Given intense and severe wildfire behavior, it is reasonable to expect there would be expensive wildfire suppression costs and damages or changes to values such as water quality, soil productivity, recreation, and aesthetics (EA, p. 3-64). Effects to these resources could be prevented or lessened with activities that treat forest fuels (EA, p. 3-64), such as those that will occur under the Selected Alternative. Unlike the Selected Alternative, Alternative 1 would take no preventative steps to protect human life and property within the wildland urban interface from an uncontrolled wildfire and/or erratic fire behavior (EA, pp. 3-51, 3-52, 3-65). Due to the proximity of these stands to the communities of Silverton and Osburn, adverse effects to life and property could occur (EA, p. 3-51). The continued succession of fuels, vegetation, mortality from insects/disease, and the exclusion of fire would create areas where the trend in fire behavior characteristics exceed the goals, objectives and standards established in the Forest Plan (EA, p. 3-65).*

Forest ecosystems	*Under the No-Action Alternative, there would be no activities to restore forest vegetation toward increased resiliency. Since the Twomile Resource Area has two relatively distinct habitat type groups (moist and dry), two general trends would be expected to occur (EA, p. 3-15). On moist sites, the short-term effects of Alternative 1 would include continued losses of Douglas-fir and grand fir as root diseases, decay and insects continue to cause deterioration of stands dominated by these species (EA, p. 3-15). Over the long term, the limited component of western larch now present would likely decline since it is often dominated by other species in dense mature stands (EA, p. 3-15). On dry sites, root disease, decay and insects would continue to cause deterioration of the stands dominated by Douglas-fir. Growing space opened by the recent Douglas-fir beetle mortality would most likely regenerate to Douglas-fir, as that is the main seed source, but root disease would continue to affect the stand (EA, p. 3-15). Large diameter Douglas-fir would gradually become less prevalent and less likely to achieve old forest structure (EA, p. 3-15). Alternative 1 would not meet Forest protection standards 1 or 2 (EA, p. 3-32).*
Flammulated owl	*Under Alternative 1, no silvicultural treatments, prescribed burning, or other treatments would be implemented to improve flammulated owl habitat (EA, p. 2-13). Although this alternative would retain all suitable flammulated owl habitat over the short term, nothing would be done to interrupt the trend of decreased canopy closure that would cause the habitat to become unsuitable over the long term (EA, pp. 2-13, 3-139). 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). "A common perception in American society is that old growth forests can be perpetuated by leaving them alone – letting nature takes its course without human interference. This concept has serious shortcomings in forests that evolved under the influence of fire and where preservation continues the practice of excluding fire," (EA, p. 3-55).*
Water and sediment yield, sediment delivery	*Since no management activities would be implemented, sediment yield values and trends would not immediately change (EA, pp. 3-87). Water yield in Nuckols Gulch and Revenue Gulch would continue to decrease very slowly over the next 20 years as vegetation recovers from recent harvest (EA, p. 3-87). Water yield in Twomile Creek would remain at current levels because vegetation in the drainage has already recovered enough from past activities to effectively intercept, utilize and transpire water (EA, p. 3-87). Sediment yield would also continue to recover to a baseline condition (EA, p. 3-87). However, without any of the aquatic restoration activities that will occur under the Selected Alternative, the net associated risk of sediment delivery would not change from current levels (EA, p. 3-88). 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 even, or a rain-on-snow event on its own), the additional sediment pulse could adversely affect fish populations and/or habitat (EA, p. 3-88). Based on these effects, the watershed would continue to be "Functioning at Risk" rather than "Properly Functioning" under the No Action Alternative.*

In summary, the No-Action Alternative would not meet any of the objectives identified in the Purpose and Need, would not be consistent with Forest Plan goals, objectives and desired future conditions, and would not be responsive to those adjacent landowners and others who feel strongly that the hazardous fuels conditions be reduced in the area (EA Appendix D; DN Attachment A).

6.2. Comparison of Alternative 3 to the Selected Alternative, by Key Issue

Alternative 3 was designed to focus activities in the wildland urban interface (rather than throughout the Twomile Resource Area) to address the wildfire hazard issue and to satisfy the purpose and need of the project (EA, p. 3-141). Alternative 3 is very similar to Alternative 2, but would prescribe restoration treatments on more acres (both within the wildland urban interface and total) than would Alternative 2. I did not select this alternative for implementation for the following reasons:

Fire/Fuels	*Alternative 3 is very similar to the Selected Alternative in terms of fuels reduction. Over time stands would more closely resemble (National Fire Plan) Condition Class 1, where fire regimes are within an historical range and the risk of losing key ecosystem components is low (EA, p. 3-59). Alternative 3 would treat approximately 74 more acres (more commercial thinning, group shelterwood and shelterwood harvests) than would Alternative 2, but the treatments would be focused more in the wildland urban interface, rather than throughout the Twomile Resource Area (EA, pp. 2-12, 3-59, 3-61). In addition, more of the harvest would be accomplished using helicopter yarding, so there would be nearly one mile less new road construction and about 1.3 miles less road reconstruction (EA, p. 2-12). This means that Alternative 3 would require walk-in or ATV access to approximately 47% of the treatment acres (compared to 28% under the Selected Alternative), which increases costs (EA, p. 3-27). The cost of walk-in or ATV access is estimated to be 20 to 50% higher than with road access (EA, p. 3-27). The additional helicopter yarding would also increase the costs associated with Alternative 3 (EA, p. 3-180).*

Forest ecosystems	*The effects to forest ecosystems under Alternative 3 would be similar to those under the Selected Alternative (EA, p. 3-17). Both would use a combination of commercial harvest and non-commercial activities to restore and trend forest vegetation toward increased health and resiliency (EA, p. 3-17). One of the key differences is that Alternative 3 would harvest in approximately 180 acres of allocated old growth stands with encroaching ladder fuels, with noncommercial activities in approximately 75 acres of allocated old growth (EA, pp. 3-25, 3-27). By treating those stands, the desired old structure within the stands could be maintained more effectively, which is important in terms of meeting the project's purpose and need of maintaining resilient fire-adapted ecosystems within the wildland urban interface (EA, p. 3-27). Although Alternative 3 would reduce the amount of allocated old growth in old growth management unit 121 from 7% to 6%, it would still exceed the Forest Plan's desired level of 5% (EA, p. 2-18). However, the loss of allocated old growth would affect habitat for flammulated owls, as described in the following paragraph.*
Flammulated owl	*Alternative 3 would reduce suitable habitat for flammulated owls on 155 acres for a period of approximately 50 to 100 years, impacting the flammulated owl and trending the species toward listing under the Endangered Species Act (EA, pp. 2-34, 2-40, 3-25, 3-141). Viability of the species could not be assured under Alternative 3. The loss of old growth would also affect other old growth-dependent species, including white-headed woodpeckers (EA, pp. 3-140, 3-141); pileated woodpeckers (EA, pp. 3-154, 3-155); and nongame species (EA, p. 3-161). This is the primary reason I did not select Alternative 3 for implementation.*
Water and sediment yield, sediment delivery	*Alternative 3 proposes the very same watershed restoration activities as does the Selected Alternative and Alternative 4 (EA, p. 2-18). Please refer to the discussion in Section 2.2 of this Decision Notice for a detailed discussion of the watershed restoration activities.*

In summary, Alternative 3 would meet all of the objectives identified in the Purpose and Need. It would be responsive to those adjacent landowners and others who feel strongly that the hazardous fuels conditions be reduced in the area, but not to those who disagree that the activities (especially commercial harvest) are necessary (EA Appendix D; DN Attachment A). Alternative 3 is consistent with all but one of the Forest Plan standards, objectives and desired future conditions. Wildlife standard 9(a), "Manage the habitat of species listed in the Region 1 Sensitive species list to prevent further declines in populations, which could lead to Federal listing under the Endangered Species Act," would not be met under Alternative 3 (EA, p. 3-165).

6.3. Comparison of Alternative 4 to the Selected Alternative, by Key Issue

This alternative was developed in response to comments received from The Lands Council and Ecology Center 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 (EA, p. 2-18). I did not select this alternative for implementation for the following reasons:

Fire/Fuels	*Under Alternative 4, there would be an immediate reduction in surface fuels on the 375 acres treated (EA, p. 3-61). However, because of the difficulties associated with re-introducing fire into some stands without commercial harvest, Alternative 4 would treat a smaller area than the other action alternatives, so the benefit to potential fire behavior in the wildland urban interface would also be limited (EA, p. 3-61). On untreated sites (95% of the Twomile Resource Area), effects would resemble those under the No-Action Alternative. The continued succession of fuels and vegetation, mortality from insects/diseases, and the exclusion of fire would create areas where the trend in fire behavior characteristics would in time be inconsistent with the goals, objectives and standards established in the Forest Plan (EA, p. 3-65). 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 Twomile Resource Area from an uncontrolled wildfire (EA, pp. 3-61, 3-65).* *Alternative 4 would allow forested areas adjacent to and within the wildland urban interface to remain in or further progress into (National Fire Plan) Condition Class 3, which would not be consistent with the goals of the National Fire Plan and 10-Year Comprehensive Strategy Implementation Plan to reduce hazardous fuels and restore fire-adapted ecosystems (EA, p. 3-61). Severe fire effects, large wildfire management costs, and fire-caused changes in values could reasonably be expected, whereas these results could likely be prevented or lessened with more effective fuel treatment methods (EA, p. 3-64), such as those that will occur under the Selected Alternative.*

Forest ecosystems	*Under Alternative 4, the density of the stands treated would decrease slightly to achieve some reduction in fuels (EA, p. 3-22). However, due to the constraints of treating only non-commercial sized fuels prior to the re-introduction of fire, Alternative 4 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 Twomile Resource Area would not be candidates for treatment; consequently this alternative would restore the fewest acres compared to the other action alternatives (EA, pp. 2-19, 3-23). Re-introducing fire alone (without understory slashing) would not restore most stands because of accumulations of duff and ladder fuels (EA, p. 3-22).*
Flammulated owl	*There would be no reduction in suitable flammulated owl habitat under Alternative 4 (EA, p. 3-141). Alternative 4 would accomplish slash/underburn treatments in four suitable flammulated owl stands (95 acres total), these stands would still provide suitable habitat in both the short and long term (EA, p. 3-140).*
Water and sediment yield, sediment delivery	*Alternative 4 proposes the very same watershed restoration activities as does the Selected Alternative and Alternative 3 (EA, p. 2-18). Please refer to the discussion on pages 4 and 5 of this Decision Notice for a detailed discussion of the watershed restoration activities.*

In summary, Alternative 4 would meet of the objectives identified in the Purpose and Need and be consistent with Forest Plan standards, but not to the extent of Alternatives 2 and 3. Alternative 4 would be responsive to those who want no commercial harvest to occur on National Forest System lands, but not to those adjacent landowners and others who feel strongly that the hazardous fuels conditions be substantially reduced in the area (EA Appendix D; DN Attachment A).

7. Findings and Consistency With Other Laws, Regulations And Policy

The Twomile Environmental Assessment and Decision Notice were prepared following the guidelines of the National Environmental Policy Act. The analysis for the Twomile 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, pp. 2-12 through 2-30, "Alternative Descriptions"), including a no-action alternative as required by NEPA. During alternative development, an additional five alternatives were briefly considered but eliminated from further study (EA, pp. 2-30, 2-31). The range of alternatives is appropriate given the scope of the proposal and the purpose and need for action (EA, pp. 1-2 through 1-5, 2-1).

The Selected Alternative is consistent with the National Forest Management Act requirements related to vegetative manipulation and aquatic resource protection. Technology and knowledge exists to ensure that lands are adequately restocked within five years after final harvest (EA, p. 3-33). Effects on residual trees and adjacent stands have been considered (EA, p. 3-33). Harvest will not occur on sites identified as not suitable for timber production (EA, p. 3-33). All treatments that will occur under the Selected Alternative are silviculturally appropriate and are within the timber and vegetation management practices outlined in the Forest Plan (EA, p. 3-33). 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, and providing a long-term supply of large woody debris (EA, pp. 2-21 though 2-23, 3-101, 3-119). These features surpass those required by the Idaho Forest Practices Act and are consistent with Forest Plan standards. Although Alternative 3 would treat more stands adjacent to the urban interface than Alternative 2, the Selected Alternative will still 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 2-31, 3-55, 3-61). 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.

The Selected Alternative is consistent with the Clean Air Act. The IPNF 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, which are considered to be the "best available control technology" (EA, p. 2-20). Based on past prescribed burning, activities of the Selected Alternative can be successfully implemented in accordance with the Clean Air Act (EA, p. 2-20).

The Selected Alternative is consistent with the National Historic Preservation Act. Surveys to locate heritage resources within the Twomile Resource Area have been completed (EA, p. 2-24). All known heritage resource sites will be protected as directed by the Forest Plan (PF Doc. HR-1). Any future discovery of heritage resource sites or caves will be inventoried and protected if found to be of cultural significance (EA, p. 2-25). A decision would then be made to avoid, protect or mitigate effects to these sites in accordance with the National Historic Preservation Act (EA, p. 2-25).

The Selected Alternative is consistent with the Environmental Justice Executive Order. 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 Interior Columbia Basin Ecosystem Management Project (ICBEMP). The Twomile Resource Area is within an area identified by the ICBEMP as Forest Cluster 4, which emphasizes reducing risk to ecological integrity and species viability. The primary risks to ecological integrity within this Forest Cluster are risks to hydrologic and aquatic systems from fire potential, risks to late and old forest structures in managed areas, and risks in forest compositions that are susceptible to insect, disease and fire (EA, pp. 1-4). Under the Selected Alternative, treatment activities in the Twomile 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 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. The Selected Alternative includes several treatment units that will exceed 40 acres, but is consistent with Forest Plan Timber Standard 7 regarding openings larger than 40 acres (EA, pp. 3-31, 3-32). The project team determined that the most effective methods of treatment to meet the objectives in the Twomile Resource Area would be to use an arrangement of vegetative restoration and fuel treatments at the landscape scale to modify fire behavior and promote healthy forest conditions (PF Doc. VEG-34). The public was informed in November 2003 that regeneration harvest openings in excess of 40 acres were proposed (EA, p. 3-32). The Regional Forester has granted approval to exceed the 40-acre opening size (PF Doc. VEG-34). 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 and in Chapter 3 of the EA.

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 Geographic Assessment classifies the Twomile Resource Area as "Condition 2" landscapes (EA, p. 1-4). Not to be confused with condition classes under the National Fire Plan, Condition 2 landscapes under the Geographic Assessment are the highest priority for vegetative restoration. On drier habitat type Condition 2 landscapes, the Geographic Assessment recommends thinning from below and using shelterwoods with reserves and group selection regeneration harvests to restore open stand structures dominated by large fire-resistant early seral tree species (such as ponderosa pine and western larch). The Geographic Assessment further classifies the watershed as "functioning, but at risk" and directs that these areas will be among the highest priority for watershed and aquatic restoration. As described in this Decision Notice, activities have been included in the Selected Alternative that will help restore water and fisheries resources in the Twomile Resource Area.

8. Finding Of No Significant Impact (FONSI)

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. For 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. There will be no significant impacts to any resource under the Selected Alternative (EA, Chapter 3; and Project Files). The impacts are within the range of those identified in the Forest Plan.

Consistent with the Forest Plan, the Selected Alternative will trend the treatment areas away from potential fire behavior that could threaten human life and property in the wildland urban interface (EA, p. 3-65). 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, but precautionary signing will provide safety in areas of activity (EA, p. 3-171). No significant increase in water yields or sedimentation in the analysis area streams is expected, and State water quality guidelines will be met (EA, p. 3-104). Development of system motorized trails and closure of other non-system trails will reduce erosion and sediment delivery (EA, p. 3-99). 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 Twomile 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 (EA, pp. 2-24, 2-25).

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. 2-1, 2-2); areas of potential controversy were then identified as issues (EA, pp. 2-4 to 2-10). 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 Twomile 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 (EA, pp. 3-1 through 3-4 [Forest Vegetation], 3-38 through 3-41 [Fire/Fuels], 3-68 through 3-72 [Aquatic Resources], 3-111 through 3-114 [Soils], 3-124 through 3-128 [Wildlife], 3-169 [Recreation], 3-173 [Scenic Resources], 3-179 and 3-179 [Finances], 3-186 and 3-187 [TES plants]). 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 (EA, pp. 3-28 through 3-33 [Forest Vegetation], 3-63 through 3-65 [Fire/Fuels], 3-100 through 3-104 [Aquatic Resources], 3-119 [Soils], 3-163 through 3-165 [Wildlife], 3-171 through 3-173 [Recreation], 3-177 [Scenic Resources], 3-185 [Finances], 3-202 [TES plants]). 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 (EA, pp. 2-24, 2-25). 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 provisions.

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. A Biological Assessment has been completed; the U.S. Fish & Wildlife Service reviewed the assessment and has concurred with our findings (Attachment B).

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 (EA, Chapter 3, by resource).

9. Documents and Project Files

This Decision Notice summarizes 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 Twomile Resource Area project are available for review by the public. The project files may be reviewed at the Fernan Office of the Coeur d'Alene River Ranger District, or are available on compact disk upon request. To review the files, please contact the NEPA Coordinator at the Coeur d'Alene River Ranger District (Fernan Office), (208) 664-2318.

10. Appeal Rights and Implementation

This decision is subject to appeal pursuant to 36 CFR 215.11. A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the *Spokesman-Review* (Spokane, Washington) newspaper. It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication of the data of the legal notice of the decision in the newspaper of record is the ***exclusive*** means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source.

Appeals must be submitted to:

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

or

USDA Forest Service, Northern Region
ATTN: Appeal Deciding Officer
200 East Broadway
Missoula, MT 59802

(Office hours are from 7:30 a.m. to 4:00 p.m. Monday through Friday, except holidays.)

Electronic appeals must be submitted to:

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

In electronic appeals, the subject line should contain the name of the project being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, Word Perfect, or Rich Text Format (RTF).

It is the appellant's responsibility to provide sufficient written evidence and rationale to show why my decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, an appeal must meet the content requirements of 36 CFR 215.14 and include the following information:

- ✓ *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;*
- ✓ *The regulation under which the appeal is being filed, when there is an option to appeal under either 36 CFR 215 or 36 CFR 251, Subpart C;*
- ✓ *Any specific change(s) in the decision that the appellant seeks and their rationale for those changes;*
- ✓ *Any portion(s) of the decision with which the appellant disagrees, and their explanation for the disagreement;*
- ✓ *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 an appeal is received on this project, there may be informal resolution meetings and/or conference calls between the Responsible Official and the appellant. These discussions would take place within 15 days after the closing date for filing an appeal. All such meetings are open to the public.

If you are interested in attending any informal resolution discussions, please contact the Response Official or monitor the following website for postings about current appeals in the Northern Region of the Forest Service:

http://www.fs.fed.us/r1/projects/appeal_index.shtml

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 Deputy District Ranger Linda McFaddan or Ecosystems Staff Officer Sherri Lionberger at the Fernan Office of the Coeur d'Alene River Ranger District, (208) 664-2318.

RANOTTA K. McNAIR
Forest Supervisor,
Idaho Panhandle National Forests

10/17/05
Date

ATTACHMENT A
RESPONSE TO PUBLIC COMMENTS

APPENDIX A, PART 1
Response to Public Comments on the 2004 Environmental Assessment

Introduction

In addition to those activities specific to the Twomile Resource Area project, we work closely with other agencies and organizations in regard to fire and fuels management. The National Fire Plan (2000) identified a three-tiered organizational structure, including a local level, a state/regional and tribal level, and a national level. For example, the Shoshone County Interagency Fire Planners Group consists of participants from the Forest Service, Bureau of Land Management, State of Idaho, Shoshone County Fire Chiefs, Shoshone County Disaster Services, and Shoshone County Commissioners. Shoshone County initiated a contract for development of the Shoshone County Fire Mitigation Plan, which provides the basis for identifying risk areas within the county, and fire mitigation treatments to reduce the risk to communities. Meeting on a monthly basis, the objective of the Fire Planners Group is to effectively implement the Shoshone County Fire Mitigation Plan to aid in the protection of communities within the county (EA, p. 1-3; PF Doc. DN-R42). Hazardous fuels reduction and forest stand restoration on federally-managed lands are just a part of the overall strategy to meet the goals of the Shoshone County Fire Mitigation Plan and National Fire Plan.

March 12, 2002 A **legal ad** was published in the newspaper of record (*Spokesman-Review*) to notify the public of the proposal (PF Doc. PI-32).

April 8, 2002 Notification of the proposal (as part of the Ponderosa Pine Restoration Area Project) was included in the "**Quarterly Schedule** of Proposed Actions" for the IPNFs (PF Doc. PI-35).

January 10, 2003 Notification of the Twomile Resource Area proposal was included in the "**Quarterly Schedule** of Proposed Actions" for the IPNFs beginning in January 2003 and continuing through the current issue (PF Doc. PI-1).

January 28, 2003 A **scoping letter** was sent to 180 members of the public (including those who had indicated an interest in this project, adjacent landowners, recreational user groups and other potentially affected organizations, and other public agencies) to share information and to request submission of public comments (PF Doc. PI-3, PI-4).

May 29, 2003 The project was introduced at a **meeting** of the Shoshone County Fire Mitigation Group.

June 24, 2003 **Flyers** were posted in communities of the Silver Valley to inform area residents of the upcoming community meeting (PF Doc. PI-35). This meeting was later rescheduled to November, since many of the people assigned to the project were dispatched on wildfire assignments.

October 2, 2003 Forest Service fire and fuels specialists, fire management officers, ecologists, silviculturists, wildlife biologists, and Forest insect and disease staff convened in the Twomile Resource Area to review treatment options and discuss the integration of multiple resource benefits (PF Doc. AD-8). Collaboration for this project also included **visits to the Twomile Resource Area** by representatives from the offices of Senator Craig and Representative Otter, IPNF District Rangers, and the IPNF Forest Supervisor. In addition, foresters visiting from the Forest Service's Regional Office in Missoula have previewed the existing conditions and helped suggest and develop treatment options (PF Doc. PI-8).

November 4, 2003 An **update letter** was mailed to the public describing current conditions in the area, the assessment process to be used, and opportunities for the public to be involved in the process. The letter included an invitation to attend a community meeting to discuss the proposal. (PF Doc. PI-19, PI-20)

November 5, 2003 An **email message** was sent to other Forest Service offices and to representatives of other agencies with an invitation to participate in the upcoming community meeting (PF Doc. PI-21).

November 13, 2003 The **community meeting** was held at the grade school in Osburn to provide information and answer questions regarding proposed activities in the Twomile Resource Area (PF Doc. PI-23).

Three comment letters were received during the EA review period. A copy of each letter in its entirety is provided at the end of this attachment. The following table identifies the author of each letter, the organization(s) represented, and a brief synopsis of their letter. Substantive comments received during the 30-day public review of the 2004 Twomile EA follow, with our response.

Table A-1. Public Comment Letters Received During the 2004 EA Review Period.

Author	Representing	Synopsis
#01 Rick Just, letter dated April 15, 2004	✪ Idaho Parks & Recreation (Boise, ID)	Mr. Just does not comment on the activities related to fuels reduction or aquatic restoration under the Twomile project, but does indicate that Idaho Parks & Recreation is supportive of the trail-related work that will occur.
#02 Mike Mihelich, letter dated April 16, 2004	✪ Kootenai Environmental Alliance (Coeur d'Alene, Idaho) ✪ The Lands Council (Spokane, Washington) ✪ The Ecology Center (Missoula, Montana) ✪ Alliance for the Wild Rockies (Helena, Montana)	Although Mr. Mihelich's 3-page letter of February 26, 2003 was published in the 2004 Twomile EA (Appendix D) and his issues identified in Chapter 2, he is correct that specific responses to his substantive comments were not provided in Appendix D. He did not propose any new alternatives or issues, but addressed the overall proposal, methods of analysis, and content of the NEPA document. We apologize for the oversight, and have responded here (in Part 1 of Attachment A) to comments from both his February 26, 2003 letter and his April 14, 2004 letter. Mr. Mihelich cites five references in his letter which are not included in his list of references cited. Without the full citation information, we were unable to locate these references.
#03 Rein Attemann, letter dated April 17, 2004	✪ The Ecology Center (Missoula, Montana) ✪ The Lands Council (Spokane, Washington) ✪ Selkirk Conservation Alliance (Priest River, Idaho) ✪ Kootenai Environmental Alliance (Coeur d'Alene, Idaho)	Many of Mr. Attemann's comments are not applicable to the Twomile Resource Area. In fact, his letter is virtually identical to his comments on the recent Deerfoot Resource Area EA, a project located several miles from the Twomile Resource Area, in an entirely different watershed. In addition, in his list of references cited, Mr. Attemann lists the same 111 references he cited in his comments on the Deerfoot project, yet only 7 of those 111 are actually cited in his comments on the Twomile project. Another 15 are cited in his letter but not included in his list of references cited. Without the full citation information, we were unable to locate several of these references.

Comments are organized by the following issue categories:

A. Forest Vegetation
B. Fire/Fuels
C. Aquatic Resources
D. Soil Productivity
E. Wildlife
F. Recreation & Access
G. Other Issues

A. Comments Related to Forest Vegetation

A.1. Forest Health *(Attemann et al, p. 5)*

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.

Mr. Attemann raised similar concerns in reference to the Deerfoot Resource Area project. With less than 15% of the acres in the Twomile Resource Area being treated, the work to be done can hardly be called massive or extensive. The Selected Alternative responds to the identified purpose and need with a balance of treatments designed to affect potential fire behavior adjacent to rural residences in the Twomile Resource Area (EA, p. 2-14). The focus is on removal of tree species susceptible to insects and disease, to restore long-lived seral tree species that are better adapted to the mixed and low severity fire regimes of northern Idaho (EA, p. 2-14).

Forest health is defined as, "The condition in which forest ecosystems sustain their complexity, diversity, resiliency and productivity to provide for specified human needs and values. It is a useful way to communicate about the current condition of the forest, especially with regard to resiliency, a part of forest health that describes the ability of the ecosystem to respond to disturbances…" (EA, Acronyms/Glossary, p. AG-8).

A.2. Historical Conditions *(Attemann et al, p. 5; Mihelich et al, p. 5))*

We were unable to find a definition of "historical range of variability" in the EA. 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. How can science define what is healthy since economic values are just expressions of a value system and not based in value-neutral science (see Walder 1995).

The EA makes statements and assumptions about historical conditions and desired future conditions, most of them based upon grossly inadequate data. The contentions that present conditions are somehow "unnatural" runs counter to more enlightened thinking on such matters, for example, in Harvey et al 1994.

Mr. Attemann raised similar concerns in reference to the Deerfoot Resource Area project. The definition of historical range of variability has not changed in regard to the Twomile assessment: "The natural fluctuation of ecological and physical processes and functions that would have occurred during a specified period of time," (EA, Acronyms/Glossary, pp. AG-9, AG-10). The term 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.

Activities in the Twomile Resource Area are not intended to return conditions to a "presettlement" status or "open park-like" stands. It is clearly stated that the natural range of variability is not necessarily a goal, but a desired trend (EA, pp. 3-6, D-2), and that the historical range of variability 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 (EA, Acronyms/ Glossary, p. AG-10).

The citation Walder (1995) is a Master's thesis prepared for the University of Montana in Missoula: "Silviculture vs. Nature: An ecological assessment of forest health alternatives." Unfortunately, Mr. Attemann did not include a copy with his comments and we were unable to locate a copy for review.

Mr. Mihelich cites Harvey et al (1994), which is part of the Eastside Forest Ecosystem Health Assessment. The reference addresses "Biotic and abiotic processes of Eastside Ecosystems: The effects of management on soil and properties, processes, and productivity," (PF Doc. DN-R11). Mr. Mihelich asserts, "There is no data that indicates that a shift due to increases in tree density is anywhere near as significant a factor in affecting resilience and the sustainability of historic ecological relationship as logging and road building has – and will to an increased degree if the heavy handed logging/restoration methods still being proposed are continued."

This reference was reviewed for applicability to the Twomile Resource Area. The activities that will occur in the Twomile Resource Area are consistent with the information and conclusions presented by Harvey et al, who concluded, "Changes in stand densities and species distribution through fire exclusion, harvesting history, or both may restrict natural processes that balance aboveground vegetation with belowground resources. Without fire, the ecosystem must compensate by accelerating biological decomposition through recycling and mortality processes, including insect and disease activity – a process that assures that fire will eventually return to the system. Appropriate restoration of that balance, and prevention of soil degradation will be prerequisite to returning forest health to pre-management levels," (PF Doc. DN-R11, p. 45).

A.3. Historical Conditions (Attemann et al, p. 5)

Charts in the EA routinely compare "historic" conditions to "current" conditions. What is "historic?" How did you get the data?

In relation to forest vegetation, the term "historic" is used in three figures (Figures 3-VEG-2, EA p. 3-6; 3- -26, EA p. 3-24; and Figure 3-VEG-29, EA p. 3-25). As used, the term refers to a period of time 100 years ago, based on the Geographic Assessment for the Coeur d'Alene River Basin (EA, p. 3-7). The discussion preceding the figures identifies where in the Project Files that information is substantiated. For example, Figure 3-VEG-2 (Current and Historic Forest Types on National Forest System Lands in the Coeur d'Alene River Basin, EA p. 3-6) is prefaced with the statement, "At the entire Coeur d'Alene River Basin scale…the white pine cover type has substantially declined in the past 100 years (Geographic Assessment, p. 37; PF Doc. VEG-R10)…"

In terms of fire/fuels, historic fire conditions were obtained through fire archives, research, and modeling. The location of fire disturbances for the Coeur d'Alene River Ranger District (including the Twomile Resource Area) have been recorded and mapped by the Forest Service for a period of about 130 years (EA, p. 3-38). A map of the recorded fire history for the resource area is provided in the Project Files (PF Doc. FF-30).

A.4. Intolerant Species (Attemann et al, p. 8)

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 clearcuts (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 the analysis area. 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 clearcutting and the agency maintains in this document and elsewhere that clearcut logging and burning are necessary to regenerate intolerant species).

This comment does not seem to apply to the Twomile Resource Area, and was in fact raised by Mr. Attemann in regard to the Deerfoot Environmental Assessment. There has been minimal timber harvest on National Forest System land within the Twomile Resource Area (EA, p. 3-13). Harvest since 1960 has included some regeneration harvests, but no clearcuts (EA, Table 3-VEG-3, p. 3-13). Harvest records previous to 1960 are not available; however, some scattered harvest is known to have taken place prior to 1960 (EA, p. 3-13). No clearcut harvests are proposed in the Twomile Resource Area under any alternative (EA, Table 2-4, p. 2-12; p. 3-33).

A.5. Thinning (Attemann et al, pp. 8, 9)

Hessburg and Lehmkuhl (1999) question the common assumption in the DEIS 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.

It is not clear whether this comment refers to the Twomile Resource Area project, since the NEPA documentation is at the Environmental Assessment (EA) level, not a Draft Environmental Impact Statement (DEIS). Mr. Attemann made this same statement in regard to the Deerfoot project, at which time 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-R1).

The review involved six 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 six scientists also had research experience working in the eastern Washington ecosystems where 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 Hessburg and Lehmkuhl 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.

In a reference cited by Mr. Mihelich, Harvey et al (1994) state, "Studies comparing pre-1900 forest and range ecosystems of the inland Pacific Northwest with post-1900 conditions generally indicate a buildup of fuels and biomass in forests since 1900…In general, when wildfires occur now in the inland Pacific Northwest, they are of much greater intensity because of the high fuel loading…Two common results of the high fuel loading are loss of all forest floor material and combustion of much large woody debris, and heating of the mineral soil, causing a loss of soil organic matter, organisms, structure, and … exchange capacity," (PF Doc. DN-R11, p. 22).

In the Twomile Resource Area, it is not "commonly assumed" that fuel levels are too high for prescribed burning to take place before thinning. Alternative 4 was developed specifically in response to Mr. Attemann's concern, analyzing the effectiveness of treating fuels without commercial harvest. However, re-introduction of fire within thinning will be problematic in areas where there have been decades of fire exclusion (EA, p. 3-22). It was determined that such treatment would have very little effectiveness in reducing potential fire behavior because of the limited opportunities for such treatment throughout the Twomile Resource Area (EA, p. 3-65).

Under the Selected Alternative, prescribed burning will occur without thinning or other logging in approximately 41% of the treatment units (EA, Table 2-6, p. 2-14). Commercial thinning will occur on a total of 79 acres under the Selected Alternative (EA, Table 2-4, p. 2-12). The intent of this thinning is to maintain resilient amounts of the overstory canopy present on the site while reducing the crown bulk density for fuels reduction (EA, p. 3-17).

A.6. Past Activities (Attemann et al, p. 9)

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 DEIS analysis. In actuality the present condition in the Deerfoot project area is a result of 3,600 acres of clearcuts 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 and replanting would add to fire risk as well.

It appears this comment was not meant to apply to the Twomile Resource Area. As stated in our response to comment A.5 above, there has been minimal rather than extensive timber harvest on National Forest System land within the Twomile Resource Area (EA, p. 3-13). As stated in our response to comment A.6, the NEPA documentation is at the Environmental Assessment (EA) level, not a Draft Environmental Impact Statement (DEIS). In addition, the comment refers to past harvest and other activities that occurred in the Deerfoot project area, not the Twomile Resource Area.

In the Twomile Resource Area, prescribed fire will be used to reduce post-harvest fuel loading and to reduce shrub competition enough to allow establishment of planted seedlings (EA, p. 3-18). To assure success, special attention will be made in every phase of reforestation on brush-prone sites (EA, p. 3-19).

Current canopy cover is 42% in the Twomile Resource Area. In 100 years, canopy cover on treated sites will improve to approximately 54%, and improving to about 45% for the area as a whole under the Selected Alternative (EA, pp. 2-33, 3-19, 3-26). This would surpass predicted canopy cover under both Alternative 1 (No Action) and Alternative 4 (non-commercial underburning only).

A.7. Over 40 Acres (Attemann et al, p. 13)

Has the FS been issued approval yet from the Regional Supervisor on the units over 40 acres in the Twomile Resource Area project?

Yes, the Regional Forester has granted approval to exceed the 40-acre opening size (PF Doc. VEG-34).

The project team determined that the most effective methods of treatment to meet the objectives in the Twomile Resource Area would be to use an arrangement of vegetative restoration and fuel treatments at the landscape scale to modify fire behavior and promote healthy forest conditions (PF Doc. VEG-34). Treatment unit size is adapted to the proximity to communities, landscape features, and topography, as well as vegetation on the sites. Under the Selected Alternative, several of treatment units exceed 40 acres (EA, Table 3-VEG-7, p. 3-27) to provide connectivity along forest land boundaries, as well as to enhance fuels reduction treatments on adjacent private ownerships as described in the Shoshone County Fire Mitigation Plan (EA, pp. 1-5, 2-30, 3-52, 3-57, 3-58).

To address concerns by Mr. Attemann, an alternative was considered that would have limited new openings to less than 40 acres (EA, p. 2-30). The alternative was eliminated from further consideration because treating large forested landscapes requires land managers to develop large-scale fuel treatment patterns that more effectively reduce the potential for catastrophic fire and promote healthier forest conditions than would small treatment patterns (EA, p. 2-30). Limiting the openings to 40 acres would also limit the ability of the project to meet the goal of implementing "seamless" fire mitigation activities where treatments are not bound by property boundaries, but span ownerships based on the effectiveness of the activities (PF Doc. VEG-34).

B. Comments Related to Fire/Fuels

B.1. National Fire Plan (Mihelich et al, p. 5)

The brief NFP discussion on pp. 1-2 and 1-3 of the EA did not address the issues raised in the KEA letter of February 26, 2003.

In his February 26, 2003 letter, Mike Mihelich stated, "The EA should provide information contained in the NFP regarding NFP requirements to reduce fire risks on private property adjacent to national forests." The National Fire Plan is discussed in the EA on pages 1-1 and 1-2, with key points and goals described on page 3-37 (including the National Fire Plan website) and page 3-44. Consistency with the goals of the National Fire Plan is addressed for each alternative (EA, pp. 3-52, 3-55, 3-56, 3-59, 3-61). The National Fire Plan document is included in the Project Files (PF Doc. FF-20).

B.2. Non-commercial Treatments (Attemann et al, p. 1)

Why were the same units under Alternative 2 not incorporated under Alternative 4 for precommercial treatment and prescribed burning?

Due to the constraints of treating only non-commercial sized fuels prior to the reintroduction of fire, Alternative 4 would include only those stands where non-commercial treatment of surface and ladder fuels would be sufficient to allow the reintroduction of fire without excessive mortality to the existing overstory (EA, pp. 2-19, 3-61). With this constraint, many stands in the resource area would not be candidates for treatment.

B.3. Past Activities (Attemann et al, p. 2)

The EA acknowledges that "commercial harvest on National Forest System lands in the Resource Area have been limited due to terrain, access, and close proximity to local communities." Did the FS rely on scientific knowledge that logging increases the risk of fire back then? Please disclose to the public in the subsequence FEIS or Decision Notice why it was important not to log in close proximity to local communities.

Changes in surface, ladder and crown fuels have resulted in the potential for an increase in fire intensity and severity when fires start in the Twomile Resource Area (EA, p. 3-38). Surface fuels were once light on drier sites due to the frequency of stand-replacing and mixed severity fires, but have been accumulating for over 65 years (EA, p. 3-45) due to the absence of fire. 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, pp. 3-38, 3-46).

Focusing treatments to reduce hazardous fuels in the wildland urban interface is a goal of the National Fire Plan, which was developed in response to the fire season of 2000. Activities proposed in the Twomile Resource Area address this and other goals of the National Fire Plan and the Shoshone County Fire Mitigation Plan, and to help move the resource area toward the desired future conditions described in the Forest Plan (EA, pp. 1-2, 1-3). There is a high priority to treat areas where human communities, watersheds, or species are at risk from severe wildfire. The Shoshone County Fire Mitigation Plan describes the entire perimeter of the community of Silverton (adjacent to the Twomile Resource Area) as being at high risk to wildfire loss and recommends, "Federal managers responsible for management of adjoining lands should consider forest management activities on the surrounding hillsides targeted at improving forest health and reducing fire risks to the community," (EA, p. 1-3).

B.4. Home Ignitability (Attemann et al, p. 3)

Jack Cohen's research findings could potentially eliminate arguments for increased public lands logging, road building, and grazing as alleged means of protecting private homes from wildfires. Consider and incorporate key points of Jack Cohen's research paper [specific points are identified].

Similar comments were raised in this organization's comments during scoping (EA, Appendix D, p. D-3). As a result, we reviewed the reference in relation to activities in the Twomile Resource Area (PF Doc. PI-44). We recognize and support Jack Cohen's research. In the research paper cited, Cohen specifically addresses home ignitability, stating, "Extensive wildland vegetation management does not effectively change home ignitability. *This should not imply that wildland vegetation management is without a purpose and should not occur for other reasons,"* (emphasis added). "For example, a [wildland-urban interface] area could be a high priority for extensive vegetative management because of aesthetics, watershed, erosion, or other values, but not for reducing home ignitability…" (PF Doc. PI-44). The purpose and need for action in the Twomile Resource Area is not to save homes, but to respond to goals and objectives of the National Fire Plan and Shoshone County Fire Mitigation Plan, and to help move the resource area toward desired future conditions as described in the Forest Plan (EA, p. 1-2).

B.5. Stand-replacing Fires (Attemann et al, pp. 6, 7)

What evidence refutes scientific research that stand-replacing fires occurred in ponderosa pine types (Arno et al 1995)?

Mr. Attemann raised this same concern in his comments on the recent Deerfoot project (Deerfoot DN, p. A-7). As explained in response to those comments, stand-replacing fires are not unnatural. Nowhere in the Twomile EA is it claimed that stand-replacing fires did not occur in ponderosa pine types. It is clearly stated, "Fire has burned in nearly every ecosystem and nearly every square meter of the coniferous forests and summer-dry mountainous forests of northern Idaho, western Montana, eastern Washington, and adjacent portions of Canada…Fire maintained ponderosa pine on sites throughout its range at the lower-elevations and killed ever-invading Douglas-fir and grand fir," (EA, pp. 3-41, 3-42). "Dry habitat types consist of ponderosa pine, western larch, Douglas-fir and grand fir. Prior to the 20th century, many stands in the dry forest types were burned frequently by low- or mixed-

severity fire; occasional stand replacing fires occurred as well," (EA, p. 3-43).

In the Twomile Resource Area, an estimated 59% of National Forest System lands are considered moist sites (EA, pp. 3-5, 3-15). Currently, this habitat group is dominated by Douglas-fir cover types (74%) and grand fir cover types (9%). Lodgepole pine and white pine cover types (about 2% each) are also found on these moist habitat types.

Historically, these habitat types were dominated in the Coeur d'Alene River Basin by white pine stands (EA, p. 3-5).

Arno et al (1995; PF Doc. DN-R25) is a USDA Forest Service publication addressing "Age-class structure of old growth ponderosa pine/Douglas-fir stands and its relationship to fire history." Our project silviculturist used this reference to describe forest vegetation conditions (EA, p. 3-22). In analysis of the fire/fuels issues, two more recent publications by Arno were used:

- Arno et al, 1996. Using silviculture and prescribed fire to reduce fire hazard and improve health in ponderosa pine forests. (PF Doc. FF-6). *Used in the description of dense stands that have developed as a result of fire exclusion (EA, p. 3-46).*
- Arno et al 1997. Old growth ponderosa pine and western larch stand structures: influences of pre-1900 fires and fire exclusion. (PF Doc. FF-28). *Used in the discussion of the benefits to managing old growth forests (EA, p. 3-55).*

B.6. Climate *(Attemann et al, pp. 6, 7)*

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 (Shinneman and Baker 1997, Veblen et al 2000).

Based on this comment, we reviewed the Shinneman and Baker (1997) reference (we were unable to locate a copy of the Veblen et al, 2000, reference).

Shinneman and Baker (1997; PF Doc. DN-R2) examined two views of pre-Euro American landscape-scale processes. "The prevailing "equilibrium" view of ponderosa pine landscapes holds that frequent, low-intensity surface fires maintained open, park-like forests of large, old trees. Yet a contrasting "nonequilibrium" view suggests that some forest ecosystems are subject to unpredictable catastrophic disturbances that dramatically alter these ecosystems."

To assess the relevance of these views, Shinneman and Baker examined early historical accounts and records of natural disturbances in the ponderosa pine forests of the Black Hills in South Dakota and Wyoming. They maintained that proposed Black Hills National Forest management plans that exclusively endorse the equilibrium view were misdirected and would move the forest ecosystem farther outside its range of natural variability.

