

APPENDIX H: COMMENT ANALYSIS RESPONSE TABLE

List of 30-day Comment Period Respondents (April 2- May 1st, and April 21th – May 20th)	
Letter #	Agency, Organization, Business, or Individual
1.	Greg L. Munther
2.	Nick Novich
3.	Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council
4.	Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council
5.	Stephen J. Flynn, Resource Manager, Sun Mountain Lumber
6.	Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council
7.	Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council

Comments received in response to the 30 day comment period legal notice. Tables are arranged by respondent letter as they were received.

Respondent #1: Greg L. Munther		
#	Comment	Comment Analysis and Disposition
1.1	<p>As you may be aware my response to scoping this project was to remove unneeded existing roads as there will not be a timber management need for these roads for decades following a nearly complete burn pattern. These roads unnecessarily compromise elk security, fragment the forest and lead to unnecessary sediment. Needless to say, I was disappointed the District took a status quo on roads and failed to take advantage of the opportunity to deal with unneeded roads. The National Forest Road Policy guides Forests to use a minimal road network. In this case, the road network left in place is not needed to access the landscape and is redundant in accessing lands surrounding the salvage area. Being the USFS maintenance budget is not likely to increase, the Forest should also be looking to eliminate roads unnecessary for management of the Forest or not needed for public access. It looks like business as usual on the B-D.</p> <p>This position leads those interests concerned about the adverse effects of roads to oppose future B-D veg projects that entail adding to the B-D road network. That is unfortunate because the B-D certainly would benefit from more active management. The B-D has a very poor record of keeping motor vehicles off of closed roads. On gentle terrain it is nearly impossible if the road prism remains in place and only a gate is used to restrain illegal use. Those roads currently legally closed should be made physically impossible to use. Mixing slash in with the road surface over the entire length of the closed road has been effective, as has been deep ripping if some large rock is present in the roadbed.</p>	<p>Travel management was identified as an issue (EA page 5) and an alternative to address travel management was considered but eliminated from detailed study. Discussion regarding the potential alternative is discussed on EA page 13.</p> <p>This project will not add to the B-D road network. Project design regarding road concerns include: obliteration of temporary roads and road use restrictions. Temporary road obliteration methods are proposed for this project that the Forest has found successful in limiting motorized vehicle. Photos of these methods are displayed in the EA (page 8 and 9, Appendix G). In addition Forest staff will monitor road use.</p> <p>The EA has been revised the EA to include photos of obliterated roads. The methods employed on these roads successfully limit motorized vehicle travel within the obliterated road corridor. Vehicle travel in this corridor is more difficult than adjacent to the trail.</p>

Respondent #2: Nick Novich		
#	Comment	Comment Analysis and FS Response
2.1	<p>This project needs to harvest as many trees as possible to facilitate new growth. This will also enhance grass reproduction much needed in this area. When new tree growth reaches 4' to 5' it needs to be thinned to promote good tree development and for a future timber source. Time seems to be at the essence on this project.</p>	<p>An alternative to the proposed action with additional harvest area is discussed on EA page 10.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
3.1	We are opposed to building any new temporary roads in the project area.	Opposition is noted and will be brought to the attention of the deciding officer. The DN Includes discussion regarding concerns and opposition to new temporary roads.
3.2	The EA states on page 12: <p>“Previously active goshawk nest sites will be visited by the district wildlife biologist. If site visits indicate nesting is active, unit harvest activities will be postponed until after August 15th (units 31, 31a, and portions of 2b). A minimum 30-acre buffer will be delineated around the active nest and suitable habitat, and the buffer area will not be harvested. ”</p> <p>Squires and Kennedy (2005) says that 250 acres must be left undisturbed around goshawk nests.</p>	Conservation measures, including a 40 acre no disturbance buffer around occupied nest areas and a 420 acre timing restriction around occupied post-fledging areas, have been incorporated in the project and are consistent with Reynolds et al., 1992 and conservation measures implemented across Region 1.
3.3a	SOIL PRODUCTIVITY <p>The EA’s soil section fails to disclose in sufficient detail how soil productivity has been affected by the 2007 fires, especially in moderately and severely burned areas. We have attached, the Black Ant FEIS (USDA Forest Service, 2002a), since it better describes fire impacts on soil productivity and the risks involved with logging such areas. Please take into consideration the inconsistencies between that FEIS and the Rat Creek Salvage Project Environmental Assessment.</p>	The effects of the 2007 Rat Creek fire on the project area soils are discussed in detail in the Soil Resource Report. This information has been added to the EA.
3.3b	The EA’s failure to face the issue of maintaining soil productivity is clearly demonstrated by its unwillingness to consider burned areas—where soil productivity has already been decreased for the foreseeable future—to meet the definition of “detrimentally disturbed.”	The effects of the 2007 Rat Creek fire on the project area soils are discussed in detail in the Soil Resource Report. This information has been added to the EA.
3.3c	The EA does not consider detrimental soil disturbance from livestock grazing, fire lines, past timber sales that weren’t modeled, or legal and illegal off-road vehicle use. Please note that the Beaverhead-Deerlodge NF’s Post-Fire FEIS disclosed on page 3.239 that “compaction in grazing allotments is often a severe problem but has received comparatively less attention.” Here, the EA ignores detrimental impacts from livestock grazing, justifying this because grazing would be suspended for a few years, as if that effectively mitigates the detrimental impacts. In the adjoining Sheep Creek FEIS begins the soil section with two sentences that strongly indicates the FS’s chosen course of action proposed is ill-advised: “Soil is the backbone of ecosystem integrity yet remains difficult to quantify when assessing impacts of human and natural disturbance. A general lack of long-term data on management and difficulty in obtaining true reference conditions complicate interpretations.” (FEIS at 165.) Shortly thereafter, “Therefore, assessments on management impacts rely on theoretical assumptions for preserving soil as a life source.” (Id.) Unfortunately, in terms of soil the FS then proceeds on a course of action perhaps best described as “damage now, monitor and experiment with	The EA does address cumulative effects of grazing and recreation on soils. “Cumulative effects from grazing are unlikely as no existing detrimental effects were found within proposed harvest units. Any grazing effects within the units that may occur would generally be limited to cattle trails and comprise a small amount of disturbance. The current absence of detrimental soil disturbance is likely due to the fact that the units are not suitable/capable grazing areas, and livestock use would have been (and will continue to be) incidental at most. The Tie-Johnson allotment has received very minimal use over the last ten years due to fires (Mussigbrod and Rat Creek),

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
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	unproven mitigation measures later."	<p>scheduled rest years, and personal convenience nonuse. Cumulative effects due to recreation would be limited to areas where proposed harvest units are also dispersed camping sites. No such sites were noted within the proposed harvest units; recreation sites are mainly concentrated along the South and Main Forks of Tie Creek along Road 1203, and do not coincide with proposed harvest units. Obliteration of temporary roads would prevent unauthorized motorized access and any associated effects."</p> <p>The effectiveness of our mitigation measures is outlined in the EA and in response to a comment below.</p>
3.3d	<p>The proposal to log in areas of low soil productivity due to impacts of wildland fires and past logging activities flies in the face of NFMA's requirements to assure regeneration, sustained yield, and maintain soil productivity. Sec. 6. of the National Forest Management Act states:</p> <p>(g) As soon as practicable, but not later than two years after enactment of this subsection, the Secretary shall in accordance with the procedures set forth in section 553 of title 5, United States Code, promulgate regulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960, that set out the process for the development and revision of the land management plans, and the guidelines and standards prescribed by this subsection. The regulations shall include, but not be limited to-</p> <p>(3) specifying guidelines for land management plans developed to achieve the goals of the Program which-</p> <p>(E) insure that timber will be harvested from National Forest System lands only where-</p> <p>(i) soil, slope, or other watershed conditions will not be irreversibly damaged;</p> <p>NFMA regulations at 36 C.F.R. § 219.27 (Management requirements) state:</p> <p>(a) Resource protection. All management prescriptions shall--</p> <p>(1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;</p> <p>(b) Vegetative manipulation. Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall--</p>	<p>As stated in the soil resource report (and now added to the EA), the overall burn severity in the proposed harvest units is "low". Furthermore, no existing detrimental disturbance due to past harvest activities was noted in any of the proposed harvest units. The Northern Region Soil Quality Standards will be met in all harvest units after road obliteration; hence the project will meet the intent of NFMA.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
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	(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources; The Forest Plan for the Beaverhead National Forest (BNF) contains the following Standard: "Management activities will be designed to sustain site productivity." ¹	
3.3e	Land productivity is not maintained by taking actions like those proposed in this project that, essentially, permanently reduce the productivity of the soil. This is especially important just taking into consideration the site factors of the fire area: "Natural replacement of topsoil in these granitic soils is slow due to inherently infertile mineral composition and resistant mineral structure for soil formation (Dan Svodboda, Beaverhead Forest Soil Scientist, personal communication 2003)" (Sheep Creek FEIS at 175) and "The climate is quite cold..." (Sheep Creek FEIS at 167). Furthermore, the Beaverhead NF has never assessed "land productivity" losses due to the infestations of noxious weeds caused by soil disturbance associated with its land management practices. The Sheep Creek FEIS states at p. 173:	Our analysis of the proposed action does not predict the permanent reduction of soil productivity. While natural replacement of project area soils is indeed slow, our analysis does not predict losing the topsoil in the first place. See the "Indirect Effects" section of Alternative 2 in the Soils section of the EA for a discussion about modeled erosion with project implementation using the Disturbed WEPP model.
3.3f	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 (<i>Centaurea biebersteinii</i> 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).	Noxious weeds and their potential to affect soil productivity is addressed in the Soil Resource Report and the EA under the Indirect Effects section of the proposed action.
3.3g	The principles of sustained yield of timber are also not served in the case where the FS does not know how losses in land productivity will lead to reductions in timber yield over second and later rotations.	See the EA for a discussion about an area that was salvaged logged in 1989 after burning in 1988 (EA page 82). The area is certified as being stocked with lodgepole, and grasses and other understory plants are present, therefore, soil productivity over the planning period appears to have been maintained.
3.3h	In order to comply with NFMA, its implementing regulations, and Forest Plan Standards, the Northern Region adopted Soil Quality Standards (FSM 2500-99-1). Therein the standards read: Policy. Design new activities that do not create detrimental soil conditions on more than 15 percent of an activity area. In areas where less than 15 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effect of the current activity following project implementation and restoration must not exceed 15 percent. In areas where more than 15 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effects from project implementation and restoration should not exceed the conditions prior to the planned activity and should move toward a net improvement in soil quality. It is clear that the intent of the Soil Quality Standards is that the FS must, in each case, consider the cumulative effects of both past and proposed soil disturbances to assure the desired soil conditions are met. This includes impacts from activities that include logging, firewood gathering, livestock grazing, and motorized recreation impacts, for under Definitions the	The project resource soils specialist is aware of the Regional soil quality standards. See the EA for a complete discussion of cumulative effects of the no-action alternative and the proposed action alternatives in regards to soil impacts.

¹ The Beaverhead Forest Plan defines "site productivity" as "Production capability of specific areas of land. On forested lands is generally expressed in cubic feet per acre per year of merchantable wood products."

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>Standards state:</p> <p>Activity Area. A land area affected by a management activity to which soil quality standards are applied. Activity areas must be feasible to monitor and include harvest units within timber sale areas, prescribed burn areas, grazing areas or pastures within range allotments, riparian areas, recreation areas, and alpine areas. All temporary roads, skid trails, and landings are considered to be part of an activity area.</p> <p>Further down at FSM 2554.1, the Soil Quality Standards state:</p> <p>1. Detrimental Soil Disturbance. These disturbances includes the effects of compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement. At least 85 percent of an activity area must have soil that is in satisfactory condition. Detrimental conditions include:</p> <p>Compaction. Detrimental compaction is a 15 percent increase in natural bulk density. The cumulative effects of multiple site entries on compaction should also be considered since compacted soils often recover slowly.</p> <p>Rutting. Wheel ruts at least 2 inches deep in wet soils are detrimental.</p> <p>Displacement. Detrimental displacement is the removal of 1 or more inches (depth) of any surface soil horizon, usually the A horizon, from a continuous area greater than 100 square feet.</p> <p>Severely-burned Soil. Physical and biological changes to soil resulting from high-intensity burns of long duration are detrimental. This standard is used when evaluating prescribed fire. Guidelines for assessing burn intensity are contained in the Burned-Area Emergency Rehabilitation Handbook (FSH 2509.13).</p> <p>Surface Erosion. Rills, gullies, pedestals, and soil deposition are all indicators of detrimental surface erosion. Minimum amounts of ground cover necessary to keep soil loss to within tolerable limits (generally less than 1 to 2 tons per acres per year) should be established locally depending on site characteristics.</p> <p>Soil Mass Movement. Any soil mass movement caused by management activities is detrimental.</p>	<p>These activity areas were addressed in the soils analysis.</p> <p>Detrimental soil conditions were discussed in the EA, Environmental Consequences, Soils section.</p>
3.3i	<p>3. Monitoring Methods. Visual methods are generally used to make initial evaluations of the effects of management activities on soils. The major objective of soil quality monitoring is to ensure that ecologically sustainable soil management practices are being applied. In most cases, qualitative estimates will be considered sufficient. The use of photo points provides good documentation and is recommended. Measurements and detailed sampling are used to calibrate visual methods and to conduct investigations where visual methods are inadequate or where benchmark or statistically valid sampling is required.</p> <p>a. Areal Extent Sampling. Estimates of the percent of an activity area affected by detrimental soil disturbance can be made visually or by transecting. If statistically valid techniques are needed for benchmark sites, determine sample size and transect design using procedures described in Howes, Hazard, and Geist 1983.</p> <p>b. Soil Sampling Techniques. Soil displacement, rutting, severely burned soil, erosion, mass movement, and above-ground</p>	<p>See the EA for a complete description of the methods used to describe the existing condition of the soil resource, including existing disturbance.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
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	organic matter can be observed and measured. (Emphasis added.)	
3.3j	<p>It should be noted that the FS assumes that maintaining soil productivity is achieved simply by limiting detrimental disturbance to no more than 15% of an Activity Area (logging or “treatment” unit). Unfortunately, the scientific adequacy of the FS’s methodology for maintaining soil productivity on the BNF has never been adequately demonstrated. The FS’s determination that it may permanently damage the soil on 15% of an activity area and still meet NMFA and planning regulations is arbitrary. The EA does not cite any scientific basis for adopting the 15% numerical limit.</p> <p>Even considering their limitations, the Regional Soil Standards are clear—the BNF must measure the amount of detrimentally disturbed soils from past or ongoing logging, grazing, off-road vehicle use, etc. in logically bounded Activity Areas—especially if the soil in those disturbed sites would be further disturbed by proposed project activities.</p>	<p>The Northern Region Soil Quality Standards were developed to address NFMA. The proposed action will be in compliance with the Northern Region Soil Quality Standards, if implemented. The 15% areal threshold for detrimental disturbance in an activity area is established in the Soil Quality Standards based on available science. The threshold for detrimental disturbance is estimated as a 15% decline in productivity from undisturbed as the smallest change detectable statistically. It does not imply an absolute productivity decline, but merely that a threshold has been passed (Powers et al, 1998). It does not imply permanent damage on 15% of an activity area as stated in your comment. Restoration of detrimental disturbance where needed will assure that no activity area exceeds the 15% areal standard.</p>
3.3k	<p>The FS is avoiding the entire issue of maintaining soil productivity. As indicated in the EA, in FSM 2500-99-1 and in FSH 2509.18, the FS assumes that maintaining soil productivity is achieved by limiting detrimental disturbance to no more than 15% of an activity area (cutting unit) and by maintaining that same 15% limit at the 6th code HUC watershed level. Unfortunately, the scientific adequacy of the FS’s methodology for maintaining soil productivity on has never been demonstrated. The FS’s determination that it may permanently damage the soil on up to 15% of an activity area and up to 15% of each 6th code HUC watershed, and still meet NMFA and planning regulations is arbitrary. Neither the EA, the Forest Plan, nor the FSM 2500-99-1 cite adequate scientific basis for adopting 15% as a numerical limit—it is simply arbitrary.</p>	<p>The Northern Region Soil Quality Standards were developed to address NFMA. In following them, we are addressing the maintenance of soil productivity, not avoiding it. Nowhere in the Northern Region Soil Quality Standards, nor in the Soil Resource Report, nor in the EA, is a 15% detrimental soil disturbance limited discussed on a 6th code HUC level. The standards were designed to be addressed at the much smaller activity area level, not the 6th code HUC level. See response to comment above regarding the 15% numerical limit.</p>
3.3l	<p>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, the FS states:</p> <p>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).</p> <p>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. (USDA Forest Service, 2002a.)</p>	<p>The Long Term Soil Productivity Study that is cited is addressing the question of long term soil productivity with management activity.</p>
3.3m	<p>The EA presents a new, discretionary limitation on cumulative loss in soil productivity within a 6th code HUC watershed (beyond and including the activity areas). This is the FS’s pretense of accounting for those areas its management has</p>	<p>The EA does not present “a new, discretionary limitation on cumulative loss in soil productivity within a 6th code HUC</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	caused excessive detrimental disturbance. However, we note that the cumulative total nears the arbitrary 15% limit. One could effectively argue that the FS cannot log much more of this watershed in the future, until many decades later when soil productivity has been genuinely restored. We can hear the howls of the timber interests already, pointing out that the Forest Plan sets no such limits and indeed, we can rest assured that the discretionary nature of this arbitrary limit means it will be immediately abandoned by the FS the second it proposes a timber sale in an area where the watershed limit would be exceeded.	watershed". Instead, soil productivity is analyzed only within proposed activity units. Quoting directly from the EA: "Analyzing effects to soil at a landscape scale (e.g. by watershed) is unreliable, since it does not involve analyzing soil disturbance as it is assessed under the Northern Region Soil Quality Standards (USDA Forest Service 1999), which is a site-specific, activity area approach."
3.3n	Application of Regional Soil Quality Standards for soil productivity conservation 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. Please make sure you comply with this requirement.	Direct, on-the-ground surveys have been completed. See the EA for details.
3.3o	Alexander and Poff (1985) reviewed literature and found that as much as 10% to 40% of a logged area can be disturbed by skyline logging. They state: There are many more data on ground disturbance in logging, but these are enough to indicate the wide diversity of results obtained with different equipment operators, and logging techniques in timber stands of different composition in different types of terrain with different soils. Added to all these variables are different methods of investigating and reporting disturbance. Alexander and Poff (1985) also note that livestock grazing and other activities such as ORVs and motorcycles cause significant soil compaction.	We agree that a diversity of results in ground disturbance due to logging can occur, depending on type of equipment used, topography, and operator. See the EA for discussion on local monitoring results. We also agree that livestock grazing and ORVs and motorcycle use can cause significant compaction; however, no such impacts were noted within proposed harvest units for this project.
3.3p	Adams and Froehlich (1981) 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 compacted area, is affected. This is ignored in the EA.	Areas adjacent to skid trails and other disturbance areas were not ignored. As the EA notes, no detrimental soil disturbance was noted in any of the proposed activity areas. Post implementation monitoring will follow the Forest Soil Disturbance Monitoring Protocol (2009), which uses random transects. This method ensures that detrimental disturbance, whether related to skid trails or not, will be detected.
3.3q	For a study done on the Kootenai and Flathead National Forests, 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.) The FS does not have enough soil bulk density and other compaction monitoring data collected at the adequate soil depths and in enough sites on the BNF to be able to make accurate predictions about the effects of soil compaction in Project activity areas. Following a study by Cullen et al., (1991) which was carried out on the Kootenai NF and the Flathead NF, the authors concluded: "This result lends support to the general observation that most compaction occurs during the first and second	Post sale monitoring will confirm the results of our analysis that predicts that Northern Region Soil Quality Standards will be met; activity areas that do not meet the standards due to compaction will be treated by either ripping or subsoiling to bring them within the standards.

