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July 26, 2003

Steve Brigham  
Million Fire Salvage Project  
Rio Grande National Forest  
Divide Ranger District  
13308 West Highway 160  
Del Norte, CO 81132

Dear Mr. Brigham,

Please accept these comments on the Million Fire salvage sale pre-decisional Environmental Assessment (EA) on behalf of the undersigned organizations. We appreciate the restraint exercised by the Rio Grande NF in proposing no salvage harvest on very steep slopes, no road construction, and no salvage harvest on top of BAER treatments. We do have a few remaining concerns, and hope the Rio Grande NF will not approve logging on any of the more risky sites in the area as outlined at the end of this letter. Following are our more specific comments on the EA.

Regeneration

Ripple and Larsen (in press) found that woody debris left behind by forest fires plays an important role in protecting regenerating aspens from ungulate browsing. With livestock grazing to be once again permitted in the project area within two years, on top of deer and elk grazing, impacts to regenerating aspen are likely. Damage to aspen sprouts through ground based logging equipment, skidding, and browsing facilitated by the removal of barriers that fallen down trees will present is likely to harm regeneration, maybe significantly. Indeed, McIver and Starr conclude that "If postfire logging is undertaken after establishment of new seedlings, significant mortality of these seedlings can occur (Roy 1956)." This citation was omitted from the list of conclusions noted in Table 3.1-1. The EA fails to account for these likely impacts to regeneration in concluding no impacts to regeneration, even though they are all clearly acknowledged numerous times in the EA.

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Further, the long term impacts through immediate machinery damage, in addition to long-term browsing harm, to aspen regeneration is likely to increase, not decrease as suggested by the EA, both the future risk of forest fire spread and intensity.

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The EA notes that trees will be planted if necessary. What funds will be used to accomplish this? How certain is it that such funds will be available? What will the source be?

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The EA notes the standard to maintain or improve long-term levels of organic matter and nutrients on all lands. Yet with the removal of so much biomass from the proposed clearcutting, long term levels can only be reduced. Indeed, the EA notes that the nutrient rating is low for the area already. Please identify how this standard will be adhered to in the Final EA. Low nutrients levels will further harm regeneration prospects. The EA notes that boles of trees contain few nutrients. Please identify any scientific references supporting or contradicting this statement in the Final EA.

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### Wildlife Viability Needs / Management Indicator Species

The implementing regulations of the National Forest Management Act (NFMA) require the Forest Service to manage fish and wildlife habitat "to maintain viable populations of existing native and desired non-native vertebrate species in the planning area." 36 C.F.R. § 219.19 (1982). Viable populations are those that have the estimated numbers and distribution of reproductive individuals to insure a well distributed continued existence in the planning area. See id. In order to insure that viable populations are maintained, "habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area." Id.

It is recognized in NFMA's implementing regulations that planning alternatives have effects on fish and wildlife populations. See 36 C.F.R. § 219.19(a) (1982). Because of this, the regulations require certain vertebrate and/or invertebrate species present in a planning area to be selected as management indicator species (MIS) in order to estimate the effects of each alternative on fish and wildlife populations. Id. Such species shall be selected because "their population changes are believed to indicate the effects of management activities." Id.

It is important to note that the regulations do not define what constitutes "management activities." However, the regulations do provide a definition for "management practices," which are activities, measures, course of actions, or treatments on the forest. 36 C.F.R. § 219.3 (1982). Thus, it is reasonable to assume that MIS are selected because their changes are believed to indicate the effects of management activities or management measures, courses of actions, or treatments on the forest. This is corroborated in Charles Wilkinson and Michael Anderson's seminal treatise, Land and Resource Planning in the National Forests, which states:

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*In choosing appropriate MIS planners should consider a broad range of management activities. The term "management activities" is not defined by either the regulations or the NFMA. However, the term "management practice" is defined as "specific activity, measure, course of action, or treatment." [36 C.F.R.] § 219.3. Neither the regulation nor its history indicates that the meaning of "management activity" should be narrower than that of "management practice." In addition, there is no indication that the term is meant to be limited to activities of the Forest Service and its agents, licensees, and contractors. Both the states and other federal agencies may engage in activities that affect wildlife*

Wilkinson & Anderson, at 302 (emphasis added)

Therefore, MIS are selected by the Forest Service to determine the effects of management alternatives on wildlife populations and to discern the effects of management activities, practices, treatments, or courses of actions on the Forest. The Region 2 Forest Service Desk Guide confirms this multifaceted role of MIS, noting that "MIS serve multiple functions in forest planning: focusing management direction developed in the alternatives, providing a means to analyze effects on biological diversity, and serving as a reliable feedback mechanism during forest plan implementation." Region 2 MIS Selection Process and Criteria, Regional Desk Guide, at G.27.

MIS are integral to understanding the effects of implementing forest plans. The actual effects of implementing a forest plan are assessed by monitoring the population trends of MIS in relationship to habitat changes on the forest. Id. (citing 36 C.F.R. § 219.19(a)(6)). Inherent in this concept is the fact that MIS "are selected species used to estimate the effects of the forest plans on forest ecosystems." See Sierra Club v. Martin, 168 F.3d 1, 5 n.7 (11th Cir. 1999).

The concept of MIS was originally recommended by the Committee of Scientists to help the Forest Service provide for well-distributed, viable populations of all vertebrate species. See Wilkinson & Anderson, at 300. MIS are used by the Forest Service to "serve as a barometer for species viability at the Forest level." Id.

In order to maintain viable populations of existing native and desired non-native vertebrate species in the planning area, MIS are selected by the Forest Service and monitored throughout the planning process. See id. MIS function as proxies for the viability of other plants and animals on the forest, and thus "the proper selection of MIS is vital." Sierra Club v. Glickman, 974 F.Supp. 905, 936 (E.D. Tex. 1997). The MIS concept "allows forest planners to select, from among the 200 to 400 vertebrate species typically inhabiting each national forest, a reasonable number of vertebrates and invertebrates to act as proxies for the others." Wilkinson & Anderson, at 300. Forest planning authorities Wilkinson and Anderson explain:

*Planners must choose MIS that adequately reflect the impact of management on wildlife habitats. The regulations require that MIS "shall be selected because they are needed to indicate the effects of management on wildlife habitats. Thus planners must justify their MIS choices based upon the extent to which these selections will ensure that adequate habitat is maintained for all existing vertebrate species. Since the Forest Service is primarily responsible for habitat maintenance, MIS projections should represent all major habitat types, including water habitat.*

regulations require that MIS, the following categories shall be included where appropriate:

*Endangered and threatened plants and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be*

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*influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality.*

36 C.F.R. § 219.19(a)(1).

Therefore, categories of MIS shall be selected that represent a suite of species: species with special habitat or management needs, species of special interest, and species which are believed to indicate the effects of management activities on other species of selected major biological communities. Once these categories are selected, the regulations further require an interdisciplinary team to estimate “the effects of changes in vegetation type, timber age classes, community composition, rotation age, and year-long suitability of habitat related to mobility of MIS.” Id. Furthermore, planning alternatives shall be stated and evaluated not only in terms of both amount and quality of habitat, but also in terms of animal population trends of the MIS. See id.

Case law confirms these legal requirements. “Once MIS are selected, they must be inventoried and monitored.” Sierra Club v. Glickman, 974 F.Supp. at 936. Furthermore, “[t]he unambiguous language of the MIS regulations requires collection of population data.” Id. The Forest Service cannot rely merely on habitat conditions as a proxy for understanding the viability of MIS. “The Forest Service must collect inventory data to evaluate its management activities—not simply assume that its management activities are sound based on the provision of a hypothetical habitat.” Id. at 938.

In collecting data on MIS, the Forest Service must look at the effects of both the management activities and the management decisions in the forest plan. Federal courts concur: “in developing inventorying and monitoring requirements, Congress, the Secretary of Agriculture, and the Committee of Scientists clearly intended that the Forest Service collect data to determine the actual effects of various forest management decisions.” Id. (emphasis added). Therefore, the Forest Service must collect MIS population data in order to understand the effects of management decisions made under a forest plan.

The Forest Service must understand the impacts of its management practices and decisions on species that are dependent on particular habitat types. For example, the Forest Service recognizes that it is not just management activities that impact species viability. According to the Regional Desk Guide, “habitat changes may be the result of active management (e.g. timber harvest, fire suppression), ecological succession (e.g. conversion of ponderosa pine to Douglas-fir due to fire suppression), or disturbance (whether or not human caused).” Regional Desk Guide, at G.33. The Forest Service must select MIS in all major habitat types represented on the Forest in order to understand the relationship between habitat changes and population trends to verify the appropriateness of all management decisions related to the Forest Plan.

In other words, it is not just timber harvesting levels that should determine the selection of a MIS; it is the suite of habitat changes that may result from all management decisions

incorporated in a Forest Plan that should be considered in selecting appropriate MIS. In order to comply with NFMA and its implementing regulations, the Rio Grande NF must select appropriate MIS to assess the effects of all management decisions and activities in the Forest Plan, including salvage timber harvest and fire suppression. None of the proposed Rio Grande MIS assessed for the project captures the ecosystem types and conditions of the project area – burned forest. Subsequently, it is unclear how the Rio Grande will be in compliance with the National Forest Management Act’s species viability requirements.

While pygmy nuthatch does require snag habitat, this is not specific at all to burned timber areas or Douglas-fir or white fir which comprised the overwhelming majority of the project area. Rather, pygmy nuthatch is associated with ponderosa pine, which comprises an insignificant portion of the project area (four acres out of 623 proposed for harvest). Similarly, hermit thrush cannot account for burned timber in Douglas/White fir stands, as it utilizes late successional spruce-fir. Nor do mule deer or elk account for viability of burned forest dependent species.

The duty to ensure viable or self-sustaining populations applies with special force to “sensitive” species. See, e.g., Oregon Natural Resources Council v. Lowe, 836 F.Supp. 727, 733 (D.Or. 1993) (sensitive species “require additional attention” under viable population provision); Oregon Natural Resources Council v. Marsh, 52 F.3d 1485, 1490-91 (9th Cir. 1995). Sensitive species are those species:

*for which population viability is a concern because they have significant current or predicted downward trends in population numbers or density, or for which there is a significant downward trend in their current or predicted habitat which would reduce their distribution.*

Id.; see also FSM Supp. § 2670.5(19), WO Amendment 2600-95-7 (1995).

FSM 2670.45 directs Forest Supervisors to determine the distribution, status, and trend of threatened, endangered, sensitive, and proposed species and their habitats on Forest lands. Furthermore, regulations require that “[e]ach Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resource under his or her administrative jurisdiction.” 36 C.F.R. § 219.12(d). This is of particular concern for burned timber dependent species, such as the sensitive three toed woodpecker.

As the Rio Grande NF has not yet completed its selection of MIS, it is unclear how it can proceed with the proposed project.

Off-Highway Vehicle Use

The management areas within the project area restrict snowmobile use to designated roads and trails. Unfortunately, the clearcutting proposed would facilitate much off-road use. How will the Rio Grande NF enforce these provisions given the likely increase in illegal off road use facilitated by clearcuts? Notably, the mitigation measures in Chapter 2 identify no monitoring for such illegal use. Further, the EA contains no discussion of summer motorized use of restrictions in the project area for the management area 5.41 and 5.11.

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Soil Erosion and Compaction

The EA notes that core soil samples will be taken “periodically”. How will the Rio Grande NF ensure that the requirement to limit detrimentally compacted soils to 15% of the project area will be adhered to if no schedule for core soils samples has been identified?

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The EA notes that previous activity has already detrimentally compacted some acreage within the project area. What is the extent of this compaction? Does it fail to adhere to the 15% standard in the WCPH?

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The EA notes that the R2 supplement No. 2509.18-92-1 requires that no additional impact to soils be permitted. Please identify in the Final EA how this standard will be met when the EA only suggests mitigation that will “minimize” impacts, rather than ensure “no” additional impact. Indeed, the EA notes that there was no attempt to quantify the short-term increase in erosion.

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The EA notes that severely burned soil areas are not necessarily coincident with high intensity burns. However, severely burned soil are identified by Beschta as areas with litter destruction. Site visits make it apparent that litter destruction is pervasive throughout the project area, thus much more than 5% of soils, as stated by the EA, has been severely burned.

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Noxious Weeds

The EA also notes that noxious weed surveys will be taken “periodically”. The Rio Grande NF should identify a schedule for noxious weed surveys, and further ensure and disclose the source of funds for both these surveys and noxious weed treatments. This is particularly important given that no in depth inventory of noxious weeds has been performed in the project area, and that the EA acknowledges that noxious weeds will increase as a result of the project. Without such measures, it is unclear how the Rio Grande NF will adhere to 36 CFR 219.12(k)(5)(iv) which requires that the Forest “[e]nsure that destructive insects and disease organisms do not increase to potentially damaging levels following management activities.”

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Dead Tree Identification / Marking Guidelines

The EA notes that guidelines will be established only following the final decision. This does not permit any opportunity for public input on this critical matter. Given that 95% of the trees within burned areas are identified in the EA as having been killed, it is critical that any trees that may survive be left so they may in the future provide a seed source, particularly for Douglas fir which is noted by other Forest Service offices as declining throughout its range due to fire suppression and previous management. Subsequently, we suggest that the Rio Grande NF adopt guidelines, and disclose them in the Final EA, that ensure that any tree that may survive are not logged. For instance, 90% crown scorch is cited for ponderosa pine. Please refer to applicable references

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The EA notes that 1% of the harvest will be live trees. Why are any live trees being proposed for removal? Further, logging of numerous live trees was directly observed with Small Sales Salvage Unit C.

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### Lynx

In February 2000, the USFS signed a Conservation Agreement with the US Fish and Wildlife Service affirming its responsibility to comply with the requirements of the Endangered Species Act. It includes a commitment to use the Science Report (a.k.a. Ruggiero et al. 2000a), Lynx Conservation Assessment and Strategy (LCAS), and locally specific information as appropriate, as both a basis for coordinated assessment and planning and as the basis for streamlining ESA Section 7 consultation (FS CA at 3, BLM CA at 2). The LCAS contains information and requirements that suggest that the Million fire salvage sale as proposed will not adhere to these requirements.

As the Trout-Handkerchief Lynx Analysis Unit (LAU) is the most heavily impacted on the Rio Grande NF, it is critical that the Rio Grande NF adhere to the letter and word of the LCAS. The lynx habitat preservation requirements contained there include the following:

- Project Planning Standard. Management actions (e.g., timber sales, salvage sales) shall not change more than 15 percent of lynx habitat within a LAU to an unsuitable condition within a 10-year period (Ruediger et al. 2000 at 80, emphasis added).
- Project Planning Standard. In the event of a large wildfire, conduct a post-disturbance assessment prior to salvage harvest, particularly in stands that were formerly in late-successional stages, to evaluate potential for lynx denning and foraging habitat (Ruediger et al. 2000 at 82, emphasis added).
- Programmatic Planning Standard. Prepare a broad-scale assessment of landscape patterns that compares historical and current ecological processes and vegetation patterns, such as age-class distributions and patch size characteristics. In the absence of guidance developed from such an assessment, limit disturbance within each LAU as follows: if more than 30 percent of lynx habitat in a LAU is currently in an unsuitable condition, no further reduction of suitable conditions shall occur as a result of vegetation management activities by federal agencies (Ruediger et al. 2000 at 78, emphasis added).
- Project Planning Standard. Within a LAU, maintain denning habitat in patches generally larger than 5 acres, comprising at least 10 percent of lynx habitat. Where less than 10 percent denning habitat is currently present within an LAU, defer any management actions that would delay development of denning habitat structure (Ruediger et al. 2000 at 79, emphasis added).
- Programmatic Planning Objective. Design vegetation and fire management activities to retain or restore denning habitat on landscape settings with highest probability of escaping stand-replacing fire events (Ruediger et al. 2000 at 81).
- Project Planning Standard. In aspen stands within lynx habitat in the Southern Rocky Mountain Geographic Areas, apply harvest prescriptions that favor regeneration of aspen (Ruediger et al. 2000 at 80).
- Project Planning Guideline. In areas where recruitment of additional denning habitat is desired, or to extend the production of snowshoe hare foraging habitat where forage

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- quality and quantity is declining due to plant succession, consider improvement harvests (commercial thinning, selection, etc.). Improvement harvests should be designed to:
- Retain and recruit the understory of small diameter conifers and shrubs preferred by hares;
  - Retain and recruit coarse woody debris, consistent with the likely availability of such material under natural disturbance regimes, and
  - Maintain or improve the juxtaposition of denning and foraging habitat (Ruediger et al. 2000 at 80-81, emphasis added).

The LCAS and BO identify a total of 18 lynx risk factors. They are as follows:

The critical component for suitable denning habitat appears to be the availability of coarse woody debris, although other factors (e.g., cover type, age class) are probably also important. Timber harvest and fire management (both fuels reduction and fire suppression) are also identified as the activities generally posing the greatest threat to denning habitat. Reductions in coarse woody debris, increases in distance between denning and foraging habitat, cover type conversion, and reductions in seral stage can all adversely impact denning habitat. Salvage operations, obviously, pose a particular threat. Disturbance during the denning period may also present a serious problem. The LCAS notes: "Minimizing disturbance around denning habitat is important from May to August" (Ruediger et al. 2000 at 83). Further, management activities should leave "substantial amounts of woody material in representative size classes, regardless of treatment" (McKelvey 2000a at 433).

Research on lynx habitat needs suggest that the project will impact lynx habitat much greater than that acknowledged by the Rio Grande NF. Colorado Division of Wildlife researchers in June found two lynx kittens, a male and female, "in a well-chosen den at 11,000 feet near a steep, rocky slope and cliff with downed timber scattered about." Clearly, downed timber is a critical component of lynx denning habitat. The salvage logging proposal's removal of boles that will soon fall and constitute such downed timber will eliminate such future denning habitat between 2 and 20 years time from now.

Based on the LCAS and these considerations, the salvage logging operations proposed will have an impact on future denning habitat (2 – 20 years) by removing what will soon constitute extensive coarse woody debris through blown down burnt trees. Subsequently, we disagree with the EA's conclusion that the Million salvage sales are, or will, occur in habitat that is unsuitable. Very soon it may provide denning habitat, but only if the trees that will blow down are not removed. While the EA concludes that the LCAS requirement that no more than 30% of available habitat will be in an unsuitable condition will be met, the other requirements noted above do not appear to be met. The Final EA should clarify whether these requirements will be met.

At a site visit on July 17, 2003, we observed logging occurring in the project area. Pictures are available upon request. Assumedly this is the 75 acre small sale unit approved under previous NEPA analysis, as noted in the EA. Page 55 notes this sale specifically as a salvage sale that is

occurring in habitat “already converted into unsuitable habitat” for lynx. The EA thus implies that only salvage of dead trees will be occurring. However, we observed numerous live trees already logged and more in the process of being logged. Subsequently, the EA fails to disclose the impacts of this live tree logging, and thus the reduction in potentially *suitable* lynx habitat. This is a violation of the NEPA, its promulgating regulations, and applicable caselaw which all require accurate, high quality cumulative effects analysis.

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The EA notes that salvage of burned trees will not harm MIS species, due to the majority of the burn being treated by salvage logging. However, this fails to account for post-fire salvage logging on private lands in the area, which is not discussed in the EA.

