RESPONSE TO PUBLIC COMMENTS ON DRAFT DECISION MEMO

Ten letters providing comments or expressing interest in the project (pf[1] E-1 through E-4, E-6 through E-9, E-11 and E-13) were received during the 30-day comment period on the draft Cow Fly Salvage Decision Memo (pf B-1). Each letter has been combined into this one document. Agency responses to comments are provided in *italics* and delineated with a box.

If you would like to review the contents, and responses, of a specific letter, please refer to the following pages or use the bookmarks provided in the electronic copy.

Letter 1: Patrick McKenna

Dear Mr. Petroni,

I think that the Cow Fly Salvage project looks fine, except that we may be missing an opportunity to provide for benefit both economically and resource wise to local residents. Also, as long as the area is checked over closely by your biologist for nesting raptors including owls and sign of large predators.

Agency Response: *The project area will be surveyed for nesting raptors prior to project implementation.*

My point is that when you bring in an outfit with helicopters it probably isn't going to provide any benefit to local woods workers.

[1] PF followed by an alpha-numeric number refers to a specific document, available upon request, in the Cow Fly Salvage Project File.

Maybe it would be possible to balance this thing out when you do N.E.P.A. include some areas for small operators to offset the expense of justifying doing N.E.P.A. for a small volume. If I am not being clear, I would be happy to discuss this further in person on the ground. But let me add a sketch of an example. This wouldn't apply to Cow Fly specifically but what if you had provided a few small areas adjacent or in the West Fork area when you did the layout for the sale.

Note: *The hand drawn sketch is not included in this electronically generated document. The sketch displays small volume timber sales (10-60 mbf) immediately adjacent to a haul road. The sketch is available for review upon request.*

Agency Response: *Much of the general area that is readily accessible to ground-based logging systems adjacent to existing roads has previously been logged. At this time we do not have plans for other small timber sales in the West Fork Madison area.*

P.S. It may be best to not allow trucks to haul on Saturdays to prevent flattening mountain bikers.

Agency Response: *We share your concern about the safety of other users of this road. The decision does not allow log hauling on weekends (noon on Fridays through Sunday), federal holidays and during the general big game hunting season unless the contracting officers determines hauling can be safely completed using flaggers provided by the contractor.*

Letter 2: Alliance for the Wild Rockies and Native Ecosystems Council

Dear Ranger Petroni:

Thank you for this opportunity to comment on the Draft Decision Memo for the Cow Fly Salvage project. Please accept these comments on behalf of the Alliance for the Wild Rockies and Native Ecosystems Council. Please include us on your mailing list for this project. We ask that you complete a full Environmental Impact Statement for this project instead of a CE.

Agency Response: *Both organizations are included on the project mailing list. After reviewing public comment, neither the ID Team nor I have identified any extraordinary circumstances or significant issues which would warrant an EIS. The project qualifies for a categorical exclusion (CE) according to FSH 1909.15, Chapter 30. The Forest Service frequently uses this CE category as an efficient means for analyzing and deciding to implement this type of project; therefore I have decided not to document this analysis using an EIS.*

I. CATEGORICAL EXCLUSION IS INAPPROPRIATE/INADEQUATE FOR COMPLIANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT (NEPA).

Only in the context of a National Forest unit having conducted business above board, in compliance with its Forest Plan Standards, Forest Plan monitoring requirements, and all other substantive and procedural laws and regulations might the use of a Categorical Exclusion (CE) be appropriate for such a relatively small timber sale. However, in the case of the Beaverhead-Deerlodge (BDNF), it is out of the question.

Agency Response: *The use of the CE is explained above.*

The BDNF has failed to live up to its promises, made in the Forest Plans, to fully monitor, evaluate, and timely report to the public the effects of implementing the Forest Plan, as the National Forest Management Act (NFMA) and its implementing regulations require.

Agency Response: *This comment is not specific to the project. We are, therefore unable to address the comment. The Forest disagrees with the above statement. Monitoring reports are electronically available at www.fs.fed/r1/b-d.*

The BDNF has failed to properly consider in their proper NEPA and NFMA context much other new information (including scientific), some of which is discussed in other sections of this Statement of Reasons, indicating the assumptions implicit in the Forest Plan are invalid.

Agency Response: *This comment is not specific to the project. We are, therefore unable to address the comment. The Forest disagrees with the above statement. This statement does not identify any specific topic or issue.*

There were also National Forest System-wide procedures that FS failed to comply with in adopting its timber sale and fuel reduction CE rules. The FS did not conduct a formal scoping process to invite public comment on the CE rules when they were proposed, which violated their own regulations. Also, the FS did not create an Environmental Assessment nor an Environmental Impact Statement in adopting the rules, to study the effects of the timber sales and "fuel reduction" action CE rules on the environment. The CE rules, which potentially allow for unlimited logging over 192,000,000 acres of public land, so long as it is done in blocks <1000 acres, will have significant, widespread cumulative impacts on the quality of the human environment, and is a major federal action requiring an EA and/or an EIS.

Agency Response: *This comment is not specific to the project. We are, therefore unable to address the comment. The Forest disagrees with the above statement.*

The FS did not use a single scientific study, document, or literature review on the environmental impacts of logging to support its decision to allow timber sales to be categorically excluded from environmental analyses by the CE rules. This failure to acknowledge environmental impacts occurred despite the fact that the FS received numerous public comments from the public, its own employees, and other government agencies such as Wyoming Fish & Game Department, Arizona Fish & Game Department, and Columbia River Inter-Tribal Fish Commission,

describing such potential impacts. The FS also used completely arbitrary numbers to develop the acreage limits for the CE rules. And the FS created the potential for significant cumulative impacts from the CE rules because there are no limits on how often the logging can occur in any given forest, nor on how far apart the logging sales must occur temporally or spatially. Furthermore, it allows the FS to avoid addressing troubling forest-wide issues while pursuing forest-wide timber harvest affecting similar species, as is definitely the case with the BDNF.

Agency Response: *This comment is not specific to the project. We are, therefore unable to address the comment. The Forest disagrees with the above statement.*

The CE rules were not based on sound, verifiable, peer-reviewed science, including objective environmental analysis of the impacts from logging on the utilization of the affected habitat by affected wildlife species, but instead was premised on selective analysis of past timber sales by FS employees. The methodology is not verifiable, it was not validated, and the substance of the resulting rules is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.

Agency Response: *This comment is not specific to the project. We are, therefore unable to address the comment. The Forest disagrees with the above statement.*

The draft DM fails to discuss cumulative effects of the actions of actions on private land or any cumulative effects.

Agency Response: *Cumulative effects of past, present and reasonably foreseeable activities were summarized on page 4 of the draft DM. Cumulative effects analysis areas varied by resource being analyzed, but most reports did not analyze actions of private lands because there are very few acres of private property (therefore, very few activities occurring on those lands) within the analysis area.*

And the BDNF has adopted many CEs using the aforementioned CE rules, since the rules were adopted about three years ago, in the context of the FS's above-mentioned failures.

Agency Response: *This comment is not specific to the project. We are, therefore unable to address the comment. The Forest disagrees with the above statement.*

These, and similar issues are raised in appellants' case, No. CV-05-37-M-DWM, and we refer the Forest Service to the issues in that case, since they apply in this action also.

Agency Response: *This comment is not specific to the project and therefore unable to address; although the Forest disagrees with this statement.*

For the above-stated reasons, the major implicit assumption in the CE process—that the effects of the Cow Fly Salvage Project, in combination with all other past, ongoing (such as Meadow Creek Fuels Reduction Project), and reasonably foreseeable activities in the project area, the

Ennis Ranger District and the BDNF—will not be cumulatively significant is invalid. Therefore, clearly the project is illegal.

Agency Response: *This comment is not specific to the project and we are unable to address it. The Forest disagrees with this statement. The rational for the use of a CE is identified above. The appropriate amount of analysis was completed for direct, indirect, and cumulative effects. This comment provides no specifics as to what area of analysis is invalid but rather makes a broad statement. Please note; the Meadow Creek Fuels Reduction Project is not located in the Gravelly landscape. Rather, it is located in the Tobacco Root Mountains nearly 50 miles north of the project area. Cumulative effects analysis areas did include areas outside of the Gravelly Mountains.*

II. FAILURE TO IMPLEMENT SCIENTIFICALLY DEFENSIBLE CONSERVATION STRATEGIES FOR SENSITIVE SPECIES AND OLD GROWTH MIS.

In response to NFMA's viability provisions, the Forest Service Manual outlines the need to design and implement conservation strategies for Sensitive and other species for which viability is a concern. The Forest Service Manual at FSM 2621.2 states:

> To preclude trends toward endangerment that would result in the need for Federal listing, units must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project.

Since the FS is not meeting species viability requirements as discussed above, it is critical for the FS to take steps to develop a multiple species conservation strategy for the BDNF.

An example of a regional multi-species conservation strategy came about in the 1990s when in Region 6, the eastside forest plans were amended in 1994 with the "eastside screens" and the Interior Columbia Basin Ecosystem Management Project (ICBEMP) found that large old trees were below historic levels across the Columbia Basin and should be protected. The "eastside screens" Amendments were in response to scientific information that the forest plans were inadequate to assure population viability of old-growth and other wildlife species. These "eastside screens" limited logging to trees less than 21" diameter at breast height (dbh), except in rare circumstances.

Agency Response: *We agree that FSM 2621.2 provides guidance for the development of conversation strategies for sensitive species. However, we disagree that such assessments have not been completed.*
The following outlines the assessments and guidelines which have been developed, and which are being used by the Beaverhead-Deerlodge National Forest, including this project:

- *A Conservation Assessment of the Northern Goshawk, Black-back Woodpecker, Flammulated owl, and Pileated Woodpecker in the Northern Region, USDA Forest, 2005 (Amended March 6, 2006 (Samson, 2005). This assessment also includes American marten and Fisher.*
- *Connelly guidelines for sage grouse 2000 and 2004 guidelines for sage grouse*

- *Carnivore guidelines for fisher, lynx, wolverine*
- *Henermeyer model for wolverine denning*

For single species such as the goshawk, there are strategies for the Southwest U.S. (Reynolds et al., 1992 and Crocker-Bedford, 1990), the Utah strategy (Graham et al., 1999), strategies for Alaska (Suring et al., 1993) and the Black Hills National Forest (USDA Forest Service, 2000b). The Northern Region's guidance, USDA Forest Service (1990), could have gotten the FS moving in the right direction; however the agency ignores what that document recommends for a goshawk conservation strategy on the BDNF.

Agency Response: *As mentioned above," A Conservation Assessment of the Northern Goshawk, Black-back Woodpecker, Flammulated owl, and Pileated Woodpecker in the Northern Region, USDA Forest" (Conservation Assessment) (Samson, 2006a)and the accompanying document "Habitat Estimates for Maintaining Viable Populations of the Northern Goshawk, Black-backed Woodpecker, Flammulated Owl, Pileated Woodpecker, American Marten and Fisher" (Habitat Estimates)(Samson 2006b) identify habitat thresholds to maintain viability at the regional scale and shows how much habitat is available by each species for each Forest. The Forest does not ignore the Northern Region's guidance, USDA Forest Service (1990), or the other reference document mentioned above. We utilize the best science available; however some of your reference documents identified have been supplemented or superceded by advances in science.*

The Idaho Panhandle National Forests' Forest Plan provides an example of better management directives for the pileated woodpecker. Wildlife Standard #10f requires "One or more old-growth stands per old-growth unit should be 300 acres or larger. Preference should be given to a contiguous stand; however, the stand may be subdivided into stands of 100 acres or larger if stands are within one mile. The remaining old-growth management stands should be at least 25 acres in size. Preferred size is 80 plus acres." (IPNF Forest Plan at II-29.) This and other IPNF old growth Standards are based upon what the IPNF recognizes are pileated woodpecker habitat needs:

> To retain a viable population of pileated woodpeckers on the IPNF … our recommendations are:

Agency Response: *These recommendations appear to be specific to the IPNF, not the Beaverhead-Deerlodge National Forest (BDNF); although they are still reviewed the comment and a response developed.*

1. Retain 10 percent old-growth throughout the Forests.

Agency Response: *This comment is not specific to the project; however, the Beaverhead National Forest Plan states "At least ten percent of the Douglas-fir and spruce component of each compartment will be maintained in old growth condition" (Forest Plan, pg II-29). Assuming the harvest units lose all of the big trees due to mortality and harvest, 48% of the Douglas-fir and spruce*

component of the timber compartment will continue to exhibit old growth characteristics (pf H-5). It should also be noted that through the Forest Plan revision process, utilizing FIA date, the Forest currently has more than 10 % old growth.

2. Distribute the old-growth so that old-growth compartments with 5 percent old-growth retain at least 5 percent old-growth. All old-growth stands 25 acres should be retained in old-growth compartments containing less than 5 percent old-growth.

Agency Response: *Again this comment is not specific to the project. Please see our response to the previous questions. Old growth characteristics in the timber compartment greatly exceed 5%.*

3. In each 10,000 acre unit at least 300 acres should be managed specifically for pileated woodpeckers. To maximize benefits to other species as well as pileateds the 300 acres should be either contiguous or divided into subunits no smaller than 100 acres. The subunits should be within approximately two square miles.

Agency Response: *This comment appears to be referring to the IPNF Forest Plan standards, as identified above, and not the BDNF. The pileated woodpecker is not known to breed on the Beaverhead portion of the BDNF, is not a management indicator species for the Beaverhead portion of the BDNF and specific management guidelines for this species would not be appropriate for the Forest. The Forest is unable to address this comment specific to this project.*

4. The areas managed for pileated woodpeckers should be at least 200 yards wide.

Agency Response: *The pileated woodpecker is not known to breed on the Beaverhead portion of the BDNF, and specific management guidelines for this species would not be appropriate for the Forest.*

5. Areas selected for old-growth management for pileated woodpeckers should also be close to water. Old-growth larch stands are highly recommended for pileated woodpecker management.

Agency Response: *Again, this comment is not specific to the project. The BDNF is dominated by lodgepole and Douglas-fir stands. There is a small portion of the Forest that contains ponderosa pine; however we do not have any larch stands.*

IPNF Forest Plan EIS Appendix 27 at p. II-40.