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
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	<p>passage of equipment." And Page-Dumroese (1993), in a Forest Service research report investigating logging impacts on volcanic ash-influenced soil in the Idaho Panhandle NF, 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.</p> <p>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."</p>	
3.3r	<p>The Northern Region recognizes that soil quality standards must be validated. FSM 2500-99-1 requires that Forest Supervisors must:</p> <p>Assess ... whether (soil quality standards) are effective in maintaining or improving soil quality;</p> <p>Evaluate the effectiveness of soil quality standards and recommend adjustments to the Regional Forester; and</p> <p>Consult with soil scientists to evaluate the need to adjust management practices or apply rehabilitation measures.</p> <p>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:</p> <p>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.</p> <p>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."</p> <p>Neither soil function nor soil quality, as FSM 2500-99-1 defines it, have ever been monitored on the BNF following management activities.</p> <p>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:</p> <p>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</p>	<p>To address questions of long-term soil quality and productivity, the Region is part of a long-term study of soil quality across the country. See http://forest.moscowfsi.wsu.edu/smp/ltspl/index.html</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
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	<p>planning goals?" We request all documentation of validation monitoring by the Forest Service in the Northern Region that answers those two questions.</p> <p>The Regional Office's reply letter stated that there is no documentation that responds to this request.</p> <p>FSM 2500-99-1 superceded similar directives issued in 1994 (FSH 2509.18). And as far back as 1988, shortly after the BNF adopted its Forest Plan, a similar directive recognized the need for monitoring to insure that soil productivity would be maintained. (See R1/R4 SOIL AND WATER CONSERVATION PRACTICES HANDBOOK, Forest Service Handbook 2509.22, May 1900.) Each of these Regional directives required implementation and effectiveness monitoring. But as the Regional Office's reply to the Ecology Center FOIA indicates, the EA is unable to cite the results of any monitoring, to provide a basis for assuming the Standards actually protect soil productivity.</p> <p>Page-Dumroese et al. 2000 (an earlier version of which is cited in FSM 2500-99-1) emphasize the importance of validating soil quality standards using the results of monitoring:</p> <p>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.)</p> <p>Soil productivity can only be protected if it turns out that the soil Standards work. To determine if they work, the FS would have to undertake objective, scientifically sound measurements of what the soil produces (grows) following management activities. But the FS has never done this on the BNF.</p>	
3.3s	<p>Also, the mitigation measures, such as operating ground-based equipment when soil moisture is low is so vague as to protect nothing.</p>	<p>Allowing soils to dry before heavy equipment operates on them has been shown to be effective in minimizing soil compaction. See: Han, H.-S., Page-Dumroese, D., Han, S.-K., and Tirocke, J. 2006. Effect of slash, machine passes, and soil moisture on penetration resistance in a cut-to-length harvesting. <i>Int. J. For. Eng.</i> 17(2):11-24.</p>
3.3t	<p>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 et al., (1989), in a FS 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 FS report, Adams and Froehlich (1981) state:</p> <p>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</p>	<p>We agree that compaction that can affect soil productivity can occur on primary skid trails. This is why we have included primary skid trails in our estimate of detrimental soil disturbance. See the EA for more details</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	the U.S. ranging from about 5 to 50 per cent.	
3.3u	Apparently, the EA does not consider the location of fire suppression activities (to fall under the definition of "activity area" as defined by the FSM R1 Supplement 2500-99-1).	The soil resource report addresses fire suppression activities on page 7 and EA page 85-86.
3.3v	<p>The EA does not consider that the wildfires have caused areas to fall under the definition of "detrimentally burned" (as per FSM R1 Supplement 2500-99-1).</p> <p>The EA does not consider that areas burned such that the areas having less available nitrogen, potassium, calcium, magnesium or other nutrients because of the effects of fire fall under the definition of "detrimentally burned" (as per FSM R1 Supplement 2500-99-1).</p> <p>The EA does not consider that areas burned such that they would be void or very much depleted of soil fungi and bacteria fall under the definition of "detrimentally burned" (as per FSM R1 Supplement 2500-99-1).</p> <p>The chemical and biological make-up of the specific soils in the project area, and their ability to withstand fire and detrimental disturbance that lowers soil productivity is not a subject adequately taken up by the FS. Harvey et al., 1994 state:</p> <p>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.</p> <p>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.)</p>	<p>"Detrimentially burned" is not a term used in FSM 2500-99-1. Severely burned soil is a category defined under detrimental soil disturbance, and it applies to prescribed fire. Guidelines for assessing burn intensity (for wildfires) are contained in the Burned-Area Emergency Rehabilitation Handbook (FSH 2509.13). The EA addresses the affects of the Rat Creek fire to the soil resource. Specifically, of 495 plots taken to address soil burn severity, none of the plots fell in areas classified as "high burn severity", and only 2% of the plots were classified as moderate severity. Therefore, the effects of the fire on carbon, nitrogen, and microbial populations are likely minimal, especially when compared with effects seen with high burn severity, which you appear to be referring to as "detrimentally burned" in your comment. The presence of live plants (that rely on microbially-mediated processes controlling nutrient availability, as you point out) in over 56% of the plots speaks to the overall low burn severity seen in the proposed harvest units.</p>
3.3w	Another big problem is that the EA largely relies on the FS's track record of relying upon Best Management Practices (BMPs) to base its claims that soil productivity will be maintained following logging practices. However, BMP monitoring does not attempt to measure post-project soil productivity, since the audits are not scientifically designed to do so. Also, BMP monitoring does not measure post-project detrimental disturbance percentages in project activity areas.	<p>Soil and water conservation practices have been shown to be effective in reducing soil disturbance on the BDNF. See the EA for details. See EA pages 89-90.</p> <p>The monitoring section of the EA states: "Harvest units and roads will be monitored after harvest to assure compliance with Region 1 Soil Quality Standards". Monitoring will be conducted following the Forest Soil Disturbance Monitoring Protocol that determines post-project detrimental disturbance percentages in project activity areas.</p> <p>EA page 89-90 discussion of BMP effectiveness:</p> <p>The proposed action includes project design features and</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p>mitigation measures to protect soils (EA page 18). Soil and water conservation practices (SWCPs) are per USDA Forest Service 1988, and are referenced below where appropriate. Direction for implementing SWCPs is set forth in the Region 1 Soil Quality Standards: <i>“Design and implement management practices that maintain or improve soil quality. Protection of the soil resource should be emphasized; restoration practices should be implemented where necessary” (USDA Forest Service 1999).</i></p> <p>Monitoring conducted on previous vegetation management projects has proven SWCPs to be effective in controlling the amount of detrimental soil disturbance in activity areas. For example, the FY 2004 Monitoring Report documents BMP effectiveness on the West Face Timber Sale (p.30). Harvesting began on the West Face timber sale in the winter of 2001. The project area is in the Pioneer Mountains and soils are generally derived from the Pioneer Batholith, which is broadly quartz-monzonite composition. While the Rat Creek project area is underlain by the Idaho Batholith rather than the Pioneer Batholith, the majority of the project area is minerologically, chemically, and physically similar, since granitic bedrock forms the parent material for the majority of soils in the project area. The quantitative monitoring of the West Face sale showed that “detrimental disturbance was estimated at less than 10 percent overall” (FY 2004 Monitoring Report, p.30). The report attributes reductions in detrimental soil disturbance found in recent projects from “historic” timber projects to logging in the driest times of the summer and over snow, excluding harvest during the wetter spring months (p.30). Logging when the soil is dry is a practice to be followed for the proposed action, is captured under SWCP 13.06.</p> <p>The FY 2004 Monitoring Report also reported on monitoring in the Joe/Fox sale (p. 93). Soils in the Joe/Fox sale are more susceptible to compaction than the majority of the soils found in the Rat Creek project area, because they have more consistent surface layers of volcanic ash mixed in than what was found in Rat Creek project area soils. Joe/Fox soils also</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p>had a soil water content of 18 to 20 percent on the date sampled, a moisture level which increases susceptibility to compaction. These soils were monitored under monitoring item 9-3 "Productivity Changes in Sensitive Soils." Monitoring results demonstrated that 15 passes of normal machinery on moist soil caused a 6.2 percent and 9.4 percent increase in surface and subsurface bulk density, respectively. These values are considerably lower than the 15 percent threshold for detrimental compaction (USDA Forest Service 1999). The percentage change is expected to be even less on frozen or drier soils. Allowing soils to dry before heavy equipment operates on them, which is listed above in "Design Features and Mitigation Measures" has been shown to be effective in minimizing soil compaction both locally as described above, and in the literature as well (Han and others 2006).</p> <p>Designating skid trails (SWCP 14.08) has been shown to reduce soil compaction to 10 percent or less of an activity area from 25-30 percent of an area if skid trails are not designated (Adams and Froehlich 1984). Monitoring of the Butte South Salvage Sale demonstrated the effectiveness of designating skid trails, allowing soils to dry prior to harvest activities, and placing slash on skid trails (USDA Forest Service 2007c). Ground cover in the units ranged from 87 to 93 percent after slash was placed on skid trails; WEPP modeling for the project indicated that 70 percent cover was sufficient to provide protective rainfall interception to prevent water erosion (USDA Forest Service 2007c).</p> <p>The use of slash to prevent rutting and compaction has also shown to be effective. Han and others (2006) found that using slash when soils were moist was an effective technique in reducing rutting and long term compaction impacts in silt loam soils.</p> <p>Burning slash piles when the soil is frozen has been shown to protect the soil. Two landings in the West Face Timber Sale were monitored for detrimental burning. The piles were moist and were burned in the fall with frozen soil and 6 inches of snow. No detrimental soil burning was noted and vegetation is</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		already returning (USDA Forest Service 2006, p.37).
3.4	<p>II. ROADLESS ANALYSIS IS INADEQUATE</p> <p>The EA pretends there is some biological or other tangible difference between uninventoried roadless areas (“unroaded areas”) and Inventoried Roadless Areas (IRAs), yet fails to disclose just what those real, tangible differences are. In fact, there are none. Previous roadless inventories, both RARE II and during preparation of the Beaverhead Forest Plan, omitted unroaded areas adjacent to the IRAs. The EA discusses unroaded areas, yet there are no maps showing the location of such areas—the boundaries of these areas. With the controversy—both social and scientific—surrounding the roadless issue, the failure to disclose with a map in an EIS all inventoried and uninventoried roadless lands makes no sense and constitutes a violation of NEPA.</p> <p>The idea of doing separate analyses for the vaguely defined “unroaded” areas and contiguous or noncontiguous inventoried roadless lands make no sense. Since the existing inventoried roadless area boundaries were often adopted arbitrarily, analyzing effects on wilderness characteristics of <u>all</u> roadless acres—whether inventoried, uninventoried, uninventoried contiguous with inventoried, or any combination—is clearly called for in this analysis. Again, with all the controversy surrounding the roadless issue, to analyze impacts on uninventoried roadless lands separate from inventoried roadless areas is completely illogical and constitutes a violation of NEPA.</p> <p>Nothing is discussed as far as the possibility that the uninventoried roadless areas may be eligible for later inclusion as inventoried roadless or as eligible for Wilderness designation.</p> <p>Proposing logging and road building activities in roadless areas of any status may irretrievably alter their wilderness characteristics. It is at this time, when an EA is prepared to discuss the issue of potential impacts on roadless, that such analyses should have taken place. The American public, in the context of commenting on the Roadless Rule proposal, has clearly spoken against adverse impacts on roadless areas. We believe an EIS is required for this project.</p> <p>It is well established that logging in an uninventoried area is an “irreversible and irretrievable” commitment of resources that “could have serious environmental consequences” <i>Smith v. U.S. Forest Service</i>, 33 F.3d 1072, 1078 (9th Cir. 1994). The EA failed to address the effects of logging and roading the uninventoried roadless areas on their characteristics vis-à-vis potential for future wilderness or inventoried roadless area designation. The discussion of the impacts on unroaded areas was superficial. There was no analysis of the project’s impact on the unique values of unroaded areas together with their adjacent inventoried roadless areas. The EA does not constitute the “hard look” requirement with respect to the environmental impact of logging and roading uninventoried roadless areas.</p> <p>The EA’s failure to take the requisite “hard look” at the IRA boundaries means that it failed to discuss whatever the landscape features were that the FS chose to consider for originally limiting the IRAs. For instance Beaver Lake IRA 1-003A seems to be bound on the east side by two roads, 1210 and 1210A—if they happen to be largely naturally or otherwise reclaimed, then their present use as a boundary of an IRA would have to be questioned.</p> <p>The revised Forest Plan dropped Beaver Lake IRA 1-003B because it was too small for wilderness designation even though it was 6300 acres in size. This is not true, the minimum size for wilderness under the Wilderness Act. Please</p>	<p>The Recreation section of the EA has been updated to include an analysis of unroaded areas. The EA includes a map (page 11) of harvest units, Forest System roads and proposed temporary roads, inventoried roadless areas, and removed from inventory roadless areas ; unroaded areas can be discerned with this map.</p> <p>The commentor does not identify units of concern.</p> <p>Discussion in the EA, Environmental Consequences, Recreation section has been added regarding eligibility for later inclusion as wilderness.</p> <p>The Recreation section of the EA has been updated to include an analysis of unroaded areas.</p> <p>Roads 1210 and 1210A are Forest System Roads.</p> <p>No treatments are planned within Beaver Lake Ira 1-003B (see EA, Environmental Consequences, Recreation section).</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>reevaluate its wilderness potential.</p> <p>Riggers, et al. 1998 provides a good discussion on the comparison of stream and water quality conditions in roadless areas vs. roaded, developed areas on the Lolo National Forest. It is likely that the roaded streams on the BDNF would show any less contrast with unroaded streams as for the Lolo NF.</p> <p><i>The Northern Rockies Ecosystem Protection Act H.R. 980 has a hearing on May 5th before the House Natural Resources committee if enacted would protect all the inventoried roadless lands and at least their contiguous unroaded areas as Wilderness, protecting the high quality wilderness experience sought after by so many people. It would also help maintain the biological diversity that is valued by the overwhelming majority of the American people, by protecting important core refugia for wildlife. The EA fails to analyze an alternative that maintains the wilderness values of all inventoried roadless and uninventoried roadless lands in the project area and preserve the option for Congress to designate Wilderness in this area before any more activities degrading the wilderness values are allowed. Please do so.</i></p> <p>The EA does not include a logging alternative that would not affect all currently unroaded areas contiguous with inventoried roadless and Wilderness, despite the fact that their omission from inventoried roadless was arbitrary, and the science that indicates such areas are the highest ecological integrity across the Northern Rockies.</p> <p>Since the EA failed, as required, to incorporate the Roads Analysis Process and disclose the locations of all motorized travelways in the project area, it is impossible for the decision maker and public to tell which of the areas to be logged fall within logically bound roadless areas (not just "inventoried" roadless areas).</p> <p>Biologically, speaking, the arbitrary "inventoried" roadless areas boundaries are irrelevant. The EA failed to analyze significant resources the FS has repeatedly acknowledged are associated with unroaded areas. In addition it does not disclose the irreversible and irretrievable commitment of resources caused by logging activities in these areas, particularly unroaded areas contiguous to "inventoried" roadless areas.</p> <p>Federal Register: October 19, 1999 (Volume 64, Number 201)]</p> <p>[Notices]</p> <p>[Page 56306-56307]</p> <p>Notice of Intent to prepare an EIS</p> <p>"This proposed rulemaking responds to strong public sentiment for protecting roadless areas and the clean water, biological diversity, wildlife habitat, forest health, dispersed recreational opportunities and other public benefits they provide."</p> <p>"... establishing criteria and procedures to ensure that the social and ecological values, that make both inventoried roadless areas and other uninventoried roadless lands important, are considered and protected through the forest planning process"</p> <p>"It would also guide land managers in determining what activities are appropriate in uninventoried roadless areas that have</p>	<p>Evaluation of areas for wilderness is outside the scope of this project. This project focuses on salvage harvest of lands suitable for timber production; See EA Purpose and Need, Proposed Action.</p> <p>The EA has been revised to include discussion regarding an alternative that avoids unroaded areas contiguous with inventoried roadless and wilderness.</p> <p>The EA includes a map of harvest units, Forest System roads and proposed temporary roads.</p> <p>The commentor is correct, wildlife and plant species do not discern administrative boundaries. Project analysis includes the effects of the proposed action on forest vegetation, sensitive plants, noxious weeds, fuels, air quality, wildlife, fisheries, hydrology, soils, heritage resources, recreation and scenery.</p> <p>This is copy from the Federal Register</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	important ecological and social values.”	
	“National procedures and criteria that address how land managers at the forest plan level should manage uninventoried roadless areas so as to protect their unroaded characteristics and benefits”	This is copy from the Federal Register
	[Federal Register: May 10, 2000 (Volume 65, Number 91)]	
	[Proposed Rules]	This is copy from the Federal Register
	[Page 30275-30288] Notice of Roadless Area Conservation Proposed Rule	
	The intent of this rulemaking is to provide lasting protection in the context of multiple-use management for inventoried roadless areas and other unroaded areas within the National Forest System	This is copy from the Federal Register
	Soil, water, and air. These three key resources are the foundation upon which other resource values and outputs depend. Healthy watersheds provide clean water for domestic, agricultural, and industrial uses; help maintain abundant and healthy fish and wildlife populations; and are the basis for many forms of outdoor recreation.	This is copy from the Federal Register
	Healthy watersheds provide a steady flow of high quality water, maintain an adequate supply of water, and reduce flooding. Managing land uses to keep watersheds properly functioning and in natural balance is critical to maintaining watershed health and productivity.	This is copy from the Federal Register
	Roadless areas generally have attributes that promote watershed health, primarily because minimal ground-disturbing activities have occurred.	This is copy from the Federal Register
	Ground disturbing activities can accelerate erosion, increase sediment yields, and disrupt normal flow processes. Roadless areas maintain healthy and productive soils, which promote water entry into aquifers, minimize accelerated runoff, and provide for a diverse and abundant plant community important to both human and animal health. Roadless areas are less likely to suffer from human-caused landslides and other soil movement that fill streams with sediment and debris and disrupt normal stream processes. Roadless areas also have less dust and vehicle emissions, which reduce air quality, elevate human health risks, and diminish water quality. Roadless areas help maintain the high quality visibility that forest users seek when visiting the national forests.	This is copy from the Federal Register
	Unroaded areas are more likely than roaded areas to support greater ecosystem health, including the diversity of native and desired non-native plant and animal communities, due to the absence of disturbances caused by roads and accompanying activities. Healthy ecosystems can be characterized by the degree to which ecological factors and their interactions are reasonably complete and functioning for continued resilience, productivity, and renewal of the ecosystem.	This is copy from the Federal Register
	Native plant and animal communities tend to be more intact in these less disturbed areas. Roadless areas also conserve native biodiversity, by providing a buffer against the spread of invasive species.	This is copy from the Federal Register
	Conserving biodiversity offers many benefits to society. The public has recognized the importance of protecting species and ecosystems for their utilitarian, subsistence, and intrinsic values. Important benefits provided by healthy ecosystems, with diverse organisms and intact natural processes, include: (1) conservation of air, water, and soil quality and (2)	This is copy from the Federal Register