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### Conclusion

The EA acknowledges that wildlife habitat effectiveness will be reduced through the proposed action. Regeneration impacts to aspen from elk, deer, and cattle grazing are likely to impact regeneration in the long term, but are not acknowledged in the EA despite evidence from many references cited therein to the contrary. The removal of trees that would otherwise block or discourage motorized vehicle access may also exacerbate soil compaction following winged subsoiler mitigation, further harming regeneration. Funds for noxious weed proliferation and control, soil compaction, and regeneration monitoring are neither identified nor guaranteed, while no schedules are suggested to do so. The analysis fails to incorporate any MIS that assess impacts to burned forest dependent species, while it is unclear how the Rio Grande NF can contemplate this project without having yet adopted an MIS list, thus being in clear violation of its monitoring duties pursuant to the NFMA. Research on lynx habitat needs suggest that the project will impact lynx to a much greater degree than that acknowledged by the Rio Grande NF, while it is unclear, and the EA fails to disclose, whether all requirements of the LCAS will be adhered to

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Given the numerous other postfire salvage logging timber sales recently approved by Region 2 of the USDA Forest Service, there is much less need to provide any significant quantity of timber. Yet the main project purpose and need is to provide wood products. Subsequently, we suggest that, at the very least, riskier aspects of this salvage sale not be approved, including:

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Logging on slopes greater than 25%, including but not limited to areas identified in Alternative 2 but not Alternative 3, as the EA notes that sedimentation effects were found to be independent of logging on slopes less than 25%.

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Logging in areas farther from roads that will require longer skid trails, especially skid trails that will have to climb slopes, including the middle part of Unit D and the north face of the ridge of Unit B, and

Logging in ephemeral stream courses, most notably in the central portion of Unit D, or where sediment could impact aquatic habitat (northern West Fork of Shaw Creek).

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Ultimately, we disagree with any commercial timber sales that are below cost. The EA notes that taxpayers will lose \$17,555.49 with the preferred alternative. It would be a more prudent use of Forest Service resources to focus non-commercial treatment on the Wildland Urban

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Interface where forest restoration can both protect homes from forest fire and provide quality jobs.

Thank you for your time and attention. We hope you will seriously consider and adopt these reasonable recommendations with the proposed Million fire salvage sale. If you have any questions or concerns about our comments herein, please feel free to contact me at 970-385-9833, or via email at [jeff@coloradowild.org](mailto:jeff@coloradowild.org).

Sincerely,



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July 27, 2003

Steve Brigham  
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Dear Steve:

Thanks for taking the time to review our concerns. It is obvious that you and the rest of the staff took considerable time putting this Environmental Assessment together for the Million Fire Salvage Timber Sale. It is our hope that shared perspectives may engage some dialogue that can help shape the decision making process.

SLVEC recommends Alternative 3. We feel we are being realistic when we consider the economic pressure the Forest Service is under, even though, under the ideal case scenario, it would be best if the forest could be left to regenerate on its own, without human extraction activities. SLVEC knows this is not realistic. We will refrain from getting into the "privatize profits, socialize (future) losses" economic argument here, but suffice it to say, as long as our culture lives in this current consumptive lifestyle climate, the Forest Service will be forced to let go of its natural resource base. It is a dilemma that can only be dealt with on a personal level at this time and no one probably sees this more clearly than the Forest Service. SLVEC however, feels compelled to bring this issue up on behalf of future generations.

To quickly address our recommendation of Alternative 3 as opposed to Alternative 2, Chapter 3, page 11, the Water Erosion Prediction Program (WEPP) was used to estimate relative amounts of erosion.. page 12 sites a comparison chart listing Alternative 2 and 3, before and after slopes of 30 and 40 %. What is being interpreted here is that the difference between logging in a sloped area of 10% differential is 87% and 90% respectively. In other words, there is a 3% difference in erosion potential. That does not make much sense. If we take the formula for gravity (32 ft. sec. squared- which implies exponential increase), and that is what we would be dealing with in terms of water travel, how can there be such a small increase in erosion potential? Not to make assumptions here in terms of understanding the underpinnings of WEPP, but suffice it to say it doesn't make much sense to this novice.

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In chapter 2, page 3, table 2.3-4 is listed and states "minor effect, may slightly improve overall watershed condition" on alternative 2 and 3. The arguments used in chapter 3 "Some researchers have suggested that logging activity may actually increase infiltration and reduce runoff by breaking the hydrophobic layer, and on-going research is investigating this factor." (McIver and Starr, 2000) This table is using words like "may's and "suggested" to justify logging activity effects and has no basis in research. At the same time, the Beschta Report (page 7 # 18) is criticized for exactly the same thing. Having read both McIver & Starr 2000 and Beschta reports- which are both summaries-and their conclusions, they all have serious questions regarding the effects of salvage logging. This is what instigated SLVEC to contact The Forest Trust to do a monitoring project on the Rio Grande National Forest to begin with. We understand that there are very few studies (3- with controls) to confirm or deny the impacts of salvage logging.

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When SLVEC and Colorado Wild went to visit the small sale (75 acres) to salvage fire-killed aspen located between FDR 345 and FDR 340 near proposed unit D, we witnessed some healthy (no sign of beetle infestation) Doug-fir being taken out on the parameter. I know the Forest Service does a remarkable job at monitoring logging activities, but it's important that vigilance and some well-placed questions be considered while managing this project. The desire to mix healthy timber in with burned salvage might be very tempting.

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We mentioned this in our previous letter regarding the Million Fire Salvage Project and wanted to briefly site it again here . "Suffice it to say that future bird habitat will be affected over a period of time and how an area is logged will determine what type of bird will reside there. I know this is referring a different area of the country, but it indicates a succession of bird population that is important to consider. "For all age classes, post harvest sites tended to have greater bird abundance.....However, differences in bird communities were apparent up to 28 years following disturbance. and this lack of complete convergence has important consequences for sustainable forestry practices designed to maintain biodiversity in the boreal mixedwood forest. Notably, Connecticut Warbler (*Oporornis agilis*), Brown Creeper (*Certhia Americana*), Winter Wren (*Troglodytes troglodytes*), and American Robin (*Turdus migratorius*) had higher densities on Postwildfire than on postharvest stands.

Lincoln's Sparrow (*Melospiza Georgiana*), Alder Flycatcher (*Empidonax alnorum*), Tennessee Warbler (*Vermivora peregrine*), Black-and-white Warbler (*Mniotilta varia*), American Redstart (*Setophaga ruticilla*), Mourning Warbler (*Oporornis philadelphia*), Rose-breasted grosbeak (*Pheucticus ludovicianus*), Canada Warbler (*Wilsonia canadensis*), and Pine Siskin (*Carduelis pinus*) had higher densities on post-harvest

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stands, possibly due to the greater abundance, after harvest, of larger live residual trees and a taller more dense shrub layer. Harvest designed to approximate stand-replacing fires may require the retention of more snags than is currently practiced. New approaches to fire salvage logging are also required to ensure adequate retention of standing dead trees on the landscape.” (Hobson, K.A. and J. Schieck (1999). Changes in bird communities in boreal mixedwood forest:…)

Again, this study refers to a different forest but some of the same basic applications to bird behavior need to be considered when managing for bird communities. SLVEC hopes to participate in this process and contribute to monitoring the behavior of future bird populations that will be migrating back to the post fire/ post salvage areas.

#### 2.6.4 -Range Management

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Cattle has already been observed to be grazing in the project area and SLVEC will take the opportunity to report grazing to district range personnel since the EA will not allow grazing for approximately 2-3 years post-fire.

We appreciate the opportunity to address a few of our concerns. Again, we encourage the Forest Service to go with Alternative 3, which minimizes the steeper slope (less than 30%) salvage. There are many more questions and concerns that need to be addressed and hopefully over the course of the next few years with the monitoring project we will be able to get a better understanding of the effects of salvage logging on our particular landscape. Thanks for considering our perspective.

Sincerely,  
Christine Canaly, Director  
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San Luis Valley Ecosystem Council



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July 22, 2003

Million Fire Salvage EA  
Rio Grande NF  
Divide RD  
13308 West Highway 160  
Del Norte, CO 81132

Dear Sirs:

Following are our comments on the Million Fire Salvage EA:

Overall, we strongly support salvage of as much of the fire-killed timber as possible, and we urge you to proceed with the sale of fire-killed trees as quickly as possible.

We are disappointed that you constrained the analysis to consider salvage on only 623 acres. The Decision to be Made should have been "1) Should fire-damaged trees within the Million burn area be salvaged at this time?" The EA should have analyzed potential salvage in the entire Million burn area, and disclosed the results of that analysis in this EA. We are especially concerned that the IDT chose to not consider salvage in Model T Park. That area is in the suitable lands, and salvage should have been considered, either via new road construction or via access across the private land as part of this EA, not in a subsequent analysis.

We suggest modifying the Unit of Measure for the Key Issues as follows: Issue 1 – Economics should include an assessment of economic benefits to local communities. 25% receipts are a non-issue since all counties in Colorado receive fixed payments. Issue 2 – Watershed Health should clarify measurement of runoff, erosion rates, and sedimentation rate in comparison to the No Action Alternative. Similarly, Issue 3 – Soil Health should clarify measurement of erosion in comparison to the No Action Alternative.

Mitigation Measures –

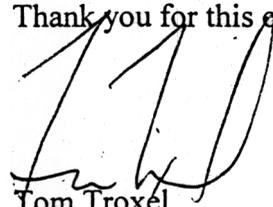
2.5.1a – seeding requirements under the timber sale contract should be restricted to that required for reducing soil erosion. Other seeding can be accomplished with KV funding.

2.5.1b – delete; implementing the forest plan is not a mitigation measure.

2.5.2b – we don't believe 12" stump heights are a mitigation measure	3-6
2.5.2c and d – these address the same issue, but with considerably different requirements. We suggest deleting (c), as it could confuse the issue of cutting trees that still have a few green branches, but will clearly not survive.	3-7
2.5.2e – our understanding is that the Forest Service should consider appropriate reforestation needs for the entire burn area, not just harvest units.	3-8
2.5.3b – what criteria will be used to determine the need to increase down woody debris? A recent study showed that contour felling and placement of trees/logs is not very effective in reducing erosion; have you considered that study in the development of this mitigation measure?	3-9
2.5.5a – we urge you to reconsider the blanket prohibition on whole tree harvesting. Whole tree harvesting is an integral component of virtually every logging operation in Colorado. We agree with your intent to leave slash and large woody debris, but we question your decision to leave all materials less than 3 inches in diameter. That said, if your decision really is to leave all materials less than 3 inches in diameter, then we ask that you discuss your objectives and various alternatives for achieving those objectives with loggers and/or prospective purchasers prior to signing the Decision Notice and prior to advertising the salvage sale(s).	3-10
2.5.5c – we believe that subsoiling, seeding, fertilizing and mulching of skid trails are excessive and unnecessary.	3-11
2.5.5d – see our comment on 2.5.1a.	
2.5.5g – we recommend that you consider the eventual contribution of snags and unmerchantable trees toward this requirement.	3-12
2.6 Monitoring - We encourage a thorough, well-documented Monitoring program, and especially urge you to design a Monitoring program that will provide a distinction between the effects of the fire and the effects of salvage logging.	3-13
Page 8 – we don't understand the basis for or the significance of the "Required minimum percent effective groundcover" in Table 3.5.1.	3-14
Page 8 – the standard regarding organic matter and nutrients includes a consideration of "existing and proposed levels of fine slash". We encourage you to conduct and consider such an analysis.	
3.17 – somewhere in the Cumulative Effects discussion regarding Wildlife, you should discuss this 9,922-acre fire and 623 acres of salvage in the context of the 1.8 million acre	3-15

Rio Grande NF, which is comprised primarily of mature and late successional forest stands.

Thank you for this opportunity to comment.

A handwritten signature in black ink, appearing to read 'Tom Troxel', written over the printed name below.

Tom Troxel  
Director

From: Scott Hatfield  
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We submit the following EA comments on the Million Fire Salvage Timber Sale Environmental Assessment. We thank the Rio Grande National Forest in advance for its consideration of our concerns about this project.

We, as potential appellants, have standing as individuals to appeal a specific decision and the Million Timber Sale program in general as a result of a number of factors. These factors, as required, will be delineated in full in any appeal process.

The Project's size and its potential for causing very serious damage to sensitive areas and significant biological resources, seems to necessitate a full EIS. We strongly urge the Rio Grande NF (RGNF) to supply this EIS.

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We respectfully request that the RGNF also include a "Forest Restoration Alternative" in the EA. The EA is exclusively focused on active post-fire salvage logging (with the exception of the required "No Action" alternative). We include a detailed non-commercial and no-harvest Restoration Alternative to salvage logging below. This Restoration Alternative focuses on passive and active ecological restoration. This and other such alternatives would provide the Agency and the public with a more comprehensive means of making an informed decision.

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The scientific research on ecological effects of salvage logging and particularly post-fire salvage logging, shows no justification for salvage logging in areas like those affected by the Million Fire. This literature and on-the-ground experience shows that the logging operations described in the EA would adversely affect the Million fire area ecosystems.

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It appears that narrow short-term economic concerns are responsible for this proposal. The forest service's responsibility to maintain the ecological health and integrity of the forest does not appear to be considered in this proposed project. Salvage logging will very likely adversely impact the interrelated resources consisting of the forest vegetation, soils, wildlife, and watersheds. Recreation will also be negatively impacted, as will scientific fire research opportunities. The full costs thus appear to far outweigh any potential benefits of this Project. The project may well also result in long term economic

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costs of repairing the damage it causes. Thus the project may produce a large net economic loss to the taxpayer, especially since salvage logging is typically federally subsidized.

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**OBLIGATION UNDER 40 C.F.R. § 1502 (NEPA VIOLATIONS): IN THE MILLION PROJECT, THE USFS MUST MEET ITS OBLIGATIONS TO TAKE A "HARD LOOK" AT THE ENVIRONMENTAL CONSEQUENCES OF ITS PROPOSED ACTIONS, USE ACCURATE SCIENTIFIC ANALYSIS, OR DISCLOSE IMPORTANT INFORMATION REGARDING IMPACTS.**

NEPA requires government agencies to disclose and take a "hard look" at the foreseeable environmental consequences of their decisions. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21, 96 S. Ct. 2718, 2730 n.21 (1976); 40 C.F.R. § 1502.16. An EIS must include sufficient information to determine what the impacts of a proposed action will be. 40 C.F.R. § 1508.9; *Southern Oregon Citizens Against Toxic Sprays v. Clark (SOCATS)*, 720 F.2d 1475, 1480 (9th Cir. 1983), cert. denied 469 U.S. 1028, 105 S. Ct. 446 (1984).

The agency must take a "hard look" at the project and its impacts, as opposed to bald conclusions, unaided by preliminary investigation, and must identify the relevant areas of environmental concern. *Maryland-National Capital Park & Planning Comm'n v. U. S. Postal Service*, 487 F.2d 1029, 1040 (D.C. Cir. 1973).

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The Million Project decision requires site-specific analysis. The Forest Service Manual states:

"Planning for units of the National Forest System involves two levels of decisions. The first is the development of a Forest Plan . . . The second level of planning involves the analysis and implementation of management practices designed to achieve the goals and objectives of the Forest plan. This involves site specific analysis to meet NEPA requirements for decision making."

FSM § 1920.

The FS typically attempts to base salvage sales on little to no site-specific information. No actual information is provided to support critical claims because the USFS typically does not have such information

The CEQ Regulations state:

"NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The

information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.

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In short, the information provided for the Million Salvage Sale must be of high quality and arise from accurate scientific analysis. Information based purely on personal communications, opinion, or expertise are not sufficient. The FS often presents information that is inadequate, flawed and biased in a number of ways. This renders any potential decision arbitrary and capricious. 5 U.S.C. § 706. Substantive, site-specific information must be offered in the FEIS. The FEIS must not be a narrative of the Forest Service's personal opinions and conjectures, as is often the case.

### *Restoration of Burned Areas*

The proposed actions are not supported by any scientific body of knowledge and in fact, many of the predicted impacts are contrary to the best available science. The Forest Service is required by NEPA to provide scientific support for its assumptions and predictions. Such empirical support is lacking entirely in the Million EA document.

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## **PROBLEMATIC ASPECTS OF THE MILLION FIRE SALVAGE LOGGING PROPOSAL**

The best available science supports a very different scenario for recovery of the Million Project Area. The USFS must rely on this science and not on its professional opinion. Several conclusions can be made based on the best available science:

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← The large majority of the Million Project Area will recover naturally without any significant intervention (Beschta, et. al., 1995; McIver and Starr, PNW-GTR-486, 2000; Stickney, 1990).

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← Sites that were damaged before the fire from roads, timber harvest, grazing, and other developments are most likely to require intervention to aid natural recovery. (Beschta et. al., 1995; Lyon, GTR-INT-184, 1976).

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← The likelihood that a home will ignite from wildfire is almost entirely determined by the landscape within 40 meters of the building and by the materials and design of the building. (Cohen, Preventing Disaster, 2000; Cohen, Reducing the Wildfire Fire Threat to Homes: Where and How Much, 2000; Cohen, Why Los Alamos Burned, 2000).

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← Management activity, including fuel reduction, beyond 40 meters away from a home has little effect on the likelihood that a home will ignite during a wildfire. (Cohen,

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Preventing Disaster, 2000; Cohen, Reducing the Wildfire Fire Threat to Homes: Where and How Much , 2000; Cohen, Why Los Alamos Burned , 2000).

- ← Salvage logging usually does significant damage, significantly changes the plant and animal succession, and has no ecological benefit. (Beschta, et. al., 1995; Robichaud, et. al., PNW-GTR-486, 2000).
- ← Stand replacing fires are a natural occurrence to which the forest is adapted with the exception of some lower elevation forest types. (Beschta, et. al., 1995; Interior Columbia Basin EIS, 2000).
- ← Drought and other climatic factors are the primary causes of large-scale fires, which occur regardless of fuel conditions. (Schmoltd, Daniel L. , et. al., , PNW-GTR-455, USFS, 1999).
- ← Fire suppression, logging, and grazing are the primary causes of unnatural fuel conditions. (Beschta, et. al., 1995; McIver and Starr, PNW-GTR-486, 2000; Schmoltd, Daniel L. , et. al., PNW-GTR-455, USFS, 1999).

Unless this information is incorporated into an EIS the Million Salvage Sale cannot meet the standards of NEPA or the directives found in the Forest Service Manual and Handbook.

The Million EA plans seem to adopt the faulty 'reburn' assumption: that standing dead trees will eventually fall to the ground and contribute to future catastrophic fires.

However, this theory has been abandoned by the agency's own scientists:

- ← "We found no studies documenting a reduction in fire intensity in a stand that had previously burned and then been logged." (Environmental Effects of Postfire Logging, USDA Forest Service, 2000).
- ← "We are aware of no evidence supporting the contention that leaving large dead wood material significantly increases the probability of reburn." (Wildfire and Salvage Logging, Beschta, et al., 1995).
- ← "The removal of large, merchantable trees from forests does not reduce fire risk and may, in fact, increase such risk." (Depts. of Agriculture and Interior, Report to the President, September 2000).