Also, "To provide suitable pileated woodpecker habitat, strips should be at least 300 feet in wAgencyh …" (USDA Forest Service, 1990).

Agency Response: *This comment appears to be specific to the IPNF - not the BDNF and therefore we are not able to address specifically to this project.*

The BDNF also ignores many structural habitat components necessary for the pileated woodpecker and flammulated owl. USDA Forest Service, 1990 indicates measurements of the following variables are necessary to determine quality and suitability of pileated woodpecker habitat:

- Canopy cover in nesting stands
- Canopy cover in feeding stands
- Number of potential nesting trees >20" dbh per acre
- Number of potential nesting trees >30" dbh per acre
- Average DBH of potential nest trees larger than 20" dbh
- Number of potential feeding sites per acre
- Average diameter of potential feeding sites

This preferred diameter of nesting trees for the pileated woodpecker recognized by R-1 is notable. McClelland and McClelland (1999) found similar results in their study in northwest Montana, with the average nest tree being 73 cm. (almost 29") dbh. The pileated woodpecker's strong preference for trees of rather large diameter is not considered in the draft DM. Effectively, the DM provides absolutely no commitments for leaving specific numbers and sizes of largest trees favored by so many wildlife species, resorting instead to vague statements in descriptions of the various silvicultural treatments proposed.

B.R. McClelland has extensively studied the pileated woodpecker habitat needs. To quote a March 12, 1985 letter from B.R. McClelland to Flathead NF Supervisor Edgar B. Brannon:

> Co-workers and I now have a record of more than 90 active pileated woodpecker nests and roosts, …the mean dbh of these trees is 30 inches… A few nests are in trees 20 inches or even smaller, but the minimum cannot be considered suitable in the long-term. Our only 2 samples of pileateds nesting in trees <20 inches dbh ended in nest failure… At the current time there are many 20 inch or smaller larch, yet few pileateds selected them. Pileateds select old/old growth because old/old growth provides habitat with a higher probability of successful nesting and long term survival. They are "programmed" to make that choice after centuries of evolving with old growth.

McClelland (1977), states:

> (The Pileated Woodpecker) is the most sensitive hole nester since it requires old growth larch, ponderosa pine, or black cottonwood for successful nesting. The Pileated can be considered as key to the welfare of most hole-nesting species. If suitable habitat for its perpetuation is provided, most other hole-nesting species will be accommodated.

Pileated Woodpeckers use nest trees with the largest dbh: mean 32.5 inches;

Pileated Woodpeckers use the tallest nest trees: mean 94.6 feet;

The nest tree search image of the Pileated Woodpecker is a western larch, ponderosa pine, or black cottonwood snag with a broken top (status 2), greater than 24 inches dbh, taller than 60 feet (usually much taller), with bark missing on at least the upper half of the snag, heartwood substantially affected by Fomes laracis or Fomes pini decay, and within an old-growth stand with a basal area of at least 100 sq feet/acre, composed of large dbh classes.

Agency Response: *This comment is not specific to this project. Pileated woodpeckers are not known to breed in the Gravelly Mountains, are not an MIS for the Beaverhead portion of the Forest, and no specific management allocation for the pileated woodpecker exists.*

A cluster analysis based on a nine-dimensional ordination of nest tree traits and habitat traits revealed close association between Yellow-bellied Sapsuckers, Mountain Chickadees, and Red-breasted Nuthatches. These three species plus the Pileated Woodpecker and Hairy Woodpecker are relatively grouped by coincident occurrence in old growth. Tree Swallows, Black-capped Chickadees, and Common Flickers are separated from the above five species by their preference for more open areas and their frequent use of small dbh nest trees.

(Most) species found optimum nesting habitat in stands with a major component of old growth, particularly larch. Mean basal area for pileated woodpecker nest sites was 150 square feet per acre. (McClelland. B.R. and others, 1979)

Agency Response: *This comment again does not appear to be specific to this project as it is referencing information specific to the Flathead and larch timber stands. This project is limited to the harvest of dead trees – primarily Douglas-fir. We do acknowledge that Pileated woodpeckers, as a primary cavity excavator, provide nesting habitat for secondary cavity nesters.*

The FS has stated: “Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population’s existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible.” (Mealey, 1983.) That document also provides guidance as to how habitat for the pileated woodpecker must be distributed for populations to persist.

Agency Response: *The Forest agrees with the above quotation. However, pileated woodpeckers are not known to breed in the Gravelly Mountains, are not a MIS for the Beaverhead portion of the BDNF and no management allocation for pileated woodpeckers has been identified for this species.*

For the fisher, scientific bases for conservation strategies are found in Witmer, et al., 1998, Jones (undated), and Johnsen, 1996. A multi-species approach for forest carnivores is illustrated in Ruggiero, et al., 1994.

For the pine marten, USDA Forest Service (1990), Ruggiero, et al. (1998) and Bull and Blumton, 1999 form some basis for marten conservation strategies.

Agency Response: *Again, this comment is not specific to the project, but rather refer to the Forest Plan and conservation strategies for the Forest. However, Samson (2006b) includes fishers and American martens. This assessment included the references you mentioned above. The project utilized the information from the assessment in determining effects to viability for these species. The analysis indicates there is not significant impact to fisher or marten.*

Please disclose the names of all other past projects (implemented during the life of the Forest Plan) whose analysis area(s) encompass the areas to be "treated" under this proposal. Please disclose if the FS has performed all of the monitoring and mitigation required or recommended in any NEPA documents, and the results of the monitoring.

Agency Response: *A list of past projects influencing the existing condition of the cumulative effects analysis areas were identified and utilized in the cumulative effects analysis by the ID Team. Required mitigation measures were implemented for all projects. Most monitoring for site specific projects are usually a recommendation and not a requirement. Forest Plan monitoring is evaluated and results published annually. These reports are on file at the supervisor's office. This comment is general in nature and does not identify specific issues related to this project that the Forest can reply to.*

The FS must disclose if the project area is within the range of any threatened, endangered, proposed, sensitive, or management indicator species and how those species may use the specific areas now proposed for "treatment." Please disclose the locations of all designated or proposed critical habitat for ESA-listed species, in relation to the project area.

Agency Response: *The biological evaluation and assessment (BE/BA) for this project discusses potential adverse impacts to species listed under the ESA and the results are summarized in the Decision Memo. Critical habitat is identified by the USFWS. There is no critical habitat for any listed wildlife species in the project area or Gravelly Mountains.*

Categorically excluding actions that risk further pollution in any Water Quality Limited Segments is not consistent with the Clean Water Act, NFMA, and NEPA.

Agency Response: *This comment is not specific to this project and therefore unable to address. This comment did not identify any specific pollution*

sources. The Forest agrees with the statement, however, this project does not risk further pollution in any Water Quality Limited Segments.

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the BDNF makes it imperative that population viability be assessed at least at the forest wide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the BDNF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

Agency Response: *Samson (2006a) assessed the viability of the northern goshawk, blackbacked woodpecker, flammulated owl and pileated woodpecker, all species that some authors have identified as "old growth dependant" noting that "old growth dependant" is a misnomer in many current applications. This assessment was conducted at the scale of the planning area and expanded to the scale of the Northern Region. Samson (2006a) concluded that the viability of these species was "not an issue" due to the limited potential for population scale impacts to these species.*

Judge Molloy recently ruled in native Ecosystems Council vs. Kimbell on the Keystone Quartz project that the Forest Service presented no hard data to support or demonstrate the biological impact on old-growth species viability across the forest of further reducing Douglas-fir old-growth habitat below minimum forest plan standards, which themselves may be inadequate in light of more recent scientific information. Species in the Northern Region, including the BDNF, thought to prefer old-growth habitat for breeding or feeding include northern goshawk, flammulated owl, pileated woodpecker, black-backed woodpecker (after wildfire or beetle epidemic), fisher, marten, Canada lynx, and wolverine. Of these, those known to inhabit the Project analysis area include all but the pine marten.

Agency Response: *This comment is not specific to this project. The proposed project would not reduce Douglas-fir old growth to below Forest standards. The proposed action would reduce the snag density on 242 acres while retaining live overstory trees and four large snags per acre. Actually, none of the species listed above are known to occur in the project area. The planning area does provide large tree and snag rich habitat for species that occur there. The northern goshawk, black-backed woodpecker, American marten and wolverine have been documented to occur in the Gravelly Mountains. Canada lynx do not occupy the BDNF.*

For the BDNF, sensitive old-growth dependent species include the northern goshawk and flammulated owl. According to official FS policy, the BDNF "must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project." FSM 2670.45. These strategies would address the forest-wide and range-wide conditions for the affected species, allowing site-specific viability analysis to be tiered to the forest-wide viability analysis, and would establish quantifiable objectives for the affected species. These strategies must be adopted *prior to* implementation of projects that would adversely impact sensitive species habitat. FSM 2622.01, 2670.45.

Agency Response: *A cursory review of the current literature would indicate that northern goshawks and flammulated owls successfully nest in forest structures that are not "old growth" and are thus not "old growth dependant species". FSM 2670.45 provides direction for listed species under ESA, not for sensitive species. We agree that 2670.45 item 2 and 2621.2 provides guidance for the development of conversation strategies for sensitive species. However, we disagree that such assessments have not been completed. For example, see Hayward and Verner (1994) - Flammulated, boreal and great gray owls in the United States, a technical Conservation Assessment, and the Conservation Assessment (Samson 2006a), a Regional multi-species assessment, addresses both the northern goshawk and flammulated owl. The biological evaluation prepared for the proposed project incorporated Samson (2006a) concluded that the proposed project may impact individual northern goshawks and flammulated owls, but was unlikely to lead to a loss of viability for the species.*

Please demonstrate that this project will leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such as flammulated owls and goshawks.

Specifically how will this project affect Flammulated owls, cavity-nesters usually associated with mature stands of ponderosa pine and Douglas-fir? Among other habitat characteristics, flammulated owls benefit from an abundance of large snags and a relatively dense under-story. The flammulated owl is a sensitive species in Region One, and is largely dependent on old ponderosa pine forests. According to a 2002 Region-wide assessment, not referenced in the 2003 FEIS for the Project, such forests only occur at 12-16% of their former, pre-fire suppression/pre-logging (that is, "historic") levels, and thus species viability has been determined to be at risk. The Northern Region also recognizes that its strategy for restoring habitat for the flammulated owl and found in the Island South project that "in no way guarantees that flammulated owls will be restored to viable levels."

Agency Response: *This comment does not appear to be specific to this project, as no "2003 FEIS" was prepared. The biological evaluation prepared for this project describes the various forests structures and components in which flammulated owls nest, and dispels the notion that flammulated owls are*

"dependant on old ponderosa pine forests." The Gravelly Mountains do not support or contain ponderosa pine forests.

Snag densities recommended by experts to support cavity-nesting birds range from 2.1 to 11 snags per acre of greater than 9" dbh. Please note that the fact that more recent science has called into question the lower snag densities cited in the earlier research, and the more recent science implies that about 4 snags per acre may be the minimum required to insure viability.

Agency Response: *The Gravelly Mountains currently exhibit over 140,000 acres of snag rich habitat. The proposed action would reduce snag densities on 242 acres, while retaining an average of four snags per acre greater than 20 inches DBH in the treatment units. Southwestern Montana is experiencing a substantial insect epidemic, the number of snags being created are exceeding the average of 4 snags per acre over the landscape. Our FIA data indicates snag levels at the landscape scale will remain high.*

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

Wright, et al. (1997) point out that habitat restoration for the flammulated owl must be carefully targeted to the correct habitat types. The FS can't simply cut and/or burn forest area and expect flammulated owls to start using it as habitat. Wright, et al. (1997) state:

> (W)e never detected Flammulated Owls in mesic old-growth ponderosa pine stands with a Vaccinium under story. Thus, within suitable landscapes, it may be most effective to conserve and restore stand structural characteristics within suitable habitat types (e.g., xeric ponderosa pine/ Douglas-fir stands in our study area), rather than within any stand containing ponderosa pine trees.

Agency Response: *The biological evaluation prepared for this project discloses potential impacts to the flammulated owl, a summer migrant to Montana and possibly the most common raptor in the western United States. Flammulated owls have not been detected in the Gravelly Mountains and the proposed action does not include habitat restoration for this species. The citation used refers to ponderosa pine and Douglas-fir.*

III. POPULATION VIABILITY AND HABITAT MANAGEMENT OF MANAGEMENT INDICATOR AND SENSITIVE SPECIES

The BDNF continues to rely on wildlife habitat models for TES and MIS, utilizing the TSMRS or a similar database, of unproven reliability. The BDNF cites no on-the-ground studies verifying the assumptions made with the use of these models.[2]

Agency Response: *This comment is not specific to the project. It does not speak to any specific model being used and therefore we are unable to respond. We would agree that it is important for any model to be verified for the specific project.*

The BDNF has consistently ignored the Region's guidance document for old-growth species' habitat management (USDA Forest Service, 1990). From USDA Forest Service, 1990:

> The greater vertical and horizontal diversity found within an old-growth stand allows for niche specialization by wildlife. Although the individual wildlife species occurring may not be unique to old-growth stands, the assemblage of wildlife species and the complexity of interactions between them are different than in earlier successional stages. P. 2
>
> Forest-wide estimates are needed of the relative abundance, patch sizes, and spatial distribution of old-growth habitat by forest type. P. 3
>
> In northwestern Montana, McClelland (1977) described a general trend of increased species richness in cavity-nesting birds from young to old-growth stands of larch and Douglas-fir. Old growth was particularly important in providing an adequate number of suitable nesting trees for cavity-nesters. P. 6
>
> Patch size correlates strongly with the numbers of species and individuals that can be supported and with rates of extinction and recolonization." …Of 48 old-growth-associated species occurring in the Northern Region, about 60 percent are thought to require stands larger than 80 acres. P. 8
>
> Roads are generally undesirable within an old-growth habitat patch. P. 9
>
> Providing for well-distributed habitat patches with interconnections between patches thus are necessary to maintain species diversity over the long term. P. 9.
>
> McClelland (1979a) noted that pileated woodpeckers usually avoid open areas for feeding, preferring forests with a significant old-growth component and high basal area. …Bull and Meslow (1977) classified preferred feeding habitats as having high densities of snags and logs, dense canopies, and tall ground cover, with more than 10% of the ground area covered by logs. Pp. 11-12.