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	sustainable levels of goods and services, including viable and desired levels of both game and non-game species.	This is copy from the Federal Register
	In addition to these important reasons for maintaining healthy ecosystems with a full component of biodiversity, many species are valuable for medicinal and agricultural purposes.	This is copy from the Federal Register
	Protecting and maintaining biodiversity also provides the opportunity for the appreciation and enjoyment of natural beauty and gives future generations the chance to experience wild places, with their unique living plant and animal communities.	This is copy from the Federal Register
	The Forest Service manages environmental settings to provide, among other things, opportunities for recreational experiences. The Recreation Opportunity Spectrum (ROS Users Guide, FSM 2311 and FSH 2309.27) was developed to provide a framework for classifying and defining segments of outdoor recreational environments, potential activities, and experiential opportunities.	This is copy from the Federal Register
	The Recreation Opportunity Spectrum's settings, activities, and opportunities represent a continuum that is divided into six classes: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. Inventoried roadless and other unroaded areas are characterized mainly by the primitive, semi-primitive non-motorized, and semi-primitive motorized classes.	This is copy from the Federal Register
	Primitive and semi-primitive non-motorized classes often have many wilderness attributes; however, unlike wilderness, the use of mountain bikes and other mechanized means of travel, such as those used by people with disabilities, can be permitted. In addition, these classes have fewer restrictions on motorized tools, search and rescue operations, and aircraft use than in wilderness areas.	This is copy from the Federal Register
	In semi-primitive motorized settings, there is little evidence of managerial control, yet these areas allow some motorized activities, such as: off-highway vehicle, over-snow vehicle, motorboat, and helicopter use; chainsaw and other motorized tool use; and appropriate motor vehicle use for other resource management activities. In addition, persons with disabilities have enhanced access capability in semi-primitive motorized class areas.	This is copy from the Federal Register
	Inventoried roadless and other unroaded areas may provide outstanding opportunities for other dispersed recreational activities, such as hiking, fishing, camping, hunting, picnicking, wildlife viewing, cross-country skiing, and canoeing. All of these activities and those mentioned for the semi-primitive motorized class may occur in areas on the developed end of the spectrum, but the experience is different. Roaded natural, rural, and urban classes are characterized by increased interactions with other people, more sights and sounds of human development and activity, more management restrictions and controls, and more landscape modification resulting from resource management activities.	This is copy from the Federal Register
	Inventoried roadless and other unroaded areas are the last remaining relatively undisturbed landscapes outside of wilderness and similarly designated areas. The demand for motorized and non-motorized recreation opportunities is increasing. As these lands continue to be developed, the supply of unroaded lands that are available for dispersed recreation is reduced.	This is copy from the Federal Register
	The Forest Service believes that it is important to protect the roadless characteristics of unroaded areas within the context of its multiple-use mandate.	This is copy from the Federal Register
		The Recreation section of the EA has been updated to include

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>Contiguous unroaded lands can be critically important linkage between roadless and/or Wilderness areas, are often at lower elevations and therefore provide unique roadless values based on differences in vegetation and habitat, proximity to mainstem rivers and larger streams and accessibility to primitive and semi-primitive recreation to the public. The EA failed to recognize or analyze the role of these lands and to analyze them, despite the continued recognition of their unique status and qualities. This is a failure to analyze a significant resource under Section 102(C) of the National Environmental Policy Act. As a result it also violates the public participation requirements of NFMA. In addition, logging in these lands is an irreversible commitment of resources, requiring full NEPA analysis of the values potentially affected by logging: soils, watershed and native fisheries, natural plant communities invasion, outdoor recreation, wildlife habitat, and wilderness value.</p> <p>Contiguous unroaded lands (those contiguous with inventoried roadless areas) have been recognized for their unique ecological potential by the USFS. Recently, the current administration noted in its Interim Directive on the Roads Policy, issued December 14, 2001:</p> <p>Additionally, the revision of Forest Service Manual Chapter 7710 included interim requirements that, rather than addressing the transportation atlas, record, or analysis, imposed a significant restriction on road construction or reconstruction in inventoried roadless areas and contiguous unroaded areas until a forest-scale roads analysis was completed and incorporated into the Forest plan. (66 FR 65796.)</p> <p>Thus, the first set of Forest Service Manual provisions accompanying the roads policy acknowledged the special importance of these lands for protection of roadless values. In addition, the agency continued to recognize their importance and link them to IRA's in terms of shared values:</p> <p>.... remains consistent with the agency's intent in adopting the final road management directive in January 2001. As explained in the January Federal Register notice, the agency retained the transition procedures of the proposed policy (renamed "interim requirements" in the final directive) to ensure that the "values associated with inventoried roadless and contiguous unroaded areas are fully considered within the context of forest planning" (66 FR 3226, Col. 3). (66 FR 65798)</p> <p>Logging of the undeveloped tracts of land contiguous to inventoried roadless areas or Wilderness requires full analysis of the wilderness, recreational and other values of the areas. The EA fails to do this. Hence, the FS makes the untenable decision to defer the decision of what to do with these areas until after they have modified them. The impacts of this irreversible action occur now, not some unspecified time in the future, and must be completely reviewed before irreversible action is taken. Logging in these unroaded areas will change their nature and reduce and modify many of the watershed values they may now serve. The reliance on management unit designations in Forest Plans that have now expired under the 15-year term under NFMA (16 USC § 1604(f) (5) "Plans... shall (5) be revised ... at least every fifteen years") is also misguided. Reliance on an outdated forest plan and then claiming that the decision can be deferred to a forest planning process to conclude at an uncertain time places these lands in limbo where the FS is free to alter their intrinsic value without analysis. The effects of logging cannot, as a practical matter, be reversed any time soon. Instead it will take decades for the areas to return to their prior values. In addition, the EA fails to adequately analyze and disclose adverse impacts that cannot be avoided by logging these areas. Plainly, the analysis given unroaded areas is not sufficient.</p>	<p>an analysis of unroaded areas.</p> <p>FSM 7710 has been revised. A Forest level roads analysis was completed in 2005. The B-D Forest Plan was revised in 2009 and 2005 Forest level roads analysis information was incorporated.</p> <p>The Recreation section of the EA has been updated to include an analysis of unroaded areas.</p> <p>The Forest Plan ROD was signed in 2009 and the Forest Plan has not "expired".</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
3.5	<p>IV. BLACK-BACKED WOODPECKER: NFMA AND NEPA VIOLATIONS</p> <p>From a NFMA perspective, is the FS insuring the viability of the black-backed woodpecker? The answer is, no—the EA’s analysis for black-backed woodpecker does not ensure viability of the species, as the Rat Creek Salvage project will destroy an inordinate amount of habitat.</p> <p>Secondly, from a NEPA perspective, did the FS take a hard-look at, or even fully disclose, the potential direct, indirect, and cumulative impacts of this project on the black-backed woodpecker and use the best scientific information available? No on both counts—the Rat Creek Salvage EA ignores a lot of recent research and discussion on the black-backed woodpecker, which would be necessary to adequately analyze cumulative effects. From a NEPA perspective, the FS has not taken the requisite hard look at the impacts of salvage logging on the viability of black-backed woodpeckers, especially in light of the devastating impacts of past misguided fires suppression and “salvage” logging policies.</p> <p>The Lolo National Forest Post Burn Final EIS (USDA Forest Service 2002b) states:</p> <p>Black-backed woodpeckers' preference for recently burned forest has led to its listing as sensitive. These woodpeckers mostly feed on large beetle larvae that are found in groups of fire-killed trees. They are also found at very low densities following some insect and disease outbreaks, but those areas appear to be only marginal habitat. Black-backs move into a stand shortly after the trees are burned, and woodpecker numbers usually peak in two or three years (Caton 1996). The birds have usually left the stand five to six years after a fire (Hutto 1995). The combined effect of fire suppression and past salvage harvest of burned trees has greatly reduced the acres of standing burned trees.</p> <p>...Several studies have shown that black-backed woodpeckers prefer ponderosa pine, western larch and Douglas fir that have burned at high to moderate/high severities (Caton 1996, Hejl et al. 2000, Hutto 1995, Powell 2000). Fires of less than 100 acres are valuable for these woodpeckers and one black-backed woodpecker nest was found in a 20 acre burn (O'Connor and Hillis 2000). Salvage logging can reduce the habitat available for these woodpeckers. At one extreme, a complete clearcut with no reserve trees would remove all of the potential habitat. In studies such as Hejl (2000), and Saab and Dudley (1998), fewer black-backed woodpeckers nested in salvaged stands compared to unlogged stands. Salvage with snag retention reduced the number of nesting woodpeckers but did not eliminate them from the stand. (Pages 3-187 to 3-188.)</p> <p>In this case, we can not see where it shows that the BDNF surveyed the areas to be logged, to determine how many nests the logging will disrupt. This contrasts to the approach taken by the Lolo NF, which did pre-project surveys in the burned areas, and committed to surveys of cutting units prior to logging:</p> <p>...Surveys for black-backed woodpeckers were conducted during 2001 on the four fires considered in this analysis. Transect surveys were done at 16 locations and covered over 970 acres of the most likely habitat. Thirteen foraging black-backed woodpeckers were seen and four nests were located. Two nests are within the Landowner Fire perimeter and two</p>	<p>Comments regarding Black-backed woodpecker were reviewed in detail and can be summarized and responded to as follows:</p> <p>a) Direct, indirect, and cumulative effects are disclosed in the WL report, pages 34 through 36. The determination made by the biologist of “May impact individual black-backed woodpeckers, but will not threaten the viability of the black-backed woodpecker nor cause a trend towards federal listing” is well supported in the analysis and documented on page 37.</p> <p>b) Current science was considered and used. The most recent Black-backed Woodpecker Northern Region Overview Key Findings and Project Considerations, 2007 was referenced and cited in addition to some of the supporting literature. This document represents a regional assimilation of up to date literature, was used in the analysis, and was prepared by the Black-backed woodpecker working group which consists of professional wildlife biologists familiar with black-backed biology and management implications at the local and regional scale.</p> <p>c) The Black-backed Woodpecker Northern Region Overview Key Findings and Project Considerations, 2007 clearly shows habitat has been increasing across the Northern Region and the Beaverhead-Deerlodge NF. Furthermore, the overview clearly shows “ that not only does the Northern Region have sufficient habitat to maintain a viable population of black-backed woodpeckers but each individual forest alone also has sufficient habitat for a viable black-backed woodpecker population”. This information is summarized in the WL report pages 28 through 34, and discusses trends at the project, forest and regional scale.</p>

² See, E.g., Hejl et al., (2000): “the brown creeper, black-backed and three-toed woodpeckers almost exclusively occupied unlogged conditions.” Accord: Hillis et al., (2002): “The greatest concerns for this species... are decades of successful fire suppression and salvage logging targeted at recent bark beetle outbreaks.”

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>are within the Ninemile Fire perimeter. Only foraging black-backed woodpeckers were seen within the Flat Fire perimeter and no nests were located (refer to Maps 3.18.13a through 3.18.14b in Appendix A). No black-backed woodpeckers were observed within the Alpine fire perimeter in 2001. Additional surveys will be conducted in harvest units with potential for black-backed woodpecker use each spring for the duration of the timber sale. (USDA Forest Service 2002b, pages 3-187 to 3-188.)</p> <p>... No timber harvest would occur in the stands where black-backed woodpecker nests were located during the 2001 surveys. Proposed harvest stands in potential black-backed woodpecker habitat would be surveyed again each spring before harvesting begins. If blackbacked woodpecker nests were located, then the nest tree would remain and a reserve patch would be marked around the nest tree. Clumps of reserve trees would be left in all regeneration stands. The clump around the nest tree could be used as one of the reserve clumps. The size and number of reserve trees and clumps would be designated for each stand in the harvest prescription. (Ibid., pages 4 - 117 to 118.)</p> <p>The Rat Creek EA failed to disclose the fact of severely reduced habitat for this species in the bioregion, and the reasons why. From the Lolo National Forest Post Burn Final EIS:</p> <p>...Past to Present: For many forest types in the Northern Rockies, stand replacement fires were the common fire regime. Studies of historic vegetation conditions indicate about 44 percent of this area was non-stocked or in seedling or sapling age classes (Losensky 1997). Older accounts suggest that black-backed woodpeckers were relatively abundant in recently burned forests (Bent 1939). Black-backed woodpecker numbers are often highest in stands that have burned within the last five years, and black-back numbers decline rapidly after that, as insect activity declines (Hutto 1995). Active fire suppression has greatly reduced the number of acres that burn with stand replacing fires. The forests that did burn were usually quickly salvaged to remove wood while it still had value.</p> <p>The combined effect of fire suppression and salvage harvest has greatly reduced the acres of standing burned trees, which is preferred blackbacked woodpecker habitat. Due to this reduction in habitat, black-backed woodpeckers went from being relatively abundant to relatively rare.</p> <p>The listing of black-backed woodpeckers as a sensitive species has highlighted the importance of burned trees as wildlife habitat. Several studies (Caton 1996, Hutto 1995, and Saab and Dudley 1998) have shown the close tie between these woodpeckers and burned forest. In some fires on National Forest land, one reason salvage has been limited is to maintain woodpecker habitat. Wildfires within wilderness areas have been the main source of burned habitat in western Montana during recent years. Prescribed burning, usually for big game winter range, has produced small amounts of burned trees that attracted black-backed woodpeckers. (USDA Forest Service 2002b, pages 4 - 117 to 118)</p> <p>The Forest Service has stated that the 2000 fires did not adequately make up for past deficits on the Lolo National Forest:</p> <p>In spite of the ecological benefits of the fires of 2000, the Lolo National Forest continues to have a significant deficit of burned forests, especially from moderate and low intensity wildfires. As a result, the forest remains unhealthy and less resilient to future disturbances. This condition is unprecedented, the consequences are largely unpredictable, the conditions are outside the range of natural variability to which these ecosystems are adapted, and healthy conditions will be</p>	<p>d) Contrary to the comment that the project will destroy an inordinate amount of habitat, the wildlife resource report demonstrates that only a small amount of available habitat will be salvage logged. The wildlife analysis demonstrates that.</p> <ul style="list-style-type: none"> • Approximately 25,600 acres within the burn perimeter is made up of forested stands with burned trees five inches in diameter or larger. This indicates that over 95% of the Rat Creek fire boundary will provide value as black-backed woodpecker habitat. Preferred woodpecker habitat increased within the burn perimeter over the pre-fire, unburned condition. • The project would treat 1,652 acres (6%) of black-backed habitat in the recent burn, indicating that 94% would remain in its current condition. • The biologist identified 1,321 acres of highest quality habitat based on higher tree density and connected habitat blocks of 200 acres or more, and showed that only 37 acres (2.8%) would be treated. After salvage, each of the identified habitat blocks would remain intact with 200 acres or larger of unsalvaged area. • The biologist identified 1,657 acres of moderate quality habitat based on tree density and habitat blocks less than 200 acres, and showed that only 128 acres (8%) would be treated. <p>Together, the information above indicates that only a small percentage (6%) of black-backed habitat created from the Rat Creek Fire is being salvage harvested, and that the salvage activities are predominately located in foraging areas and outside of the burned areas most likely to be frequented as breeding territories.</p> <p>e) The information prepared for the Lolo National Forest was prepared before the Conservation Assessment and population/viability estimates (Samson 2006ab) were</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>increasingly expensive to restore (USDA Forest Service 2002b, p. 3-155).</p> <p>Cherry (1997) states:</p> <p>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.</p> <p>One Forest Service biologist, P. Dolan states, "Retention of all or most of the large snags will help compensate for past losses." (Dolan 1998a,b.)</p> <p>Dolan states in regards to impacts on the black-backed woodpecker due to fire suppression and post-fire logging states:</p> <p>It seems that we have a huge cumulative effects problem here, and that each salvage sale removes habitat that is already very limited. We are having trouble avoiding a "trend to federal listing" call for the BBWO in salvaging burns, unless comparable acres of fire-killed dead are being created through prescribed burns.</p> <p>The wildfires did not eliminate this crisis. "In spite of the ecological benefits of the fires of 2000, the Lolo National Forest continues to have a significant deficit of burned forests, especially from moderate and low intensity wildfires." (Lolo Post-Burn FEIS at 3-155.)</p> <p>Hutto, 1995 states: "Fires are clearly beneficial to numerous bird species, and are apparently necessary for some." (p. 1052, emphasis added.) "If some bird species require burned forests for the maintenance of viable populations (which is strongly suggested by this study), then post-fire salvage cutting may be conducted too frequently to be justified on the basis of sound ecosystem management... [since the kind of selective tree removal favored in such salvage sales] results in the removal of the very tree species and sizes preferred by the more fire-dependent birds." (Ibid., p. 1053.) Accordingly, Hutto urged in his paper that "[t]he current tendency to expedite timber 'salvage' sales on burned forest lands needs to be re-examined." (Ibid.)</p> <p>This recommendation bears closer scrutiny. As Hutto, whose study keyed on forests burned in the supposedly disastrous 1988 season, noted:</p> <p>"Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number of species in forests that had undergone stand-replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two-year-old burned forests in the Olympic Mountains, Washington, <i>were as great as adjacent old-growth forests...</i></p> <p>...Several bird species seem to be relatively <i>restricted</i> in distribution to early post-fire conditions... I believe it would be difficult to find a forest-bird species more restricted to a single vegetation cover type in the northern Rockies than the Black-</p>	<p>completed. As summarized in the Wildlife Resource Report, current information indicates that adequate post-fire habitat for black-backed woodpeckers is available at Regional, eco-province, Forest, and project level scales, and cumulative effects were considered.</p> <p>f) Field surveys conducted in 2008 by the project wildlife biologist confirmed the presence of black-backed woodpeckers. The wildlife analysis considers that black-backed woodpeckers are present throughout the analysis area. The biologists determination is based on the expected loss of some foraging habitat, some nesting habitat, and possibly a possible displacement of a minimal number of individuals in treated areas. Despite these reductions, the biologist concluded that overall losses are small in comparison to expected population and habitat trends.</p> <p>g) Bollenbacher et al (2008) Estimates of Snag Densities for Eastside Forests in the Northern Region – Report 08-07 v 2.0 provides the most up to date foundation for standard 3 as it pertains to snag retention on the Beaverhead-Deerlodge National Forest. Within salvage units, the project will leave all snags greater than 15 inches (except for safety concerns). Outside of treatments units (which covers approximately 24,000 acres) snags will remain abundant and in large/continuous patches.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>backed Woodpecker is to early [first 6 years] post-fire conditions.”</p> <p>(Hutto 1995, emphasis added).</p> <p>Regarding the recently issued “U.S. Forest Service Region One Black-Backed woodpecker Assessment” [Hillis et al., 2002] we point out the following salient points:</p> <p>“The relatively minor decline in existing habitat compared to the mean HRV for the entire 1940 to 2000 time period... simplistically interpreted, might suggest that black-backed woodpeckers are at no risk.” “That conclusion is likely grossly understated...” (p. 13. emphasis added).</p> <p>“Burned habitats lost to timber salvage have not been considered... (Ibid.)</p> <p>“Policy-makers also may need to reevaluate the priorities for salvage logging burned areas... Even in ‘high burn’ periods... adverse impacts on black-backed woodpeckers can result from relatively modest amounts of salvage logging.” (Ibid. p. 14.)</p> <p><i>Managers should recognize the need for decadence in unburned forests.</i> For black-backed woodpeckers, this is especially important in trees that are otherwise healthy, dying, or recently dead.” (Ibid. p. 15.)</p> <p>We now refer to the very first management recommendation at the end of the Hillis et al., (2002) paper:</p> <p>“Considering both the departure from historically available habitat and the increased interval between large fires, these findings suggest the black-backed woodpecker may be at substantial risk in USFS Region One. This conclusion suggests that <i>Region One policy-makers should recognize the need for retaining moderate and high severity fires on substantial acreages at normal intervals when land use and fire suppression decisions are made.</i>” (italized in orig, p. 14.)</p> <p>We also point out that the Northern Region Snag Protocol is a guidance document that was not independently peer-reviewed, was not subject to public process under NEPA and NFMA for planning level guidance validity, and which is in any case something the FS would choose to ignore when convenient, since it is not mandatory. Harris (1999) and ICBEMP DSEIS Appendix 12 present scientific information that contrasts greatly with the Rat Creek EA on this topic.</p> <p>We are also concerned that not enough snags will be left because of safety concerns. At our objection meeting over the Anaconda Deerlodge Job Core Project. Acting Supervisor Stewart stated that if there were a conflict between a person's safety and a tree that was being left, the Forest Service would move the person rather than the tree. We ask for the same here.</p> <p>The EA does not adequately consider management recommendations from other Region One black-backed woodpecker assessments such as O'Connor and Hillis (2000), such as:</p> <p>Conduct a Forest scale assessment of historic versus current amounts of source habitats for black-backed woodpeckers, including trends of subalpine, montane and lower montane old forests, managed and unmanaged young forest stages of lodgepole pine, areas of large scale insect infestations and burned forests. The assessment of burned forests should include estimates of amounts of post-fire habitat that currently exist compared to estimates of amounts that occurred</p>	