Regarding the last point, logging can increase fire risk, in part, because logging operations increase the surface fuel load by leaving behind saplings and massive piles of sticks and debris called 'slash.' Further, the forest floor dries out more quickly and temperatures can get much hotter, when it is deprived of shade provided by the large trees that are cut down in "salvage" operations. This drying effect turns slash piles and debris-strewn clearings to tinder.

### *Salvage logging*

Salvage logging itself has no scientifically sound justification. Ecological justifications for it simply do not exist. Erosion and sedimentation, and the accompanying loss of soil nutrients, are acknowledged to be crucially important issues in salvage logging operations, especially post-fire operations (Klock 1975, Marton and

Haire 1990, Minshall et al. 1994, Beschta et al. 1995). It has been strongly recommended that salvage logging be prohibited in sensitive areas, including burned areas such as those proposed for the Million Salvage Sales, or in any site where accelerated erosion is possible (Beschta, 1995). Pronounced erosion and sedimentation is already taking place in the Million area, yet no attempts have been made to carefully quantify these variables or make scientific predictions for future increases or decreases. The BAER reports for the Million area were qualitative at best.

Post-fire logging has been shown to significantly hinder forest recovery. Research on post-fire logging on the Winema NF, showed that logged sites in '93 produced only about 38% of the understory biomass of that on the unlogged site, and in '94 produced only about 27% of the understory biomass of that on the unlogged site. (Sexton 1998). Recovery of understory groundcover is the primary recovery mechanism for post fire recovery of erosion and runoff, and consequent downstream sediment-related effects. This indicates that post-fire logging seriously impedes recovery.

Sexton's work also indicates that the post-fire logging also reduced understory species richness by 13% in '93 and 30% in '94. Logging reduced species richness, diversity and altered species composition, and stunted the growth rates of naturally regenerating ponderosa pine and the survival of planted ponderosa pines relative to unlogged, burned sites. The area was logged using ground based equipment over >60cm of snow.

Sexton concluded that his study

**"...demonstrates that salvage logging retards the re-establishment early growth of [*P. ponderosa*] and [*P. tridentata*], two important wildfire restoration priorities."**

In short, there simply is no scientific literature in support of salvage logging; on the contrary there is substantial literature explaining the negative impacts of such logging. For example, the Beschta Report (1995) advances several recommendations, nearly all of which are in direct opposition to various aspects of the proposed Million Project.

These recommendations include:

- ← No tractors and skidders in all salvage areas because of the exacerbated soil compaction and erosion problems they create on sensitive soils
- ← No road building or restoration of long abandoned roads
- ← Retention of at least 50% of all snags in all size classes
- ← Retention of all snags greater than 20 inches or older than 150 years
- ← Presumption against reseeded
- ← General recommendation to allow burned areas to recover naturally rather than resorting to human intervention.

### *Soil and Water Impacts*

The water resources section of any EIS or other public information document must consider factors beyond changes in road density, changes in sediment delivery, and delays in sediment delivery recovery. Stressed aquatic systems require thorough assessment. The current conditions of soil compaction and locations of road and river crossings must be disclosed.

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Use of the WEPP computer model simply takes into account large scale harvesting, thus all private land logging, roadside salvage, reconstruction of roads as well as fire suppression and recovery activities are not accounted for in this model. Therefore, the predicted change in sediment caused by harvest is a significantly low estimate and ignores easily quantifiable contributors to sediment delivery. The bulk of the logging EISs that have been reviewed by us generally use measures more inclusive to estimate sediment delivery such as Equivalent Road Area.

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Additionally, claims that the rehabilitation of long abandon roads will not significantly increase soil erosion or sedimentation are unfounded and constitute a failure to disclose significant impacts and thus are a violation of NEPA. While the EA document indicates new roads will not be built, the use of old roads will open these areas to increased erosion.

Again, there is ample science demonstrating the impacts of roads. For example, Amaranthus et. al (1985) concluded that soil erosion rates due to debris slides were many times higher on forests with roads, landings, and logging activity than on undisturbed forests. *Roads were found to cause 60% of the erosion volume.* Eaglin and Hubert (1993) concluded that the volume of fine sediment present in streams increased in direct proportion to logging in the watershed *and stream crossings by roads.* Corn and Bury (1989) found that a higher proportion of fine sediment occurred in streams flowing through forest stands with logging than streams flowing through unlogged forest stands. Potts et al (1985) found that sedimentation increases after large fires, but increases significantly more after post-fire logging. This increased sedimentation caused by post-fire logging is particularly severe where high-intensity fires occurred and erosion and resulting sedimentation is most severe with ground-based skidding systems. (Megahan and Molitor 1975; Klock 1975).

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The Million Project must not rely on unsubstantiated conjecture to explain away any significant impacts on soil compaction and erosion. The EA must take a hard look at the impact to hydrophobic soils from soil compaction and other impacts. Mitigation measures for intermittent streams must be presented. Such a failure to look at the impacts from logging and road crossings on intermittent streams is a gross violation of NEPA.

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The EA must disclose the impacts on soil and water quality from fire suppression activities associated with the Million Fire as well as any recovery activities.

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Central to NEPA's diverse procedural requirements is the mandate that a federal agency take a hard look at the environmental consequences of its proposed action.<sup>1</sup> Taking a proper hard look prohibits general statements about possible effects,<sup>2</sup> and in fact

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requires the Forest Service to reference material in support of or in opposition to its conclusions. Such reference must be made in the environmental document.<sup>3</sup>

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Obviously, use of abandon roads, road reconstruction, and fire suppression and recovery components of the Million Salvage proposal cannot be ignored, considered separately or treated as a brief narrative. To do so is in direct violation of the statues and directives that shape the agency's compliance with NEPA.

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Detailed planning for mitigation measures is needed. This includes mitigation for such concerns as noxious weeds, fire and fuels, hydrology, soil compaction etc. The Neighbors of Cuddy Mountain case provides clarification with respect to the Forest Service's duty to properly formulate and discuss mitigation measures:

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“The Forest Service's perfunctory description of mitigating measures is inconsistent with the “hard look” it is required to render under NEPA . . . A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA.”<sup>4</sup>

While the use of BMPs is to be encouraged in timber salvage projects, we note that the use of these measures is not in and of themselves sufficient to ensure compliance with the law. Again Neighbors of Cuddy Mountain,

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“The Forest Service's broad generalizations and vague references to mitigation measures in relation to the streams affected do not constitute the detail as to mitigation measures that would be undertaken, and their effectiveness, that the Forest Service is required to provide.”<sup>5</sup>

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### **CONCERNS ABOUT LOGGING OF SEVERE BURN AREAS AND LOGGING OF ALL LARGE TREES**

The EA proposes to log severely burned areas (p. 23 of the EA states " It is estimated that approximately 95% of the trees within the harvest areas proposed for harvest in Alternatives 2 and 3 were killed."), a practice condemned by field experience and scientific research. Following extensive salvage logging in the 1990s, researchers recommended that salvage logging by any method be prohibited on sensitive sites like severely burned areas. Indeed the conclusion of these studies was that severe burn areas should be exposed to as little disturbance as possible.

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Since the RGNF has disregarded crucial information about severe burn sites in its EA, it is especially important to remind RGNF of relevant findings of the Beschta report, a report which the Forest has unfairly and unjustifiably discredited in the Million EA.

Of reports and papers that came to the same conclusions, Beschta, et al. 1995, perhaps best summarized key management considerations regarding severely burned areas: "Delays in recovery may increase the likelihood of extirpation of stressed populations, or may alter the pathway of recovery altogether. As a practical example, areas that have experienced the effects of a severe burn and are likely to exhibit high erosion should not be subjected to additional management activities likely to contribute to yet more sedimentation. Efforts should focus on reducing erosion and sedimentation from existing human-caused disturbances, e.g., roads, grazing, salvage logging." Beschta, et al. 1995, **recommended that salvage logging by any method be prohibited on sensitive sites, including in severely burned areas...**" The report also stated, "Logging of sensitive areas is often associated with accelerated erosion and soil compaction (Marton and Haire 1990), and inherently involves the removal of large wood which in itself has multiple roles in recovery. Salvage logging may decrease plant regeneration, by mechanical damage and change in microclimate. Finally, logging is likely to have unanticipated consequences concerning micro-habitat for species that are associated with recovery, c.g., soil microbes."

Since logging causes soil compaction and long-term loss of soil productivity, Beschta et al. (1995) also concluded:

...post-burn management activities that accelerate erosion or create soil compaction must be prohibited. ... Because of soil compaction and erosion concerns, conventional types of ground-based yarding systems (tractors and skidders) should generally be prohibited. Sediment management should focus on protecting and maintaining natural sediment control mechanisms in burned landscapes, particularly the natural recruitment of large woody debris...

Logging in areas of severe burning will result in further damage to soil structure, lowered soil productivity, and increased soil erosion. We talk about these effects in detail in the soil section. The EA must analyze the impacts of logging on soil stability and productivity both in the long-term and the short-term. The natural groundcover has a fragile hold in the severely burned areas and logging practices and road building are certain to make the situation worse. We see no positive impacts of logging on soils in burn areas. We note that rather than decreasing erosion, as alleged in the EA, the logging slash piles will in many cases serve as erosion catalysts. Heavy rains and snowmelt will dislodge the soil from under the slash piles since the ground under them will be devegetated due to lack of sunlight. In addition, many severely burned areas targeted for logging include sites which have intrinsically erosive soils, fragile soils, slopes, and possess other properties which will result in unacceptably high accelerated erosion due to the disturbances logging will cause. These complications also need to be discussed by the FS.

The EA should consider the least invasive methods for dealing with hydrophobic soils and consider carefully whether any action is necessary at all. Break up of hydrophobic (water-repellent) soils is sometimes cited as a positive effect of post-fire salvage logging. However, hydrophobic soil is not unnatural after a severe fire, and the impacts are

relatively short-term in duration. Within three years, the effects generally disappear. The impact of soil erosion, displacement, and compaction from commercial logging, however, endures significantly longer.

### **LOGGING ALL LARGE TREES IS UNACCEPTABLE**

Page 25 of the EA indicates all severely crown scorched "trees greater than 10" diameter breast height (DBH) would be harvested. It also indicates "trees 5" to 10" DBH may be removed (optional removal)". Thus all large trees will be removed, except "snags would be identified on the ground and retained to meet or exceed Forest Plan Standards and Guideline".

Here we bring together reasons, which are discussed in greater detail throughout our comment document, as to why it is important to leave far more large trees in the burn area than the FS is considering.

Wildfire is an essential natural process, which has shaped the forests of western and northern North America for millennia, providing renewal and rejuvenation. However, immediately following a fire, forests are incredibly sensitive and need time to heal. Burned trees play a vital role in forest rejuvenation after a fire, and scientific research has demonstrated that logging of burned trees (salvage logging) may hinder these natural processes severely. The FS's proposal to remove all the large trees in the cutting units is diametrically opposed to the knowledge base of forest fire ecology.

Burned trees play an essential role in a healthy forest ecosystem. Forests are not destroyed or lifeless following fire. Standing dead trees and fallen logs which salvage logging removes provide critical habitat for species including lynx, marten and fisher. Cavity nesting birds that thrive in post fire forests include pileated and black backed woodpeckers, northern goshawks and boreal owls. Standing dead trees provide shade, stabilize and regulate the water flow on post-fire soils. The eventual decay of fire burned trees recycles important nutrients that increase forest productivity. Many of these points have been and will be discussed in detail elsewhere in our comments. All these points unequivocally speak to the great need to preserve the large trees in the burn area.

It is well established that post-fire salvage logging of large trees causes dramatic setbacks in regeneration and increases the risk of yet another wildfire. The removal of all large burned trees will leave behind the small fire-killed trees and flammable debris, which are materials which actually render the area fire prone. This practice also conflicts with the Forest Service's own scientific research. This research recommends that leaving large dead trees in the forest after a burn protects the soil, provides favorable microclimates for a full spectrum of forest flora and fauna, including microorganisms, and prevents future severe burns by blocking fire propagation. Indeed large logs often soak up and store voluminous amounts of water (becoming increasingly moist as they decay) and serve as very effective propagation barriers. Forest Service management often ignores or denies its own research, as is amply demonstrated in the current EA, and

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countless other FS documents. We ask that a hard look be taken into these matters, as is required by NEPA.

Even in severely burned areas, significant forest stand structure still remain on site in the form of scattered live trees, large snags, and down logs, providing habitat for numerous wildlife species, preventing widespread erosion, and providing shade for millions of tree seedlings regenerating in the area. These remaining materials are critical for natural fire recovery processes, and their removal could retard or prevent this natural ecological recovery. The large trees are some of the most important members of the burn legacy.

The FS proposes to remove trees, all large ones, that would otherwise supply the bulk of the fertilizer for the next generation of trees and ground covers. That is, the forest service intends to remove trees larger than 10" in diameter (and to use arbitrary and capricious judgement on others, as cited above). No where in the EA does the FS bother to calculate the astronomical amount of fertilization biomass that it intends to remove from the forest. No farmer with any desire to stay in business, let alone with integrity enough to provide stewardship for his land, would in his wildest dreams consider not fertilizing the soil. Yet this practice is seemingly regarded as perfectly acceptable to the USFS. Such abject negligence regarding land stewardship is deplorable. Greed seems to blind the FS to even the basic rudiments of ecological needs in this sale. This level of abandonment of stewardship principles is simply unacceptable.

Additionally, the Forest Service's own scientific literature has found that logging of large trees, through the creation of slash, can intensify and spread bark beetle outbreaks which are already at epidemic levels in many areas.

#### **THE EA UNFAIRLY AND UNJUSTIFIABLY DISCREDITS AND DISMISSES THE BESCHTA REPORT**

The Beschta report (1995) is unfairly and unjustifiably discredited in the Million EA. We quote from p. 11 of the EA:

The Beschta Report, Beschta et al. (1995) was referenced in several scoping letters and will be addressed in the effects section of the analysis. Although the Beschta Report discusses some important topics related to post-fire salvage, the report is a commentary paper, is not site specific, and lacks comprehensive literature citations (Everett 1995) (McIver-Starr 2000)."

The other criticism and reasoning appearing in the EA is similarly superficial, unjustified, and unsubstantiated. We return to some of it later in this section.

#### **Court Support for Beschta**

We emphasize that Federal courts have rejected both EA's and EIS's prepared in support of post-fire salvage sales for failure to consider the Beschta Report. See, e.g., *Sierra Club v. Bosworth*, 199 F.Supp.2d 971 (N.D. Ca. 2002); *Blue Mountains Biodiversity Project v.*

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Blackwood, 161 F.3d 1208 (9 th Cir. 1998) (Forest Service's failure to discuss and consider the Beschta report's recommendations lend weight to [the plaintiffs] claim that the Forest Service did not take the requisite 'hard look' at the environmental consequences of post-fire logging instead of letting nature do the healing.); League of Wilderness Defenders v. Forsgren, 184 F.Supp.2d 1058 (D. Or. 2002) (Some reasoned evaluation of the Beschta report is essential to any salvaging proposal on a forest damaged by wildfire.).

We present the ruling of the UNITED STATES DISTRICT COURT FOR THE DISTRICT OF OREGON, for Civil No. 02-75-HA, LEAGUE OF WILDERNESS DEFENDERS et al. vs. BLM:

"Defendants' attempted refutation of plaintiffs' motion for summary judgment on the merits also fails. This court granted the preliminary injunction in this case after recognizing the serious questions raised by plaintiffs' assertions that the BLM (1) improperly disregarded **sound scientific evidence that post-fire salvage logging likely results in 'persistent, significant environmental impacts;'** (2) **omitted discussion in the EA of the "Beschta Report,"** and addressed these issues only after the decision-making process was complete and portions of the public raised concerns; (3) failed to consider the **cumulative impacts** of fire suppression activities, grazing and logging on BLM and adjacent lands; and (4) failed to consider a reasonable range of alternatives when it **excluded a restoration alternative that omitted salvage logging.** After further review of the Administrative Record ("AR"), and after consideration of the parties' briefing and their testimony and arguments presented at the hearings conducted in this case, this court concludes plaintiffs are now entitled to summary judgment regarding defendants' failure to comply with NEPA."

Another excerpt, *ibid*, "The EA also violated NEPA by failing to disclose respected scientific evidence running contrary to the BLM's final decision to allow salvage logging, and because it failed to address the differences between the BLM's view of likely impacts and the view of others in the scientific community (**including views expressed in the Beschta Report**), and failed to take the "hard look" at post-fire issues as required by NEPA. This court has consistently followed the Ninth Circuit's teaching in *Blackwood* that a forest management agency's failure to discuss and consider the **Beschta Report** "lends weight to [a plaintiff's] claim that the Forest Service did not take the requisite 'hard look' at the environmental consequences of post-fire logging instead of letting nature do the healing." *Blackwood*, 161 F.3d at 1213. "

In *Sierra Club v. Bosworth*, 199 F.Supp.2d 971 (N.D. Ca. 2002), the court ruled "Nor does the fact that the Forest Service's scientists may have considered contrary opinions, such as the Beschta report, constitute sufficient compliance with NEPA where the EIS fails to disclose or analyze such opinions. n4 See *Seattle Audubon Society v. Moseley*, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) ("NEPA requires [\*981] that the agency candidly disclose in its EIS the risks of its proposed action, and that it respond to the adverse opinions held by respected scientists."); *Lyons*, 871 F. Supp. at 1318 ("An EIS must . . . candidly disclose the risks and any scientific uncertainty. It must also disclose

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responsible scientific opinion in opposition to the proposed action, and make a good faith, reasoned response to it.") (citations omitted)." "

Another court ruling deserves further mention. In, *League of Wilderness Defenders v. Forsgren*, 184 F.Supp.2d 1058 (D. Or. 2002), the court found, "Plaintiffs successfully raise serious questions about the adequacy of the EA's discussion of opposing viewpoints. Defendants' criticisms of plaintiffs' previous participation and of the **Beschta report** fail to establish they took the "hard look" at post-fire issues as required by NEPA and the Ninth Circuit after *Blackwood*. The *Blackwood* decision, as well as the Regional Forester's post-Beschta report directive, both make clear that some reasoned evaluation of the Beschta report is essential to any salvaging proposal on a forest damaged by wildfire. "Allowing the Forest Service to rely on its own expert opinions without providing hard data either vitiates a plaintiff's ability to challenge an agency action or results in the courts second guessing an agency's scientific conclusions. As both of these results are unacceptable, we conclude that NEPA requires that the public receive the underlying environmental data from which a Forest Service expert derived her opinion." *Idaho Sporting Congress*, 137 F.3d at 1150. Defendants' reliance upon the inclusion of various references and reports in the Administrative Record is insufficient, and fail to further either of NEPA's two primary goals: insuring the agency has fully contemplated the environmental effects of its action; and insuring the public has sufficient information to challenge the agency. *Id.* at 1151."

Clearly then, Beschta has endured the hard scrutiny of the courts, and cannot be dismissed in the flippant manner it is in the EA. This constitutes a flagrant violation of NEPA.

### **A Detailed Look at the Proven Credibility of Beschta**

One of the eight distinguished authors of the Beschta report, James R. Karr, Professor of Aquatic Sciences and Zoology, University of Washington, wrote a defense of this paper after Dale Bosworth, USFS Chief, attempted to discredit it (in a manner similar to the EA). This defense was sent July 3, 2002 to the Subcommittee on Forests & Forest Health, 1337 Longworth House Office Building U.S. House of Representatives, Washington, D.C. 20515-6205.