[2] In his 1991 book, In the Absence of the Sacred, Jerry Mander notes criticisms of the use of computers by the Forest Service biologists, and discusses the loss of relationship between humans and their wildlife neighbors as computers are utilized more widely by biologists (see Mander, 1991).

In the northern Rockies, the density of snags and stumps at pileated feeding sites (not throughout the feeding range) averaged 7 per acre (Aney and McClelland 1985). At least 500 acres of suitable feeding habitat is needed within the home range of a pair (McClelland 1979a). P. 12.

Monitoring Old-growth Habitats and MIS
Landres et al. (1988) pointed out that identifying old-growth stands based on habitat requirements of the MIS, and then monitoring habitat conditions for those MIS to assess old-growth conditions, is circular reasoning. Because old-growth associated MIS are intended to represent a community of wildlife species, stand selection, management and monitoring should not be directed only towards the minimum requirements of MIS. Both general habitat conditions in relation to an ecological classification and suitability of the stands or patches to MIS need to be monitored. P. 38, emphasis added.

Three levels of monitoring intensity have been identified for Forest Plan implementation: implementation, effectiveness, and validation monitoring. Monitoring of habitats should be emphasized at all levels, with additional monitoring of habitat occupancy and population trends of MIS as appropriate. P. 38.

Monitoring Intensity
Model predictions can be tested by sampling a portion of the designated old-growth stands to determine the actual rate of occupancy by management indicator species. P. 38.

Validation Monitoring
Model validation should include tests to determine whether model output correctly predicts habitat quality. Reproductive performance over time is a good indicator of site productivity. P. 39.

Validation of Effects of Management Practices on Population Viability Monitoring data should enable comparison of 'control' and 'treatment' territories. Otherwise, it will be unclear whether observed population changes were due to habitat change, weather, prey population cycles, or other factors. P.39.

Methods For Habitat Monitoring
Aerial photo interpretation or other remotely-sensed data are suitable to determine cover type, over story tree size, percent canopy cover, and stand acreage. Additional sampling effort will be needed to obtain reasonably accurate estimates of size and density of dead trees, standing and down. P. 40.

Methods For Monitoring Pileated Woodpecker
(field methodologies given, p. 40)

Methods For Monitoring Goshawk

(field methodologies given, pp. 40-41)

Methods For Monitoring Marten
(field methodologies given, p. 41)

Agency Response: *This comment does not appear to be specific to the project, and it is unclear what point the commenter is making. On the BDNF, the Identification of patches of forest as "old growth" is based on evaluating the vegetative characteristics of the site, not the presence or absence of a particular species of wildlife. This project does not involve the harvest of any old growth stands as identified above.*

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

The BDNF ignores important scientific information on goshawk habitat requirements. Reynolds, et al. 1992 provide a basis for a northern goshawk conservation strategy that could be implemented if forest wide habitat considerations were to be truly taken into account. They suggest that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be maintained, yet the BDNF fails to recognize that (see also Suring et al. 1993). Graham, et al. 1999, USDA Forest Service 2000b, Iverson et al. 1996, and Suring et al. 1993 are more examples of northern goshawk conservation strategies the FS might adopt for this Forest or Region, if emphasis was more appropriately placed on species conservation and insuring viability rather than justification for resource extraction.

Agency Response: *A biological evaluation was completed for this project. The biological evaluation incorporated the R-1 Conservation Assessment (Samson 2006a) for maintaining viable populations for sensitive species including goshawks. Goshawks have not been detected in the project area. The biological evaluation did not identify any substantial adverse impacts to goshawks.*

USDA Forest Service 200b recommends that forest opening greater than 50-60 acres be avoided in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (Id.). Research suggests that a localized distribution of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

Agency Response: *The proposed action is to salvage standing dead Douglas-fir and lodgepole pine using helicopters to yard harvested material. Little impact to living overstory trees and understory vegetation is anticipated. Salvage harvest is unlikely to result in forest openings of any size.*

The scientific information provided in Center for Biological Diversity, 2004, also conflicts with the BDNF's analyses and conclusions regarding goshawk viability, and includes vital information on goshawks not considered by the BDNF.

Goshawks are often associated with a thick over story cover and areas with a large number of large trees. For example, Hayward and Escano (1989) recommend an over story canopy between 75 and 80%. According to the BE/BA for the Keystone Quartz EIS in the Beaverhead NF, "Goshawks prefer vegetation structure that permits them to approach prey unseen and to use their flight maneuverability to advantage (Widen, 1989, Beier and Drennan 1997)…"

Opening forests by logging will increase suitability of species as the red-tailed hawk, which competes with goshawks, as well as the great horned owl, a goshawk predator. The problems of habitat conversion from that of goshawk to red-tailed hawk has been reported by La Sorte et al., 2004 based on a study of over 120 goshawk territories.

Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered. This indicates that the full 180-acre nest area management scheme recommended by Reynolds et al. (1992) should be used around any active goshawk nest on the Forest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

Greenwald et al., 2005 reviewed the current literature on goshawk habitat relationships applicable to the Northern Rockies. Nine of 12 studies demonstrated selection for stands with higher canopy closure, larger tree size, and greater numbers of large trees than found in random stands. Some notable statements and conclusions include:

> …Most studies found that goshawks avoided open areas and logged early-seral stands; none of the studies cited in this paper found selection for such features.
>
> …While some studies suffered from small sample sizes or relatively short sampling periods, the consistency of results demonstrates goshawk selection for late-successional forest structures (e.g., high canopy closure, large trees for forest type, canopy layering, abundant coarse woody debris) when using areas within their studied home ranges. … This is not to say that goshawks only forage or roost in mature stands, but rather that such stands are disproportionately selected.
>
> … (R)eviewed studies found goshawks avoided open areas, particularly logged open areas, and none found selection for openings.
>
> … The 5 studies correlating nest occupancy and productivity with habitat features consistently demonstrated a relationship between closed-canopied forests with large trees and goshawk occupancy. Occupancy rates were reduced by removing forest cover in the home range, which thereby resulted in reduced productivity because there were fewer active breeding territories. (Internal citations omitted.)

> Seeking to promote abundant populations of 14 prey species, Reynolds et al. (1992) recommend maintaining 20% of the landscape in grass–forb or seedling–sapling stage forest, 20% in young forest, 20% in mid-aged forest, and 40% in mature and old forests. … Given the above findings that goshawks generally avoid open areas and early-seral forest, that logging reduces goshawk occupancy and productivity, and a lack of evidence that creating openings or young forest through logging benefits goshawks, these recommendations appear to lack support in research produced since 1992.
>
> Across most of the western United States, mature and old-forests have declined to much less than 40% of the landscape. Given these declines and the lack of information on the amounts of mature and old-forest goshawks require, we recommend protecting existing mature and old-forest characteristics and ensuring that such forests are allowed to develop in proportions similar to presettlement conditions. This can be accomplished by restricting cutting to small trees, and prohibiting large reductions in canopy closure. A similar proposal was recently adopted by Region 5 of the United States Forest Service for the Sierra Nevada. In sum, based on apparent inconsistencies between subsequent research and Reynolds et al. (1992), we recommend adaptation of the management guidelines to incorporate results of numerous studies conducted since 1992. (Internal citations omitted.)

The issue of fragmentation should have been more thoroughly considered with respect to goshawks. Other edge-adapted species may compete with the goshawk and displace the goshawk if inadequate amounts of interior forest habitat are available. Crocker-Bedford (1990) recommends that a foraging area of >5000 acres of dense forest, in which no logging is permitted, be designated for goshawks, with additional areas of 2500-5000 acres of more marginal habitat designated beyond this 5,000 acre foraging area.

Agency Response: *A biological evaluation was completed for this project, which incorporates the best available science. Some of the references listed above are older studies. Region 1 recently completed a Conservation Assessment (Samson 2006a), which incorporated the most recent and best science available for the northern goshawk. This assessment determined that habitat for the northern goshawk was abundant and well distributed across the Northern Region and individual Forests, there is no evidence that populations of northern goshawks are in decline and that the viability of the goshawk in the Northern Region is not an issue. This project would not impact any known goshawk nest site. The biological evaluation prepared for this project determined that implementation may impact individual goshawks or their habitat, but would not likely result in a trend toward federal listing or cause a loss of viability to the population or species.*

The BDNF fails to take seriously the uncertain and precarious population status of the fisher, as described in Witmer, et al., 1998:

> The status of the fisher in the Western United States is poorly known but generally perceived as precarious and declining. This is a serious issue alone, but it also is a component of the larger problem of the decline of biological diversity. Recovery of species of concern must necessarily focus on the population level, because this is the scale at which genetic variation occurs and because population [sic] are the constituent elements of communities and ecosystems. Systematic habitat alteration and overexploitation have reduced the historical distribution of fishers in suitable habitat in the interior Columbia basin to isolated and fragmented populations. Current populations may be extremely vulnerable to local and regional extirpation because of their lack of connectivity and their small numbers (Id. at 14, internal citations omitted).

The proposed logging could adversely impact fishers and their habitat. Habitat elements for natal and maternal dens are found in large diameter logs or snags, slated to be reduced by the logging. "Though the post-treatment stand condition would not be 'clear cuts', they would be fairly open and Jones (1991) did not expect to find substantial fisher hunting use of plantations by fishers until canopy approached 80% and 10-15 feet respectively (depending on snow depths)" (Flathead NF's Spotted Beetle EA, p. 3-62). The logging, snag removal and other activities associated with this project would negatively affect fisher habitat. Movement, denning, resting areas, genetic diversity, and other aspects of fisher life cycles and fisher survival could be impacted by the project; the FS does not fully consider these elements of the project or adequately mitigate their impacts.

Jones (undated) and the LNF's Johnsen (1996) provide examples of possible conservation strategies for the fisher, something the FS has so far neglected to implement for this Sensitive species.

Agency Response: *The biological evaluation completed for this project discusses the fisher at length. Indeed, the western "distinct population segment" of fisher has been found to warrant protection under the endangered species act. However, the western DPS consists of two localized population, one in the southern Sierra Nevada and one on the western slope of Washington, Oregon and northern California. Review of the existing literature suggests that fisher may not have occurred on the Yellowstone plateau historically, and are unlikely to occur in the Gravelly Mountains. Review of the literature also reveals that habitat "preferred" by fisher varies regionally and by observer; habitat structure- large trees and large logs on the forest floor- and slope position-low snow accumulation and mesic site conditions-appear to be the key elements of fisher habitat. The proposed project would reduce the density of standing dead trees on predominately dry Douglas-fir sites.*

Regarding another Sensitive species, the black-backed woodpecker, Cherry (1997) states:

> The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is

> badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The Region 1 black-backed woodpecker assessment (Hillis et al., 2003) notes that the black-backed woodpecker depends upon dead and dying trees:

> Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests. (Internal citations omitted.)
>
> …Black-backed woodpeckers also occur in unburned landscapes Bull et al.1986, Goggans et al.1987, Bate 1995, Hoffman 1997, Weinhagen 1998, Steeger and Dulisse in press, Taylor unpublished data). Taylor's observations of black-backed woodpeckers in unburned forests in northern Idaho suggest that they may occur at substantially lower densities in unburned forests, but no rigorous comparisons between black-backed woodpecker densities in burned and unburned forests have been done. Hutto (1995) hypothesized that black-backed woodpeckers reproduce at *source* reproductive levels in burns, but may drop to *sink* reproductive levels in the intervening periods between large burns.

Dolan (1998a,b) states in regards to impacts on the black-backed woodpecker due to fire suppression and post-fire logging states:

> 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.

The comments by other biologists attached to Dolan, 1998a,b reveal that the FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. The fire suppression and "salvage" logging policies of the BDNF are the biggest threat to black-backed woodpecker population viability on the Forest, unfortunately in failing to create a conservation strategy the cumulative impacts of the BDNF's ongoing fire suppression policy will remain unexamined. This project continues an unspoken management for extinction policy.

Agency Response: *We agree that dead and dying trees are preferred habitat for the black-backed woodpecker (BBWP), particularly burned stands. Trees killed by insects however, may also provide suitable habitat for this species. We note that the references cited above, specifically Hillis et al. (2003), omits the dramatic increases in suitable habitat that has occurred as a result of recent fire activity and insect outbreaks in the Northern Rockies. Also, the "best available*

science" includes the Conservation Assessment by Samson (2006), which includes the BBWP. According to this assessment, the BDNF has sufficient habitat to meet minimum viability threshold for BBWP. Because of the current bark beetle epidemic, habitat is increasing, even with the cumulative effect of all harvesting currently and reasonably foreseeable taking place on the BDNF.

Lofroth (1997) in a British Columbia study, found that wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993). The cumulative impacts of logging and road building on a species that depends upon remote, wild areas remain unexplored.

Agency Response: *This comment does not appear to be specific to this project. This project only involves taking dead trees and includes no new road construction. Potential impacts to wolverine are discussed in the biological evaluation of the project. No impact to this species is anticipated.*

The DM does not adequately consider cumulative effects on upland habitat for boreal toads. This does not make sense, since such small populations that are likely to persist are especially susceptible to fragmentation and extirpation due to isolation of smaller populations. See Maxell, 2000. In fact, the BDNF has never performed a genuine analysis of cumulative impacts of logging activities on boreal toads.