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>historically and should consider historic fire regimes.</p> <p>... Leave some large patches of intact post-fire habitat, including entire fires. The size to leave is relative to the size of the fire, however we suggest that leaving a few larger patches or one very large patch is probably more valuable than scattered small patches, especially if managing for black-backed woodpeckers is an objective. Wisdom et al. (2000) suggest leaving patches at least 956 acres, based on home range sizes of black-backed woodpeckers in mature and old forests.</p> <p>O'Connor and Hillis, 2000 cite Wisdom et al. (2000) who suggest retaining snags in clumps, and at least 42 snags per acre of dbh > 9". O'Connor and Hillis, 2000 also state, "There is evidence from Saab and Dudley (1998) that black-backed woodpeckers nested in salvaged areas with retained snags of this size and density. This snag retention may be uneconomical. If less snags per acre or smaller sizes are left, assume the area will not support nesting black-backed woodpeckers after logging."</p> <p>The Westside Reservoir Post-Fire Project FEIS, Flathead NF (2004) cites Wisdom and others (2000) who provide the following recommendations for back-backed woodpecker habitat:</p> <ul style="list-style-type: none"> • Avoid post-fire salvage logging in portions of large burned forests to maintain contiguous burned stands of at least 387 hectares (956 acres). • Where post-fire salvage logging is planned in burned, lower montane forests, retain snags in clumps rather than evenly spaced distributions. • Allow wildfires to burn in some forests with high fire risk to produce stand-replacing conditions. • Avoid post-fire salvage logging in portions of large burned forests for about 5 years post-fire. <p>The EA's analysis of snag habitat basically comes down to a declaration that since much burned area elsewhere will not be logged, what "little" is logged will have negligible effects on snag habitat.</p> <p>The Lolo National Forest Post Burn Final EIS (2002) states on page 4-118:</p> <p>...Recommendations from several studies for maintaining black-backed woodpecker habitat while harvesting in burned stands include:</p> <p>...Retain large snags because these snags have greater longevity than smaller snags (Saab and Dudley 1998)</p> <p>Minimum diameter standards for snags are designated in the prescriptions and harvest contract. Snag retention guidelines are specific to each unit because the composition of each unit is different. For example, some units would have snag retention of 8 to 12 snags per acre greater than 12 inches dbh. In a stand with an average dbh of 10 inches, 12-inch dbh trees may be some of the larger ones in the unit. In stands with larger average dbh, the minimum diameter retained would be larger.</p> <p>(USDA Forest Service 2002b.) Bull, et al. (1997) conclude:</p>	

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>This document presents new information on the retention and selection of trees and logs most valuable to wildlife.</p> <p>...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, two recent studies indicate that viable woodpecker populations occurred in areas with about four snags per acre.</p> <p>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.</p> <p>As the science indicates that the black-backed woodpecker relies on bark-beetle infestations to mitigate the impacts of not having enough burned habitat, what is the cumulative effect of further reducing burned habitat and attempting to eradicate a bark-beetle infestation in the same project? The Rat Creek Salvage EA fails to consider these effects.</p> <p>The EA concludes that the Project "...may impact individuals or habitat, but would not be likely to contribute to a trend towards federal listing or cause loss of viability to the population or species." The problem with cavalierly dismissing the incremental habitat loss as somehow insignificant is that the BDNF has not placed it in any intelligible context. Viability must be assured at the forest-wide (or range-wide) scale before site-specific impacts can be assessed. In this case there is an EA that does nothing to assure viability.</p> <p>And now the crux of our ecological concerns with the impacts of post-burn projects: Here we have the best indicator species for post-fire landscapes – the black-backed woodpecker. Given all the public alarm and political gesturing over the widespread nature of wildfires in recent years, one would naturally presume that this species is thriving. It is not. And the reason it is not goes back to Hutto's call for reconsideration of the FS's policy to expedite salvage sales on burned forests. Because, unfortunately (and as the FS acknowledges), black-backed woodpeckers and salvage logging are not compatible.²</p> <p>Hillis, et al. (2002) provides the necessary background for an analysis of the cumulative impacts of salvage logging policies on black-backed woodpecker viability, although it concedes that it doesn't go that far. It clearly demonstrates the first step in the kind of response to the crisis situation presented by the habitat short-fall for black-backed woodpeckers that we insist is required <i>before</i> decisions are made to further commit already scarce natural resources.</p> <p>It is very significant in that, with the Rat Creek Salvage Project, the BDNF continues to treat stand-replacing, high severity wildfire as something to be avoided (and then salvaged), without any discussion of the <i>future</i> habitat needs of the black-backed woodpecker (e.g., in 2008, when the 2002 wildfire habitat is no longer useful).</p>	

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>The Forest Plan for the Beaverhead NF contains no standards applicable to the black-backed woodpecker—a Sensitive species needing special emphasis. That is also why the FS must prepare a conservation strategy, as its own directives indicate, before taking actions that further reduce habitat for the species. The discussion initiated among FS biologists by Dolan (1998a, b) reveals that the FS had at that time designed a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers, and in fact it hasn't to date.</p> <p>The FS chose a cumulative effects analysis area for the black-backed woodpecker that encompasses other recent fires on the BDNF. It did so to justify heavily logging the Sheep Creek fire area; the reasoning being that since the post-fire logging here will largely eliminate black-backed woodpeckers from the fire area, the FS needs to be able to point to other areas that are (so far!) not proposed for logging. This fails to comply with the habitat and population distribution requirements under NFMA regulations.</p> <p>Questions unanswered are very basic: What is a scientifically sound forest-wide standard for the BDNF to insure the viability of the black-backed woodpecker? How much black-backed woodpecker habitat is currently available in the BDNF, how is it distributed, and how much will be available after this latest timber sale?</p>	
3.6	<p>RAT CREEK SALVAGE PROJECT VIOLATES NFMA AND THE CLEAN WATER ACT</p> <p>The Clean Water Act (CWA) requires that federal agencies comply with its provisions. The agency must protect water quality and comply with state water quality standards on National Forest system lands. Marble Mountain Audubon Soc. v. Rice, 914 F.2d 179, 182 (9th Cir. 1990); Oregon Natural Resources Council v. U.S. Forest Service, 834 F.2d 842, 848 (9th Cir. 1987); Northwest Indian Cemetery Protective Ass'n v. Peterson, 794 F.2d 688, 697 (9th Cir. 1987); 33 U.S.C. 1323(a) ("Each department, agency, or instrumentality of the executive [branch] . . . shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution"); 16 U.S.C. 1604(g)(3)(E)(iii) (timber may be harvested only where "protection is provided for streams, streambanks shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment"); 36 C.F.R. 219.23(d) ("Forest Planning shall provide for -- Compliance with requirements of the CWA, the Safe Drinking Water Act, and all substantive and procedural requirements of Federal, State and local governmental bodies") and 36 C.F.R. 219.27(a)(4) ("All management prescriptions shall . . . Protect streams, streambanks, shorelines, lakes, wetlands and other bodies of water").</p> <p>Section 303(d) of the CWA [33 USC §1313(d)] requires that states list water quality limited segments of bodies of water within its jurisdiction. The listed segments are not meeting state water quality standards or failing to meet designated uses due to identified reasons. The states are required to develop Total Maximum Daily Loads (TMDL) for these waters [33 USC Sec 1313 (d)(1)(c)]. TMDLs are designed to address all sources of pollution limiting the water quality of the public waters and should include point and non-point sources of pollution, such as sediment generated from logging activities. In the absence of a TMDL federal agencies have a duty to avoid further degradation of WQLS stream segments. The Project as embodied by Alternative 2 in the ROD violates this duty and thereby violates the CWA.</p>	<p>The MOU between Montana DEQ and the Regional Forester of USFS Region 1, signed 3-17-2009, states that <i>"Within watersheds with impaired water bodies and within the framework of a proposed action use reasonable land, soil, and water conservation practices. Where WQS are not met, State of Montana "reasonable land, soil, and water conservation practices" (BMPs and other measures as needed) are the minimum standard."</i> Further degradation of WQLS stream segments due to implementation of Alternative 2 is not predicted and this is disclosed in the EA water quality section.</p>
3.7	<p>The EA notes on page 58: "This alternative would be consistent with Forest Plan water resource standards, Clean Water Act and State Water Quality standards which support an A-1 classification. This alternative meets the direction and load</p>	

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>allocations listed in the Draft version of the Upper Big Hole TMDL. Salvage harvest may reduce the risk of a re-burn event with possible high burn severity. This might lead to a subsequent lower risk of erosion and sedimentation. Predicting long-term fire risks and post-fire consequences in absolute terms is not possible; therefore, ascertaining consistency within the regulatory framework can only be done in relative terms as described under cumulative effects."</p> <p>What science is backing up this statement that the area is at a higher risk for reburn with possible high burn severity? Jack Cohen from the Forest Fire Lob in Missoula told me that dead trees never produce a fire with an intensity as high as green trees, even when they are on the ground. This statement is arbitrary.</p>	<p>Discussion of possible effects due to re-burn has been removed from the <i>Water Resources</i> section of the EA.</p>
3.8	<p>New road construction also does not meet the TMDL requirements.</p> <p>The EA relies on implementation of BMPs to support its claim that the "recovering" sediment conditions in the WQLS Trail Creek will meet CWA requirements, however the lack of occurrence of the native Westslope Cutthroat Trout (WCT) in the listed reach is troubling to say the least. BMPs simply cannot be relied upon as the Forest Plan method of maintaining viable populations when their previous use has not insured adequate population distribution as NFMA requires. What BMP failures have been noted for past projects? That is an important question, as it could assist in understanding the cause of apparent local extirpation of WCT. BMPs that have already failed cannot be relied upon to prevent further water quality degradation. Beschta et al. (2004) state:</p> <p>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.</p> <p>The critical issue is that logging activities have no positive long-term effect on sedimentation reduction. Addition of sediment to WQLS water bodies that are already compromised in their water quality does nothing to move toward remedying the water quality violations and adverse affects on attainment of beneficial uses. Specifically, the addition of sediment to the WQLS stream from logging activities under the alternative <u>adopted by the ROD</u> is a violation of the Clean Water Act. It interferes with the attainment of the beneficial use of maintaining healthy fishable populations of native salmonids. The FS may believe that because the sediment loads are said to be decreasing over time that such additional sediment is not an issue under the CWA. This belief is mistaken and is not supported in law or science. Fish suffer many effects from sedimentation. These effects range from physiological and behavioral, where gills are injured by the passage of a high volume of abrading sediment and foraging habits altered or interfered with due to changes in visibility in the water, to the actual death of fish. Thus, the cold-water fishery and aquatic life beneficial uses are further damaged which result in a CWA violation.</p>	<p>You imply BMP failures are likely the reason that WCT are no longer present in Trail Creek. The current distribution of WCT on the Forest is closely correlated with non-native fish influences. Trail Creek currently supports an eastern brook trout population throughout its length. Brook trout have out-competed WCT in many streams across the Forest, and seem to be most effective in areas dominated by low stream gradients – like those common to Trail Creek.</p> <p>New road construction is not a violation of TMDL requirements. The DRAFT sediment load allocation speaks to a % reduction, not to a prohibition of select activities.</p> <p>The analysis does not predict an addition of sediment (see EA Environmental Consequences, Water resources, Alternative 2 – Proposed Action). The Water Resources section of the EA states <i>"Even under a worse-case scenario, the potential for any sediment delivery from a harvest unit is extremely low."</i> Furthermore, with regards to temporary road construction, it states <i>"By implementing this mitigation under the scenario of inputs variables used for Cross Drain, no sediment is expected from temporary roads. Also worth noting is that the actual buffer length for all temporary roads is far greater than 160 feet. This greatly reduces the potential for any sediment delivery."</i> No sediment delivery is predicted for Tie Creek, Johnson Creek, lower Trail Creek or the North Fork of the Big Hole Rive so the project would not impact TMDL.</p> <p>EA page 75 (Fish and Aquatic Habitat): The <i>Rat Creek Salvage Hydrology Report</i> (Salo 2009) indicates that predicted</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p>sediment travel distance of eroded soil generated on a harvest unit is far less than the distance to the stream. The difference under the worse-case scenario of 246 feet can be considered a margin of safety. Even under a worse-case scenario, the potential for any sediment delivery from a harvest unit is extremely low.</p> <p>Within that same report, the Cross-Drain application (WEPP) indicated sediment delivery to streams is unlikely, and no sediment is expected from temporary roads (USDA Forest Service 2008c). Only isolated segments of existing roads lie within a 160 foot buffer. WEPP Road was used to determine if a change in use levels (high traffic versus low traffic) would result in a change in sediment leaving the buffer. The model indicated there should be no sediment delivery based on increased use of the roads.</p>
3.9	<p>The EA does not disclose the statistical accuracy of the its models, used in this case to estimate sediment production cause by Project activities as required by Forest Plan standards. The fact that the WEPP model has already been shown to vastly underestimate the amount of soil erosion (Maudlow-Toston Fire Salvage, Helena NF) reveals the FS's inability to adequately predict such risks to soil and aquatic habitat integrity.</p> <p>The EA "reports no confidence intervals, standard deviations or standard errors in association with its conclusions" regarding model results for sediment. Along with violating the CWA and state water quality regulations in Water Quality Limited Segments, in providing no discussion of the accuracy of modeled sediment projections the Project also violates the Forest Plans.</p>	<p>Documentation of the WEPP model is found at the following website: http://forest.moscowfsl.wsu.edu/fswepp/. It essentially states that model accuracy is plus or minus 50%. (see EA page 92: The accuracy of all Disturbed WEPP predictions is, at best, plus or minus 50 percent (Elliot et al. 2000)). A study on the Bitterroot NF (Spigel and Robichaud, 2007) showed that measured erosion rates were 15% less than modeled rates using WEPP, well within the stated model accuracy. The statement about the vast underestimate produced by WEPP (Maudlow-Toston Fire Salvage) is unreferenced.</p> <p>Confidence intervals, standard deviations or standard errors apply to empirical data sets, not to modeling efforts which rely on a disclosed set of assumptions and produce repeatable results.</p> <p>The Revised Beaverhead-Deerlodge Forest Plan does not include a standard which requires an estimate of sediment production.</p> <p>The Supplemental Information Report, Maudlow-Toston Post-wildfire Salvage Project, Soil Resource (Farley, 2001) was</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p>reviewed. The fire burned in 2000 and monsoon rains in July 2001, the 1st year following the fire resulted in erosion that exceeded predictions. It is important to note that "soil erosion" and "sediment delivery to streams" are not necessarily one in the same. Proximity to water is always an important consideration. The portion of the report you refer to addresses estimates of soil erosion in the burned area. It is not directly addressing erosion from constructed road surfaces and it is not referring to sediment delivery to streams. That same report also addressed BMP effectiveness, based on Montana State Forestry Best Management Practices Monitoring. It states "the audit teams evaluated 42 sites for BMP application. Audit results showed that across all ownerships, BMPs were properly applied 96% of the time." It also states: "The audit teams also evaluated BMP effectiveness. Audit results showed that across all ownerships, BMPs were effective in protecting soil and water resources 98% of the time."</p> <p>Modeling results have been verified through field survey on the project area and errors in statistical accuracy are recognized. A margin of safety has been built in to project design (see EA table 33). The EA page 96-97: <i>Sediment delivery from temporary road construction was estimated using WEPP Cross Drain. This model computes the erosion produced from a designated road segment, and then predicts what portion of that sediment will reach a stream by accounting for variables including distance and slope of buffer between the road and stream; road width, road gradient and cross drain spacing. The variables used in the analysis represent a site with the most potential for delivering sediment within the Rat Creek Wildfire area.</i></p> <p><i>WEPP Road was used to determine if change in use levels (high traffic versus low traffic) would result in change in sediment delivery from existing roads that lie 160 feet from a stream. The assumption is that current levels of use constitute a low use level, and logging truck traffic would constitute a high use level.</i></p> <p><i>Field reconnaissance of units as well as existing and proposed</i></p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p>roads provides useful information for validation of model results. Site specific review of proposed actions allows identification of any design or mitigation features needed to meet the desired condition.</p> <p>EA page 102: This analysis recognizes all design features and mitigation measures listed on EA pages 14-18. Design features include buffering all units a minimum of 300 feet from perennial streams, and 150 feet from intermittent streams. While all temporary roads would be located far from streams, the following guideline is recommended for spacing water bars or other appropriate drainage on temporary roads:</p> <ul style="list-style-type: none"> • Cross drain spacing, at a maximum, should be determined by dividing 1000 (feet) by the percent grade of the road. For example, a road segment with a 5 percent grade should have a maximum cross drain spacing of 200 feet. <p>EA page 102: The analysis discussed in this section was performed using sediment delivery prediction equations (Ketcheson and Megahan 1996). It shows that predicted sediment travel distance of eroded soil generated on a harvest unit is far less than the distance to the stream. The difference under the worse-case scenario of 246 feet can be considered a margin of safety. Even under a worse-case scenario, the potential for any sediment delivery from a harvest unit is extremely low.</p> <p>The Cross-Drain application (WEPP) was used to predict potential sediment delivery to a stream from temporary roads. The model inputs used include a silt loam soil type, buffer length of 160 feet, buffer gradient of 10 percent, a road width of 12 feet and a road gradient of 8 percent (maximum expected). The results are shown in Table 34.</p> <p>EA page 102: Only isolated segments of existing roads lie within a 160 foot buffer. These roads are currently well maintained with all applicable Best Management Practices (BMPs) in place. A severe convectional storm event hit the Rat</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<i>Creek Wildfire area during July, 2008. Forest Road (FR) 1203 was examined near the bridge on Tie Creek after the storm and appeared hardest hit by the storm. It was observed that the existing belt style water bars were very effective at dispersing runoff. While sediment deposits were noted in the buffer zone between the road and the stream, no sediment delivery to Tie Creek was noted. WEPP Road was used to determine if a change in use levels (high traffic versus low traffic) would result in a change in sediment leaving the buffer. The model inputs include a silt loam soil texture, outsloped rutted road design, graveled surface, road gradient 6 percent, road length (distance between cross drains) 180 feet, width 14 feet, fill gradient 30 percent, fill length 10 feet, buffer gradient 20 percent, and buffer length 160 feet. This approximates the conditions found at the FR 1203 near Tie Creek. The results were that both use levels (high and low) predicted zero sediment leaving the buffer.</i>
3.10	The EA provides no data to substantiate its claims that streams in the Project area are, in terms of sediment yields, are nearing "baseline" levels. Cobble embeddedness and channel stability data were not gathered post-fire, despite the fact that post-fire data is the only kind that would reveal the cumulative interaction between the vegetation-removing and physical soil characteristic-altering effects of the fires with the effects of past logging, road building, and erratic road maintenance.	The EA references an analysis that shows reductions in % fines in substrate. A citation to the data used for developing the analysis is now included in the EA; <i>Bengeyfield, 2002</i> . Effects to substrate and channel stability from wildfire may experience a lag effect in terms of time. Data and field reconnaissance gathered for this project was done after only one runoff regime (spring/summer of 2008). Regardless of effects from wildfire, the indirect effects from this project are not expected to change the cumulative effects.
3.11	The FS has also failed to monitor the long-term impacts on water quality and fish habitat from implementing the Forest Plan. As a result, the cumulative impacts of logging and road building are not sufficiently disclosed in the EA or anywhere else. McIver and Starr, (2000) state: Of these [factors affecting hydrological problems], road building and continued use of roads are probably the biggest potential contributors to post fire erosion, just as they are in green tree stands (Megahan 1980). The continued use of even well-constructed gravel roads can contribute substantial amounts of sediment compared to undisturbed areas (Reid and Dunne 1984)."	The stream channel surveys on project streams serve as long-term monitoring sites to determine whether we are meeting monitoring and evaluation requirements in the Revised Beaverhead-Deerlodge Forest Plan. See the discussion in the EA for a disclosure of cumulative effects. The references provided list concepts in a general sense, but do not substitute for site-specific analysis as required by NEPA done for this project. EA environmental consequences, water resources, direct and