Prof. Karr's defense begins as follows, "Several years ago, we contributed to a report titled 'Wildfire and Salvage Logging, Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments' (Beschta et al., 1995), commonly referred to as the 'Beschta Report.' Our report was embraced by diverse groups inside and outside the US Forest Service (USFS), including a number of courts, because of its rigorous scientific foundations and the effort we made to translate the results of a rich history of scientific and technical research into specific management and policy guidelines."

Dr. Karr finds it odd that "testimony by the current Chief of the USFS before the Subcommittee on Forests & Forest Health on June 12, 2002 and a June 2002 USFS report titled 'The Process Predicament: How Statutory, Regulatory, and Administrative Factors

Affect National Forest Management indicts the Beschta Report as questionable. Those challenges seem to hinge on the fact that the report has not been published in a peer-reviewed journal and the assertion by unspecified USFS staff that the report contains unsubstantiated statements and assumptions. We note that this claim of scientific errors committed in the Beschta Report has never been backed up with specific documentation by citation of specific USFS or other documents, peer-reviewed or not."

Dr. Karr goes on to say that "There is a simple reason why the Beschta Report stands up to scrutiny in the courts. It is reasonable, concisely stated, and is a robust and accurate interpretation of science and management experience. Despite numerous attempts, its scientific integrity has not been successfully undermined in a court of law." Further he states, "To provide an early response for the record, we send this letter as a written response to the Chief's testimony and the comments contained in the Process Predicament Report. We are compelled to do so, because in our view, Dale Bosworth, in his role as Chief of the USFS, **misrepresented our work and its effect on USFS activities** in his testimony before you on 12 June 2002."

Five points of the letter are particularly pertinent to the present EA:

" #1. **Contrary to the Chief's wholly unsubstantiated statement that our report is questionable, our work is supported by a rich history of scholarly work by scientists inside and outside the USFS.** We cited more than a dozen such publications in our report. Our goal in the report was to provide limited scientific citations so as not to overwhelm the people and institutions that we expected might use our report. We summarized briefly the wealth of scientific information and peer-reviewed publications on the effects of logging and other post-fire activities on forests, soils, watersheds, water quality, and fish. The intervening seven years has seen an explosion of additional work both inside the USFS and elsewhere, virtually all of it concordant with our conclusions and recommendations. Equally important, the members of the Beschta Panel were selected because of the breadth and depth of their scholarly experience, their expertise in diverse relevant fields including forest soils, watershed hydrology, water quality, forest management, landscape ecology, aquatic ecology, fish ecology, conservation biology, and ecological restoration. ....

#2. **Chief Bosworth should be aware that the USFS itself has repeatedly conceded that our March 1995 report had, and still has, scientific merit.** In August 1995, Dr. Richard Everett of the USFS Pacific Northwest Research Station prepared a response to the Beschta Report titled "Review of Recommendations for Post-Fire Management" (Everett Report) in a letter to the Regional Forester of Region 6 (Oregon and Washington). The Everett Report concurred with key aspects of our report, including our conclusion that there were no data to indicate that post-fire salvage logging reduced the risk of reburn. To wit, the Everett Report (p. 4) stated: "[t]here is no support in the scientific literature that the probability for reburn is greater in post-fire tree retention areas than in salvage logged sites." The Everett Report (p. 4) also concludes that the Beschta Report was "correct that the intense reburn concept is not reported in the literature." The Everett Report (p. 5) also states that current research suggests that salvage

logged areas may have elevated fire hazard over unlogged sites for the first twenty years after logging. The Everett Report (p. 6) concludes, "[t]he urgency to remove woody biomass is not based on reducing short-term fire hazard, but on the capture of economic values and reduction of long-term fire hazard."

In 2000, the USFS's Pacific Northwest Research Station published a literature review of fire and salvage logging effects, titled "Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography" (McIver and Starr, 2000). Among other things, McIver and Starr (p. 19, 2000) "found no studies documenting a reduction in fire intensity in a stand that had previously burned and then been logged." This is precisely the conclusion we made in our 1995 report.

Our 1995 report concluded that the effects of logging are typically more persistent and ecologically damaging than fire. This is corroborated in the conclusions in the USFS's 1997 regional assessment of Columbia River basin conditions, "The Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volumes I-IV" (PNW-GTR-405, USFS, Walla Walla, Washington; USFS and USBLM, 1997a). This 1997 assessment also concluded that an effective way to restore damaged forest soils is to leave areas undisturbed until recovery has occurred (USFS and USBLM, p. 206, 1997a). It concludes (p. 206) that prevention of soil damage is far more effective than attempting restoration after damage has occurred. USFS and USBLM (p. 206, 1997a) also concluded that logging negatively affects soil and forest productivity, while burning these materials in place causes significantly less negative impacts. Notably, all of these conclusions are in our 1995 report.

Although they are not peer-reviewed, USFS environmental impact statements (EIS) have also concurred with our conclusions. As just one example, the USFS's 1997 Draft EIS for the Interior Columbia Basin Ecosystem Management Project states (Ch. 4, p. 13): "[b]ecause of the mosaic pattern that wildfire produces, and the residual wood that is left on site...wildfire usually has fewer implications for loss of soil productivity and function than disturbances which remove soil organic matter and decrease (sic) bulk density as well." It also states that although fire can affect soil productivity and hydrologic properties, the effects of logging on these soil properties are usually more severe and more persistent than fire (USFS and USBLM, Chap. 4, pp. 12-13, 1997b). Again, these are the precise conclusions we communicated in our 1995 report.

The USFS officially recognized the importance of our 1995 report for post-fire projects. In July 1995, in a Memo from Regional Forester J. Lowe to Forest Supervisors and Directors, titled "Analysis of Fire Recovery Projects," the USFS Regional Forester for Region 6 (Oregon and Washington) directed Forest Supervisors to require that our report be considered with NEPA documentation for site-specific projects. The memo states (p. 1), "[c]learly this information needs to be considered in ongoing analysis . . . For each project or group of similar projects, review the Beschta paper (along with other information sources) to determine applicability given site-specific conditions and issues in the project area." While emphasizing the need to assess the principles of the Beschta

Report on a case-by-case basis, the Everett Report (p. 1) commended our 1995 report for identifying potential problems associated with post-fire salvage logging.

**#3. The Chief's testimony incorrectly asserts that our 1995 report was not peer-reviewed.** Our 1995 report was peer-reviewed, prior to issuance, by other scientists with expertise in fire ecology, including Dr. J. B. Kauffman, a Professor of Riparian Ecology at Oregon State University in Corvallis, OR. Further, in March 1995, more than 50 scientists with expertise in biology, fisheries, wildlife, ecology, and geology endorsed our report in an open letter to President Clinton, with our report attached. It is worth noting that typically three or fewer peer-reviewers review most papers published in scholarly scientific journals.

The Chief is correct in noting that our 1995 report has not been published in a peer-reviewed technical journal. At the time of our publication, we decided to forego presenting our conclusions and recommendations in a form suitable for a technical journal for two reasons. First, we felt that it was crucial to rapidly inject sound science into the discourse regarding post-fire salvage practices, which at the time were damaging a wide variety of natural resources. Sadly, this concern continues to be germane today.

Second, we decided to issue a concise and policy relevant document in a form understandable to a wide audience, including citizens, agency personnel, and scientists, rather than issue a report full of the often ponderous language of technical papers published in peer-reviewed journals with their limited, but specialized audience. We stand by that decision given the management context at the time and that sadly persists today...

**#4. The Chief's assertion that EISs must address work of questionable scientific merit that has not been peer-reviewed is amusing, and self-contradictory.** USFS EISs are not normally subjected to peer-review by scientists outside of the agency. Further, USFS EISs often come to conclusions, or are used to support decisions, that directly contradict the vast body of scientific evidence and information. The USFS publishes reams of information annually that has not undergone any peer review by scientists external to the agency. So, if the Chief wishes to apply a single yardstick, he should point out that the bulk of his agency's assessments are scientifically questionable, using the standard he applies to external reports.

**#5. Finally, we emphatically note that our report is not responsible for the USFS's avowed inability to address some of the very real and pressing issues affecting public lands, our natural resource heritage.** Rather, the agency often strives to ignore or deny the vast body of knowledge that has accumulated in recent decades in favor of antiquated policies. For example, extensive and detailed studies (mostly conducted by the agency's own scientists) demonstrate that the smallest diameter fuels present the highest risk for fire while the largest diameter trees are critically important to retain crucial ecological functions in forested landscapes. Yet, the USFS continues to attempt to implement post-fire salvage logging that focuses on the removal of the largest diameter

fuels. Similarly, it is indisputable that roads are one of the greatest threats to the ecological integrity of forested systems and associated river, wetland, lake, and coastal ecosystems. Yet, the USFS has failed to adopt a policy that mandates reversing the worst ecological effects of roads, or that precludes incursion of roads into roadless areas. Despite widespread recognition of these facts, the USFS diverts staff and money to extraordinarily costly salvage logging projects at the expense of reducing the extent of the road network or undertaking needed fine-fuels reductions in unburned forests.

This is not just a recipe for controversy, it is also a recipe for the continued deterioration of forested landscapes, and of living systems that are sustained by and sustain those forests. Humans are a key part of those landscapes. Humans, too, suffer when these resources are degraded, as will often happen if the forest practices advocated by the Chief and "The Process Predicament" report are continued. Continued denial of the extensive body of technical and scientific evidence that formed the foundation of our report will guarantee continuation of the downward spiral of forest-associated resources.

We appreciate the opportunity to provide these perspectives on our work and its relevance to pressing natural resource dilemmas. We stand ready to provide more information on these issues as needed. Since we write as co-authors and scientists, we include our current work affiliations for identification and communication purposes only.

The Million EA, for all practical purposes, summarily dismisses Beschta, and related works, as irrelevant (p. 6 of the EA). The pertinent quote from the EA, p. 6, is "Several concerns relevant to this project that Beschta and others (1995) express are part of the action alternatives. The proposed action for Million salvage project addresses many of these concerns by avoiding sensitive areas and applying other resource protection measures. However, the Beschta paper is otherwise irrelevant to this project because the purpose and need for the project is to recover wood value from some of the fire-killed trees while improving economic opportunities, rather than to reduce future wildfire risk or improve ecological conditions."

In effect the FS is telling us that while the project may increase wildfire risk and devastate the ecological health of the forest (as Beschta et al. and many other works indicate salvage logging in burned areas does), this is nothing to be concerned about because the pursuit of profit justifies all. This sentiment is deplorable; we find it unconscionable that the FS, as steward of public forests, would dare express such outlooks. Very clear violations of NEPA occur here, especially when account is taken of the fact that the FS analysis does not consider concerns of Beschata and others, as is claimed in the EA. Regarding the latter, the claim made in the EA of "avoiding sensitive areas and applying other resource protection measures" is patently false. The truth is that the EA proposes to log in the most sensitive areas (severe burn areas), and does not practice mitigation measures of significance. Both of these points are discussed in detail elsewhere in the comments.

In short, the FS does not take a hard look at the findings of works like Beschta et al. in this EA, and this is absolutely unacceptable in the context of its proposal to salvage log the Million burn area.

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## TREE MORTALITY PREDICTIONS / OLD GROWTH

Studies performed in Colorado on ponderosa pine suggest that 90 percent crown scorch is the crown scorch level to use if death is to be accurately predicted, although the Wyant et al. study suggests that high levels of stem char are also important. Harrington (1993 Int. J. Wildland Fire 3:65-72) stated "...trees smaller than 10 cm [4 in.] died readily with greater than 50 percent scorching, but about 90 percent crown scorch was required by large trees to be lethal" (p. 65). Harrington (1987 Western J. Applied Forestry 2:14-16) also says, "Scorch damage of up to 90 percent of the crown caused minimal mortality regardless of season" (p. 14). Meanwhile, Gorte (1995) noted that damage from wildfires is typically overstated, and offered the following synopsis:

*Mature conifers often survive even when their entire crowns are scorched; a few species, notably lodgepole pine and jack pine, are serotinous, which means that their cones will only open and spread their seeds when they have been exposed to the heat of a wildfire. Grasses and other plants often benefit from wildfire, because fire quickly decomposes organic matter into its mineral components (a process that, in the arid West, may require years or decades without fire), and the flush of nutrients accelerates plant growth for a few growing seasons. Few animals are killed by even the most severe wildfires; rather, many animals seek out burned sites for the newly available minerals and for the flush of plant growth. And erosion is typically far worse along the fire control lines than from the broad burned areas.*

Michael G. Harrington, a Forest Service researcher with the Rocky Mt. Forest and Range Experiment Station in Flagstaff performed these studies on the San Juan NF near Dolores, Colorado. Thus, based on the studies above, it is likely that large trees with less than 90 percent crown scorch or low levels of stem char will recover.

Another scientific reference discussing scorched tree recovery potential is Dieterich, John H. 1979. Recovery potential of fire-damaged southwestern ponderosa pine. USDA Forest Service Research Note RM-379, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo. 8 pp. Dieterich shows color photographs of two ponderosa pine trees, one with 80 percent crown scorch, and another with 95 percent crown scorch that both recovered fully following a 7,150-acre wildfire in Arizona in 1973. The reference states "removal of a large percentage of live crown by scorching can result in reduced growth the first year. Growth should return to normal during the second and third growing seasons." (p. 2). Thus the Rio Grande NF stands to kill many trees that might otherwise recover if left alone.

Morrison and Swanson (1990) also found that old-growth stands may persist through burns. Old-growth ponderosa pine is rare on the Rio Grande NF and throughout the

Greater Southern Rockies Ecoregion. Given the rarity of this forest structural stage, and its importance in sustaining regional and forest-specific biological diversity, we oppose salvage logging any of this forest type. The EA should clearly show (based on field surveys) where old-growth ponderosa pine (and other species) occurs in the project area and forest-wide so that cumulative impacts can be assessed. The Draft EIS or EA should also identify what percentages of the crowns were scorched, as well as the level of stem char. Given Morisson and Swanson's (1990) findings, old growth ponderosa pine may very well have survived significant fire damage. Coupled with Dieterich's findings and recommendations, the Rio Grande NF should not rush the adoption of salvage logging.

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## UNPROFITABLE TIMBER SALES

In a Forest Plan, the range of alternatives considered "must also include an alternative which contemplates timber harvesting at a profitable level even if that level requires reducing current timber production levels." *Citizens for Environmental Quality v. U.S.*, 731 F.Supp. 970, 990 (D. Colo. 1989). Section 1604(g)(3)(F)(ii) and 36 C.F.R. 219.27(a)(7) require an analysis, of among other factors, "economic impacts on each advertised sale area" prior to authorizing even-aged timber cuts. This analysis need not be made in a Forest Plan, however "The economic impact analysis may be performed any time prior to the implementation of the project." *Citizens for Environmental Quality v. U.S.*, 731 F. Supp. 970, 991 (D. Colo. 1989).

If a Forest Plan adopts a proposed action resulting in "an increase in timber sales from recently experienced levels" and the action would result in "reduce(d) economic efficiency," the plan must comply with the dictates of the so-called "MacCleery Decision," requiring detailed justification for the action. *Citizens for Environmental Quality v. U.S.*, 731 F.Supp. 970, 986 (D. Colo. 1989). That decision requires the Forest Service to address the following questions: "Is the timber program as currently proposed actually the most effective way to achieve the non-timber multiple use objectives of the plan? To what extent can timber program costs be cut and/or revenues be enhanced while still providing an appropriate level of non-timber multiple use objectives? Are there other ways to accomplish vegetation management more cost effectively than through a timber program as currently proposed?" *Citizens for Environmental Quality v. U.S.*, 731 F.Supp. 970, 987 (D. Colo. 1989).

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In addition, the MacCleery decision requires "the Regional Forester to fully explain the economic implications of the planning alternatives in the ROD. The ROD must explain why the Regional Forester believes the plan will provide greater overall net public benefits than other alternatives and the explanatory burden is increased if the selected alternative has a lower present net value than other alternatives." *Citizens for Environmental Quality v. U.S.*, 731 F.Supp. 970, 987 (D. Colo. 1989).

The MacCleery decision requires a "comprehensive analysis" in the ROD addressing: "(1) the difference between the net value and mix of the priced outputs that could be realized in implementing alternative(s) having a higher PNV and the net value and mix of the priced outputs anticipated if the selected alternative were to be implemented; (2) the objectives of the selected alternative in terms of priced and non-priced outputs and/or responses to expressed public issues that would not be expected to be realized if the alternative(s) having a higher PNV were implemented; (3) a summary in the ROD of the trade-offs or differences between (1) and (2) expressed in economic, environmental, physical and/or other appropriate quantitative and qualitative terms; and (4) an explanation as to why the selected alternative is expected to provide greater overall net public benefits than the alternative(s) with a higher PNV." Citizens for Environmental Quality v. U.S., 731 F.Supp. 970, 987-88 (D. Colo. 1989).

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**SOCIO-ECONOMIC ANALYSIS (VIOLATIONS OF NEPA, MUSYA, RPA, NFMA, APA AND GCCPA): THE SOCIOECONOMIC ANALYSIS MUST PROVIDE INFORMATION NEEDED TO INSURE THAT THE MILLION SALVAGE PROJECT IS ECONOMICALLY JUSTIFIED.**

*The Million Fire Salvage project must be economically justifiable.*

As set forth below, various statutes, regulations, and rules governing Forest Service management require the Million Fire Salvage project to be economically justified, from a broad-multi-resource perspective. This obligation extends to all Forest Service programs and projects, but is especially important in the context of stewardship projects designed for restorative purposes.

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*To be economically justified, the Million Fire Salvage project must rest upon a socioeconomic analysis that fully accounts for effects on all market and non-market goods and services, and considers the economic interests of all those who are economically affected by management activities.*

To demonstrate the economic feasibility of the Million Fire Salvage project, the Forest Service must engage in an economic efficiency analysis that adds other economic costs and benefits that are not part of Forest Service monetary transactions. FSH 2409.18.12.2. This includes all marketed and non-marketed benefits and costs to all those who derive economic value from the lands affected by the project. As characterized by Niemi and Whitelaw (1997), classes of interests that must be represented in such an economic analysis include four major groups: (1) those who benefit from timber sales; (2) those

who incur economic costs from timber sales; (3) those who see the unlogged forest resources affected as an element of quality of life, and (4) those who place an intrinsic value on unlogged forest resources.<sup>6</sup> A comprehensive socioeconomic analysis that addresses costs and benefits to all these interests is required for projects that are analyzed in the context of an environmental impact statement. FSH 2409.18.32.2. The EA must meet this requirement by including costs and benefits beyond those associated with the wood products.