Shinneman and Baker concluded that nonequilibrium considerations, such as integrating large and intense disturbances into management plans based on range of natural variability, may be equally important to maintaining ecosystem diversity, health and integrity. They suggest that large areas may need to be maintained in an unmanaged condition, and that large wilderness areas may best encompass and perpetuate all ecosystem components and process unimpeded.

However, they point out that this nonequilibrium-influenced management emphasis may be most appropriate where large patches of dense, older forests with interior and roadless conditions still exist. "In contrast, equilibrium-influenced management may be appropriate where restoration efforts are required to preserve valuable, small remnant old-growth patches or other ecologically valuable areas from impending destructive disturbance…Areas where large catastrophic disturbances were historically rare but with current conditions prime for such disturbances may also be appropriately managed for equilibrium conditions…"

The Twomile Resource Area more closely resembles the "equilibrium-influenced" area described by Shinneman and Baker than the "nonequilibrium influenced" area. There are no large areas of interior or roadless conditions in the resource area. Current forest conditions indicate that a "destructive disturbance" is likely to occur in the form of a severe wildfire (EA, p. 3-47).

B.7. Stand-replacing Fires *(Attemann et al, pp. 6, 7)*

What evidence is there that refutes the plethora of agency studies 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) 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?

Historically, the dominant fire regime in the Twomile Resource Area has been of mixed fire severity, although stand-replacement fires were also common (EA, pp. 3-43 through 3-46). Due to the proximity of these stands to communities in the Silver Valley, we do not want fire behavior such as that which occurs during stand replacing fires.

Mr. Attemann included only a portion of Robert Ament's full statement, which was made in a "green paper" prepared by Ament for the American Wildlands organization regarding the "Fire Policy for the Northern Rocky Mountains," (1997; PF Doc. DN-3). . In his paper, Ament cites Hutto (1995) in stating, "the origin of most Rocky Mountain forest stands can be traced to stand-replacement fires *as opposed to mild understory burns,"* (emphasis added). Ament concludes his paper with five recommendations for future action, including:

- ***Focus prescribed burns in fire regimes where fire suppression has moved them furthest from their natural behavior. These activities should center primarily on human development in or near the valley bottoms in low severity fire regimes.*** Dry habitat types in the Twomile Resource area primarily fall into fire regime Condition Class 3, which describes areas were fire regimes have been substantially altered from their historical range, the risk of losing key ecosystem components is high, and fire frequencies have departed from historical frequencies by multiple return intervals (EA, p. 3-44, 3-55). Moist habitat types in the Twomile Resource Area are within

historic fire return intervals, but the white pine and western larch necessary for restoration do not exist (EA, p. 3-45, 3-56). Under the Selected Alternative, treatments are designed to affect potential fire behavior adjacent to rural residences in the Resource Area (EA, p. 2-14).

- ***Prescribed natural fire should be utilized to a much larger extent, especially on multiple use lands.*** Wildland fire use is the management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in a Fire Management Plan (2004 IPNF Fire Management Plan; PF Doc. FF-38). The IPNF Forest Plan does not provide direction for Wildland Fire Use; however, the Wildland Fire Use program is being considered under the IPNF Forest Plan revision (PF Doc. FF-38, p. 4).
- ***Update fire management plans, maximize land areas for prescribed fire.*** The Fire Management Plan for the IPNF was updated in March 2004 (PF Doc. FF-38).
- ***Only suppress fires in areas where threats to human health, safety and important structures are at risk.*** The Forest Plan does allow for the use of unplanned ignitions as prescribed fire, as long as the appropriate documentation under NEPA has been completed, there is a fire use plan, and consultation with both the U.S. Fish & Wildlife Service and the public has been completed. However, utilizing unplanned ignitions as prescribed fire is restricted in some areas of the IPNF; in the vicinity of the Twomile Resource Area, we can only choose to contain, confine and control wildfires (PF Doc. FF-38).
- ***Further expansion of human development in the wildland-urban interface requires responsible actions by private landowners. Preventative actions and pre-fire activities must occur collaboratively on both public and private lands.*** We agree that effectively reducing fire requires a collaborative approach. The Twomile proposal emphasizes a collaborative, community-based approach to wildland fire and hazardous fuels reduction issues (EA, p. 2-2). We are working with fire agencies and organizations to assist adjacent landowners in these efforts. For example, the Shoshone County Fire Mitigation Working Group is an interagency partnership that works collaboratively to reduce hazardous fuels in the urban interface across all ownerships (EA, p. 3-63). We are working with them on other fuel reduction efforts focused on private lands within or adjacent to the Twomile project area (EA, p. 3-63). The cumulative effects analysis considered effects to fire/fuels as a result of activities on private lands adjacent to the resource area (EA, p. 3-63).

B.8. Historic Conditions *(Attemann et al, p. 7)*

The FS 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 EA uses an early 20th century photo of Rathdrum Prairie to showcase 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.

Mr. Attemann made this comment in his letter regarding the Deerfoot project. In the Twomile Resource Area EA, Figure 1-4 does not depict the Rathdrum Prairie; it depicts an accumulation of dense fir trees amongst mature ponderosa pine trees in the Twomile Resource Area (EA, p. 1-3). The photo **is** used in the Wildlife section of Chapter 3 (EA, Figure 3-WL-6, p. 3-137), and is accurately described as portraying an "Historic ponderosa pine stand on the Rathdrum Prairie." The photograph is used to support the corresponding text, which reads, "Records for the Coeur d'Alene River Basin and the Twomile Resource Area indicate that ponderosa pine stands had a larger distribution than today throughout the Resource Area and across the IPNF," (EA, p. 3-137).

Although Mr. Attemann does not provide a full citation for Hammer (2000), it appears to refer to a short paper prepared by Keith Hammer for the Friends of the Wild Swan and Swan View Coalition organizations of Kalispell, Montana: "Ponderosa Poster Child: U.S. Forest Service Misrepresenting the Historic Condition of Western Forests and the Effects of Fire Suppression and Logging," (PF Doc. DN-R4)

In the paper, Hammer claims that the Forest Service misrepresented one of several photographs provided in the Rocky Mountain Research Station's publication: "80 Years of Change in Ponderosa Pine Forest." Hammer contends "the Forest Service has launched widespread and massive efforts to restore remnant ponderosa pine and mixed species forests to fictitious historic conditions by logging these forests to open the canopy as well as the understory."

As stated in our response to comment A-2, activities in the Twomile Resource Area are not intended to return conditions to a presettlement status or open, park-like stands. The activities are proposed to reduce fire intensities and restore fire-adapted ecosystems in the wildland urban interface, in accordance with the National Fire Plan. Under this strategy, there is a high priority to treat areas where human communities, watersheds or species are at risk from severe wildfire (EA, p. 1-2).

B.9. Stand-replacing Fires *(Attemann et al, p. 7)*

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.

Mr. Attemann made this same comment in relation to other proposals on the Coeur d'Alene River Ranger District, including the Deerfoot project. However, larch restoration is not a key component of the purpose and need for activities in the Twomile Resource Area. Historically, an estimated 9% of National Forest System lands in the Coeur d'Alene River Basin were western larch. Over the last 100 years, that has been reduced to approximately 3% in the basin (EA, Figure 3-VEG-2, p. 3-6). Currently, larch is found on only a small percentage of moist sites in the Twomile Resource Area (EA, p. 3-7). For the purposes of the Twomile project analyses, western larch is considered a component of the ponderosa pine stands. Historically, an estimated 15% of the Twomile Resource Area was in this combined forest cover type (EA, Figure 2-2, p. 2-32). Under

the Selected Alternative, this cover type will increase to an estimated 26% in approximately 100 years (EA, Figure 2-2,p. 2-32).

B.10. Climate (Attemann et al, p. 8)

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)?

The effect of climate on forest vegetation has been considered: "The vegetation structures that exist in the ecosystem are a function of climate, the physical site, the plant species available in an area the disturbance history, and the successional processes that follow disturbance," (EA, p. 3-4).

Based on Mr. Attemann's comment, we reviewed the Webb and Bartlein (1992) reference (PF Doc. DN-R42). They describe the major global climatic variations for the last 20,000 years, the last 175,000 years, and the last 3 million years. By studying these three periods of large climate changes, they concluded that major elements of the biosphere track the long-term environmental changes fairly closely. However, a reference cited by Mr. Mihelich (Harvey 1994) includes the statement, "Retrospective climate evaluation with temperature and moisture measurements over a 95-year period showed that climatic factors are not likely to have been directly involved in recent forest health changes (PF Doc. DN-R11, p. 45).

The analysis for the Twomile Resource Area must consider conditions and potential effects at a more appropriate temporal and spatial scale, as required by NEPA and the Council on Environmental Quality (40 CFR 1508.25). The Twomile project forester considered vegetation conditions at three scales: the Interior Columbia River Basin, the Coeur d'Alene River Basin, and the resource analysis area:

- At the Interior Columbia River Basin scale, findings show the IPNF have a low composite ecological integrity, primarily due to past alterations (EA, p. 1-4). The Twomile Resource Area is in Forest Cluster #4, where the primary risks are to hydrologic and aquatic systems from fire potential, risks to late and old forest structures in managed areas, and risks in forest compositions that are susceptible to insect, disease and fire (EA, p. 1-4).
- Historical information indicates that white pine, ponderosa pine and western larch in the Coeur d'Alene River Basin have declined as a result of fire, white pine blister rust, and harvesting, and that individual stands are dense compared to historical conditions (EA, pp. 1-4, 3-6).
- Within the Twomile Resource Area, the majority of the acres burned in the large stand replacement and mixed severity fires of the late 1800s and early 1900s. The fire of 1889 spread throughout the Twomile Resource Area and much of the Silver Valley (EA, p. 3-44). While the 1910 fire likely had influence in the Twomile drainage, its effects are most clearly seen east of the Twomile Resource Area (EA, p. 3-10).

B.11. Natural Fire (Attemann et al, p. 9)

The effects discussions fail to discuss the beneficial impacts and natural role of natural fire. They also fail to analyze the negative impacts of unnatural spring burning on vegetative cover and fire regimes.

Mr. Attemann raised this concern during scoping as well as in relation to other proposals (EA, Appendix D, p. D-5). As with those proposals, the effects of prescribed fire in the Twomile Resource Area can be controlled by careful ignition in the appropriate weather conditions. Specifically, changes in aspects and shaded draws are commonly used as boundaries. These areas often have higher fuel moistures (especially in the spring) and in many cases will burn with very little intensity, if at all (EA, p. 3-47).

"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. 2-20). "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. 2-23).

B.12. Wildland Urban Interface (Attemann et al, p. 9, 10)

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 p. 1-6). How close is close? We recommend that all districts on the IPNF adopt the fire ecology and science by Jack Cohen. Landscape treatment away from communities is irresponsible to the communities at risk. [Hayman Fire Case Study Analysis is also cited.]

This comment was raised during scoping for the Twomile project (EA, Appendix D, p. D-3). Our response is the same: Cohen states that treating dry-site stands to reduce potential for high intensity fire is a good ecologically-based treatment that reduces the firebrand production that tends to increase fire spread. He also states that maintaining sustainable ecosystems is consistent with protecting homes and values associated with those homes from fire (PF Doc. PI-44).

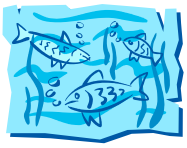
The Ecology Center has cited Cohen's work in the past to support their position on fuels management. In regard to their citation of his research in their appeal of the Island Unit Fuels Reduction Project (Flathead NF, Swan Lake RD), Cohen states, "I think that it is unfortunate that my research is being used as an exclusionary mechanism (i.e. appeals) rather than for opportunities to more effectively manage in our fire environments…I think we have at least two significant incompatibilities with our fire environments: homes burning is the most visible but our ecosystems are and are becoming incompatible (and thus the values we derive from those ecosystems over the long term). Ponderosa pine is the most noted forest type that has become biologically unsustainable with uncharacteristically extensive high intensity fires. I suggest that even in our low frequency stand replacement cover types that fires

may become uncharacteristically extensive as we lose patch variability at the landscape scale. Thus I think we have good reasons for doing "fuel" management well beyond residential areas, but not necessarily for the homes – for sustaining the ecological values," (PF Doc. DN-R5).

Mr. Attemann has cited the Hayman Fire Study (PF Doc. DN-R6) in regard to other projects on the Coeur d'Alene River Ranger District, including the Deerfoot project. As a result, the 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 Twomile Resource Area. For example,

- ***The potential for extreme fire behavior was predisposed by drought (Hayman Fire Study, p. 5).*** In the Pacific Northwest, forests with high stem density and fuel loading have been subjected to extreme fire weather conditions, leading to severe and large wildfires, such as those experienced in 2000, 2002, and 2003. Forests in northern Idaho have also been subjected to these conditions. For the last two years, most weather stations on the IPNF have reported very high to extreme fire danger (PF Doc. FF-38, p. 29).
- ***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).*** Fire exclusion in the Twomile Resource Area has provided an avenue for shade-tolerant vegetation to continue to grow and create pathways that can carry fire to the top of the tree canopy. Fire exclusion has also contributed to the accumulation of dead and down woody debris (EA, pp. 1-3, 3-45). The accumulation of vegetation is the setting for a potentially intense and severe stand-replacing fire (EA, p. 1-4).
- ***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. 2-19). 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. 2-20).
- ***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. The Selected Alternative (Alternative 2) is consistent with and will further the goals of the 10-Year Comprehensive Strategy Implementation Plan (www.fireplan.gov) to reduce hazardous fuels and restore fire-adapted ecosystems (EA, p. 3-56).
- ***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).*** As stated earlier, fire exclusion in the Twomile Resource Area has contributed to the accumulation of dead and down woody debris (EA, pp. 1-3, 3-45). The accumulation of vegetation is the setting for a potentially intense and severe stand-replacing fire (EA, p. 1-4). Activities under the Selected Alternative will reduce the stand density and decrease potential flame lengths that in turn reduces the probability of stand replacing or lethal fire behavior (EA, p. 3-55).

Also of significance is the fact that, following the Hayman 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, something they felt would be tantamount to letting the forest grow and waiting for an ignition source (Hayman Fire Study, p. 17).



C. Comments Related to Aquatic Resources

C.1. Water Quality Standards *(Mihelich et al, pp. 1-3)*

Mr. Mihelich maintains that predicted increases in sediment would be in violation of Idaho laws regarding Water Quality Standards (IDAPA 58.01.02.054.04). Mr. Mihelich questions the scientific basis for the conclusion that increases of sediment yield between 3% and 9% will not result in any increased sediment above the figure of 36 tons. The combined issues of lack of culvert maintenance, estimated sediment risk reduction, and the interpretation of Idaho WQS by Idaho DEQ require a more through sediment risk discussion than is found in the EA.

The November 4, 2003 letter raised important questions and concerns (PF Doc. AQ-93). DEQ determined the best way to address these issues was through the development of a more comprehensive guidance document (April 16, 2004 letter, PF Doc. AQ-94). The [draft] guidance states that those water bodies for which TMDLs are to be completed in the current and next year are high priority water bodies; those to be developed in the years thereafter are medium and low priority water bodies (PF Doc. AQ-94, p. 2). There are no streams within the Twomile Resource Area that are water quality limited (EA, pp. 3-67, 3-72). However, all the stream in the resource area flow through private land or BLM managed land in their lower reaches, and then flow into the South Fork Coeur d'Alene River, which is water quality limited (303d listed) for both metals and sediment (EA, pp. 3-67, 3-72). The current status is that there is an approved TMDL, and its implementation plan is pending (EA, p. 3-67). Under this status, management activities should not result in a net increase in metal or sediment to the South Fork Coeur d'Alene River (EA, p. 3-67).

Percent increase in sediment yield is estimated as the annual sediment above existing levels, based on WATSED modeling (EA, p. 3-86). The Guidelines for Changes to Sediment Yield (EA, p. 3-87) indicate that sediment yield increases up to 10% indicate there is **potential** for an increase in sediment or delay of watershed recovery, but the increase **would not be measurable**. Short-term increases in the Twomile Resource Area subwatersheds

range from 0 to 9% (EA, p. 3-91). Therefore, in any of the watersheds, short-term sediment yield increases under any action alternative would not be sufficient enough to cause **measurable** effects to water quality or to impair beneficial uses (EA, pp. 3-91, 3-92). Consequently, there would be no measurable change from the current annual sediment of 36 tons (EA, Table 3-AQ-8, p. 3-95).

Since all ground disturbing activities (roading, yarding, etc.) would occur outside of Riparian Habitat Conservation Areas (RHCAs), the risk of any sediment generated by logging activities actually reaching a live channel is very low (EA, p. 3-92). Road recontouring and stream crossing treatments are the only sites that could potentially erode and create sediment that may move downstream during the construction phase. The short-term effects during decommissioning activities would be a slight risk of erosion and sediment delivered downstream IF a large precipitation event were to occur during the first year after the activity, while ground cover is being established (EA, p. 3-93).

The combination of direct and indirect effects of the proposed alternatives with past, present and reasonably foreseeable activities will result in an overall net decrease in sediment yield (EA, p. 3-96).

The Forest Service will work to develop an implementation plan for our portion of the TMDL in the South Fork Coeur d'Alene River, in cooperation with the Idaho DEQ and interested local parties (EA, p. 3-67).

C.2. Water Quality Standards *(Mihelich et al, p. 16)*

The proposed action (Alt. 2) does not indicate compliance with Idaho WQS that apply to water quality limited water bodies impacted by pollutants including sediment and metals. The introduction of additional pollutants such as sediment is contrary to Idaho WQS.

This is addressed in the EA (Chapter 3, Aquatic Resources). None of the streams within the Twomile Resource Area are identified as (303d) water quality limited (EA, pp. 1-1, 3-67, 3-72). These three streams are tributaries to the South Fork Coeur d'Alene River, which **is** identified as water quality limited due to both metals and sediment (EA, pp. 1-2, 3-67, 3-72; PF Doc. AQ-10). As such, management activities should not result in a net increase in metal or sediment to the South Fork Coeur d'Alene River.

Given the scope of the proposed activities and ensuing analyses, it was determined that cumulative effects would not be detected in the South Fork Coeur d'Alene River (EA, pp. 3-81). If any sediment increase were to occur, it would be localized near road reconstruction activities in the Nuckols Gulch subwatershed, and the amount of sediment would not be enough to measure in the lower reaches of the stream (EA, p. 3-92). Only 10 to 20 acres of treatment would occur in this 1,880-acre drainage, and with no harvest in Riparian Habitat Conservation Areas, sediment would be prevented from being routed downstream or to the South Fork Coeur d'Alene River (EA, pp. 3-92, 3-100, 3-104).

Within the Twomile Resource Area, the ongoing activities and reasonably foreseeable projects (such as development of trails away from riparian areas, and repair of existing roads and trails) would greatly reduce the amount of sediment that is contributed to Twomile Creek (EA, p. 3-96), even when considering any increases in sediment that could potentially occur. Therefore, this project would not impair beneficial uses within the Twomile Resource Area or downstream in the South Fork Coeur d'Alene River (EA, p. 3-96).

C.3. Water Yield *(Mihelich et al, p. 5)*

Since there are already sediment problems with associated downstream fish habitat and hydrologic function loss in the Twomile Creek watershed, what is the basis for the statement on p. 3-89 that increased water yields in the Twomile Creek watershed would result in no effects to salmonid redds in the cumulative effects analysis area?

This was explained in the EA (pp. 3-86 through 3-89). Peak flows represent the change in runoff and are expressed as the percent change from the estimated "natural" peak month discharge, based on WATSED modeling (EA, p. 3-86). The Guidelines for Changes to Water Yield and Peak Flow (EA, p. 3-86) indicate that water yield increases up to 5% indicate there is **potential** for an increase in water yield and peak flow or delay of watershed recovery, but the increase **would not be measurable**. For example, if you dumped a cup of water into a stream, you know the flow has increased; yet it would not be measurable at a gauging station. This would be the situation in the Revenue Gulch and Twomile Creek watersheds (EA, Table 3-AQ-4, p. 3-88).

Water yield increases from 5 to 10% indicate there is **slight potential** that there would be a measurable increase in water yield and peak flow or delay of watershed recovery. This would be the situation in the Nuckols Gulch watershed (EA, Table 3-AQ-4, p. 3-88).

Short-term increases in water yield would not be detectable in the main stem streams of the Twomile Resource Area, and would not change existing fisheries habitat conditions in any of the fish-bearing stream segments. Since any change in water yield associated with this project probably would not be differentiated from normal climatic fluctuations in the watersheds, any additional bedload scour during high flows would not be expected. Salmonid redds existing in the cumulative effects area would not be directly or indirectly affected by the expected increase in water yield (EA, p. 3-89).

C.4. Sediment Yield *(Mihelich et al, p. 2)*

Mr. Mihelich asks why the baseline sediment yield conditions prior to 1980 were not included in the tables on 3-90 and 3-91, and states that if this information is not available, the scientific processes used to select the year 1980 as a baseline for sediment increases should be described.

Sediment yield is based on WATSED modeling. (EA, p. 3-86). 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 on snow melt. Recovery may take up to 60 or 100 years to return to pre-harvest levels, but changes are so small after 20 years that they are unable to be detected by the WATSED model (EA, p. D-6, Comment 3-G).

C.5. Culverts *(Mihelich et al, p. 3)*

There is a lack of high quality information and lack of expert agency comments in Ch. 3 regarding the potential failures of the culverts in the project area in light of the Idaho FPA regarding culvert maintenance.

All roads within the Twomile Resource Area were surveyed during the 2002-03 field seasons using the "Methods for Inventory and Environmental Risk Assessment of Road Drainage Crossings" (Flanagan et al 1998; PF Doc. AQ-52; EA, pp. 3-71, 3-101). Sites where roads cross drainages were inventoried to assess erosional hazards and risks to aquatic ecosystems. The inventory included fill volumes, culvert sizes, erosional features, and other variables, so that sediment risk from culvert failure could be assessed. From this information, culverts and stream crossing could be prioritized for upgrading or removal.

There are no known National Forest System road-stream crossings that are at risk of failing and dislodging sediment downstream in the Nuckols Gulch or Revenue Gulch watersheds (EA, p. 3-77).

There are no known major erosion sites or sources that directly route sediment into streams in the Nuckols Gulch, Revenue Gulch or Silverton Face drainages, or to the South Fork Coeur d'Alene River (EA, pp. 3-77, 3-78).

All of the 16 road-stream crossings are located in the Twomile Creek watershed (EA, pp. 3-75, 3-92). At least 13 of these are likely to fail because they either have undersized culverts, no culverts, or fill that can easily erode and be routed sediment downstream (EA, pp. 3-93, 94). Crossings that pose a barrier to fish are considered in the effects to fisheries analysis (EA, pp. 3-84, 3-103). Under the Selected Alternative, 14 of the 16 road-stream crossings will be repaired or replaced (see Table 4 in section 2.2 of this decision notice).

Under the No-Action Alternative, none of the proposed aquatic restoration activities would occur. Crossings in the Twomile Creek watershed would likely fail under either of two scenarios: If a large stand-replacing fire occurs followed by a high intensity rain or rain-on-snow event, or if a large rain-on-snow event were to occur (EA, pp. 3-87, 3-88). Under either of these scenarios, the additional sediment pulse could result in adverse effects to fish populations.

C.6. WATSED Model *(Mihelich et al, p. 4)*

The WATSED discussions in Ch. 3 did not mention that the model cannot distinguish between fine and coarse sediment, and therefore there are no coefficient files. Additionally, the model has been found to underestimate sediment production by up to 320% (Rock Creek FEIS, Kootenai NF). Since the model has a number of significant flaws, it is critical real coefficients exist that account for event based processes and functions, including r-o-s events and specific in-channel responses. The DN/FONSI must supply pages numbers from the WATSED manual that specifically discusses the coefficients mentioned on p. 3-71 of the EA.

Mr. Mihelich made this same comment related to the Deerfoot EA. As stated at that time, 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.** 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 (EA, pp. 3-70, 3-71).

D. Comments Related to Soils Productivity

D.1. Soil Conditions *(Attemann et al, p. 11)*

The EA depends too much on timber stand inventory, soil maps, road databases and aerial photo's. 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, 1970s, 1980s and 1990s? Does that figure meet FSM guidelines and IPNF Forest Plan standards? Will soil compaction from heavy machinery for yarding further compact existing conditions? What are the mitigation measures designed to meet these guidelines?

As explained in Chapter 3, Soils (Methodology), the Regional Soil Quality standards were revised in November 1999 (Regulatory Framework for Soil Productivity, p. 3-110). The revised standard specifies that 85% of an activity area (cutting unit) must have soil that is in satisfactory condition; a level based on the lowest magnitude of change detectible given current monitoring technology. Existing data, field reviews, aerial photos, timber stand and road databases were used to determine the disturbance factor for each activity area. Disturbance factors used in the analysis represent an average percentage of detrimentally disturbed soils, obtained through past monitoring on existing harvest units (PF Doc. SOIL-46 through SOIL-50). On the ground reviews were also conducted to assess conditions within past harvest disturbance areas (EA, p. 3-111; PF Doc. SOIL-17).

Past management activities within the proposed treatment areas were queried from the District's Timber Stand Management Record System (TSMRS) database and checked against timber maps, aerial photographs, and ground surveys (EA, p. 3-115). Out of a total of 32 proposed treatment areas, only one has had previous harvest treatments: Unit 11 was commercially thinned as a seed production site using skyline yarding, with no substantial impacts.

Effects to soil productivity are disclosed for all alternatives (EA, pp. 3-117, 3-118). Under the Selected Alternative (Alternative 2), there are only 8 acres of the 1,100 total proposed treatment acres that have had past disturbance (EA, Table 2-13, p. 2-36). The disturbance that would occur as a result of treatment is a total of less than 9 additional acres across 14 units (ranging from 1 to 3 acres per unit).

In addition, the effects analysis assumed that all proposed harvest treatments would occur during non-winter conditions, when the disturbance potential would be the greatest. If some harvest units are logged during the winter months, the effects from compaction and soil displacement could be less than reflected by the current analysis (EA, p. 3-118).

After analyzing the potential effects of proposed activity, specific mitigation measures can be identified to reduce the level of impacts to natural resources (EA, p. 2-27). Based on the effects analysis for the Selected Alternative (EA, pp. 3-116 through 3-121) and the features designed to protect soil resources (EA, pp. 2-23, 2-24), anticipated effects to soils are within acceptable levels; therefore no mitigation measures are necessary.

E. Comments Related to Wildlife

E.1. Old Growth (Mihelich et al, p. 5)

The EA fails to demonstrate that the proposed activities, in combination with cumulative impacts, would be in compliance with all Forest Plan old growth standards.

A similar comment was raised during scoping for the Twomile Resource Area proposal (EA, Appendix D, p. D-8). The old growth issue has been thoroughly addressed in the EA (Chapter 3, Forest Vegetation and Wildlife). Allocated old growth stands in the Twomile Resource Area were reviewed to validate whether they met old growth criteria necessary for allocation. The resource area was also screened for potential additional old growth stands. Stands meeting the old growth criteria were allocated and are listed in Table 3-VEG-1 (EA, p. 3-9).

Under the Selected Alternative, hazardous fuel reduction treatments will occur on approximately 75 acres in stands of allocated old growth (EA, p. 2-15). These treatments will involve thinning, slashing and underburning, which will not affect the allocation of these stands because the treatments will not change the old growth structure of the stands (EA, pp. 2-15, 3-25, 3-29). The Forests' annual monitoring report discloses the most recent reviews and allocations of old growth across the Idaho Panhandle National Forests.

E.2. Old Growth (Mihelich et al, p. 7)

There are a number of issues relating to the accuracy of the TSMRS and old growth allocations for the 15 stands listed in Table 3-VEG-1 and the 3 stands shown on the OGMU map. In June of 2003, KEA received a copy of the IPNF's TSMRS database. The database was current as of June 5, 2003. A review of the 18 stands cited using the STANDS: table section and STANDS_COMPONENTS section of the TSMRS shows a number of instances where there is missing, incomplete or questionable old growth data. The DN/FONSI must supply a thorough examination of the processes used to designate true old growth trees in the Twomile project area. There also needs to be expert agency comments that describe the reasons stands that do not appear to be actual old growth were classified as old growth in the project area.

The Timber Stand Management Record Systems (TSMRS) is one of several databases developed from stand exam information, historical records, and aerial photo interpretation (EA, p. 3-1; PF Doc. VEG-14). Stand exams have been completed for all stands in the Twomile Resource Area.

The STAND_COMPONENTS information accessed by Mr. Mihelich is compiled of information from stand exams in the TSMRS database. The database uses the most recent information available, but does not track changes to the stands over time. The STAND_COMPONENTS section is not used for determining old growth status because it lacks the ability to report the number of trees in size classes of greater than 21 inches diameter and greater than 17 inches diameter; the largest diameter class it reports is 14 inches diameter or larger.

Our analyses of old growth use the R1 Edit program (the newest version is called FSVeg). This program can report the number of trees in both the greater than 21-inch diameter and greater than 17-inch diameter classes. The most current information regarding allocated old growth (and the methodology used) in the Twomile Resource Area is provided in the EA (pp. 3-9; 3-25, and 3-28 through 3-25, and 3-28 through 3-30).

E.3. Old Growth (Mihelich et al, p. 6)

The EA on p. 3-28 states that allocation of old growth within the Resource Area follows current old growth definitions from the Forest Plan and the Regional Task Force Report. Was the allocation of old growth in the Resource Area in complete conformance with the Regional Task Force Report?

The Chief of the Forest Service established the National Old Growth Task Force in 1989, along with an action plan to deal with management of old growth forests. The action plan called for each Region to develop local definitions based upon a national generic definition of old growth. Within the year, Region 1 named an old growth committee and set forth an action plan for meeting national requirements.

The IPNF Forest Plan was also completed in 1989 before the regional action plan was available, as indicated by the wording for Forest Plan old growth standard 10a: "A definition for old growth is being developed by a Regional Task Force and will be used by the Forest when completed. As an interim guideline, stands classified as old growth should meet the definition given by Thomas (1979)."

The regional task force report, "Old-growth Forest Types of the Northern Region" was completed in 1992 (PF Doc. VEG-R20). As stated in the EA (p. 3-38), standard 10a would be fully met under all alternatives; indicating the allocation of old growth in the Resource Area is in complete conformance with the regional task force report.

E.4. Old Growth (Mihelich et al, p. 6)

The IPNF has failed to cite any evidence that its logging old growth strategy will improve old growth species habitat over the short-term or long-term.

Alternative 3 would have treated several old growth stands that have encroaching ladder fuels (EA, p. 3-27). By treating old growth stands now, the desired old structure within the stands may be maintained more effectively. This would be important in terms of meeting the project's purpose and need of maintaining resilient fire-adapted ecosystems within the wildland urban interface. The harvest treatments would have changed the structure from old growth to seedling on approximately 155 acres, which would still have met the District and IPNF old growth allocation requirements (EA, pp. 3-25, 3-27). All alternatives, including Alternative 3, would maintain mature/old structure above the historic range and the Twomile Resource Area would continue to exceed the

optimal amount of mature/old class structure for goshawks and pileated woodpeckers (EA, pp. 3-134, 3-155).

Under the Selected Alternative (Alternative 2), no allocated old growth will be harvested (EA, p. 3-25). Hazardous fuels reduction activities will occur on approximately 75 acres of allocated old growth; treatments will involve non-commercial slashing and underburning, which will not change the old growth structure or allocation of these stands (EA, pp. 2-15, 3-25, 3-29).

Arno et al (1997) state: "A common perception in American society is that old growth forests can be perpetuated by leaving them alone – letting nature take its course within human interference. This concept has serious shortcomings in forests that evolved under the influence of fire and where preservation continues the practice of excluding fire…" (EA, p. 3-55).

E.5. Old Growth MIS (Mihelich et al, p. 7)

The EA fails to disclose population trends of its old growth MIS – including pine marten, pileated woodpecker and the northern goshawk.

Similar concerns were raised during scoping for the Twomile Resource Area proposal (EA, Appendix D, p. D-9). Due in part to the concerns raised by the Lands Council, Ecology Center and Kootenai Environmental Alliance, old growth management indicator species were addressed as an analysis issue (EA, p. 2-8). Old growth is discussed in detail in the Forest Vegetation section of Chapter 3, with the old growth management indicator species discussed in the Wildlife section of Chapter 3.

E.6. Old Growth MIS (Attemann et al, p. 5)

The IPNF will not employ the most current, relevant science and has failed to monitor these MIS and their habitat. The Twomile Resource Area project would continue the FS-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.

Mr. Attemann made this same comment in his comments on the Deerfoot project. As stated in our response to his comments, 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, 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, pp. 3-124 through 3-128).

Wildlife species known to occur on the IPNFs were screened to determine relevancy to the Coeur d'Alene River Basin and to the Twomile Resource Area by reviewing sighting record, planning documents, habitat suitability models, historic records and scientific literature (EA, pp. 3-126 through 3-128).

Allocated old growth in the analysis area is described in the EA (pp. 3-9, 3-10, 3-128, 3-129). A comparison of allocated old growth acres affected is provided in the Forest Vegetation analysis (EA, p. 3-25). Effects to old growth management indicator species are also described (pp. 3-128, 3-132 through 3-135, 3-152 through 3-155), as is snag and down wood habitat (EA, pp. 3-130, 3-131). All of the proposed alternatives would meet Forest Plan standards related to old growth (EA, pp. 3-28 through 3-30).

Based on design features and mitigation (sections 3.5.A. and 3.5.B. of this decision notice), snag management will meet or exceed Forest Plan requirements. There will be little reduction in snags as a result of project activities in the Twomile Resource Area, since all existing snags will be retained unless they pose a threat to forest workers (section 3.5.A.). Management indicator species, old growth, and snags are all monitored through the Forest Plan, with findings disclosed in the annual Forest Plan Monitoring Report.

E.7. Pine Marten (Mihelich et al, p. 9)

The EA completely dismisses project impacts on the MIS pine marten. Research by Ruggerio et al (1998) and Bull and Blumton (1999) shows that the kind of treatments proposed for the Twomile Project reduce the availability of prey species for the marten.

Pine marten were not analyzed in detail because the Twomile Resource Area does not have the higher-elevation spruce-fir habitats preferred by pine marten (EA, p. 2-11). In addition, the analyses for fisher and pileated woodpecker already address other habitat considerations of pine marten, such as old forests, snags, down logs and trapping vulnerability (EA, pp. 2-11; 3-144 through 3-147; 3-152 through 3-155). The Project Files contain information supporting these statements (PF Doc. WL-R33, R49 through R-51, R53, R75, and R77). The two studies cited by Mr. Mihelich (PF Doc. DN-7 and DN-34) indicate that vertical and horizontal diversity provided by snags and large down woody debris are important habitat characteristics for pine marten. This is consistent with the information provided by the wildlife biologist in the EA (Chapter 3, Wildlife). "Dead trees, both standing and on the ground are critical habitat components for nearly all wildlife species…" (EA, p. 3-130). "Down wood is essential in providing den sites, cover and foraging substrate for a variety of species including lynx, fishers, pine martens and other small mammals," (EA, p. 3-131).

E.8. Goshawks (Attemann et al, p. 7, 8)

What evidence is there that these forests are like those in the Southwest? Why is the agency using a model that may better fit the Southwest for so-called ponderosa pine stands in the Northern Rockies?

The Draft Idaho State Habitat Conservation Assessment and Conservation Strategy for Northern Goshawk (1995) recommends following the Southwestern guidelines: "USFS Southwest Region Management Recommendations for the Northern Goshawk…can guide management of goshawk territories until new guidelines now being developed by the US Forest Service can be reviewed," (PF Doc. WL-46).

E.9. Goshawks (Mihelich et al, p. 12)

Logging, road building and other disturbance associated with the project and other cumulative impacts could affect goshawk nesting, post-fledging family habitat, alternative nesting, foraging, competitors, pre and potential habitat, including areas far from cutting units. Research in the Kaibab National Forest found that goshawk populations decreased dramatically after partial logging, even when large buffers around nests were provided (Crocker-Bedford, 1990).

Crocker-Bedford (1990) states that nests of northern goshawks are usually found within dense stands of large trees; thus their nesting habitat may be adversely affected by timber harvest (PF Doc. DN-R20). The study was to test the adequacy of nest habitat buffers for maintaining goshawk reproduction, and to analyze goshawk fidelity over time to nest trees and nesting stands. The study involved historical goshawk nesting trees and stands.

The Northern Goshawk Assessment (Hillis, et al, 2002) noted, "When reviewing the status of sensitive species in Region One, these findings should be strongly considered for determining if the northern goshawk deserves sensitive status. Unless there is other compelling data not described in this assessment, the northern goshawks likely should be removed from sensitive status," (PF Doc. WL-R80).

In the Twomile Resource Area, there is no suitable goshawk-nesting habitat (EA, p. 1-133). There are nearly 400 acres of capable nesting habitat (which is not currently providing for the needs of the species, but could over time). Only precommercial thinning and brushing activities will occur in the capable nesting habitat (EA, p. 3-134). However, even these capable nesting sites are harsh and not classic goshawk habitat, so the activities are not expected to reduce the future value of nesting habitat (EA, p. 3-134).

In addition, continuing implementation of the District Travel Plan and managing ATV use through reducing pioneered ATV trails could protect post-fledgling habitat from disturbance (EA, p. 3-135).

Surveys will be conducted prior to harvest to ensure protection of goshawks and other species (EA, p. 2-24). If previously unknown nesting goshawks are found, nesting and post-fledgling habitat will be maintained as described in the EA (p. 2-28).

E.10. Viability (Mihelich et al, p. 5, 10)

The EA fails to demonstrate compliance with Forest Plan wildlife standards 7a and 7b. The IPNF has never determined minimum viable populations for any MIS or TES species as NFMA requires, not has it specific the amount and distribution of habitat necessary to maintain viable populations.

The FS has failed to tier the viability analyses for Sensitive species that would be impacted by the Twomile project to a landscape analysis of Sensitive species viability that would allow for some assurances to the public that species viability is currently being insured in spite of continued habitat destruction and/or alteration.

Similar comments were raised during scoping and addressed in the EA (Appendix D, p. D-7).

Wildlife Standard 7(a) requires that at least minimum viable populations of management indicator species be distributed throughout the Forest. Wildlife Standard 7(b) requires that habitat be maintained for cavity nesting species and foraging substrates by implementation of the IPNF Snag and Woody Down Timber Guidelines. Compliance with these standards has been addressed in the EA (p. 3-164).

Under the National Forest Management Act, we are to manage for viable populations of existing and desired species (EA, p. 3-124). A viable population is one that is regarded as having the estimated numbers and distribution of reproductive individuals to ensure that its continued existence is well distributed in the project area (EA, Acronyms/Glossary, p. AG-25).

Viability of Threatened, Endangered, Sensitive and Management Indicator Species has been evaluated and documented in the EA (Chapter 3, Wildlife). For example:

- *Viability of gray wolves will be maintained since the goal to have 30 breeding pairs well distributed throughout three states for three successional years has been met (EA, p. 3-132).*
- *Adhering to R1 snag protocol, maintaining dry site old growth on the landscape, maintaining 10% old growth across the forest, and implementing the mitigation measures will ensure the viability of goshawk within the Twomile Resource Area (EA, p. 3-135).*
- *Viability concerns for flammulated owls are addressed because there will be no reduction in suitable habitat, and habitat will be provided to accommodate multiple nesting territories (EA, p. 3-141).*
- *There will be no loss of viability to black-backed woodpeckers, since large fires in Montana in 2002 and 2003 have created a source habitat for black-backed woodpeckers in the Northern Rockies Region, and burned habitat is now above historical levels in nearby Montana (EA, p. 3-144).*
- *There will be no loss of viability to fishers due to the availability of movement corridors outside the analysis area, because riparian habitats will be restored in the East Fork Twomile Creek watershed; mature/old age classes have been maintained above the historic range; the fisher is not a legally trapped species in Idaho; R1 snag management protocol will be implemented; and old growth will be maintained at 10% across the IPNF (EA, p. 3-147).*
- *Viability of wolverines will be maintained: security patches are provided in the Coeur d'Alene Mountains, large patches of refugia are available on the nearby Kootenai and Lolo National Forests, the prey base will be maintained; and because there is no trapping season in Idaho for the wolverine (EA, p. 3-149).*
- *Since no known populations will be affected and restoration activities will trend habitat toward an improved condition, viability should be maintained or enhanced over the long term for the Coeur d'Alene salamander. Implementing guidelines and buffers under the Inland Native Fish Strategy will also help ensure viability of this species (EA, p. 3-151).*
- *Retaining snags at levels recommended in the R1 Snag Protocol and mitigations implemented during burning operations will ensure viability of the Townsend's big-eared bat (EA, p. 3-152).*

- *Implementation of riparian buffers; maintenance of 10% old growth across the IPNF; and adhering to the R1-Snag Protocol will provide consistency with requirements for pileated woodpecker viability (EA, p. 3-155).*

E.11. Lynx (Mihelich et al, p. 7)

The EA fails to demonstrate full project compliance with the Lynx Conservation Assessment and Strategy. The conclusion that the proposed project, in conjunction with other ongoing or foreseeable actions, will "not likely adversely affect" the Canada lynx absent demonstrating full consistency with the LCAS, is without adequate basis. The U.S. Fish and Wildlife Service is or soon will be designating critical habitat for the Canada lynx. All or portions of the project area are likely or ought to be designated critical habitat. The FS should not be causing more damage to potentially critical habitat.

As stated in the Lynx Conservation Strategy and Assessment, conservation measures (objectives, standards and guidelines) generally apply only to lynx habitat within the LAU's (PF Doc. WL-R81, pp. 77, 78; and Attachment B, pp. 6-7). The Twomile Resource Area is not within or near a Lynx Analysis unit (LAU) or designated travel corridor (EA, p. 2-11). The Twomile Resource Area provides poor quality habitat for lynx due to low elevations, lack of spruce/fir habitats, and isolation from preferred habitat by distance and by lack of connected, preferred habitat types (EA, p. 2-11; Attachment B, pp. 6-7).

E.12. Boreal Toads (Mihelich et al, p. 10)

The EA (p. 3-128) dismisses project and cumulative effects on habitat for boreal toads. This does not make sense, since such small populations that are likely to persist are especially susceptible to fragmentation and extirpation due to isolation of smaller populations.

There will be no project or cumulative effects on habitat for boreal toads in the Twomile Resource Area, because 1) There has been no documented occurrence of this species in the area; 2) Activities will not occur in habitat preferred by boreal toads; and 3) All proposed treatment areas are on drier sites in the watershed, where these toads are least likely to occur (EA, p. 2-11).