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>[E]rosion rates on landings and roads were 100 times those of undisturbed areas. (Swank et al 1989)</p> <p>Rhodes, (2002) performed a Bitterroot BAR Project field review, and concluded about the post fire logging on the Bitterroot NF: "1) Log haul and other road use has greatly increased sediment delivery in affected streams."</p>	<p>indirect effects states: <i>"The analysis discussed in this section was performed using sediment delivery prediction equations (Ketcheson and Megahan 1996). It shows that predicted sediment travel distance of eroded soil generated on a harvest unit is far less than the distance to the stream. The difference under the worse-case scenario of 246 feet can be considered a margin of safety. Even under a worse-case scenario, the potential for any sediment delivery from a harvest unit is extremely low.</i></p> <p><i>The Cross-Drain application (WEPP) was used to predict potential sediment delivery to a stream from temporary roads. The model inputs used include a silt loam soil type, buffer length of 160 feet, buffer gradient of 10 percent, a road width of 12 feet and a road gradient of 8 percent (maximum expected). The results are shown in Table 34.</i></p> <p><i>A convectional storm event hit the Rat Creek Wildfire area during July, 2008. Forest Road (FR) 1203 was examined near the bridge on Tie Creek after the storm and appeared hardest hit by the storm. It was observed that the existing belt style water bars were very effective at dispersing runoff. While sediment deposits were noted in the buffer zone between the road and the stream, no sediment delivery to Tie Creek was noted</i></p> <p><i>The analysis also shows that sediment delivery is predicted only when using extreme distances between cross drains. Using the mitigation listed above, the recommended cross drain spacing for a road segment with 8 percent grade is 125 feet. By implementing this mitigation under the scenario of input variables used for Cross Drain, no sediment is expected from temporary roads. Also worth noting is that the actual buffer length for all temporary roads is far greater than 160 feet. This greatly reduces the potential for any sediment delivery.</i></p> <p><i>Only isolated segments of existing roads lie within a 160 foot buffer. These roads are currently well maintained with all</i></p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<i>applicable Best Management Practices (BMPs) in place.</i>
3.12	<p>FS USES UNSCIENTIFIC "REBURN" HYPOTHESIS TO SUPPORT LOGGING</p> <p>A major assumption upon which the project proposal rests is that the justification for removing burned trees is that it responds to some "need" to reduce fuels. However there is no scientific support that post-fire logging is needed to reduce risk of future fires. Beschta et al. (1995) state they "...are aware of no evidence supporting the contention that leaving large dead wood material significantly increases the probability of reburn." In a response to Beschta et al. commissioned by the Forest Service, Everett (1995) conceded that there was "little to no evidence" that post-fire salvage removal of trees limits the intensity of future fires. Additionally McIver and Starr, (2000) state: "No studies have specifically looked at how postfire logging alters the size distribution of fuel and the concomitant changes in future fire risk." The EA <u>provided no specific cites to scientifically support</u> that the proposed logging activities will in fact reduce any future fire risk that is necessary to suppress.</p> <p>Further, a review of the literature makes clear that the concept of logging to reduce the potential of future fires to severely burn soils is only sparsely conceptually supported and entirely lacking in empirical support. This lack of empirical support is confirmed by McIver and Starr (2000), the FS review of post-fire logging. The report states, "we found no studies documenting a reduction in fire intensity in a stand that had previously burned and then been logged."</p>	<p>The project purpose and need is clearly stated in the EA and does not include a purpose or need to reduce fuels.</p>
3.13	<p>The EA also fails to analyze the potential for post-fire logging to hinder natural regeneration. Tree planting may prevent natural post-fire succession patterns that are essential to the post-fire regeneration of the forest. Beschta et al. (1995) state, "from an ecological perspective, there is frequently no need for artificial regeneration. Artificial reintroduction of species will circumvent natural successional changes." Also, "such practices (as reseeding and replanting) should be employed only when there are several years of evidence that natural regeneration is not occurring" (Id.). Beschta et al. (1995) also state:</p> <p>Human intervention should not be permitted unless and until it is determined that natural recovery processes are not occurring.</p> <p>Active planting and seeding has not been shown to advance regeneration.</p> <p>Such practices [as reseeding and replanting] should be employed only when there are several years of evidence that natural regeneration is not occurring.</p> <p>Seeding and reforestation may alter habitat composition and alter competition, which could result in a favoring of non-native species. McIver and Starr, (2000) note, "Salvage logging may decrease plant regeneration, by mechanical damage and change in microclimate." The potential impacts of logging related disturbance and tree planting on natural regeneration was not adequately analyzed in the EA.</p>	<p>EA Purpose and Need: "Reforestation of the harvest units through existing, on site tree seed is proposed, however most regeneration is expected to be lodgepole pine. Maintaining the pre-fire species mix of trees is desired and planting Douglas-fir would achieve the species mix.</p> <p>Fill in planting of Douglas fir is planned after monitoring of natural regeneration. EA page 10: "The forest regeneration of on harvest units would be monitored until the sties are fully stocked. Supplemental planting of Douglas-fir would be planned on harvest units ... where it could be expected to occur as a natural stand component. The regeneration on suitable forest lands that are Douglas-fir habitat types would be monitored."</p> <p>Regeneration of the harvest units is discussed in the vegetation section of the EA: Silviculture, Alternative 2, Direct and Indirect Effects.</p> <p>"EA states "Typical third year stocking after a wildfire ranges from 100 trees per acre to 5,000 trees per acre".</p> <p>Two wildfires in the same vicinity of the Rat Creek wildfire had</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		the following results in regard to regeneration. Harvested units within the Sheep Creek wildfire, (2002) regenerated naturally averaging 800 to 1200 seedlings per acre. In comparison, units within the Mussigbrod wildfire were not logged and regeneration ranged from 250 seedlings per acre to 10,000 seedlings per acre with most nits ranging between 500 and 1000 seedlings per acre. All harvest units were certified as fully stocked.
3.14	Although the EA chose a cumulative effects analysis area that included other recent fires on the Beaverhead-Deerlodge NF for other purposes, it did not do so for fuels and fire risk. This reveals the FS's bias toward justifying its preconceived conclusions.	The area analyzed for cumulative effects varies by resource. Each resource area states the area considered and the rational for the area.
3.15	<p>Grizzly bear and Canada lynx (threatened species) are not reasonably expected to occur within Beaverhead County, including the project area, and therefore are not included on the list of TEPS being analyzed in further detail.</p> <p>The EA is in violation of the Endangered Species Act requirements for lynx. This is violation of the ESA and an internal Forest Service memo according to Jim Claar from the Regional Office in Missoula. Mr. Claar told us in a phone conversation that the Forest Service is directed to follow the Northern Rockies lynx management direction in historic lynx habitat. The project area is historic lynx habitat which means it is suitable habitat.</p> <p>The EA is also in violation of the ESA requirements for grizzly bears. A grizzly bear was killed near Mount Hagen a couple of years ago and grizzly bears have been sighted in the Pintler Wilderness area. Both grizzly bears and lynx need to be included as part of the TEPS and analyzed for how this project will impact them.</p>	<p>Northern Rockies Lynx Management Direction is discussed on EA page 41-43.</p> <p>The lynx and grizzly bear have not been included in the US Fish and Wildlife Service quarterly species lists for the Beaverhead-Deerlodge NF since April 2007. The most recent list (5/04/09) maintains that status. There are no ESA issues for the project.</p> <p>The Northern Rockies Lynx Management Direction applies to the BDNF as described in the Northern Rockies Lynx Management Record of Decision (ROD). Page 29 of the ROD is included in appendix C in the Wildlife Resource Report, and discusses procedures for "unoccupied" habitat. Analysis completed in the wildlife resource report is consistent with this documentation.</p> <p>The status of Grizzly Bears was reviewed and included in Biological Evaluation section of the Wildlife Resource Report.</p>
3.16	<p>ECONOMICS</p> <p>NFMA and the Forest and Rangeland Renewable Resources Planning Act (RPA) require management of national forest system lands in a manner that maximizes long term net public benefits based on the best available science. This was not done. Please comply with the monitoring requirements of the Forest Plan or NFMA.</p> <p>A June 2007 GAO report to Congress: Federal Timber Sales: Forest Service Could Improve Efficiency of Field-Level Timber Sales Management by maintaining More Detailed Data (GAO-07-764) details the problems with Forest Service</p>	<p>Forest and Forest Service cost accounting is beyond the scope of this project. The financial analysis in the Rat Creek EA used the best available data. Costs used in the financial analysis are displayed in the Rat Creek Financial Report, Appendix A and B. Costs are based on Forest program funding levels or experience costs.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #3: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>Timber sale accounting.</p> <p>“For example, for fiscal years 1992 through 1997, the Department of Agriculture’s Inspector General reported that the Forest Service’s accounting data-including data associated with timber sales-were not reliable. We reported a similar finding in 2001. Further, in 2003 and again in 2006, we reported that the Service does not maintain data on the actual cost of individual work activities, including timber sales, and as a result cannot assess the extent to which these activities yielded accomplishments commensurate with the dollars spent on them.” (GAO report p. 2).</p> <p>The report notes that the Forest “Service recently stopped tracking obligations and expenditures at the forest level, where timber sales are generally carried out, and now tracks them at the national forest level.” (GAO p. 3.) The report continues, “Without obligations and expenditure data on individual timber sales, for example, field managers said that they cannot compare actual expenditures on the ground with planned expenditures, identifying potential inefficiencies across sales, or identify resources available to another sale if needed.” (GAO p. 3). The report continues by stating without this data at the ranger level field managers cannot compare expenditures across districts to see if spending is occurring as planned. This is a violation of NFMA, NEPA and the forest plan.</p> <p>In a May 1, 2003 report, GAO-03-503 Forest Service: Little Progress on Performance Accountability Likely Unless Management Addresses Key Challenges sent to Congress and the Honorable Scott McInnis, Chairman of the subcommittee on Forest Health, Barry Hill, Director of Natural Resources and Environment at the General Accounting Office, reported “the Forest Service has not been able to provide to Congress and the public with a clear understanding of what its 30,000 employees accomplish with the approximately \$5 billion it received every year.”</p> <p>In 2006 the GAO reported the Forest Service does not have a system to determine the cost of activities below the program level resulting in a focus on budget management without a focus on cost management (GAO 2007, pp. 10-11).</p> <p>Please perform a complete cost benefit estimate as required by NFMA and NEPA and the Forest Plan. These laws require the Forest Service prior to project implementation to access for potential physical, biological, aesthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area based on the best available science. NFMA and the Forest Plan require accurate documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the forest plan. The GAO reports state this is not being done.</p>	

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
4.1	At this time, NEC would like to request a hard copy of the final decision when released, including the Decision Notice and Finding of No Significant Impact NEC would also like to request a hard copy of the biological evaluation prepared for this project at that time as well.	This is a request for information. Request for information: DN, FONSI, BE at the time of project decision.
4.2	1. There is an inadequate range of alternatives for this proposal. Given the limited amount of unburned and/or unlogged forest remaining in this landscape, the Forest Service needs to address the preservation of biological diversity as an important management concern, rather than simply producing timber products. The current proposal contains almost no direct mitigation for any wildlife species, including snags, because snags do not actually have to be retained in any harvest unit as per the Revised Forest Plan.	The alternatives considered for this project and listed in the March version of the EA were based on issues and concerns identified during scoping. Additional alternatives have been considered based on the comments received on the March version of the EA (EA pages 5-6, 13-15.). No specific number of alternatives is required or prescribed (36CFR220.7(b)(2)).
4.3	2. There clearly needs to be an alternative that limits any salvage unit openings to 40 acres or less. The agency did not demonstrate that any particular emergency exists that justifies the huge number of very large openings that will be created, including 116, 130, 131, 171, 178, and 318 acres in size. Just because bark beetles are present, and just because some trees may die from fire effects, does not create an emergency. These are common, natural processes. Although the EA implies that beetle-impacted areas will not recover as fast as compared to if these areas are logged, no specifics were provided. On the contrary, forests will recover much more quickly left alone than if logged. So the agency has failed to justify the plan for the huge openings.	The comment does not explain why salvage units need to be 40 acres or less. Rat Creek Wildfire created "dead and dying" forest conditions which initiated the change in seral conditions to an early successional stage. An alternative that limits harvest units to 40 acres or less has been considered and is discussed in the EA. And ESD would come from the Chief of the USDA Forest Service. Salvage material will deteriorate and become unmerchantable (see EA page 2).
4.4	3. There clearly needs to be an alternative that does not require any new road construction. The EA notes frequently that there are already too many roads in this landscape. The construction of 7 more miles seems unwarranted.	The EA does not state there are too many roads in this landscape. The Big Hole Landscape and Hunting unit 321 are meeting Forest Plan road density objectives. The stated rationale for the alternative is flawed. The alternatives considered for this project and listed in the March version of the EA were based on issues and concerns identified during scoping. Additional alternatives have been considered based on the comments received on the March version of the EA and includes discussion of an alternative with no new roads.
4.5	4. Since the FS has now begun a standard practice of logging along all roads, the impact of 7 new miles of roads that may be logged was never evaluated or addressed in the EA	The Rat Creek Roadside Hazard Reduction Project Decision Memo approved a project to remove dead trees adjacent to roads open to public use to reduce hazards to safety and to reduce maintenance costs. Temporary roads and system roads opened for restricted travel will not be open to the public. Additional roadside hazard tree treatment within the project area or vicinity is not on the SOPA and not a reasonably foreseeable action.