From Ch. 3 p. 173 of the Bristow Area Restoration Project EA, Kootenai National Forest, (USDA Forest Service, 2003a:

> Little quantitative data are available regarding the boreal toad's use of upland and forested habitats. However, boreal toads are know to migrate between the aquatic breeding and terrestrial nonbreeding habitats (TNC Database 1999), and that juvenile and adult toads are capable of moving over 5 km between breeding sites (Corn et al. 1998[3]). It is thought than juveniles and female boreal toads travel farther than the males (Ibid). A study on the Targhee National Forest (Bartelt and Peterson 1994) found female toads traveled up to 2.5 kilometers away from water after breeding, and in foraging areas, the movements of toads were significantly influenced by the distribution of shrub cover. Their data suggests that toads may have avoided macro-habitats with little or no canopy and shrub cover (such as clearcuts). Underground burrows in winter and debris were important components of toad selected micro-sites in a variety of macro-habitats. The boreal toad digs its own burrow in loose soil or uses those of small mammals, or shelters under logs or rocks, suggesting the importance of coarse woody debris on the forest floor. …(T)imber harvest and prescribed burning activities could impact upland habitat by removing shrub cover, down woody material, and/or through compaction of soil.

Montana Fish, Wildlife & Parks, 2005 (a more recent version of the above cite "TNC Database, 1999") also discuss boreal toad habitat:

[3] Cited and included as Maxell et al., 1998 herein.

Habitats used by boreal toads in Montana are similar to those reported for other regions, and include low elevation beaver ponds, reservoirs, streams, marshes, lake shores, potholes, wet meadows, and marshes, to high elevation ponds, fens, and tarns at or near treeline (Rodgers and Jellison 1942, Brunson and Demaree 1951, Miller 1978, Marnell 1997, Werner et al. 1998, Boundy 2001). Forest cover in or near encounter sites is often unreported, but toads have been noted in open-canopy ponderosa pine woodlands and closed-canopy dry conifer forest in Sanders County (Boundy 2001), willow wetland thickets and aspen stands bordering Engelmann spruce stands in Beaverhead County (Jean et al. 2002), and mixed ponderosa pine/cottonwood/willow sites or Douglas-fir/ponderosa pine forest in Ravalli and Missoula counties (P. Hendricks personal observation).

Elsewhere the boreal toad is known to utilize a wide variety of habitats, including desert springs and streams, meadows and woodlands, mountain wetlands, beaver ponds, marshes, ditches, and backwater channels of rivers where they prefer shallow areas with mud bottoms (Nussbaum et al. 1983, Baxter and Stone 1985, Russell and Bauer 1993, Koch and Peterson 1995, Hammerson 1999). Forest cover around occupied montane wetlands may include aspen, Douglas-fir, lodgepole pine, Engelmann spruce, and subalpine fir; in local situations it may also be found in ponderosa pine forest. They also occur in urban settings, sometimes congregating under streetlights at night to feed on insects (Hammerson 1999, P. Hendricks personal observation). Normally they remain fairly close to ponds, lakes, reservoirs, and slow-moving rivers and streams during the day, but may range widely at night. Eggs and larvae develop in still, shallow areas of ponds, lakes, or reservoirs or in pools of slow-moving streams, often where there is sparse emergent vegetation. Adult and juvenile boreal toads dig burrows in loose soil or use burrows of small mammals, or occupy shallow shelters under logs or rocks. At least some toads hibernate in terrestrial burrows or cavities, apparently where conditions prevent freezing (Nussbaum et al. 1983, Koch and Peterson 1995, Hammerson 1999).

Maxell et al., 1998 state:

> We believe that the status of the Boreal toad is largely uncertain in all Region 1 Forests. …Briefly, factors which are a cause for concern over the viability of the species throughout Region 1 include: (1) a higher degree of genetic similarity within the range of Region 1 Forests relative to southern or coastal populations; (2) a general lack of both historical and current knowledge of status in the region; (3) indications of declines in areas which do have historical information; (4) low (5-10%) occupancy of seemingly suitable habitat as detected in recent surveys; (5) some evidence for recent restriction of breeding to low elevation sites and; (6) recent crashes in boreal toad populations in the southern part of its range which may indicate the species' sensitivity to a variety of anthropogenic impacts.

Agency Response: *A Biological Evaluation (BE) was completed for this project including an evaluation of Boreal toads. The BE did not identify any significant impacts to Boreal toads. The Forest has completed a survey for Boreal toads, published by Maxell in 2004. Maxwell also provided information and guideline concerning the effects*

of specific projects on Boreal toads. This information, as well as other best available science was utilized for this project.

V. GRIZZLY BEAR

The Biological Assessment for the grizzly bear arrives at a "may adversely effect" for grizzly bears. This logically constitutes an "extraordinary circumstance." Please complete the Endangered Species Act Section 7 consultation requirements

Grizzly bears do use the project area and therefore the endangered species act applies. Please examine the cumulative effects of the road construction and other ongoing foreseeable fuel reduction, cumulative with every other fuel reduction or other CE the BDNF wants to implement in the vicinity, must be considered as a whole.

Agency Response: *At the time this comment was submitted, a Biological Assessment had not been finalized. As a result, the reviewer is incorrect, a "may adversely effect" determination was not made. Rather, the May 1, 2007 Biological Assessment arrived at a "may affect (but is) not likely to adversely affect" determination for the grizzly bear (pf H-11). However, since the Yellowstone grizzly bear distinct population segment was delisted by the USFWS effective April 30, 2007, consultation is no longer required (pf F-13). A cumulative affects analysis is included with the Biological Evaluation (pf H-12). However, there are no road construction or fuel reduction projects scheduled in the cumulative effects analysis area (Cliff Lake Bench) in the reasonably foreseeable future.*

VI. Lynx and wolves

Please examine the effects of the project on lynx and wolves.

Agency Response: *It has been determined that lynx do not occupy the BDNF and therefore the project would have no effect on lynx. The Biological Assessment determined implementation of the project would not likely jeopardize the continued existence of the gray wolf. USFWS has concurred with this determination.*

VII.
How will this project affect soils? Please demonstrate that this project will follow the regional soil standards.

Agency Response: *This project has been evaluated by a soil scientist following R-1 soil guidelines. Since this project is being proposed for helicopter logging using existing landings and roads, no additional adverse impacts to soils are expected. Cumulative impacts range from 3-5% detrimental soil disturbance.*

VIII. Please complete and accurate economic cost benefit anlysis.

Agency Response: *This statement is too general to respond to. We know that to meet the purpose and need that offering the material for sale will provide income to treasury. To do nothing does not meet the purpose and need. This comment does not identify what cost benefit analysis would specifically be addressing.*

IX. Please examine this project's impact on uninventored roadless lands.

Agency Response: *The project area lies between the existing West Fork Madison Road and the Cliff Lake Bench Road. The land area between these two roads is not of sufficient size to eventually be considered part of an inventoried roadless area.*

Sincerely,

Michael T. Garrity
Executive Director
Alliance for the Wild Rockies

And for
Sara Johnson
Native Ecosystems Council

And for
Jeff Juel
WildWest Institute

Agency Response: *The BDNF had most of the following literature electronically available. As a result, it is available in the project file. On April 4, 2007, we requested copies from Alliance for the Wild Rockies of the literature we did not have available (pf E-10). At the time of the decision, Alliance for the Wild Rockies had not responded to our request. Literature marked with an asterisk (*) is not available from the BDNF.*

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Letter 3: E.A. Johnson

Dear Ranger Petroni:

Thank you for asking me to comment on the Cow Fly Salvage. As always, I find this proposed action on FS manage public lands appropriate and well thought out. The impact on land and wildlife of treating these 250 acres will be miniscule. There will be no significant visual impacts. Any local impact will be short term and transitory. Those whiners who say otherwise obviously have never done anything more with their hands than feed their face.

Good luck with this project.

Agency Response: *Thank you for your statement of support. We agree that significant impacts will not occur as a result of implementing the project.*

Sincerely,

E.A. Johnson

Letter 4: RY Timber, Inc.

Dear Mark:

Following are RY Timber's comments on the above mentioned Timber Sale:

--concentrate harvest activities in areas with sufficient volume per acre to make helicopter logging as efficient and economical as possible

Agency Response: *The harvest units in the proposal were specifically delineated around the heaviest pockets of dead trees in an attempt to provide efficient and economical helicopter logging opportunities.*

--provide sufficient landings to make the flights as short and efficient as possible

Agency Response: *The landings are located as close as possible to the harvest units using the existing road system and previous log deck sites.*

--lop the slash on site as propose

Agency Response: *This mitigation measure remains in the decision.*

--**NOW** for the most important consideration. In you list of features associated with this decision, there are two items dealing with no harvesting during the winter due to snowmobile use and no log hauling during the general big game hunting season. Because of fire suppression work that pays a lot more than logging, helicopters are not available during the summer and early fall months. Later in the fall and during the winter is when the helicopters become available again. These two restrictions need to be removed. Temporary, short-term disruption of a snowmobile trail can be mitigated by directing this traffic to another area for a couple of months while the harvesting is completed; and by restricting hauling to Monday through Friday, it shouldn't be a serious imposition on the hunters in the area. After all, these were logging roads first and then they became recreational access roads, not the other way around.

Agency Response: *The mitigation measures described in the draft DM were modified to address the concerns raised here. The final decision allows log hauling during heavy use recreation periods with traffic controlled by flaggers to provide safe use of the road.*

Thank you for the opportunity to comment.

Sincerely,

D.L. Hanson
Forester

Letter 5: Floyd Thomas III

Dear Mark,

The article on the proposed salvage harvest in the Dillon Tribune today prompted me to write you. I want to say first that I am in total support of this cut and want you to continue to cut and clean up the bug trees. The fact is that you, by doing something about the bug tree problem is refreshing to me and you should be commended for it. I would like to see not only the 250 acre cut that you propose but more would be better. Why not do 10-20 of these 250 acre cuts per year and then go back through them with a nice VMP burn to improve the range for the animals. I hope that the cut that you are proposing not only for lumber interests but includes the home owner that wants some wood for the fire place.

Agency Response: *At this time we do not have plans for other small timber sales in the West Fork Madison area. Since the harvest units proposed for Cow Fly Salvage are not located adjacent to roads, opportunities for home owners to collect firewood are limited. However, some slash of firewood sized material may be available at the landing sites or log decks located at Miller Flats and HooDoo Pass. This residual material will be available to the general public through personal use firewood permits.*

I am going to add a few other issues to this letter. I am against "ANY" more road closures in any National Forest or on any BLM lands. As a matter of fact I would like to see all roads that have been closed in the last 10 years be re opened. It is my opinion that we do not need any more "Wilderness" areas and a matter of fact some should be brought out of that status immediately. Timber sales and firewood cutting should be encouraged and all obstacles in the way for the home owner to get off road to cut some fire wood should be done away with. Other uses of hunting, fishing, prospecting, livestock grazing, and other uses should be encouraged as much as possible. Access is a key to good use of our natural resources and should never be hampered in any way.

Agency Response: *No change in motorized use is included with this proposal. In the general vicinity of the project, no roads have been closed in the last 10 years. Wilderness areas are congressionally designated and beyond the scope or influence of this decision.*

When I was a youngster and we drove to the Sequoia National Forest there used to be a sign at the entrance of the forest saying "You are entering the Sequoia

National Forest a Land of Many Uses". Now I feel it is a land of No Uses. Thanks for your time.

Regards

Floyd Thomas III

Letter 6: Dan and Lois Pence

Thank you for attempting to maintain forest health and reduce future fire hazard in the Meridian Creek area of the West Fork of the Madison River drainage. Hopefully obstructionists operating in the name of environmentalism will be unable to stop your commendable efforts.

You appear to have addresses most of our concerns in you proposal. Hopefully you can successfully complete more similar actions in the future. We support the project as proposed with the following comments:

Agency Response: *Thank you for your statement of support.*

-Coordinate timing of timber harvest so that most Douglas-fir bark beetles (and pine beetles where Lodgepole is involved) will be attracted to the cut trees to lay their eggs. Timing is important so that the cut logs (and beetle eggs) can be removed from the forest before the eggs hatch, reducing future insect problems.

Agency Response: *The comment describes a "trap tree' methodology to treat insect infestations in stands. This treatment has proven very successful in small group attacks where quick salvage can be completed. The current Douglas-fir epidemic in this area is too large and long term to utilize this approach.*

-We support using temporary roading where needed to meet goals, providing that all such roads are closed and obliterated as soon as the project is completed.

Agency Response: *No temporary roads are needed for this project.*

-When leaving the 1.5 snags per acre to meet wildlife needs, give priority to Douglas-fir snags rather than lodgepole since they are more stable and will remain standing for a much longer time.

Agency Response: *This recommendation is included in mitigations measures for the decision.*

-Where possible, liberate aspen stands that are being crowded out be evergreens. You may need to broadcast burn through these stands to

encourage sprouting if natural aspen regeneration does not immediately respond.

Agency Response: *We share your concerns about the age and vigor of aspen stands in the Gravelly Mountains. However, while aspen occurs immediately adjacent to some of the proposed harvest units, we cannot attempt to revigorate these stands under our authority for salvage timber harvest.*

Letter 7: John Sparks

John Sparks called today to comment on Cow Fly. John was in favor of the project and liked to see us not only harvest those trees, but also see that wood go to some use.

Agency Response: *Thank you for your statement of support.*

Letter 8: Capital Trail Vehicle Association (CTVA)

Dear Ms. Bowey:

We support the Cow Fly Salvage Sale Project as a reasonable multiple-use project necessary for reasonable management of our forests. We support the Cow Fly Salvage Sale project as long as it does not close or impact any existing motorized routes or preclude the development of new motorized routes in the future.

Agency Response: *Thank you for your statement of support. The project does not alter existing motorized routes or influence future decisions concerning travel management.*

We appreciate the opportunity to provide our input on this project.

Sincerely,

Ken Salo

Letter 9: WildWest Institute

Mr. Petroni,

I am commenting on the Cow Fly salvage proposal (your March 14, 2007 scoping notice) on behalf of the WildWest Institute and the Alliance for the Wild Rockies.

Agency Response: *The March 14, 2007 letter was not a scoping notice (see pf B-3), rather the letter transmitted a copy of the draft Decision Memo for Cow*

Fly Salvage and provided an opportunity for those interested in or affected by this proposal an opportunity to make their concerns known prior to a decision being made by the Responsible Official. The following letter is a near duplicate of the letter submitted by The Ecology Center[4] on February 21, 2006 in response to the January 20, 2006 scoping notice (pf C-30). Interdisciplinary Team responses to concerns identified in the February 2006 letter have been posted on the Beaverhead-Deerlodge National Forest web page since March 15, 2007. For the convenience of WildWest Institute, and other readers, we have inserted the same responses to the same concerns in the following paragraphs.