E.13. Fisher (Mihelich et al, p.13)

Jones (undated) provides an example of a conservation strategy for the fisher, something the FS has so far neglected for this Sensitive species.

Fishers are addressed in the EA (Chapter 3, Wildlife). Jones (1991 in: Idaho Fish & Game 1995; PF Doc. WL-R29, WL-R47, WL-R70) was used as a source of information regarding reference conditions and affected environment for fishers, as documented in the 2004 Twomile EA (page 3-145).

Viability for fisher will be maintained under the Selected Alternative because movement corridors are available outside the analysis area, riparian corridors will be restored in the East Fork Twomile Creek watershed, mature/old age classes have been maintained above the historic range in the area, it is illegal to trap fisher in Idaho, the R1 Snag Protocol will be implemented (exceeding Forest Plan standards), and old growth will be maintained at or above 10% across the IPNF (2004 Twomile EA, page 3-147).

E.14. Wolverine (Mihelich et al, p. 13)

Lofroth (1997) in a study in British Columbia found that wolverines use habitats as diverse as tundra and old growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993). Please explain why this scientific information should be discounted for the purposes of the Twomile project.

The information Mr. Mihelich provided on the USDA Forest Service (1993) citation was insufficient for us to be able to locate the reference material. Although we attempted to locate the Lofroth (1997) study, no copy could be located. Regardless, the information cited was not "discounted" nor even mentioned in the analysis of effects to wolverine. Wolverines are addressed in the EA (Chapter 3, Wildlife). Description of their life history, management recommendations, reference conditions, affected environment and environmental effects were based on a number of scientific publications applicable to this region, including the "Habitat Conservation Assessment and Conservation Strategies for Forest Carnivores In Idaho" (1995; PF Doc. WL-R13), and "Forest Carnivore Conservation and Management in the Interior Columbia Basin" (1998; PF Doc. WL-R64).

E.15. Black-backed Woodpeckers (Mihelich et al, p. 13)

The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpecker. The cumulative impacts of the ongoing fire suppression policy are also not adequately considered.

A similar comment was raised during scoping for the Twomile project (EA, Appendix D, p. D-9). Black-backed woodpeckers are addressed in the EA (Chapter 3, Wildlife). A number of scientific studies were used to describe their life history, management recommendations, reference conditions, affected environment, and environmental consequences (EA, pp. 3-141 through 3-144). Specific management recommendations for this species support re-introduction of fire into the ecosystem (EA, p. 3-142). Although northern Idaho is below the historic range for burned habitat on the landscape, large fires in Montana in 2002 and 2003 have created habitat for black-backed woodpeckers in the Northern Rockies Region, and burned habitat is now above historic levels in Montana (EA, p. D-9).

E.16. White-headed Woodpeckers (Mihelich et al, p. 13)

The EA, p. 3-137, indicates that the Sensitive white-headed woodpecker doesn't reside in the project area. We are unaware of the FS having ever established what the range of this bird is across the IPNF.

The actual statement in the EA is, "White-headed woodpeckers were given a low probability of occurrence because although some habitat occurs in the resource area…observations in the Coeur d'Alene Basin and surrounding area are very limited with only one known confirmed sighting," (EA, p. 3-137). Surveys for white-headed woodpeckers were conducted in the Twomile Resource Area in 2002; no observations of the species were recorded (EA, p. 3-139). The survey data is provided in the project files (PF Doc. WL-38).

E.17. Snags (Mihelich et al, pp. 13, 14)

The EA fails to disclose how much snag loss would be expected because of OSHA safety concerns. The paltry number of snags and green tree replacements to be retained in some logging units, and the failure to specify snags of adequate size, contrasts with scientifically determined habitat needs acknowledged elsewhere by the FS. The Forest Plan and Regional snag guidelines lack peer-review and validation from post-implementation monitoring.

Harris (2000) and ICBEMP DSEIS Appendix 12 present scientific information that contrasts greatly with the Chips Ahoy DEIS on this topic. The EA fails to cite the results of monitoring results that indicate the FS is capable of meeting snag requirements for wildlife species.

A similar comment was raised during scoping on the Twomile project (EA, Appendix D, p. D-9). As stated in our response to that comment, the number of snags removed from a unit for safety reasons is minimal, based on past experience. Region 1 protocol (which are more protective than Forest Plan snag guidelines) will be met or exceeded (EA, pp. 2-24, 3-164).

Mr. Mihelich provides two citations he says "present scientific information that contrasts greatly with the Chips Ahoy DEIS on this topic." The Twomile Resource Area EA is in no way related to the Chips Ahoy DEIS, which is located on an entirely different district of the IPNF. The Twomile EA frequently cited the results of monitoring to indicate that we are capable of meeting snag requirements for wildlife species. For example, "The 1998 IPNF Forest Plan Monitoring Report summarizing 10 years of monitoring information found that on monitored plots, snag retention guidelines were met," (EA, p. 3-130).

E.18. Pileated Woodpeckers (Mihelich et al, p. 15)

The Forest Plan provides an example of better management directives for the pileated woodpecker than does the EA. To retain a viable population of pileated woodpeckers on the IPNF our recommendations are those identified in the Forest Plan EIS Appendix 27 at p. II-40.

The Forest Plan EIS pages cited by Mr. Mihelich do not exist (there is no Appendix 27 to the IPNF Forest Plan or the Environmental Impact Statement).

Pileated woodpeckers are an Old Growth Management Indicator Species addressed in detail in the analysis (pp. 3-162 through 3-155). Forest Plan guidelines state that 10% old growth across the Forest ensures viability of old growth dependent species (IPNF Forest Plan, p. II-5; PF Doc. WL-R53). This will be accomplished by maintaining at least 10% of the Forest as old growth and retaining up to 5% old growth in each old growth unit to assure adequate distribution (Forest Plan old growth standards 10b and 10c). Forest Plan monitoring indicates that the Forests' allocated old growth in 2002 was 12% (EA, p. 3-29). The Twomile Resource Area is within Old Growth Management Unit 121, which currently contains over 7% allocated old growth (EA, p. 3-153). Under any alternative, both old growth standards would be met (EA, p. 3-29).

E.19. Nongame (Mihelich et al, p. 16)

Enumeration and monitoring of specific small, non-game birds and animal populations that are important in keeping destructive insect populations at low levels are not disclosed in the EA.

A similar comment was raised during scoping for the Twomile project (EA, Appendix D, p. D-7). As stated in our response, this analysis considered both nongame species and their habitat (EA, pp. 3-160 through 3-162). The analysis is commensurate with the importance of the impact (CEQ 1502.15), risk associated with the project, species affected, and current knowledge (EA, pp. 3-127, D-7).

E.20. Flammulated Owls (Attemann et al, p. 10)

The EA does not cite the results of any studies or research that supports its contention that its proposed treatments will in fact result in better flammulated owl habitat and thus more flammulated owls in the Twomile Resource Area. The IPNF admits to not having any historical records of these species "specifically" (EA, p. 3-136). What do you mean by "specifically?"

Flammulated owl habitat was a key issue because the ponderosa pine and Douglas-fir stands in the Twomile Resource Area appear to provide some of the best habitat for flammulated owls on the Coeur d'Alene River Ranger District (EA, pp. 2-7, 2-15). The Selected Alternative is designed based on a landscape plan to spatially define both capable and suitable flammulated owl habitat blocks of 300 acres or larger. The size of these blocks is based on the Montana Partners in Flight Bird Conservation Plan for the flammulated owl (EA, p. 3-140; PF Doc. WL-R39). Habitat for flammulated owl was evaluated using a habitat suitability model derived from data in the Timber Stand Management Record System (EA, p. 3-139; PF Doc. WL-26). Several scientific studies were used to describe the life history, management recommendations, reference conditions, affected environment, and environmental consequences related to flammulated owl. For example, Johnsgard 1988 in Atkinson 1990; Bergman 1983; Bull et al 1990; Hayward 1986; Reynolds et al 1987; Goggans 1986; Howie and Richie 1987; Reynolds and Linkhart 1987; and others (EA, pp. 3-135 through 3-139).

In describing the reference condition for flammulated owls and white-headed woodpeckers, we made the statement, "There are no historical records of these species specifically…" (EA, p. 3-136). The term "specifically" was used to indicate that there are no historical records for these **particular** species. However, we went on to state that the Interior Columbia Basin Assessment found the amount of interior ponderosa pine forest maintained by frequent, low intensity fires (habitat preferred by flammulated owls) has declined by 80 percent (EA, pp. 3-136, 3-137).

F. Comments Related to Recreation & Access

F.1. Trail Use (Idaho Parks & Recreation, p.2)

We expect that participation rates in the trail based activities listed in the EA would be different in the Silver Valley than on a statewide basis. We suggest that the EA be reworded to "The 2003 Idaho Statewide Outdoor Recreation and Tourism Plan found that approximately 30% of *Idahoans* [emphasis added] use ATVs, 15% use motorcycles, 45% hike, and 10% use bicycles. Visitors to the Twomile Resource Area exhibit similar participation rates."

The difference between *all* visitors and *Idahoan* visitors is a valid distinction point. We look forward to 2005 release of findings of the Idaho Parks & Recreation study on recreation rates on a regional/county basis. However, the change in wording does not substantially change the analysis or conclusions regarding recreation and access; therefore the EA will not be re-issued.

F.2. Trail Location (Idaho Parks & Recreation, p. 2)

The EA stated on p. 3-170 that waterbars would be constructed on portions of grade that exceed 20%. We believe that it is generally more desirable in the long run on steep portions of trails (grades that exceed 20%). Trails built to a lesser grade and which have a rolling grade have fewer erosion problems. The Coeur d'Alene River Ranger District should relocate the steep sections when possible.

We agree that steep sections of trail should be avoided when possible. We repair or relocate such trail segments as funding allows.

F.3. Road Access (Attemann et al, pp. 10, 11)

Roads identified on the IPNF Coeur d'Alene map for additional co-use as both road and trail are identical to those proposed under Twomile. So what is actually being proposed? The EA needs to identify the exact 9.5 miles of added ATV trails/roads. Which District Travel Plan is the FS relying on, 2001 or 2003? As plaintiffs on the CDA Travel Plan, we are greatly concerned that the EA wrongfully relies on a document that does not hold legal mustard and failed to conduct an Environmental Assessment on all open and closed roads and proposed changes to these roads.

Mr. Attemann's organization recently raised this issue in similar comments on the Deerfoot Resource Area project. As explained on page A-7 of the Deerfoot Decision Notice, the District Travel Plan was released to the public in June 2002. Over the following year, members of the public as well as Forest Service employees suggested changes to the Travel Plan. Resource specialists at the district reviewed these recommendations, considering and documenting effects of each proposed change. 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 revised Travel Plan was the basis for the Coeur d'Alene National Forest Visitor's Map, which is currently available to the public.

F.4. Road Density (Attemann et al, p. 11)

Why is the FS allowing for more open ATV routes in an area that contains high open road density levels and is "a problem for wildlife species that can be affected by disturbance (Appendix H)? The EA openly acknowledges that the current situation for elk security is violating the Forest Plan and that the continued implementation of the District Travel Plan will continue to affect elk and other wildlife species.

Recreation goals and objectives of the Forest Plan are to provide for the projected use of developed recreation areas with development of new sites as budget becomes available, to provide for a variety of dispersed recreation opportunities – both motorized and nonmotorized, to pursue opportunities to increase and improve the recreation trail system, and to continue to increase cooperative trail programs with organizations, clubs and other public agencies (EA, p. 3-169).

The amount of recreation use (including but not limited to ATV's) in the Twomile Resource Area and Coeur d'Alene River Basin has been considered (EA, pp. 3-169 through 3-173, D-9). There are no developed campgrounds, picnic areas, or other structural recreation developments in the resource area or in the immediate vicinity (EA, p. 3-169). As a result, recreation management in the Twomile area focuses on trail and road systems as facilities for recreation opportunities (EA, p. 3-169).

As suggested by the Lands Council and Ecology Center organizations, a Roads Analysis Process (RAPs) was completed for the resource area, and the recommendations incorporated into the proposed action (EA, p. 1-5; PF Doc. TRAN-1). The existing trail system is inadequate for the level of ATV use (EA, p. 3-169). ATV's are being used on old logging and mining roads in the area, in some cases causing erosion, streambank collapse and effects on wildlife. ATVs damage narrow single-track trails and present hazards to riders when the machines are forced onto the fall line of the ridges (EA, p. 3-169). Activities such as this are common where facilities have not been sufficient to meet the recreation demand (EA, p. 3-170).

Expansion of the ATV trail system was one of the recommendations of the RAPs report, to accommodate ATV travel and link to trails outside the Resource Area (EA, p. 1-5). The new ATV trails will be created from old logging roads, which have the proper width to safely allow ATVs to pass each other and accommodate the width of the machines.

In conjunction with the ATV trail expansion, work will be done to deter ATV's from using the single-track trails or pioneering trails. This will help to protect single-track trails and natural resources from ATV impacts.

The project wildlife biologist states, "The current level of open road density in the Twomile Resource Area is a problem for wildlife species that can be affected by disturbance," (EA, p. 3-131). Continued implementation of the District Travel Plan will better identify roads closed to motorized use and improve enforcement of existing closures (EA, p. 3-132). Following completion of activities in the Twomile Resource Area, the open road density would be lower than the current level (EA, Appendix H, p. H-4).

G. Comments Related to Other Issues

G.1. Monitoring (Attemann et al, p. 4)

It is important that the results of past monitoring be incorporated into project planning. The following should be included in the EIS or project file: a list of all past project (completed or ongoing) implemented in the project area watersheds; the results of all monitoring done in the project area as committed to in the NEPA documents for the past projects; the results of all monitoring done in the project area as part of the Forest Plan monitoring effort; and a description of any monitoring specified in past NEPA or the Forest Plan for the project area, which has yet to be gathered and/or reported.

Monitoring is an ongoing effort. The Forest Plan monitoring and findings are published in an annual report that is available to the public (EA, p. D-12). Results of monitoring have been used and disclosed in the project analyses as appropriate (and documented by resource in Chapter 3 of the EA).

G.2. Monitoring (Attemann et al, p. 5)

The Ecology Center letter of January 25, 2000 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 FEIS comments.

The Ecology Center and Lands Council have asked that this letter to the Forest Supervisor be incorporated in their scoping, EA review, and appeal comments on numerous projects over the past four years. The letter expresses the organizations' views on forest management and policy on a wide-scale basis. The Appeals Deciding Officer, Forest Supervisor and District Rangers have 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]). Since their letter was written three years before this project was initiated, their comments can hardly meet the requirements to be specific to the proposed action.

G.3. Response to Comments (Attemann et al, p. 4)

In reviewing the EA, we find that the EA has failed to adequately address our scientific papers that we provided with our February 28, 2003 scoping comments.

Mr. Attemann lists the same 111 references in his April 17 letter as he did in his February 28, 2003 letter (as can be seen by comparing his comments in the EA, Appendix D to his letter at the end of this attachment). Specific citations were reviewed for applicability when used in relation to proposed activities in the Twomile Resource Area, as noted in the response to comments (EA, Appendix D). Of the 111 references, only 7 were actually cited in the text of his April 17 comments; an additional 15 were cited but not included in the list of references, therefore we were unable to obtain copies of many of these.

G.4. Public Involvement (Attemann et al, p. 10, 11)

The EA discloses, "local recreation users were consulted during the development of trails proposed for the Twomile Area." Provide documents showing who the FS met with, how many times they met, and notes from those discussions to show a perspective on the user types that the FS met with.

Local recreation users participated in the public meeting on November 13, 2003 in Osburn, Idaho (PF Doc. PI-23, PI-26). We also discuss recreation opportunities at the periodic Forest Plan revision meetings and through ongoing discussions with recreation users related to District-wide programs.

APPENDIX A, PART 2
Response to Public Comments on the 2005 REVISED Environmental Assessment

Introduction

Four comment letters were received during the Revised EA review period. The following table identifies the source of each letter and a brief synopsis of their letter. A copy of each letter in its entirety is provided at the end of this attachment.

Table A-2. Public Comment Letters Received During the REVISED EA Review Period.

Author	Representing	Synopsis
#02 Mike Mihelich, letter dated June 9, 2005 #03 Jeff Juel, letter dated June 10, 2005	✪ Kootenai Environmental Alliance (Coeur d'Alene, Idaho) ✪ The Lands Council (Spokane, Washington) ✪ The Ecology Center (Missoula, Montana) ✪ Selkirk Conservation Alliance (Priest River, Idaho)	Mr. Mihelich and Mr. Juel provided comments on behalf of the same organizations. As noted, several of their comments are identical to those they provided during review of the 2004 EA (addressed in Part 1 of this attachment). Mr. Juel cited a number of references in his comments. We located those that we could, and requested copies of the remainder from Mr. Juel. He responded that most were available online at their webpage. We obtained those that were there but were still lacking a number of his references cited that Mr. Juel was unable to locate. We have reviewed references whenever possible, as noted in response to comments. Several of Mr. Juel's comments address requirements or disclosures of the Forest Plan and the Federal Wildland Fire Policy. These are outside the scope of this proposal. We have responded to any and all substantive comments that can be applied to the Twomile Resource Area.
#04 Jonathan Oppenheimer, letter dated June 9, 2005	✪ Idaho Conservation League (Hayden, ID)	Mr. Oppenheimer expressed appreciation that the preferred alternative includes helicopter logging and skyline yarding. He recommended the IPNF exercise caution when in areas with potential high sediment yield or mass failure. He provided several comments regarding potential effects to aquatic biota and fisheries.
#05 David Vig, letter dated June 9, 2005	✪ Northwest Access Alliance (Hayden, ID)	Mr. Vig restated his organization's support for the Twomile project, attaching his comments dated November 9, 2003. He noted that the level of analysis and detail required is "far in excess of what should be necessary to complete a project of this nature."

Substantive comments received during the 30-day public review of the Twomile REVISED Environmental Assessment are identified below, with our response.

Comments are organized by the following issue categories:

AA. Forest Vegetation
BB. Fire/Fuels
CC. Aquatic Resources
DD. Soil Productivity
EE. Wildlife
FF. Recreation & Access
GG. Process & Other Issues

A. Comments Related to Forest Vegetation

AA.1. Fuels Removal (Oppenheimer, page 8)

Place less emphasis on reducing crown bulk density, and instead focus on thinning from below and removing ladder and ground fuels. Habitat loss is increased in areas cut by regeneration, seed tree or shelterwood logging, prescriptions that produce adverse effects for species relying on more continuous canopies such as snowshoe hare, lynx, pine marten, and fisher. After this analysis, the Forest Service should focus on those stands that are the farthest outside of the historic range.

The focus of the Selected Alternative does not emphasize reducing crown bulk density. Instead, this alternative was designed to reduce hazardous fuels and improve forest health (EA, page 2-13). It focuses on removal of tree species susceptible to insects and disease to restore long-lived seral tree species that are better adapted to the mixed and low severity fire regimes of northern Idaho (EA, page 2-14). The treatments will reduce the ladder fuels and dense stands that increase the risk of high intensity wildfire, especially adjacent to the rural residences in the Twomile Resource Area (EA, page 2-14).

AA.2. Tree Diameter (Mihelich's June 9, 2005 letter, page 3)

The decision document should include information indicating whether any trees larger than 16" dbh in Unit 28 would be logged.

The 2005 Revised EA explains that Alternative 2 proposes commercial thin/improvement cutting in Unit 28, which is an important area to treat because it is within the wildland urban interface and immediately adjacent to private land with structures (page R3-6). Trees larger than 16 inches diameter would likely be removed during treatment. Large diameter trees (18 inches or greater diameter) will be retained unless removal is unavoidable due to safety reasons or special circumstances (DN, Section 3.5 "Features;" 2004 Twomile EA, page 2-24). Treatment in this unit would be designed and accomplished in a manner that would maintain the old growth characteristics; therefore the old growth allocation would not change (pages R3-5, R3-6).

AA.3. Ecological Restoration (Juel, page 1)

Using your model of ecological restoration as represented by the EA and REA, how much more logging and how much more burning will the FS have to undertake in these watersheds before the areas are fully functioning ecologically?

Treatments under the Selected Alternative will create more desirable fire-adapted structures and increase the long-lived seral species component in the Resource Area (EA, p. 3-17). Re-entries will be required over the next 10 to 50 years for precommercial thinning and slashing and burning of ladder fuels in the understories. Additional stands may need commercial thinning or regeneration treatments in the future, depending on the disturbances and mortality they experience over time (EA, pages 3-17, 3-22).

The environmental assessment did not include the potential future activities that would be necessary to maintain desired stand conditions (EA, p. 1-5). Because of the uncertainty of the timing and conditions, any future actions designed to create or maintain the desired stand conditions would be analyzed separately following applicable legal requirements.

AA.4. Noxious Weeds (Juel, page 18)

The FS has no idea how the productivity of the land has been affected in the project area and forest wide due to noxious weed infestations, nor how that situation is expected to change.

Noxious weeds were addressed in the 2004 Twomile EA, including the regulatory framework for the control of noxious weeds, the affected environment (at the Interior Columbia Basin, Coeur d'Alene River Basin and Twomile Resource Area scales), and environmental consequences to noxious weeds under the alternatives (EA, Appendix F). The analysis of environmental consequences included direct and indirect effects as well as cumulative effects (EA, pages F-4 through F-7). Analysis was conducted using results of past noxious weed surveys, documented distribution of weed species in habitats similar to those found in the proposed treatment sites, and types of proposed treatments and the risk of weed spread and introduction of new weed invaders from the proposed activity based on current knowledge and professional judgment (EA, page F-4).

The Selected Alternative includes specific features designed to reduce the spread of noxious weeds following the guidance of the Noxious Weed Final Environmental Impact Statement (DN, Section 3.1.A.(6); EA, p. 2-21.

AA.5. Forest Health (Juel, pages 19-21)

The FS often makes a case for logging as a way to reduce insect and disease damage to timber stands. The FS has no empirical evidence to indicate its "treatments" for "forest health" decrease rather than increase the incidence of insects and disease in the forest. Since the FS doesn't cite research that proves otherwise in the REA, we can only conclude that "forest health" discussions are unscientific and biased toward logging as a solution. Please consider the large body of research that indicates logging, roads and other human caused disturbance promote the spread of tree diseases and insect infestation.

Activities in the Twomile Resource Area are not proposed as a way to reduce insect and disease damage to timber stands. The purpose and need for the current Twomile Resource Area proposal was developed in response to goals and objectives of the National Fire Plan (2002; PF Doc. FF-20) and Shoshone County Fire Mitigation Plan (2002; PF Doc. FF-36), to help move the resource area towards the desired future conditions described in the Forest Plan (1987; PF Doc. REF-1); as well as being responsive to recommendations made under the Interior Columbia Basin Ecosystem Management Project (1996; PF Doc. REF-3) and the Geographic Assessment (1998, PF Doc. PROC-2) for the Coeur d'Alene River Basin (Revised EA, pages R1-3 through R1-6).

The effect of various treatments on insects and diseases has been considered in the Twomile Resource Area (EA, pages 3-11, 3-12, 3-28, and 3-32. The focus of the Selected Alternative is on removal of tree species susceptible to insects and disease, to restore long-lived seral tree species that are better adapted to the mixed and low severity fire regimes of northern Idaho (EA, p. 2-14). Forest Protection Standards 1, 2 and 3 will be met under the Selected Alternative. In contrast, the No-Action Alternative would not use integrated pest management methods or reduce the perpetuation of pest problems, and would therefore not meet Forest Protection Standards 1 and 2 (EA, page 3-32). In addition, a recent publication "Root Disease in Coniferous Forests of the Inland West: Potential Implications of Fuels Treatments" (PF Doc. VEG-48) cites voluminous references related to disease, disease management, and fuels. This and other references do not indicate that logging, roads, or human disturbance are the major reasons for spread of tree diseases.

This comment is similar to one raised on behalf of these organizations by Rein Attemann in his April 17, 2004 letter (see Comment A-1 in Section 1 of this attachment).

B. Comments Related to Fire/Fuels

BB.1. Fire/Fuels Analysis (Oppenheimer, pages 7-8)

The FS should compare present, historic, and post-treatment fuel loads and canopy densities for each unit within the proposed treatment area. More quantifiable data needs to be present in the EA on the current and target levels of crown densities in the project area. Additionally, more information on the analysis used to determine condition class should be included in the EA. While project record files were referenced in the EA, minimal data was included to discuss the methodology, assumptions, or shortcomings of the fire regime condition class assessment.

A voluminous amount of data and information was used in the fire/fuels analysis. The data presented in the EA and Revised EA is that which was necessary to disclose the analysis process and findings. The remainder of data is provided in Project Files, which are available for public review, and in fact which have been reviewed by Mr. Juel and/or his associates in the past.

Fuel loads were addressed; FVS computer modeling included information on fuels over time (EA, pages 3-38, 3-39). The FFE-FVS model was used to describe existing fuel conditions in the Twomile Resource Area, as well as to compare effects of proposed treatments (EA, pages 3-39, and 3-46 through 3-63). The fire hazard analysis also considered fuel loading, among other factors (EA, page 3-40, 3-41).

Canopy closures were addressed under the structure and species composition discussions, including historic conditions (EA, page 3-7), present conditions under the No-Action Alternative (EA, pages 3-15 and 3-16), and post-treatment conditions under the action alternatives (EA, pages 3-17 through 3-23).

A brief overview of the Fire Regime Condition Class (FRCC) analysis was provided in the 2005 Revised EA (pages R3-7 through R3-9; PF Doc. FF-43), with reference to the Fire Regime Condition Class Guidebook, which includes 108 pages of information about the analysis process. This guidebook is part of the project files (PF Doc. FF-39), which is available to the public upon request (EA, page 1-6, Section 1.6).

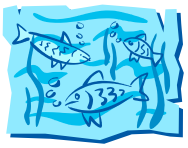
BB.2. Effects of Thinning (Juel, pages 4-6)

Fire modeling shows that thinning will increase the rate of spread of fire, something not clearly disclosed to the public in the REA. Also, Hessberg and Lemkuhl (1999) question a common assumption that fuel levels are too high for prescribed burning to take place before thinning, and suggest that prescribed burning alone can be utilized in many cases where managers typically assume mechanical fuel reductions must be used.

These are very similar to comments these organizations provided during scoping (EA, Comment 2.b., Appendix D), and in review of the 2004 Twomile EA (Part 1 of this attachment, comment A.5). In their scoping comments they cited Omi and Martinson (2002) in support of their theory. In reviewing this reference, we found that Omi and Martinson's study supports activities such as those proposed in the Twomile Resource Area; stating, "While surface fire intensity is a critical factor in crown fire initiation, height to crown (the vertical continuity between fuel strata) is equally important. Further, crown fire propagation is dependent on the abundance and horizontal continuity of canopy fuels. Thus, treatments that reduce canopy fuels increase and decrease fire hazard simultaneously. With little empirical evidence and an infant crown fire theory, fuel treatment practitioners have gambled that a reduction in crown fuels outweighs any increase in surface fire hazard. Our research demonstrates that their bets have been well placed," (Omi & Martinson, 2002, p. 25; PF Doc. 45).

Their reference to Hessberg and Lemkuhl's 1999 study is identical to comments they made in their April 17, 2004 letter. Please refer to Comment A.5 in Part 1 of this attachment.

C. Comments Related to Aquatic Resources



CC.1 Analysis Scale (Oppenheimer, pages 1, 3, 4)

The IPNF should not disregard the potential effects of the Twomile project on aquatic biota and fisheries in the analysis area simply because of its existence in a larger watershed. While the effects to the Twomile subwatershed could be argued as negligible in comparison to the entire south fork of the Coeur d'Alene River watershed or the IPNF, using this argument does not relieve the IPNF of its obligations to Threatened, Endangered, MIS, sensitive species or cumulative effects in the Twomile Resource Area.

As displayed in Figure 3-AQ-1 on page 3-70 of the 2004 EA, the effects to aquatic resources were analyzed at the subwatershed scale (Twomile Creek, Nuckols Gulch, and Revenue Gulch). Each of the subwatersheds in the Twomile Resource Area was analyzed as its own

cumulative effect area (EA, p. 3-68). The entire South Fork Coeur d'Alene River Basin was not selected as the cumulative effects area, because the Twomile Resource Area occupies only 15 percent of the basin upstream of the Twomile Creek confluence. Water quality in the South Fork Coeur d'Alene River (not the river basin), just downstream of the Twomile Resource Area, was qualitatively addressed in the 2004 EA based on changes in contribution of pollutants (EA, p. 3-68).

Peak flows represent the change in runoff and are expressed as the percent change from the estimated "natural" peak month discharge, based on WATSED modeling (EA, p. 3-86). The Guidelines for Changes to Water Yield and Peak Flow (EA, p. 3-86) indicate that water yield increases up to 5% indicate there is **potential** for an increase in water yield and peak flow or delay of watershed recovery, but the increase **would not be measurable**. For example, if you dumped a cup of water into a stream, you know the flow has increased; yet it would not be measurable at a gauging station. This would be the situation in the Revenue Gulch and Twomile Creek watersheds (EA, Table 3-AQ-4, p. 3-88).

Water yield increases from 5 to 10% indicate there is **slight potential** that there would be a measurable increase in water yield and peak flow or delay of watershed recovery. This would be the situation in the Nuckols Gulch watershed (EA, Table 3-AQ-4, p. 3-88).

CC.2 Road Density (Oppenheimer, page 3)

There are westslope cutthroat and rainbow trout present in Twomile Creek, both of which have the potential to be affected by the Twomile project. The IPNF, however, appears to suggest that since these two species are present in streams and rivers throughout the Coeur d'Alene Basin, the affects on the two species in the Twomile Area is somehow not an issue.

Fish habitat and populations are addressed in detail in the 2004 EA (pages 3-83 through 3-85). The consideration of fish species distribution across the Forest (DN, Section 3.3) was necessary to address viability of these species. The effects analysis included direct, indirect, and cumulative effects to fisheries. Based on the stream channel types and landtype characteristics, the estimated short-term changes in peak flow, estimated short-term changes in sediment yields, and potential increases from a rain-on-snow event will not affect stream channel morphology, and will therefore not change fish habitat (EA, p. 3-89; DN, Section 3.3). Over the long term, the reduction in sediment yield is expected to benefit survival of individuals and improve habitat (EA, p. 3-97).

CC.3. Aquatic Restoration (Oppenheimer, page 8)

The Twomile project should focus more effort on road obliteration, soil stabilization/restoration and watershed restoration, instead of logging.

The focus of the activities in the Twomile Resource Area are not on logging, but on activities that will respond to the goals and objectives of the National Fire Plan and Shoshone County Fire Mitigation Plan, and help to move the resource area toward desired future conditions as described in the Forest Plan (EA, p. 1-2). One of the tools to reach these goals is tree removal, which includes both commercial logging and noncommercial harvest of trees. The Selected Alternative includes aquatic restoration activities (DN, Section 2.2). For example, the East Fork of Twomile Creek (at Road 271-UBA) has failed culverts that are contributing sediment to the stream (EA, p. 3-75). This is one of 14 crossings that will be repaired or removed (DN, Section 2.2, Table 4).

CC.4. Water Quality Standards (Mihelich's June 9, 2005 letter, page 1)

The release of sediment in water quality limited water bodies associated with Alternative 2 would be a violation of Idaho Water Quality Standards (IDAPA 58.01.02.054.04).

Mr. Mihelich provided these same comments earlier - please see our response to Comments C.2 and C.3 in Part 1 of this Attachment A.

CC.5. WATSED Model (Mihelich's June 9, 2005 letter, page 2)

The WATSED discussions in Ch. 3 did not mention that the model cannot distinguish between fine and coarse sediment, and therefore there are no coefficient files. Additionally, the model has been found to underestimate sediment production by up to 320% (Rock Creek FEIS, Kootenai NF). Since the model has a number of significant flaws, it is critical real coefficients exist that account for event based processes and functions, including r-o-s events and specific in-channel responses. The DN/FONSI must supply pages numbers from the WATSED manual that specifically discusses the coefficients mentioned on p. 3-71 of the EA.

Mr. Mihelich made this same comment earlier – please see our response to Comment C.6 in Part 1 of this Attachment A.

CC.6. Cumulative Effects (Mihelich's June 9, 2005 letter, page 2)

Since there is a lack of accurate data for peak flows and sediment releases off of private lands and BLM lands in the project area as a result of past activities (page R2-4), it is not apparent the model can accurately estimate annual peak flows and sediment loads in the project area due to missing data. The anticipated sediment and water yields associated with Alternative 2 likely do not account for the cumulative impacts to the water bodies in the project area from past and ongoing activities on private and BLM lands since the model does not account for these activities.

Mr. Mihelich made this same comment earlier – please see our response to Comment C.6 in Part 1 of this Attachment A.

CC.7. Validation Monitoring (Mihelich's June 9, 2005 letter, page 3)

There should be information in the decision document that will indicate whether INFISH validation monitoring data has been acquired for the Twomile Resource Area. If INFISH validation monitoring data has been acquired for the Resource area and INFISH written evaluations have been produced, the data and evaluations should be included in the project file.

There is a long-term tri-region project underway to evaluate the effects of land management activities on aquatic and riparian communities at multiple scales, and assess whether management direction implemented through the Inland Native Fish Strategy and its anadromous cousin PACFISH is effective in maintaining or improving aquatic and riparian conditions at both the landscape and watershed scales on federal lands. The IPNF is one of the Forests being monitored. The PacFish and INFISH Biological Opinion (or "PIBO") Effectiveness Monitoring Project is in its first 5-year sampling cycle. It will be 2006 and beyond before conclusions can be made through this effort (2003 IPNF Forest Plan Monitoring and Evaluation Report, page 57; PF Doc. CR-023).

CC.8. Fry Emergence (Juel, page 3)

The REA fails to demonstrate compliance with the Forest Plan fry emergence standards and other related Forest Plan requirements. The IPNF's decision to implement the fry emergence Forest Plan amendment is still under review, therefore the Forest Plan as before the amendment is still in effect.

As described in this Decision Notice (Section 3.3, "Consistency"), I signed a Decision Notice and Finding of No Significant Impact on June 2, 2005, amending the Forest Plan to modify or remove objectives, standards and monitoring requirements pertaining to fry emergence success (PF Doc. AQ-95).

The Selected Alternative is consistent with the Forest Plan standards for water resources and fisheries as amended.

CC.9. WATSED Limitations (Juel, page 3)

The precision or amount of error in the estimates derived from the WATSED model are not disclosed. They are estimates based upon sampling that inherently has some amount of error.

Limitations of the WATSED model were discussed briefly in the 2004 Twomile EA (pp. 3-70, 3-71). Further clarification of the appropriate uses and known limitations of the model are provided in the 2005 Revised EA (pp. R2-8, R3-10 through R3-12). We frequently validate the WATSED coefficients and estimates using long-term water quality monitoring networks on the IPNFs. Forest Plan monitoring reports (USDA Forest Service, 2000, 1999 and 1998b; PF Doc. AQ-5 through AQ-7) describe how the calibration and validation of WATSED has been an annual process on the Forest, and where changes have been made (Revised EA, p. R2-8).

CC.10. Western Montana Level I Bull Trout Paper (Juel, page 4)

We ask that the FS explicitly consider the Western Montana Level I Bull Trout Team position paper in the subsequent NEPA document.

These organizations made this same request in their February 24, 2003 scoping comments (EA, Comment 3.e, page D-6). As we stated in our response to their comment, the Western Montana Level 1 Bull Trout Team position paper is not applicable to the Coeur d'Alene River Basin. The State of Idaho Governor's Bull Trout Plan (1996; PF Doc. AQ-11) incorporates the entire Coeur d'Alene River drainage and its' tributaries, which includes the cumulative effects analysis area for the Twomile Resource Area (EA, Regulatory Framework for Aquatic Resources, p. 3-68; Consistency with the State of Idaho Governor's Bull Trout Plan, p. 3-102).

CC.11. WATSED Estimates of Peak Flow (Juel, pages 21-22)

The REA wholly ignores and fails to disclose the FS's own research (King 1989) on the accuracy of a peak flow model in estimating increases in peak flows from logging and roads in nearby northern Idaho. King examined the veracity of a model for changes in peak flow as a function of Equivalent Clearcut Area, which is one basis of WATSED. King found that the ECA model consistently underestimated measured increases in flow caused by roads and logging. WATSED model outputs are also inadequate to disclose effects on peak flows and aquatic resources, because the model estimates changes in average monthly peak flow caused by logging and roads. King clearly noted that estimates of average monthly peak flows are not adequate for estimating likely changes in channel conditions and sediment transport caused by logging and roads.

WATSED, like any quantitative model, is only a tool. In this analysis, WATSED was not the only tool utilized for analysis of watershed responses. The model results have been incorporated with other analysis tools and sources of information to provide the basis for interpretation, as described in the 2005 Revised EA, page R3-11. The specialists on this project have verified for themselves the results and trends that WATSED simulates (Revised EA, page R3-12). The project hydrologist used the conclusions drawn from King (1989; PF Doc. AQ-40) in his analysis of effects on rain-on-snow (EA, p. 3-87).

CC.12. Peak Flow Impacts (Juel, page 22)

Although channel adjustment processes are complicated, it is indisputable that increases in peak flow will result in enlarged channel area via increased channel erosion (Schumm, 1969; Richards, 1982) The REA fails to adequately disclose that these impacts can be extremely significant, even if they are "immeasurable."

Peak flows represent the change in runoff and are expressed as the percent change from the estimated "natural" peak month discharge, based on WATSED modeling (EA, p. 3-86). The Guidelines for Changes to Water Yield and Peak Flow (EA, p. 3-86) indicate that water yield increases up to 5% indicate there is **potential** for an increase in water yield and peak flow or delay of watershed recovery, but the increase **would not be measurable**. For example, if you dumped a cup of water into a stream, you know the flow has increased; yet it would not be measurable at a gauging station. This would be the situation in the Revenue Gulch and Twomile Creek watersheds (EA, Table 3-AQ-4, p. 3-88).

Water yield increases from 5 to 10% indicate there is **slight potential** that there would be a measurable increase in water yield and peak flow or delay of watershed recovery. This would be the situation in the Nuckols Gulch watershed (EA, Table 3-AQ-4, p. 3-88).

Short-term increases in water yield would not be detectable in the main stem streams of the Twomile

Resource Area, and would not change existing fisheries habitat conditions in any of the fish-bearing stream segments. Since any change in water yield associated with this project probably would not be differentiated from normal climatic fluctuations in the watersheds, any additional bedload scour during high flows would not be expected.

We requested copies of the references cited by Mr. Juel, but he was not able to locate his copies and we were unable to locate them elsewhere, therefore we are unable to respond more specifically to these references.

CC.13. Mass Failures *(Juel, page 22)*

The REA does not disclose the degree of natural and management-induced mass failures in the watershed.

There have been no recorded mass failures in the Twomile Resource Area. Landtypes within the Resource Area have a predominately low mass failure potential (EA, page 3-116; PF Doc. SOIL-3). Alternative design measures will ensure that soil strength would continue with no concerns from mass failure in any of the proposed activity areas (EA, page 3-116; PF Doc. SOIL-38). If a severe fire occurred, resulting in hydrophobic soils, moderate surface erosion would occur but the potential for mass failures would still be low due to the overall landtype characteristics in the Twomile Resource Area (EA, page 3-116).

D. Comments Related to Soils Productivity

DD.1. High Risk Soils *(Oppenheimer, pages 1 and 2)*

We recommend that the IPNF exercise caution when partaking in treatments in units with the potential for high sediment yield and/or mass failure. Units 7, 21, 30, 31, 37c, 37d, and 37e have portions that rate high in potential sediment yield and mass failure.

While these units will be treated with helicopter and skyline yarding, the IPNF needs to assess these areas under INFS as Riparian Habitat Conservation Areas and conduct a watershed analysis, if entering the RHCAs is proposed. These treatment areas should be avoided in order to ensure that neither of these potentials are realized in these units.

Effects to soil productivity are disclosed for all alternatives (EA, pp. 3-117, 3-118). There would be no erosion or mass failure concerns in any of the proposed activity areas (Revised EA, pp. R3-22, R3-23).

Specific standards and guidelines of the Inland Native Fish Strategy are applied to activities in the Twomile Resource Area, as described in the 2004 Twomile EA (Appendix B). Standard widths of the Riparian Habitat Conservation Areas (RHCAs) will be used, with no commercial timber harvest activities proposed in the RHCAs (EA, page B-1, Timber Management). Stream channel buffer widths are described in the 2004 Twomile EA, page 2-22.

To protect fish habitat, commercial timber cutting is prohibited in RHCAs (EA, page 2-22). INFS allows silvicultural practices to be applied in RHCAs to acquire desired vegetation characteristics and design prescribed burn projects where needed to attain Riparian Management Objectives (RMOs). Using "Standard Widths Defining Interim RHCAs," no commercial timber harvest activities are proposed within RHCA within the project area. In some units, noncommercial (i.e. ladder fuel reduction) treatments were deemed necessary in order to reduce fuel hazards and loading (EA, page B-1). This form of activities would meet the intent of silvicultural practices that would not retard RMOs and avoid adverse effects to inland native fish by preventing long-term RMO damage or reduction.

The units identified by Mr. Oppenheimer do not include any commercial or noncommercial activities in RHCAs.

DD.2. Coarse Woody Debris *(Oppenheimer, page 6)*

We encourage you to abide by the Coarse Woody Debris Recommendations in Graham, 1994.

Management of large coarse woody debris and other organic matter (limbs and tops) will follow the research guidelines in Graham et al (1994; PF Doc. SOIL-32); and Intermountain Forest Tree Nutrition Cooperative (IFTNC) guidelines will ensure retention of maximum potassium on sites (EA, p. 3-119; Revised EA, p. R3-17; DN, Section 3.4).

DD.3. Soil Erosion, Compaction, & Productivity *(Juel, pages 13-14)*

Project activities will accelerate soil erosion, increase soil compaction, and degrade soil productivity. Fires and mechanical treatments may adversely affect soil productivity. In 2002 the Ecology Center asked the Northern Region if they have ever performed validation monitoring of its 15% standard; their reply stated that there is no documentation that responds to this request. If the IPNF is aware of any documentation that would respond to this request, please disclose it.