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
4.6	5. There was almost no analysis of the direct impacts of the proposed salvage project on wildlife. Although the agency is required to define how Forest Plan standards will be met, this does not eliminate the requirement to evaluate project impacts as per the National Environmental Policy Act (NEPA). The direct impacts of this project on snags, elk security, habitat effectiveness, hiding cover, open road density, pine marten, goshawks, great gray owls, cavity nesting birds, forest interior birds, lynx, etc., remains to be done for this project.	The BA/BE/Wildlife Report and the EA describes direct and indirect effects to wildlife and wildlife habitats.
4.7	6. In the assessment of direct impacts to wildlife for this project, the analysis area should be small enough so that project impacts are not "washed out" by a large landscape. Direct impacts of logging about 1600 acres cannot be evaluated with a 26,000 acre project area. At a minimum, inventoried roadless lands should not be included, including both the Beaver Creek Roadless Areas, since these lands will not be directly affected by the project. Their inclusion simply reduced apparent impacts of the project.	The area considered for cumulative effects varies by resource and the rationale for the area considered is disclosed.
4.8	7. The Beaver Creek Roadless Area 1-003B was illegally dropped during the Forest Plan revision. IRAs cannot be eliminated in the Forest Plan process as per the Roadless Area Conservation Rule (RACR). The impacts of the Rat Creek project need to be assessed on unoaded lands adjacent to both 1-003A and 1-003B.	The EA has been updated to include an analysis of unroaded lands.
4.9	8. Because the Beaverhead-Deerlodge National Forest (BDNF) failed to evaluate the ecological values of IRA 1-003B in the Forest Plan revision, these values were not carried over into the Rat Creek analysis. In the Rat Creek analysis, there is no evaluation of the importance of unroaded lands to ecological health. This shows a significant agency bias to logging, as bark beetles and fire have significant ecological values that will be destroyed with logging. Although there are no actual units in 1-003B, there are units immediately adjacent to the boundary. These units could have also been added to 1-003B, rather than slated for timber production. There was no alternative that considered this option to maintain ecological health of this landscape in the face of extensive existing roading and logging.	<p>The EA has been updated to include an analysis of unroaded lands, including those adjacent to IRA 1-003B.</p> <p>The proposed action would harvest 1,652 acres of the 26,600 acre Rat Creek Wildfire or approximately 6 percent. (see EA page s-i). Approximately 93 percent of the Rat Creek Wildfire will remain untreated. The stated "agency bias toward logging" seems to be unfounded with this large amount of wildfire area remaining untreated. Suitable habitat for bark beetles will remain within the untreated areas. The 7 miles of temporary road proposed for construction amount to a density of less than 0.01 miles per square mile when considered in relation to the area of Hunting Unit 321.</p> <p>The Forest Plan establishes where timber harvest is not allowed and where timber harvest is permitted to meet other resource objectives (Forest Plan timber management standard 6). The Forest plan identifies all units as "Lands Suitable for Timber Production".</p> <p>The alternatives considered for this project and listed in the March version of the EA were based on issues and concerns identified during scoping. Additional alternatives have been considered based on the comments received on the March version of the EA and includes discussion of an alternative that forgoes treatment in areas contiguous to inventoried roadless areas.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
4.10	9. The Forest Service's contention that bark beetles are an emergency is unfounded. There are on average bark beetles episodes every 30-40 years, and are therefore natural processes. Some of the trees will die regardless of whether they are logged or left on the land. So logging will have no impact on this natural process. In fact, more trees will die if the logging proceeds. Therefore, the agency's proposal will only make the current situation worse, so cannot be considered reasonable action that deserves emergency status.	There is no contention that bark beetles are creating an emergency. The ESD was requested to expedite the salvage harvest of wood products that are in a deteriorating condition.
4.11	10. According to the EA, only about 4% of this landscape has not been logged or burned in recent times. Treatment of the few remaining areas where green forests remain hardly seems like an emergency.	The salvage harvest units are all within the Rat Creek Wildfire perimeter (see EA, Figure 1, map of harvest units). The harvest units are not "remaining green forests"
4.12	11. In the response to comments, please define what the level of hiding cover will be, on average, in treatment units.	Before harvest, most treatment units have limited big game hiding cover because of a loss of canopy and understory vegetation from the wildfire. After harvest, treatment units will have limited big game hiding cover for a period of 10 to 15 years as lodgepole pine regenerates and grows to a suitable height capable of concealing deer and elk. After approximately 15 years, hiding cover will be abundant in treatment areas. . Secure habitat for wildlife is measured by open motorized road & trail density at the landscape scale for summer and at the Montana FWP hunting unit (2006) scale. No permanent roads will be developed for this project. Consequently there will be no change in the existing condition.
4.13	12. In the response to comments, also please map existing hiding cover for the project area, so that the impacts of the project can be understood by the public.	Hiding cover for big game species has been largely reduced in all burned areas. Since the project proposal treats only dead and dying forest, little or no additional hiding cover is expected to be removed by the treatments. Hiding cover will remain primarily in unburned areas and riparian conservation areas where burn intensities are limited. . Secure habitat for wildlife is measured by open motorized road & trail density at the landscape scale for summer and at the Montana FWP hunting unit (2006) scale. No permanent roads will be developed for this project. Consequently there will be no change in the existing condition.
4.14	13. Please identify the location of big game security areas as per Hillis et al. (1991) before and after logging, where there is at least a 250 acre block of contiguous hiding cover at least 0.5 miles from an open motorized route, including administrative and logging use. Although security is discussed in the Rat Creek EA, this security definition does not include a cover requirement and the open road density criteria do not require that a road actually be closed, so that analysis is useless to define project impacts.	Hiding cover for big game species has been largely reduced in all burned areas. Since the project proposal treats only dead and dying forest, little or no additional hiding cover is expected to be removed by the treatments. Hiding cover will remain primarily in unburned areas and riparian conservation areas where burn intensities are limited. . Secure habitat for wildlife is measured by open motorized road & trail density at the landscape scale for summer and at the Montana FWP hunting unit (2006) scale. No permanent roads will be developed for this project. Consequently there will be no change in the existing condition.
4.15	14. If security is below 30% as is recommended by Christensen et al. (1993), then why aren't current conditions considered a significant impact on elk, vulnerability?	The project is found to be consistent with goals, objectives, and standards for maintaining wildlife habitat and security areas stated in the Revised Forest Plan. Wildlife security areas have been defined in Plan by the density of roads open to public use at the landscape scale (such as Big Hole Landscape), and at the Hunt Unit Scale. Proposed treatment units will not open additional roads to the public and do not establish new roads in unroaded areas. . Secure habitat for

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		wildlife is measured by open motorized road & trail density at the landscape scale for summer and at the Montana FWP hunting unit (2006) scale. No permanent roads will be developed for this project. Consequently there will be no change in the existing condition.
4.16	15. Please discuss what the current status is for elk vulnerability in the affected hunting unit.	Though hiding cover is limited across the burn perimeter as a result the 2007 fire, security habitat (as well as additional forage) will be provided throughout the burn in areas that are largely unroaded, or infrequently accessed by motor vehicles. Figure 23 in the Wildlife Resource Report demonstrates that the burn perimeter will remain largely unavailable to motorized use and continue to provide secure habitat for elk. Thus, vulnerability across the hunt unit will remain in its current condition. Secure habitat for wildlife is measured by open motorized road & trail density at the landscape scale for summer and at the Montana FWP hunting unit (2006) scale. No permanent roads will be developed for this project. Consequently there will be no change in the existing condition.
4.17	16 .It is not clear why open roads are not considered a disturbance to big game species (see EA at 12, 29 and 36). Please provide a brief summary of how this conclusion was derived to demonstrate the analysis methods used are valid. Please also discuss road impacts to big game as defined in Christensen et al. (1993), where all motorized routes are considered a displacement impact on elk.	See EA pages 35 and 35: "The following diagram shows the location of security habitat for hunt unit 321, and an expanded view of the proposed temporary roads and reconstructed roads for the project. The proposed road construction (temporary or re-construction), would not increase access to unroaded areas that provide for elk security habitat.
4.18	17.Please define the estimated basal area that will remain in each proposed harvest unit after salvage logging.	The information is included in Silviculture report Appendix B. Silv Report Appendix B is EA Appendix C.
4.19	18.It would be helpful to provide photos of past harvest units that are similar to those planned so that the public can picture the level of tree removal that will occur with this project.	The EA will be updated to include an appendix with photos of Sheep Creek Salvage units. EA appendix D includes photos of the Sheep Creek salvage units.
4.20	19. The agency needs to evaluate the direct impacts of roads (open road and motorized trail density) during logging, excluding unroaded areas. All roads that have motorized use should be included. J	The wildlife resource report did consider the effect of during logging activities and concludes "Effects to elk security are limited to temporary disturbances from motorized equipment and harvest activities in areas that are already moderately roaded."
4.21	20. Please provide adequate information on the identification and long term management plans for all new road segments that will be constructed for this project. Please identify each segment by a number, identify total miles of the new segment, and identify the specific date by which this road segment will be obliterated. This mitigation should be a part of the decision, or otherwise the public can assume that such obliteration may never occur.	EA page 7 states "All existing closed roads would be closed again following their use and all temporary roads would be obliterated after use." The EA includes additional information to clearly identify post sale road obliteration: Figure 1-3; and Appendix G..
4.22	21 It is obvious that much of the new road construction will be permanent. The clearcut areas will be monitored for regeneration, and if planting is required, the roads will also have to be used. Then there will be precommercial thinning, etc. Unless the Forest Service can demonstrate that these roads will actually be obliterated, the public can	EA page 7 states "All existing closed roads would be closed again following their use and all temporary roads would be obliterated after use. The project design features include closing and obliteration of roads upon completion of harvest activities.

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	assume that they will remain on the landscape just as all the previous hundreds of logging roads in the analysis area have remained.	
4.23	22. We would like to know what percentage of the project area will be usable to elk during the summer, or those areas with a habitat effectiveness rating of at least 50% (under 2 miles of open road per section).	Wildlife Security has been analyzed at the landscape scale and the hunt unit scale consistent with Revised Forest Plan Goals, Objectives, and Standards. The requested analysis will not provide additional information necessary to evaluate the effects of the proposed salvage logging and associated activities. The project will not change the existing condition.
4.24	23. What amount of the project area should be available to elk in the summer in order to prevent significant displacement impacts to this MIS and species "indicated" by elk?	Wildlife Security has been analyzed at the landscape scale and the hunt unit scale consistent with Revised Forest Plan Goals, Objectives, and Standards.
4.25	24. The EA implies that much of this landscape has too many roads due to past timber harvest (eg at 5,10). At the same time, the EA fails to identify any wildlife problems caused by these roads. How can you have too many roads and yet have no wildlife problems caused by these roads?	<p>Comments were received during the public scoping period related to travel management and closing of excess roads. These are discussed on EA page 5 and 13. Standards for road density are being met in hunting unit 321 and the Big Hole Landscape (see EA page 13). The proposed action would not change open motorized road density because use will be restricted, and they will not be open to public motorized vehicle use. Open motorized road and trail density does not include roads available for permitted or administrative use (see Forest Plan pages 45-47). In addition, the 10 miles of temporary roads and system roads opened for restricted use amount to a density of 0.01 miles per square mile when considered in relation to the area of Hunting Unit 321 (See EA page 13).</p> <p>The project has been designed to minimize the impacts of temporary roads. The use of temporary roads constructed for harvest access and system roads reconditioned for harvest access will be restricted to Forest Service personnel and those involved in salvage harvest operations (see EA Project Design Features, Recreation and Scenery). Temporary roads constructed for harvest access will be obliterated upon completion of unit harvest activities (see EA Project Design Features, Harvest Operations).Restricted road use will monitored by Forest law enforcement and sale administrationstaff.(See EA, monitoring).</p>
4.26	25. If this area already has too many roads, why will the construction of 7 miles more of new roads not exacerbate this problem?	<p>See EA page 10: <i>The project area is within Hunting Unit 321, which has a hunting season open motorized road and trail density of 1.1 miles per square mile and this objective is being met with current travel management.</i> Discussion of the travel related issues regarding landscape and hunting unit road density objectives have been added.</p> <p>The EA indicates that Road densities meet Forest Plan goals and standards for the Big Hole landscape and Hunt Unit 321. Wildlife security is measured appropriately at those scales by considering the density of roads open to the public. The project does not establish any new system roads, and does not open any roads for public use. Therefore, wildlife security habitat will essentially remain in it's current condition.</p>
4.27	26. It is clear that the agency has not looked at the road density problem, which is a	See EA page 10: <i>The project area is within Hunting Unit 321, which has a hunting season open</i>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	NEPA violation.	<i>motorized road and trail density of 1.1 miles per square mile and this objective is being met with current travel management.</i>
4.28	27. There is no evaluation of project impacts on the pine marten. It seems like pine marten habitat is quite limited in this landscape already, and that additional logging of relatively green forests will certainly impact remaining habitat. Why wasn't this forest species evaluated?	The species is not federally listed, sensitive, or a designated species of interest on the BDNF and thus was not analyzed separately. However, effects are similar to other forest species that depend on relatively continuous stands of mature forest. Based on the summary of Marten natural history described in Buskirk and Ruggiero (1994) and Buskirk (2002), marten habitat is centered in green tree mature or late-seral spruce/fir forest with substantial coarse woody debris. The project treats only a small percentage of spruce/fir forest within the burn perimeter, selects for dead and dying timber, and is located primarily in lodgepole pine habitat. Thus, the project would have minimal impacts to marten. Project design features including the retention of snags, old growth, coarse woody debris and no harvest in riparian conservation areas will mitigate negative effects to marten that may inhabit the area.
4.29	28. The EA notes that 20 tons per acre of logging debris will be left. What is unclear is to why this is considered suitable for the pine marten and other wildlife species. Please define why 20 tons per acre will meet wildlife needs, and what this was based on. There is no data that demonstrates this meets the needs of the pine marten, then this cannot be considered an effective mitigation measure for this and other species.	The following project design feature is included in the project proposal and has been analyzed in the wildlife resource report: • <i>"Where a suitable number of large diameter trees exist, harvest units will maintain the following minimum amounts of large woody debris: 6 pieces per acre 10 feet in length, and the small end diameter equal to or greater than 8 inches in lodgepole pine cover type; 6 pieces per acre 10 feet in length and the small end diameter equal to or greater than 12 inches in Douglas-fir cover type.</i> " <p>This standard was analyzed in the FEIS of the revised forest plan and found to be adequate to provide for the needs of a variety of wildlife species that depend on downed woody debris.</p> <p>There is a project design feature for soils, EA page 13: "At least 12 tons per acre of coarse woody debris will be left in harvest units."</p>
4.30	29. Please discuss the effectiveness of logging debris left, as per structure, for the pine marten as compared to natural jack-strawed conditions.	Lodgepole pine stands, particularly those with minimal canopy cover and/or understory vegetation because of recent wildfire, are marginal/secondary habitat for marten since they provide reduced prey base, and reduced overhead cover to protect marten from predators. Coarse woody debris that is left in these stands whether treated, or untreated will provide similar value hiding cover, used by marten primarily during snow/free periods, as they disperse between quality habitats in riparian conservation areas, mature spruce/fir forests.
4.31	30. The former Forest Plans included the pine marten as a management Indicator species (MIS). There was no analysis in the revised plan as to why this species was dropped as an MIS, or what species was used to replace it. Please define what species that indicates older unlogged forest habitat was used for the Rat Creek analysis to estimate management impacts on this suite of forest species.	Please see the response to 4.28. A review of decisions in the Revised Forest Plan is outside the scope of this project. Detailed analysis describing the project effects specifically to marten is unnecessary because their primary habitat (mature spruce-fir forest) is not being removed through treatments. Retention of snags, old growth, riparian conservation areas, and coarse woody debris in treatment areas is adequate to provide continued use of the habitats by marten in a manner similar to current conditions.
4.32	31. We would like to know what units are included in one of the four burn intensity categories. Please define this for individual units as well as the project as a whole, as	A map displaying the harvest units and burn intensity has been added: see EA Appendix F.

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	per Table I in the EA at page 2.	
4.33	32. There is no analysis in the Rat Creek EA as to the total disturbance period in this project area from past and ongoing logging projects, including the Rat Creek Roadside Salvage project. Please define what non-disturbance periods have existed in this landscape in the last 20 years, and how this has affected wildlife.	The requested analysis is outside the scope of the project. The project is located within Tie-Johnson management area of the Big Hole Landscape which is managed for timber production, livestock grazing, and dispersed recreation according to the Revised Forest Plan. In it's current condition, the area meets Forest Plan Objectives for road/trail density that provide for wildlife security, and is consistent with state management objectives in Hunt Unit 321.
4.34	33. Please define which roads that were used for the Rat Creek Roadside Salvage Program will be affected by the current project; these roads will have increased disturbance impacts to wildlife due to the lack of cover along the roads. This cumulative impact needs to be assessed.	Hiding cover for big game species has been largely reduced in all burned areas. Since the project proposal treats mostly dead and dying forest, little or no additional hiding cover is expected to be removed by the treatments, including dwarf mistletoe sanitation. Hiding cover will remain primarily in unburned areas and riparian conservation areas where burn intensities are limited. Though hiding cover is limited across the burn perimeter as a result the 2007 fire, security habitat (as well as additional forage) will be provided throughout the burn in areas that are largely unroaded, or infrequently accessed by motor vehicles. Figure 23 in the Wildlife Resource Report demonstrates where road use would be modified on currently closed roads, and that the burn perimeter will remain largely unavailable to motorized use and continue to provide secure habitat for elk. Secure habitat for wildlife is measured by open motorized road & trail density at the landscape scale for summer and at the Montana FWP hunting unit (2006) scale. In it's current condition, the area meets state management objectives in Hunt Unit 321and there will be no change in existing condition with regard to road densities and thus elk security.
4.35	34. Based on past projects, what is the expected difference in tree regeneration in unlogged versus logged salvage units? Since this will greatly impact wildlife habitat, this difference was never discussed in the EA Yet this is a critical component of this project, because such large openings are planned. Recovery of wildlife habitat, such as for snowshoe hares, which in turn feed many predators, will be affected by the proposed treatments, and this needs to be fully evaluated.	Two wildfires in the same vicinity of the Rat Creek wildfire had the following results in regard to regeneration. Harvested units within the Sheep Creek wildfire, (2002_ regenerated naturally averaging 800 to 1200 seedlings per acre. In comparison, units within the Mussigbrod wildfire were not logged and regeneration ranged from 250 seedlings per acre to 10,000 seedlings per acre with most nits ranging between 500 and 1000 seedlings per acre. All harvest units were certified as fully stocked. Stands are expected to naturally regenerate at a similar rate in salvaged and unsalvaged areas. Recovery of forested habitat and prey species such as snowshoe hare, small rodents, and pine squirrels is likely to occur at similar rates within and outside of proposed treatment units. In particular, retention of riparian conservation areas, snags, coarse woody debris, and most green trees (where they occur) provide additional mitigations that enhance the dispersal of wildlife into salvaged areas as vegetation regenerates. We expect natural regeneration in both logged and unlogged areas to increase habitat for hares over the unburned condition.
4.36	35. Typically most snags are lost in harvest units due to various causes, including safety requirements. What specific measures will be incorporated to ensure that the Revised Forest Plan snag direction will be met.	The statement is unfounded. The EA Appendix D includes photos of the Sheep Creek Salvage Project depicting residual stems and snags.