We request the Forest Service adopt the Forest Restoration Assessment Principles found within the Forest Restoration Principles and Criteria (DellaSala, et al., 2003) as a screen for all proposed actions.

Agency Response: *Since the purpose of this project does not include ecological restoration, the principles identified by DellaSala were not used. However, while the purposes are different, many of the principles identified by DellaSala were used. For example, the participatory principle (#8) was included as part of the public participation process for the project.*
It is more difficult to recognize implementation of some of the more programmatic principles on this site-specific proposal but they remain in effect (or in progress) within the agency. For example implementing the economic framework principles (#6) include changes in legislative appropriations and contracting policies focused on best value rather than lowest bid are being pursued at the national level and, as a result, are outside the scope, and not influenced by this project.

The purpose of the proposal is to recover economic value from dead and dying trees before the wood fiber value is lost through decay. Unfortunately, this mindset downplays the most important value these dead and dying trees have for the ecosystem. For example, Harvey et al., 1994 state:

> Although usually viewed as pests at the tree and stand scale, insects and disease organisms perform functions on a broader scale.
>
> …Pests are a part of even the healthiest eastside ecosystems. Pest roles—such as the removal of poorly adapted individuals, accelerated decomposition, and reduced stand density—may be critical to rapid ecosystem adjustment
>
> …In some areas of the eastside and Blue Mountain forests, at least, the ecosystem has been altered, setting the stage for high pest activity (Gast and others, 1991). **This increased activity does not mean that the ecosystem is**

[4] On April 26, 2006, the Beaverhead-Deerlodge National Forest received notice that The Ecology Center had changed its name to WildWest Institute (pf C-37).

broken or dying; rather, it is demonstrating functionality, as programmed during its developmental (evolutionary) history.

(Emphasis added.) In focusing on areas affected by bark beetles, the Forest Service (FS) is targeting one of the most dynamic ecosystem process, one that is vitally important for providing wildlife habitat components and one that provides for the cycle of life found in the most fundamental matrix of forest ecosystems—the soil. The proposal reflects a lack of understanding of the role of pest organisms, similar to the simple-minded "Smokey Bear" campaign against wildland fire, which at the root of it has sought to maintain trees for eventual "harvest" rather than maintaining healthy forest ecosystems.

The FS has therefore fostered a social expectation that sales of "salvage" timber will be offered. The definition of "salvage" denotes saving something from going to waste. To consider trees killed or otherwise affected, directly or indirectly, by natural processes such as insect, disease, or fire—processes that are vital in sustaining the ecosystem and its interlinked components—to be "wasted" if allowed to play out their functions is the antithesis to "ecosystem management." The entire notion of "salvage" as it pertains to forest management has been used by the industry and its agency proponents to mislead the public into accepting ecosystem damage under the guise of "management." The reason why salvage is so controversial is that bureaucrats, in responding to artificially-created social expectations, are playing politics with our public forests. Investing taxpayer dollars in damaging "salvage" logging projects instead of proposing true restoration projects to deal with the vast mismanagement written all over the roaded portion of this national forest is a waste of taxpayer dollars.

Agency Response: *We would agree that pests do have a very important role to play in the ecosystem, as does fire. However the amount of mortality in this area is very large which sets up an imbalance in the processes. Rots and fungi are not sufficient to convert the biomass material to soil under current climatic conditions. This imbalance is naturally rebalanced by wildfire at a later date and by random events.*

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

Agency Response: *Even though salvage operations emphasize the removal of sound, merchantable wood, dead and decayed woody material would be retained on site to be consistent with the1986 Beaverhead Forest Plan, and will vary in size, based on existing stand characteristics. This material would be available for use by wildlife.*

Logging activities will lead to accelerated erosion, soil compaction, and degraded soil productivity. Fire is a natural and essential component of forest ecosystems and future

effects of fire on the proposed "salvage" area would only indicate a high degree of ecosystem function. Beschta et al., 1995 state, "Land managers should be managing for the naturally evolving ecosystems, rather than perpetuating artificial ones we have attempted to create."

Agency Response: *Since there would be no new soil disturbance or litter layer disturbance, there would be no accelerated soil erosion, compaction or degraded productivity.*

Any forest condition that is maintained through intense mechanical manipulation is not maintaining ecosystem function. The proposed management activities would work against the *processes* that naturally shaped the ecosystem and resulted in a range of natural structural conditions. The FS seems to fail to understand that dead, diseased, dying, etc. trees have a role in the forest—they are not "opportunities" for logging. Please disclose the amounts of snags, recruitment snags, and down woody debris previous logging operations have left in previous similarly logged units, so that the public can tell if you've met Forest Plan Standards in those units. Please perform surveys to determine the amounts of snag habitat and down woody debris exist in similarly stocked unmanaged areas for comparison.

Agency Response: *The purpose of this project is to salvage timber that is dead or dying from insect infestation. Since the purpose does not focus on ecosystem restoration principles, the project design was not based on assumptions of natural desired conditions representative of the historic range of variability. Furthermore, principles about historic ranges of vegetative conditions and structure are of value when viewed at a landscape level far larger than the project area.*

Regarding the black-backed woodpecker, Cherry (1997) states:
The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The Region 1 black-backed woodpecker assessment (Hillis et al., 2003) notes that the black-backed woodpecker depends upon the very forest conditions that the FS targets for logging:
Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer

infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests. (Internal citations omitted.)

…Black-backed woodpeckers also occur in unburned landscapes Bull et al.1986, Goggans et al. 1987, Bate 1995, Hoffman 1997, Weinhagen 1998, Steeger and Dulisse in press, Taylor unpublished data). Taylor's observations of black-backed woodpeckers in unburned forests in northern Idaho suggest that they may occur at substantially lower densities in unburned forests, but no rigorous comparisons between black-backed woodpecker densities in burned and unburned forests have been done. Hutto (1995) hypothesized that black-backed woodpeckers reproduce at source reproductive levels in burns, but may drop to sink reproductive levels in the intervening periods between large burns.

Dolan (1998a,b) states in regards to impacts on the black-backed woodpecker due to fire suppression and post-fire logging states:
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.

As stated in the comments attached to Dolan, 1998a,b—a problem that persists even today—the FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. Fire suppression, insect and disease suppression, and "salvage" logging policies of the Beaverhead-Deerlodge NF are the biggest threat to black-backed woodpecker population viability on the Forest, unfortunately in failing to create a conservation strategy the cumulative impacts of the Beaverhead-Deerlodge NF's ongoing fire suppression policy will remain unexamined. Please note that the three-toed woodpecker is another species that has similar habitat needs to the black-backed woodpecker.

Agency Response: *Natural habitats change over time as a result of a variety of factors. The non-published, non peer reviewed "gray" literature cited above does not reflect current forest conditions in the Gravelly Mountains or elsewhere on the Beaverhead-Deerlodge National Forest, and it is questionable if it ever did. The area proposed for limited salvage harvest has not experienced recent fire; a post-fire salvage harvest is not proposed. Specific to the black-backed woodpecker, habitat capable of supporting wood boring beetles is currently abundant and well distributed across the planning area. This topic is discussed at length in the Biological Assessment. The Northern three-toed woodpecker is known to occur in the Gravelly Mountains and is suspected to breed there. We will consider this possible correlation in the biological assessment for the proposed project, as appropriate.*

There is considerable scientific controversy over the adequacies of the cited Forest Plan snag standards and guidelines, recognized by the FS itself. The IPNF (USDA Forest

Service, 2000c) recently called for updated snag guidelines: "Apply snag and down woody material guidelines from the Upper Columbia River Basin Assessment to improve marten habitat" (p. 39). The Northern Region Snag protocol–although not been subject to independent scientific peer review and validation from post-implementation monitoring—postdates the Forest Plan.

The FS's reliance on Thomas et al., 1979 was severely criticized in Bull et al. 1997. The FS has not responded to this new scientific information that seriously calls into question its snag standards and guidelines. Harris (1999) and ICBEMP DSEIS Appendix 12 also present recent scientific information on this topic. And McClelland (undated) states:

> The snags per acre approach is not a long-term answer because it concentrates on the products of ecosystem processes rather than the processes themselves. It does not address the most critical issue--long-term perpetuation of diverse forest habitats, a mosaic pattern which includes stands of old-growth larch. **The processes that produce suitable habitat must be retained or reinstated by managers. Snags are the result of these processes (fire, insects, disease, flooding, lightning, etc.)**. (Emphasis added.)

And Hutto, 1995 addresses the processes topic, talking about fire in that case:

> Fire is such an important creator of the ecological variety in Rocky Mountain landscapes that the conservation of biological diversity [required by NFMA] is likely to be accomplished only through the conservation of fire ***as a process***…Efforts to meet legal mandates to maintain biodiversity should, therefore, be directed toward maintaining processes like fire, which create the variety of vegetative cover types upon which the great variety of wildlife species depend. (Emphasis added.)

Agency Response: *We agree with this statement and believe natural processes need to be restored. However that proposal is beyond the scope of this project. Further details about the availability of snag habitat can be found in Response to Scoping Comments, WLD-4.*

Please disclose how stands to be logged compare to old-growth criteria. In order to disclose such information, please provide all the details, in plain language, of these areas' forest characteristics (the various tree components' species, age and diameter of the various tree components, canopy closure, snag density by size class, amounts of down logs, understory composition, etc.).

Please disclose whether the amount of existing old growth meets standards and other required levels for old-growth habitat. The FS must consider the likelihood that the areas proposed for logging will have habitat characteristics for old-growth associated wildlife enhanced, not destroyed by the same natural processes the FS is using as an excuse for the logging proposal. Please disclose if the proposed cutting units were, still are, or will, in the foreseeable future, qualify as old growth, and to what degree they are and will, under any alternative, provide habitat characteristics for old-growth associated wildlife.

What criteria or definition(s) of old growth are you using? Please disclose how the project will impact the old-growth wildlife species, and mature forest associated species.

Please disclose, using tables and maps, the amounts, locations, sizes, and connectivity of all old-growth stands in the project area. Disclose whether it is actual old growth (meets all criteria) or whether it is "recruitment" old growth. Disclose whether or not you have compared all stands proposed for logging and/or burning to the old-growth criteria. Please disclose the methodology used to identify each stand as old growth, recruitment old growth, or not old growth.

Agency Response: *The proposed cutting units are currently old growth as determined by the District Silviculturist by walk thru. The units were specifically laid out to include the heaviest mortality from Douglas-fir beetle. So stand specifics differ significantly from cutting unit parameters. The units have heavier mortality, larger trees, and are concentrated in pockets. Actual unit specifics such as trees/ acre, volume, heights, diameters, and ages have not been recently sampled. Actual marking, sampling, and attributes will be determined following a treatment decision. Following treatment the silviculturist predicts that the stands will not meet old growth standards, and the old growth analysis reflects this.*

The Beaverhead-Deerlodge NF has failed to cite any evidence that managing for old growth habitat (i.e., logging to improve or create old growth) strategy will improve old growth species habitat over the short-term or long-term. In regards to such a position:

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

(Pfister et al., 2000, pp. 11, 15 emphasis added).

Agency Response: *This proposal does not seek to manage the stands for old growth.*

For the proposal to be consistent with the Forest Plan, sufficient habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. The Beaverhead-Deerlodge NF has failed to insure viability of MIS and TES species to date.

The FS has acknowledged that viability is not merely a project area consideration, that the scale of analysis must be broader:

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

> larger than National Forest boundaries. No wildlife species that presently occupy the project area are at such low numbers that potential effects to individuals would jeopardize species viability. No actions proposed under the preferred alternative would conceivably lead to loss of population viability. (Lewis and Clark NF, Dry Fork EA Appendix D at p. 9.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the analysis area are still part of viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale. The analysis must cover a large enough area to include a cumulative effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations.

Agency Response: *This is an incorrect statement. The Beaverhead-Deerlodge has conducted extensive monitoring of northern goshawk nest occupancy and productivity on the west side of the Forest in cooperation with University of Montana - Western, has sponsored and funded graduate level research on goshawks in the Flint Creek Range and participated in the Region-wide goshawk inventory of 2005. Goshawk surveys specific to this project were conducted during the 2006 season.*
The Beaverhead Forest Plan requires the Beaverhead NF to monitor habitat for species that prefer old growth habitat using several measures, one of which is the number of American martens and goshawks using data provided by MFWP. As MFWP does not inventory or monitor northern goshawks and track surveys for pine martin are sporadic, we have greatly exceeded this requirement.
At the time of completion of the 1986 Beaverhead Forest Plan, four threatened or endangered species were identified to may have been present on the Forest. These were the bald eagle, peregrine flacon, gray wolf and grizzly bear. The bald eagle will be delisted in the coming months, the peregrine falcon was removed from threatened status in 1999, the gray wolf in Montana has met recovery goals for the last six years and the grizzly bear in the Greater Yellowstone Area was delisted this month. Grizzly bears have expanded into the Gravelly Mountains, and the Forest supports numerous wolves. Not only has land management under the Beaverhead Forest Plan assisted in insuring the viability of these species, it has promoted their recovery.

The fact that the Beaverhead NF has not monitored the population trends of its old-growth management indicator species (MIS) as required by the Forest Plan bears important mention here. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the Beaverhead-Deerlodge NF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest

Plan must be considered (id.) but this has never been done by the Beaverhead-Deerlodge NF. It is also of paramount importance to monitor population trends (as mandated by the Forest Plan) during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

Agency Response: *The Forest Service recently completed A Conservation Assessment of the Northern Goshawk, Black-backed Woodpecker, Flammulated Owl and Pileated Woodpecker in the Northern Region (Samson 2006a). This document assesses population viability using a habitat proxy at the Forest and Regional Scale, and evaluates cumulative impacts by assessing changes in habitat quality and quantity over time. The Council on Environmental Quality (CEQ) defines cumulative effects as "all past, present and reasonably foreseeable" actions, and thus an assessment that evaluated habitat change over time would in fact address temporal considerations associated with the Forest Plan.*

Unfortunately, region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003).