The 15% standard is based on the lowest magnitude of adverse change detectable, given the current monitoring technology (EA, page 3-110; PF Doc. SOIL-43). To determine whether proposed activities would detrimentally impact or have cumulative effects on soils, the IPNF Soil NEPA Analysis Process (Niehoff 2002; PF Doc. SOIL-41) was used (EA, page 3-113; Revised EA, page R3-17). Disturbance factors represent an average percentage of detrimentally disturbed soils, which was obtained through past monitoring on existing harvest units (Forest Plan Monitoring Reports for 1988, 1991, 1993, 1997, and 1999; PF Doc. SOIL-46 through SOIL-50). On the ground soil reviews were conducted in the Twomile area to assess existing conditions within the proposed activity areas (EA, page 3-111; PF Doc. SOIL-17).

Under the Selected Alternative (Alternative 2), there are only 8 acres of the 1,100 total proposed treatment acres that have had past disturbance (EA, Table 2-13, p. 2-36). Of all proposed treatment units, the highest cumulative disturbance is in Unit 31, with less than 5% disturbance, well below the 15% standard (Revised EA, page R3-26, Table 3-SOIL-2). We are not aware of any Regional validation monitoring of the 15% standard.

DD.4. Soils Mitigation (Juel, page 14)

The REA relies upon mitigation for soils, but cites no monitoring or scientific studies to validate the effectiveness of the mitigation.

No mitigation measures were proposed to reduce impacts to soils (EA, pages 2-27, 2-28). Specific features of the alternatives were designed to protect soils (EA, pages 2-23, 2-24). Both scientific studies and monitoring results are cited to support the effectiveness in using such design features. The IPNF Soil NEPA Analysis Process (Niehoff 2002; PF Doc. SOIL-41) was used to determine whether proposed activities would detrimentally impact or have cumulative effects on soils; the detrimentally disturbed acres were calculated using coefficients based on past Forest soil monitoring data (EA, page 3-113).

DD.5. Landtypes (Juel, page 14)

The REA fails to disclose the implications of landtype limitations for detrimental soil impacts. The public cannot tell which proposed activity areas fall into which landtypes, and therefore might be more at risk for erosion or other detrimental impacts. The REA fails to disclose the results of monitoring of past actions on these various landtypes that would reveal the levels of soil impacts of the various logging activities carried out in the past (and now proposed with the new project).

Analysis of soil resources was carried out using a landtypes map displaying low, moderate, and high potential for surface erosion, sediment yield, and mass failure (EA, page 3-116; PF Doc. SOIL-22). One hundred percent of soils in the Twomile Resource Area have a low potential for surface erosion (EA, page 3-116, Table 3-SOIL-1).

Out of a total of 32 proposed treatment areas, only Unit 11 has had previous harvest treatments – it was commercially thinned as a seed production site using skyline yarding (EA, page 3-115; 2005 Revised EA, page R3-20). Skyline (or cable) yarding systems have been shown to produce minor (approximately 2%) level of detrimental impacts (EA, page 3-115; PF Doc. SOIL-37 and SOIL-41). Under the Selected Alternative, only underburning will occur in Unit 11 to reduce brush and improve wildlife browse (EA, page 3-115). There would be no increase in detrimental impacts in the proposed burn-only units (EA, page 3-118).

DD.6. Soil Functioning Indicators (Juel, page 15)

Please disclose what inventory or monitoring information of soil functioning indicators the Forest has, including lichens, fungi, insects, etc. since these can and do define existing and probable future forest conditions, especially related to natural recovery following fire.

This comment is identical to a comment Mr. Juel made during scoping; our response is provided in the 2004 Twomile EA, page D-5, comment 2.h. Briefly, the TES plant analysis addresses effects to lichens as appropriate (EA, page 3-189, Table 3-TES-2).

DD.7. Soil Productivity Terminology (Juel, pages 15, 18)

The meaning of "soil productivity" in the terminology of NFMA is largely ignored. Even if the FS were to meet the 15% standard in all activity areas forest wide and soil conditions of land outside proposed activity areas could reasonably be ignored, the FS still cannot assume that there has been no "significant or permanent impairment of the productivity of the land" as NFMA requires.

The soils analysis of effects to soil productivity included both on the ground soil reviews and methodology based on past monitoring of existing units (Revised EA, page R3-17). Only a total of 158 acres in the Twomile Resource Area have had previous harvest activities (EA, page 3-13), representing only 3/10 of one percent of the total Twomile Resource Area. Over half of this harvest was commercial thin using skyline/cable yarding systems; based on past monitoring, this method has been shown to result in a minor (approximately 2%) disturbance level (EA, page 3-115; PF Doc. SOIL-37 and SOIL-41).

In his comments, Mr. Juel cites a measure of soil productivity from Grier et al (1989). Review of this study finds that the authors state, "this measure is far from ideal for management purposes," and point out that prescribed burning reduces soil productivity much less than wildfire (PF Doc. DN-R23).

Juel also cites Adams & Froelich (1981). Review of this study finds the authors discussed methods for minimizing impacts of compaction, including the use of skyline and helicopter (versus ground-based) logging systems and using designated skid trails (PF Doc. DN-R43). Under the Selected Alternative, over 99% of the harvest will be accomplished with helicopter and skyline logging system; with less than 1% using the tractor logging system (EA, page 2-12). In the tractor logging (consisting of 6 acres in a portion of Unit 30), skid trails will be established at 150-foot spacing to reduce overall soil compaction and displacement (EA, page 2-23).

DD.8. Soil Monitoring (Juel, pages 16-17)

Neither soil function nor soil quality have ever been monitored on the IPNF following management activities. The FS seems to have only interpreted monitoring requirements in terms of maintaining no more than 15% of activity areas in a detrimentally disturbed condition. There is no way the FS has enough soil bulk density and other compaction monitoring data collected at the adequate soil depths and in enough sites to be able to assure that the use of heavy machinery, as prescribed by the Twomile project, will not significantly or permanently impair the productivity of the soil.

Mr. Juel cites Page-Dumroese (2000) as support for validating soil quality standards. Review of the study found the objective of the study was to evaluate the effectiveness of applying uniform soil quality guidelines and threshold values over diverse forest landscapes in the Pacific Northwest (PF Doc. DN-R31). The authors state, "Our study emphasizes the importance of site-specific information and that blanket threshold values are not the optimum solution," (page 459).

Also, "The importance of soil monitoring to evaluate disturbance effects on soil productivity is widely accepted and mandated through numerous laws and initiatives," (page 460).

The 15% standard is based on the lowest magnitude of adverse change detectable, given the current monitoring technology (EA, page 3-110; PF Doc. SOIL-43). Disturbance factors represent an average percentage of detrimentally disturbed soils, which was obtained through past monitoring on existing harvest units (Forest Plan Monitoring Reports for 1988, 1991, 1993, 1997, and 1999; PF Doc. SOIL-46 through SOIL-50). On the ground soil reviews were conducted in the Twomile area to assess existing conditions within the proposed activity areas (EA, page 3-111; PF Doc. SOIL-17). Heavy (tractor yarding) machinery is only being used in a small portion (6 acres) of Unit 30, and will stay on designated trails (DN, Section 2.2, Table 2; Section 3.4 "Features").

DD.9. Coarse Woody Debris (Juel, pages 17-18)

The REA fails to cite monitoring results showing the FS has been able to correctly implement the coarse woody debris guidelines on the IPNF. The FS must evaluate the adequacy of such required mitigation measures..

All of the harvest activity units were assessed for past activities, coarse woody debris, and organic matter (Revised EA, page R3-18; PF Doc. SOIL-67). Some proposed activity units have a low coarse woody debris ratio; however, the ratio in these units will improve as woody debris is left on site in the form of tree tops and slash (Revised EA, page R3-18). Alternatives were designed to meet the large woody debris guidelines (EA, pages 2-24, 3-113; Graham et al, 1994; PF Doc. SOIL-32) and silvicultural prescriptions (EA, page 3-113). Fine organic matter and large woody debris would be retained on the ground in harvest units (EA, page 2-23).

Based on the analysis, the level of effect to soil productivity is acceptable, therefore no mitigation measures are necessary to reduce the effect of activities on soils.

E. Comments Related to Wildlife

EE.1. Wildlife Analysis Data (Mihelich's June 9, 2005 letter, page 3)

The decision document should indicate whether all TSMRS data reviewed and cited on page R2-9 is located in the project files.

Information related to the validation of data used in the forest vegetation analysis (including TSMRS) is provided in the project files (Revised EA, page R3-2; PF Doc. VEG-36). The entire database is not included due to its size. However, it is available on the Forest's webpage (http://www.fs.fed.us/ipnf/eco/yourforest/gis/index.html).

EE.2. Flammulated Owl Surveys (Juel, page 1)

Has the FS performed surveys in the project area and if so, what are the results? Has the IPNF ever done post-project surveys for flammulated owls in forest areas treated similarly as this proposal to determine habitat suitability and owl occupancy, and if so, what are the results?

The IPNF has developed a forest-wide capability/suitability model for TES/MIS, including flammulated owl. The Habitat Suitability Index (HSI) model uses vegetative characteristics to determine if stands are currently suitable flammulated owl nesting/foraging habitat (Revised EA, page R3-29). The biologist noted that the stands provided large ponderosa pine, patchy grass understories, stands of brush, and an open growing character to the stands. The wildlife biologist conducted surveys, primarily in suitable habitat areas (Revised EA, page R3-29; PF Doc. WL-16), to validate habitat characteristics. These characteristics were validated in the field surveys. In addition, several night calling surveys for flammulated owls occurred (Revised EA, page R3-29; PF Doc. WL-38, WL-39, WL-40). No responses were detected.

EE.3. Cumulative Effects (Juel, page 3)

The FS doesn't have data on how most TES and MIS wildlife select habitat following past management actions, so cumulative effects are not understood, simply following from neglect of monitoring responsibilities from the Forest Plan and NFMA regulations.

Effects to wildlife as a result of past activities are clarified in the 2005 Revised EA (pages R2-2 through R2-7). Mr. Juel quotes a sentence from page R2-8, but ignores the subsequent sentence, "The environmental baseline condition incorporates the sum total of habitat changes through the years, and is therefore an accurate reflection of current habitat conditions."

Surveys for MIS and TES wildlife species do occur on the IPNF, as documented in the Forest Plan monitoring reports. For example, the 2001 Monitoring Report documents surveys for goshawks and black-backed woodpeckers on the Coeur d'Alene River Ranger District (2001 Forest Plan Monitoring Report, page 66; PF Doc. CR-017). The 2002 Monitoring Report documents surveys for flammulated owls, black-backed woodpeckers, and white-headed woodpeckers on the District (2002 Forest Plan Monitoring Report, pages 77-79; PF Doc. CR-018). The 2003 Monitoring Report documents surveys for flammulated owls, goshawks, and black-backed woodpeckers on the District (2003 Forest Plan Monitoring Report, pages 82-83; PF Doc. CR-022). Wildlife surveys in other areas of the IPNF are documented in these reports as well.

EE.4. Old Growth Criteria (Juel, page 4)

The REA provides no information on the precision or amount of error in the estimates of old growth, based on its inventory, in neither the project area old growth management unit nor forest wide. The definition or minimum criteria used for old growth in the REA does not include important habitat characteristics needed by old-growth wildlife species. Block size of old-growth habitat, between-block forest integrity, and special juxtaposition are some important considerations ignored by the REA.

Allocated old growth was addressed as part of the forest structure analysis (EA, page 3-9; Revised EA, page R3-2; PF Doc. VEG-36). Block size is considered in the old growth analysis (EA, page 3-30; PF Doc. VEG-37, VEG-38, VEG-39, VEG-43). Additional review of allocated old growth in Old Growth Management Unit (OGMU) 121 has occurred (Revised EA, page R3-3; PF Doc. CR-023). In the Twomile Resource Area, there would be no change in old growth allocations under the Selected Alternative (Revised EA, page R3-5).

Definitions of old growth are based on Green et al (1992) with corrections in February 2005 (PF Doc. VEG-37). These sources emphasize the need to incorporate habitat characteristics, landscape considerations, and a full range of resource values (including human values) in the selection of lands to be managed for old growth (2003 IPNF Forest Plan Monitoring and Evaluation Report, page 90; PF Doc. CR-022).

EE.5. MIS Populations (Juel, pages 6, 13)

Region-wide the FS has failed to meet Forest Plan old growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA.

Mr. Juel cites himself (2003) and Pickens (2005) in support of this statement. Both papers have been reviewed for their applicability to the Twomile Resource Area project. Response to these citations is lengthy but necessary given the substantial differences between the findings and methodology of these organizations and our own findings and methodology regarding old growth.

Mr. Juel's paper "Old Growth At A Crossroads: U.S. Forest Service Northern Region National Forests Noncompliance With Diversity Provisions Of Their Forest Plans And The National Forest Management Act Regulations" (August 2003; PF Doc. DN-R45) addressed regulations dealing with old-growth forests and the wildlife species that depend upon them. Mr. Juel does not provide his qualifications in conducting such a review, nor any scientific citations supporting his conclusions. Since the paper was completed prior to the Twomile Resource Area project, it does not specifically address the project.

Mr. Juel made similar comments regarding species viability and population trends in his comments during scoping and in comments on the 2004 Twomile EA. Please refer to Comments E.5 and E.10 in Part 1 of this attachment.

During the summer of 2004, Ms. Pickens and a group of volunteers conducted their own old growth inventory in 53 stands on the IPNF, documented in a 10-page paper ("Lost Forests: An Investigative Report on the Old-Growth of North Idaho," 2005, PF Doc. DN-R46). Our consideration of this paper included a review by Art Zack, Ph.D., Forest Ecologist on the IPNF (Zack, 2005; PF Doc. DN-R47).

Ms. Pickens provides what she claims is the Forest Service definition of old growth, yet uses only the minimum standards for old growth types; which are clearly not the only considerations for old growth allocation (Revised EA, page R3-3). Some of the "old growth criteria" identified by Ms. Pickens are in direct contradiction to the Forest Service definition. Some of the criteria are in logical conflict with what we know about the natural historic fire regimes in northern Idaho under which the old growth developed. Other of her criteria is inappropriate for the northern Idaho ecosystems (Zack, 2005, PF Doc. DN-R47).

The Lands Council's "Inventory Methodology" (on page 12 of their report) provides no specific details, no information about a statistical design sample at any scale, or any explanation for why this was the appropriate methodology to use. Based on their brief description, there was apparently no attempt to get samples of different tree size classes on the plot, which is necessary to assess stage structure. Their use of a 14-inch borer means that trees larger than 28 inches in diameter (the biggest and often oldest trees) were not likely to have their ages recorded (Zack, 2005, page 3; PF Doc. DN-R47). Ms. Pickens does not identify the location or identification number of the 53 stands they hiked through and inventoried in 2004. No qualifications are provided for Ms. Pickens or the "volunteers," who were not identified. Photographs and map excerpts throughout the paper lack any identification of when or where the photos were taken, or their source. The map on page ii is labeled "USFS GIS 2003," yet the report was completed in 2005, at which time much more recent maps were available to The Lands Council.

As soon as The Lands Council released their report, we requested information about their survey methodology, descriptions and locations, so that we could work together to better understand the differences between their information and ours. In response to our repeated requests, The Lands Council refused to provide sample design information at the stand selection, plot selection, or tree selection scales. Of the 53 stands they stated they inventoried, they provided information regarding just two stands.

The first was a picture of a stand they stated they had sampled and found not to be old growth. This stand was classified as old growth by the Forest Service, but over time there were not enough live big old trees to meet the minimum old growth criteria, likely due to insects and disease mortality. After the most recent exam showing new mortality, this old growth status of this stand should likely be reclassified. Before any management activity would occur in the stand, it would be reviewed by the project interdisciplinary team and could be reclassified at that time.

The second piece of information provided by The Lands Council was an aerial photograph of a stand they claimed was identified by the Forest Service as old growth, but which they had determined not to meet old growth criteria. In fact, this is not a stand identified as old growth by the Forest Service. The stand is in an area that has had substantial insect and disease mortality over past years. The Forest Service had re-assessed this stand

more than a year before The Lands Council paper was released, found that it no longer met old growth criteria, and therefore removed it from the old-growth designation (Zack 2005, page 4; PF Doc. DN-R47). This clearly demonstrates that we update the stand database in response to changing conditions on the ground, and that The Lands Council was not using the best available information for their investigation.

Ms. Pickens' provides excerpts from the 2004 Ninth Circuit Court of Appeals decision on the Iron Honey Restoration Project. She states that the "Court found that the Idaho Panhandle National Forests' timber data base inventory is outdated and inaccurate and is not a reliable indicator of old growth habitat." The court ruling specifically addressed the timber stand management report system database (TSMRS). Our identification and verification of old growth is based on much more than just the TSMRS. In the Twomile Resource Area, we have completed an extensive validation of data used for analysis and a review of all old growth stands (Revised EA, page R2-9). We also have old growth statistical estimates derived from Forest Inventory and Analysis (FIA) data for the IPNF (PF Doc. CR-023), which Ms. Pickens does not address.

Ms. Pickens' contends, "Of the 5,000 field inventoried stands in the mapping database, 26% are missing from the inventory database totaling 60,000 acres." Forest Service representatives visited The Lands Council offices and found that the organization was using an old, obsolete version of the TSMRS database, despite having been provided with a more recent version, which is available to the public on our IPNF website and periodically updated (Zack, 2005, page 4; PF Doc. DN-R47). In addition, The Lands Council was using an obsolete version of the FSVEG database, which did not provide the current status of which stands had field inventory data. A substantial number of Forest Service old growth exams were done between 2003 (the year of the database they were using) and 2005 (the year they released their report). Further, without actually looking at stand folders, The Lands Council had no source for other field notes that may have been used to provide old growth field verification. Because they were using two obsolete database versions and failed to look at a third source of information, The Lands Council report does not have the current information necessary to support its conclusions.

Ms. Pickens states, "TLC continues to fight timber sales aimed at North Idaho's old growth." On their website, the Lands Council organization makes it clear that their objectives include ending all commercial logging of federal forests (see their website at www.landscouncil.org/about/about.htm). In the last several years, The Lands Council has filed appeals and/or lawsuits on virtually all of the Forest's projects that involved commercial timber harvest, regardless of the tree ages or conditions, or the reasons for the harvest. Timber harvest is a tool that can be used to restore the overall health of forest stands.

Ms. Pickens complains about the Bush administration's release of its new regulations to the National Forest Management Act. The changes to NFMA are entirely unrelated to the Twomile Resource Area proposal and the amount of old growth on the IPNF, and Ms. Pickens makes no attempt to connect her statement to this project, therefore these comments are outside the scope of this proposal.

Ms. Pickens also complains about the use of categorical exclusions under the Healthy Forest Restoration Act of 2004. The comments apparently do not point to the Twomile Resource Area project, since it was not categorically excluded from documentation, and has been analyzed in detail (including cumulative effects) through an environmental assessment.

Ms. Pickens claims that "Overwhelming evidence from the databases to field monitoring indicates the FS: a) does not know how much old-growth is in the forest; b) overestimates how much is there; c) does not have a total of ten percent and; d) will continue to operate as usual if they go unchallenged."

Allocation of old growth within the Twomile Resource Area is based on current and widely accepted science and follows current old growth definitions from the Forest Plan, the Regional Task Force Report (including Green et al., 1992 and the February 2005 errata; PF Doc. VEG-37), and Forest Supervisor letters of direction for implementing Forest Plan old growth standards (Revised EA, page R3-5; PF Doc. VEG-15).

On the IPNF, harvest of old growth is allowed when there is more than 5% in an old growth management unit and the Forest total is more than 10%. We have completed an extensive validation of data used for analysis and a review of all old growth stands in the Twomile Resource Area (Revised EA, page R2-9). Based on the review, we found the Forest has exceeded the requirement that at least 10% of the forested portion of the IPNF be maintained as old growth (EA, page 3-29; 2005 Revised EA, page R3-6). This is further supported by FIA data (PF Doc. CR-023). Under the Selected Alternative, Unit 28 would be commercially thinned with the use of a helicopter. Such a treatment would maintain the old growth characteristics of the stand, and therefore there would be no change in old growth allocation for these acres (DN, Section 2.2; Revised EA, page R3-6).

EE.6. Harvest of Old Growth (Juel, page 6)

Please disclose how much old growth, by type has previously been clear cut, salvaged, intermediate cut, thinned etc. in the project area during Forest Plan implementation.

Based on available records, there has been no harvest of old growth in the Twomile Resource Area. There was no harvest of old growth proposed under the Montgomery Moon project. In the Dago Seed Production Area, 1980 stand exam data indicates that the stand was about 50 to 60 years old at the time of harvest; therefore it would not then and would not now have met the criteria to be considered old growth.

EE.7. Population Viability of Old Growth-Dependent Species (Juel, pages 6-7, 13)

Considering potential difficulties of using population viability analysis at the project analysis area level, the cumulative effects of carrying out multiple projects simultaneously across the IPNF makes it imperative that population viability be assessed at least at the forest wide scale. The IPNF has never determined minimum viable

populations for any MIS or TES species as NFMA requires, nor has it specified the amount and distribution of habitat necessary to maintain viable populations.

Aimed at the Forest level, these comments are outside the scope of the Twomile proposal. Northern goshawk and pileated woodpeckers are the old growth management indicator species used for the Twomile analysis (EA, page 3-128).

No activities would affect suitable habitat, and goshawks are not known to nest in the vicinity. The Region 1 viability criteria of one goshawk nesting pair for each 10,000 acres (Warren 1990, PF Doc. WL-R61) would continue to be met under the Selected Alternative (EA, page 3-135).

Over time, any of the proposed action alternatives (including the Selected Alternative 2) would result in a trend toward more suitable habitat for pileated woodpeckers, since the proposed activities would increase the distribution of older ponderosa pine forests that are used by this species (EA, page 3-155). There would be only short-term losses in pileated woodpecker snag habitat.

EE.8. Old Growth Surveys (Juel, pages 6-7)

The REA does not disclose if all the areas to be logged or burned have been field surveyed for their old-growth habitat characteristics, or meet the old-growth criteria.

Stands in the Twomile Resource Area were field reviewed during our recent validation of allocated old growth in Old Growth Management Unit 121 (Revised EA, pages R2-9, R3-3). The review included a detailed review of allocated old growth in OGMU 121; a review of all stands in OGMU 121 to find stands not previously allocated that meet allocation definitions; an additional review of proposed treatment units for potential old growth definition criteria; and a review of landscape arrangement, consistency with Forest Plan old growth standards, and an additional review of the August 2004 digital aerial photo's to determine if there had been any changes since the earlier field exam that could change the old growth allocation (Revised EA, page R3-3).

EE.9. Old Growth Maintenance Level (Juel, page 7)

Why does the IPNF assume that 10% is all that is needed to maintain viable populations of old-growth species on the Forest?

The direction for allocation of old growth is from the 1987 Forest Plan (PF Doc. CR-002), the Regional Task Force Report, "Old Growth and Forest Types of the Northern Region," (Green et al. 1992, with errata corrections in February 2005; PF Doc. VEG-15); and Forest Supervisor letters of direction for implementing old growth standards (Revised EA, pages R3-3, R3-5; PF Doc. VEG-15).

EE.10. Managing Old Growth (Juel, pages 7-8)

The FS has failed to cite any evidence that its managing for old growth habitat strategy (logging old growth or logging to facilitate development of old growth) will improve old growth species' habitat over the short-term or long-term.

Under the Selected Alternative, commercial thin/improvement cut will occur in one unit (Unit 28) in allocated old growth. This unit is within the wildland urban interface and immediately adjacent to private land with structures. The treatment is designed and will be accomplished to maintain old growth characteristics; therefore these acres would not have a change in old growth allocation (DN, Section 2.2; Revised EA, page R3-6).

EE.11. Goshawk Habitat (Juel, pages 8-9)

Logging, road building and other disturbance associated with the project and other cumulative impacts would affect goshawk nesting, post-fledging family habitat, alternative nesting, foraging competitors, prey and potential habitat, including areas far from cutting units.

This comment is virtually identical to the one Mr. Mihelich made on behalf of these organizations in his April 16, 2004 letter (please refer to Part 1 of this attachment (Comment E-9). Since the time of our response to that comment, Forest Service personnel have conducted calling surveys for goshawk in the Twomile Resource Area (Revised EA, page R3-29). No responses were detected (PF Doc. WL-16).

EE.12. Fisher Status (Juel, page 9)

The REA failed to disclose and analyze the uncertain and precarious population status of the fisher, as described in Witmer, et al., 1998. The proposed project would adversely impact fishers and their habitat. Jones (undated) provides an example of a conservation strategy for the fisher, something the FS has so far neglected for this Sensitive species.

We described the status of fisher population as "precarious and declining" (EA, page 3-145). Management recommendations and the analysis of environmental consequences for fisher were based on the reference cited by Mr. Juel, "Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Coordinates," by Witmer et al. 1998 (EA, pages 3-144, 3-146, 3-147; PF Doc. WL-R64). The alternative management options presented in the 2004 Twomile EA address the four issues of concern to fisher conservation and management as outlined in Witmer et al. 1998 (EA, page 3-147; PF Doc. WL-R64). Viability for fisher will be maintained under the Selected Alternative based on the following: movement corridors are available outside the analysis area, riparian corridors will be restored in the East Fork Twomile Creek watershed, mature/old age classes have been maintained above the historic range in the area, it is illegal to trap fisher in Idaho, the R1 Snag Protocol will be implemented (exceeding Forest Plan standards), and old growth will be maintained at or above 10% across the IPNF (EA, page 3-147).

Mr. Mihelich made the same comment regarding Jones' work in his April 16, 2004 letter. Please see Part 1 of this attachment (Comment E.13).

EE.13. Black-backed Woodpeckers (Juel, pages 9-10)

The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of black-backed woodpeckers. Cumulative impacts of the IPNFs fire suppression policy are not adequately considered.

Mr. Mihelich made the same comment in his April 16, 2004 letter. Please see Part 1 of this attachment (Comment E.15).

EE.14. Wolverines (Juel, page 10)

Lofroth (1997) found that wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service 1993). Please explain why this scientific information should be discounted for the purposes of the Twomile project.

Mr. Mihelich made the same comment in his April 16, 2004 letter (see Part 1, Comment E.14 of this attachment). We have since located and reviewed the Lofroth reference, which documented research to obtain baseline movement, home range, habitat use, food habitat and population information on wolverine in plateau and foothill landscapes in British Columbia, Canada (PF Doc. DN-R48). The habitat studied does not match the habitat in the Twomile Resource Area and northern Idaho, and is therefore not used as a source of information for this project.

EE.15. Pine Marten (Juel, pages 10-11)

The IPNF provides inadequate management strategies to ensure viability of the pine marten. The kind of treatments proposed for the Twomile project reduce the availability of prey species for the marten.

Mr. Mihelich made virtually the same comment in his April 16, 2004 letter, again citing Ruggerior et al (1998) and Blumton (1999). Please see Part 1 of this attachment (Comment E.17).

EE.16. Flammulated, Boreal Owl and Great Gray Owls (Juel, page 11)

The flammulated, boreal owl and great gray owl are species of concern that are sensitive to logging and other management activities. The IPNF provides inadequate management strategies to insure their viability. See for example Hayward and Verner, 1994.

The Selected Alternative is designed based on a landscape plan to spatially define both capable and suitable flammulated owl habitat blocks of 300 acres or larger. The size of these blocks is based on the Montana Partners in Flight Bird Conservation Plan for the flammulated owl (EA, p. 3-140; PF Doc. WL-R39). Habitat for flammulated owl was evaluated using a habitat suitability model derived from data in the Timber Stand Management Record System (EA, p. 3-139; PF Doc. WL-26). Several scientific studies were used to describe the life history, management recommendations, reference conditions, affected environment, and environmental consequences related to flammulated owl. For example, Johnsgard 1988 in Atkinson 1990; Bergman 1983; Bull et al 1990; Hayward 1986; Reynolds et al 1987; Goggans 1986; Howie and Richie 1987; Reynolds and Linkhart 1987; and others (EA, pp. 3-135 through 3-139).

Neither boreal nor great gray owls are species of concern for the Coeur d'Alene River Ranger District or IPNF.

EE.17. Snag Habitat (Juel, pages 11-12)

The IPNF continues to ignore the fact that Bull et al 1997 essentially nullify the IPNFs snag habitat retention and management strategies. The high density of snags and defective trees within old-growth would likely be substantially eliminated with the planned logging. The REA does not adequately consider that snags may be cut down for safety reasons during logging operations.

Snag retention in the Twomile Resource Area is based on the Forest Service's Region 1 protocol for snag retention which was published in 2000 and is therefore more recent than the Bull study cited by Mr. Juel (EA, page 2-24; PF Doc. WL-54). All snags would remain following project activities unless removal is unavoidable or required for safety reasons (EA, page 2-24). Based on past experience, the number of snags removed from a unit for safety reasons is minimal. The snag protocol (which is more restrictive than current Forest Plan snag guidelines) will be met or exceeded in the Twomile Resource Area (EA, pages 2-24, 3-164).

EE.18. Pileated Woodpeckers (Juel, page 12)

The degree to which pileated woodpeckers prefer larger trees/snags for nesting is not recognized by the REA. Also, the USDA Forest Service 1990 states, "To provide suitable pileated woodpecker habitat, strips should be at least 300 feet in width…" The REA also ignores many structural habitat components necessary for the pileated woodpecker.

As described in the 2004 Twomile EA (page 3-152, 3-153), management recommendations for pileated woodpeckers are based on Region 1 snag management protocol and on the guidelines developed in association with the Upper Columbia River Basin (UCRB EIS, as described in Bull et al. 1997; PF Doc. WL-41). Mr. Juel's quote from USDA Forest Service 1990 is specifically stated in our management recommendations for pileated woodpeckers (EA, page 3-153).

The snag protocol (which is more restrictive than current Forest Plan snag guidelines) will be met or exceeded in the Twomile Resource Area (EA, pages 2-24, 3-164).

EE.19. Snag Retention (Juel, page 12)

The REA cites the Northern Region Snag Management Protocol, which lacks peer-review and validation from post-implementation monitoring. Harris (1999) and ICBEMP DSEIS (Appendix 12) also present scientific information that contrasts greatly with the REA on this topic. The REA also fails to cite the results of monitoring that indicate the FS is capable of meeting snag requirements for wildlife species.

Mr. Mihelich made virtually the same comment in his April 16, 2004 letter (see Part 1 of this attachment, Comment E.17). Neither Mr. Mihelich nor Mr. Juel specifies how these two references contrast with the 2005 Revised EA, therefore we are unable to respond in further detail to their comment.

EE.20. Validity of Data (Juel, page 13)

The IPNF has admitted that the use of database habitat information is suspect (US Forest Service, 2000c). The REA does not indicate the degree of accuracy of the databases discussed in the REA and relied on for these analysis, as compared to USDA Forest Service 2000c.

Mr. Juel is citing from the 1998 IPNF Forest Plan Monitoring Report, which was published in 1999 (PF Doc. CR-015). He has taken a single sentence from a paragraph regarding pileated woodpecker habitat; the paragraph in its entirety reads: "When the Forest Plan was written, we did not have the technology to assess mature and old growth forest habitats at the landscape scale. Consequently, the pileated woodpecker was chosen as a surrogate for estimating habitat condition. We now use Geographic Information Systems (GIS) extensively to evaluate habitat abundance and distribution. Habitat modeling based on the timber stand database has its limitations: the data are, on average, 15 years old; canopy closure estimates are inaccurate; and data do not exist for the abundance or distribution of snags or down woody material, which are both important pileated woodpecker habitat components," (1998 IPNF Forest Plan Monitoring Report, page 40, PF Doc. CR-014).

A number of wildlife surveys have occurred on the Coeur d'Alene River Ranger District and elsewhere on the IPNF in the years since that report was prepared (refer to the Forest Plan Monitoring Reports for 1999 to present). In the Twomile Resource Area, information is provided to verify accuracy and timeliness of data used in the wildlife analysis (Revised EA, pages R1-1, R3-28 through R3-35).

EE.21. Non-game Wildlife (Juel, pages 18-19)

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

This same comment was made by both Karen Lindholdt (on page 10 of her February 28, 2003 letter) and Mike Mehilich (on page 16 of his April 16, 2004 letter) on behalf of these organizations.

As stated in our responses (found in Part 1, Comment E.19 of this attachment and in the 2004 Twomile EA, Appendix 5a), this analysis considered both nongame species and their habitat (EA, pages 3-160 through 3-162). The analysis is commensurate with the importance of the impact (CEQ 1502.15), risk associated with the project, species affected, and current knowledge (EA, pages 3-127 and D-7). Please see Part 1 of this attachment (Comment E.19).

F. Comments Related to Recreation & Access

FF.1. ATV Routes (Oppenheimer, pages 5-6)

We are concerned about the national trend in the proliferation of ATVs and would rather not see additional routes designated for ATV use. By adding 9.5 miles of existing logging roads and 4.4 miles of mining roads to the motorized trail system in the Twomile Area, a total of 13.9 miles of road would be added to the motorized trail system. We believe this is an excessive amount of motorized routes to be addition to the system in the Twomile Area.

The existing trail system is inadequate for the current ATV use (EA, p. 3-169). Recreation-based organizations and individuals have requested that trails and road access to the Twomile Area continue to provide recreation opportunities (DN, Section 2.6). The public demand for access to trails and routes for ATVs would be addressed by the proposed trail expansion under the action alternatives (EA, p. 3-170). Trail expansion would be accompanied by some trail obliteration and closure to protect other resource values, as well as to protect trail developments from impacts (EA, p. 3-170). Development of system motorized trails and closure of other non-system trails will reduce erosion and sediment delivery (DN, Section 2.2, Recreation Access Activities and Section 2.6, Responsiveness to Public Concerns; 2004 EA, p. 3-99). The trail expansion would have a minimal effect on soils (EA, pp. 3-117, 3-118). Trail expansion would bisect some existing wildlife security areas, which would reduce security in those particular areas (EA, p. 3-160). However, after completion of all project activities, there would be no change in the amount of elk security in the Twomile Resource Area or in Compartment 113 (EA, p. 3-159).

This comment is similar to one provided by Rein Attemann during review of the 2004 EA. Please refer to Comment F.4 (and our response) in Part 1 of this Attachment.

FF.2. Roads in Storage (Oppenheimer, page 6)

The EA suggests that up to 12.6 miles of roads would be placed into storage following completion of the Twomile project. We are concerned that if gates and/or signs are not in place to restrict ATVs from utilizing stored roads, they will be subjected to the increasing trend in ATV and OHV proliferation. Therefore we would prefer that these roads be fully decommissioned or at the very least the restrictions on stored roads be enforced.

The Roads Analysis Process (RAPs) recommended decommissioning of a total of 10.5 miles of road, with another 12.6 available for decommissioning (PF Doc. TRAN-1, pages 39-43). These activities would be implemented as additional funding becomes available through appropriated funding or grants (EA, page 2-26).

FF.3. Roads Analysis Process (Juel, p. 2)

The Roads Analysis Process should not lead to arbitrary decisions such as expansion of the ATV trail system by using old logging roads. The analysis itself should be reviewable by the public. In this case, what little we know of the process is that it results in unknown impacts on affected resources due to increased ATV traffic and unknown continued damage due to roads that will not receive necessary maintenance due to funding shortfalls.

RAPs is not a decision document (PF Doc. TRAN-1, page 4), but a process designed to help identify and prioritize prospective changes to access in a particular area. The objective of roads analysis is to provide decision makers with critical information to develop road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions (PF Doc. TRAN-1, page 4). The roads analysis will also result in determining the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands PF Doc. TRAN-1, page 5). As directed under the new Federal Register regarding administration of the Forest Transportation System, roads that are no longer needed to meet forest resource management objectives should be decommissioned or considered for other uses, such as trails (PF Doc. TRAN-1, page 5).

Mr. Juel specifically requested the use of this process in his February 24, 2003 letter (PF Doc. PI-12): "We request the FS strongly consider obliterating the watershed-damaging roads in the project area. The FS's Roads Analysis Process (RAP) must be utilized as the basis for information everyone about the status of travelways in the area, and be used for the restoration/access management assessment. This will help us understand why the FS might want to keep a road or travelway on the landscape, and allow us to further comment."

The RAPs completed for the Twomile Resource Area included an assessment of benefits, problems and risks to ecosystem functions and processes; aquatic, riparian zone and water quality; terrestrial wildlife, economics, commodity production (timber, minerals, grazing, water production, special forest products etc.), general public transportation, administration, forest protection, recreation (unroaded, road related, passive use values), cultural and heritage resources, social issues, and civil rights/environmental justice.

Management opportunities (including those to decommission roads, lower maintenance levels, and improve road conditions) were identified and prioritized (PF Doc. TRAN-1, pages 36-39). Recommended actions were listed and those that could be accomplished under the Twomile project were incorporated into the proposed action (EA, page 1-5; PF Doc. TRAN-1, pages 39-43). The effects analysis (including consequences of implementing the proposed changes to access) was documented in the 2004 Twomile EA that was made available to the public for review and comment (PF Doc. PI-73). The Lands Council, Ecology Center, and Kootenai Environmental Alliance all received a copy of the EA (PF Doc. PI-53.

FF.4. Effects on Wildlife (Juel, page 12)

The REA fails to adequately disclose the cumulative impacts of the ever-increasing motorized recreational use on wildlife species.

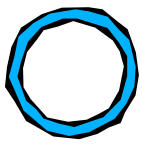
Cumulative effects of motorized recreation were considered in the wildlife effects analysis. For example:

In the cumulative effects to northern goshawk it is stated, "Managing ATV use along specific corridors and eliminating other pioneered ATV trails could protect post fledgling habitat from disturbance," (EA, page 3-135).

In the cumulative effects to fisher it is stated, "Implementation of the District Travel Plan should increase security for the fisher across the Coeur d'Alene River Ranger District. Riparian corridors through private land within the resource area may provide movement corridors for fisher, but most of these areas likely do not provide high quality habitat due to the proximity to urban development and high degree of recreational use," (EA, page 3-147).

In the cumulative effects to Rocky Mountain elk it is stated, "The District Travel Plan restricts motorized use (ATVs and motorcycles) to designated trails across the District (Chapter 2, "Ongoing and Reasonably Foreseeable Activities"). This will improve the effectiveness and size of the elk security areas within the Twomile Resource Area by reducing ATV access into portions of the analysis area where there currently are no restrictions. To provide recreationists with opportunities for motorized recreation, areas within the Twomile Resource Area would be added to the motorized trail system…There will be ATV trails added that would bisect some existing security areas, which would reduce security in those areas. Idaho Fish and Game, who manage elk as a hunted species and monitor their populations, ensure elk viability," (EA, pages 3-159, 3-160.

Additional discussion of motorized recreation is provided in our response to Comment F.4 in Part 1 of this attachment.



G. Comments Related to Other Issues

GG.1. Cumulative Effects (Oppenheimer, pages 6-7)

It is curious why the cumulative effects analysis did not include a number of projects within the Twomile Resource Area. These projects include BLM logging and thinning projects (Rock Creek Release, Island Pilot Fuels Reduction and Forest Health, and South Hill-Wallace WUI Project), as well as Forest Service projects in the South Fork Coeur d'Alene River subbasin (Lookout Divide Beetle Salvage, Placer HFRA, Thin Above Camp, Thin Above Addition, and others).

During scoping, we asked adjacent landowners to identify any ongoing or reasonably foreseeable activities on their lands (PF Doc. PI-20). Reasonably foreseeable activities were identified in the 2004 Twomile EA (pages 2-2 through 2-4; Project Files AD-11), and discussed as

appropriate for each resource (for example, effects to forest vegetation on page 3-28; effects to aquatic resources on pages 3-95 through 3-100; effects to soil productivity on page 3-119; effects to each wildlife species on pages 3-135, 3-141, 3-143, etc.).

Another review of reasonably foreseeable activities was conducted during development of the 2005 Revised EA to determine if there are additional harvest activities proposed on BLM or private lands in the analysis area (page R2-7). A search of the Forest Practices Notices filed with the Cataldo District for the State of Idaho Department of Lands found only one additional harvest proposal. This proposal is for a small harvest of less than 25 thousand board feet of timber in Section 21, T48N, R4E, which lies in a subdivision within the city of Silverton. No additional effects to resources would occur from this minor activity (Revised EA, page R2-7).

With the exception of the South Hill-Wallace WUI proposal, the rest of the projects identified by Mr. Oppenheimer are not within any of the cumulative effects analysis areas for the Twomile project (the cumulative effects area varied depending on the resource). For example, the aquatics analysis followed watershed boundaries, while the wildlife analysis followed management units or habitat areas.

The South Hill project is in the public scoping phase; no specific proposal has been made at this time. Therefore, we are unable to consider potential cumulative effects related to the project (PF Doc. DN-R72).

GG.2. Public Education (Oppenheimer, p. 7)

This project needs to emphasize homeowner education and responsibility to make homes more fire resistant.

The Shoshone County Fire Mitigation Working Group, of which we are a member, is working closely with private landowners, local fire and land management agencies, and other members of the public to help reduce fire risk and mitigation hazards. (EA, pp. 2-2; DN, Section 1.3).

GG.3. Incomplete Sentence (Vig)

It appears some wording was omitted. In line 1 of the 5th paragraph of page R2-8, the sentence is not complete.

Mr. Vig is correct – the sentence was not completed. The sentence should have read, "The limitations of the models used for analysis within the project area are discussed in the EA (Aquatic Resources, pages 3-70, 3-71)."

GG.4. Need for an EIS (Juel, page 1)

The scientific and legal controversy surrounding the issues for which the IPNF is responding to with this REA, along with the likely significant cumulative effects on water quality, fisheries habitat, wildlife and other resources associated with the proposed logging activities, all indicate an EIS is required.

In determining whether to prepare an environmental impact statement (EIS), federal agencies are required to determine whether the proposal is one that normally does or does not require an environmental impact statement (40 CFR 1501.4). If that cannot be clearly determined, an environmental assessment (EA) is prepared to help make the determination on whether to prepare an EIS. If we find no EIS is required, we issue a finding of no significant impact (40 CFR 1501.4, 1508.13). If significant impacts are apt to occur as a result of implementing a proposed activity, an EIS must be prepared (40 CFR 1501.4).

We have prepared the EA and found that there will be no significant effect on the human environment as a result of the project, which is therefore exempt from requirements to prepare an EIS (40 CFR 1500.4(q)).

GG.5. Comment Period (Juel, page 1)

It is unclear just what the context is that you are soliciting comments on this REA. Have you withdrawn the original Decision Notice? If not, it seems that the FS's belief is that it simply has to have a comment period and then proceed immediately with implementing the original decision. Such a course of action wouldn't serve NEPA, the public interest nor the Forest ecosystems.