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
4.37	36. What is the expected survival rate for snags that are left in harvest units, and what is this based on?	This is disclosed in the EA , <i>Fire and Fuels section</i> : "...about 90 percent of dead trees are expected to fall down within 20 years,"
4.38	37. It is unclear, including in the Revised Forest Plan (RFP), as to how the snag density required will be maintained over time. Please define how the snag density will be maintained in the proposed treatment units over time. Unless this is shown, then the project will not meet the RFP direction.	<p>Alternative 2 would meet the Forest Plan standard for snag retention on all harvest units. All existing live trees and snags greater than 15.0" will be retained with the exception of trees that are a defined safety hazard and designated for felling by Forest Service personnel. Alternative 2 includes harvesting dead and dying trees 4-15.0 inches DBH. Dead and dying trees of this size are not likely to grow into the size class of 15.0" DBH and larger. The standard states "... the standard is deemed complied with by retention of the existing live trees and/or snags greater than 15.0" dbh in the treatment units."</p> <p>The proposed action treats 1,652 acres of the 26,600 acre Rat Creek Wildfire. Approximately 93 percent of the wildfire area will remain untreated with abundant standing snags. Snag levels in untreated wildfire areas could be expected to be similar to the current stand conditions identified in EA appendix C. Most stands have high levels of mortality. In addition, the Forest is experiencing mortality due to Forest insects, which create snags when they kill the trees. Live trees retained within the harvest units, and outside the harvest units have potential to become snags due to damage from insects. Forest insect and disease conditions are discussed in the EA on page 22:</p> <p><i>A second condition that is impacting forest health is the mountain pine beetle (Dendroctonus ponderosae) (MPB) epidemic also possibly initiated by the current drought conditions that started in 2001 and continued through 2008. The MPB is currently infesting residual green topped lodgepole pine trees 6 inches dbh and larger. Douglas-fir trees are being infested by the Douglas-fir beetle.</i></p> <p><i>In 2001 a mountain pine beetle infestation started on the Butte Ranger District of the Beaverhead-Deerlodge National Forest. In 2002 the infestation turned epidemic. This infestation has spread to all districts at significant levels. Mortality associated with the MPB epidemic in lodgepole stands on the Butte Ranger District is reaching 85 percent (Gibson 2008, unpublished report). As the infestation has progressed it is assumed similar conditions could be expected for the Wisdom Ranger District. . Bollenbacher et al (2008) Estimates of Snag Densities for Eastside Forests in the Northern Region – Report 08-07 v 2.0 provides the most up to date foundation for snag densities. Bollenbacher accounts for snag recruitment over time by vegetation category as stands age and mortality occurs.</i></p>
4.39	38. If the 6.4 snags over 15 inches dbh are not maintained in individual harvest units, please define how the agency knows they will still average 6.4 per acre across the project area, including in all the 3179 acres of previous logging areas and along the	Alternative 2 would meet the Forest Plan standard for snag retention on all harvest units. All existing live trees and snags greater than 15.0" will be retained with the exception of trees that are a defined safety hazard and designated for felling by Forest Service personnel. The standard states "... the standard is deemed complied with by retention of the existing live trees and/or

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	roadside areas currently being salvaged?	<p><i>snags greater than 15.0" dbh in the treatment units."</i></p> <p>Alternative 2 proposes harvest of trees 15.0 inches dbh and less. These trees are dead or dying and are not expected to growth to a size larger than 15.0 inches so they would never contribute to the population of snags larger than 15.0 inches dbh.</p> <p>The proposed action treats 1,652 acres of the 26,600 acre Rat Creek Wildfire. Approximately 93 percent of the wildfire area will remain untreated with abundant standing snags. Snag levels in untreated wildfire areas could be expected to be similar to the current stand conditions identified in EA appendix C. In addition, the Forest is experiencing mortality due to Forest insects, which create snags when they kill the trees. Live trees retained within the harvest units, and outside the harvest units have potential to become snags due to damage from insects. Forest insect and disease conditions are discussed in the EA on page 22:</p> <p><i>A second condition that is impacting forest health is the mountain pine beetle (Dendroctonus ponderosae) (MPB) epidemic also possibly initiated by the current drought conditions that started in 2001 and continued through 2008. The MPB is currently infesting residual green topped lodgepole pine trees 6 inches dbh and larger. Douglas-fir trees are being infested by the Douglas-fir beetle.</i></p> <p><i>In 2001 a mountain pine beetle infestation started on the Butte Ranger District of the Beaverhead-Deerlodge National Forest. In 2002 the infestation turned epidemic. This infestation has spread to all districts at significant levels. Mortality associated with the MPB epidemic in lodgepole stands on the Butte Ranger District is reaching 85 percent (Gibson 2008, unpublished report). As the infestation has progressed it is assumed similar conditions could be expected for the Wisdom Ranger District.</i></p>
4.40	39. The EA did not define the current snag level across the project area. Does it currently meet the 6.4 per acre over 15 inches, and if not, how can more logging be planned?	<p>.Data is not available to determine the precise number of snags over 15" DBH across the burn perimeter. However, the WL standard for snag retention applies specifically to mechanical vegetation treatments, to ensure that existing large diameter snags are not removed during treatment, to an extent which reduces the overall availability of large diameter snags across the analysis area. Since the project proposal retains all existing snags and trees over 15 inches DBH, with a few exceptions for safety reasons, the proposed action Alterative 2 meets the Forest Plan standard for snag retention on all harvest units. All existing live trees and snags greater than 15.0" will be retained with the exception of trees that are a defined safety hazard and designated for felling by Forest Service personnel. Alternative 2 includes harvesting dead and dying trees 4-15.0 inches DBH. Dead and dying trees of this size are not likely to grow into the size class of 15.0" DBH and larger. The standard states "... the standard is deemed complied with by retention of the existing live trees and/or snags greater than 15.0" dbh in the treatment units."</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		See the response to comment 4.39 for additional discuss regarding wildfire area snag levels.
4.41	40. The RFP does not require any specific distribution of snag habitat across an entire landscape of thousands and thousands of acres. Please define why snag distribution, which will be reduced in this sitespecific project, does not affect distribution of cavity-nesting birds and hence their viability.	<p>Alterative 2 would meet the Forest Plan standard for snag retention on all harvest units. All existing live trees and snags greater than 15.0" will be retained with the exception of trees that are a defined safety hazard and designated for felling by Forest Service personnel. The standard states "... the standard is deemed complied with by retention of the existing live trees and/or snags greater than 15.0" dbh in the treatment units."</p> <p>The proposed action treats 1,652 acres of the 26,600 acre Rat Creek Wildfire. Approximately 93 percent of the wildfire area will remain untreated with abundant standing snags. Snag levels in untreated wildfire areas could be expected to be similar to the current stand conditions identified in EA appendix C. In addition, the Forest is experiencing mortality due to Forest insects, which create snags when they kill the trees. Live trees retained within the harvest units, and outside the harvest units have potential to become snags due to damage from insects. Forest insect and disease conditions are discussed in the EA on page 22:</p> <p><i>A second condition that is impacting forest health is the mountain pine beetle (Dendroctonus ponderosae) (MPB) epidemic also possibly initiated by the current drought conditions that started in 2001 and continued through 2008. The MPB is currently infesting residual green topped lodgepole pine trees 6 inches dbh and larger. Douglas-fir trees are being infested by the Douglas-fir beetle.</i></p> <p><i>In 2001 a mountain pine beetle infestation started on the Butte Ranger District of the Beaverhead-Deerlodge National Forest. In 2002 the infestation turned epidemic. This infestation has spread to all districts at significant levels. Mortality associated with the MPB epidemic in lodgepole stands on the Butte Ranger District is reaching 85 percent (Gibson 2008, unpublished report). As the infestation has progressed it is assumed similar conditions could be expected for the Wisdom Ranger District. Bollenbacher et al (2008) Estimates of Snag Densities for Eastside Forests in the Northern Region – Report 08-07 v 2.0 provides the most up to date foundation for snag management.</i></p>
4.42	41. Please provide a map that shows areas and acres in the project area where the RFP snag density will be maintained.	Data is not available to determine the precise number and distribution of snags over 15" DBH across the burn perimeter. However, the WL standard for snag retention applies specifically to mechanical vegetation treatments, to ensure that existing large diameter snags are not removed during treatment, to an extent which reduces the overall availability of large diameter snags across the analysis area. Since the project proposal retains all existing snags over 15 inches DBH, with a few exceptions for safety reasons, than the proposed action meets the Forest Plan standard for snag retention. Alterative 2 would meet the Forest Plan standard for snag retention

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		on all harvest units. The EA includes a map with the harvest units. . All existing live trees and snags greater than 15.0" will be retained with the exception of trees that are a defined safety hazard and designated for felling by Forest Service personnel. The standard states "... the standard is deemed complied with by retention of the existing live trees and/or snags greater than 15.0" dbh in the treatment units."
4.43	42. Please define what percentage of the landscape can fall below the RFP snag direction and still maintain well-distributed cavity nesting bird and woodpecker populations.	Nearly 24,000 acres (94%) across the burn perimeter will retain snags in their current condition and thus, continue to provide abundant and well distributed habitat for cavity nesting birds and other snag dependent species. The comment is a mute point. Alternative 2 would meet the Forest Plan standard for snag retention on all harvest units. Existing live trees and snags greater than 15.0" will be retained. See response at 4.41
4.44	43. How can snag densities averaged across the landscape predict cavity nesting bird densities within harvest units?	The precise number of cavity nesting birds that might be affected within salvage units has not been determined but is expected to be small when considering a large amount of available habitat and applicable design criteria. The recent loss of trees to wildfire and associated insect activity has led to a substantial expansion of disturbed habitat available to cavity dependant species. Snag retention standards are designed to retain snags (and corresponding available cavities as well as other habitat features) in a density similar to that found across the Beaverhead-Deerlodge National Forest based on figures presented in Bollenbacher et. al. , 2008. In addition, all trees and snags greater than 15" diameter will be retained, which typically make up the most desirable snags for cavity dependent species. As stated earlier, nearly 24,000 acres of the burn perimeter will remain without salvage treatments. Thus, it is reasonable to conclude that the recent increase in available cavities, the small percentage of habitat being treated, and tree retention within salvage units will leave numerous snags available for cavity development and retain a landscape suitable to provide for the needs of cavity dependant species. Bollenbacher et al (2008) Estimates of Snag Densities for Eastside Forests in the Northern Region – Report 08-07 v 2.0 provides the most up to date foundation for snag management.
4.45	44. If the above cannot be determined, how will the agency know the impact of individual harvest units on cavity nesting birds?	See Response to 4.44 above.
4.46	45. The agency needs to identify the "direct" impact of logging on snag habitat and associated species "within" harvest units. What is the predicted level of reduction of snag habitat over 10 inches dbh in proposed units, and what is the average estimated decline in cavity nesting birds and woodpeckers as a result.	Snag retention standards, old growth retention, and avoidance of riparian conservation areas are consistent with Revised Forest Plan goals, objectives, and standards which were designed to maintain suitable habitat conditions for a variety of wildlife species, including cavity nesting birds. The direct effect of the loss of snags from proposed salvage is that some habitat will be lost within treatment units, however that habitat is only a small percentage of similar habitat within the burn perimeter and larger landscapes. Effects will be minimal and are not expected to cause a pattern of decline in any of the snag dependant wildlife species as additional suitable habitat is abundant

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		in adjacent areas. Bollenbacher et al (2008) Estimates of Snag Densities for Eastside Forests in the Northern Region – Report 08-07 v 2.0 provides the most up to date foundation for snag management. Also see response to 4.44 above.
4.47	46. If cavity nesting birds and woodpeckers decline in treatment units, how will this decline be mitigated? Why are populations expected to increase elsewhere to compensate for this habitat loss?	See responses to 4.44 and 4.46.
4.48	47. Since trees with heavy checking will not provide suitable snag habitat, are these trees going to still be counted as part of the snags left for wildlife?	Snags with active decay and defect, such as checking, are preferred since they are more likely to develop heart rot and development of cavities.
4.49	48. Since the agency is not using an indicator species to monitor the effects of logging activities on cavity-nesting birds and woodpeckers, how do you know that the snag management direction you are implementing will maintain viable populations of associated species. What information is available to convert snag habitat within harvest units to a given population density of cavity-nesting birds and woodpeckers with a high probability of accuracy, or is better than actually monitoring wildlife?	Populations for the species potentially affected by the project proposal are measured at scales larger than the project area (burn perimeter) and are addressed in Samson, 2006 (a)(b). The project is consistent with findings in those documents as well as Revised Forest Plan goals, objectives, and standards, which were designed to maintain species populations and available habitats at the appropriate scale. As evidenced by its inclusion in the R1 sensitive species list, the black-backed woodpecker is the only cavity nesting species identified as having viability concerns. Noted at response 3.5 the Black-backed Woodpecker Northern Region Overview Key Findings and Project Considerations, 2007 clearly shows habitat has been increasing across the Northern Region and the Beaverhead-Deerlodge NF. Furthermore, the overview clearly shows "that not only does the Northern Region have sufficient habitat to maintain a viable population of black-backed woodpeckers but each individual forest alone also has sufficient habitat for a viable black-backed woodpecker population"
4.50	49. There is no discussion in the EA regarding the needs of cavity nesting birds and woodpeckers that require a forested environment as breeding habitat. In these cases, leaving snags in harvest units will not maintain their habitat. Where is the suitable habitat for this suite of species in the project area? Is it adequate, and if so, how was this determined. How will reductions in green forest habitat affect this suite of species?	The project is designed to salvage dead and dying tree as a result of wildfire and accompanying insect infestations and thus, does not reduce the capacity of unburned forested habitats to support cavity nesting species. Green tree harvest is limited to exceptions for skid trails and landings, and a project design feature for removal of trees with mistletoe is included in the EA as follows: <i>Dwarf mistletoe infected lodgepole pine trees which survived the fire and in excess of those live trees needed to meet Forest Plan wildlife habitat standard 4, regarding minimum numbers of live trees larger than 10.0 inches dbh, would be cut and removed or cut and left on site to reduce dwarf mistletoe infection of the lodgepole pine regeneration.</i>
4.51	50. How has the lack of snags within the 3179 acres of previously logged areas (likely an underestimate) affected cavity-nesting birds and woodpeckers? What is the average snag size within remaining unlogged green forests, and is this size suitable enough for cavity nesting birds? This is an important inventory need, as many green forests may lack large snags needed by wildlife.	Previous harvest was considered as part of cumulative effects and in calculations for the Revised Forest Plan. Similarly, the wildfire created a substantial influx of snags across the 26,600 acre burn perimeter. Treatment units are located in dead and dying stands rather than green forested stands and thus, would not reduce the availability of snags in green stands. Riparian Conservation areas would not be salvaged and are of particular importance for providing a substantial component of remaining green trees as well as large diameter snags distributed

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		among those trees.
4.52	51. Since snags are not actually required in any harvest units as per the RFP, and since "existing" snags in other areas are going to be used as mitigation, why is this considered "mitigation?" Total snag habitat will still decline, so no mitigation actually occurs. Given this, how can the agency determine that the loss of 1600 acres of snag habitat will not affect local viability and distribution of species?	Approximately 94% of the burned forest (24,000 acres) will remain unsalvaged and therefore provides mitigation to the loss of snags that would occur in salvage areas. Populations for the species potentially affected by the project proposal are measured at scales larger than the burn perimeter/project area and are addressed in Samson, 2006 (a)(b). The project is consistent with findings in those documents as well as Revised Forest Plan goals, objectives, and standards, which were designed to maintain species populations and available habitats at the appropriate scale. The project includes the retention of snags and trees larger than 15.0 inches DBH within all harvest units.
4.53	52. The agency claims that the area will be surveyed prior to logging to determine whether the two goshawk territories where over 900 acres of habitat will be logged are active in 2009. Please define why postponement of this habitat destruction to a later time period constitutes "mitigation." Will this be done very year until finally, no goshawks are located and then all their habitat will be logged?	Analysis and 2009 field surveys indicate that most burned areas are naturally no longer expected to function as nest area habitat because of a loss of green tree canopy below 45% cover. Proposed harvest units occur in these burned areas and thus are not expected to reduce suitable nest area habitat. However, if active goshawk territories are detected, no ground disturbance of nest stands (40 acres) and timing restrictions in post-fledging areas (420 acres) will be enacted.
4.54	53. It is unlikely that the agency will expend even a reasonable effort to determine whether goshawks are present in either nesting territory, even though such a mitigation measure is not actually mitigation. At a minimum, please define the expected days and time periods (dates and number of people that will survey for goshawks).	Goshawk surveys were conducted during 3 separate field visits in June, and early July of 2009, using broadcast calls at 300 foot intervals along specified transects (based on Kennedy Stahlecker, 1993). Surveys are focused near proposed harvest units with previously documented goshawk observations. 60 calling stations were completed using a trained crew of wildlife biologists and technicians and findings are filed in the project record. No goshawk were detected. If active nest areas are located, conservation measures will be applied. The WL report has been updated on pages 72-77.
4.55	54. Please define the history of the two goshawk territories (Mayfield Meadows and Mayfield Ranch) and the status of monitoring since these nests were discovered in 1999	Nesting activity and monitoring for goshawk territories "Maybe Meadows" and "Maybe Ranch" are summarized in Kirkley, 1999-2005. Maybe Ranch nest has been gone since 2003, and Maybe meadows nests have had no activity 2002 through present. Nest sites at both territories were visited by Kirkley in 2008 (personal communications) where he found that the nests were gone (due to wildfire), and that nest stand characteristics no longer provided suitable nesting habitat.
4.56	55. Regional direction calls for a 40 acre buffer to protect a single goshawk nest stand. Why does this project call for only 30 acres?	The WL report was updated to reflect 40 acre no ground disturbing activity buffers that would be applied to active goshawk nest areas.
4.57	56. Why won't the goshawk nesting areas be protected permanently, regardless of use during any given year? It is well known that goshawks may not nest every year. This is hardly an excuse for logging their nesting habitat.	Proposed harvest units are no longer suitable as nesting habitat because of the loss of forested canopy cover as a result of the fire.