*The Million Fire Salvage EA must incorporate information about the economic benefits of unlogged forests.*

National Forests generate a host of economically valuable goods and services simply by existing as natural ecosystems. Because fire is an essential disturbance process in the Million area forests, in the long run, the flow of goods and services that are generated by burned and naturally regenerated lands should be at least as great as those that are generated by unburned lands, provided that no additional disturbance from road building, logging, or other aspects of salvage are implemented. The Forest Service must report information detailing the goods and services associated with unlogged forests. In particular, if left undisturbed by logging, the Million Salvage project area can be expected to generate both short and long term economic benefits in the form of:

- ← recreational opportunities and tourism;
- ← recreational fisheries within the boundaries of the Rio Grande National Forest and downstream;
- ← habitat for important game species and hunting both within and outside of the Rio Grande National Forest;
- ← habitat for species sought by birders and other wildlife viewers;
- ← enhanced property values;
- ← clean water for communities downstream from the Rio Grande National Forest;
- ← regulation of water flowing through rivers and streams, including flood control;
- ← non-timber forest products such as wild mushrooms, herbs, and medicinal plants;
- ← biological resources that either have value now or have as yet unknown but potentially large economic and social value;
- ← biological and genetic resources that can improve the long-term productivity of all forest land;
- ← pest-control services provided by species that prey on agriculture and forest pests, and;
- ← pollination services provided by species that pollinate important forest and agricultural crops.

These are important economic benefits generated by National Forests in every part of the nation, including the Rio Grande National Forest. Economists generally refer to such benefits as ecosystem services.<sup>7</sup> (See Declarations of Robert Costanza, Rex Cullum, Laura Erickson, Al Espinosa, Larry Evans, Brock Evans, Timothy McDevitt, Ron Mitchell, Karyn Moskowitz, Jerry Murphy, Ronel Paddock, Thomas Power, John Talberth, Mary Vogel, Thomas Vuyovich, and Ed Whitelaw, incorporated here by reference and on file with the Regional Forester). The Forest Service has extensive

literature and sources of data that it can rely upon to quantify the magnitude of ecosystem services. (See Declarations of Robert Costanza, Ed Whitelaw, Thomas Power, John Talberth, and Karyn Moskowitz, incorporated here by reference and on file with the Regional Forester).

Failure to incorporate information about ecosystem services into the Million Fire Salvage decision, the Rio Grande National Forest LRMP, and the RPA would violate numerous statutes, regulations, and rules governing Forest Service management activities described below.

*The Million Fire Salvage EA must incorporate information about externalized costs of logging.*

**In making the decision to implement the Million Fire Salvage the Forest Service must incorporate information about externalized costs passed on to communities, businesses, and individuals if and when the Million Fire Salvage area is logged. (See Declarations of Ed Whitelaw, Thomas Power, Randal O'Toole, Karyn Moskowitz, Jeff Debonis, and John Talberth, incorporated here by reference and on file with the Regional Forester). These include the direct, indirect, and cumulative economic costs associated with:**

- ← lost recreational opportunities and tourism;
- ← lost recreational fisheries within the boundaries of the Rio Grande National Forest and downstream;
- ← lost habitat for important game species and associated hunting opportunities both within and outside of the Rio Grande National Forest;
- ← lost habitat for species sought by birders and other wildlife viewers;
- ← diminished property values;
- ← reductions in clean water for communities downstream from the Rio Grande National Forest;
- ← diminished capacity to regulate water flowing through rivers and streams, including flood control;
- ← diminished production of non-timber forest products such as wild mushrooms, herbs, and medicinal plants;
- ← loss of biological resources that either have value now or have as yet unknown but potentially large economic and social value;
- ← loss of biological and genetic resources that can improve the long-term productivity of all forest land;
- ← diminished pest-control services provided by species that prey on agriculture and forest pests, and;
- ← diminished pollination services provided by species that pollinate important forest and agricultural crops.
- ← lost jobs and income associated with timber production on private lands that is displaced by Rio Grande National Forest timber sales;

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- ← lost jobs and income associated with the production of alternative and recycled products that is displaced by subsidized Rio Grande National Forest timber sales;
- ← death, injury, and property damage associated with logging on the Rio Grande National Forest, and;
- ← increased risk of wildfires caused by adverse changes in microclimate, increased human access, and slash generated by timber sales.

These externalized costs are generated by National Forest logging in every part of the nation, including the Rio Grande National Forest. (See Declarations of Garrick Beck, Robert Costanza, Rex Cullum, Laura Erickson, Al Espinosa, Larry Evans, Brock Evans, Timothy McDevitt, Ron Mitchell, Karyn Moskowitz, Jerry Murphy, Cara Nelson, Ronel Paddock, Thomas Power, John Talberth, Mary Vogel, Thomas Vuyovich, and Ed Whitelaw, incorporated here by reference and on file with the **Regional Forester**). The Forest Service has extensive literature and sources of data that it can rely upon to quantify the magnitude of these externalized costs. (See Declarations of Robert Costanza, Ed Whitelaw, Thomas Power, John Talberth, and Karyn Moskowitz, incorporated here by reference and on file with the Regional Forester).

Failure to incorporate externalized costs into the Million Fire Salvage decision violates the economic analysis requirements of numerous statutes, regulations, and rules governing Forest Service management activities described below.

#### *Violations*

##### Violations of the Multiple Use and Sustained Yield Act (MUSY)

By failing to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision the Forest Service violates the Multiple Use and Sustained Yield Act. Without incorporating ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Forest Service cannot meet MUSY's requirements to administer National Forests for all of their resources, to maximize public benefits, to give due consideration to the relative resource values of all National Forest resources. 16 U.S.C. § 528; 529; 531.

##### Violations of the Forest and Rangeland Renewable Resources Planning Act (RPA), the National Forest Management Act (NFMA), and their Implementing Regulations.

By failing to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision the Forest Service violates the Forest and Rangeland Renewable Resources Planning Act and the National Forest Management Act. Without incorporating ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Forest Service cannot meet the RPA and NFMA's requirements to secure the maximum benefits of multiple use sustained yield management, to conduct comprehensive economic assessments of all National Forest resources, to identify all costs and all benefits associated with program and project outputs, to insure consideration

of the economic aspects of renewable resource management, to improve Forest Service accountability when it prepares annual budgets and reports to Congress on the costs and benefits of its programs, and to conserve forests and promote the use of recycled products. 16 U.S.C. § 1600(7); 1601(d)(1); 1600(3); 1602(2); 1604(g)3; 1606(a); 1606(b); 1606(c); 1606(d).

By ignoring ecosystem service benefits and externalized costs, the Forest Service also runs afoul of regulations implementing the RPA and NFPA which require that the Forest Service maximize net public benefits, evaluate the relative values of all National Forest resources, consider all market and non-market costs and all benefits of management decisions, and assign monetary values to goods and services to the extent that they can be assigned. 36 C.F.R. § 219.1; 219.4(a)1; 219.4(b)1ii; 219.12; 219.13; 219.14.

#### Violations of the National Environmental Policy Act and its Implementing Regulations

If the FS fails to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Rio Grande National Forest Service will violate the National Environmental Policy Act. Without incorporating ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Forest Service cannot meet NEPA's requirements to fully disclose the direct, indirect, and cumulative economic impacts of the timber sale program and to give appropriate consideration to environmental amenities in decision-making. 42 U.S.C. § 4332 (C); 4332 (B).

By failing to utilize appropriate professional expertise capable of disclosing all natural resource benefits and externalized costs, the Forest Service would violate NEPA's mandate to rely upon a systematic and interdisciplinary approach to decision making. 42 U.S.C. § 4332 (A).

By ignoring ecosystem service benefits and externalized costs, the Forest Service would run afoul of regulations implementing NEPA which require full disclosure of direct, indirect, and cumulative economic impacts, identification of environmental effects and values in adequate detail so that they can be compared with economic and technical analyses, rigorous analysis of the benefits of implementing the "no action" alternative in timber sales, and use of appropriate professional expertise. 40 C.F.R. § 1501.2(a); 1501.2(b); 1502.6; 1502.16; 1502.24; 1507.2(a); 1507.2(b); 1508.7; 1508.8; 1508.27.

The Forest Service would also violate its Environmental Policy and Procedures Handbook, which reiterates requirements set forth in NEPA and the CEQ Regulations implementing NEPA. FSH 1909.15. These requirements also appear in the Forest Service Manual. FSM 1950.

#### Violations of the Administrative Procedures Act

By failing to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Rio Grande National Forest LRMP, and the RPA, the Forest Service violates the Administrative Procedures Act. Sources of information and methodologies for quantifying these benefits and costs are readily available and used by

the Forest Service and other federal agencies outside the context of the timber sale program. In light of this, the decision to ignore these benefits and costs violates the APA's prohibitions on making decisions that are arbitrary, capricious, and unreasonable. 5 U.S.C. § 706.

Violations of the Forest Service's Economic and Social Analysis Handbook.

By failing to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Rio Grande National Forest Service would violate provisions of its Economic and Social Analysis Handbook requiring that the Forest Service maximize net public benefits and fully account for all market and non-market benefits and costs in the context of market studies, economic efficiency analysis, and economic impact assessments of its plans and programs. FSH 1909.17.11.1; 1909.17.14.1; 1909.17.14.11; 1909.17.14.6; 1909.17.23.

Violations of the Forest Service's Timber Sale Preparation Handbook.

By failing to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Rio Grande National Forest Service would violate provisions of its Timber Sale Preparation Handbook requiring that all marketed and non-marketed costs and benefits be addressed in analyses of the financial and economic efficiency of individual timber sales and the timber sale program, as a whole. FSH 2409.18.13.1; 2409.18.32.

Violations of the Forest Service Manual.

By failing to incorporate ecosystem service benefits and externalized costs into the Million Fire Salvage decision, the Rio Grande National Forest Service would violate numerous provisions of the Forest Service Manual. These include provisions that require the Forest Service to manage the timber sale program so that total benefits exceed total costs, to account for non-timber economic effects in its timber sale analyses, to ensure that economic values used in economic efficiency and economic impact assessments adequately reflect biological, economic, and social conditions, and that economic and social impacts and costs and benefits inform all decisions. FSM 2403.4; 2403.5; 1971.5; 1970.1(1), (2), (3); 1970.2; 1970.3(1), (5).

The FEA must address the issue of salability to the purchaser.

The Forest Service has an obligation to disclose that there are serious issues related to the salability and economic feasibility of the project. In particular:

If anticipated value of the timber to the purchaser does not cover the purchaser's costs, verify that the sale is feasible for an operator to harvest either with or without supplemental funding. If the sale is not feasible to a purchaser and will, most likely, receive no bids, drop or delay the sale until market conditions are better, or redesign the sale, within the limits of the forest plan, to make it more attractive to potential purchasers. FSH 2409.18.23.

Thus, not only does the Forest Service have the obligation to demonstrate feasibility in the FEA, but the agency has an additional duty to either drop the Million Fire Salvage project in its entirety or substantially redesign the sale because it will likely receive no bids in its present form.

*The FEA must not grossly overstate economic benefits to the wood products sector.*

As set forth above, the FEA must not fail to discount its projections of revenues, incomes, and jobs in the wood products sector to reflect significant uncertainties as to whether or not the project will actually be sold and logged. Economists have developed a wide range of tools for dealing with projections of uncertain benefits, and these tools should be applied in the context of the Million FEA. In particular, the calculations of project revenues, incomes, and jobs generated should be multiplied by the probabilities of the timber sale actually being sold and logged. For a more complete discussion of how uncertainty needs to be incorporated into the FEA's economic analysis, we refer the Forest Service to Boardman, et al. (2001).<sup>7</sup>

Economic benefits to the wood products sector are typically grossly overstated because the Forest Service fails to recognize that the FEA must disclose only the incremental revenues, incomes, and jobs generated by the sale. If the Million project is simply displacing revenues, incomes, and jobs that would otherwise be associated with logging on non-federal lands, the Forest Service can claim absolutely no additional revenues, incomes, or jobs generated by the project. The Office of Management and Budget clearly requires this kind of accounting:

Analyses should take particular care to identify the extent to which a policy such as a subsidy program promotes substitutes for activities of a similar nature that would occur without the policy. Either displaced activities should be explicitly recorded as costs or only incremental gains should be reported as benefits of the policy. (OMB Circular A-94 at 6).<sup>8</sup>

The FEA must acknowledge displacement effects. That is, it must not erroneously conclude that all revenues, jobs, and incomes associated with the project will be created out of thin air.

**← RANGE OF ALTERNATIVES (VIOLATIONS OF NEPA AND FOREST SERVICE HANDBOOK AND MANUAL): THE FOREST SERVICE IS REQUIRED TO ANALYZE A NO-HARVEST ALTERNATIVE WHEN PROPOSING STEWARDSHIP PROJECTS. THE MILLION PROJECT FEA MUST CAREFULLY CONSIDER THESE.**

The Million Project FEA must carefully address non-commercial alternatives. There are no legitimate ecological justifications for salvage logging. Erosion and sedimentation, and the accompanying loss of soil nutrients, are acknowledged to be major problematic issues in salvage logging operations, especially post-fire operations. Further, there is little to no market for the salvaged materials. In fact, the President of Forest Products in Española, for example, wrote to the Forest Service in April 2001,

I wanted to give you our comments on any applicable sale before you have invested several thousand dollars into it. If you continue to follow through with a sale, however, we will certainly look at what you have and work with the salvage crews, but I am not very hopeful at this point.

He goes on,

Unfortunately, at the time of the currently scheduled sale, I believe your standing timber will have lost over 90% of its lumber value. A proposed timber harvest which only contains number 3 dimension lumber will not pay the cost of logging itself let alone the cost of saw milling it.

The FEA must address a no-harvest restoration alternative that implements prescribed burning, snag recruitment, placement of nest boxes, culvert replacement, large woody debris (LWD) recruitment, and road obliteration alone, without commercial timber harvest, in particular the market is in question. The Forest Service must consider these kinds of alternatives. The fact that soil compaction caused by salvage logging can impede the rate of recovery of mature forest relative to replanting alone without salvage logging should have by itself indicated to the Forest Service the need to fully analyze such alternatives.

Also, the FEA must adequately explain why periodic prescribed fire as opposed to salvage logging could not be used to manage post-fire hazardous fuels. There is ample evidence in the literature that such an alternative would achieve the restoration goals of the project in a cost efficient manner without creating any of the ecological and economic damage of treatments that include commercial logging.

In all projects involving stewardship goals, the Forest Service Handbook and Manual explicitly require consideration of alternatives without commercial logging:

Where timber harvest is proposed primarily for the purpose of achieving forest stewardship purposes a full range of alternatives, including practical and feasible non-harvest options, must be analyzed in the environmental analysis process. FSM 2432.22c.

Consideration of such a non-harvest alternative is especially important in situations, such as the Million Project, where there is no demand for the wood products that will be generated under the logging alternatives, and where logging is financially inefficient:

ïf the forest has no timber program or if there [is] no demand for the timber being harvested, these vegetation management projects should be accomplished through other means, such as controlled burning. Timber harvest must be the most financially efficient way of achieving the necessary vegetation management, that is, it produces the least net costÖf FSH 2409.18.26.1.2

Further, the Forest Service is required to analyze such an alternative under NEPA. Because commercial logging, as proposed in the Million Project causes undesirable impacts on the environment, the agency must include an alternative that does not include such impacts:

ïDevelop other alternatives fully and impartially. Ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment. Consider reasonable alternatives even if outside the jurisdiction of the Forest Service. 40 CFR 1502.22.

The range of alternatives considered in the Million Project FEA must not prematurely foreclose an option to protect and enhance the environment. As the Beschta Report (1995) clearly states,

ïHuman intervention on the post-fire landscape may substantially or completely delay recovery, remove the elements of recovery, or accentuate the damage. In this light there is little reason to believe that post-fire salvage logging has any positive ecological benefits, particularly for aquatic ecosystems. There is considerable evidence that persistent, significant adverse environmental impacts are likely to result from salvage logging.ï

Beschta 1995

Obviously, if leading scientists raise such concrete doubts, then the FEA should consider an alternative that would not result in such impacts. Such an alternative must be developed even if implementing such an alternative would not meet current policy:

ïReasonable alternatives which may require a change in existing law or policy to implement shall be formulated if necessary to address a major public issue, management concern, or resource opportunity identified during the planning process. 36 CFR §219.12,f [5].

Just such a situation exists with the Million Project; there is a major public issue (commercial timber harvest and impacts to soils and water quality), a management concern (forest health, lower road density, etc.), and little to no market value. According to law and forest service direction, the agency must formulate a no-harvest alternative that addresses the restoration needs of the Million Project Project Area. We provide such a plan below.

**SPECIES VIABILITY (VIOLATIONS OF NFMA, ESA AND APA): THE MILLION PROJECT WILL JEOPARDIZE THE VIABILITY OF SPECIES THAT FIND OPTIMAL HABITAT IN INTERIOR FORESTS AND NATURALLY DISTURBED AREAS. POPULATION OR MONITORING DATA MUST BE PRESENTED FOR SEVERAL MIS SPECIES IN EITHER THE MILLION PROJECT FEA OR B.E.**

NFMA requires that the Forest Service provide for a diversity of plant and animal communities. 16 U.S.C. § 1604(g)(3). The Agency is required by NFMA's implementing regulations to maintain populations of native animals through monitoring the impacts of Forest Plans, including specific management actions, on management indicator species (MIS). 36 C.F.R. § 219.12(a)(6). The Million Project includes commercial salvage harvest, ground-disturbing activities associated with timber harvest, road construction activities as well as realignments, and other vegetative manipulation. These activities are likely to jeopardize the viability of species that find optimal habitat in forests with well-developed structures, and forests naturally disturbed by fire, disease and insect pathogens. Included here are forests that are disturbed by fire and the natural insect infestations that follow fire in a functioning ecosystem. The structural attributes created by fire, particularly the abundance of snags and LWD, are of critical importance to the viability of many species including Canada lynx, flammulated owl, northern goshawk, Mexican spotted owl, small mammals, bat species, several woodpecker species, and Neotropical migratory birds.

For many of these species the Forest Service has no up-to-date population data describing population numbers, locations, and trends, nor monitoring data on which the agency can rely to determine that the actions proposed in the context of Million Project will maintain numbers and distribution of these species sufficient for insuring long term viability. The Forest Service must obtain the necessary data for management indicator species rather than simply assuming that enough habitat will remain to maintain viable populations. This approach, which exclusively relies on habitat estimates, without checking the actual populations, ensures that any changes in population will go undetected. The latter approach was unambiguously rejected recently in federal court,

îThe Forest Service is obligated by the plain language of the National Forest Management Act's regulations to acquire and analyze hard population data for its selected management indicator species . . . Under this clear language, it may not rely solely on habitat trend data as a proxy for population data or to extrapolate population trends.î Forest Guardians et al. v. United States Forest Service, No. CV 00-714 JP/KPM-ACE.

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NFMA does not envision forest planning stopping at the Forest Plan level. In fact, the implementing regulations of NFMA state plainly that diversity shall be considered throughout the planning process. 36 C.F.R. § 219.26.

Nor has the Forest Service determined the minimum number of reproductive individuals that would constitute a viable population. The Forest Service is required by law to determine this minimum number of reproductive individuals before implementing activities that might impact those individuals or populations such as are planned in the Million Project. The Forest Service cannot permit these activities without knowing the location and number of individuals of these species that would enable determination of whether habitat for each vertebrate is well distributed to facilitate interaction. Until such information is provided the Forest Service cannot know whether it is providing sufficient habitat to support the minimum number of reproductive individuals nor that the habitat is distributed in such a manner as to permit interaction.