The 2005 Revised EA was developed as guided by Forest Service Handbook 1909.15, Chapter 10, Part 18.4: "Revise an EA if the interdisciplinary review of new information or changed circumstances indicates that changes in the EA are needed to address environmental concerns that have a bearing on the action or its impacts. Upon completion of the revised EA, prepare a new finding of no significant impact (FONSI) which addresses the effects of the action. Reconsider the original decision and, based upon the EA and FONSI, issue a new decision **or** document that the original decision is to remain in effect and unchanged. A new decision may address all or a portion of the original decision," (FSH 1909.15,10, page 18).

Revisions to the EA were necessary based on a recent 9th Circuit Opinion (Revised EA, page R1-1). The Revised EA was prepared to document additional analysis required by the 9th Circuit Court of Appeals, disclose the results to the public, and assist the decision maker in reaching a reasoned and informed decision in light of the additional information. Also disclosed are changes that are pertinent to this project since release of the 2004 EA (Revised EA, page R1-1, R1-2).

The additional information provided in the 2005 Revised EA clearly validates our finding that the Proposed Action would be the most effective approach to meeting the stated purpose and need for the Twomile Resource Area; therefore I have decided to implement Alternative 2 (the Proposed Action) as described in the 2004 EA and 2005 Revised EA (see Section 2 of this Decision Notice). While I could have simply documented that the original decision would remain in effect and unchanged, I chose to issue a new decision in order to give concerned members of the public every available opportunity to participate in this planning process.

As stated in Section 8 of this Decision Notice, I have reviewed the direct, indirect and cumulative effects of the project activities, and find that there are no significant beneficial or adverse impacts on the human environment; therefore an EIS will not be prepared.

GG.6. Incorporated Comments (Juel, page 1)

We incorporate all previous comments on and our appeal of the Twomile project as comments on this REA. Please explicitly respond in writing to the issues raised in those documents.

Comments received from these organizations regarding the Twomile Resource Area proposal have been considered, and response provided to their substantive comments:

Project Phase	*Response Documentation*
Scoping	*2004 EA, Appendix D*
2004 EA Review	*2004 DN; 2005 DN (Part 1 of this Attachment A)*
2004 DN Appeal	*2004 DN Appeal Transmittal Letter (PF Doc. DN-R49)*
2005 Revised EA	*2005 DN (Part 2 of this Attachment A)*

GG.7. Cumulative Effects Analysis (Juel, pages 2-3)

In order to properly assess cumulative effects as per the Ninth Circuit's decision, the FS must not only quantify the acres and point to locations of past and ongoing actions, but must also state the goals of the projects and if those goals were met, indicate if any assumptions underlying those projects' "purpose and need" statements were correct, and disclose significant monitoring information related to potentially similar impacts from the Twomile proposal. Also the EA must indicate if the results of those projects in any way led to the current Twomile proposal's stated purpose and need.

The 9th Circuit Court did not require the FS to state the goals of past projects and whether those goals were met, did not require that the FS indicate if any assumptions underlying those project's purpose and need statements were correct; did not require the FS to disclose significant monitoring information related to potentially similar impacts from the Twomile proposal; and did not require that the FS indicate if the results of those projects in any way led to the current Twomile proposal's stated purpose and need (PF Doc. DN-R50).

However, past activities were thoroughly discussed in the 2005 Revised EA, including the type of activity, project name, timeframe in which it occurred, location, and scope of the activities, including acres or miles if known; and the effects to vegetation, aquatics, soils, wildlife, and fire/fuels (Revised EA, pages R2-1 through R2-7).

Rather than discussing general goals of the projects, we discussed objectives of specific actions, such as regeneration harvest to initiate and manage new stands that were planted with root disease-resistant species; thinning units to reduce the potential for crown fires, etc. (Revised EA, pages R2-2 through R2-7).

The purpose and need for the current Twomile Resource Area proposal was developed in response to goals and objectives of the National Fire Plan (2002; PF Doc. FF-20) and Shoshone County Fire Mitigation Plan (2002; PF Doc. FF-36), to help move the resource area towards the desired future conditions described in the Forest Plan (1987; PF Doc. REF-1); as well as being responsive to recommendations made under the Interior Columbia Basin Ecosystem Management Project (1996; PF Doc. REF-3) and the Geographic Assessment (1998, PF Doc. PROC-2) for the Coeur d'Alene River Basin (Revised EA, pages R1-3 through R1-6).

A synopsis of the cumulative effects analysis is provided in the DN (Section 4).

Letter #01

DIRK KEMPTHORNE
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April 15, 2004

Kerry Arneson, NEPA Coordinator
Coeur d' Alene River Ranger District
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Coeur d' Alene, ID 83814-5899

RE: Twomile Environmental Assessment

Dear Ms. Arneson:

Staff reviewed the Twomile Environmental Assessment. We previously commented on this project during the scoping period in February 2003.

All action alternatives have taken our suggested mitigation items to protect the trail system within the Twomile area. In addition, the Coeur d' Alene River Ranger District also proposes to designate 9.5 miles of old logging roads to accommodate ATVs across the range of action alternatives. We believe that the designation of these old logging roads as ATV trails is a proactive step in trying to provide for local recreation opportunities.

We were pleased that the Coeur d' Alene River Ranger District designed a restriction on winter logging from December 15 through April 1 as a project feature. This feature is important to retain local snowmobiling opportunities.

In Chapter 2, on page 2-28, the project covers wildlife mitigation requirements. One requirement would close all roads opened, constructed or reconstructed during the project activities with a gate, and then more effectively close these roads following project activities. While this is an important wildlife mitigation requirement, it is also an important recreation mitigation requirement.

If roads are not effectively closed during or after project activities, the public can become accustomed to using these roads. Trying to close these roads after project activities can become more difficult and controversial. Letting the public know that these roads are just project related roads decreases future expectations of new access routes.

The Existing Recreation Access Conditions are covered on Page 3-169. The section uses the 2003 Idaho Statewide Comprehensive Outdoor Recreation and Tourism Plan as a reference. The EA makes the assumption that recreation participation rates are the same in the Twomile Resource Area as they are statewide.

The 2002 Idaho Outdoor Recreation Survey (which the participation rates in the document were based on) was a statewide survey that measured statewide participation rates. We expect that participation rates in the trail based activities listed in the EA (ATV, Motorcycle, Hike, Bicycles) would be different in the Silver Valley than on a statewide basis.

We will be doing a study on recreation participation rates that will track down participation rates on a regional and hopefully a county basis that will be released early next year. In the meantime, we suggest that the EA be reworded to "The 2003 Idaho Statewide Outdoor Recreation and Tourism Plan found that approximately 30% of Idahoans use ATVs, 15% use motorcycles, 45% hike, and 10% use bicycles. Visitors to the Twomile Resource Area exhibit similar participation rates."

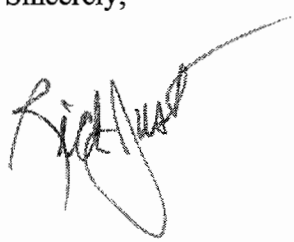
The EA indicated that 0.4 miles of single-track trail would be added to the trail system through relocation of some of the trails. The relocations would direct the trails away from closed roads. This relocation will also have the benefit of reducing steep grade located at the entrance and exit of the road prism.

The EA also stated on Page 3-170 that waterbars would be constructed on portions of grade that exceed 20%. We believe that is generally more desirable in the long run on steep portions of trail (grades that exceed 20%). Trails built to a lesser grade and which have a rolling grade have fewer erosion problems. The Coeur d'Alene River Ranger District should relocate the steep sections when possible.

The EA stated on Page 3-171 that the project would construct a parking area near the confluence of Twomile Creek and East Twomile Creek to accommodate recreation use. This project component as well as the trail relocation, and ATV trail designation would be eligible for an Off Road Motor Vehicle Fund (ORMV) or Recreation Trails Program (RTP) grant. The grant application deadline for these programs is January 28, 2005. If you are interested in applying for these funds, please contact Tami Johnson, North Region Grant Specialist at (208) 208-769-1511. Tami can provide you with further information about these grant programs.

We are pleased that the district consulted with local recreationists during project development. The project adequately protects and improves recreation opportunities throughout the range of alternatives. We appreciate the opportunity to participate in the planning process. If you have any questions about our comments, contact Jeff Cook, Outdoor Recreation Analyst at (208) 334-4180 ext. 230.

Sincerely,



Rick Just, Coordinator
Outdoor Recreation Data Center

Letter #02
Rec'd 19 April 2004

Kootenai Environmental Alliance

NEPA Coordinator
Coeur d'Alene River Ranger District-Fernan Office
2502 East Sherman Avenue
Coeur d'Alene, ID 83814-5899

April 16, 2004

NEPA Coordinator:

The following comments are being submitted in response to the Twomile EA.

A. Idaho Water Quality Standards (WQS):
It is indicated on page 3-67 there is an approved TMDL for the South Fork Coeur d'Alene River. The discussion on page 3-67 includes information that describes three streams in the Twomile project area, Twomile Creek, Nuckols Gulch, and Revenue Gulch that are tributaries to the South Fork CDA River. On page 3-72 the discussion of Impaired Waters includes the following sentence. "All the streams in the Twomile Resource Area flow through private land or BLM managed land in their lower reaches and then flow into South Fork Coeur d'Alene River."

Idaho WQS are described in IDAPA 58.01.02. IDAPA at 58.01.02.054.04 describes the regulations that apply to high priority water quality limited water bodies and the discharge of pollutants such as sediment into water quality limited water bodies. In section 04 these regulations require that the total load must remain constant or decrease. In Chapter 3 of the EA, on page 3-91, Table 3-AQ-5 shows the amount of increased sediment yield with Alternatives 1 through 4. The proposed action, Alternative 2, would result in increased sediment releases over current sediment yield in the three watersheds from 3% to 8%. Alternative 3 would also result in increased releases of sediment in the three watersheds. These increases range from 3% to 9%.
The sediment increases associated with Alternatives 2 and 3 clearly do not comply with Idaho WQS listed in IDAPA at 58.01.02.054.04.

The releases of sediment associated with Alternatives 2 and 3 also is a violation of Idaho WQS at IDAPA 58.01.02.080.01 "No pollutant shall be discharged from a single source or in combination with pollutants discharged from other sources in concentrations or in a manner that:
a. Will or can be expected to result in violation of the water quality standards applicable to the **receiving water body or downstream waters**;" (emphasis added)

B. Accuracy of Sediment yields calculations:
Table 3-AQ-7, page 3-94 describes the existing sediment risk for Twomile Creek as being 36 tons per year.
Table 3-AQ-8, page 3-95 shows the "Estimated sediment **delivery** (tons) under the Twomile Resource (all sediments sources from inventories data only in

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kea@kealliance.org • www.kealliance.org

Twomile Creek)". The figure of 36 tons is given for the no Action Alternative, both Action Alternatives, and also Alternative 4.
In light of the sediment yield information presented on page 3-91 regarding the increase in sediment yield of between 3% and 9% for the Action Alternatives, how can there be no increases of sediment over the figure of 36 tons with either Action Alternative when Alternatives 1 and 4 do not result any increase in sediment yield?
What is the scientific basis for the conclusion that increases of sediment yield between 3% and 9% will not result in any increased sediment above the figure of 36 tons? NEPA at 40 CFR 1500.1(b) requires high quality information and accurate scientific analysis.

The DN and FONSI must supply high quality information with accurate scientific analysis that was used as part of the sediment analysis process that will show how the conclusion was arrived at in the EA that there would be no sediment yield increases with Alternatives 2 and 3 is spite of the sediment yields that would increase from between 3% and 9%.

C. Sediment Yield Charts:
The Sediment Yield charts in the EA, pages 3-90 and 3-91, list the Twomile, Nuckols Gulch, and Revenue Gulch subwatersheds with the existing sediment yields and the increases that would occur as a result of Alternatives 2, 3 and 4.
Concerning Twomile, it appears that in 1980 the sediment yield for this subwatershed was approximately 135% over natural conditions.
Concerning the Nuckols Gulch subwatershed, it appears that in 1980 this subwatershed had a sediment yield increase that was approximately 50% over natural conditions.
Concerning Revenue Gulch subwatershed, it appears that in 1980 this subwatershed had a sediment yield increase that was approximately 70% over natural conditions.

The DN and FONSI should provide additional information that will indicate the reasons why the baseline sediment yield conditions prior to 1980 were not included in the Tables shown on pages 3-90 and 3-91. If this information is not available, the DN and FONSI should describe the scientific processes that were used to select the year 1980 as a baseline for sediment increases in the analysis area.

D. Corrugated Steel Pipes (CSP) and Idaho FPA:
There are a number of instances in Chapter 3 of the EA where culverts and culvert failures in the analysis area are discussed, including pages 3-71, 3-75, and 3-94. The discussion on page 3-75 mentions culverts that may plug at their inlets and then fail, particularly on roads that are not maintained. The issue of undersized pipes is mentioned on page 3-94.
Idaho Forest Practices Act at IDAPA 20.02.01.040 contains regulations regarding the minimum size of culverts that to be installed in forest roads. The minimum acceptable size is 18 inches, and an 18-inch pipe can flow 6 cfs. IDAPA at 20.02.01.040.02e has specific regulations that apply installations of new culverts and reinstallation on roads after flood events or other catastrophic

events. The regulations at 040.02e require the installation of culverts that can carry a 50-year peak flow.
CSP have a minimum design life of 70 years, [Corrugated Steel Pipe Institute; Canada, The National Corrugated Steel Pipe Association, USA, and the American Iron and Steel Institute].
The issue of potential culvert failures for the 16 pipes in the Twomile drainage relates to lack of maintenance of the culverts and high peak flows. Idaho FPA regulations at IDAPA specifically require maintenance of culverts on active and inactive forest roads, IDAPA 20.02.01.040.04.
This same IDAPA regulation also contains specific regulations that concern culverts and long-term inactive forest roads and permanently abandoned forest roads.

There is a lack of high quality information and lack of expert agency comments in Chapter 3 regarding the potential failures of the culverts in the project area in light of the Idaho FPA regarding culvert maintenance. The culvert failure analysis in Chapter 3 does not indicate Idaho FPA regulations historically or currently are being complied with in the project area. There is a lack of high quality information or accurate scientific analysis of the reasons why fully functional culverts 18 inches and larger designed to handle 50-year flows would fail in the project area.

E. Sediment risk reduction/WQS regulations:
It is alleged in Chapter 3 of the EA, pages 3-75 and 3-94, that there is a risk of 36 tons of sediment per year being routed and delivered downstream if some culverts were to fail. On pages 3-94 and 3-95 it is alleged that there would be a reduction of sediment by 30 tons per year as a result of the removal of 13 culverts.
The Idaho Department of Environmental Quality (DEQ) in their November 4, 2003 letter to the IPNF Forest Supervisor described a number of water quality issues that include Idaho WQS, TMDLs and logging projects in waterbodies that are water quality limited. The entire letter is enclosed as Attachment 1.
The language on page two of the November 4, 2003 letter indicates that theoretical sediment risk reduction activities in fact ..."do not count towards pollutant reduction credit."

The combined issues of; lack of culvert maintenance, estimated sediment risk reduction, and the interpretation of Idaho WQS by Idaho DEQ require a more through sediment risk discussion than is found in the EA. There should be either a supplemental EA to address the water quality issues surrounding accurate scientific analysis of sediment risk reduction associated with the Twomile project.
If a supplemental EA will not be produced, the DN and FONSI must provide accurate scientific analysis with expert agency comments that supports the contention any sediment released with Alternative 2 or 3 would not impact any waterbodies located downstream from the analysis area.

F. WATSED model:
In Chapter 3, on pages 3-86 and 3-87, it is indicated the model was used to calculate water yields, peak flows, and sediment yields. On page 3-71 it is

mentioned that rain-on snow events, in-channel responses, and stream bank erosion cannot be calculated with the model. It is stated on page 3-71 that the model incorporates the results of r-o-s events and in-channel responses ..".. in the calibration of its driving coefficients." The driving coefficients are not displayed in the EA and there is no further discussion of these coefficients in the EA.

The WATSED discussions in Chapter 3 did not mention that the model cannot distinguish between fine and coarse sediment, and therefore there are no coefficient files, [Attachment #2].
Additionally, the model has been found to underestimate sediment production by up to 320%, see Attachment #3.

Since the model has a number of significant flaws, it is critical real coefficients exist that account for event based processes and functions, including r-o-s events, and specific in-channel responses. The DN and FONSI must supply to page number(s) from the WATSED manual that specifically discusses the coefficients mentioned on page 3-71 of the EA.

Fisheries:
It is indicated in the EA, pages 3-80 and 3-81, that streams listed in Table 3-AQ-3 flow into fish-bearing waterways such as the South Fork Coeur d'Alene River. Westslope cutthroat trout (wct) are found in Twomile Creek and the South Fork Coeur d'Alene River. It is stated on page 3-82 "Westslope cutthroat trout have been identified in nearly all streams in the Twomile Resource Area." On page 3-84 the temperature discussion in the second paragraph regarding Twomile Creek indicates temperature criteria for wct spawning and incubations periods were periodically exceeded in 2002. The East Fork Twomile Creek discussion on page 3-84 mentions one human caused fish barrier and an additional in-channel barrier is also mentioned. Bedload problems in the East Fork Twomile Creek are cited on page 3-84 that are degrading downstream fish habitat. "Through the hydrologic dynamics of the channel, this bedload is beginning to erode and scour into the channel, resulting in **downstream fish habitat and hydrologic function loss** and likely the failure of the crossing mentioned previously." (Emphasis added)
Concerning sediment and fisheries, the following statements are found on page 3-92. "Increases in sediment delivery can affect fish habitat by filling in the interstitial spaces in spawning gravels. Resulting in decreased water flow through the gravels that is imperative for oxygen delivery and waste removal for incubating eggs. Filling of interstitial spaces can also displace macroinvertebrates, thereby reducing an important food source for fishes."

The water yield analysis on page 3-89 describes estimated mean peak flow increases for Action Alternatives 2 and 3 in the project area that would range between 5.3% and 5.7%. Peak flow increases of 7% for the Twomile watershed would occur with each Action Alternative, page 3-88.
In spite of the statements made on page 3-84 regarding current bedload problems, the sediment issues described on page 3-92, and the peak flows increases that would occur with each Action Alternative, the following statement is made on page 3-89. "Salmonid redds existing in the cumulative

effects analysis area would not be directly or indirectly affected by the expected increase in water yield."
Since there already are sediment problems with associated downstream fish habitat and hydrologic function loss in the Twomile Creek watershed, what is the basis for the statement on page 3-89 that increased water yields in the Twomile Creek watershed would result in no effects to salmonid redds in the cumulative effects analysis area? All of the watersheds in the analysis area are currently Functional at Risk and the baseline conditions are nowhere near natural background conditions, pages 3-90 and 3-91, figures 3AQ-9, 10, and 11.

National Fire Plan (NFP) /Fire issues:
KEA submitted written comments to District Ranger Stringer on February 26, 2003 in response to the January 28, 2003 Twomile project letter. Pages 1 and 2 of the KEA letter contained a number of comments regarding the NFP and fire issues. The brief NFP discussion on pages 1-2 and 1-3 of the EA did not address the issues raised in the KEA letter of February 26,2003. There are no responses in Appendix D of the EA to the NFP issues and fire issues that were cited on pages 1 and 2 of KEA's February 26, 2003 letter.

Old Growth:
Many adverse consequences to soil, ecological processes, wildlife, and other elements of the natural environment are associated with logging, including thinning. (Ercelawn, 1999; Ercelawn, 2000.) For example: "Salvage or thinning operations that remove dead or decayed trees or coarse woody debris on the ground will reduce the availability of forest structures used by fishers and lynx." (Bull et al., 2001.)

The EA fails to demonstrate that the proposed activities, in combination with cumulative impacts of all past, ongoing, and reasonably foreseeable actions on lands of all ownerships in the analysis area, would be in compliance with all Forest Plan old growth standards. Similarly, the EA fails to demonstrate compliance with Forest Plan Wildlife Standards 7a and 7b. A big problem with the EA's analyses for old-growth Sensitive and Management Indicator Species (MIS) is that the connection between the areas designated for old growth management and old growth species, i.e. how these acres contribute to old growth species' viability, is missing. As far as we're aware, the IPNF has never determined minimum viable populations for any MIS or TES species as NFMA requires, nor has it specified the amount and distribution of habitat necessary to maintain viable populations.

The EA makes statements and assumptions about historical conditions and desired future conditions, most of them based upon grossly inadequate data. The contentions that present conditions are somehow "unnatural" runs counter to more enlightened thinking on such matters. For example, Harvey et al. 1994 state:

> Although usually viewed as pests at the tree and stand scale, insects and disease organisms perform functions on a broader scale.
>
> ...Pests are a part of even the healthiest eastside ecosystems. Pest roles—such as the removal of poorly adapted individuals, accelerated

decomposition, and reduced stand density—may be critical to rapid ecosystem adjustment

...In some areas of the eastside and Blue Mountain forests, at least, the ecosystem has been altered, setting the stage for high pest activity (Gast and others, 1991). This increased activity does not mean that the ecosystem is broken or dying; rather, it is demonstrating functionality, as programmed during its developmental (evolutionary) history. (Emphasis added.)

We agree that a shift in forest structure including the pattern or arrangement of the IPNF forest communities has occurred, and could affect resilience and the sustainability of historic ecological relationships. Our agreement is based upon our awareness of the degree of logging and roadbuilding in recent decades, causing significantly reduced amounts of late successional forest habitat, snags, large woody debris, mature and late successional interior habitat, and habitat connectivity. However, there is no data that indicates that a shift due to increases in tree density is anywhere near as significant a factor in affecting resilience and the sustainability of historic ecological relationships as logging and roadbuilding has--and will to an increased degree--if the heavy-handed logging/restoration methods still being proposed are continued.

The EA on page 3-28 states that allocation of old growth with the Resource Area follows current old growth definitions from the Forest Plan and the Regional Task Force Report (Green et al 1992). Was the allocation of old growth in the Resource Area in complete conformance with the Regional Task Force Report?

The EA in Chapter 3 fails to disclose which areas of allocated old growth meet scientifically accepted criteria for old growth. Nor does the old growth analysis in Chapter 3 disclose if all areas proposed for logging were analyzed to ensure that old-growth trees would not be logged.

The IPNF has failed to cite any evidence that its "managing for old growth habitat" (i.e., logging old growth) strategy will improve old growth species habitat over the short-term or long-term. In regards to this popular FS theory:

> (T)here is the question of the appropriateness of management manipulation of old-growth stands... Opinions of well-qualified experts vary in this regard. As long term results from active management lie in the future – likely quite far in the future – considering such manipulation as appropriate and relatively certain to yield anticipated results is an informed guess at best and, therefore, encompasses some unknown level of risk. **In other words, producing "old-growth" habitat through active management is an untested hypothesis.**

(Pfister et al., 2000, pp. 11, 15. emphasis added). There is no data to lead us to believe that anything other than logging old growth areas in the Twomile project area will reduce their natural qualities, reduce their habitat value for wildlife, and reduce their resiliency to subsequent disturbance, such as fire.

Then there is the question of the adequacy of the 10% old-growth Standard itself. Lesica (1995) stated that the Northern Region of the FS's general goal of maintaining 10% of forests as old growth may extirpate some species. This is based on his estimate that 20-50% of low and many mid-elevation forests were in old growth condition prior to European settlement.

There are also a number of issues relating to the accuracy of the TSMRS and old growth allocation for the 15 stands listed in Table 3-VEG-1, page 3-9 of the EA, and the 3 stands shown on the OGMU Map. In June of 2003, KEA received a copy of the IPNF's TSMRS database. The database was current as of June 5, 2003. A review of the 18 stands cited using the STANDS: table section and STANDS_COMPONENTS section of the TSMRS shows a number of instances where there is missing, incomplete, or questionable old growth data.
Starting with the STANDS_COMPONENTS section, for stands 11301014 and 11301015 there is no data at all for these stands. Stand 11302028 lists PP with an average dbh of 32", and 1 tree per acre. There is no year listed under Comp_Origin for this stand. Stand 11302023 has a Comp_Origin of 1904. Stand 11302029 has a Comp_Origin of 1891 and 2031 has a Comp_Origin of 1909.
For stands 11305022 and 5023, there is no data at all for these stands.
All of the stands cited are classified as old growth, but stand 11301011 is not classified as old growth. This 59-acre DF stand has an avg dbh of 20" and with a Comp_Origin of 1874.
Stand 11301012 is not classified as old growth but it has a Comp_Origin of 1879 and a Size-Class year of 1870 as noted in the STANDS: table section.
Stand 11305017 is not classified as old growth but it has a Comp_Origin of 1852, with there has GF with an avg dbh of18", avg height of 101' and 40 TPA.

Stand 11102014 shown on the Old Growth map and listed as being old growth is classified as IMSA with a Size-Class year of 1910 in the TSMRS.
The following stands in Compartment 113 do not have a special-use code of 9, even though there are listed in the EA, page 3-9, as being old growth. These stands are: 1014, 1015, 2028, 2029, 2030, 2031, 5021, 5022, and 5023. A number of these stands are listed as having a Size-Class of 1889 or 1890.

The missing, incomplete and questionable data does not indicate a high quality information or accurate scientific analysis required as part of the old growth analysis in the EA. The DN and FONSI must supply a through examination of the processes used to designate true old growth trees in the Twomile project area. There also needs to be expert agency comments that describe the reasons stands that do not appear to be actual old growth were classified as old growth in the project area.

Wildlife:
The EA fails to demonstrate full project compliance with the Lynx Conservation Assessment and Strategy. The conclusion that the proposed project, in conjunction with other ongoing or foreseeable actions, will "not likely adversely affect" the Canada lynx absent demonstrating full consistency with the LCAS, is without adequate basis.

The U.S. Fish and Wildlife Service is, or soon will be designating critical habitat for the Canada lynx. All or portions of the project area are likely, or ought to be, designated

critical habitat. The FS should not be causing more damage to potentially critical habitat.

A previous FS EIS (USDA Forest Service, 1999) discussed the relationship between wildlife species and the habitat components found only in mature and old growth forests. Please discuss the discrepancies between the EA and these discussions from USDA Forest Service, 1999:

> Fishers occur most commonly in landscapes dominated by mature to old-forest cover." (III-254.) "Fishers prefer habitats with high canopy closure (greater than 80 percent) and avoid areas with low canopy closure (less than 50 percent). ...The habitat requirements of fishers are thought to be associated with the physical structure of the forest and associated prey. This structure includes the vertical and horizontal complexity created by a diversity of trees sizes and shapes, light gaps, dead and downed wood and layers of overhead cover. Large-diameter spruce and grand-fir snags and large downed material are used for denning and foraging. Fishers tend to avoid non-forested areas. (III-254.)
>
> Many wildlife species occurring on the IPNF prefer or only occur in mature and old growth forests. Mature and old forests are more likely than younger forests to provide habitat for species which prefer large trees, structural and biological diversity, and closed canopies, and/or which depend on snags or down logs for nesting, foraging or raising their young. (Id. at III-243.)
>
> Over 40 wildlife species depend on snags (dead trees) for their forage, cover or a place to raise their young. (III-244.)
>
> Existing structurally immature stands could provide old-growth habitat over time if not disturbed or if managed to maintain large, old, diseased and dead structural components of the forest within the levels needed to provide suitable habitat. (III-243.)
>
> Most species identified as "Sensitive" by the Forest Service are associated with later successional habitats, or habitat and cover types in short supply (such as cottonwood communities, large standing dead trees or large downed trees.). (III-244.)
>
> Large-diameter snags provide habitat for the greatest variety of cavity users and remain standing longer than smaller snags. (III-244.)
>
> Snags provide den sites for fishers and other mammals, and roosts for several species of bats and owls. (III-244.)
>
> Goshawks have habitat requirements associated with components and attributes of late successional forests. While associated with mature to old growth habitat, they utilize other successional stages. For example, feeding habitat can be found in pole-sized timber stands. ...Old growth is important for northern goshawks not only for prey species habitat but also

for the large trees that provide the substrate for their substantial nest structures. (III-255.)

In the western United Stares, marten are most abundant in mature to old-growth true-fir or spruce-fir forests and generally avoid open, drier coniferous forest. They prefer forest stands greater than 40 percent tree canopy closure, which protects them from predators and enhances the moist conditions favorable for prey species. (III-257.)

Marten are closely associated with mature to old-growth timber stands, preferring moist habitat types where small mammals are more abundant. American marten prefer stands with greater than 40 percent canopy closure, and tend to avoid those stands with less than 30 percent closure. In addition to a closed canopy, marten require an abundance of large downed logs and snags. This provided secure resting locations, denning habitat and winter access to small mammals living beneath the snow. (III-580, 581.)

Pileated Woodpecker. This species nests and roosts in cavities in large diameter (20 inches diameter or greater) live or dead trees. It selects nest trees in clumps of snags in stands with at least 70% canopy cover. ...Pileated woodpeckers feed on beetles, carpenter ants and other insects in live and dead trees logs and stumps. (III-258.)

The EA completely dismisses project impacts on the MIS pine marten. Ruggerio, et al. (1998) and Bull and Blumton, 1999, indicate that vertical and horizontal diversity provided by snags and large down woody debris are important habitat characteristics for the MIS pine marten. Their research shows that the kind of treatments as proposed for the Twomile Project reduce the availability of prey species for the marten.

Old growth allows martens to avoid predators, provides resting and denning places in coarse woody debris and large diameter trees, and allows for access under the snow surface. A FS Northern Region summary of old-growth habitat needs of martens reviewed research suggesting that martens prefer forest stands with greater than 40% tree canopy closure and rarely venture more than 150 feet from forest cover, particularly in winter (USDA Forest Service, 1990). It also cites research suggesting that at least 50% of female marten home range should be maintained in mature or old growth forest.

Consideration of habitat connectivity is essential to ensuring marten viability:

> To ensure that a viable population of marten is maintained across its range, suitable habitat for individual martens should be distributed geographically in a manner that allows interchange of individuals between habitat patches (USDA Forest Service, 1990).

The FS has otherwise recognized the need for updated guidelines for the pine marten: "Apply snag and down woody material guidelines from the Upper Columbia River Basin Assessment to improve marten habitat" (USDA Forest Service 2000c, p. 39).

However, The EA makes no determination regarding the significance of the pine marten habitat losses associated with past or proposed vegetation treatments. This does not insure viability of the species, as NFMA requires.

The EA, page 3-128, dismisses project and cumulative effects on habitat for boreal toads. This does not make sense, since such small populations that are likely to persist are especially susceptible to fragmentation and extirpation due to isolation of smaller populations. See Maxell, 2000.

According to official FS policy, the FS "must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project." FSM 2670.45. The FS never has. According to FS experts, population viability analysis is not plausible or logical, from a scientific standpoint, at the project level such as the scale of a timber sale(s), absent some tiering to a larger-scaled study. Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas (often referred to as "landscape scales"). The FS has failed to tier the viability analyses for Sensitive species that would be impacted by the Twomile project to a landscape analysis of Sensitive species viability that would allow for some assurances to the public that species viability is currently being insured in spite of continued habitat destruction and/or alteration.

Viability of species is not merely an issue of a given project area. As a matter of science, a larger area must be considered. In their response to comments on the Dry Fork Vegetation and Recreation Restoration Project Environmental Assessment, Lewis & Clark National Forest, 2000, the FS acknowledged 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. (Appendix D at p. 9.)

Ruggiero, et al. 1994 provide guidance for reconciling the disparity between the geographic size of project analyses vs. the needs of species: "The disparity between the scale of a local management action (e.g., a timber sale) and the scale of the ecological response (e.g., species viability) is a fundamental problem in assessing population viability."

Both Ruggiero, et al. 1994 and Lindenmayer, et al. 1993 provide discussion on why population viability analysis is the best available tool assessing population viability, the latter providing examples of population viability analysis being used for several species of wildlife and one plant species. Lacy and Clark, 1993 provide an example of population viability analysis used to design a computer simulation of risk of extinction of the pine marten.

In a scientific document prepared as a part of ICBEMP, Witmer, Martin, & Sayler (1998) make recommendations which reinforce our comments about population dynamics, population viability analysis, and monitoring. From the Abstract:

> Forest carnivores in the Pacific Northwest include 11 medium- to large-sized mammalian species of canids, felids, mustelids, and ursids. These carnivores have widely differing status in the region, with some harvested in regulated furbearer seasons, some taken for depredations, and some protected because of rarity. Most large carnivores have declined in numbers or range from human encroachment, loss or modification of forest habitat, accidental deaths (e.g., mortality from vehicles), illegal kills, and our inability to adequately monitor and protect populations. Efforts to reverse these trends include new approaches to reduce conflicts with humans, research to better define habitat needs, formation of expert carnivore working groups, and use of Geographic Information System models to predict specific impacts of habitat modifications. Long-term preservation of large carnivores in the region is problematic unless we reduce forest fragmentation and conflicts with humans and improve our ability to quantitatively integrate population dynamics with landscape level habitat requirements. (Emphasis added.)

The FS has thus far failed to "improve our ability to quantitatively integrate population dynamics with landscape level habitat requirements" of MIS and TES species.

Methodology exists for determining the presence of indicator and Sensitive wildlife species presence in forest areas and/or for monitoring population levels (Bachman et. al. 1990, Becker 1991, Bull et al. 1990; Copeland 1993, Foresman et. al. 1998, Raphael 1994, USGS 1997, Watson et. al. 1999, Weaver, et al., 1997; Zielinski et. al. 1996, Zielinski et. al. 1995). Some of these techniques, such as snow track surveys, are useful for multiple species in single transects.

The issue of providing for the larger landscape needs of far-ranging forest carnivores (including the grizzly bear, gray wolf, wolverine, fisher, pine marten, lynx, goshawk, etc.) reveals the need to utilize the principles of Conservation Biology on a landscape level. Core areas of relatively undisturbed habitats need to be maintained. Linkages with other core areas need to be established, providing sufficient habitat components so the linkages, or corridors, are functional for genetic interchange purposes. Both core areas and linkages should be the focus of the watershed rehabilitation and recovery discussed above (such as road removal). Buffer zones around core areas should also be recognized in their contribution to habitat needs for these wildlife species.

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The continued fragmentation of the IPNF is also a major issue. It is documented that edge effects occur 10-30 meters into a forest tract (Wilcove et al., 1986). The size of blocks of interior forest that existed historically before management (including fire suppression) was initiated must be compared to the present condition. Again, this should be a landscape ecology analysis which looks at the larger picture of the fragmentation of habitat in surrounding concentric circles.

Logging, roadbuilding and other disturbance associated with the project and other cumulative impacts could affect goshawk nesting, post-fledging family habitat, alternative nesting, foraging, competitors, prey and potential habitat, including areas far from cutting units. Research in the Kaibab National Forest found that goshawk populations decreased dramatically after partial logging, even when large buffers around nests were provided (Crocker-Bedford, 1990).

Reynolds et al. (1992) provide a basis for a northern goshawk conservation strategy that could be implemented if forestwide habitat considerations were to be truly taken into account. Graham, et al. 1999, USDA Forest Service 2000b, Iverson et al. 1996, and Suring et al. 1993 are other examples of northern goshawk conservation strategies the FS might adopt for this Forest or Region, if emphasis was more appropriately placed on species conservation and insuring viability rather than justification for resource extraction.

Research suggests that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be maintained (Suring et al. 1993, Reynolds et al. 1992). USDA Forest Service 2000b recommends that forest opening greater than 50-60 acres be avoided in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (Id.). Research suggests that a localized distribution of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

It is not clear from the EA, pages 3-133 and 3-134, whether goshawk viability is in fact being maintained or how goshawk viability would to be maintained into the future if this and other cumulative actions proceed. The FS has not incorporated up-to-date quantitative science into this analysis and has therefore not demonstrated that it is maintaining goshawk viability.

Goshawks are often associated with a thick overstory cover and areas with a large number of large trees. For example, Hayward and Escano (1989) recommend an overstory canopy between 75 and 80%.

Please consider the scientific information provided in Center for Biological Diversity, 2004, which conflicts with the EA or included vital information on goshawks missing from the EA.

The issue of fragmentation should have been more thoroughly considered with respect to goshawks. Other edge-adapted species may compete with the goshawk and displace the goshawk if adequate amounts of forest interior habitat is not provided. Crocker-Bedford (1990) recommends that a foraging area of >5000 acres of dense forest, in which no logging is permitted, be designated for goshawks, with additional areas of 2500-5000 acres of more marginal habitat designated beyond this 5,000 acre foraging area.

The EA discloses that the status of the Fisher is precarious, page 3-145. Additionally, the uncertain and precarious population status of the fisher is described in Witmer, et al., 1998:

> The status of the fisher in the Western United States is poorly known but generally perceived as precarious and declining. This is a

> serious issue alone, but it also is a component of the larger problem of the decline of biological diversity. Recovery of species of concern must necessarily focus on the population level, because this is the scale at which genetic variation occurs and because population [sic] are the constituent elements of communities and ecosystems. Systematic habitat alteration and overexploitation have reduced the historical distribution of fishers in suitable habitat in the interior Columbia basin to isolated and fragmented populations. Current populations may be extremely vulnerable to local and regional extirpation because of their lack of connectivity and their small numbers (Id. at 14, internal citations omitted).

Jones (undated) provides an example of a conservation strategies for the fisher, something the FS has so far neglected for this Sensitive species. And the adjacent Kootenai NF's beginnings of a conservation strategy for fisher is discussed in Johnsen (1996).

Lofroth (1997) in a study in British Columbia, found that wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993). Please explain why this scientific information should be discounted for the purposes of the Twomile project.

Cherry (1997) states:

> The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. The cumulative impacts of the ongoing fire suppression policy are also not adequately considered.

The EA, page 3-137, indicates that the Sensitive white-headed woodpecker doesn't reside in the project area. We are unaware of the FS having ever established what the range of this bird is across the IPNF.

Snags are a habitat feature important for maintaining old-growth species and biodiversity. The EA fails to disclose how much snag loss would be expected because of OSHA safety concerns .

The paltry number of snags and green tree replacements to be retained in some logging units, and the failure to specify snags of adequate size, contrasts with

scientifically-determined habitat needs acknowledged elsewhere by the FS. The Forest Plan and Regional snag guidelines lack peer-review and validation from post-implementation monitoring. Harris (2000) and ICBEMP DSEIS Appendix 12 present scientific information that contrasts greatly with the Chips Ahoy DEIS on this topic.

The EA fails to cite the results of monitoring results that indicate the FS is capable of meeting snag requirements for wildlife species.

Bull, et al., 1997 state:

> This document presents new information on the retention and selection of trees and logs most valuable to wildlife.
>
> ...Current direction for providing wildlife habitat on public forest lands does not reflect this new information. Since the publication of Thomas and others (1979), new research suggests that to fully meet the needs of wildlife, additional snags and habitat are required for foraging, denning, nesting, and roosting. Although we do not suggest specific numbers or snags to retain by forest type, tow recent studies indicate that viable woodpecker populations occurred in areas with about four snags per acre.
>
> We suggest that the next step in snag management should involve creating a model that incorporates the new information on woodpecker foraging substrates (live trees, snags, and logs), home range sizes, number and characteristics of roost trees, multiple occupancy of snags, and needs for other habitat structures. Once this information is incorporated, the model may suggest changes to guidelines that specify numbers of snags and other habitat features by forest type and geographic area. Additional information on fall rates of snags, foraging needs of black-backed and three-toed woodpeckers, relation of the density of woodpeckers to that of secondary cavity nesters, and relation of snag density to woodpecker density would greatly improve the model.

The IPNF (USDA Forest Service, 2000c) has also recently called for updated snag guidelines: "Apply snag and down woody material guidelines from the Upper Columbia River Basin Assessment to improve marten habitat" (p. 39). Although the Report doesn't state what those guidelines should be, we welcome the IPNF's acknowledgment of scientific evidence that refutes its inadequate guidelines.

Pileated woodpeckers prefer larger trees/snags for nesting, as noted on pages 3-152 and 153 of the EA. It is also noted on pages 3-152 and 3-153, "To provide suitable pileated woodpecker habitat, strips should be at least 300 feet in width..."
There are also many structural habitat components necessary for the pileated woodpecker. USDA Forest Service, 1990 indicates that measurements of the following variables are necessary to determine quality and suitability of pileated woodpecker habitat:

- Canopy cover in nesting stands
- Canopy cover in feeding stands
- Number of potential nesting trees >20" dbh per acre
- Number of potential nesting trees >30" dbh per acre

- Average DBH of potential nest trees larger than 20" dbh
- Number of potential feeding sites per acre
- Average diameter of potential feeding sites

The preferred diameter of nesting trees for the pileated woodpecker recognized by USDA Forest Service, 1990 is notable. McClelland and McClelland, 1999 found similar results in their study in northwest Montana, with the average nest tree being 73 cm. (almost 29") dbh. The pileated woodpecker's strong preference for trees of large diameter of 29" is not mentioned on page 3-152.

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey, 1983.) This cited document also provides guidance as to how habitat for the pileated woodpecker must be distributed for populations to persist.

The Forest Plan provides an example of better management directives for the pileated woodpecker than does the EA. Wildlife Standard #10f requires "One or more old-growth stands per old-growth unit should be 300 acres or larger. Preference should be given to a contiguous stand; however, the stand may be subdivided into stands of 100 acres or larger if stands are within one mile. The remaining old-growth management stands should be at least 25 acres in size. Preferred size is 80 plus acres." Forest Plan at II-29. This and other IPNF old growth Standards are based upon what the IPNF recognizes are pileated woodpecker habitat needs:

> To retain a viable population of pileated woodpeckers on the IPNF ... our recommendations are:
>
> 1. Retain 10 percent old-growth throughout the Forests.
> 2. Distribute the old-growth so that old-growth compartments with 5 percent old-growth retain at least 5 percent old-growth. All old-growth stands 25 acres should be retained in old-growth compartments containing less than 5 percent old-growth.
> 3. In each 10,000-acre unit at least 300 acres should be managed specifically for pileated woodpeckers. To maximize benefits to other species as well as pileateds the 300 acres should be either contiguous or divided into subunits no smaller than 100 acres. The subunits should be within approximately two square miles.
> 4. The areas managed for pileated woodpeckers should be at least 200 yards wide.
> 5. Areas selected for old-growth management for pileated woodpeckers should also be close to water. Old-growth larch stands are highly recommended for pileated woodpecker management.

(Forest Plan EIS Appendix 27 at p. II-40.)

Since the EA provides inadequate analysis regarding the size and quality of habitat blocks needed by the pileated woodpecker, the analysis completely fails to disclose the quantitative or qualitative significance of cumulative effects due to past logging in the area.

Enumeration of and monitoring of specific small, non-game birds and animal populations that are important in keeping destructive insect populations at low levels are not disclosed in the EA.