Agency Response: *Old Growth was mapped and inventoried by installation of statistically sound F.I.A. plots and monitored at the Regional level. Furthermore, proposed treatment units have been field-inventoried (see project file) for old growth characteristics. This statement is simply not true for this area. Monitoring of population trends has been completed (see 6/1/04 Madison Ranger District Wildlife Productivity and Habitat Monitoring).*

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes,[5] distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

Agency Response: *Certainly, if in the initial designation of the early Forest Reserves and later National Forests we had the cumulative experience and ecological knowledge that we have today, we may have configured our National Parks, Reserves and Forests differently than they currently occur on the*

[5]Subpopulations.

landscape. Unfortunately, we are, for the most part, stuck with what we have for the boundary of NFS lands in the Gravelly Mountains. Interestingly, however, scientists and managers have come to recognize the Gravelly, Greenhorn and Snowcrest mountains and the Tobacco Root Mountains to the north as being within the "Greater Yellowstone Ecosystem." We recognize the importance of the Gravelly Mountains within the larger fabric of the Greater Yellowstone Ecosystem and as dispersal corridors for carnivores/omnivores. In many ways, the Gravelly Mountains form part of a large biological reserve.

Please include in your analysis the possible effects of noxious weed introduction on Sensitive plant populations and other components of biodiversity. Please include in the analysis the results of monitoring of noxious weed infestations and treatment efficacy from past management actions in the Forest.

One of the biggest problems with the FS's failure to deal forthrightly with the noxious weed problem on a forestwide basis is that the long-term costs are never adequately disclosed or analyzed. The public is expected to continuously foot the bill for noxious weed treatments—the need for which increases yearly as the Beaverhead-Deerlodge NF continues the large-scale propagation of weeds, and fails to monitor the effectiveness of all its noxious weed treatment plans to date. There is no guarantee that the money needed for the present management direction will be supplied by Congress, no guarantee that this amount of money will effectively stem the growing tide of noxious weed invasions, no accurate analysis of the costs of the necessary post-treatment monitoring, and certainly no genuine analysis of the long-term costs beyond those incurred by site specific weed control actions.

Agency Response: *Noxious weeds infestations in the project area, and elsewhere on the Forest, are being managed following direction in the 2002 ROD for the Beaverhead-Deerlodge National Forest Noxious Weed Control Program. The requested analysis information is included in the FEIS for that ROD. The potential for noxious weeds introduced during project implementation to effect sensitive plant populations is low (see plant BE).*

Our goals for the area include fully functioning stream ecosystems that include healthy, resilient populations of native trout. The highest priority management actions in the project area are those that remove impediments to natural recovery. We request the FS design a restoration/access management plan for project area streams that will achieve recovery goals. The task of management should be the reversal of artificial legacies to allow restoration of natural, self-sustaining ecosystem processes. If natural disturbance patterns are the best way to maintain or restore desired ecosystem values, then nature should be able to accomplish this task very well without human intervention (Frissell and Bayles, 1996).

Agency Response: *Forest Plan goals include "Riparian-wetland areas across the Beaverhead National Forest Planning Area are, at a minimum, in proper functioning condition" (Forest Plan Amendment #7, page 1). For Meridian Creek,*

this goal is primarily being achieved through prescribed management of livestock. The sediment reduction package included with the proposal would further assist achievement of this Forest goal.
Mitigation such as implementing streamside buffer zones that maintain rates of large woody debris input and limit sediment generated from harvest activities from being routed into streams are included in the proposed action to prevent adverse effects to aquatic taxa occurring in Meridian Creek and the West Fork of the Madison River.
A population of Westslope cutthroat trout (WCT) occurs in the Meridian Creek drainage. Relative to the proposed project, Meridian Creek is adequately buffered from the effects of the project units and roads. From the perspective of recovery goals for WCT, an interagency sub-basin plan for the upper Missouri River basin is being prepared by MFWP with the goal of identifying and prioritizing recovery efforts for WCT, under the authority and direction of the state-wide interagency WCT MOU.

Please utilize the NEPA process to clarify any roadless boundary issues. It is not adequate to merely accept previous, often arbitrary roadless inventories—unroaded areas adjacent to inventoried areas were often left out. Additionally, there is a lot of public support for adding unroaded areas as small as 1,000 acres in size to the roadless inventory.

Agency Response: *NEPA analysis for inventoried roadless areas is currently in process but the outcome from the eventual decision on the Revised Forest Plan is not likely to influence management in the project area (see Beaverhead-Deerlodge National Forest Draft Revised Land and Resource Management Plan DEIS, Volume II, page 139-151).*

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Where livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, streambank stability and subsequent sedimentation.

Agency Response: *The project analysis will evaluate any potential effects that may influence water resources. Project implementation would decrease the amount of sediment delivered to Meridian and the West Fork Madison River from the road system by implementing the sediment reduction package. There would be no effects to seeps, springs, and bogs because harvest activities are not proposed in these areas. Livestock are currently permitted to graze in the project area under the terms of an approved Allotment Management Plan. An assessment of the impacts from livestock grazing was completed before the AMP was approved. The AMP includes monitoring of livestock grazing and potential impacts.*

Please disclose in the NEPA document the results of up-to-date monitoring of fish habitat and watershed conditions, as required by the Forest Plan.

Agency Response: *Forest Plan Monitoring and Evaluation reports are electronically available at: www.fs.fed.us/r1/b-d.*

The NEPA analysis should show whether or not your alternatives would comply with the Clean Water Act and all state water quality laws and regulations. Categorically excluding actions that risk further pollution in Water Quality Limited Segments is not consistent with the Clean Water Act, NFMA, or NEPA. Please note that designating BMPs is not sufficient for compliance with CWA and NFMA.

Agency Response: *The West Fork of the Madison River is listed in the State 305(b) report as partially meeting the needs of cold water fisheries and habitat. However, the project would not alter chemical or biological quality of water in this stream. As a result, the project does not violate the Clean Water Act.*

We ask that the FS utilize the Roads Analysis Process and analyze travel management, including road obliteration, and include an alternative that would not leave any deferred or outstanding maintenance needs/BMP upgrades in the analysis area. Roads often have devastating impacts on water quality and fish habitat by increasing landslides, erosion, and siltation of streams. Roads also fragment forests and degrade or eliminate habitat for species that depend on remote landscapes, such as grizzly bears, wolves, and other large, wide-ranging predators (Trombulak and Frissell 2000).

Agency Response: *The roads analysis process is not necessary because no road construction or obliteration is included in the decision.*

Discuss the actual effectiveness of proposed BMPs in preventing sediment from reaching streams in or near the analysis area. What BMP failures have been noted for past projects with similar landtypes? We would like to see a thorough discussion of the BMPs and mitigation measures you would propose. Also, pleased disclose which segments of which roads in the watersheds to be affected by this proposal will not meet BMPs following project activities.

Unfortunately, the entire issue of BMPs has been repeatedly clouded by the FS. The Lolo NF and Regional Office have admitted that during even large-scale projects, not all problem sites are restored up to BMP standards (Lolo BMP Memo), thus allowing chronic, persistent watershed damage to continue indefinitely.

Agency Response: *Effectiveness of past BMPs that intended to reduce or prevent sediment from reaching water courses within the analysis area is a crucial part of developing a sediment reduction package that becomes a part of the decision. Where past practices applied to the existing transportation system do not meet State water quality standards and Clean Water Act requirements for*

whatever reasons, the sediment reduction package will specify actions necessary to meet State and Federal laws. The Montana Forestry Best Management Practices Monitoring effort provides a comprehensive evaluation of practices most likely to reduce or prevent effects to water quality. This biannual effort involves the use of a wide spectrum of specialists from diverse backgrounds. The 2004 Forestry BMP Audit Report is available from DNRC, Forestry Division, Missoula, MT 59804-3199.

Please examine past logging activities, including such information as year and regeneration success level for each past activity in the analysis area and in the cumulative effects area. Please disclose the sizes and condition of manmade openings already existing in the area, and exactly where the proposed cutting units are in relation to the old logged areas.

Agency Response: *Past logging areas and activities were reviewed for this project. Past logging was primarily even aged management in lodgepole pine stands to salvage mountain pine beetle mortality in the 1980's. These stands have quite a bit of documentation on regeneration success, species composition, and vigor. Manmade openings currently do not exist as defined in the Forest Plan as they are all successfully regenerated and meet big game hiding cover objectives. Some of the stands were scheduled for precommercial thinning in the late 1990's. The proposed precommercial thinning was subsequently cancelled for consistency with the Canada Lynx Conservation Strategy. Several of the proposed harvest units are proximate to the Meridian Creek treatments, which are currently well stocked with vigorous young trees.*

Among other things, we are concerned that project activities will accelerate soil erosion, increase soil compaction, and degrade soil productivity. Prescribed fires and mechanical treatments may adversely affect soil productivity. NFMA requires the FS to "not allow significant or permanent impairment of the productivity of the land." [36 C.F.R. § 219.27(a)(1).] NFMA requires the Forest Service to "ensure that timber will be harvested from National Forest System lands only where—soil, slope, or other watershed conditions will not be irreversibly damaged." [16 U.S.C. 1604 (g)(3)(E).]

Agency Response: *There would be no new soil disturbance or litter layer disturbance, so there will be no accelerated soil erosion, compaction or degraded productivity. No other treatments such as mechanical or burning would occur. Only helicopter removal of dead trees would occur.*

The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173:

> Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (*Centaurea biebersteinii D.C.*) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to

> compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

Please disclose how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades.

Agency Response: *Noxious weed infestations in the project area are very low. Noxious weeds infestations in the project area, and elsewhere on the Forest, are being managed following direction in the 2002 ROD for the Beaverhead-Deerlodge National Forest Noxious Weed Control Program. Due to the limited amount of noxious weed infestations in the project area, productivity of the land has not been affected. Prevention and control efforts will continue into the future.*

Please fully analyze and disclose cumulative impacts on soil productivity. Disclose the areas of unstable and highly erosive soils that would result in mass movement and erosion. Include maps that show all land and soil types in the NEPA document. Please analyze how much soil compaction and surface erosion has occurred in the proposal area because of past actions and what the likely increases will be for the alternatives proposed.

Agency Response: *Cumulative impacts are disclosed in the soils scientist's report, including effects from past timber cutting. Landtype and soil unit maps are in the project file.*

Please disclose the scientific research information you have to indicate that "mitigation" measures such as helicopter yarding, winter logging, and skidding on slash mat materials will minimize damage to soils.

Agency Response: *This project proposes helicopter removal of dead trees. Other measures, including skidding would not be used, so no ground disturbance would occur. There is a large body of scientific literature on helicopter logging in association with fire salvage, but research on helicopter logging unburned sites is scarce, probably because there are no obvious direct effects. A good scientific assessment of the salvage logging literature is: "Salvage Logging, Ecosystem Processes, and Biodiversity Conservation", by D.B. Lindenmayer and R.F. Noss. in Conservation Biology, Vol. 20, No. 4, 949-958. They provide components of "... ecologically defensible salvage logging", which this project meets, including replacement of ground based logging with helicopter.*

The FS has essentially admitted that it is in the dark as far as doing scientific research on soil productivity changes following management activities. In response to comments on the Black Ant Salvage DEIS, Lewis & Clark NF, USDA Forest Service, 2002 states:

> Soil Quality Standards "provide benchmark values that indicate when changes in soil properties and soil conditions would result in significant change or impairment of soil quality based on available research and Regional experience" (Forest Service Manual 2500, Region 1 Supplement 2500-99-1, Chapter 2550 – Soil Management, Section 2554.1).

> A formal research study, the "Long Term Soil Productivity Study," is currently being conducted by the Research Branch of U.S. Department of Agriculture, Forest Service to validate these soil quality standards.

The Forest Management Handbook at FSH 2509.18 directs the FS to do validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy" (2.1 – Exhibit 01). It asks what we are asking: "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?" The Ecology Center recently asked the Northern Region if they have ever performed this validation monitoring of its 15% Standard, in their February 26, 2002 Freedom of Information Act request to the Regional Forester, requesting:

> The Forest Management Handbook at FSH 2509.18 provides the Forest Service with examples of validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy." It asks "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?" We request all documentation of validation monitoring by the Forest Service in the Northern Region that answers those two questions.

The Regional Office's reply letter stated that there is no documentation that responds to this request. If the Beaverhead-Deerlodge NF is aware of any new documentation that would respond to this request now, we ask that you please disclose it.

Harvey et al., 1994 state:

> The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.
>
> The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake.

(Internal citations omitted.)

Please disclose your inventory or monitoring of indicators, including lichens, fungi, insects, etc. since these can and do define existing and probable future forest conditions, especially related to natural recovery following fire. Lichens in particular, while capturing atmospheric nitrogen for later release to higher plants and trees, are sensitive

indicators of atmospheric and ground conditions and cannot be ignored in attempts at ecosystem management. Fungi and insects indicate and largely drive forest condition. Those that act as antagonists or parasites to destructive forms like root disease fungi or bark beetles should be recognized, as should tree pathogens and pests.

Agency Response: *We do not have inventories for fungi, lichens or insects. However, this project does not propose salvage harvest following a wildfire, rather it proposes salvage harvest of dead and dying trees due to insect infestations.*

Lacy, 2001 examines the importance of soils for ecosystem functioning and points out the failure of most regulatory mechanisms to adequately address the soils issue. From the Abstract:

> Soil is a critical component to nearly every ecosystem in the world, sustaining life in a variety of ways—from production of biomass to filtering, buffering and transformation of water and nutrients. While there are dozens of federal environmental laws protecting and addressing a wide range of natural resources and issues of environmental quality, there is a significant gap in the protection of the soil resource. Despite the critical importance of maintaining healthy and sustaining soils, conservation of the soil resource on public lands is generally relegated to a diminished land management priority. Countless activities, including livestock grazing, recreation, road building, logging, and mining, degrade soils on public lands. This article examines the roots of soil law in the United States and the handful of soil-related provisions buried in various public land and natural resource laws, finding that the lack of a public lands soil law leaves the soil resource underprotected and exposed to significant harm. To remedy this regulatory gap, this article sketches the framework for a positive public lands soil protection law. This article concludes that because soils are critically important building blocks for nearly every ecosystem on earth, an holistic approach to natural resources protection requires that soils be protected to avoid undermining much of the legal protection afforded to other natural resources.