Because the Forest Service has no such data for most species adversely affected by the proposed management activities, and because what data there is suggests that such species are declining and otherwise at risk, the Forest Service runs afoul of viability and diversity requirements set forth in forest planning regulations 36 C.F.R. § 219.19 and § 219.26. In addition, any decision made on the Million Project and associated activities without the above-described information would be considered arbitrary and capricious and constitute agency action unlawfully withheld or unreasonably delayed in violation of the APA. (5 USC §§ 706[1] & 706[2]).

#### *Mexican spotted owl*

The Mexican spotted owl should be a management indicator species that is also listed as threatened under the Endangered Species Act. The U.S. Fish and Wildlife Service notes that the Rocky Mountain owl population is vulnerable, saying, "[i]solation of spotted owl pairs and small populations distributed over large areas of fragmented landscape prompt concern because if they are lost, the species disappears from the entire landscape it once inhabited." The absence of on-going surveys to monitor owl population trends show that the Forest Service is failing in its duty to return the threatened owl population to viability.

In fact, the most recent science on Mexican spotted owl responses to fire has demonstrated that owls may not abandon PACs post-fire. Jenness (2000) found that the presence of recent fire in a territory showed no evidence of affecting whether owls will be present or reproducing at that location.<sup>9</sup> He also used statistical methods to demonstrate that the percentage of pine in a burned territory had the most influence on owl response, and that no fire severity variables had any significant and biologically interpretable influence on owl response. Although, the author states his results may not apply to 100% stand replacing fires, he does state that there is a threshold somewhere between 55% and 100%.

Again, new research from California indicates that not only do spotted owls return to burned territories, but may also be reproducing successfully in burned territories. (Bond, M. in press). Bond's soon-to-be-published research paper shows that, with regard to spotted owls that had returned to sites that experienced moderate to severe burns, 4 of 7 owl pairs produced fledglings the year following fire in their territories.

Finally, because the Rio Grande National Forest has failed to monitor the overall Mexican spotted owl population as mandated by the USFWS biological opinions, any action taken that impacts owl habitat may constitute jeopardy, as the Forest has little idea how many or where the owl is present. Thus, because the ESA prohibits federal actions which jeopardize listed species or degrade their habitats, the Million Salvage sale violates section 7(a)(2) of the ESA. 16 U.S.C. § 1536(a)(2).

### *Northern goshawk*

The FEA must consider work of the Forest Service's own scientists who have found that goshawks in Utah have been observed using forests even when there is substantial insect-related mortality in the overstory up to 80%.<sup>10</sup>

The salvage of dead and dying trees, and road building planned in the context of the Million Project will adversely affect goshawks by eliminating potential nest stands, degrading post-family fledgling areas and foraging areas, fragmenting contiguous habitat, and creating habitat conditions that will place goshawks at a competitive disadvantage with species that thrive in openings and areas disturbed by human activities. The net result of these impacts will be to displace goshawks from the project area.

### *Three-toed and hairy woodpecker*

The removal of dead and dying trees (future snags) and fragmentation of large tracts of unharvested areas will have significant effects on the three-toed and hairy woodpecker in the planning area. McIver and Starr (2000) reviewed several studies that documented that post-fire logging caused significant changes in abundance and nest density of cavity-nesting birds. Most cavity-nesters showed consistent patterns of decrease after logging, including the hairy and three-toed woodpeckers.<sup>11</sup>

The northern three-toed woodpecker occurs primarily in spruce-fir forests where it can be normally found in low population densities. Normal densities exist around 1 pair per 100 acres but during beetle outbreaks can increase to 1 pair per acre.<sup>11</sup> This woodpecker species requires clumped snags in spruce-fir forests and 99% of their winter diet is composed of insects, primarily spruce beetles.<sup>12</sup> In fact, Koplin and Baldwin (1970) found that three-toed woodpeckers consumed as much as 2-26% of the brood of an endemic population of *Dendroctonus obesus* and reduced brood survival of an epidemic population of spruce beetles by 70-79%.<sup>13</sup>

Reducing snag density and reducing the food source of this species will have a significant effect on its viability in the project area and forest wide.<sup>14</sup> In fact, the USFWS has suggested in a separate salvage situation that at least six to seven snags should be retained per acre.<sup>15</sup> Spruce mortality from epidemic beetle outbreaks serves a critical role in the balance of this ecosystem including providing abundant habitat and food for cavity nesters and insectivores such as the three-toed woodpecker and Neotropical migratory bird species. Commercially removing this material stops this process in its tracks and deprives many species of developing habitat and food sources. The Forest Service must treat the three-toed woodpecker and the hairy woodpecker with a qualitative analysis in the FEA.

The Forest Service must provide population monitoring data and analysis of such data in the project record, which documents that the viability of the three-toed woodpecker or hairy woodpecker would be maintained in the planning area. This includes monitoring data from past projects which can be used to predict the woodpecker's response to activities planned in the Million Project. As with other MIS, sensitive species, and T&E species, the FEA and project record must contain substantive determinations one way or the other regarding viability.

#### *Neotropical Migrant Birds*

As a class of species, neotropical migrant birds are sensitive to timber harvesting because many such species rely upon relatively unfragmented conifer and aspen stands with a high level of structural and compositional complexity. The Forest Service has extensive literature regarding the habitat requirements of neotropical migrants, and their sensitivity to logging and road building.<sup>16</sup> Many neo-tropical migrants find ideal habitat in older spruce stands within the project area.

The U.S. Forest Service, in other regions, is consistently using NTMBs as a sensitive class of species for which to manage. This is due to growing concerns with habitat fragmentation and population declines. The Million Project will likely have a significant adverse effect on NTMBs due to salvage of dead and dying trees. The FEA must address NTMBs carefully, so as to not violate the Migratory Bird Treaty Act. By law, the Forest Service must take steps to reduce or eliminate intentional or unintentional takes of migratory birds and incorporate migratory bird impacts into its NEPA analysis. These requirements appear frequently in the Migratory Bird Treaty Act (16 U.S.C. § 703-711) and the President's Executive Order of January 11, 2001.

### **CUMULATIVE EFFECTS (VIOLATIONS OF NEPA): *THE MILLION FEA MUST ACCOUNT FOR SIGNIFICANT CONTRIBUTORS TO CUMULATIVE EFFECTS.***

The Forest Service Environmental Policy and Procedures Handbook sets the standard for analysis of cumulative effects:

"Individual actions when considered alone may not have a significant impact on the quality of the human environment. Groups of actions, when added together, may have collective or cumulative impacts, which are significant. Cumulative effects that occur must be considered and analyzed without regard to land ownership boundaries. Consideration must be given to the incremental effects of past, present, and reasonably foreseeable related future actions of the Forest Service, as well as those of other agencies and individuals."

The Council has extensively described the minimum requirements for analysis and mitigation of cumulative impacts on Environmental Quality in its publication *Considering Cumulative Effects Under the National Environmental Policy Act (1997)*, by the CEQ regulations implementing NEPA (40 C.F.R. 1508.7; 1508.8), and by the Forest Service's Environmental Policy and Procedures Handbook (FSH 1909.15.15.1). Specific examples of quantitative information to be addressed by cumulative effects analyses are identified by these sources as well as other regulations or rules for specific resources, such as threatened, endangered, and sensitive wildlife. FSM 2620.3; 2620.44; 2621.3.

At minimum, an adequate cumulative effects analysis must:

- ← identify the past, present, and reasonably foreseeable actions of Forest Service and other parties affecting each particular aspect of the affected environment;
- ← must provide quantitative information regarding past changes in habitat quality and quantity, water quality, resource values, and other aspects of the affected environment that are likely to be altered by Forest Service actions;
- ← must estimate incremental changes in these conditions that will result from Forest Service actions in combination with actions of other parties, including synergistic effects;
- ← must identify any critical thresholds of environmental concern that may be exceeded by Forest Service actions in combination with actions of other parties, and;
- ← must identify specific mitigation measures that will be implemented to reduce or eliminate such effects.

Using these minimum criteria established by the CEQ, by regulations implementing NEPA, and by Forest Service rules and regulations as a guide, it is abundantly clear that the Forest Service must attempt to complete a legally adequate cumulative effects analysis for any aspect of the environment affected by the proposed Million Project.

The cumulative effects sections in the Million Project FEA must not avoid the required cumulative effects analysis by separating each analysis and ignoring the overall impacts of the proposed actions across the project area as a whole, and relying on BMPs. The

FEA assumes that water quality will be protected if BMPs and mitigation measures are implemented. However, while prevention and minimization of adverse impacts at the project site is indeed necessary, it is not sufficient to avoid cumulative effects (CEQ 1971).

Further, a recent USDA Office of the Inspector General Report concluded that reliance on speculative mitigation measures **significantly compromised environmental quality.**<sup>17</sup>

The Million Project FEA must provide *quantified* or *detailed* information. Two areas in which this shortcoming will likely be most pronounced are: 1) The cumulative effects the salvage sale will have on sedimentation and erosion in conjunction with the severely damaging erosion and sedimentation which has already occurred; and 2) Failure to address the cumulative effects of the salvage sale in conjunction with the extensive logging and fire suppression activities in the area.

The past, present or future projects that may contribute to cumulative impacts must be listed and discussed in detail. Quantified analysis of cumulative watershed impacts using such standard measures as sedimentation, turbidity, water temperature, etc., must be addressed. Cumulative impacts of reopening of decommissioned roads, private land logging, fire suppression activities contributing to increased OHV use, increased risk of fire ignition and catastrophic behavior (activity fuels increase), grazing, firewood poaching, noxious weed infestations, etc. must all be addressed.

In regards to private land logging the FEA must contain information on the number of large trees to be removed, and the acreage of habitat removed that is still suitable **AT THE TIME OF THE LOGGING** for spotted owl or goshawk foraging, roosting, or nesting and the potential effects of this on owl and goshawks in the project area.

**NOXIOUS WEEDS (VIOLATIONS OF NEPA): THE MILLION SALVAGE DECISION MUST TREAT THE THREAT OF NOXIOUS WEEDS AND THE CONTRIBUTION OF THIS SALE TO THIS ACKNOWLEDGED PROBLEM ON THE RIO GRANDE NATIONAL FOREST.**

In light of the present infestation on the Rio Grande National Forest, the acknowledgement of the presence or potential presence of noxious weeds, the potential acknowledgement in the FEA that none of the vehicles used in the emergency rehabilitation of the Project Area were not washed and the reseeding operation failing to use a certified weed-free seed source, the well-documented contribution of logging activities to the spread of noxious weeds, the Forest Service should focus on causative factors rather than mitigation.

The FS must provide an in-depth treatment of the risk of noxious weed introduction and spread. The agency cannot simply rely on mitigation measures; rather it must begin to address the actions that cause the infestation such as road development and logging related vehicles.

## NFMA AND NEPA VIOLATIONS REGARDING IMPACTS ON SOIL AND SOIL PRODUCTIVITY

The National Forest Management Act prohibits the FS from carrying out management activities that cause permanent impairment of the soil. At 16 U.S.C. 1604(g)(3)(E) 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. NFMA implementing regulations at 36 CFR §219.27(a)(1) state, All management prescriptions shall conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land.

NEPA regulations at 40 CFR §1508.7 state:

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

NFMA implementing regulations at 36 CFR §219.27(f) state:

Conservation of soil and water resources involves the analysis, protection, enhancement, treatment, and evaluation of soil and water resources and their responses under management and shall be guided by instructions in official technical handbooks. These handbooks must show specific ways to avoid or mitigate damage, and maintain or enhance productivity on specific sites. These handbooks may be regional in scope or, where feasible, specific to physiographic or climatic provinces.

Stated objectives include: To meet direction in the National Forest Management Act of 1976 and other legal mandates. To manage National Forest System lands under ecosystem management principles without permanent impairment of land productivity and to maintain or improve soil quality.

Policy. Design new activities that do not create detrimental soil conditions on more than 15 percent of an activity area. In areas where less than 15 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effect of the current activity following project implementation and restoration must not exceed 15 percent. In areas where more than 15 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effects from

project implementation and restoration should not exceed the conditions prior to the planned activity and should move toward a net improvement in soil quality.

It is clear that the intent of the Regional Standards is that the Forest Service must consider the cumulative effects of both past and proposed soil disturbing activities to assure the desired soil conditions are met. This includes impacts from activities that include livestock grazing, for under Definitions the Standards state:

*Activity Area. A land area affected by a management activity to which soil quality standards are applied. Activity areas must be feasible to monitor and include harvest units within timber sale areas, prescribed burn areas, grazing areas or pastures within range allotments, riparian areas, recreation areas, and alpine areas. All temporary roads, skid trails, and landings are considered to be part of an activity area.*

For example, consider a monitoring report of detrimental soil conditions in the Moodoo Salvage timber sale area. This proposed cutting unit coincided with a grazing allotment on the Sandpoint Ranger District, IPNF. As part of an administrative appeal settlement, the FS agreed to check for detrimental soil conditions due to past grazing and logging activities. The IPNF soil scientist, Jerry Niehoff, found significant detrimental soil conditions due to livestock grazing and recommended changes to the Moodoo Salvage project.

The FS should also include the impacts of snowmobiles on vegetation and soil productivity, which have been explained to the FS by Hammer (2002)<sup>18</sup>.

1. Detrimental Soil Disturbance. These disturbances includes the effects of compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement. At least 85 percent of an activity area must have soil that is in satisfactory condition. Detrimental conditions include:

Compaction. Detrimental compaction is a 15 percent increase in natural bulk density. The cumulative effects of multiple site entries on compaction should also be considered since compacted soils often recover slowly.

Rutting. Wheel ruts at least 2 inches deep in wet soils are detrimental.

Displacement. Detrimental displacement is the removal of 1 or more inches (depth) of any surface soil horizon, usually the A horizon, from a continuous area greater than 100 square feet.

Severely-burned Soil. Physical and biological changes to soil resulting from high-intensity burns of long duration are detrimental. This standard is used when evaluating prescribed fire. Guidelines for assessing burn intensity

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are contained in the Burned-Area Emergency Rehabilitation Handbook (FSH 2509.13).

**Surface Erosion.** Rills, gullies, pedestals, and soil deposition are all indicators of detrimental surface erosion. Minimum amounts of ground cover necessary to keep soil loss to within tolerable limits (generally less than 1 to 2 tons per acres per year) should be established locally depending on site characteristics.

**Soil Mass Movement.** Any soil mass movement caused by management activities is detrimental.

3. **Monitoring Methods.** Visual methods are generally used to make initial evaluations of the effects of management activities on soils. The major objective of soil quality monitoring is to ensure that ecologically sustainable soil management practices are being applied. In most cases, qualitative estimates will be considered sufficient. The use of photo points provides good documentation and is recommended. Measurements and detailed sampling are used to calibrate visual methods and to conduct investigations where visual methods are inadequate or where benchmark or statistically valid sampling is required.

a. **Areal Extent Sampling.** Estimates of the percent of an activity area affected by detrimental soil disturbance can be made visually or by transecting. If statistically valid techniques are needed for benchmark sites, determine sample size and transect design using procedures described in Howes, Hazard, and Geist 1983.

b. **Soil Sampling Techniques.** Soil displacement, rutting, severely burned soil, erosion, mass movement, and above-ground organic matter can be observed and measured.

(Emphasis added.)

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 (cutting unit).

**Unfortunately, the scientific adequacy of the FS's methodology for maintaining soil productivity on the RGNF has never been demonstrated. The FS's determination that it may permanently damage the soil on 15% of an activity area and still meet NMFA and planning regulations is arbitrary. The EA does not cite any scientific basis for adopting the 15% numerical limit.**

Even considering their limitations, the Regional Soil Standards are clear?the FS must at least estimate the amount of detrimentally disturbed soils from logging, grazing, etc. in logically bounded Activity Areas?especially if the soil in those disturbed sites would be further disturbed by proposed project activities.

The EA must disclose a numerical estimate of the cumulative percent of detrimental soil impacts the logging, burning, and landing construction, and road building activities would cause in each specific cutting unit (activity area).

Whereas the FS might state that logging has not previously occurred in the proposed cutting units, the FS must not fail to disclose, for any Activity Area, the percentage of existing detrimental soil disturbance from past livestock grazing, off-road vehicle or snowmobile use, firewood cutting, and other human disturbances. It must not only provide percentages of iSeverely Burnedî conditions in the cutting units following the fire.

The FS then must display, for each Activity Area, the anticipated percentage of total detrimental soil disturbance that would exist in these same cutting units *after* Million logging activities. The FS appears to often try to obfuscate the entire meaning of idetrimental disturbanceî by leaving vague and unanswered the question of whether its okay to exceed 15% if some of the disturbance was caused by a wildland fire. The FS should disclose the reduced soil productivity due to the fire, and also adequately discuss the soil productivity implications for the cumulative effects of the fire plus proposed logging.

The criteria for assessing areas of detrimental burning are defined in Forest Service Handbook, FSH 2509.13, Chapter 20 ÷ Burned-area Survey, Section 23.32a. Section 23.32a lists five site indicators to use in identifying fire intensity. These five indicators are: 1) depth and color of ashes; 2) size and amount of live fuels consumed; 3) litter consumption; 4) plant root crowns damaged; and 5) soil crusting, or baking of the soil surface.

We also ask if the soil erosion following the fire should be considered a part of the idetrimental disturbanceî equation. Predictions should point out that a lot of erosion would happen in the proposed cutting units. We ask,

Does the FS believe that areas where erosion has occurred or will occur post-fire fall under the definition of idetrimentally displacedî? If so, can these areas be managed to fall outside the definition of idetrimentally displacedî? If so, please explain in detail.

The FS typically does not consider soil nutrient losses because of burning to be a subject of numerical soil productivity standards, despite the fact that nutrient levels are inextricably linked to soil productivity. The same for soil erosion following fire?if the burns result in erosion of soil, the FS doesnít believe that this should be considered in any quantitative consideration of soil productivity that the public can be expected to hold it to.

Since the Standards are at least in part numerical, failure to disclose numerical amounts means the FS would fail to demonstrate consistency with NFMA.

The EA needs to disclose the results of monitoring that indicate the effectiveness of logging in winter conditions to reduce impacts on soil productivity.

Standards results in NEPA analyses often do not consider soil productivity outside the Activity Areas (cutting units) of the proposed timber sale. But merely showing that a proposed project will not permanently damage any more than 15% of proposed cutting units. This means that significant loss of soil productivity in past cutting units (that may have experienced livestock grazing), roads, landings, firelines created to fight wildland fires, and the loss of soil productivity from wildland fires themselves are simply dismissed without consideration. This is not permissible.

If the FS uses the 15% Standard, then the meaning of soil productivity in the terminology of NFMA is largely ignored. The FS claims that soil quality is maintained when erosion, compaction, displacement, rutting, burning, and loss of organic matter are maintained within defined soil quality standards (FSM 2500-99-1). But even if the FS were to meet the 15% Standard in all Activity Areas forestwide, and even if the soil conditions of land outside Activity Areas could reasonably be ignored, the FS still cannot assume that there has been no significant or permanent impairment of the productivity of the land as NFMA requires.

Soil productivity can only be assumed to be maintained if it turns out that the soil Standards work. To determine if they work, the FS would have to undertake objective, scientifically sound measurements of what the soil produces (grows) following management activities. But the FS has never done this on the RGNF.