The proposed action Alternative 2 does not indicate compliance with Idaho WQS that apply to water quality limited waterbodies impacted by pollutants including sediment and metals. The introduction of additional pollutants such as sediment is contrary to Idaho WQS. Alternative 3 also does not indicate compliance with Idaho WQS. Neither Action Alternative provide assurances IPNF Forest Plan old growth and wildlife requirements would be met if either Alternative was implemented.

The comments are also being submitted on behalf of the following organizations. The Lands Council, 423 W. First Ave., Suite 240, Spokane WA 99201509-838-4912, Mike Peterersen
The Ecology Center, 801 Sherwood Street, Suite B, Missoula MT 59802, 406-728-5733, Jeff Juel
The Alliance for the Wild Rockies, PO Box 505, Helena MT 59624, 406-459-5936, Mike Garrity

Sincerely,

Mike Mihelich Forest Watch Coordinator

Enclosure: attachments

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Mihelich Letter Attachment #1

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706-1255 • (208) 373-0502

Dirk Kempthorne, Governor
C. Stephen Allred, Director

November 4, 2003

Ranotta McNair, Forest Supervisor
Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, ID 83815

RE: Application of Total Maximum Daily Load Provisions to Forest Projects.

Dear Ms. McNair:

The Idaho Department of Environmental Quality (DEQ) and the U.S. Forest Service (USFS) have recently discussed the application of the Idaho Water Quality Standards, IDAPA 58.01.02, to timber projects. More specifically, questions have been raised concerning the application of Idaho's antidegradation and TMDL provisions found in the Water Quality Standards. This letter is intended to explain how DEQ interprets and applies these sections of the standards.

The Clean Water Act and Idaho state law requires TMDLs to be developed for water bodies on the state's 303d list. The state is to prioritize the development of TMDLs depending upon the severity of pollution and the uses of the water body (40 CFR 130.7(b)(4); IDAPA 58.01.02.054.03). Idaho has prioritized the development of TMDLs through the development of a schedule resulting from litigation brought by the Idaho Conservation League and The Lands Council against EPA. Those water bodies for which TMDLs are to be developed in the current and following year are designated high priority water bodies, those to be developed in the next two years are medium priority, and those to be developed thereafter are low priority. In this way, the prioritization changes as TMDLs are completed and DEQ works its way through the schedule. Since prioritization changes each year, the TMDL schedule should be reviewed on an annual basis to determine the priority of water bodies.

The treatment of water bodies on the 303d list before a TMDL is completed depends upon the priority of the water body. For high priority water bodies, new or increased discharges of pollutants which have caused the water quality limited listing are only allowed if the total load of the pollutant remains constant or decreases within the watershed (IDAPA 58.01.02.054.04). For medium and low priority water bodies, actions can be allowed as long as there is no further impairment of the beneficial uses (IDAPA 58.01.02.054.05).

Once a TMDL is developed, actions causing new or increased discharge of pollutants must be conducted in a manner consistent with the TMDL (IDAPA 58.01.02.054.04; Idaho Code § 39-3610). In addition, Idaho has an antidegradation policy in state law that requires that existing uses of water bodies and the water quality necessary to protect the uses be maintained and protected (IDAPA 58.01.02.051; Idaho Code § 39-3603).

If a TMDL has been developed by DEQ and approved by EPA, then, according to the Water Quality Standards, a timber project should be conducted in a manner consistent with the TMDL. The TMDL may provide that, in order to meet Water Quality Standards, there must be a reduction in the amount of sediment delivered to the water body from forest lands and forest roads. In order to be consistent with such a TMDL, the Forest Service should demonstrate how sediment reduction efforts taken in conjunction with the timber project will result in a reduction of sediment in the watershed. Such pollutant reduction projects should occur within the same time frame or prior to, any sediment loading from the timber project.

DEQ believes that it is reasonable to expect the full benefits from sediment reduction projects to be realized within three to five years. Reduction actions must occur concurrently or prior to sediment loading activity.

While a TMDL looks at sediment loading on a watershed basis, DEQ is also concerned with impacts on individual water bodies within the watershed. The Tier I Antidegradation Policy in the Water Quality Standards, as outlined above, does not prohibit the introduction of new sediment or other pollutants to a water body, but instead only prohibits the introduction of sediment that will lower the level of water quality necessary to maintain and protect existing uses. Therefore, even if sediment levels are reduced overall in a watershed, it is a violation of the antidegredation policy for sediment introduction to impair uses in any individual water body in the watershed.

If there is not yet an approved TMDL, and the water bodies affected by a timber project are high priority water bodies, then any new or increased sediment discharges can only occur if the sediment load in the watershed remains constant or decreases.

As indicated above, sediment reduction actions **must** be used to offset any sediment generated from the project. These reduction actions must be undertaken prior to or within the same timeframe as actions that deliver sediment to the watershed. DEQ will also expect reductions to occur within a three to five year period. To ensure compliance with the antidegradation policy, studies should evaluate whether the project will cause an impairment in any individual water body within the watershed.

When developing a sediment pollutant offset please remember that sediment <u>risk</u> reduction activities do not count towards pollutant reduction credit. In addition, sediment reduction projects that are not securely funded cannot be used for pollutant offsets due to the uncertainty and unknown timing of these activities. Also, the pollutant load increase resulting from sediment reduction projects must be included in the pollutant offset budget.

To Recap:

1. Water bodies scheduled for the development of a TMDL within two years of the current date are considered high priority waters and require a no net increase of the pollutant(s) of concern. Medium and low priority waters require that beneficial uses are not further impaired.

2. The proposed action needs to be consistent with an approved TMDL. If a TMDL requires a load reduction, then the proposed activity must show a net decrease of the pollutant(s) of concern.

3. DEQ will generally expect that the full amount of sediment reduction must occur within a three to five year timeframe. Load reduction measures shall occur prior to or concurrent with loading activity.

4. The antidegradation policy requires that existing beneficial uses be maintained and protected on all waterbodies. Pollutant trading cannot be used as a substitute for this policy.

5. If a TMDL is expected shortly, projects currently in the planning stages should anticipate the requirement for load reductions in the listed watershed.

6. Risk reduction activities cannot be used for pollutant trading.

7. Pollutant reduction activities must have adequate funding before they can be used as offsets.

8. Loading, resulting from pollutant reduction activities, must be included in the pollutant offset budget.

If you require further guidance on these topics please give me a call at (208) 373-0502. We hope this has answered your questions regarding our Water Quality Standards. We look forward to working with your staff on future management actions.

Sincerely,

David Mabe

David Mabe
Administrator
Idaho Water Quality Programs

DEM:dc

C: Ken Heffner, Watershed Program Manager, USDA Region 4
Bruce D. Sims, Hydrologist, USDA Region 1
Douglas Conde, Deputy Attorney General, DEQ
Ed Tulloch, Water Quality Supervisor, DEQ, CRO
Michael McIntyre, Surface Water Program Manger, DEQ
Marti Bridges, TMDL Manager, DEQ

Mihelich letter Attachment # 2

United States Department of Agriculture | Forest Service | Region One

Northern Region
200 East Broadway
Missoula, MT 59802

File Code: 6270-1-1
R1-RO-024
Date: January 27, 2004

Mike Mihelich
Kootenai Environmental Alliance
P.O. box 1598
Coeur d' Alene, ID 83816-1598

Dear Mr. Mihelich:

This letter responds to your November 25, 2003, Freedom of Information Act request submitted to the Idaho Panhandle National Forest (IPNF). On January 22, 2004, the Idaho Panhandle Forest Supervisor provided you a response to Items A1 through A3, and B2 of your request and forwarded Items B1 and B3 of your request to this office for further review and determination. These items are further described as follows:

> *Item B1. "Since the WATSED model does not account for rain-on-snow events, in-channel, and stream bank erosion, what are the names of each of the coefficient files that are required when the model is used to calculate the amount of coarse bedload movement that would occur in a watershed for a given activity?"*
>
> *Item B3. "We wish to receive a copy of the page(s) from the appropriate documents listing the coefficients that are used, and a copy of the page(s) describing the procedures that are used in conjunction with the coefficients to distinguish between fine sediment and coarse sediment when Sediment Yield Total and Sediment Increase Annual % is calculated."*

We have determined that a thorough search of the files on the IPNF was conducted and they did not find any records responsive to these items of your request. The Forest provided the following explanations regarding these items:

Item B1. The WATSED model does not attempt, nor is it designed to simulate individual events or in-stream response. It also does not attempt to simulate or estimate any one type of sediment. Therefore a listing of the coefficient file names you are seeking does not exist.

Item B3. Since the WATSED model also does not attempt to distinguish between "fine" and "coarse" sediment, there are no coefficients to distinguish between the two. WATSED does estimate sediment from surface erosion and from mass erosion processes. Generally, the latter is coarser than the former. These procedures are documented in the WATSED manual, which we understand has already been provided by the Forest to you in response to other inquiries.

Under the Freedom of Information Act you have the right to appeal a no records response. Any appeal must be made in writing to the Chief, USDA Forest Service, Stop 1143, 1400 Independence Avenue SW, Washington, DC 20250-1143 within 45 days from the date of this letter. The term "FOIA Appeal" should be placed in capital letters on the front of the envelope.

Sincerely,

William Boettcher

for KATHLEEN A. MCALLISTER
Acting Regional Forester

cc: John I Carlson

Mihelich Letter
Attachment #3

Final
Environmental Impact Statement

ROCK CREEK PROJECT

September 2001

U. S. Forest Service
Kootenai National Forest

Bob Castaneda
Bob Castaneda, Forest Supervisor

Montana Department of
Environmental Quality

Jan P. Sensibaugh, Director

Volume II

Rationale for Alternative V Sediment Mitigation Calculations[1]

Alternative V includes various sediment abatement measures meant to minimize impacts to Rock Creek. These measures include containment around some facilities, revegetation requirements, best management practices, road drainage upgrades, and road resurfacing. However, analyses in the Biological Assessment for bull trout (included in Appendix B of the final EIS) found that additional sediment mitigations, beyond those already specified in Alternative V in the supplemental EIS, would be needed to offset project impacts. The added mitigation was needed to compensate for unavoidable effects that would result from implementing the sediment abatement program and less than 100 percent effectiveness of best management practices.

Additional sediment mitigations have been added to Alternative V based on the results of the WATSED analysis of the alternatives described earlier in this appendix. The agencies accepted the WATSED numeric prediction of change in sediment production for Alternative V and then inflated the estimate to compensate for two degrees of uncertainty. The objective was to arrive at an estimate of tons of new fine sediment resulting from Alternative V, and thus the tons of sediment from existing source areas that should be immobilized through a mitigation program. The goal was a high probability that Alternative V as described in the final EIS would result in no net increase in fine sediment in Rock Creek, and a reasonable certainty of an actual reduction in fine sediment transport over the life of the mine.

The sediment mitigation need was identified through the following steps:

1. Subtract the tons/year sediment estimate for the existing 1998 condition from the tons/year estimate for Alternative V at the height of project construction:

   469.6 tons/year - 403.5 tons/year = 66.1 tons/year estimated increase

2. Based on limited WATSED validation monitoring, inflate the result from step #1 by 300 percent to account for an apparent under-estimation of real-world effects on sediment production:

   66.1 tons/year * 3.0 = 198.3 tons/year probable increase in fine sediment

3. As an added measure of certainty, double the result in step #2 to compensate for the marginal accuracy of the model, the limited amount of validation data, and less than 100 percent effective mitigation:

   198.3 tons/year * 2.0 = 396.6 tons/year real increase in fine sediment

4. To dilute the aura of precision that 396.6 tons/year implies, round up the result in step #3 to the nearest hundred tons:

   369.6 tons/year . 400 tons/year mitigation requirement

[1] Information taken from Memo to Rock Creek Project IDT, May 6, 1998, from R. Douglas Perkinson, KNF.

Three lines of evidence suggest that a 400 ton/year reduction in fine sediment would result in no net increase, or an actual long-term reduction, in Rock Creek fine sediment in transport and instream.

First, WATSED predicts a 38 percent increase in sediment delivery from Alternative V at the height of construction, but then sediment transport falls below the present condition five years later due to hard surfacing of some roads, improved road drainage control and revegetation benefits (sediment abatement). Thus the model output matches our understanding of the processes involved, and it hypothesizes a net reduction over time. However, it does not account for stream channel sediment production or less than totally effective sediment abatement measures.

Secondly, there is a decade of monitoring data that compares WATSED data modeled sediment production against streambed McNeil sediment cores for a stream near Libby. The trend line for these two data sets mirror each other, with a time lag of four years between a change in sediment input and a change in streambed fine sediment. This 4-year time lag nearly matches the WATSED assumption that the initial pulse of sediment from a disturbance lasts 5 years, and it also is what is expected when a disturbance occurs far upstream of the streambed monitoring site.

The third line of evidence is several years of suspended sediment validation monitoring that compares WATSED-predicted to actual sediment output from a managed watershed nearly identical (size, flow, disturbance levels) to Rock Creek. This validation monitoring indicates WATSED under-predicted effects by 320 percent.

Given that these lines of evidence are instructive, but not conclusive, it has been concluded that WATSED can track real-world processes. However, numeric estimates need to be inflated before they can be considered reasonably accurate. Hence, the calculations described above.

Recommendations on where to mitigate for unavoidable fine sediment effects relies on the WATSED analysis and the floodplain sediment source survey conducted by ASARCO. The model indicates a short-term increase for the west fork of 46 percent as a result of evaluation adit and access road construction, a 20 percent increase for the east fork from mill site construction, and a cumulative 38 percent increase when the remainder of the road construction and reconstruction, powerline and pipeline construction, and the tailings facility construction are included. The baseline data for the project indicates three important bull trout habitat areas: the West Fork of Rock Creek, the lower end of the East Fork of Rock Creek, and the perennial main stem reach of Rock Creek around the confluence with Engle Creek. This indicates a need to require sediment mitigation at a minimum of two sites.

The first site is the main stem floodplain terrace (P-1) at the confluence with Engle Creek and an unidentified source area in the West Fork of Rock Creek drainage. If pre-mitigation monitoring of these two sites indicated they produce less than 400 tons of fine sediment in an average year, the next priority would be mitigation of a source within the East Fork of Rock Creek basin and then a site in or near the Orr Creek basin. Mitigations of the main stem site near Engle Creek would benefit migratory bull trout assumed to be using this area for spawning and mitigating sites along the west fork would benefit the population of resident bull trout.

#02

Kootenai Environmental Alliance

P.O. Box 1598 Coeur d'Alene, ID 83816-1598

June 9, 2005

NEPA Coordinator
Coeur d'Alene River Ranger District – Fernan Office
2502 East Sherman Avenue
Coeur d'Alene, ID 83814-5899

Dear Ms. Arneson:

The following comments concern the Revised Twomile Environmental Assessment (EA).

Idaho Water Quality Standards:
The Revised EA on page R3-15 included the following statements. "All alternatives would be consistent with the requirements of the Clean Water Act. Sediment and metals, the pollutants of concern, would not increase in the water quality limited South Fork of the Coeur d'Alene River in segment from Placer Creek to Big Creek."
The information in the Revised EA indicates there is no change to the amount of sediment that would be released with Alternative 2 into Twomile Creek, Nuckols Gulch, and Revenue Gulch and then downstream into the South Fork Coeur d'Alene River.
The 9th Circuit Court ruling did not address issues relating to Idaho WQS and Forest Service activities in water quality impaired water bodies. No Idaho WQS that were in effect when the original Twomile EA was released have been changed. Forest Service activities are required to be in full compliance with all applicable Idaho WQS, including IDAPA 58.01.02.054.04. The increased release of sediment in water quality limited water bodies associated with Alternative 2 would be a violation of Idaho WQS, which include IDAPA 58.01.02.054.04.

WATSED Model:
The 9th Circuit Court ruling concerning the model did not address the issue of WATSED analysis of activities on private lands or other ownerships. The Revised EA on page R2-4 includes a discussion of private logging activities. The discussion in section 4 of page R2-4 shows there has been a total of 845 acres of private logging activities in the analysis area. The following statement is made on page R2-4. "On privately owned lands, there are varying levels of disturbance that are difficult to account for in the WATSED modeling."
Additional information on page R2-4 includes the following statement. "Lands in the Silverton face drainage that are under private or BLM ownership have also been intensively managed and developed, particularly in the mid- to late –1990s (EA, p. 3-79)."
The statements on page R2-4 regarding the model and logging activities on the 845 acres of private lands indicates the model was unable to calculate any effects to peak flows or sediment releases as a result of the activities on the private lands. It also appears that the

model was not able to calculate any effects to peak flows or sediment releases as a result of activities on BLM lands in the analysis area.

We wish to enter into the official record the following information regarding instances where the Forest Service's own analysis indicated the model significantly underestimated peak flows and sediment production. The Sandpoint Ranger District's 1993 Grouse Creek EA described the model as underestimating monthly peak flows by 34% and also noted the average peak flows over the period of record for Grouse Creek were 122% greater than the monthly peak estimated by WATSED, pages III-37 and III-40.
The September 2001 Kootenai National Forest (KNF) Rock Creek Project FEIS, Volume II Appendices included Appendix N. Pages N-9 and N-10 of Appendix N describe underestimation of real-world effects on sediment production, and discuss the validation monitoring performed by the Forest Service that indicated the model under-predicted sediment effects by 320%.
The WATSED discussion in the Revised EA in Section 3.4.2 does not include a discussion of instances where the model has been found to significantly underestimate peak flows and sediment production.

It is stated on page R3-10 regarding the model "It is not designed to produce absolute or accurately quantified solutions, rather, the model is meant to be reasonably precise in terms of changes and trends."
Since there is a lack of accurate data for peak flows and sediment releases off of private lands and BLM lands in the project area as a result of past activities, page R2-4, it is not apparent the model can accurately estimate annual peak flows and sediment loads in the project area due to missing data. The anticipated sediment and water yields associated with Alternative 2 likely do not account for the cumulative impacts to the water bodies in the project area from past and ongoing activities on private and BLM lands since the model does not account for these activities.

Old Growth:
Information on page R3-4 shows approximately 133 acres of old growth were added to the Resource Area and approximately 180 acres of previously classified old growth were dropped after further old growth review. One of the old growth stands added was stand 11301001, where 55 acres were listed as being old growth. Also on page R3-4 it is mentioned that stand 11301001 would have 45 acres of commercial thinning. The information indicates 45 of the 55 acres would be logged with Alternative 2. On page R3-6 it is indicated that with Alternative 2 there would be commercial logging in unit 28, which is within allocated old growth.
In the original Twomile project files there was a field observations document that described characteristics of a number of stands in the project area. J. Kincheloe performed the observations and the date of the document is 12-27-02. For stand 10301001 it was noted the 2nd layer overstory canopy consisted of PP and DF, 80-90 years old, 50-80 feet in height, with a dbh between 6-16 inches. It was also noted that toward the top of the stand there were old growth PP and DF, with a small amount of western pine beetle at the top of the stand. Additional notes mentioned a southerly aspect

and thinner, rockier soil conditions. The decision document should include information indicating whether any trees larger than 16" dbh in unit 28 would be logged.

Fry emergence:
The discussions in the Revised EA regarding the fry emergence process and the IPNF Fry Emergence Amendment did not address the following issues relating to the INFISH strategy. Attachment A of the INFISH strategy, at page A-15, includes a discussion relating to Monitoring. The following statements are made on page A-15. "Nevertheless, it is critical to begin monitoring" and "A third type of monitoring (validation monitoring) is intended to ascertain the validity of the assumptions used in developing the interim direction. Because of the short-term nature of the management direction, **no specific requirements** are included for validation monitoring." (Emphasis added)
The INFISH strategy has been in existence since 1995. The INFISH monitoring/sampling program on the IPNF will take approximately 15 years to definitively determine the effectiveness of INFISH strategies, IPNF April 2005 Fry Emergence Amendment EA at page 31. If there are funding constraints, it is possible the INFISH monitoring/sampling of the watersheds on the IPNF would be delayed. There should be information in the decision document that will indicate whether INFISH validation monitoring data has been acquired for the Twomile Resource area. If INFISH validation monitoring data has been acquired for the Resource area and INFISH written evaluations have been produced, the data and evaluations should be included in the project file.

Wildlife:
The 9th Circuit Court ruling at page 11173 stated, "If the habitat trend data is flawed, the proxy on proxy result, here species population trends, will be equally flawed." The Revised EA at page R2-9 indicates a number of TSMRS data fields were reviewed and the following sentences are found on page R2-9. "The Wildlife analysis utilizes vegetation data in determination of existing habitat conditions and effects to species" and "In addition, stand trees per acre, stand basal area, and tree age were also verified."
The decision document should indicate whether all TSMRS data reviewed and cited on page R2-9 is located in the project files.

We wish to receive a copy of the decision document when it is released, as do the organizations listed below.

Sincerely,

Mike Mihelich Forest Watch Coordinator

The comments are also being submitted on behalf of the following organizations.

The Lands Council, Mike Petersen, 423 W. First Ave., Suite 240, Spokane, WA 99201, 509-838-4912
The Ecology Center, Jeff Juel, 314 North First Street West, Missoula, MT 59802, 406-728-5733

Letter # 03

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

April 17, 2004

Lonnie Newton, Project Team Leader
Coeur d Alene River Ranger District
2502 East Sherman Avenue
Coeur d Alene, ID 83814

Re: Twomile Resource Area Project EA

Dear Ms. Newton,

Please accept these comments on the Twomile Resource Area EA on behalf of The Lands Council, the Ecology Center, and the National Forest Protection Alliance. Our comments should be appended to the Kootenai Environmental Alliance's Twomile Resource Area EA comments.

We appreciate the opportunity to comment on the Twomile Resource Area Project, located on lands managed by the P Ranger District on the Idaho Panhandle National Forests. Twomile Resource Area EA Proposed Action, Alternative B, proposes to log 4.5 mmbf on 1,104 acres (72% of which is commercial timber sale), build 1.9 miles of new system road, reconstruction of 1.4 miles of road, and reconditioning of 1.2 miles of road, decommission of 3.4 miles of closed road, increase trail access by including 0.4 miles of added single-track trail (rerouting and repairing),9.5 miles of added ATV opportunities and 6.4 miles of additional co-use as both road and trail (Roads 271, 424, 953 and 2322).

We thank you for incorporating our scoping comments into a non-commercial Alternative (Alternative 4) for consideration. This Alternative is based on the best available science. While your preferred alternative is 72% commercially driven compared to Alternative 4, we are curious to know why those same units were not incorporate and taken into account under Alternative 4 for precommercial treatment and prescribed burning. This would increase the acreage treated from 374 acres to the 1,104 acres (as indicated under Alternative 2) and have a greater benefit for the communities of Osborn and Silverton. Just because we are opposed to commercial logging as a means to meet your purpose and need of the project, does not mean that other treatments, i.e. Pre-commerical thinning and/or prescribed burning should not be proposed instead on those commercial logging units.

We are in support of the FS's objective to protect communities and private homes from wildfire threats. In fact The Lands Council's Wildfire Education Program has has worked effectively in northeastern Washington in outreach and education and providing free defensible space planning to rural homeowners. We have adopted FS's own fire science and research, namely Dr. Jack Cohen's work (*Research Physical Scientist at the Rocky Mountain Research Station)* , in our defensible space plans. Over 150 defensible space plans have been implemented with the assistance of Washington's Department of Natural Resources.

While the Twomile Project rightfully should protect the communities of Osborn and Silverton, we do not agree with the FS's proposal to use commercial logging as a the tool to attain this goal, as it will put these communities and residents in greater danger of wildfire. This is irresponsible and a disservice to the communities. Furthermore the EA acknowledges that "commercial harvest on National Forest System lands in the Resource Area have been limited due to terrain, access, and ***close proximity to local communities***" (EA pg.1-1). So why the change of heart all of a sudden? Did the FS relay on scientific knowledge that logging increases the risk of fire back then? Please disclose to the public in the subsequent FEIS or Decision Notice why it was important not to log in ***"close proximity to local communities"***.

Ironically, the current stands are composed primarily of Douglas-fir, with ponderosa pine and lesser amounts of white pine and grand fir, in the 90 to 110-year age range (EA pg. 1-1). How convenient to rationalize that douglas-fir is essentially a weed species in this ecosystem that is competing with the late seral stage ponderosa pine and larch species and there for commercial logging will be the tool to manage our public lands at the expense of soils, wildlife, watersheds, and communities.

Fire research shows that commercial logging does not decrease the threat of wildfire:

*"Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity."

-Sierra Nevada Ecosystem Project, 1996. Final Report to Congress

*"Logged areas generally showed a strong association with increased rate of spread and flame length, thereby suggesting that tree harvesting could affect the potential fire behavior within landscapes. In general, rate of spread and flame length were positively correlated with the proportion of area logged in the sample watersheds."

-Historical and Current Forest Landscapes in Eastern Oregon and Washington. Part II: Linking Vegetation Characteristics to Potential Fire Behavior and Related Smoke Production (PNW-GTR-355)

"As a by-product of clear-cutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. The potential rate of spread and intensity of fires associated with recently cut logging residues is high, especially the first year or two as the material decays. High fire-behavior hazards associated with the residues can extend, however, for many years depending on the tree. Even though these hazards diminish, their influence on fire behavior can linger for up to 30 years in the dry forest ecosystems of eastern Washington and Oregon."

-Historical and Current Forest Landscapes in Eastern Oregon and Washington. Part II: Linking Vegetation Characteristics to Potential Fire Behavior and Related Smoke Production (PNW-GTR-355)

"It appears significant that many large fires in the western United States have burned almost exclusively in slash. Some of these fires have stopped when they reached uncut timber; none has come to attention that started in green timber and stopped when it reached a slash area."

-G.R. Fahnestock, 1968. "Fire hazard from pre- commercially thinning ponderosa pine." U.S. Forest Service

"Fire severity has generally increased and fire frequency has generally decreased over the last 200 years. The primary causative factors behind fire

regime changes are effective fire prevention and suppression strategies, selection and regeneration cutting, domestic livestock grazing, and the introduction of exotic plants."

-Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin (PNW-GTR-382)

"The high rate of human-caused fires has generally been associated with high recreational use in areas of higher road densities."

-An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins-Volume II (PNW-GTR-405)

Logging trees is focusing on the wrong forest fuel. Logging removes the least flammable of the forest fuels. Fuel treatment should be focusing on the most flammable of the forest fuels, such as brush, weeds, and the lower branches of the ladder fuel trees:

- "The majority of the material that we need to take out is not commercial timber. It is up to three and four inches in diameter. We can't sell it. Fire suppression and drought are to blame. " - Denny Truesdale, USDA Forest Service Fire Specialist (C-SPAN 8-10-00)

Commercial logging is not an effective tool to protect the home or community as fire brands from miles away can ignite the house on fire. By implementing defensible space planning, a homeowner will reduce the risk of ignitability! This need to be the forthmost focus in true fuels reduction and Wildland Urban Interface project.

Jack Cohen, research scientist at the Fire Sciences Laboratory in the Forest Service's Rocky Mountain Research Station, presented the paper **Reducing the Wildland Fire Threat to Homes: Where and How Much?** (attached for your review) at the Fire Economics Symposium in San Diego, California on April 12, 1999. His research findings could potentially eliminate arguments for increased public lands logging, road-building, and grazing as alleged means of protecting private homes from wildfires.

Key Points of Jack Cohen's Research Paper that we ask the Forest Service to consider and incorporate into the Twomile Resource area project:

Home ignitability, rather than wildland fuels, is the principal cause of home losses during wildland/urban interface fires. Key items are flammable roofing materials (e.g. cedar shingles) and the presence of burnable vegetation (e.g. ornamental trees, shrubs, wood piles) immediately adjacent to homes.

Cohen's Structure Ignition Assessment Model (SIAM) indicates that intense flame fronts (e.g. crown fires) will not ignite wooden walls at distances greater than 40 meters (approx. 130 feet) away. Field tests of experimental crown fires revealed that wooden walls can successfully survive intense flame fronts from as close as 10 meters (approx. 30 feet) away!

Current strategies for wildland fuel reduction may be inefficient and ineffective for reducing home losses, for extensive wildland fuel reduction on public lands does not effectively reduce home ignitability on private lands.

The so-called "wildland/urban interface zone" overgeneralizes and misrepresents the zone of prime fire risk and fuel hazards: the home and its adjacent vegetation.

Opportunities to use prescribed fire for the sake of ecosystem restoration may be greatly enhanced in wildland/urban interface areas if home ignitability is reduced.

The primary and ultimate responsibility for home wildfire protection lies with private homeowners, not public land management agencies (or taxpayers).

Given nonflammable roofs, Stanford Research Institute found that 95 percent of homes survived where vegetation clearance of 10 to 18 meters was maintained around the homes.

In our scoping letter comments, dated February 28, 2004 scoping comments, we provided numerous citations supporting our comments. In reviewing the EA, we find that the EA has failed to adequately address our scientific papers that we provided. Under NEPA agencies must use the best available science, and take into consideration and evaluate scientific viewpoints. For example we referred to Hutto, R. L. (1995)paper titled Composition of bird communities following stand-replacement fires in the Northern Rocky Mountain (U.S.A.) conifer forests, or M. Finney et all (2002) Report on Fire Behavior, Fuel Treatments, and Fire Suppression , in Interim Hayman Fire Case Study Analysis, or Dr. Jack Cohens paper titled Reducing the Wildland Fire Threat to Homes: where and how much? (USDA Forest Service, 1999a).

MONITORING:
It is important that the results of past monitoring be incorporated into project planning. All Interdisciplinary Team Members should be familiar with the results of all past monitoring pertinent to the TwoMile project area, and any deficiencies of monitoring that have been previously committed to. For that reason, we expect that the following be included in the EIS or project file:

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

MANAGEMENT INDICATOR SPECIES

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.

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 and the EA states that "large-diameter snags are in short supply and canopy closure in many stands is less than optimal for pileated woodpeckers because of the structure found in dry habitat types" (EA 3-153). The IPNF will not employ the most current, relevant science and has failed to monitor these MIS and their habitat. The Twomile Resource Area 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.

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 EA 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 FEIS 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 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.

By failing to adequately monitor for the MIS forest wide the Twomile Resources Area project violates the Forest Plan and therefor should be terminated, especially the commercial logging of ~750 acres.

<u>Fire/Forest Health/Historic Range of Variability (HRV)/Vegetation</u>

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?

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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.

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 Prarie 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 Prarie 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 díAlene 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 clearcuts (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 clearcutting and the agency maintains in this document and elsewhere that clearcut 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 alteratnives 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 DEIS 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 DEIS 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 DEIS 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 clearcuts, does not affect the current fire regime. 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 clearcuts 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 district s on the IPNF adopt 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:

- 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

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 effec tiveness 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.

FLAMMULATED OWL
The EA states that the Twomile Resource Area "appears to provide some of the District s best habitat for flammulated owls" and that nearly all of the Twomile Resource Area provides big-game winter range habitat (pg. 1-1).

The EA does not cite the results of any studies or research that supports its contention that its proposed "treatments" will in fact result in better flammulated owl habitat and thus more flammulated owls in the Twomile Resource Area is located within three major subwatersheds (Twomile, Nuckols, and Revenue Gulch) and one small face drainage (Silverton). The Idaho Panhandle National Forest admits to not having any historical records of these species "specifically" (EA pg. 3-136), even with sizable areas of prime interior ponderosa pine forest habitat according to the Interior Columbia Basin Assessment (Quigly et.al. 1996; PF Doc. WLR44)
Why do suppose that?
By the way, what do you mean by "specifically"?

REACREATION
Which District Travel Plan is the FS relying on, 2003? or the 2001 District Treavel Plan?

According to the Twomile Project EA, approximately 0.4 miles would be added to the single- track trail system, 9.5 miles of added ATV opportunities (by using old roads starting in the bottom of Twomile Creek canyon and stretching from Capital Hill to Dago Peak); and 6.4 miles of additional co-use as both road and trail (Roads 271, 424, 953 and 2322) all because of "public demand for access to trails and routes for ATV s" . Upon looking at the IPNF Couer D'Alene map to identify the description provided above for the new 9.5miles of added ATV opportunities, I find that the roads include FS 271, 424, and 2322 are identical to the proposed 6.4 miles of additional co-use trails and routes. So what is actually being proposed? The EA needs to identify the exact 9.5 miles of added ATV trails/roads .

The EA discloses that "local recreation users were consulted during the development of trails proposed for the Twomile Area". We ask that the FS provide documents showing who the FS met with, how many times they met, notes from those discussions to get a perspective on the user

types that the FS met with.

As plaintifs on the CDA Travel Plan, we are greatly concerned that the EA wrongfully relies on a document that does not hold legal mustard and failed to conduct an Environmental Assessment on all open and closed roads and proposed changes to these roads. We contest the statement in the EA that the proposed changes to access management under the Twomile Resource Area project are "consistent with access management under the District s new Travel Plan"(Project Files, Transportation). FS roads 271 and 424 are "roads closed to motorized travel, except for Administrative use" with no physical barrier to prevent and discourage the public from violating this determination. Yet in a similar document provided to us in our lawsuit, FS roads 271 and 424 are listed as "Roads Designated Open to all Motorized Use".

Why is the FS allowing for more open ATV routes in an area that contains high open road density levels in the Twomile Resource Area and is "a problem for wildlife species that can be affected by disturbance" (Appendix H)? In Chapter 3 under impacts to the Rocky Mountain Elk, the EA openly acknowledges that the current situation is for elk security is violating the Forest Plan and that the
continued implementation of the District Travel Plan will continue to affect elk and other wildlife species. For example:

- The current elk habitat potential for EHU 5 is 47%, which is below the Forest plan goal of 55% (Forest Plan Appendix B, Summer Range Elk Management Plan; PF Doc. WL-R53). Compartments 112, 189, 187 and 190 all have elk habitat potentials below 40%, reducing the overall potential in EHU5. The low elk habitat potential is due to reduction of effectiveness of security areas due to use of trails by motorized vehicles (ATVs) (pg. 3-156);
- EHU5 does not currently meet the Forest Plan goal for elk habitat potential (pg. 3-156);
- However, ATV use occurs within all three areas, reducing the effectiveness of the security (the reduced effectiveness was accounted for in the elk model by using a lower value for security). Roading and motorized use is the biggest impact to elk security within the Twomile Resource Area. Currently there are 2.1 miles of roads per square mile of land that are drivable with standard-sized vehicles (pg. 3-158);
- After activities are completed under Alternatives 2, 3 and 4, security would return to the existing level within the Twomile Resource Area (pg. 3-158) which ultimately means that the Forest Plan will continue to be violated--Post sale, after all newly constructed roads and reconstructed roads are closed, Alternative 2 would have an elk habitat potential (EHP) 1% below the existing EHP (pg. 3-158);
- There will be ATV trails added that would bisect some existing security areas, which would reduce security in those areas. Idaho Fish and Game, who manage elk as a hunted species and monitor their populations, insure elk viability (pg. 3-160);

Has the FS consulted with the Idaho Fish and Game on this matter? If so, please send us a copy of their comment letter.

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?

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 2 proposes 4 helicopter landings which is equivalent to 4 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. 3-110, 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. 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 the acres that have been previously logged over the past thirty to forty years will also be logged again under the Twomile Resources Area Project.

Finally, the EA indicates that 16 of the 32 units will be greater than 40 acres (Table 3-Veg-7) and that the size openings would range up to 225 acres leaving anywhere from 10-50 trees per acre (pg. 3-18). The FS is required to receive approval by the Regional Supervisor for treatments resulting in openings greater than 40 acres in size. Has the FS been issued approval yet on the Twomile Resource Area Project?

We wish to remain on the mailing list for this project. Please sent us a copy of the the Biological Assessment, a copy of Idaho Fish And Games' comment /assessment letter , and permission slip for from the Regional Supervisor, immediately. Please add each group to the mailing list as well.

Sincerely

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Transmitted via email--please acknowledge receipt!

To Whom it may concern:

These are some more comments on the Twomile Revised Environmental Assessment (REA), on behalf of the Ecology Center, the Lands Council, Selkirk Conservation Alliance, and Kootenai Environmental Alliance. The scientific and legal controversy surrounding the issues for which the IPNF is responding to with this REA, along with the likely significant cumulative effects on water quality, fisheries habitat, wildlife, and other resources associated with the proposed logging activities, all indicate an EIS is required.

In is unclear just what the context is that you are soliciting comments on this REA. Have you withdrawn the original Decision Notice? If not, it seems that the FS's belief is, that it simply has to have a comment period and then proceed immediately with implementing the original decision. Such a course of action wouldn't serve NEPA, the public interest, nor the forest ecosystems.

We incorporate all previous comments on, and our appeal of, of the Twomile Project, as comments on this REA. Please explicitly respond in writing to the issues raised in those documents, if not also raised herein.

The REA states, "(T)he ponderosa pine and Douglas-fir stands in the Resource Area appear to provide some of the District's best habitat for flammulated owls." Has the FS performed surveys in the project area, and if so, what are the results? Has the IPNF ever done post-project surveys for flammulated owls in forest areas treated similarly as this proposal to determine habitat suitability and owl occupancy, and if so, what are the results?

Using your model of ecological restoration as represented by the EA and REA, how much more logging and how much more burning will the FS have to undertake in these watersheds before the areas are fully functioning ecologically?

The point of our previous comment on the Roads Analysis Process is that it should not lead to arbitrary decisions such as "expansion of the ATV trail system by utilizing approximately 9.5 miles of old logging roads (to accommodate ATV travel and link to trails outside the Resource Area)." The analysis itself should be reviewable by the public. In this case, what little we know of the process is that it results in unknown impacts on affected resources due to increased ATV traffic and unknown continued damage due to roads that will not receive necessary maintenance due to funding shortfalls.

"(T)here are no harvest records available prior to 1960 so specific information related to those activities could not be included." Is it the FS's position that if activities were not reflected in the TSMRS, ground surveys are unnecessary (such as to examine for old stumps, evidence of mining, roads, motorized trails, etc.) in order to sufficiently analyze and disclose cumulative effects?

We believe that in order to properly assess cumulative effects, as per the Ninth Circuit's decision, the FS must not only quantify the acres and point to locations of past and ongoing actions, but the FS must also state the goals of the projects and if those goals were met, indicate if any assumptions underlying those projects' "purpose and need" statements were correct, and disclose significant monitoring information related to potentially similar impacts from the Twomile proposal. Also, the EA must indicate if the results of those projects in any way led to the current Twomile proposal's stated purpose and need.

The REA states that past logging helped by "trending the species composition toward longer-lived seral species." The EA fails to provide the data to substantiate that statement, and lacks citations to the results of surveys of tree species regeneration, and statistics on species of trees planted in the old units.

"The majority of existing roads in Twomile were constructed well before 1970..." The REA does not disclose the effects caused by the human use of the forest adjacent to these roads, including firewood cutting, on resources such as old growth, amounts of current and recruitment large woody debris for soil renewal and wildlife habitat, and on wildlife species needing standing snags.

The discussions about past timber sales are still too cursory for understanding cumulative effects, for example, for the Montogmery Moon timber sale:

"Based on years of monitoring on the District and throughout the Panhandle Forest, an estimated 1 to 3 percent soil compaction or displacement resulted from this harvest and follow-up burning for each unit..." Has this been verified by soil surveys?

"Effects on aquatics: This harvest opened up the canopy enough to cause a slight increase in peak flows in Twomile Creek (less than 1 percent). There was also a slight increase in sediment yield from this timber harvest." Was this stated from modeling, or from direct measurements? If from modeling, are you ignoring the impacts of Rain-on-Snow and other instantaneous peak flow events?

Also, similarly the REA states, "this sale was recent enough that Region 1 snag guidelines were in place to retain adequate snags per acre on site, and down woody debris guidelines from Graham et al. (1994; PF Doc. SOIL-32) were also in place." Has the FS done surveys to verify that each of those guidelines was followed? Are there wildlife surveys indicating wildlife use of snags in these areas, that were very much modified (reduced canopy closure, security, etc.) by logging?

"The regeneration harvests reduced canopy substantially (below 35 percent canopy closure) and treated the surface fuels, including logging slash, prior to planting of more fire resistant species." What effect did such canopy reduction have on potential future fires' rate of spread?

Similar deficiencies exist with the discussions of other past management actions.

The effects of fire behavior due to logging on land of other ownerships was not sufficient to understand cumulative effects with the Twomile proposal.

The discussions on the effects of fire suppression (p. R2-6) are, as is usually the case, greatly speculative with little quantitative estimation or data. It is therefore easy to bias the "solution" to this so-called "problem", as you do, towards commercial logging as a "solution."

The REA fails to demonstrate compliance with the Forest Plan fry emergence standards and other related Forest Plan requirements. The IPNF's decision to implement the fry emergence Forest Plan amendment is still under review therefore the Forest Plan as before the amendment is still in effect. Therefore, the REA is not in compliance with NEPA and NFMA.

"Wildlife habitat selection is almost entirely based upon existing conditions, rather than the disturbance history of an area." The FS doesn't have data on how most TES and MIS wildlife select habitat, following past management actions, so cumulative effects are not understood, simply following from your neglect of monitoring responsibilities from the Forest Plan and NFMA regulations.

The second paragraph on page R2-8 under "Limitations of the WATSED Model" omits significant discussion on WATSED model limitations.

The precision, or amount of error, in the estimates derived from the WATSED model are not disclosed. They are estimates, based upon sampling that inherently has some amount of error. The FS, in its "Response to Motion for Preliminary Injunction" brief in the ongoing litigation on the Kootenai NF, states in regards to a scientific report, "Dr. Schloeder's purported 'statistical analysis' reports no confidence intervals, standard deviations or standard errors in association with its conclusions." The FS must be held to the same standards of data and information quality. However, the REA failed to present any "confidence intervals, standard deviations or standard errors in association with its conclusions" regarding estimates derived from the WATSED model, the amount of activity area detrimental soil disturbance, and other numbers and statistics displayed. Since the REA does not provide the public or decision maker with sufficient information on the accuracy of its estimates and model results, the information is not scientifically valid nor reliable.

The REA provides no information on the precision, or amount of error, in the estimates of old growth, based on its inventory, neither in the project area old growth management unit nor forestwide.

The definition, or minimum criteria used for old growth in the REA does not include important habitat characteristics needed by old-growth wildlife species. The FS assumes that forest areas meeting the displayed minimum criteria serve old-growth wildlife species, but this is an assumption that has not been sufficiently verified either at the site-specific project level nor forestwide. Block size of old-growth habitat, between-block forest integrity, and spatial juxtaposition are some important considerations ignored by the REA.