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
4.58	57. The EA infers that goshawks are gone from this area. As per #54 above, please define the level of monitoring that has occurred here and if this is adequate to predict current goshawk occupancy.	<p>The GIS analysis presented in the wildlife report indicates a loss of canopy cover across the analysis area as a result the Rat Creek fire, which is likely to affect the distribution of potential nest areas and PFAs. Potential nest areas are most likely to occur in unburned forests with large trees and dense canopy cover, or within Riparian Conservation Areas, neither of which will be included within harvest units.</p> <p>Goshawk surveys were conducted during 3 separate field visits in June, and early July of 2009, using broadcast calls at 300 foot intervals along specified transects (based on Kennedy Stahlecker, 1993). Surveys are focused near proposed harvest units with previously documented goshawk observations. Approximately 60 calling stations were completed using a trained wildlife crew. No goshawk were detected. If active nest areas are located, conservation measures will be applied.</p>
4.59	58. Since goshawks may have up to 4-8 nest sites, how will a 30 acre buffer around one nest site protect their overall nesting habitat?	<p>The area immediately surrounding the nest tree, referred to as the nest area (analogous to the "stand") often contains alternative nests and may be reused in consecutive years (Squires and Kennedy 2006). A 40 acre no ground disturbance buffer is likely to protect multiple nests. Similarly, buffers may be placed around additional forested stands as alternate nest areas, if surveys determine that recently occupied nests are thought to be present, and the forest vegetation is made up of relatively closed canopies (50 to 90%) and open understory habitat.</p>
4.60	59. How many nest stands have been identified for the two goshawk territories in the past, and why haven't these been protected in a postfledging area of 600 acres?	<p>Nest areas were determined by the presence of the known nests based on searches conducted by Kirkley, 1999-2005 which included searches for additional nests and broadcast calling to evaluate activity. Post fledging areas of 420 acres have been identified in the wildlife report.</p>
4.61	60. Please define the current status of the landscape for both goshawk territories are per habitat conditions recommended by Reynolds et al. 1992.	<p>This analysis was completed and is included in the wildlife report. The analysis indicates that active goshawk territories are unlikely within the burn perimeter.</p>
4.62	61. Please cite the published research that defines the level of habitat loss through burning that causes abandonment of goshawk territories.	<p>Vegetation in nest areas and the PFAs central to a goshawk territory varies, but is correlated to relative continual forest canopy. Published research (Clough 2000) found areas of continuous forest surrounding the nest site out to a variety of distances, such as 981 feet in west central Montana. Similarly, Samson 2006a; Squires and Kennedy 2006, found that mid- to late-seral forest with > 50% canopy cover and structural diversity in the understory appear important at the PFA scale.</p> <p>The natural effects of wildfire have been to reduce the forest canopy well below that preferred by goshawk, and to reset stands to early seral stages not suitable as nest areas or PFAs.</p>
4.63	62. Partial burning of forest stands may enhance goshawk habitat due to increasing old growth conditions; at a minimum, these stands will recover quickly without logging. What criteria will the agency use to estimate habitat loss for goshawk in this burned landscape?	<p>The project proposal focuses on the removal of dead and dying trees which are no longer nest habitat for goshawk nor do they meet the definition of old growth.</p> <p>Stands included in the proposed action do not meet the definition of oldgrowth. See EA Appendix C.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		The silviculture report showing that proposed harvest units do not meet old growth criteria from Green et. al has been included in the WL report as Appendix B.
4.64	63. The August 15 time restriction for an active goshawk nest is barely past the latest average fledging date for goshawks on the Beaverhead-Deerlodge National Forest. What published research recommends this as a mitigation measure to save young goshawks during an extremely vulnerable period when they are poor fliers and are just learning to hunt?	Based upon assimilation of goshawk literature and professional judgment by local wildlife biologists, the Northern Region Overview Key Findings and Project Considerations for Northern Goshawk (2007) suggests that projects "Allow no ground disturbing activities inside known occupied PFAs from 15 April through 15 August (about 30 days post-fledging) to protect the goshawk pair and young from disturbance during the breeding season until fledglings are capable of sustained flight. Note, fledglings are not capable of sustained flight until flight feathers fully develop and harden, which takes 30 days after fledging off the nest (see above). After August 15, treatment-related activities may commence within the PFA but outside the nest area. "
4.65	64. Management of the goshawk will help ensure viability of the great gray owl as well. Why is protection of a 30 acre nest stands per goshawk pair considered adequate habitat management for the great gray owl?	Great gray owls (as well as other owls) are unable to construct their own nests and thus frequently nest in those constructed by goshawks. Effects to great grey owl were analyzed in the WL report pages 78 and 79 and were found to be in compliance with the Forest Plan.
4.66	65 .Over 900 acres of habitat within the two goshawk territories (close to the nesting areas) will be logged. This impact, along with past logging and fires, would seem to create problems for these two territories. What criteria is the agency using to ensure that a minimum amount of habitat will remain in both these two territories to ensure they are not lost?	The wildlife analysis was updated to reflect the type and amount of goshawk habitat within the burn perimeter, and being removed by proposed treatment units. Treatments focus on burned stands with substantial tree mortality and thus have minimal affects on stands of mature timber with closed canopy which are preferred goshawk habitat.
4.67	66. The BDNF has no population data for goshawks. If these two nesting territories are destroyed with this project, what data is available to demonstrate to the public that this will not exacerbate an existing decline of this species on the Forest, as is happening in other areas of the western United States?	The wildlife analysis indicates that effects to habitat within the goshawk territories occurred from the change in forest vegetation from the Rat Creek fire and associated tree mortality.
4.68	67. The RFP and as cited in the EA infers there is abundant goshawk habitat across the BDNF. What is lacking is any validation of the agency's habitat model by outside, nonagency individuals. Currently what information indicates that the goshawk habitat model closely reflects existing levels of goshawks?	Validation of regional models is outside of the scope of the project. However, the models were developed based on assimilation of goshawk literature and professional judgment of wildlife biologists in the region. The Northern Goshawk Working Group (2007) prepared a summary of key findings related to goshawk in the Northern Region and continues to support the results of Samson's modeling in Region 1.
4.69	68. Please define what this existing estimated goshawk level is as per the habitat model in Samson, as it is impossible for us to interpret his results.	A summary of key findings is as follows: Goshawk habitat in R1 is abundant and well distributed with high percentage of well connected mature forest. Therefore more nesting habitat exists on today's landscape than what occurred historically (Samson 2006a). The level of timber harvest of the forested landscape in R1 is insignificant (Samson 2006a). The suppression of natural ecological processes has increased and continues to increase the amount of goshawk habitat (Samson 2006a).

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p>No demographic information exists to suggest a decline in goshawk numbers (USFWS 1998, Kennedy 2003; Anderson et al. 2004; Squires and Kennedy 2006).</p> <p>Samson (2006) estimated the amount (by hectare) of nesting, post-fledgling and foraging habitat by National Forest (mid-level) from both a Regional and province basis using habitat relationship models and FIA data.</p> <p>A comparison of habitat estimates for maintaining viable populations to that available on each Forest indicates that habitat is available in excess to that needed, given the natural distribution of the species and its habitat as mapped, and according to the scientific literature (Samson 2006b).</p> <p>At page 26 (3.1.2 Habitat Thresholds) and page 27 (Table 4) of the Northern Goshawk Northern Region Overview: Key Findings and Recommendations Samson, used PFA acres and determined a critical habitat estimate of 30,147 acres for a minimum viable population for northern goshawks in the Northern Region. The Beaverhead-Deerlodge contained 344,071 acres.</p>
4.70	69. How does the population estimate provided by Samson compare with the known goshawk territories on the BDNF? Are they similar, or is there considerable discrepancy, as appears to be the case? Why isn't this essential step taken in the assessment of the forest's goshawk population? If there is a significant discrepancy, why is the model considered reliable?	The nest sites within the Rat Creek Burn were used in Samson's estimates but do not reflect a complete census of all goshawk territories on the Forest. Validation of Regional Level modeling was addressed previously.
4.71	70. There is no analysis in the EA regarding old growth habitat in the project area. We would like to know where old growth is located (on a map), how many acres it constitutes, and how each stand specifically meets the Green et al. (1992) criteria.	<p>Old growth forest has not been mapped at the landscape scale or within the Rat Creek burn perimeter. The project relies on data presented in the revised forest plan which indicates that old growth is present in sufficient quantities in the Big Hole landscape and across the forest. In compliance with Forest Plan Standards, the silviculture report (Appendix B in WL and Silviculture Resource Reports) includes an analysis of stand data within proposed harvest units. This data indicates that stands proposed for harvest did not meet old growth criteria from Green et al. (1992) before the fire or after the fire.</p> <p>No oldgrowth stands are proposed for harvest, see EA appendix C. Proposed harvest units do not meet the definition of old growth and this is displayed in the EA. See EA Appendix C.</p>
4.72	71. The EA as well as the RFP implies that logging will not affect old growth as long as the minimum number of large old trees remains. This number of trees may not even be as many as are left in seed cuts. If old growth or potential old growth stands in the	No oldgrowth stands are proposed for harvest, see EA appendix C. Proposed harvest units do not meet the definition of old growth and this is displayed in the EA. See EA Appendix C

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	project area are going to be logged, the agency needs to be able to demonstrate why these old growth values to cavity nesting birds, great gray owls, woodpeckers, goshawks and pine marten will not be lost.	
4.73	72. The RFP discusses goshawk post fledging areas, but these were not discussed in the Rat Creek EA Why not?	This discussion has been added to the Wildlife Resource Report.
4.74	73. Contrary to Reynolds, other researchers have recommended that a 250 acre block of undisturbed forest habitat be preserved around goshawk nesting areas. This appears to have the greatest probability of maintaining goshawk habitat use over time, and should be applied to the Rat Creek Project. Reynolds et al. (1992) can be used for management of the foraging areas, however, where 40% of the landscape should be comprised of mature and old growth forests.	Analysis and recommendations to mitigate effects to goshawk habitat are consistent with an assimilation of goshawk literature and professional judgment by local wildlife biologists. This information is presented in the Northern Region Overview Key Findings and Project Considerations for Northern Goshawk (2007). The project analysis gives no indication that additional conservation measures are necessary, considering that harvest is not expected to reduce nest area habitat or the amount of unburned mature forest.
4.75	74. The EA failed to define why the salvage units are expected to provide foraging habitat for the black-backed woodpecker. What specific criteria are being applied, and what are these based on?	The wildlife report summarizes that: "Foraging habitat within harvest units will continue to be available associated with the patchy distribution of snags, retention areas, and unmerchantable timber." These areas are expected to provide some continuing level of insect activity (as available food) to black-backed woodpeckers using adjacent unharvested areas.
4.76	75. Will any black-backed woodpecker surveys be completed to demonstrate where prime nesting areas are located?	Field surveys occurred by the wildlife biologist in 2008 and verified the presence and sign of black-backed woodpeckers. The wildlife analysis considered the presence and location of quality habitat which included areas with larger diameter snags and a higher density of snags. Specific surveys for nest sites will not be conducted nor are they necessary. The analysis was based on an assimilation of current literature (Black-backed Woodpecker, Northern Region Overview, Key Findings and Project Considerations, 2007) and found that 97% of the highest quality black-backed habitat will remain untreated.
4.77	76. The EA at 37 claims that habitat for the lyl1X will not be modified. However, with the numerous very large openings, movement barriers for both the lyl1X and pine marten could be created. What information does the agency have to ensure that dispersal of lynx through this landscape will not be impacted by large openings of up to and over 300 acres?	Within harvest units, some amount of travel/hiding cover will be retained through riparian conservation areas, coarse woody debris, snag retention, and unmerchantable timber left on site. However, the area remains identified as "unoccupied" by Canada lynx, and treatment units are located primarily in lodgepole pine forest rather than spruce/fir forest, the preferred habitat for Canada lynx. There is no empirical data yet available for the Beaverhead-Deerlodge NF to delineate specific movement areas for large carnivores
4.78	77. Since the lynx survey protocol has been developed for the BDNF, has this protocol been applied to the Rat Creek Project Area to facilitate coordination for lynx management?	Regional Office personnel are working with the FWS to develop and complete a protocol to survey currently unoccupied lynx habitat in secondary areas as described in the Biological Opinion, Term and Condition #4. Details of the protocol are not yet available to the Beaverhead-Deerlodge NF. The protocol will be applied by Rocky Mountain Research Station personnel on a schedule to be determined (Tim Bertram pers. Comm.)
4.79	78. Overall, it appears that significant impacts to wildlife already exist in this landscape due to a variety of factors, including past logging, a high density of roads, and a loss of green forest habitat for some species due to fire. The actual level of impact remains	The purpose of the Rat Creek Environmental Assessment is to determine whether to prepare an environmental impact statement or a finding of no significant impact. The Deciding Official will make this decision.

RAT CREEK SALVAGE PROJECT

EA Comment Analysis

Respondent #4: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	unknown due to a lack of analysis by the agency. This being the case, the effects of yet more logging and more roads is unknown, but clearly with exacerbate existing conditions. An environmental impact statement appears to definitely be required for this project.	

Respondent #5: Steve Flynn, Sun Mountain Lumber		
#	Comment	Comment Analysis and FS Response
5.1	This letter is in support of the Proposed Action as described in the Rat Creek Salvage Environmental Assessment. I believe the Proposed action is based upon the best available science and adequately addresses the Purpose and Need. In the development of the Rat Creek Salvage project please consider the following:	Comment is in support of Alternative 2.
5.2	This is a salvage project and therefore utilization requirements for required removal of material need to be relaxed. Sawlog utilization should be to a 7" top dib and 16' length on dead trees.	Utilization specification in the timber sale contract may be modified, depending on market conditions and the condition of the salvage material.
5.3	No hunting season closures.	The project includes several design features related to hunting season to provide for public safety: these include restrictions on weekend and holiday hauling from September 6 th through November 30 th . Roads and trails may be closed to public use to provide for safety. See EA page 13. Other than these restrictions, harvest operations would not be closed during hunting seasons.
5.4	Close roads to the public during operations whenever possible.	There is a project design feature road and trail closure for public safety during harvest operations; see EA page 13. In addition motorized vehicle travel will be restricted to those open motorized routes identified on the Forest Plan Interim Roads and Trails Inventory GIS layer (see EA page 13).

Respondent #6: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
6.1	Thank you for this opportunity to comment on the Rat Creek Salvage Project Environmental Assessment (EA). Please accept these additional comments from me on behalf of the Alliance for the Wild Rockies and Native Ecosystems Council.	No response needed.
6.2	We do not believe that the Forest Service is satisfying the emergency situation determination as provided in 36 CFR 215.10; the conditions required to declare this an emergency and allow for immediate sale of the salvage timber as soon as a decision is signed.	36CFR 215.10: <i>Emergency situation: A situation on National Forest System lands for which an immediate implementation of all or part of a decision is necessary for relief from hazards threatening human health or safety or natural resources on those NFS or adjacent lands; or that would result in substantial loss of economic value to the Federal Government if implementation of</i>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #6: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
		<p><i>the decision were delayed.</i></p> <p><i>36CFR 215.10: Authority: The Chief and the Associate Chief of the Forest Service are authorized to make the determination that an emergency situation exists, and may delegate this authority only to the Deputy Chief for the NFS and to Regional Foresters</i></p>
6.3	<p>We agree that the Forest Service seems to be able to adequately estimate the revenue from a timber sale; but the Forest Service has not demonstrated that it can accurately estimate the costs. From our estimates from looking at the Beaverhead-Deerlodge national Forests budgets, you lose on average of \$1400 per acre on your timber program. Your costs are under estimated.</p> <p>A June 2007 GAO report to Congress: Federal Timber Sales: Forest Service Could Improve Efficiency of Field-Level Timber Sales Management by maintaining More Detailed Data (GAO-07-764) details the problems with Forest Service Timber sale accounting.</p> <p>"For example, for fiscal years 1992 through 1997, the Department of Agriculture's Inspector General reported that the Forest Service's accounting data-including data associated with timber sales-were not reliable. We reported a similar finding in 2001. Further, in 2003 and again in 2006, we reported that the Service does not maintain data on the actual cost of individual work activities, including timber sales, and as a result cannot assess the extent to which these activities yielded accomplishments commensurate with the dollars spent on them." (GAO report p. 2).</p> <p>The report notes that the Forest "Service recently stopped tracking obligations and expenditures at the forest level, where timber sales are generally carried out, and now tracks them at the national forest level." (GAO p. 3.) The report continues, "Without obligations and expenditure data on individual timber sales, for example, field managers said that they cannot compare actual expenditures on the ground with planned expenditures, identifying potential inefficiencies across sales, or identify resources available to another sale if needed." (GAO p. 3). The report continues by stating without this data at the ranger level field managers cannot compare expenditures across districts to see if spending is occurring as planned. This is a violation of NFMA, NEPA and the forest plan.</p> <p>In a May 1, 2003 report, GAO-03-503 Forest Service: Little Progress on Performance Accountability Likely Unless Management Addresses Key Challenges sent to Congress and the Honorable Scott McInnis, Chairman of the subcommittee on Forest Health,</p>	<p>Forest and Forest Service cost accounting is beyond the scope of this project. The financial analysis in the Rat Creek EA used the best available data. Costs used in the financial analysis are displayed in the Rat Creek Financial Report, Appendix A and B. Costs are based on Forest program funding levels or experience costs.</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #6: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	<p>Barry Hill, Director of Natural Resources and Environment at the General Accounting Office, reported "the Forest Service has not been able to provide to Congress and the public with a clear understanding of what its 30,000 employees accomplish with the approximately \$5 billion it received every year."</p> <p>In 2006 the GAO reported the Forest Service does not have a system to determine the cost of activities below the program level resulting in a focus on budget management without a focus on cost management (GAO 2007, pp. 10-11).</p>	
6.4	<p>Please perform a complete cost benefit estimate as required by NFMA and NEPA and the Forest Plan. These laws require the Forest Service prior to project implementation to access for potential physical, biological, aesthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area based on the best available science. NFMA and the Forest Plan require accurate documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the forest plan. The GAO reports state this is not being done.</p>	<p>Project economics was not identified as an issue or concern during project scoping. The financial analysis meets Forest Service requirements. The EA includes a disclosure of project impacts on the various aspects of the project: physical, biological, aesthetic and cultural.</p>
6.5	<p>The Sun Mountain lumber mill in Deerlodge is currently shut down because of the poor market for lumber, i.e. there is an over supply of lumber in this country. Dumping more timber on an over supplied market is not going to help and since the Forest Service is already losing money on this timber sale it is not an economic emergency to get a below cost timber sale out sooner.</p>	<p>Market conditions are subject to change. The forest products industry has expressed an interest in the products of the Rat Creek Salvage Project.</p> <p>This statement is unfounded: BDNF staff David Fletcher talked with Sun Mountain Lumber regarding this issue: "Talked with Sun Mt. Lumber, they were shut down this past winter for 2 weeks to allow the plainer to catch up with milling operations. They have had no work interruptions since then and have no plans to limit operations."</p>

Respondent #7: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
7.1	<p>Native Ecosystems Council (NEC) and the Alliance for the Wild Rockies (AWR) would like to send in additional comments on the draft environmental assessment (EA) released for public comment first on March 31, 2009, and then, subsequently, again because the Forest Service is requesting emergency status for this project. We believe that this procedure violates various requirements of both the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA). For example, the Forest Service's economic analysis in the draft EA misrepresents the on-the-ground situation. This project will lose money for the Forest Service, so therefore could not possibly qualify for an emergency situation. The economic analysis has greatly underestimated the costs of this project, thereby misrepresenting the benefits of the sale. A losing timber</p>	<p>36CFR 215.10: <i>Emergency situation: A situation on National Forest System lands for which an immediate implementation of all or part of a decision is necessary for relief from hazards threatening human health or safety or natural resources on those NFS or adjacent lands; or that would result in substantial loss of economic value to the Federal Government if implementation of the decision were delayed.</i></p> <p>36CFR 215.10: <i>Authority: The Chief and the Associate Chief of the Forest Service are authorized to make the determination that an emergency situation exists, and may delegate this authority only to the Deputy Chief for the NFS and to Regional Foresters</i></p> <p>The project financial analysis has been updated with current market values for timber. Costs</p>

RAT CREEK SALVAGE PROJECT
EA Comment Analysis

Respondent #7: Michael Garrity, Alliance for the Wild Rockies; and Sara Johnson, Native Ecosystems Council		
#	Comment	Comment Analysis and FS Response
	sale is clearly not a financial emergency for the Forest Service.	included in the analysis are those costs experienced and budget on the B-D NF.
7.2	In addition, the Forest Service has not provided any information to the public in the draft EA in regards to why an emergency situation is being implemented. According to the NEPA, the agency has to define the planned action, and the rationale, to the public in adequate detail so that they may provide effective comments. The public has received no information as to why this project qualifies as an emergency situation.	The project purpose and need, and proposed action is discussed in detail on EA pages 1-4. The deteriorating condition of the dead standing timber is discussed on EA page 2.
7.3	There are also various requirements as per the NFMA in regards to creating openings larger than 40 acres. There is no information provided to the public in the draft EA as to what the specific requirements are for a exemption from the 40-acre limit, and why the Forest Service has met these requirements and analysis procedures. This information needs to be provided to the public so that they can provide comments.	This is discussed on EA page 4, 18 (last paragraph). The proposed action includes the salvage of timber from a natural wildfire event.
7.4	It is clear that the Forest Service has not provided adequate information to the public so that they can either understand why this project is an emergency situation, and why a 40-acre exemption for opening sizes will meet the requirements of the NFMA. The Forest Service needs to provide this information to the public in a revised draft EA.	The information was provided in the EA that was available to the public prior to the 30 day comment period.