The article goes on:

> Countless activities, including livestock grazing, recreation, road building, logging, mining, and irrigation degrade soils on public lands. Because there are no laws that directly address and protect soils on the public lands, consideration of soils in land use planning is usually only in the form of vaguely conceived or discretionary guidelines and monitoring requirements. This is a major gap in the effort to provide ecosystem-level protection for natural resources.
>
> The rise of an “ecosystem approach” in environmental and natural resources law is one of the most significant aspects of the continuing evolution of this area of law and policy. One writer has observed that there is a

> fundamental change occurring in the field of environmental protection, from a narrow focus on individual sources of harm to a more holistic focus on entire ecosystems, including the multiple human sources of harm within ecosystems, and the complex social context of laws, political boundaries, and economic institutions in which those sources exist.
>
> As federal agencies focus increasingly on addressing environmental protection from an holistic perspective under the current regime of environmental laws, a significant gap remains in the federal statutory scheme: protection of soils as a discrete and important natural resource. **Because soils are essential building blocks at the core of nearly every ecosystem on earth, and because soils are critical to the health of so many other natural resources—including, at the broadest level, water, air, and vegetation—they should be protected at a level at least as significant as other natural resources.** Federal soil law (such as it is) is woefully inadequate as it currently stands. It is a missing link in the effort to protect the natural world at a meaningful and effective ecosystem level.
>
> … This analysis concludes that the lack of a public lands soil law leaves the soil resource under-protected and exposed to significant harm, and emasculates the environmental protections afforded to other natural resources.

(Emphasis added.) The problems Lacy (2001) identifies of regulatory mechanisms exist in Regional and Forest-level standards and other guidance applicable for the proposed project.

The amount of detrimental soil disturbance would increase with the implementation of the timber sale, therefore soil productivity would be reduced. Some activities, such as log landing construction and intensive log skidding would essentially permanently reduce the productivity of the soil on those sites directly affected.

Agency Response: *There won't be any ground based activities in the units such as log skidding, as all trees would be removed by helicopter. Therefore, there would be no direct or indirect effects in the units themselves. The roads and landings are already in place, having been used in adjacent timber activity. Soil cumulative effects are disclosed in the soil scientists report (available in the project file).*

The intent of the Regional 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.

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) or limiting "total resource commitment" in another arbitrarily defined area. Unfortunately, the scientific adequacy of the FS's methodology for maintaining soil productivity on the Beaverhead-Deerlodge NF has never been demonstrated. The FS's determination that it may permanently damage the soil over that much area and still meet NMFA and planning regulations is arbitrary.

Agency Response: *We are proceeding with soil management in a manner consistent with the best, most recent research. Please see: Powers, R.F. 2006. Long-term soil productivity: genesis of the concept and principles behind the program. Can. J. For. Res. 36: 519-528.*

The FS must deal with the very basic question, what are the quantitative cumulative effects of management activities on the productivity of the land?

The only way for there to be any meaning to the numerical standards in cases where logging is proposed over previously disturbed soils and where activity area boundaries are not kept constant is if a qualified soil scientist actually performs site-specific field measurements to measure the existing percentages of detrimental soil disturbance within the already-established boundaries of activity areas, and within newly-established activity areas. Will the FS utilize the services of a soil scientist on the ID Team?

Agency Response: *A soil scientist is a member of the interdisciplinary team preparing the analysis for the project.*

Please provide estimates of current detrimental disturbance in **all** previously established activity areas in the watersheds affected by the proposal.

Please disclose the link between current and cumulative soil disturbance in project area watersheds to the current and cumulative impacts on water quantity and quality.

Agency Response: *Cumulative effects analyses for both soil and hydrology are available in the project file. These analyses considered past, present and reasonably foreseeable activities in the affected 6th Code HUCs.*

Please consider the implications of all landtype limitations for detrimental soil impacts. Some of these landtypes may have "moderate" or "severe" soil erosion and sediment hazard potential, and soil erosion or mass wasting (a severe form of erosion) are both kinds of detrimental impacts. The FS must consider which proposed activity areas fall into which landtypes, and therefore might be more at risk for erosion or other detrimental impacts that decrease soil productivity. Please disclose the results of monitoring of past actions on these various landtypes, that would reveal the differential levels of soil impacts of the various logging activities carried out in the past (and now proposed with this new project).

Agency Response: *Landtypes were one of the stratifications for determining both existing condition and effects in the soils specialist report. Forest monitoring reports are available electronically at: www.fs.fed.us/r1/b-d*

Please disclose the locations and sizes of proposed log landings, which is important because of the extreme amount of soil and other disturbance that occurs on these sites—they will be essentially industrialized for the long-term, despite "mitigation."

Agency Response: *Proposed landings are located on the project map. They are less than two acres each but two acres was used for effects analysis (see cumulative effects, soil scientist's report).*

Please disclose measures of, or provide scientifically sound estimates of, detrimental soil disturbance or soil productivity losses (erosion, compaction, displacement, noxious weed spread) attributable to off-road vehicle use.

Agency Response: *During project review on the ground, no off-road vehicle use was noted. Livestock trailing was seen, and is included in cumulative effects, but no weeds were noted on or near the trailing.*

Please disclose the results monitoring of weed treatments on the Beaverhead-Deerlodge NF that have been projected to significantly reduce noxious weed populations over time, or prevent spread. This is an ongoing issue of land productivity.

It is clear that the intent of the Regional Soil Quality Standards is that the FS must, in each case, consider the cumulative effects of both past and proposed soil disturbances to assure that soil productivity will be maintained. This includes impacts from activities that include logging, motorized vehicle use, etc. Such cumulative effects analysis found in the Soil and Water Conservation Practices Handbook (FSH 2509.22). FSH 2509.22 states:

> Practice 11.01 – Determination of Cumulative Watershed Effects
>
> OBJECTIVE: To determine the cumulative effects or impact on beneficial water uses by multiple land management activities. Past, present, or reasonably foreseeable future actions in a watershed are evaluated relative to natural or undisturbed conditions. Cumulative impacts are a change in beneficial water uses caused by the accumulation of individual impacts over time and space. Recovery does not occur before the next individual practice has begun.
>
> EXPLANATION: The Northern and Intermountain Regions will manage watersheds to avoid irreversible effects on the soil resource and to produce water of quality and quantity sufficient to maintain beneficial uses in compliance with State Water Quality Standards. Examples of potential cumulative effects are: 2) excess sediment production that may reduce fish habitat and other beneficial uses; 3) water temperature and nutrient increases that may affect beneficial uses; 4) compacted or disturbed soils that may

cause site productivity loss and increased soil erosion; an 5) increased water yields and peak flows that may destabilize stream channel equilibrium.

IMPLEMENTATION: As part of the NEPA process, the Forest Service will consider the potential cumulative effects of multiple land management activities in a watershed which may force the soil resource's capacity or the stream's physical or biological system beyond the ability to recover to near-natural conditions. A watershed cumulative effects feasibility analysis will be required of projects involving significant vegetation removal, prior to including them on implementation schedules, to ensure that the project, considered with other activities, will not increase sediment or water yields beyond or fishery habitat below acceptable limits. The Forest Plan will define these acceptable limits. The Forest Service will also coordinate and cooperate with States and private landowners in assessing cumulative effects in multiple ownership watersheds.

Please disclose how the proposed project units would be consistent with Graham, et al., 1994 recommendations for fine and coarse woody debris, a necessary consideration for sustaining long-term soil productivity.

Agency Response: *Graham, et al 1994, mirrors the current Forest Plan standards for woody debris, though the range is wider under Graham. In these cutting units, there is a large amount of woody debris for the habitat type. Following the project, there would still be at least 10 tons per acre, which is consistent with both Graham and the Forest Plan.*

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

Agency Response: *This issue is not applicable because the project does not propose any activities designed to alter destructive insect populations.*

The rationale and analysis of this proposal must look at the forest as an ecosystem with interrelationships coequal to timber production. Please use the ecosystem management approach to assess fungal and insect organisms as capable of operating in a self-regulatory manner and exist as beneficial organisms within the project area. Some species of trees, native insects, and disease organisms are often described by the FS as "invasive" or somehow bad for the ecosystem. Such contentions that conditions are somehow "unnatural" runs counter to more enlightened thinking on such matters.

Agency Response: *The requested analysis might be appropriate if the purpose of this project was to restore the ecosystem or to produce timber. However the purpose of this project is to salvage timber that is dead or dying from insect infestation. Also, in previous comments this author questioned the very ecosystem analysis they are currently proposing and stated it has flaws. Finally*

the insect and fungal organisms were assessed and found to be non self-regulating in the absence of other natural mechanisms such as fire, drought, and erosion. These are all beyond the nature and scope of this project. For this project, we did not describe trees, native insects and disease organisms as "invasive" or infer they are "bad".

As far as we are aware, the FS has no empirical evidence to indicate its "treatments" for "forest health" decrease, rather than increase, the incidence of insects and diseases in the forest. Since the FS doesn't cite research that proves otherwise in its NEPA analyses, we can only conclude that "forest health" discussions are unscientific and biased toward logging as a "solution." Please consider the large body of research that indicates logging, roads, and other human caused disturbance promote the spread of tree diseases and insect infestation.

For example, multiple studies have shown that annosus root disease (Heterobasidion annosum, formerly named Fomes annosus), a fungal root pathogen that is often fatal or damaging for pine, fir, and hemlock in western forests, has increased in western forests as a result of logging (Smith 1989). And researchers have noted that the incidence of annosus root disease in true fir and ponderosa pine stands increased with the number of logging entries (Goheen and Goheen 1989). Large stumps served as infection foci for the stands, although significant mortality was not obvious until 10 to 15 years after logging (Id.).

The proportion of western hemlock trees infected by annosus root disease increased after precommercial thinning, due to infection of stumps and logging equipment wounds (Edmonds et al. 1989, Chavez, et al. 1980).

Armillaria, a primary, aggressive root pathogen of pines, true firs, and Douglas-fir in western interior forests, spreads into healthy stands from the stumps and roots of cut trees (Wargo and Shaw 1985). The fungus colonizes stumps and roots of cut trees, then spreads to adjacent healthy trees. Roots of large trees in particular can support the fungus for many years because they are moist and large enough for the fungus to survive, and disease centers can expand to several hectares in size, with greater than 25% of the trees affected in a stand (id.). Roth et al. (1980) also noted that Armillaria was present in stumps of old-growth ponderosa pine logged up to 35 years earlier, with the oldest stumps having the highest rate of infection.

Filip (1979) observed that mortality of saplings was significantly correlated to the number of Douglas-fir stumps infected with Armillaria mellea and laminated root rot (Phellinus weirii). McDonald, et al. (1987) concluded the pathogenic fungus Armillaria had a threefold higher occurrence on disturbed plots compared to pristine plots at high productivity sites in the Northern Rockies. Those authors also reviewed past studies on Armillaria, noting a clear link between management and the severity of Armillaria-caused disease.

Morrison and Mallett (1996) observed that infection and mortality from the root disease Armillaria ostoyae was several times higher in forest stands with logging disturbance than in undisturbed stands, and that adjacent residual trees as well as new regeneration became infected when their roots came into contact with roots from infected stumps.

Precommercial thinning and soil disturbance led to an increased risk of infection and mortality by black-stain root disease (Leptographium wageneri) in Douglas-fir, with the majority of infection centers being close to roads and skid trails (Hansen et al. 1988). Also another Black-stain root disease (Verticicladiella wagenerii) occurred at a greater frequency in Douglas-fir trees close to roads than in trees located 25 m or more from roads (Hansen 1978). Witcosky et al. (1986) also noted that precommercially thinned stands attracted a greater number of black-stain root disease insect vectors.

Complex interactions involve mechanical damage from logging, infestation by root diseases, and attacks by insects. Aho et al. (1987) saw that mechanical wounding of grand fir and white fir by logging equipment activated dormant decay fungi, including the Indian paint fungus (Echinodontium tinctorium).

Trees stressed by logging, and therefore more susceptible to root diseases are, in turn, more susceptible to attack by insects. Goheen and Hansen (1993) reviewed the association between pathogenic fungi and bark beetles in coniferous forests, noting that root disease fungi predispose some conifer species to bark beetle attack and/or help maintain endemic populations of bark beetles.

Goheen and Hansen (1993) observed that live trees infected with Laminated root rot (Phellinus weirii) have a greater likelihood of attack by Douglas-fir beetles (Dendroctonus pseudotsugae). Also, Douglas-fir trees weakened by Black-stain root disease (Leptographium wageneri var. pseudotsugae) are attacked and killed by a variety of bark beetle species, including the Douglas-fir bark beetle (D. pseudotsugae) and the Douglas-fir engraver (Scolytus unispinosis) (id.).

The root disease Leptographium wageneri var. ponderosum predisposes ponderosa pine to several bark beetle species, including the mountain pine beetle (D. ponderosae) and the western pine beetle (D. brevicomis) (Goheen and Hansen 1993).

A variety of root diseases, including black-stain, Armillaria, and brown cubical butt rot (Phaeolus schweinitzii), predispose lodgepole pine to attack by mountain pine beetles in the interior west. The diseases are also believed to provide stressed host trees that help maintain endemic populations of mountain pine beetle or trigger population increases at the start of an outbreak (Goheen and Hansen 1993).

Grand and white fir trees in interior mixed-conifer forests have been found to have a high likelihood of attack by the fir engraver (Scolytus ventralis) when they are infected by root diseases, such as laminated root rot, Armillaria, and annosus (Goheen and Hansen 1993).