The FS is badly misplacing the threats to clean water onto vegetative conditions instead of correctly identifying the true threats to watershed health. The Western Montana Level I Bull Trout Team (2001) state:

> (T)he real risk to fisheries is not the direct effects of fire itself, but rather the existing condition of our watersheds, fish communities, and stream networks, and the impacts we impart as a result of fighting fires. Therefore, attempting to reduce fire risk as a way to reduce risks to native fish populations is really subverting the issue. If we are sincere about wanting to reduce risks to fisheries associated with future fires, we ought to be removing barriers, reducing road densities, reducing exotic fish populations, and re-assessing how we fight fires. At the same time, we should recognize the vital role that fires play in stream systems, and attempt to get to a point where we can let fire play a more natural role in these ecosystems.

The biologists emphasize, "the importance of wildfire, including large-scale, intense wildfire, in creating and maintaining stream systems and stream habitat." The biologists continue "in most cases, proposed projects that involve large-scale thinning, construction of large fuel breaks, or salvage logging as tools to reduce fuel loading with the intent of reducing negative effects to watersheds and the aquatic system are largely unsubstantiated." The biologists point out that logging, thinning and fire suppression can have harmful effects on watersheds (Id.). We ask that the FS explicitly consider the Western Montana Level I Bull Trout Team position paper in the subsequent NEPA document.

Fire modeling shows that thinning will increase the rate of spread of fire, something not clearly disclosed to the public in the REA. A FS science publication reports: "Depending on the type, intensity, and extent of thinning, or other treatment applied, fire behavior can be improved (less severe and intense) or exacerbated" (Graham, et. al, 1999a). Christensen, et al., in their September 24, 2002 letter to President Bush give another explanation for increase in fire intensity post-thinning, which is the increased drying effect of sun and wind in stands that have been opened up. And a series of studies from the scientific literature shows post-thinning increases in fire intensity and/or spread.[1]

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[1] Many of these studies were reviewed by the Forest Service in connection with the Final Environmental Impact Statement for the Roadless Areas Conservation Rule (FEIS). The fire specialist review of scientific literature for the FEIS summarizes their findings. See FEIS, Fuel Management and Fire Suppression Specialist's Report [available online at:

Obviously, following project "treatments" the vegetation would not remain static, so later treatments will be required to meet these new watershed objectives/management emphases. The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate implementation in the Implementation Action Plan Report for the Federal Wildland Fire Management Policy and Program Review. In general, the FS lags far behind other federal land management agencies that have already invested considerable amounts of time, money, and resources to implement the Fire Policy. Continued mismanagement of national forest lands and FS refusal to fully implement the Fire Policy puts wildland firefighters at risk if and when they are dispatched to wildfires. This is a programmatic issue, one that the current Forest Plan does not adequately consider. Please see Ament (1997) as comments on this proposal, in terms of fire policy and programmatic planning.

Any forest condition that is maintained through mechanical manipulation is not maintaining ecosystem function. The proposed vegetation management activities would not be integrated well with the *processes* that naturally shaped the ecosystem and resulted in a range of natural structural conditions. Thus, the need for standards guiding both the delineation of zones where "artificializing" fuel reduction actions may take place, and that also set cut tree size limits and snag and down woody debris retention amounts.

Also, Hessberg and Lemkuhl (1999) question a common assumption that fuel levels are too high for prescribed burning to take place before thinning, and suggest that prescribed burning alone can be utilized in many cases where managers typically assume mechanical fuel reductions must be used. Their review also stresses the importance of larger level spatial and temporal issues, generally not well disclosed or understood in limited "treatment" proposals.

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http://www.roadless.fs.fed.us/documents/feis/specrep/xfire_spec_rpt.pdf] at 22 ("The Congressional Research Service ... noted: 'timber harvesting does remove fuel, but it is unclear whether this fuel removal is significant;'" "Covington (1996) ... notes that, 'scientific data to support such management actions [either a hand's off approach or the use of timber harvesting] are inadequate'" (brackets in the source)); id. at 22-23 ("Kolb and others (1994) ... conclude that ... management activities to improve forest health [such as fuel management] are difficult to apply in the field" (brackets in the source)); id. at 21 ("Fahnstock's (1968) study of precommercial thinning found that timber stands thinned to a 12 feet by 12 feet spacing commonly produced fuels that 'rate high in rate of spread and resistance to control for at least 5 years after cutting, so that it would burn with relatively high intensity;'" "When precommercial thinning was used in lodgepole pine stands, Alexander and Yancik (1977) reported that a fire's rate of spread increased 3.5 times and that the fire's intensity increased 3 times"); id. at 23 ("Countryman (1955) found that 'opening up' a forest through logging changed the 'fire climate so that fires start more easily, spread faster, and burn hotter"). See also Huff, M.H., R.D. Ottmar, E. Alvarado, R.E. Vihnanek, J.F. Lehmkuhl, P.F. Hessburg, and R.L. Everett. 1995. "Historical and current landscapes in eastern Oregon and Washington. Part II: linking vegetation characteristics to potential fire behavior and related smoke production." U.S. Forest Service Pacific Northwest Forest and Range Experiment Station, GTR PNW-355. See also "Initial review of silvicultural treatments and fire effects on Tyee fire." Appendix A, Environmental Assessment for the Bear-Potato Analysis Area of the Tyee Fire, Chelan and Entiat Ranger Districts, Wenatchee National Forest, Wenatchee, WA.

Many adverse consequences to soil, ecological processes, wildlife, and other elements of the natural environment are associated with logging, including thinning. (Ercelawn, 1999; Ercelawn, 2000.) For example: "Salvage or thinning operations that remove dead or decayed trees or coarse woody debris on the ground will reduce the availability of forest structures used by fishers and lynx." (Bull et al., 2001.)

The fact that the IPNF has not monitored the population trends of its old-growth management indicator species (MIS) as required by the Forest Plan bears important mention here. The IPNF has failed to insure viability of MIS and TES species to date. Unfortunately, region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003). As recent court decisions and a report by the Lands Council (Picken, 2005) reveal, the IPNF's old-growth inventory inaccurately inflates the actual amount of old growth existing on the Forest.

Please disclose how much old growth, by type, has previously been clearcut, salvaged, intermediate cut, thinned, etc. in the project area during Forest Plan implementation. Additionally please disclose the figures from the time prior to Forest Plan adoption.

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the IPNF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the IPNF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

A big problem with the FS's analyses for old-growth Sensitive and Management Indicator Species (MIS) is that the connection between the areas designated for old growth management and old growth species, i.e. how these acres contribute to old growth species' viability, is glossed over. As far as we're aware, the IPNF has never determined minimum viable populations for any MIS or TES species as NFMA requires, nor has it specified the amount and distribution of habitat necessary to maintain viable populations. Nor has it monitored population trends of indicator species, as NFMA requires.

The REA does not disclose if all the areas to be logged or burned have been field surveyed for their old-growth habitat characteristics, or meet the old-growth criteria. Areas proposed for burning or logging may have old-growth characteristics that would be ignored simply because other areas have been designated for old-growth management.

Lesica (1995) stated that maintaining 10% of forests as old growth may extirpate some species. This is based on his estimate that 20-50% of low and many mid-elevation forests were in old

growth condition prior to European settlement. Why does the IPNF assume that 10% is all that is needed to maintain viable populations of old-growth species on the Forest? What is the scientific basis for the IPNF's position, namely that maintaining 10% old-growth on the Forest is plenty to maintain population viability of all species needing old-growth habitat?

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes,[2] distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

The FS has acknowledged 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. No wildlife species that presently occupy the project area are at such low numbers that potential effects to individuals would jeopardize species viability. No actions proposed under the preferred alternative would conceivably lead to loss of population viability. (Lewis and Clark NF, Dry Fork EA Appendix D at p. 9.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the analysis area are still part of viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale. The analysis must cover a large enough area to include a cumulative effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations.

The FS has failed to cite any evidence that its managing for old growth habitat strategy (i.e., logging old growth or logging to facilitate development of old growth) will improve old growth species' habitat over the short-term or long-term. In regards to the FS's "managing for old growth habitat" theory:

> (T)here is the question of the appropriateness of management manipulation of old-growth stands... Opinions of well-qualified experts vary in this regard. As long term results from active management lie in the future – likely quite far in the future – considering such manipulation as appropriate and relatively certain to

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[2]Subpopulations.

> yield anticipated results is an informed guess at best and, therefore, encompasses some unknown level of risk. In other words, producing "old-growth" habitat through active management is an untested hypothesis.

(Pfister et al., 2000, pp. 11, 15 emphasis added). Furthermore the FS never discloses if the areas "treated" will retain characteristics meeting Forest Plan or Regional old growth criteria—and if they won't, how they will at some specified time in the future. There is no scientific certainty in the FS's approach.

The continued fragmentation of the IPNF is a major ongoing concern. It is documented that edge effects occur 10-30 meters into a forest tract (Wilcove et al., 1986). The size of blocks of interior forest that existed historically before management (including fire suppression) was initiated--compared to the present condition—is not adequately considered. Again, this should be a landscape ecology analysis that looks at the larger picture of the fragmentation of habitat in surrounding concentric circles.

Logging, roadbuilding and other disturbance associated with the project and other cumulative impacts would affect goshawk nesting, post-fledging family habitat, alternative nesting, foraging, competitors, prey and potential habitat, including areas far from cutting units. Research in the Kaibab National Forest found that goshawk populations decreased dramatically after partial logging, even when large buffers around nests were provided (Crocker-Bedford, 1990).

The FS's analysis of goshawks seems to reflect a very poor understanding of northern goshawk habitat requirements. Reynolds, et al. 1992 provide a basis for a northern goshawk conservation strategy that could be implemented if forestwide habitat considerations were to be truly taken into account. Reynolds et al. (1992) suggest that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be maintained, yet nothing in the REA seems to recognize that (see also Suring et al. 1993). Graham, et al. 1999, USDA Forest Service 2000b, Iverson et al. 1996, and Suring et al. 1993 are more examples of northern goshawk conservation strategies the FS might adopt for this Forest, if emphasis was more appropriately placed on species conservation and insuring viability rather than justification for resource extraction.

USDA Forest Service, 2000b recommends that forest opening greater than 50-60 acres be avoided in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (Id.). Research suggests that a localized distribution of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

Goshawks are often associated with a thick overstory cover and areas with a large number of large trees. For example, Hayward and Escano (1989) recommend an overstory canopy between 75 and 80%. According to the BE/BA for the Keystone Quartz EIS in the Beaverhead-Deerlodge NF, "Goshawks prefer vegetation structure that permits them to approach prey unseen and to use their flight maneuverability to advantage (Widen, 1989, Beier and Drennan 1997)..."

The issue of fragmentation should have been more thoroughly considered with respect to goshawks. Other edge-adapted species may compete with the goshawk and displace the goshawk if adequate amounts of forest interior habitat is not provided. Crocker-Bedford (1990)

recommends that a foraging area of >5000 acres of dense forest, in which no logging is permitted, be designated for goshawks, with additional areas of 2500-5000 acres of more marginal habitat designated beyond this 5,000 acre foraging area.

The REA failed to disclose and analyze the uncertain and precarious population status of the fisher, as described in Witmer, et al., 1998:

> The status of the fisher in the Western United States is poorly known but generally perceived as precarious and declining. This is a serious issue alone, but it also is a component of the larger problem of the decline of biological diversity. Recovery of species of concern must necessarily focus on the population level, because this is the scale at which genetic variation occurs and because population [sic] are the constituent elements of communities and ecosystems. Systematic habitat alteration and overexploitation have reduced the historical distribution of fishers in suitable habitat in the interior Columbia basin to isolated and fragmented populations. Current populations may be extremely vulnerable to local and regional extirpation because of their lack of connectivity and their small numbers (Id. at 14, internal citations omitted).

The proposed project would adversely impact fishers and their habitat. Habitat elements for natal and maternal dens are found in large diameter logs or snags. "Salvage or thinning operations that remove dead or decayed trees or coarse woody debris on the ground will reduce the availability of forest structures used by fishers and lynx." (Bull et al., 2001.) Such key habitat components would be reduced in stands intensively managed for timber. "Though the post-treatment stand condition would not be 'clear cuts', they would be fairly open and Jones (1991) did not expect to find substantial fisher hunting use of plantations by fishers until canopy approached 80% and 10-15 feet respectively (depending on snow depths)" (Flathead NF's Spotted Beetle EA, p. 3-62). The extensive logging, snag removal and other activities associated with the project would negatively affect fisher habitat. Movement, denning, resting areas, genetic diversity, and other aspects of fisher life cycles and fisher survival could be impacted by the project; the FS does not fully consider these elements of the project or adequately mitigate their impacts. A finding of no significant impact is not warranted.

Jones (undated) provides an example of a conservation strategy for the fisher, something the FS has so far neglected for this Sensitive species.

Regarding another IPNF Sensitive species, the black-backed woodpecker, Cherry (1997) states:

> The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The Region 1 black-backed woodpecker assessment (Hillis et al., 2003) notes that the black-backed woodpecker depends upon the very forest that this project targets for much of its logging, removal of dead and dying trees:

> Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests. (Internal citations omitted.)
>
> ...Black-backed woodpeckers also occur in unburned landscapes Bull et al. 1986, Goggans et al.1987, Bate 1995, Hoffman 1997, Weinhagen 1998, Steeger and Dulisse in press, Taylor unpublished data). Taylor's observations of black-backed woodpeckers in unburned forests in northern Idaho suggest that they may occur at substantially lower densities in unburned forests, but no rigorous comparisons between black-backed woodpecker densities in burned and unburned forests have been done. Hutto (1995) hypothesized that black-backed woodpeckers reproduce at *source* reproductive levels in burns, but may drop to *sink* reproductive levels in the intervening periods between large burns.

The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. The cumulative impacts of the IPNF's ongoing fire suppression policy are also not adequately considered.

Lofroth (1997) in a study in British Columbia, found that wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993). Please explain why this scientific information should be discounted for the purposes of the Twomile project.

The IPNF provides inadequate management strategies to insure viability of the pine marten. Ruggerio, et al. (1998) and Bull and Blumton, 1999, indicate that vertical and horizontal diversity provided by snags and large down woody debris are important habitat characteristics for the pine marten, another old-growth wildlife species. The kind of treatments proposed for the Twomile project reduce the availability of prey species for the marten.

Old growth allows martens to avoid predators, provides resting and denning places in coarse woody debris and large diameter trees, and allows for access under the snow surface. USDA Forest Service, 1990 is summary of old-growth habitat needs of martens reviewed research suggesting that martens prefer forest stands with greater than 40% tree canopy closure and rarely venture more than 150 feet from forest cover, particularly in winter. It also cites research suggesting that at least 50% of female marten home range should be maintained in mature or old growth forest. Also, consideration of habitat connectivity is essential to ensuring marten viability: "To ensure that a viable population of marten is maintained across its range, suitable

habitat for individual martens should be distributed geographically in a manner that allows interchange of individuals between habitat patches (Ibid.).

The IPNF has otherwise recognized the need for updated guidelines for the pine marten: "Apply snag and down woody material guidelines from the Upper Columbia River Basin Assessment to improve marten habitat" (USDA Forest Service 2000c, p. 39).

The flammulated, boreal owl and the great gray owl are species of concern that are sensitive to logging and other management activities. The IPNF provides inadequate management strategies to insure their viability. See, for example, Hayward and Verner, 1994.

The IPNF continues to ignore the fact that Bull et al., 1997 essentially nullify the IPNF's snag habitat retention and management strategies. The high density of snags and defective trees within old-growth (Green et al. 1992) would likely be substantially eliminated with the planned logging. Bull, et al., 1997 state:

> This document presents new information on the retention and selection of trees and logs most valuable to wildlife.
>
> ...Current direction for providing wildlife habitat on public forest lands does not reflect this new information. Since the publication of Thomas and others (1979), new research suggests that to fully meet the needs of wildlife, additional snags and habitat are required for foraging, denning, nesting, and roosting. Although we do not suggest specific numbers or snags to retain by forest type, tow recent studies indicate that viable woodpecker populations occurred in areas with about four snags per acre.
>
> We suggest that the next step in snag management should involve creating a model that incorporates the new information on woodpecker foraging substrates (live trees, snags, and logs), home range sizes, number and characteristics of roost trees, multiple occupancy of snags, and needs for other habitat structures. Once this information is incorporated, the model may suggest changes to guidelines that specify numbers of snags and other habitat features by forest type and geographic area. Additional information on fall rates of snags, foraging needs of black-backed and three-toed woodpeckers, relation of the density of woodpeckers to that of secondary cavity nesters, and relation of snag density to woodpecker density would greatly improve the model.

The IPNF (USDA Forest Service, 2000c) recently called for updated snag guidelines: "Apply snag and down woody material guidelines from the Upper Columbia River Basin Assessment to improve marten habitat" (p. 39), unfortunately at all levels this recommendation has subsequently been ignored.

The REA does not adequately consider that snags may be cut down for safety reasons during logging operations (due to OSHA regulations. The REA fails to disclose <u>how much</u> snag loss would be expected because of safety concerns and also skyline corridors and other methods of

log removal—the loss could be more significant that disclosed, because the REA doesn't provide any idea the degree of snag loss due to these concerns. The paucity of snag habitat in previously logged areas is no doubt at least partially attributed to concerns over logger safety.

The degree to which pileated woodpeckers prefer larger trees/snags for nesting is not recognized by the REA. Also, USDA Forest Service, 1990 states, "To provide suitable pileated woodpecker habitat, strips should be at least 300 feet in width..." The REA also ignores many structural habitat components necessary for the pileated woodpecker. USDA Forest Service, 1990 indicates that measurements of the following variables are necessary to determine quality and suitability of pileated woodpecker habitat:

- Canopy cover in nesting stands
- Canopy cover in feeding stands
- Number of potential nesting trees >20" dbh per acre
- Number of potential nesting trees >30" dbh per acre
- Average DBH of potential nest trees larger than 20" dbh
- Number of potential feeding sites per acre
- Average diameter of potential feeding sites

The preferred very large diameter of nesting trees for the pileated woodpecker recognized by USDA Forest Service, 1990 (and ignored by the snag retention strategy in the REA) is notable. McClelland and McClelland, 1999 found similar results in their study in northwest Montana, with the average nest tree being 73 cm. (almost 29") dbh.

The paltry number of snags to be retained in logging units, and the failure to specify snags of adequate **size**, contrasts with scientifically-determined habitat needs acknowledged elsewhere by the FS. The REA cites the Northern Region Snag Management Protocol, which lacks peer-review and validation from post-implementation monitoring. Harris (1999) and ICBEMP DSEIS Appendix 12 also present scientific information that contrasts greatly with the REA on this topic.

The REA also fails to cite the results of monitoring that indicate the FS is capable of meeting snag requirements for wildlife species.

Since the Twomile REA provides inadequate analysis regarding the size and quality of habitat blocks needed by the pileated woodpecker, the analysis completely fails to disclose the quantitative or qualitative significance of cumulative effects due to past logging in the area.

The REA also fails to adequately disclose the cumulative impacts of the ever-increasing motorized recreational use on wildlife species. The Analysis of the Management Situation for Revision of the Kootenai and Idaho Panhandle Forest Plans (AMS) notes: "Roads that were originally constructed and used for timber harvest are now predominately used for recreation purposes..." (p. 41). The fact that the FS has never publicly declared that the existence of these single-use timber roads was not to create expectations of unlimited use of such roads for recreation access has led to unrealistic expectation on the part of certain members of the public, and also unwarranted political pressure to maintain maximum access.

From the KIPZ AMS Technical Report:

> Sensitive species are those species for which population viability is a concern, and are administratively determined by the Regional Forester. Population trends for many of these species is unknown at this time. Monitoring for sensitive bird species is being conducted as part of the Region 1 Landbird Monitoring Program. This program monitors bird presence along permanent transects in both managed and unmanaged, burned and unburned forests in all forest types. Once adequate data is available assumptions on population trends may be determined for some of these species. (p. 52, emphasis added.)

First of all, the FS should disclose which species for which population trends are unknown. It is particularly telling that, following over 17 years of original Forest Plan implementation, the FS has no idea as to the population trends of these species. This means the FS has not "insured viability" as NFMA requires. Unexplained is why the FS did not take the steps necessary to insure viability, like follow NFMA and Forest Plan monitoring requirements by performing population surveys, or like follow its own Forest Service Handbook and Forest Service Manual guidance and design **conservation strategies** for Sensitive species:

> The companion approach to the coarse filter is the "fine filter" analysis in which conservation strategies are used for individual species or groups of species to contribute to population viability. The fine filter approach narrows the focus to those species that require habitat that may be outside the historic range of variation (HRV). (AMS Technical Report p. 49, emphasis added.)

The IPNF has admitted that the use of database habitat information, is suspect: "Habitat modeling based on the timber stand database has its limitations: the data are, on average, 15 years old; canopy closure estimates are inaccurate; and data do not exist for the abundance or distribution of snags or down woody material..." (U.S. Forest Service, 2000c). The REA does not indicate the degree of accuracy of the databases discussed in the REA and relied on for these analyses, as compared to the one subject to that observation.

According to official FS policy, the FS "must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project." FSM 2670.45. The FS never has. According to FS experts, population viability analysis is not plausible or logical, from a scientific standpoint, at the project level such as the scale of a timber sale(s), absent some tiering to a larger-scaled study. Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas (often referred to as "landscape scales"). The FS has failed to tier the viability analyses for Sensitive species that would be impacted by the Twomile project to a landscape analysis of Sensitive species viability that would allow for some assurances to the public that species viability is currently being insured in spite of continued habitat destruction and/or alteration.

We are concerned that project activities will accelerate soil erosion, increase soil compaction, and degrade soil productivity. Prescribed fires and mechanical treatments may adversely affect soil productivity. NFMA requires the FS to "not allow significant or permanent impairment of the productivity of the land." [36 C.F.R. § 219.27(a)(1).] NFMA requires the FS 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." [16 U.S.C. 1604 (g)(3)(E).]

The FS has essentially admitted that it is in the dark as far as doing scientific research on soil productivity changes following management activities. In response to comments on the Black Ant Salvage DEIS, Lewis & Clark NF, USDA Forest Service, 2002 states:

> Soil Quality Standards "provide benchmark values that indicate when changes in soil properties and soil conditions would result in significant change or impairment of soil quality based on available research and Regional experience" (Forest Service Manual 2500, Region 1 Supplement 2500-99-1, Chapter 2550 – Soil Management, Section 2554.1).
>
> A formal research study, the "Long Term Soil Productivity Study," is currently being conducted by the Research Branch of U.S. Department of Agriculture, Forest Service to validate these soil quality standards.

The Forest Management Handbook at FSH 2509.18 directs the FS to do validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy" (2.1 – Exhibit 01). It asks what we are asking: "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?" The Ecology Center recently asked the Northern Region if they have ever performed this validation monitoring of its 15% Standard, in their February 26, 2002 Freedom of Information Act request to the Regional Forester, requesting:

> The Forest Management Handbook at FSH 2509.18 provides the Forest Service with examples of validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy." It asks "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?" We request all documentation of validation monitoring by the Forest Service in the Northern Region that answers those two questions.

The Northern Region office's reply letter stated that there is no documentation that responds to this request. If the IPNF is aware of any new or other documentation that would respond to this request, we ask that you please disclose it to us now.

The REA relies upon mitigation for soils, but cites no monitoring or scientific studies to validate the effectiveness of the mitigation.

The REA fails to disclose the implications of landtype limitations for detrimental soil impacts. Some of the landtypes have "moderate" or "severe" soil erosion and sediment hazard potential, and soil erosion or mass wasting (a severe form of erosion) are both kinds of detrimental impacts. And the public cannot tell which proposed activity areas fall into which landtypes, and therefore might be more at risk for erosion or other detrimental impacts that decrease soil productivity. Finally, the REA fails to disclose the results of monitoring of past actions on these various landtypes, that would reveal the differential levels of soil impacts of the various logging activities carried out in the past (and now proposed with this new project).

The REA fails to link the current and cumulative soil disturbance across hundreds or thousands of acres in the project area watersheds to the impacts on water quantity and quality.

Please disclose what inventory or monitoring information of soil functioning indicators the Forest has, including lichens, fungi, insects, etc. since these can and do define existing and probable future forest conditions, especially related to natural recovery following fire. Lichens in particular, while capturing atmospheric nitrogen for later release to higher plants and trees, are sensitive indicators of atmospheric and ground conditions and cannot be ignored in attempts at ecosystem management. Fungi and insects indicate and largely drive forest condition. Those that act as antagonists or parasites to destructive forms like root disease fungi or bark beetles should be recognized, as should tree pathogens and pests.

The meaning of "soil productivity" in the terminology of NFMA is largely ignored. In FSM 2500-99-1 the FS claims that "Soil quality is maintained when erosion, compaction, displacement, rutting, burning, and loss of organic matter are maintained within defined soil quality standards." But even if the FS were to meet the 15% Standard in all Activity Areas forestwide, and even if the soil conditions of land outside proposed activity areas could reasonably be ignored, the FS still cannot assume that there has been no "significant or permanent impairment of the productivity of the land" as NFMA requires.

It is reasonable to expect that in order for the FS to assure that soil productivity is not or has not been significantly impaired, to assure that the forest is producing a sustained yield of timber, for one example, tree growth must not be significantly reduced by soil-disturbing management activities. Grier and others (1989), in a Forest Service General Technical Report, adopted as a measure of soil productivity: "the total amount of plant material produced by a forest per unit area per year." (P. 1.) And they cite a study finding "a 43-percent reduction in seedling height growth in the Pacific Northwest on primary skid trails relative to uncompacted areas" for example. And in another Forest Service report, Adams and Froehlich (1981) state:

> Measurements of reduced tree and seedling growth on compacted soils show that significant impacts can and do occur. Seedling height growth has been most often studied, with reported growth reductions on compacted soils from throughout the U.S. ranging from about 5 to 50 per cent.

Adams and Froehlich (1981) also provide reasons why impacts beyond the directly compacted 15% of an area must be considered in any reasonable definition of soil productivity:

> Since tree roots extend not only in depth but also in area, the potential for growth impact also becomes greater as compaction affects more of the rooting area. In a thinned stand, for example, you can expect the greatest growth impacts in residual trees that closely border major skid trails or that have been subject to traffic on more than one side of the stem."

In other words, when an Activity Area reaches 15% detrimentally impacted soils via compaction, tree growth outside the skid trail, or beyond the 15% compacted area, is affected. This is ignored in the Regional Policy and the REA.

The Northern Region recognizes that the Standards must be validated. FSM 2500-99-1 requires that Forest Supervisors must:

- Assess … whether (soil quality standards) are effective in maintaining or improving soil quality;
- Evaluate the effectiveness of soil quality standards and recommend adjustments to the Regional Forester; and
- Consult with soil scientists to evaluate the need to adjust management practices or apply rehabilitation measures.

This all implies that monitoring must be undertaken. Furthermore, FSM 2500-99-1 recognizes that soil productivity is defined not merely in terms of the absence of meeting the 15% standard. "Soil Function" is defined thus:

> Primary soil functions are: (1) the sustenance of biological activity, diversity, and productivity, (2) soil hydrologic function, (3) filtering, buffering, immobilizing, and detoxifying organic and inorganic materials, and (4) storing and cycling nutrients and other materials.

And "Soil Quality" is defined as "The capacity of a specific soil to function within its surroundings, support plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation."

Neither soil function nor soil quality, as FSM 2500-99-1 defines it, have ever been monitored on the IPNF following management activities. Unfortunately, the FS seems to have only interpreted monitoring requirements in terms of maintaining no more than 15% of activity areas in a detrimentally disturbed condition.

Page-Dumroese et al. 2000 emphasize the importance of validating soil quality standards using the results of monitoring:

> Research information from short- or long-term research studies supporting the applicability of disturbance criteria is often lacking, or is available from a limited number of sites which have relative narrow climatic and soil ranges.
> …Application of selected USDA Forest Service standards indicate that blanket threshold variables applied over disparate soils do not adequately account for nutrient distribution within the profile or forest floor depth. These types of guidelines should be continually refined to reflect pre-disturbance conditions and site-specific information. (Abstract.)

The FS's methodology might approach adequacy if the FS were to have actually validated it by performing objective, scientifically adequate measures of compaction such as measures of bulk density. Adams and Froehlich (1981) state: "While general field observations can be useful in recognizing severe compaction problems, measurement of actual changes in soil density permits the detection of less obvious levels of compaction." It is these "less obvious levels of compaction" that are missed by the kind of monitoring the FS has performed on the IPNF.

For a study done on the Kootenai NF and the adjacent Flathead NF in Montana, soil scientists measured soil bulk densities, macropore porosities, and infiltration rates using paired

observations of disturbed vs. undisturbed soils. They discovered that although "the most significant increase in compaction occurred at a depth of 4 inches… some sites showed that maximum compaction occurred at a depth of 8 inches… (and) "Furthermore, ... subsurface compaction occurred in glacial deposits to a depth of at least 16 inches." (Kuennen, Edson, and Tolle, 1979.) There is simply no way that the FS has enough soil bulk density and other compaction monitoring data collected at the adequate soil depths and in enough sites to be able to assure that the use of heavy machinery, as prescribed by the Twomile project, will not significantly or permanently impair the productivity of the soil.

In interpreting the requirements of NEPA, the federal courts have evaluated the adequacy of mitigation measures that EISs and EAs rely upon. Relying upon inadequate mitigation measures to protect soils fails to meet this judicially specified test of compliance with NEPA regulations.

Following a study by Cullen and others (1991) which was carried out on the Kootenai NF and the adjacent Flathead NF, the authors concluded: "This result lends support to the general observation that most compaction occurs during the first and second passage of equipment." And Page-Dumroese (1993), in a FS research report investigating logging impacts on volcanic ash-influenced soil in the adjacent IPNF, states, "Moderate compaction was achieved by driving a Grappler log carrier over the plots twice." She also cited other studies that indicated: "Large increases in bulk density have been reported to a depth of about 5 cm with the first vehicle pass over the soil." Williamson and Neilsen (2000) assessed change in soil bulk density with number of passes and found 62% of the compaction to the surface 10cm to come with the first pass of a logging machine. In fine textured soils Brais and Camire (1997) demonstrated that the first pass creates 80 percent of the total disturbance to the site.

Adams and Froehlich (1981) state, "Unfortunately, little research has yet been done to compare the compaction and related impacts caused by low-pressure and by conventional logging vehicles."

From Grier and others (1989):

> The potential productivity of a site can be raised or lowered by management activities causing a permanent or long-term increase or decrease in the availability of nutrients essential for plant growth. (P. 27.)
>
> …Any time organic matter is removed from a site, a net loss of nutrients from that site also occurs. In timber harvesting or thinning, nutrient losses tend to be proportional to the volume removed. (P. 27.)
>
> …Slash burning is a common site preparation method that can affect soil chemical properties tremendously. A great deal of controversy is often associated with using fire because of the wide variety of effects, some of which are definitely detrimental to site quality and some of which are beneficial. (P. 30.)

The REA also fails to cite monitoring results showing the FS has been able to correctly implement the coarse woody debris guidelines on the IPNF. The FS must evaluate the adequacy

of such required mitigation measures. An environmental impact statement must present a "reasonably complete discussion of possible mitigation measures." *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 351 (1989).

The IPNF has never attempted to put in place a scientifically sound definition of "soil productivity" that can be measured and compared to baseline conditions. Harvey et al., 1994 state:

> The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.
>
> The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake.

(Internal citations omitted.)

The Forest Plan never anticipated nor disclosed the degree to which land management activities, including timber production grazing, and management of recreational activities, would lead to so much of the IPNF being infested with noxious weeds. The Sheep Creek Salvage FEIS (Beaverhead-Deerlodge NF, 2005) states at p. 173:

> Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (*Centaurea biebersteinii D.C.*) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

The FS has no idea how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, nor how that situation is expected to change.

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

The rationale and analysis of this proposal must look at the forest as an ecosystem with interrelationships coequal to timber production. Please use the ecosystem management approach to assess fungal and insect organisms as capable of operating in a self-regulatory manner and exist as beneficial organisms within the project area. Some species of trees, native insects, and disease organisms are often described by the FS as "invasive" or somehow bad for the

ecosystem. Such contentions that conditions are somehow "unnatural" runs counter to more enlightened thinking on such matters. For example, Harvey et al., 1994 state:

> Although usually viewed as pests at the tree and stand scale, insects and disease organisms perform functions on a broader scale.
>
> ...Pests are a part of even the healthiest eastside ecosystems. Pest roles—such as the removal of poorly adapted individuals, accelerated decomposition, and reduced stand density—may be critical to rapid ecosystem adjustment
>
> ...In some areas of the eastside and Blue Mountain forests, at least, the ecosystem has been altered, setting the stage for high pest activity (Gast and others, 1991). This increased activity does not mean that the ecosystem is broken or dying; rather, it is demonstrating functionality, as programmed during its developmental (evolutionary) history.

The FS often makes a case for logging as a way to reduce insect and disease damage to timber stands. As far as we are aware, the FS has no empirical evidence to indicate its "treatments" for "forest health" decrease, rather than increase, the incidence of insects and diseases in the forest. Since the FS doesn't cite research that proves otherwise in the REA, we can only conclude that "forest health" discussions are unscientific and biased toward logging as a "solution." Please consider the large body of research that indicates logging, roads, and other human caused disturbance promote the spread of tree diseases and insect infestation.

For example, multiple studies have shown that annosus root disease (Heterobasidion annosum, formerly named Fomes annosus), a fungal root pathogen that is often fatal or damaging for pine, fir, and hemlock in western forests, has increased in western forests as a result of logging (Smith 1989). And researchers have noted that the incidence of annosus root disease in true fir and ponderosa pine stands increased with the number of logging entries (Goheen and Goheen 1989). Large stumps served as infection foci for the stands, although significant mortality was not obvious until 10 to 15 years after logging (Id.).

The proportion of western hemlock trees infected by annosus root disease increased after precommercial thinning, due to infection of stumps and logging equipment wounds (Edmonds et al. 1989, Chavez, et al. 1980).

Armillaria, a primary, aggressive root pathogen of pines, true firs, and Douglas-fir in western interior forests, spreads into healthy stands from the stumps and roots of cut trees (Wargo and Shaw 1985). The fungus colonizes stumps and roots of cut trees, then spreads to adjacent healthy trees. Roots of large trees in particular can support the fungus for many years because they are moist and large enough for the fungus to survive, and disease centers can expand to several hectares in size, with greater than 25% of the trees affected in a stand (id.). Roth et al. (1980) also noted that Armillaria was present in stumps of old-growth ponderosa pine logged up to 35 years earlier, with the oldest stumps having the highest rate of infection.

Filip (1979) observed that mortality of saplings was significantly correlated to the number of Douglas-fir stumps infected with Armillaria mellea and laminated root rot (Phellinus weirii). McDonald, et al. (1987) concluded the pathogenic fungus Armillaria had a threefold higher occurrence on disturbed plots compared to pristine plots at high productivity sites in the Northern Rockies. Those authors also reviewed past studies on Armillaria, noting a clear link between management and the severity of Armillaria-caused disease.

Morrison and Mallett (1996) observed that infection and mortality from the root disease Armillaria ostoyae was several times higher in forest stands with logging disturbance than in undisturbed stands, and that adjacent residual trees as well as new regeneration became infected when their roots came into contact with roots from infected stumps.

Precommercial thinning and soil disturbance led to an increased risk of infection and mortality by black-stain root disease (Leptographium wageneri) in Douglas-fir, with the majority of infection centers being close to roads and skid trails (Hansen et al. 1988). Also another Black-stain root disease (Verticicladiella wagenerii) occurred at a greater frequency in Douglas-fir trees close to roads than in trees located 25 m or more from roads (Hansen 1978). Witcosky et al. (1986) also noted that precommercially thinned stands attracted a greater number of black-stain root disease insect vectors.

Complex interactions involve mechanical damage from logging, infestation by root diseases, and attacks by insects. Aho et al. (1987) saw that mechanical wounding of grand fir and white fir by logging equipment activated dormant decay fungi, including the Indian paint fungus (Echinodontium tinctorium).

Trees stressed by logging, and therefore more susceptible to root diseases are, in turn, more susceptible to attack by insects. Goheen and Hansen (1993) reviewed the association between pathogenic fungi and bark beetles in coniferous forests, noting that root disease fungi predispose some conifer species to bark beetle attack and/or help maintain endemic populations of bark beetles.

Goheen and Hansen (1993) observed that live trees infected with Laminated root rot (Phellinus weirii) have a greater likelihood of attack by Douglas-fir beetles (Dendroctonus pseudotsugae). Also, Douglas-fir trees weakened by Black-stain root disease (Leptographium wageneri var. pseudotsugae) are attacked and killed by a variety of bark beetle species, including the Douglas-fir bark beetle (D. pseudotsugae) and the Douglas-fir engraver (Scolytus unispinosis) (id.).

The root disease Leptographium wageneri var. ponderosum predisposes ponderosa pine to several bark beetle species, including the mountain pine beetle (D. ponderosae) and the western pine beetle (D. brevicomis) (Goheen and Hansen 1993).

A variety of root diseases, including black-stain, Armillaria, and brown cubical butt rot (Phaeolus schweinitzii), predispose lodgepole pine to attack by mountain pine beetles in the interior west. The diseases are also believed to provide stressed host trees that help maintain endemic populations of mountain pine beetle or trigger population increases at the start of an outbreak (Goheen and Hansen 1993).

Grand and white fir trees in interior mixed-conifer forests have been found to have a high likelihood of attack by the fir engraver (Scolytus ventralis) when they are infected by root diseases, such as laminated root rot, Armillaria, and annosus (Goheen and Hansen 1993).

More western pine beetles (Dendroctonus breviformis) and mountain pine beetles (D. ponderosae) were captured on trees infected by black-stain root disease (Ceratocystis wageneri) than on uninfected trees (Goheen et al. 1985). The two species of beetle were more frequently attracted to wounds on trees that were also diseased than to uninfected trees. They also noted that the red turpentine beetle (Dendroctonus valens) attacked trees at wounds, with attack rates seven-to-eight times higher on trees infected with black-stain root disease than uninfected trees. Spondylis upiformis attacked only wounded trees, not unwounded trees (Id.).

Elevated peakflows contribute to downstream flooding and increase the magnitude and extent of flood damage. Elevation of downstream flows also increases downstream channel erosion and sediment transport. Even relatively slight increases in downstream flooding greatly increase downstream erosion and sediment transport because they are exponentially related to streamflow (King, 1989).

The REA also wholly ignores and fails to disclose the FS's own research (King, 1989) on the accuracy of a peakflow model in estimating increases in peakflows from logging and roads in nearby northern Idaho. King (1989) examined the veracity of a model for changes in peakflow as a function of Equivalent Clearcut Area (ECA), which is one basis of WATSED. King found that the ECA model consistently underestimated measured increases in flow caused by roads and logging.

The WATSED model outputs are also inadequate to disclose the effects of the alternatives and cumulative effects on peakflows and resultant impacts on aquatic resources, because the model estimates changes in **average monthly** peakflow caused by logging and roads. The REA only discusses cumulative and alternative effects on these average monthly peakflows. The REA fails to disclose that King (1989) clearly noted that estimates of average monthly peakflows triggered by logging and roads are not adequate for estimating likely changes in channel conditions and sediment transport caused by logging and roads. King (1989) noted:

> ...the largest 7 or 8 days of streamflow account for the majority of the bedload movement...Average monthly streamflows are usually not a good index of bedload transport, and 'changes in average annual monthly peakflows have no meaningful effect on sediment transport' (Megahan, 1979) and are thus poor indicators of changes in channel-forming flows.

In his research in northern Idaho, King (1989) also stated:

> Thus, it is the relatively few **high flow days** that have the potential for shaping the channel. Increases in **short duration high flows** following harvesting and road building are more important in terms of potential channel erosion and bedload transport than increases in longer duration high flows such as the **maximum mean monthly streamflows**... (emphasis added).

> Therefore, increases in short-duration highflows are more important than longer duration highflows in shaping the channel, and any procedure to estimate streamflow responses and set limits on harvesting should focus on these shorter duration highflows.

The REA's analysis of changes in monthly peakflow is not a surrogate for estimates of daily and instantaneous peakflows triggered by the alternatives and in combination with the cumulative effects of the existing road network and past logging. These peakflow attributes are most important for determining the likely effects on channels and sediment transport triggered by logging and roads (King, 1989). Average peakflows are not of greatest concern. Sediment transport and channel change are greatly affected during extreme events.

WATSED and ECA estimates of peakflow changes do not address changes in daily and instantaneous peakflows from rain-on-snow and other storm events exacerbated by logging and roads. The watershed analysis ignores the occurrence of high peak flows due to such events. Such events occur with some regularity within the Decision area. Rain-on-snow events during the winter and spring months have been found to be the dominant mechanism causing peak flows in the area (MacDonald and Hoffman, 1995).

The REA fails to disclose that small headwater channels are especially vulnerable to increased erosion and sediment transport to downstream habitats caused by increased peakflows (King, 1989). Increased peakflows lead to head cutting channel erosion, expansion of cross-sectional channel area, channel widening, and elevated bank erosion. Increases in peakflow, alone, can increase erosion in smaller streams contributing to downstream sedimentation in pools and low gradient stream reaches. King (1989) warned that the increased peakflow documented in watersheds in northern Idaho could increase downstream sedimentation since sediment transport was highly correlated to peak streamflow magnitude. Although channel adjustment processes are complicated, it is indisputable that increases in peakflow will result in enlarged channel area via increased channel erosion (Schumm, 1969; Richards, 1982). The REA fails to adequately disclose that these impacts can be extremely significant, even if they are "immeasurable."

Beschta et al. (2004) state:

> It is perhaps widely accepted that "best management practices" (BMPs) can reduce damage to aquatic environments from roads. Time trends in aquatic habitat indicators indicate, however, that BMPs fail to protect salmonid habitats from cumulative degradation by roads and logging (Espinosa et al. 1997.) Ziemer and Lisle (1993) note a lack of reliable data showing that BMPs are cumulatively effective in protecting aquatic resources from damage.

The REA does not disclose the degree of natural and management-induced mass failures in the watershed. Mass failures easily travel through INFISH buffer strips causing huge amounts of sediment increases into streams Since INFISH and BMPs fail to prevent degradation of water quality and aquatic habitats, more logging and road building with implementation of INFISH and BMPs cannot be relied upon to prevent further water quality degradation.

It is our intention that you include in the record and review all of the literature and other incorporated documents we've cited herein, and explicitly respond to the scientific information as it applies to the Twomile project proposal. **Please contact me if you have problems locating copies of any of those cites.**

Thank you for your attention to these concerns. Please keep each group on your list to receive further mailings on the proposal. Also, please mail to the Ecology Center copies of the Biological Evaluations/Assessments for all Threatened, Endangered, Proposed, and Sensitive fish, wildlife, and plant species for this proposed project, as soon as they are available.