It is reasonable to expect that in order for the FS to assure that soil productivity is not being significantly impaired, to assure that the forest is producing a sustained yield of timber, for one example, tree growth must not be significantly reduced by soil-disturbing management activities. Grier and others (1989), in a Forest Service General Technical Report, adopted as a measure of soil productivity: the total amount of plant material produced by a forest per unit area per year. And they cite a study where a 43-percent reduction in seedling height growth in the Pacific Northwest on primary skid trails relative to uncompacted areas for example. And in another Forest Service report, Adams and Froehlich (1981) state:

Measurements of reduced tree and seedling growth on compacted soils show that significant impacts can and do occur. Seedling height growth has been most often studied, with reported growth reductions on compacted soils from throughout the U.S. ranging from about 5 to 50 per cent.

Adams and Froehlich (1981) also provide reasons why impacts beyond the directly compacted 15% of an area must be considered in any reasonable definition of soil productivity:

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Since tree roots extend not only in depth but also in area, the potential for growth impact also becomes greater as compaction affects more of the rooting area. In a thinned stand, for example, you can expect the greatest growth impacts in residual trees that closely border major skid trails or that have been subject to traffic on more than one side of the stem."

In other words, when an Activity Area reaches 15% detrimentally impacted soils via compaction, tree growth **outside the skid trail**, or beyond the 15% compacted area, is affected.

To recognize that the Standards must be validated, Forest Supervisors must:

- ← Assess whether (soil quality standards) are effective in maintaining or improving soil quality;
- ← Evaluate the effectiveness of soil quality standards and recommend adjustments to the Regional Forester; and
- ← Consult with soil scientists to evaluate the need to adjust management practices or apply rehabilitation measures.

This all implies that monitoring must be undertaken. Furthermore, recognizing that loss of soil productivity is defined not merely in terms of the absence of meeting the 15% standard. Soil Function is defined thus:

Primary soil functions are: (1) the sustenance of biological activity, diversity, and productivity, (2) soil hydrologic function, (3) filtering, buffering, immobilizing, and detoxifying organic and inorganic materials, and (4) storing and cycling nutrients and other materials.

And Soil Quality is defined as "The capacity of a specific soil to function within its surroundings, support plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation."

Page-Dumroese et al. 2000 (an earlier version of which is cited in FSM 2500-99-1) emphasize the importance of validating soil quality standards using the results of monitoring:

Research information from short- or long-term research studies supporting the applicability of disturbance criteria is often lacking, or is available from a limited number of sites which have relative narrow climatic and soil ranges. Application of selected USDA Forest Service standards indicate that blanket threshold variables applied over disparate soils do not adequately account for nutrient distribution within the profile or forest floor depth. These types of guidelines should be continually refined to reflect pre-disturbance conditions and site-specific information. (Abstract.)

Furthermore, even if it were reasonable to assume that the FS need only maintain soil conditions so that no more than 15% of Activity Areas be in a detrimentally disturbed

condition, the FS has not actually included measures of all the kinds of soil disturbance that meet the definition of idetrimentally disturbed.i

Adams and Froehlich (1981) state: "While general field observations can be useful in recognizing severe compaction problems, measurement of actual changes in soil density permits the detection of less obvious levels of compaction." It is these illess obvious levels of compactioni that are missed by the lack of monitoring.

For a study done on the Kootenai NF and the adjacent Flathead NF in Montana, soil scientists measured soil bulk densities, macropore porosities, and infiltration rates using paired observations of disturbed vs. undisturbed soils. They discovered that although "the most significant increase in compaction occurred at a depth of 4 inches" some sites showed that maximum compaction occurred at a depth of 8 inches" (and) iFurthermore, ... subsurface compaction occurred in glacial deposits to a depth of at least 16 inches." (Kuennen, Edson, and Tolle, 1979.) There is simply no way that the FS has enough soil bulk density and other compaction monitoring data collected at the adequate soil depths and in enough sites to be able to assure that the logging activities will not significantly or permanently impair the productivity of the soil.

Another problem with the FSis lack of soil monitoring is that there has been no measure of soil productivity reductions due to loss of soil nutrients from logging activities, including removal of boles, branches, and from site preparation methods such as burning. From Grier and others (1989):

The potential productivity of a site can be raised or lowered by management activities causing a permanent or long-term increase or decrease in the availability of nutrients essential for plant growth.

Any time organic matter is removed from a site, a net loss of nutrients from that site also occurs. In timber harvesting or thinning, nutrient losses tend to be proportional to the volume removed.

Slash burning is a common site preparation method that can affect soil chemical properties tremendously. A great deal of controversy is often associated with using fire because of the wide variety of effects, some of which are definitely detrimental to site quality and some of which are beneficial.

An environmental impact statement must present a "reasonably complete discussion of possible mitigation measures." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 351 (1989).

Without sufficient soils monitoring and field verification in the project area, the Forest Service cannot make supportable predictions that the project will comply with Forest Plan Standards. Courts have held that sufficient monitoring and inventorying of forest resources is vital to making sound, forest management decisions and ultimately protecting the forest resources.

Again, the FS has legal mandates to do far more than they have for protecting soils on the RGNF. Sec. 6. Section 6 of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, states: "(g) As soon as practicable, but not later than two years after enactment of this subsection, the Secretary shall in accordance with the procedures set forth in section 553 of title 5, United States Code, promulgate regulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960, that set out the process for the development and revision of the land management plans, and the guidelines and standards prescribed by this subsection. The regulations shall include, but not be limited to-

"(3) specifying guidelines for land management plans developed to achieve the goals of the Program which-

"(E) insure that timber will be harvested from National Forest System lands only where-

"(i) soil, slope, or other watershed conditions will not be irreversibly damaged;

NFMA implementing regulations of the Act states, at 36 C.F.R. § 219.27:

(a) Resource protection. All management prescriptions shall--

(1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;

(b) Vegetative manipulation. Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall--

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources (Emphasis added.)

The Forest Service must follow the planning regulations in adopting the Regional Standards, otherwise the NFMA Act itself is violated in authorizing the Million Project, which will further disturb soil on areas already impacted by fire, grazing, and off-road vehicle use.

In failing to assure consistency with Regional Soil Standards, the FS cannot certainly not assure compliance with the very plain language of NFMA and NEPA regulations.

## **FOREST SERVICE HAS NEVER PROACTIVELY AND FORTHRIGHTLY RESPONDED TO THE FOOTHILLS FIASCO**

*To gain an understanding of citizen's concern about the FS and the Million salvage timber sale, one only needs to look into its inability to lawfully implement post-fire timber sales in the past. On the Boise NF the Foothills Wildfire Recovery Project included at least 2,300 violations of statute, regulations, and was the subject of a USDA IG audit and a criminal investigation between November 1993 and January 1994 to address whistleblower complaints about the conduct of the FS. The FS has refused to release this investigation's findings to the public. It is crucial that the findings, including*

*the IG's final report be released to the public in conjunction with this proposed post-fire sale, so that the public knows how the Foothills Project, labeled by Chief Jack Ward Thomas as a National Fire Salvage Model, erred and thereby know what to expect of this project.*

Congresswoman Carolyn Maloney issued a report on the implementation of the Foothills Project. That report was provided to the Regional Office as Appeal Attachment 16 of the Ecology Center et al. appeal of the Lolo Post Burn ROD, so we do not attach it here.

The FS has never responded to the issue of its inability to correctly and legally implement its National Fire Salvage Model. We have been involved with following the Bitterroot Burned Area Recovery Project implementation (e.g., see Rhodes, 2002<sup>19</sup> and Appeal Attachment 4 of their Lolo Post Burn ROD<sup>20</sup>), where the FS is making similar mistakes and deliberate violations. The FS needs to explain in the Million EA how it will not repeat this pattern.

So as the FS makes cries for ever wider discretion in implementing its management of the national forests, simultaneously its lack and evasion of accountability cries out for the public's increased scrutiny and tightening of the reins of discretion.

4-43

## **ROADS AND ROADLESS AREAS**

The EA will state that no logging or road building would occur in inventoried roadless areas but federal court rulings and other past FS commitments have determined that EAs such as Million Salvage are the proper and necessary process for validating and correcting roadless area boundaries since earlier inventory efforts often fail to include some unroaded lands. The EA must not fail to examine this issue. The maps must show all the roads. It appears likely that both logging and road building are proposed for uninventoried roadless areas.

Neither logging nor road building has been proposed under any action alternative within existing inventoried roadless areas. As previously stated, none of the areas outside the existing inventoried roadless areas meet the suitability guidelines for consideration as roadless areas due to existing roads.

The changes in snowmobile routes also have undisclosed implications due to the routes being into unroaded or wilderness study areas, and implications for compliance with the limitations on snowmobile use in the Forest Plan, Minimize public access by limiting motorized use to existing roads and travelways.

The FEA must provide an analysis of the Million DN's cumulative effects on roadless and wilderness characteristics.

4-44

## ROADS ANALYSIS

The project must be in compliance with the Roads policy of January 12, 2001, 66 Fed. Reg. 3206. Specifically, the Forest Service must perform a Roads Analysis at the Forest, Watershed, or Project level, identifying what roads are needed in the area, as well as what measures are necessary to close the "unnecessary" roads. Also, each road must have a Management Objective that requires the Forest Service to maintain the road at a specific maintenance level.

Roads analysis is an integrated ecological, social, and economic approach to transportation planning, addressing both existing and future roads - including those planned in unroaded areas. Analysts use relevant existing scientific literature in the analysis, disclosed assumptions made during the analysis, and revealed the limitations of the information on which the analysis is based. Public involvement is an important element in the analysis in order to determine what roads are "needed".

The Roads Analysis must be in conformance with the FS document "Roads Analysis" Misc. Report FS643. As such, the Forest Service must follow these steps:

1. Identifying the area to be analyzed and the intensity of the analysis
2. Describing the existing situation
3. Identifying issues
4. Assessing benefits, problems and risks
5. Describing opportunities and setting priorities
6. Reporting

The Forest Service must also address the following questions:

- \* What ecological attributes, particularly those unique to the region, would be affected by roading of currently unroaded areas?
- \* To what degree do the presence, type, and location of roads increase the introduction and spread of exotic plant and animal species, insects, diseases, and parasites? What are the potential effects of such introductions to plant and animal species and ecosystem function in the area? To what degree do the presence, type, and location of roads contribute to the control of insects, diseases, and parasites?
- \* How does the road system affect ecological disturbance regimes in the area?
- \* What are the adverse effects of noise caused by developing, using, and maintaining roads?
- \* How and where does the road system modify the surface and subsurface hydrology of the area?
- \* How and where does the road system generate surface erosion?
- \* How and where does the road system affect mass wasting?
- \* How and where do road-stream crossings influence local stream channels and water quality?

- \* How and where does the road system create potential for pollutants, such as chemical spills, oils, de-icing salts, or herbicides, to enter surface waters?
- \* How and where is the road system hydrologically connected to the stream system?
- \* How do the connections affect water quality and quantity (such as, the delivery of sediments and chemicals, thermal increases, elevated peak flows)?
- \* What downstream beneficial uses of water exist in the area? What changes in uses and demand are expected over time? How are they affected or put at risk by road-derived pollutants?
- \* How and where does the road system affect wetlands?
- \* How does the road system alter physical channel dynamics, including isolation of floodplains; constraints on channel migration; and the movement of large wood, fine organic matter, and sediment?
- \* How and where does the road system restrict the migration and movement of aquatic organisms? What aquatic species are affected and to what extent? How does the road system affect shading, litterfall, and riparian plant communities?
- \* How and where does the road system contribute to fishing, poaching, or direct habitat loss for at-risk aquatic species?
- \* How and where does the road system facilitate the introduction of non-native aquatic species?
- \* To what extent does the road system overlap with areas of exceptionally high aquatic diversity or productivity, or areas containing rare or unique aquatic species or species of interest?
- \* What ecological attributes, particularly those unique to the region, would be affected by roading of currently unroaded areas?
- \* To what degree do the presence, type, and location of roads increase the introduction and spread of exotic plant and animal species, insects, diseases, and parasites? What are the potential effects of such introductions to plant and animal species and ecosystem function in the area?
- \* To what degree do the presence, type, and location of roads contribute to the control of insects, diseases, and parasites?
- \* How does the road system affect ecological disturbance regimes in the area?
- \* What are the adverse effects of noise caused by developing, using, and maintaining roads?
  - \* Is there now or will there be in the future excess supply or excess demand for unroaded recreation opportunities?
  - \* Is developing new roads into unroaded areas, decommissioning of existing roads, or changing the maintenance of existing roads causing substantial changes in the quantity, quality, or type of unroaded recreation opportunities?
- \* What are the adverse effects of noise and other disturbances caused by developing, using, and maintaining roads, on the quantity, quality, and type of unroaded recreation opportunities?
- \* Who participates in unroaded recreation in the areas affected by constructing, maintaining, and decommissioning roads? What are these participants' attachments to the area, how strong are their feelings, and are alternative opportunities and locations available?

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4-45

In December 1997, the FS revised their estimate of the National Forest road network from 380,000 to 440,000 miles. The extra 60,000 miles comes from unauthorized and unengineered roads -including the ubiquitous, stealthy, temporary road. The Forest Service has no method for tracking temporary roads, nor does it include public highways, state or county roads in its inventory. However, temporary roads cause lasting impacts to the National Forests, as explained below.

Temporary roads are not considered system roads. Most often they are constructed in conjunction with timber sales, and financed by the timber purchaser. Timber sale contracts typically require that temporary roads be obliterated and revegetated, but they often remain on the ground after the contract is closed, at which point they become the responsibility of the Forest Service.

The Forest Service has no design constraints for temporary roads other than clearing width and location (though location is decided in conjunction with the timber purchaser). Best management practices (in states having them) may also apply to temporary road construction. If a temporary road is proposed for sensitive habitat, the Forest Service can impose design parameters, but that changes the road designation from temporary to specified short-term. In addition to the lack of design constraints, no length constraints exist; a temporary road could be 1/8th of a mile or 18 miles. In addition to timber sale access, temporary roads are often used for mineral and gas exploration.

Environmental analyses consider a maximum amount of temporary roads for a project, and the contractor is limited to this amount. The FS sale administrator and the timber sale contractor then jointly determine where they will be built.

According to NFMA, 16 USC 1608(b), and the Forest Service Manual (FSM) 7703.1, the agency is required to: *Reestablish vegetative cover on any unnecessary roadway or area disturbed by road construction on National Forest System lands within 10 years after the termination of the activity that required its use and construction.*

A recent ruling by the U.S. District Court for the Western District of Washington requires that non-system roads on National Forests over 10 years old must be obliterated and revegetated, according to 16 USC 1608(b), the National Forest Management Act. In this case, Northwest Ecosystems Alliance v. USFS, Case No. C96-0451-R, Judge Rothstein also required that the Forest Service inventory *all* roads within a forest, even non-system roads which are no longer used.

Regardless of the FSM 10-year rule, temporary roads can remain for much longer. For example, timber sales typically last 3-5 years or more. If a temporary road is built in the first year of a 6 year timber sale, its intended use doesn't end until the sale is complete - 6 years. The timber contract often requires the purchaser to close, obliterate the road a few years after the FS completes revegetation work, slash burning, etc. So this temporary road could remain open through this 6 years, plus another 2-3 years before the 10 year clock starts ticking on the FSM guidelines. According to several agency road specialists, FS contract administrators also have signed off on contracts even though closure/obliteration has not been done. Once the contract is closed, the timber purchaser is absolved of responsibility, and the Forest Service absorbs the responsibility and cost of complying with the FSM.

Therefore, temporary roads can legally remain on the ground for up to 20 years or more, yet they are constructed with few, if any environmental safeguards. This leads to increased erosion and sedimentation, access for illegal off-road vehicles, and other problems. But because temporary roads aren't tracked, their total mileage and impacts are unknown. Their status as non-system roads often makes them priorities for obliteration, though timber sale contracts require this anyway. And as the agency obliterates these roads, total road mileage doesn't change because they are not part of the system. Therefore, scarce obliteration funds are wasted fixing problems that timber purchasers were supposed to pay for, while obliteration for system roads proceeds at a snail's pace and road construction and reconstruction continue to scar the landscape.

In addition, the Forest Service has been known to misapply the term *temporary* to allow road construction in places it is prohibited. The FSM (2432.35b) states: *Use temporary roads only for short-term non-recurrent purchaser use.* But when the Superior National Forest, as part of a Forest Plan Amendment, implemented road density standards to comply with wolf habitat requirements, the standards exempted temporary roads from density calculations. Since the Amendment, the Superior has built few forest development roads, but has built and rebuilt temporary roads.

Temporary roads cause significant impacts on the land, require little environmental oversight and remain untracked by the Forest Service. They often remain

on the land beyond their allowable term and eat up limited road obliteration money that might be better spent on system roads.

The EA must address road issues specific to off-road vehicle use. System off-road vehicle trails, as well as user created roads cause enormous ecological damage. Many of these trails are in the worst possible locations, running alongside and through streams. The policy must bring these recreational uses inside the same ecological sideboards as passenger vehicle roads.

The need for enforcement of travel management restrictions, especially as regards motorized use, and for the increased funding of enforcement in the project area must also be met.

4-45

## **WATER QUALITY, FISHERIES, AND CLEAN WATER ACT**

Factors such as the condition of roads outside the arbitrarily defined project area, as well as the condition of soils from past management activities leading to potential water quality problems, must be considered.

Downstream of the project area, there are streams that already do not meet state water quality standards due to ongoing sedimentation. Concerning salvage logging and already degraded water quality, the EPA commented:

Also, the North Fork Smith River is on Montana's 1996 and 2000 lists of 303(d) impaired waterbodies., and the North Fork Musselshell River is on Montana's 1996 list of 303(d) impaired waterbodies. Such water quality impaired water bodies on the Montana 303(d) list need to have a Total Maximum Daily Load (TMDL) with a water quality restoration plan prepared by the Montana Dept. of Environmental Quality (MDEQ) to promote their recovery. An amount of 637 acres of timber harvest are proposed in the North Fork Musselshell River drainage, and 102 acres of harvest proposed in the North Fork Smith River drainage (i.e., ground disturbing tractor timber harvest with 4 \_ miles of temporary road construction on "high to very high" post-fire erosive soils). While it appears that direct impacts to these water quality limited streams from proposed activities would be low, since they are stated to be "far below" the project area, the potential for eroded sediment to be transported down-gradient out of the immediate project area to surface waters tributary to the 303(d) listed water bodies is unclear.

4-46

The EPA also commented:

It is important that proposed road construction and logging activities do not further degrade 303(d) listed streams, and are consistent with the State's development of TMDLs to restore water quality and beneficial use support. We recommend that the Forest Service contact the MDEQ to assure that the Forest Service's proposed actions are consistent with the State's TMDL development to restore water quality (contact Jim Bauermeister of MDEQ in Helena at 444-6771)

4-46

It appears that the FS relies upon implementation and evaluation of Best Management Practices (BMPs) as the primary means of ensuring that State water quality standards are met. However soil physical features and soil processes are very significantly affected by fire in large parts of the Million area, and that erosion is present without logging. The FS has failed to evaluate soil and water BMPs to determine their effectiveness on areas affected by fire, making BMPs unreliable for ensuring that State water quality standards are met.