More western pine beetles (Dendroctonus breviformis) and mountain pine beetles (D. ponderosae) were captured on trees infected by black-stain root disease (Ceratocystis wageneri) than on uninfected trees (Goheen et al. 1985). The two species of beetle were more frequently attracted to wounds on trees that were also diseased than to uninfected trees. They also noted that the red turpentine beetle (Dendroctonus valens) attacked trees at wounds, with attack rates seven-to-eight times higher on trees infected with black-stain root disease than uninfected trees. Spondylis upiformis attacked only wounded trees, not unwounded trees (Id.).

Agency Response: *Logging to reduce insect and disease damage to timber stands is not associated with this project.*
The above list of insect and disease factors were reviewed and the interdisciplinary team determined that (1) some were not applicable (the insect/disease is not present because the host trees do not grow in the project area) or (2) the concern is not applicable because we did not propose this project with the intent of reducing insect and disease damage to timber stands.

Jones and Grant (1996) describe the relationship of roads and clearcutting:

> The addition of roads to clear-cutting in small basins produced a quite different hydrologic response than clear-cutting alone, leading to significant increases in all sizes of peak discharges in all seasons, and especially prolonged increases in peak discharges of winter events. These results support the hypothesis that roads interact positively with clear-cutting to modify water flow paths and speed the delivery of water to channels during storm events, producing much greater changes in peak discharges than either clear-cutting or roads alone. Roads alone appear to advance the time of peak discharges and increase them slightly. Road surfaces, cutbanks, and ditches, and culverts all can convert subsurface flow paths to surface flow paths (Harret al., 1975; King and Tennyson, 1984; Wemple, 1994; Wright et al., 1990). Reid (1991) and Reid and Dunne (1984) estimated discharges from culvert outfalls in western Washington and associated them with runoff from road surfaces.

It is extremely important the FS disclose the environmental baseline for watersheds. Generally, this means their condition before development or resource exploitation was initiated. For example, the baseline condition of a stream means the habitat conditions for fish and other aquatic species prior to the impacts of road building, logging, livestock grazing, etc. Therefore, proper disclosure of baseline conditions would mean estimates of stream stability, pool frequency conditions, water temperature range—essentially the values of Riparian Management Objectives along with such parameters as sediment levels. When such information is provided, comparison with the current conditions (after impacts of development) will aid in the assessment of cumulative effects of all alternatives.

Agency Response: *Please see the Hydrology Report for existing condition of watersheds within project area. Except for wilderness areas (either designated or de-facto) within the Beaverhead-Deerlodge National Forest, historical "development or resource exploitation" activities often play a dominant role in watershed condition and pre-date any meaningful watershed assessment efforts. Because this holds true for the analysis area associated with this project, absolute baseline watershed information simply does not exist. Riparian Management Objectives, part of the Inland Native Fish Strategy, apply to streams west of the Continental Divide, clearly outside the project area. Modeling efforts using WEPP show reductions in sediment delivery for Meridian Creek and the West Fork Madison River through implementation of the sediment reduction package (a feature of the proposed action). As described in the cumulative effects section of the Hydrology Report, a net decrease in sediment is expected through implementation of the proposed action. Please note that this proposal does not include road building or clearcutting of trees.*

The FS insists that the economic system as it presently exists be a part of the equation for performing "ecosystem management." Although we disagree the way this is interpreted to mean that present economic interests must be served first, the FS should follow thorough and tell the full economic story of just what the project's impacts would be to taxpayers, not just to local economic interests. Along with the costs of the specific project actions, the costs of road maintenance proportionately attributable to this project and the cumulative economic impacts of carrying out fire suppression policy and the resultant need to carry out such projects as this one should be disclosed.

In the name of increased responsibility to the taxpayer for providing the highest benefits in return for public investments, we request that you document how your decisions and the selected alternatives maximize net public benefit. In other words, you should give consideration to, and adequately document, who would benefit from this project and who would pays for it. Please provide an itemized list of monetary costs and benefits for the project, including the no-action alternative.

Economics is another reason why we strongly desire to see an alternative that would only involve restoration and recovery. The long-term benefits of not having to spend money for doing road maintenance or other management activities and administration in the analysis area should be compared to the expenses incurred from both the action alternative(s) and the no-action alternative.

Agency Response: *The purpose of this project is to salvage dead and dying trees from an insect infestation. An economic analysis would be appropriate if that purpose included such concerns.*

For every project proposal, it is important that the results of past monitoring be incorporated into planning. All Interdisciplinary Team Members should be familiar with the results of all past monitoring pertinent to the Meridian Creek watershed, and any

deficiencies of monitoring that have been previously committed to. For that reason, we expect that the following be included in the NEPA documents or project files:

- A list of all past projects (completed or ongoing) implemented in the Meridian Creek watershed.
- The results of all monitoring done in the project area as committed to in the NEPA documents of those past projects.
- The results of all monitoring done in the proposed project area as a part of the Forest Plan monitoring and evaluation effort.
- A description of any monitoring, specified in those past project NEPA documents or the Forest Plan for proposed project area, which has yet to be gathered and/or reported.

Please disclose the name of any other past logging projects (implemented during the life of the Forest Plan) whose analysis area(s) encompass the areas to be logged under this proposal. Please disclose if the FS has performed all of the monitoring and mitigation required or recommended in any NEPA documents, and the results of the monitoring. Lacking such knowledge, justification for use of a CE is missing.

Agency Response: *Each specialist report includes a list of past, present and reasonably foreseeable projects that are, or may, influence the existing condition of the specific resource analyzed in the report. These activities vary by report because the spatial and temporal areas for cumulative effects analysis also vary by resource.*
When applicable, the results of past monitoring of land management activities are also included in the individual specialist reports.
Reports disclosing the results of Forest Plan monitoring are available electronically at: www.fs.fed.us/r1/b-d.

Before approving a further set of activities that are known causes of ecosystem damage—activities such as logging, road construction, and motorized access—the FS must complete the revision of the Forest Plan in order to elucidate a truly sustainable ecological vision of forest management. The FS proposes to continue to implement a Forest Plan that has in many ways expired, both legally and ecologically. Project-level decisions based upon an out-of-date Forest Plan and in an absence of adequate monitoring are inadequately informed, are likely illegal, and will result in more of the same kind of damage that has occurred continuously under the first Forest Plan.

Agency Response: *The Beaverhead-Deerlodge National Forest is in the process of revising their two forest plans. We are analyzing and responding to comments received on the Draft Environmental Impact Statement. However, until the Forest Plan is revised, the Beaverhead-Deerlodge National Forest will continue following management direction in the 1986 Beaverhead National Forest Land and Resource Management Plan.*

The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate

implementation in the Implementation Action Plan Report for the Federal Wildland Fire Management Policy and Program Review. In general, the FS lags far behind other federal land management agencies that have already invested considerable amounts of time, money, and resources to implement the Fire Policy. Continued mismanagement of national forest lands and FS refusal to fully implement the Fire Policy puts wildland firefighters at risk if and when they are dispatched to wildfires.

Agency Response: *This comment does not seem to be germane to this project, but rather a "canned" response to a different project included in a response letter. The purpose of this project is to salvage timber that is dead or dying from insect infestation,* ***not*** *to develop or support the development of an approved fire management plan in compliance with the Federal Wildland Fire Policy.*

Cumulative effects are defined by NEPA at 40 C.F.R. 1508.7 as:

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

This means the FS must consider the cumulative effects of activities on land of all ownerships in or adjacent to the affected watersheds.

It has been well-established that site-specific Biological Evaluations (BEs) or Biological Assessments (BAs) must be prepared for all actions such as this. Further, the Forest Service Manual requires that BEs/BAs consider cumulative effects. The Forest Service Manual states that project BEs/BAs must contain "a discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects" [FSM 2672.42(4)]. "Existing conditions" obviously are the current conditions of the resources as a result of past actions.

Thank you for your attention to these concerns. Please keep us on your list to receive further mailings on the proposal. Also, **please send to the WildWest Institute copies of the Biological Evaluations/Assessments for all Threatened, Endangered, Proposed, and Sensitive fish, wildlife, and plant species for this proposed project, as soon as they are available.**

Agency Response: *The Biological Evaluations will be electronically available at www.fs.fed.us/r1/b-d when the decision is made.*

It is our intention that you include in the record and review all of the literature and other incorporated documents we've cited herein, and explicitly respond in writing to the scientific information as it applies to the project proposal. **Please contact me if you have problems locating copies of any of those references.**

Agency Response: *The identified literature citations are available in the project file.*

We conclude this comment letter with this passage from Frissell and Bayles (1996):

> Most philosophies and approaches for ecosystem management put forward to date are limited (perhaps doomed) by a failure to acknowledge and rationally address the overriding problems of uncertainty and ignorance about the mechanisms by which complex ecosystems respond to human actions. They lack humility and historical perspective about science and about our past failures in management. They still implicitly subscribe to the scientifically discredited illusion that humans are fully in control of an ecosystemic machine and can foresee and manipulate all the possible consequences of particular actions while deliberately altering the ecosystem to produce only predictable, optimized and socially desirable outputs. Moreover, despite our well-demonstrated inability to prescribe and forge institutional arrangements capable of successfully implementing the principles and practice of integrated ecosystem management over a sustained time frame an at sufficiently large spatial scales, would-be ecosystem managers have neglected to acknowledge and critically analyze past institutional and policy failures. They say we need ecosystem management because public opinion has changed, neglecting the obvious point that public opinion has been shaped by the glowing promises of past managers and by their clear and spectacular failure to deliver on such promises.

Sincerely,

And on behalf of:
/s/ Michael Garrity

Jeff Juel

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Letter 10: Native Ecosystems Council

SNAGS: What is the availability of large snags, including those over 20 inches in diameter breast height, in this timber compartment, and how will this most recent harvest affect these densities?

Agency Response: *The proposed Cow Fly Salvage Project intends to capture economic value associated with standing dead trees, or snags. The area proposed for treatment is currently a snag rich environment. As proposed, four snags greater than 20 inches DBH per acre in each harvest unit would remain following salvage harvest.*

MANAGEMENT INDICATOR SPECIES FOR SNAGS: Since the Beaverhead Forest has no MIS for snags, how are direct and cumulative effects of snag reduction via timber harvest being evaluated for wildlife species dependent upon snags?

Agency Response: *In reality, direction provided by the 1986 Beaverhead Forest Plan for snags and old growth has little influence on the current level or suitability of habitat for the woodpeckers and other species that use snags. To illustrate this point, the 1986 Beaverhead Forest Plan snag management standard is a retention standard for treatment areas, and recognizes that areas not designated suitable for timber harvest are an important element of wildlife habitat. For example, the 1986 Forest Plan identified the 58,062 acre Tobacco Root Geographical Display Area 4C. The 1986 Forest Plan identified 42,644 acres (73%) of the Tobacco Root Planning Unit 4C as **not** available for timber harvest. The combined Tobacco Root Geographical Display Areas 4A, B and C totals approximately 115,000 acres. Since 1984 (2 years prior to the completion of the Forest Plan), 2600 acres have been harvested using a variety of approaches. This represents less than 2.3% of the combined Tobacco Root*

Geographical Display Areas 4A, B and C and less than 11% of the area the 1986 Forest Plan identified as available for harvest. As such, the snag management standard has been applied to less than 2.3% of the combined Geographical Display Areas 4A, B and C. It is unlikely that harvest at this scale has a measurable, population level impact on cavity nesting species. In addition, the Forest Service can elect to exceed a minimum standard at ay time, and is doing so in the proposed Cow Fly Salvage project.

SNAG RECRITMENT: How will the proposed salvage affect snag recruitment, and what data is available to indicate that recruitment will not be significantly affected? What level of reduction in snag recruitment is estimated to be "significant?"

Agency Response: *The proposed action is to harvest standing dead trees. This includes trees that are currently dead, and those that die between the date of decision and completion of the project. As only standing dead trees would be removed, there would be no impact on snag recruitment. Snags can only be "recruited" from trees that are currently alive, will die and become snags at a later date. It is anticipated that green, overstory trees would remain in the harvest units following completion of the proposed action. These trees would remain available for snag recruitment.*

CURRENT BEST SCEINCE FOR SNAGS: The Beaverhead Forest's snag direction has not been validated yet, while the Regional Office has developed much better snag direction. Why won't the Northern Region Snag Protocol be used for this project?

Agency Response: *The 2000 Northern Region Snag Protocol is being used for this project.*

OLD GROWTH: What is the current level of Douglas Fir old growth within this timber compartment?

Agency Response: *As described in the Cow Fly Salvage Project Old Growth Analysis, approximately 59 percent of the Douglas-fir component of compartment 720 is considered old growth based on stand specific data and Green et al. 1992. Following implementation, this compartment will exceed 48 percent old growth using these criteria.*

LOGGING IMPACTS ON OLD GROWTH: The Frozen Face DM claimed that salvage logging would not affect old growth values; please provide the monitoring data that demonstrates that salvage logging will not alter wildlife values in old growth stands.

Agency Response: *We reviewed the 9/22/04 Decision Memo for the Frozen Face Douglas-fir Beetle Salvage project. That Decision Memo does <u>not</u> state salvage logging would not affect old growth values.*

Natural habitats, including habitats exhibiting old growth characteristics, change over time. The habitat in the harvest units, and the overall forested landscape in the vicinity of the project area, has recently changed (or been altered) due to an insect infestation. Obviously, removing dead trees alters the existing structure and components of the harvest units. Of specific concern to the Cow Fly Salvage project is whether the removal of dead trees on 242 acres as described in the decision leads to an extraordinary circumstance or significant issue which would warrant analysis in an EIS. Please refer to the decision rationale in the Decision Memo for Cow Fly Salvage as supported by the wildlife specialist report, Biological Assessment and Biological Evaluation.

WILDLIFE SURVEYS: Please ensure that effective wildlife surveys have been completed in this timber compartment as a part of project planning for the Cow Fly salvage; effective surveys should have been completed on the goshawk, flammulated owl, and woodpeckers.

Agency Response: *Wildlife surveys specific to the Cow Fly Salvage were conducted during the breeding season of 2006, and will be conducted in 2007.*