We conclude this comment letter with this passage from Frissell and Bayles (1996):

> Most philosophies and approaches for ecosystem management put forward to date are limited (perhaps doomed) by a failure to acknowledge and rationally address the overriding problems of uncertainty and ignorance about the mechanisms by which complex ecosystems respond to human actions. They lack humility and historical perspective about science and about our past failures in management. They still implicitly subscribe to the scientifically discredited illusion that humans are fully in control of an ecosystemic machine and can foresee and manipulate all the possible consequences of particular actions while deliberately altering the ecosystem to produce only predictable, optimized and socially desirable outputs. Moreover, despite our well-demonstrated inability to prescribe and forge institutional arrangements capable of successfully implementing the principles and practice of integrated ecosystem management over a sustained time frame an at sufficiently large spatial scales, would-be ecosystem managers have neglected to acknowledge and critically analyze past institutional and policy failures. They say we need ecosystem management because public opinion has changed, neglecting the obvious point that public opinion has been shaped by the glowing promises of past managers and by their clear and spectacular failure to deliver on such promises.

Sincerely,

/s/

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#04

NEPA Coordinator
Coeur d'Alene River Ranger District – Fernan Office
2502 East Sherman Avenue
Coeur d'Alene, ID 83814-5899

June 9, 2005

RE: Idaho Conservation League comments on the Revised Twomile EA

Dear Randy:

Thank you for allowing the Idaho Conservation League to comment on the Revised Twomile EA. For thirty years, the Idaho Conservation League has worked to preserve Idaho's clean water, wilderness and quality of life through citizen action, public education, and professional advocacy. As Idaho's largest statewide conservation organization we represent over 3,300 members, many of whom have a deep personal interest in ensuring that timber harvesting and forest management prescriptions do not detrimentally impact water quality, fish and wildlife, and recreational opportunities.

We appreciate that the IPNF has included, in the preferred alternative for the Twomile project, the use of helicopter logging and skyline logging, with limited tractor logging in order to meet the purpose and need for the project. We do recommend, however, that the IPNF exercise caution when partaking in treatments in units with the potential for high sediment yield and/or mass failure.

The IPNF also should not disregard the potential effects of the Twomile project on aquatic biota and fisheries in the analysis area simply because of its existence in a larger watershed. While the effects to the Twomile subwatershed could be argued as negligible in comparison to the entire South Fork of the Coeur d'Alene River watershed or the IPNF, using this argument does not relieve the IPNF of its obligations to threatened, endangered, MIS, sensitive species or cumulative effects in the Twomile Resource Area.

We thank you once again for the opportunity to comment on the revised environmental assessment for the Twomile project and encourage you to contact us if you have any questions about these comments. Please send us any subsequent documents for this project.

Sincerely,

/s/ Jonathan Oppenheimer
Jonathan Oppenheimer
North Idaho Associate

Idaho Conservation League comments on the Revised Twomile EA

Purpose and Need

In recent times there has been significant attention paid to the accumulation of increased fuels on the national forests. The Wildland Urban Interface (WUI) is the area where general agreement exists in the reduction of forest fuels. Given the significant number of acres that exhibit fuel accumulations on the national forests, it is not feasible to treat all of these acres. Therefore we are generally more supportive of fuels reduction treatments that occur in the WUI as opposed to far away from communities.

The stated purpose and need as summarized in the Revised Twomile EA are to meet the objectives of the National Fire Plan and the Shoshone County WUI Mitigation Plan.[1] In meeting these objectives the IPNF has considered treatment options that will limit the negative impacts on the environment in the Twomile area. The proposed treatment types listed in Table 2-6 of the EA included predominately helicopter logging and skyline logging, with only about 6 acres of tractor logging.[2] We appreciate that the IPNF has considered such treatment options in order to limit negative ecological effects in the ecosystems in the Twomile Resource Area. However, the EA for the Twomile project notes that units 7,21,30,31,37c, 37d, and 37e have portions that rate high in potential sediment yield and mass failure.[3]

While these units will be treated with helicopter and skyline logging, the IPNF needs to assess these areas under INFISH as Riparian Habitat Conservation Areas and conduct a Watershed Analysis, if entering the RHCAs is proposed. These treatment areas should be avoided in order to ensure that neither of these potentials are realized in these units.

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[1] USDA. 2005. Revised Twomile Environmental Assessment. Idaho Panhandle National Forest, Coeur d'Alene River Ranger District. p. R1-4.

[2] USDA. 2004. Twomile Environmental Assessment. Idaho Panhandle National Forest, Coeur d'Alene River Ranger District. p. 2-14.

[3] USDA. 2005. Revised Twomile Environmental Assessment. Idaho Panhandle National Forest, Coeur d'Alene River Ranger District. p. R3-22.

Roads in the Twomile RA

The extensive network of roads in the Twomile Resource Area, and the future amendments to the travel plan following the completion of the project are troublesome. The Twomile EA references the Geographic Assessment, which classifies the Twomile Resource Area as "Condition 2":[4]

- "Condition 2" landscapes have high road densities and undesirable terrestrial conditions (such as high-graded stands of medium sized trees of poor quality).
- Condition 2 landscapes are the highest priority for aggressive vegetation restoration.

The IPNF identified the problems that high road densities create on the national forests. In the Twomile Resource Area specifically, the EA states:[5]

> *Roads have resulted in a high amount of riparian disturbance throughout the resource area, including increased sediment yields. Encroaching roads contribute to sediment in the East Fork of Twomile Creek on an ongoing basis with frequent bank erosion. The low and mid-elevation riparian roads have altered stream channel function and morphology, which along with riparian large woody debris reduction has reduced available aquatic biota habitat.*

We are concerned about the affects that high road densities have on aquatic biota, fisheries, and wildlife. There are Westslope Cutthroat and Rainbow Trout present in Twomile Creek, both of which have the potential to be affected by the Twomile project.[6] The IPNF, however, appears to suggest that since these two species are present in streams and rivers throughout the Coeur d'Alene Basin, the affects on the two species in the Twomile area is somehow not an issue. The EA states:[7]

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[4] Ibid. p. R1-6.
[5] USDA. 2005. Revised Twomile Environmental Assessment. Idaho Panhandle National Forest, Coeur d'Alene River Ranger District. p. R2-5 through R2-6.
[6] Ibid. R3-14.
[7] Ibid. p. R3-14.

Based on the distribution of species across the forest, the lack of connectivity between large watersheds, and the limited cumulative effects area [...], activities in the Twomile Area will not affect viability of any threatened, endangered, sensitive, or MIS fish species on the IPNF.

The IPNF has framed the issue of the potential affects on species in the Twomile Area as almost inconsequential when compared with a "large watershed" or the whole IPNF. When the potential effects are framed in terms of the Twomile Area alone, however, the potential effects for the Twomile Area are much more significant. We believe that negating the potential impacts on an individual, small watershed because of its existence in a larger watershed is an invalid means by which to evaluate the potential affects on threatened, endangered, sensitive, or MIS species. The entire South Fork of the Coeur d'Alene River and its subwatersheds are "functioning at risk" according to the Geographic Assesssment referenced in the Twomile EA.[8] Making these problems merely an issue of scale does not relieve the Forest Service of any obligations it has to threatened, endangered, sensitive, or MIS species.

High road densities do not just affect aquatic or riparian habitats and species. Roads on the national forests can create problems for wildlife too. In the EA, the IPNF states:[9]

Roads dissect wildlife habitat causing fragmentation. They lead to a loss of security during denning/calving season as well as hunting/trapping seasons. Roads themselves can affect movement patterns of some species and have caused direct mortality from vehicle collisions.

The Twomile EA provides many reasons why high road densities on the IPNF and the Twomile Area have negative effects. The EA has verified that the conditions in the Twomile area are not ideal in terms of ecological impacts by its classification as

[8] Ibid. p. R1-3.
[9] Ibid. p. R2-6.

"Condition 2" in the Geographic Assessment and by the "riparian disturbance" that has occurred there. The EA also describes the problems that occur as a result of high road densities. The IPNF has attempted to address these issues through the Road Analysis Process (RAP) as recommended by The Lands Council and the Ecology Center. Recommendations generated by the RAP for the Twomile area include:[10]

- 1.9 miles of new road for treatments
- Decommissioning 3.4 miles of road that are encroaching on stream channels
- trail repairs
- 0.4 miles of new single-track trail
- Expansion of ATV trail system by utilizing 9.5 miles of existing logging roads

Decommissioning the 3.4 miles of roads that are encroaching on the stream channels is certainly a noteworthy step forward. At the same time, we are concerned about the national trend in the proliferation of ATVs and would rather not see additional routes be designated under the travel plan for ATV use. Under the effects to soil under Alternatives 2 and 3, the EA states that an additional 4.4 miles of ATV/motorcycle trails will be added to the existing motorized recreation trail system in the Twomile Area by utilizing existing bull dozer exploration roads.[11] By adding 9.5 miles of existing logging roads and 4.4 miles of mining roads to the motorized trail system in the Twomile Area, a total of 13.9 miles of road would be added to the motorized trail system. We believe this is an excessive amount of motorized routes to be adding to the system in the Twomile Area. However, we would rather have ATVs restricted to designated routes in lieu of no restrictions on cross-country travel.

In addition, ATV and OHV proliferation will have an impact on wildlife. As noted above, roads can impact the "security" of wildlife, yet the IPNF seeks to expand the ATV trail system in the area, which will further reduce wildlife "security." The IPNF should limit

[10] USDA. 2005. Revised Twomile Environmental Assessment. Idaho Panhandle National Forest, Coeur d'Alene River Ranger District. p. R1-6.
[11] Ibid. p. R3-23.

the reduction in wildlife security by placing restrictions on ATV and OHV use during denning/calving seasons.

The EA also suggests that up to 12.6 miles of roads would be placed into storage following the completion of the Twomile project.[12] We are concerned that if gates and/or signs are not in place to restrict ATV from utilizing "stored roads," they will be subjected to the increasing trend in ATV and OHV proliferation. Therefore we would prefer that these roads be fully decommissioned or at the very least the restrictions on stored roads be enforced.

Potassium Loss Mitigation

Off-site transport of nutrients because of logging operations is a very real concern on many forests where the geological characteristics naturally imply low background levels of certain nutrients. On the Belt series metasedimentary formations found in the Twomile Area, potassium deficiencies are naturally occurring.[13] Since about 85% of the potassium found in tree biomass occurs in the branches, twigs, and leaves,[14] we agree with the proposed practice in the Twomile project treatments of leaving the slash scattered on the ground in the treatment units for two winters before underburning. Allowing as much of the potassium to return to the soil is important for the long-term resiliency of the forest. We encourage you to abide by the Coarse Woody Debris Recommendations in Graham, 1994[15]

Cumulative Effects

It is curious why the cumulative effects analysis did not include a number of projects within the Twomile Resource Area. These projects include BLM logging and thinning projects (Rock Creek Release, Island Pilot Fuels Reduction and Forest Health, and South Hill-Wallace WUI Project), as well as Forest Service projects in the South Fork Coeur

[12] Ibid. R3-23.
[13] USDA. 2005. Revised Twomile Environmental Assessment. Idaho Panhandle National Forest, Coeur d'Alene River Ranger District. R3-16.
[14] Ibid. p. R3-16.
[15] Graham, R. et al. Managing Coarse Woody Debris in Forests of the Rocky Mountains. USDA Forest Service-Intermountain Research Station INT-RP-477.1994.

d'Alene River subbasin (Loookout Divide Beetle Salvage, Placer HFRA, Thin Above Camp, Thin Above Addition and others). Most troubling among these, is the BLM's South Hill-Wallace WUI Projects, which falls within the treatment area of the Twomile project, yet was not referenced at all in the EA. As a result of the lack of disclosure and analysis, the cumulative effects analysis continues to be deficient.

Homeowner Education and Action

This project needs to emphasize homeowner education and responsibility to make homes more fire resistant. Private land owners living along the wildland-urban interface need to realize that they cannot rely solely on public land management agencies to reduce the risk of wildfires. Important points include retrofitting roofing material and clearing vegetation and other flammable materials within 200' of homes. This reduction of fuels and flammability will be more effective than extensive thinning and regeneration projects extending far into the forests. Once such measures have taken place, additional treatments along the wildland-urban interface such as prescribed fire may be more socially acceptable and successful. Areas that pose the highest risk to homes and structures need to be treated before those that are simply cheapest to treat.

Educational efforts for homeowners and visitors should describe the natural fire regime, insect cycles for this area, as well as homeowner and community responsibilities. As part of this project, the BLM should actively provide Firewise information and materials to community leaders and homeowners with the end result being that homeowners would take responsibility in protecting their personal property. Additional information should be distributed which describes fire as a natural and cyclical regime while stressing its importance to ecosystem structure and health.

Restoring Fire-Adapted Ecosystems

The Forest Service should compare present, historic, and post-treatment fuel loads and canopy densities for each unit within the proposed treatment area. More quantifiable data needs to be presented in the EA on the current and target levels of crown densities in the project area. Additionally, more information on the analysis used to determine condition

class should be included in the EA. While project record files were referenced in the EA, minimal data was included to discuss the methodology, assumptions, or shortcomings of the fire regime condition class assessment.

In the wildland/urban interface, we believe that the Forest Service should place less emphasis on reducing crown bulk density, and instead focus on thinning from below and removing ladder and ground fuels. Habitat loss is increased in areas cut by regeneration, seed tree or shelterwood logging, prescriptions that produce adverse effects for species relying on more continuous canopies such as snowshoe hare, lynx, pine marten, and fisher. After this analysis, the Forest Service should focus on those stands that are the farthest outside of the historic range.

Water Quality

Due to the requirement of sediment reduction in the South Fork Coeur d'Alene River , as per the TMDL, a significant portion of that reduction will need to come from tributaries, such as Twomile Creek. In order to meet the prescribed reductions from the TMDL, the Twomile project should focus more effort on road obliteration, soil stabilization/restoration and watershed restoration, instead of logging.

#5

Northwest Access Alliance
PO Box 1514
Hayden, ID 83835

June 9, 2005

NEPA Coordinator
CDA River Ranger District – Fernan Office
2502 East Sherman Avenue
Coeur d'Alene, ID 83814

Dear Ms. McNair:

We have reviewed the revised Twomile EA.. We would like to restate our support for this project consistent with our comments of Nov. 19, 2003, which are attached.

We believe you have done a good job addressing the concerns raised in the 9th Circuit Court decision. However, we also feel that the level of analysis and the detail required is far in excess of what should be necessary to complete a project of this nature.

In our review we did notice one place where it appears some wording was omitted. In line 1 of the 5th paragraph of page R2-8, the sentence is not complete. (page attached). Again, we support this project and look forward to its rapid implementation.

Sincerely,

David Vig

David Vig,
President

Northwest Access Alliance
PO Box 1514
Hayden, ID 83835

November 9, 2003

Joe Stringer, District Ranger
Coeur d'Alene River Ranger District
2502 East Sherman Avenue
Coeur d'Alene, ID 83814

Dear Mr. Stringer,

After reviewing the information on the Two-Mile Project at a recent meeting in Osborn, we would like to offer the following comments. This information is being provided on behalf of the Northwest Access Alliance (NWAA), a group of 70 families and businesses who use the Forest for recreational purposes. NWAA is working to preserve, protect an enhance the ability to access public lands for both motorized and non-motorized enthusiasts.

- Active Management – Fuels

We strongly support your attempts to actively manage and reduce the fuels adjacent to communities on the District. Such action is essential to help protect the communities from the effects of catastrophic wildfire.

- Active Management – Forest Health

We support the efforts to address forest health issues and support the alternative that allows maximum flexibility. The removal of commercial saw timber should be undertaken if it is determined to be the best treatment for management of the land and resources. The economic benefits to local communities should be a strong consideration.

- Recreational Access – Standard Vehicles

We support the retention of existing road access for visitors with standard highway vehicles. The existing roads adequately serve this purpose and should be retained. These roads are used for a variety recreation and other activities including wood gathering, huckleberry picking, hunting and pleasure riding. These are low impact activities that should be encouraged.

- Recreational Access – Off-Highway Vehicles

Planning efforts must include the analysis of existing and potential opportunities to improve OHV recreation. Prior to any road decommissioning, the route should be analyzed for potential inclusion into a motorized trail system. OHV routes should be analyzed using a system approach. Attempts should be made to connect existing riding opportunities to provide loop opportunities. In addition, trails that provide an opportunity for riders to find a challenging experience should be included in the system as

alternative loops. Some segments of existing trail should be maintained and if necessary upgraded to provide desired opportunities.

Single-Track motorized opportunities are needed in the area. There are many examples of single-track opportunities being lost to ATV use. Some of the existing motorcycle trails should be maintained for the single-track experience. Management of the area should identify which routes available for ATV use and those available only for motorcycle use.

There is a strong need for designation or development of new ATV trails. ATV use in the area is increasing dramatically and use is occurring within this area. Trail designation will give visitors a place to go and will also provide economic benefits to the communities as they are called on to provide services to the trail users.

Following is some specific information regarding trails in the Two-Mile area:

- Trail #103 has been used by ATV's for many years and is currently passable from the bottom to the junction with Trail #101. This segment of trail should be designated for ATV use. The upper segment of this trail should be upgraded to handle ATV use.

- Trail 101 should be designated for ATV use.

- There is an existing trail connecting Trail 103 with the Two-Mile road through sections 6 and 7. This trail should be recognized and designated for ATV use.

- There is currently a trail that connects to the Two-Mile road in section 8 and runs up the ridge through section 9 and connects to Road 953. This trail should be designated as an ATV trail.

- We also understand that there is an existing trail that runs up a drainage in sections 4 and 5 and that there is a desire to eliminate use on this route. Elimination of this route would be reasonable if an alternative route is available. We understand that the upper section of Road 271 could serve this need and would support designation of this segment as an ATV trail.

- If the upper section is converted to an ATV trail, it would be appropriate to review trail 102 for reconstruction as an ATV trail to facilitate loop travel.

I appreciate the opportunity to comment on this project and look forward to working with you in the future. If you have any questions please contact me at 208-683-2590.

Sincerely,

David Vig
President

Attachment to
David Vigs comments.

effects on impacted species. Wildlife habitat selection is almost entirely based upon existing conditions, rather than the disturbance history of an area. The environmental baseline condition incorporates the sum total of habitat changes through the years, and is therefore an accurate reflection of current habitat conditions. As discussed in the EA (EA, pgs. 3-68) non-Federal ownerships cannot be relied upon for long-term habitat contributions because they are highly susceptible to harvest, rural development, or other irretrievable alterations. Although these other ownerships may provide suitable habitat for some species analyzed, we lack data to adequately assess these areas, and therefore conservatively assume that they are providing no habitat for these species.

B. Soils Analysis

Soils analysis should not rely solely on spreadsheet models and database information for analysis of current conditions and probable effects. Information should be verified by field inspections of the soils and on-site verifications of the modeling results.

The soils analysis for the Twomile EA did not rely solely on models or database information. Areas proposed for timber harvest that had past activities were inspected on the ground to verify the existing conditions. All units meet or exceed the Forest Plan soil standards.

C. Limitations of the WATSED Model

The discussion of analysis methodologies needs to include appropriate discussion of the limitations of the computer-generated WATSED model.

The limitations of the models used for analysis within the project area is . It also explains other methodologies and references used to assist in the analysis. The WATSED model was used to measure anticipated sediment and water yield modifications in the Twomile Creek watershed, ~~which~~ was divided into the following subwatersheds: Twomile Creek, Nuckols Gulch, Revenue Gulch, and the Silverton Face Drainages.

Further clarification of the appropriate uses and known limitations of the model are provided to help the public and the decision maker better understand this model and how it is used in the overall aquatics analysis for this project. This information is summarized here, with more detailed explanation in Chapter 3.

The watershed response model, WATSED, used on the IPNF is designed to address the *cumulative* effects of timber harvest operations, roads, and fire. It does account for drought or flood years and rain-on-snow events when those phenomena are part of the long-term climatic record for a region.

It does not attempt to analyze the effects of grazing, mining (other than vegetation removal and road construction), or other non-silviculture practices. It does not attempt to simulate watershed response for any individual or episodic storm (including "rain-on-snow" events), mass erosion events, or extreme drought or flood years.

WATSED was designed to objectively compare relative differences between alternatives in terms of changes in trend, risks, and regiment; rather than to predict precise sediment and water yields that might occur as a result of stochastic events or non-forest related actions. The IPNFs frequently validate the WATSED coefficients and estimates using long-term water quality monitoring networks on the IPNF. Forest Plan monitoring reports (USDA 2000, 1999, and 1998b; PF Doc. AQ-5 through AQ-7) describe how the calibration and validation of WATSED has been an annual process on the Forest and where changes have been made.

D. Accuracy of the Database Used for Old Growth Calculations

The timber stand database (TSMRS) should not be the only source of information for old growth calculations and conclusions. Field visits should be used to verify or update database information and verify the old growth analysis and compliance with Forest Plan standards.

ATTACHMENT B

United States Department of Agriculture

Forest Service

Idaho Panhandle National Forests

Coeur d'Alene River Ranger District

Silverton Office
P. O. Box 14
Silverton, ID 83867

Fernan Office
2502 East Sherman Avenue
Coeur d' Alene, ID 83814

File Code: 2670 **Date:** September 22, 2005

Subject: Biological Assessment for actions related to the Coeur d'Alene River Ranger District **Twomile Resource Area Environmental Assessment**

To: District Ranger Randy Swick

This biological evaluation/assessment, prepared in compliance with Forest Service Manual 2672.4 and Section 7(b) of the 1973 Endangered Species Act (ESA), evaluates possible effects on the habitat of federally listed species. Species evaluated include those listed in USFWS letter, Ref. No. 1-9-03-SP-365 (105.0100). All listed species except for Spalding's catchfly and gray wolf have no effect determinations under the proposed action as documented in this biological assessment.

Proposed Action: The proposed action is designed to reduce hazardous fuels, and improve forest health. The stands selected for treatment have significant variability in terms of landscape position, elevation, vegetative species present, and habitat types. Therefore the treatments prescribed under the proposed action may vary slightly from traditional silviculture prescription definitions. Following is a summary of actions that would occur under the preferred alternative (proposed action):

- *1,103 total treatment acres: 72% commercial harvest, 3% noncommercial harvest, 25% non-harvest*
- *Commercial harvest would include 81% helicopter, 18% skyline, and less than 1% tractor yarding*
- *Canopy closure ranges from 30 to 90% before treatment, to 30 to 60% following treatment*
- *Vegetation and fuels treatment activities would require construction of 4 helispots, 1.9 miles of new system road, reconstruction of 1.4 miles of road, and reconditioning of 1.2 miles of road.*
- *Aquatic restoration would include repair or replacement of 8 stream crossings and decommissioning of 3.4 miles of closed road.*

Summary of Activities Under the Proposed Alternative - Twomile Resource Area

Activity	Acres
Proposed Vegetative Treatment (acres)	
Precommercial Thinning	32
Commercial Thinning	79
Group Seedtree Harvest	78
Group Shelterwood Harvest	500
Shelterwood Harvest	141
Underburn/Slash/Rehab (no commercial harvest/yarding)	273
Total acres treated	**1,103**
Yarding systems (acres)	
Skyline	193
Tractor	6
Helicopter	599
Stream crossings repaired or replaced	14
Helispots constructed	4
Road decommissioning	3.4
Road reconditioning (miles)	1.2
Road reconstruction (miles)	1.4
System road construction (miles)	1.9
Estimated timber harvest volume (million board feet – MMBF)	4.6
Estimated cunits (CCF – one cunit is equal to one hundred cubic feet)	10,700

Vegetation and Fuels Treatment by Unit under the Proposed Action

Unit	Acres	Vegetation Treatment	Logging System	Fuel Treatment	% Canopy Closure Before Treatment	% Canopy Closure After Treatment
1	17	slash and burn	none	underburn	70	60
2	40	slash and burn	none	underburn	70	60
3	17	slash and burn	none	underburn	70	60
5	20	group seed tree	skyline	underburn	80	15
6	31	slash and burn	none	underburn	60	50
7	90	shelterwood	helicopter	underburn	80	40
9	51	shelterwood	helicopter	underburn	70	30
10	24	slash and burn	none	underburn	60	50
11	24	burn only	none	burn only	40	25
12	29	group shelterwood	helicopter	underburn	80	20
13	22	slash and burn	none	underburn	60	40
20	13	precommercial thin/ release	none	lop and scatter	50	40
21	46	group shelterwood	helicopter	underburn	50	35
22	28	slash and burn	none	wildlife burn	30	20
23	94	group shelterwood	helicopter	underburn	80	20
25	19	precommercial thin/ release	none	handpile	40	35
27	78	group shelterwood	helicopter	underburn	80	40
28	45	commercial thin	helicopter	underburn	60	40
29	34	commercial thin	27 ac. helicopter, 7 ac. skyline	lop and scatter	90	50
30	58	group shelterwood	11 ac. helicopter, 41 ac. skyline, 6 ac. tractor	underburn	70	25
31	63	group shelterwood	50ac. helicopter/ 13ac. skyline	lop and scatter	80	30
32	36	slash and burn	none	underburn	60	45
33	58	group seed tree	helicopter	underburn	80	10
34	25	300' slash	none	handpile	60	60
35	9	100' slash	none	chip	60	50
36a	34	group shelterwood	skyline	underburn	80	20
36b	20	group shelterwood	helicopter	underburn	80	20
37a	10	group shelterwood	skyline	underburn	80	30
37b	25	group shelterwood	skyline	underburn	80	40
37c	17	group shelterwood	skyline	underburn	80	40
37d	16	group shelterwood	skyline	underburn	80	40
37e	10	group shelterwood	skyline	underburn	80	40

Watershed Restoration Activities Under the Proposed Action

Road #	Miles of Road to be Decom-missioned	# of Crossings/ Culverts to be Removed	General Road Location
271UB	0.34	2	Twomile Spur UB, in the Lower East Fork of Twomile Creek. Involves a segment of encroaching road, an abandoned mine, and 2 stream crossings.
271UBA	0.84	6	East Fork and Twomile Spur UBA. This road follows the upper East Fork of upper Twomile Creek. Involves one abandoned mine and 1 failed culvert.
271UF	0.18	1	A portion of Twomile Spur Road UF, which connects to Trail 102 and comes down to a stream crossing on upper Twomile Creek. The road is located on the east side of the creek.
271UF	0.57	1	A portion of Twomile Spur Road UF. The road segment is located on the west side of upper Twomile Creek, upstream of its confluence with the East Fork Twomile Creek.
271UK	0.39	1	Twomile Spur Road UK. A short road in lower Twomile Creek draining, which leads to an abandoned mine adit.
424UN	0.33	3	A portion of Twomile Saddle Spur Road UN, which connects to the main Road 271 near the upper East Fork of Twomile Creek.
424UP	0.69	0	A potion of Twomile Saddle Spur Road UP, in the upper drainage of the East Fork of Twomile Creek, connecting Spur Roads 271-UBA to 424-UPA

The proposed action focuses on the removal of tree species susceptible to insects and disease, and on the restoration of long-lived seral tree species that were historically better adapted to the mixed and low severity fire regimes of northern Idaho. The proposed activity treatments would reduce ladder fuels and stand density to decrease the risk of high intensity wildfire. The treatments are designed to effect potential fire behavior adjacent to the rural residences in the Resource Area by decreasing expected fire intensity and by creating circumstances that would allow fire suppression crews to better manage the fire.

Slash generated from the activities would remain on site to over-winter providing a nutrient source. After that time, the slash would be subject to a prescribed burn, hand piling, grapple piling, or chipping to achieve desired fuels reduction objectives. The openings created by treatment activities would be planted with ponderosa pine, western larch, and on moist sites, white pine. The prescriptions incorporate existing conditions on the ground and provide for opportunities to promote the advantageous characteristics of the stand by retaining fire resistant ponderosa pine and western larch, and by reducing adverse conditions (encroaching Douglas-fir and grand fir that increase stand density and competition for resources).

The proposed action prescribes approximately 75 acres of hazardous fuel reduction treatments in stands that have attributes associated with old growth. The treatments would involve non-commercial slashing and underburning activities, which would not change the old growth structure; and would therefore not affect the old growth allocation of these stands.

The proposed action would improve the aquatic resources of Twomile Creek by decommissioning 3.4 miles of road that are encroaching on the existing stream channels. Roads identified for decommissioning are currently closed to motorized use under the District Travel Plan. In conjunction with the decommissioning, aquatic restoration would occur at 2 culverts, 2 armored fords, and 4 stream crossings in the Twomile Resource Area. However, new road construction would detract from these improvements to some degree.

Threatened and Endangered Wildlife Species

The USDI Fish and Wildlife Service provided an updated list of proposed, threatened or endangered species that may occur within the Idaho Panhandle National Forests on March 4, 2005 (No. 1-9-05-SP-0154). These species, their listing status and the probability that they occur in the Twomile Resource Area are shown in the following table.

Threatened, Endangered and Proposed Wildlife Species

Species Scientific Name	Common Name	Status	Probability of Occurrence*
Haliateetus leucocephalus	Bald Eagle	Threatened	Low
Canis Lupis	Grey Wolf	Endangered	Moderate
Lynx Canadensis	Canada Lynx	Threatened	Low
Ursus Horribilis	Grizzly Bear	Threatened	Low
Rangifer tarandus	Woodland Caribou	Endangered	None

**Probability of occurrence is based on records of species sightings, presence of suitable habitat and the potential for the watershed to provide suitable habitat in the future.*

The Twomile Resource Area is not within a recovery area for any threatened or endangered species, and no critical habitat occurs within the Coeur d'Alene River Basin at this time. The Pacific Bald Eagle Recovery Plan, the Northern Rocky Mountain Wolf Recovery Plan, the Recovery Plan for Woodland Caribou in the Selkirk Mountains and the Grizzly Bear Recovery Plan provide requirements for habitat management for these species. In February of 2000, a Lynx Conservation Assessment and Strategy was released in an effort initiated by the Fish and Wildlife Service and in cooperation with the Forest Service and the Bureau of Land Management. The purpose of the Strategy is to provide a consistent and effective approach to avoid or reduce adverse effects resulting from management activities to the species or its habitat. The assessment is based partly on the delineation of Lynx Analysis Units (LAUs) where habitat is managed to provide for lynx denning and foraging habitat.

This analysis reflects changes in habitat conditions (such as stand structure) resulting from past, present and reasonably foreseeable actions. Except where specifically stated, it is assumed that private lands do not provide habitat, in order to provide the most conservative ("worst case") assessment on these lands, since the Forest Service has not authority or information base concerning private lands.

Summary of Effects of proposed activities on Threatened and Endangered Species in the Twomile Resource Area.

Species Common Name	Status	Effects Determination
Bald Eagle	Threatened	No effect on the bald eagle or it's habitat
Gray Wolf	Endangered	Not likely to adversely affect the gray wolf
Canada Lynx	Threatened	No effect on the lynx or its habitat
Grizzly Bear	Threatened	No effect on the grizzly bear or it's habitat
Woodland Caribou	Endangered	No effect on the caribou or it's habitat

Bald Eagle (*Haliateetus leucocephalus)*: The Twomile Resource Area does not provide a water body large enough to support bald eagles. No sightings of bald eagles have ever been recorded in the area. Therefore, activities under any alternative would have **no effect** on bald eagles. Viability of the species would be maintained, because recovery goals have been met (PF Doc. WL-41).

Gray Wolf (*Canis Lupis)*: Wolves are not known to occur in the resource area. One wolf pack is thought to possibly use the northeast edge of the Coeur d'Alene River Ranger District. The pack has been documented outside Noxon, Montana across the Bitterroot Divide. In addition, one known pack is found south of the St. Joe divide. The Twomile Resource Area is adjacent to urban development so does not provide preferred habitat for wolves. Although a transient individual could use the area, the last wolf observation in the area was over 10 years ago. Activities proposed under the action alternatives would benefit wolf prey species by improving forage palatability and nutrition on winter range. Therefore, activities under this project **may affect, but would not likely adversely affect** gray wolves or gray wolf populations. Viability of the species would be maintained, since the goal to have 30 breeding pairs well distributed throughout three states for three successive years has been met (2001 wolf recovery report; PF Doc. WL-41).

Canada Lynx (*Lynx Canadensis*): The Bitterroot Divide and the St. Joe Divide provide the best habitat for lynx found on the Coeur d'Alene River Ranger District. The Twomile Resource Area provides poor quality habitat for lynx due to low elevations, lack of spruce/fir habitats and isolation from preferred habitat by distance and by lack of connected, preferred forest types. The resource area consists primarily of low-elevation drier site habitats and is adjacent to urban development associated with the towns of Osburn and Silverton. It is not within, or near, an LAU or designated lynx travel corridor. Lynx are considered only an infrequent transient in the watershed.

Snowshoe hares are numerous in some stands in the resource area (PF Doc. WL-16 [field notes]), but there is no supporting information to show that lynx would utilize low elevations close to urban areas in order to exploit this food source. Interstate 90, located just south of the resource area, is a major barrier to the movement of large ranging furbearers like the lynx. Based on these considerations, there would be **no effect** on lynx or lynx populations under any alternative. The U.S. Fish and Wildlife Service have not defined viability, for the Canada lynx.

Grizzly Bear (*Ursus Horribilis*): Grizzly bears are not likely to occur on the District and neither the District nor the Twomile Resource Area are currently within a designated grizzly bear recovery area (USFWS 2000; PF Doc. WL-R59). Quality grizzly bear habitat does not exist in the Coeur d'Alene Mountains and there have been no sightings of grizzly bears in the Twomile Resource Area. The only recorded grizzly sightings on the District occurred over 10 years ago. These sightings were in the northernmost sections of the District near the border with the Kaniksu Forest and several air miles from the watershed. Like the lynx, Interstate 90 makes it more unlikely that grizzlies would travel into the area. The project would not result in the long-term degradation of grizzly bear habitat, nor would any expansion of human settlement occur as a result of the project. Based on these considerations, there would be **no effect** on grizzly bears or grizzly bear populations under any alternative. Viability is insured because the Northern Continental Divide grizzly bear population has met recovery goals (WL-41).

Woodland Caribou (*Rangifer tarandus*): Although there is some evidence that Caribou once ranged as far south as the Salmon River, currently this species is not known to occur outside the Selkirk Mountains in Idaho. Although some potential habitat exists in other portions of northern Idaho the species is known to exist in only in the one area. Because there is no use of the area by caribou, there would be **no effect** to caribou or caribou populations under any alternative.

Threatened and Endangered Plant Species

This Biological Assessment addresses the effects to Threatened plants from the proposed action, described above, in the Twomile Resource Area. It was prepared in accordance with Forest Service Manual 2672.4 and Section 7(b) of the 1973 Endangered Species Act (ESA). Currently, the U.S. Fish and Wildlife Service (USDI 2003) lists two species as Threatened for the Idaho Panhandle National Forests, water howellia (*Howellia aquatilis*), and Spalding's catchfly (*Silene spaldingii*). There are no federally listed Endangered plants for the Idaho Panhandle National Forests (IPNF). There are no known occurrences of Threatened plant species on the, IPNF, although suitable habitat is suspected to occur.

Water howellia (*Howellia aquatilis*), currently found in western Montana, northern Idaho and Washington, is an aquatic plant restricted to small pothole ponds or the quiet water of abandoned oxbows which seasonally dry up to allow for seed germination (Shelly 1994). A historical occurrence of water howellia is documented at Spirit Lake. This occurrence has not been relocated since its discovery in 1892 and is presumed extirpated (Shelly 1994). No suitable aquatic habitat for water howellia is present in the project area. There are no river oxbow or pothole pond habitats present that would support this species.

Spalding's catchfly *(Silene spaldingii)* is a perennial herb endemic to the Palouse region of southeast Washington and adjacent Oregon and Idaho and is disjunct in northwest Montana (Lesica 1997). This species is suspected to occur on the IPNF. Suitable habitat consists of grasslands dominated by native perennial grasses such as Idaho fescue (*Festuca idahoensis*) and rough fescue (*Festuca scabrella*), with associated species such as bluebunch wheatgrass (*Pseudoroegneria spicata*) snowberry (*Symphoricarpos albus*), ninebark (*Physocarpus malvaceus*) and Nootka rose (*Rosa nutkana*). Depending on soil moisture characteristics, some sites have few to no shrubs or trees present, whereas other sites may have scattered individual ponderosa pine or Douglas-fir

(USFWS 2000). Spalding's catchfly sites range from 1,750 to 5,100 feet. Soils are generally moderately deep to deep. The closest documented occurrences to the project area are in Spokane County, Washington. This species is suspected to occur on the IPNF. Field surveys of potential habitat that were completed for recent projects such as the Douglas-fir Beetle FEIS (1999), Small Sales FEIS (2000), and Iron Honey FEIS (2001) did not detect any occurrences of this species.

Pre-field screening revealed 537 acres of potentially suitable *Silene spaldingii* habitat in the Resource Area. Approximately 215 acres of potential habitat may be affected by proposed activities. Field surveys for Threatened plants were conducted in potentially suitable habitat within proposed activity areas. Survey documentation is contained in the Project File. No *Silene spaldingii* was found. Although many of the species commonly associated with *Silene spaldingii* are present, such as bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), ninebark (*Physocarpus malvaceus*), and snowberry (*Symphoricarpos alba*), not all characteristics of highly suitable habitat are represented. Habitats that were identified as potentially suitable during the pre-field analysis were, upon field review, determined to be of low suitability, or unsuitable for Spaldings catchfly. Weed presence is variable, from low to heavily infested in some locations, mainly near existing roads. Soils are moderately deep to shallow, with surface rock and small outcroppings present in some units. *Silene spaldingii* is considered to inhabit sites that have moderately deep to deep soils, and well developed grassland communities.

Analysis of Effects and Conclusion

Suitable habitat for water howellia *(Howellia aquatilis)* is not present in the project area, therefore there is no potential for the species to occur there. There would be **no effect** to this Threatened species from implementation of the proposed action.

Implementation of the proposed action **may affect, but is not likely to adversely affect,** Spalding's catchfly (*Silene spaldingii*) based on the presence of low suitability habitat. Management activities that would occur in potential habitat for *Silene spaldingii* include slashing, underburning and timber harvesting. There would little timber harvesting in habitat because these areas are already quite open, occupied primarily by herbaceous, grassland species, shrubs, scattered ponderosa pine and Douglas-fir. Prescribed fire is the primary activity to be conducted in habitat areas. Fire would be low intensity, spring underburning for the most part. The dry grasslands and grassy openings in Douglas-fir/ponderosa pine forest that provide habitat for Spalding's catchfly, were historically maintained by frequent, low-intensity fires. Studies of Spalding's catchfly (Lessica 1997) suggest that fire may contribute to maintenance of grassland habitats through removal of excess litter and creation of sites for seedling recruitment. Increased recruitment and plant vigor were observed following spring and fall burns on experimental plots in Montana.

Weed invasion following management activities is a potential threat to grassland habitat when weeds such spotted knapweed and Dalmatian toadflax are present. Features of the proposed action provide measures that would reduce the spread of noxious weeds in the Resource area due to management activities, per direction **in Forest Service Manual FSM 2081.2**. These provisions include contract clauses for pre-treatment of roads used in the timber sale, washing of construction equipment (**CT 6.361)**, and grass seeding in soil disturbance areas. These measures, though effective, will not completely eliminate the spread of weeds. Reasonably foreseeable actions, including post-treatment monitoring and additional noxious weed control, would be carried out as necessary according to available funding.

Mitigation

Considering the mitigation measures for Threatened plants as outlined in the Twomile Environmental Assessment, no further mitigation measures are necessary to support the conclusion of Determination of Effects in this Biological Assessment. Mitigation for Threatened plants in Chapter II of the Twomile E.A. provides for field surveys to be completed in all potentially suitable habitats prior to project implementation. If populations of Threatened plants are found, they would have specific mitigation measure designed for their protection. Mitigation measure may include dropping the unit or area from activities, or placing a buffer around a population.

Summary of Conclusion of Effects for Threatened Plants

Water howellia (*Howellia aquatilis*)

Analysis area	Biological Determination
Project Area	No effect

Spalding's catchfly (*Silene spaldingii)*

Analysis Area	Biological Determination
Project Area	May Effect, Not Likely to Adversely Affect

Threatened and Endangered Fish Species

The U. S. Fish and Wildlife Service (USFWS) lists two fish species as endangered or threatened under the Endangered Species Act (ESA) of 1973 (USDI, 2000; PF Doc. FISH-1). The Kootenai River population of white sturgeon (Acipenser transmontanus) is listed as "endangered" (USDI, 1994; PF Doc. FISH-2) and the Columbia River Distinct Population Segment of bull trout (Salvelinus confluentus) is listed as "threatened" (USDI, 1998; PF Doc. FISH-3).

The purpose of this document is to analyze the effects of the proposed action, as described in the Twomile Resource Area on these two fish species. It was prepared in accordance with Section 7(c) of ESA, and manual direction to review all Forest Service activities to ensure that such activities do not contribute to a downward trend in population numbers or density of sensitive species and/or a downward trend in habitat capability (FSM 2672.1 and 2672.4).

Bull Trout: Bull trout, listed under the Endangered Species Act as a threatened species, are not known to reside in the S.F. Coeur d'Alene River or its tributaries analyzed in this document, specifically Twomile Creek and Nuckols and Revenue Gulches. Streams within the Twomile Resource Area have been surveyed for presence/absence of salmonids as part of this project in 2002 and 2003 (USFS – district files). Current data

for the S.F. Coeur d'Alene River basin (IDF&G and USFS); and the recovery plan does not identify the S.F. Coeur d'Alene River basin as being occupied by bull trout. Also, the S.F. Coeur d'Alene River watershed is not proposed as critical habitat as published by the USFWS on November 8, 2002 (http://pacific.fws.gov/).

Analysis of Effects

Table BA-FISH-1: Endangered or Threatened Species in the Analysis Area

Species	Habitat Present	Habitat Absent	Species Present	Species Absent
Endangered fish: White sturgeon (*Acipenser transmontanus)*		X		X
Threatened fish: Bull trout (*Salvelinus confluentus)*		X		X

Further explanations for above table:

- White sturgeon are found only in the main Kootenai River, outside of the cumulative effects areas for this project and will not be considered further;
- Bull trout are not currently found to occupy the S.F. Coeur d'Alene River watershed or its tributaries and will not be considered further.

Determination of Effects on Species: No fish, no habitat, hence ***no effect***.

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