4-47

Apparently, the FS does not have any data on use of its BMPs on landscapes heavily affected by fire. The FS sometimes relies on a scientifically invalid monitoring report done on the Boise NF.

The FS cannot claim that the lack of perennial streams connecting the project area to the WQLSs downstream rule out sediment impacts from logging activities. The Lolo Post Burn Project FEIS discusses how intermittent/ephemeral streams or dry draws flowed extensively following fires in the burned watersheds, creating significant water quality impacts. We incorporate that FEIS and the following website which discusses the issue, within this statement of reasons, for the purposes of pointing out how increased sediment impacts should be expected into downstream WQLSs:

<http://www.wildrockies.org/teci/Lolo-Post-Burn/>

4-48

Furthermore, Duncan, et al., 1987 found in their study that some fine sediment traveled down ephemeral stream channels to the mouths of the streams. Also, during flows of the magnitude necessary to flush stored sediment from ephemeral tributaries, discharge in downstream channels would be high (Id., p. 118). It is clear that flows of the magnitude necessary to flush stored sediment are highly likely in a fire-affected landscape.

The analysis should also disclose the connection between use of roads for log hauling and the sedimentation into streams as a result. Rhodes (2002) has shown that such impacts can be very significant.

4-49

The analysis should also disclose the impacts of sedimentation on water quality if the road repairs are not completed in a timely manner as anticipated.

Affects from the logging activities, including erosion, decreased water infiltration due to soil compaction, road construction, road reconstruction, etc. will only exacerbate the conditions.

4-49

Also, the Denver Water Board is trying to build sediment dams to prevent Cheeseman Reservoir from filling and overflowing. Full analysis of the damage to this municipal water supply due to increased erosion must be fully analyzed.

4-50

## WATERSHED CONSERVATION PRACTICES HANDBOOK

The Watershed Conservation Practices Handbook needs to be followed as directed by the Forest Service Handbook Region 2 Amendment. Sections concerning hydrological function, riparian areas, sedimentation, soil productivity, and water purity detail obligations including design criteria, monitoring, and restoration. The EA needs to show these are being met.

4-51

The lack of evidence showing completed T-walks before the project would be of special concern. There needs to be evidence of completed T-walks after project completion also. T-walks are the easiest method of checking for sedimentation effects in streams. Sedimentation is an important byproduct of salvage logging and must not be ignored by neglecting to do preproject T-walks. Preproject T-walks would, of course, not designate a desired condition or natural baseline, but rather a benchmark for restoration activity.

4-52

Meeting standards for Hydrological Function is very important. Current drought conditions combined with post fire conditions only increases the necessity to carry through on these obligations to protect the sponge and filter qualities of watersheds. The ability to infiltrate precipitation and naturally regulate runoff must not be further degraded. Good vegetation and ground cover need to be promoted. Connected disturbed areas need to be minimized.

4-53

From page 8 of the Beschta et al. 1995 report **Wildfires and Salvage Logging:**  
**Salvage logging should be prohibited in sensitive areas.**

Logging of sensitive areas is often associated with accelerated erosion and soil compaction (Marston and Haire 1990), and inherently involves the removal of large wood which in itself has multiple roles in recovery. Salvage logging may decrease plant regeneration, by mechanical damage and change in micro-climate. Finally, logging is likely to have unanticipated consequences concerning micro-habitat for species that are associated with recovery, e.g., soil microbes. Salvage logging by any method must be prohibited on sensitive sites, including:

4-54

- ï in severely burned areas (areas with litter destruction),
- ï on erosive sites,
- ï on fragile soils,
- ï in roadless areas,

- in riparian areas,
- on steep slopes,
- any site where accelerated erosion is possible.

4-54

The project area needs to be inventoried in regard to severely burned areas, erosive sites, fragile soils, steep slopes, sites where accelerated erosion is possible, and other sensitive sites. There is an obligation to promote good vegetation and ground cover, not inhibit it. Watershed Conservation Practices (WCP) direct the USFS in Standard 1 under Hydrological Function to

- Manage land treatments to conserve site moisture and to protect long-term stream health from damage by increased runoff.

**Increased runoff and sediment caused by soil disturbances are the major source of stream impacts. Creation of dry micro-climates does not conserve site moisture, but rather makes a bad situation worse.**

Watershed Conservation Practices (WCP) direct the USFS in Standard 2 under Hydrological Function to

- **Manage land treatments to maintain enough organic ground cover in each land unit to prevent harmful increased runoff.**

Detrimental effects of salvage logging inhibit ground cover vital to maintain hydrological function. Reduced ground cover decreases infiltration of water and increases surface runoff and peak flows. Continued or severe loss of ground cover often results in the formation of pedestals, rills, and gullies that greatly concentrate runoff, increase peak flows, and damage streams. Restoration procedures detailed in the WCP Handbook need to be followed.

Soil Productivity must not be degraded over the long term. Soil productivity determines vegetation growth capability in all ecosystems. Soil depth, structure, organic matter and nutrients are critical to sustaining this potential. Standards and design criteria to protect soil productivity apply to all actions that may impact these soil qualities. Nutrient loss occurs when organic matter and nutrients contained in leaves, limbs, litter, hummus and topsoil are moved offsite. The project area already has highly degraded soil productivity. There is an obligation to maintain or improve these conditions, not to make them worse. The removal of biomass would make a bad situation worse.

4-55

## **FAILURE TO CONSIDER PAST FAILURES OF iBMPSi**

The Forest Service continues to claim that Best Management Practices (iBMPSi) will protect water quality. This claim does not relieve the Forest Service of their duty to protect water quality and fisheries. The standard, blind, and complete reliance by the Forest Service on i best management practicesi to comply with state water quality standards was officially rejected by the Ninth Circuit over ten years ago.

4-56

The BMPs, however, are merely a means to achieve the appropriate state Plan water quality standards. . . Adherence to the BMPs does not automatically ensure that the applicable state standards are being met.

Northwest Indian Cemetery v. Peterson, 795 F.2d 688, 697 (9th Cir. 1986).

While the Forest Service has been allowed for many years to reference a list of best management practices and then presume to extensively log watersheds, this practice can no longer continue. Instead, the Forest Service must disclose the consistent failure of best management practices to prevent significant water quality problems in the past. Sierra Club v. Morton, 510 F.2d 813, 824; National Wildlife Federation v. USFS, 801 F.Supp. 360 (D.Or 1984). There is no good evidence that the application of BMPs can reduce the impacts of logging and road construction at the watershed scale to a level safe for at-risk aquatic species especially in light of existing conditions of imperiled aquatic invertebrates and habitats. (Rhodes et al., 1994; Espinosa et al., 1997). Instead, [a]vailable data and analysis consistently suggest that the vast majority of watersheds managed for multiple uses exhibit degraded conditions in their fish habitats. (Espinosa et al. 1997). Clearly the same is true in the Middle Fork of the John Day Basin.<sup>21</sup> Also, anadromous and resident fisheries have declined steadily. A recently published paper by Al Espinosa, a respected former Forest Service Fisheries Biologist with over two decades of Forest Service experience, Jon J. Rhodes, Hydrologist for the Columbia River Inter-Tribal Fish Commission, and Dale A. McCullough, included the following critique of Forest Service best management practices,

This process could be more appropriately named least management practices. BMPs are subject to a wide spectrum of interpretation - frequently by resource technicians from disciplines not qualified to apply measures to protect salmon habitat or that have other resource objectives in mind. Therefore, the least effective practices in terms of protecting salmon habitat are frequently applied. BMPs are contingent upon economic considerations and are habitually diluted or dropped because they are not economically feasible. BMPs do not deal with cumulative effects and the recovery of impacted watersheds. In fact, they promote cumulative effects and do not allow recovery because watershed or fish habitat standards (criteria) are not directly linked to the watershed management process in which BMPs are selected . . . The reality is that BMPs cannot protect aquatic resources from the effects of excessive development. This philosophy has unequivocally failed to provide adequate protection for salmon habitat.

The authors recommend that projects scheduled for degraded watersheds should not proceed until the Forest Service can demonstrate that conditions have recovered to optimum levels. At the very least, the Forest Service cannot be allowed to continue in its quest to log degraded watersheds containing imperiled aquatic species without fully disclosing why its BMPs have consistently failed in the past, and how the BMPs have been beneficially modified to provide sufficient protection for this proposed project.

## **NON-COMMERCIAL AND NO-HARVEST RESTORATION ALTERNATIVE**

## Conservation and Local Economy Alternative For the Million Fire Area: A Restoration Alternative

### Purpose and Need

The alternative meets the following purpose and needs:

1. Provide for, and aid, natural recovery of the burned area.
2. Improve the protection of homes from wildfire.
3. Provide economic opportunities for individuals in the Million Fire area.
4. Provide for clean water, healthy watersheds.
5. Reduction in nonnative weeds.
6. Restore wildfire into the forest ecology outside of the Wildland-Urban Interface.
7. Improve the scientific understanding of fire ecology.
8. Improve the public's understanding of fire ecology and forest management.

### Summary

This alternative protects homes from wildfire and improves forest health. It is based soundly on the best available science. Two compelling themes emerge from the scientific literature and on-the-ground experience with fire and forest health issues related to fire. They are:

1) The chances of a home igniting during a wildfire is determined almost entirely on what happens within a hundred yards of the home. The landscaping within 40 meters of the home and the building design and materials determine whether or not a home will catch fire. Home protection is a local endeavor. It is what is done on private property that really counts. What is done miles away on national forest land has almost nothing to do with saving homes from wildfire. (*Cohen, Preventing Disaster, 2000; USDA, 1999, Reducing the Wildfire Fire Threat to Homes: Where and How Much , 2000; Cohen, Why Los Alamos Burned , 2000* ).

2) Fire is a major force of nature that is a natural part of the forest in the Million area watershed. On the other hand, past human management has led to the need for proactive management to restore these forests.

Wildland fires are meant to happen. Natural recovery, or more accurately natural succession, works well. Our attempts to intervene in nature's dynamic should be limited to facilitating the natural forces at work. Human intervention is only necessary in areas where we have done damage or made significant changes to the landscape before the fire. The two biggest issues to deal with are to remove/rehabilitate roads and to allow lightning-caused fire to play its ecological role. (*Beschta, et. al., 1995; McIver and Starr, PNW-GTR-486, 2000; Stickney, 1990*).

The **Conservation and Local Economy Alternative** provides home protection through a Homeowner Education Program and a Community Conservation Corps. The Corps will provide both fire hazard assessment and fire hazard reduction landscape assistance free of charge. Applying fire hazard actions to private land is the only way to effectively reduce the homeowner's risk due to wildfire.

The **Conservation and Local Economy Alternative** sustains forest health by allowing and facilitating natural recovery and succession. Unroaded areas and areas that were not intensively managed prior to the fire will be allowed to naturally recover. Active recovery efforts of road rehabilitation, road removal, stream banks stabilization, and in some cases, replanting, will be done in areas that were damaged through human management prior to the fire. Weed control will be done through prevention and control in areas where weeds are known to have occurred prior to the fire.

The **Conservation and Local Economy Alternative** provides opportunities for residents of the Million fire area to access traditional forest products through standard Forest Service permitting procedures. Currently open roads would be used to access fuelwood, viga/latilla, house log and other specialty products in roadside harvest areas where environmental impacts are determined to be insignificant.

The **Conservation and Local Economy Alternative** provides for the collection of scientific field data that will greatly increase our understanding of fire. Several study areas will be selected for different conditions and management approaches, utilizing appropriate experimental design, data collection and analysis.

The **Conservation and Local Economy Alternative** provides jobs and income in the Million fire area through contractual mechanisms related to active restoration activities. Those activities are describe in detail below and include homeowner education, road removal and decommissioning, road recontouring and culvert replacement, contouring felled logs and mulching, revegetation, weed control, and prescribed fire.

### **Basis for the Conservation and Local Economy Alternative**

Three issues must be addressed to meet the purpose and need:

1. Improve the protection of homes from wildfire.
2. Insure the healthy recovery of the burned area.
3. Allow fire to play its natural role in the forest ecosystem.

Based on the best available science, an alternative that best facilitates the recovery of the burned area, the restoration of fire into the ecosystem and protects homes needs to be consistent with the following principles:

ï The large majority of burned areas recover naturally without any significant intervention (*Beschta, et. al., 1995; McIver and Starr, PNW-GTR-486, 2000; Stickney, 1990*).

ï Sites that were damaged before the fire from roads, timber harvest, grazing, and other developments are most likely to require intervention to aid natural recovery. (*Beschta et. al., 1995; Lyon, GTR-INT-184, 1976*).

ï The likelihood that a home will ignite from wildfire is almost entirely determined by the landscape within 40 meters of the building and by the materials and design of the building. (*Cohen, Preventing Disaster, 2000; Cohen, Reducing the Wildfire Fire Threat to Homes: Where and How Much , 2000; Cohen, Why Los Alamos Burned , 2000* ).

ï Management activity, including fuel reduction, beyond 40 meters away from a home has little effect on the likelihood that a home will ignite during a wildfire. (*Cohen, Preventing Disaster, 2000; Cohen, Reducing the Wildfire Fire Threat to Homes: Where and How Much , 2000; Cohen, Why Los Alamos Burned , 2000* ).

ï Salvage Logging usually does significant damage, significantly changes the plant and animal succession, and has no ecological benefit. (*Beschta, et. al., 1995; Robichaud, et. al., PNW-GTR-486, 2000*).

ï Stand replacing fires are a natural occurrence to which the forest is adapted with the exception of some lower elevation forest types. (*Beschta, et. al., 1995; Interior Columbia Basin EIS, 2000*).

ï Even ponderosa pine forests have been found to have originated in stand replacing fire events. (Arno et al. 1995)

ï Drought and other climatic factors are the primary causes of large-scale which fires, which occur regardless of fuel conditions. (*Schmoltdt, Daniel L. , et. al., , PNW-GTR-455, USFS, 1999*).

ï Fire suppression, logging, and grazing is the primary causes of unnatural fuel conditions. (*Beschta, et. al., 1995; McIver and Starr, PNW-GTR-486, 2000; Schmoltdt, Daniel L. , et. al., PNW-GTR-455, USFS, 1999*).

Based upon these principles, two distinct categories of the landscape emerge: The Wildland-Urban Interface, which lies within 40 meters of structures, and the area outside of the Wildland-Urban Interface. Two distinct goals are thus differentiated. In the Wildland-Urban Interface the goal is to protect homes while providing aesthetic appeal and maintaining habitat as much as possible. Outside of the Wildland-Urban Interface, the goal is to allow and, when needed, aid natural succession of the forest ecosystem, including post-fire succession.

Applying the above principles to the Wildland-Urban Interface, we find that the management activity that is effective at protecting homes occurs on private property with few exceptions. In order to protect homes from wildfire, the home design and construction materials must resist ignition from firebrands. The landscape within 40 meters of the home must be thinned to eliminate the likelihood of a crown fire and small

fuels must be removed to stop an approaching fire. The Forest Service's roles, to aid in accomplishing these actions, are homeowner education and assistance in fuel management within 40 meters.

The Alternative includes two activities that implement effective home protection assistance. 1) A homeowner education program and 2) A home site fuel reduction Corps.

Homeowner education is based upon a coordinated program of public presentations, direct mail education material, media public interest education, and news features. Home site fuel reduction assistance will be accomplished with a Community Conservation Corps formed by the Forest Service. The Corps will provide free onsite assessment, education, and landscape services. The Corps will consist of locally hired workers and contractors.

Applying the principles outlined above to the area outside of the Wildland-Urban Interface is based on the understanding that natural forces, natural disturbance, and successional processes will provide for recovery. Management actions are utilized only on sites where natural recovery is determined to be unlikely to occur. (*Beschta, et. al., 1995*). In areas significantly outside the normal range of vegetative conditions due to fire exclusion, delineate where prescribed fire would be allowed to burn, when caused by lightning. In some areas where allowing a natural fire to burn might threaten home or other human built structures, this alternative would require the Forest Service to do all it can to prepare the structures and immediately surrounding area.

## **Features of the Conservation and Local Economy Alternative**

### **1. HOME PROTECTION**

Homeowner education will include direct mail to every household in the local area determined to be in a fire prone landscape describing what is needed to protect a home from wildfire. Annual public presentation of this information will be given throughout the local area. In addition, public presentations will be held on Jack Cohen's work. TV, Radio, and Newspaper ads will be run summarizing the information and advising how to get help.

A Community Conservation Corps will be created. This Corps will provide a fire-safety assessment and landscape fire hazard reduction assistance free of charge to homes in the Wildland-Urban Interface. This responds to the issue of wildfire risk to private homes and structures located in the Wildland-Urban Interface.

### **2. BURNED AREA RECOVERY**

Burned areas will be allowed to naturally recover except where previous human activities have resulted in conditions that require intervention. This responds to the issue of insuring forest health through natural post fire succession.

## **NATURAL RECOVERY OF BURNED AREA.**

Applicable areas. All burned areas that were not damaged by intensive management, outside of the Wildland-Urban Interface.

Management action. Allow to naturally recover. The only active management shall be trail maintenance and weed management that is described below.

## **GRAZING REASSESSMENT**

Applicable areas. Grazing allotments in the burned area.

Management Action. Eliminate cattle grazing in burned areas and initiate National Environmental Policy Act before grazing is returned.

## **ROAD ELIMINATION**

Applicable areas. All roaded areas in the Million planning area.

Management actions:

Remove and recontour all roads not needed for foreseeable management projects, for the following reasons:

- a) The lack of funding for the Forest Service to adequately maintain all roads.
- b) The ongoing ecological damage from roads that are not or cannot be adequately maintained.
- c) For affirmative response to the new Roads Policy.

## **ROAD REHABILITATION**

Applicable areas. In all roaded areas in the Million planning area, the roads that are needed in the foreseeable future will be rehabilitated and the iMurphy private land access component will be authorized. All bridge/culvert replacement/construction authorized in the Million ROD.

Management action. Upgrade all culverts. For those remaining roads that are causing damage to the watershed because of their location, this alternative would relocate those sections of road away from the riparian areas after an independent NEPA analysis.

## **WATERSHED PROTECTION**

Applicable areas. High hazard areas in the Wildland-Urban Interface and in areas that are roaded and were intensively managed prior to the fire.

Management action. Contouring felled logs and mulching. In specific cases, planting will be used in areas where a ground survey has shown that no seed source is available.

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## **PLANT TREES**

Applicable areas. Roaded and heavily logged areas where there is no seed source as determined by, 1) Site analysis of soil and seed sources that determines that there is no available seed source, 2) Observation in subsequent years after the burn that natural recovery is not occurring.

Management Action. Seed or plant trees.

## **WEED PREVENTION**

Applicable areas. Entire burned area.

Management actions. A weed prevention program will limit human and equipment weed seed spread. All activities (including mechanized operations) shall have an equipment wash down, personnel education program, and weed-free stock feed.

## **WEED CONTROL**

Applicable areas. Areas that contained weeds prior to the burn or have been assessed to have weed seed present.

Management actions. Survey and map locations of noxious weeds. Apply Integrated Pest Management. The application of herbicides shall be limited to hand application.

### **3. INTEGRATE FIRE INTO THE ECOSYSTEMS OF THE RIO GRANDE NATIONAL FOREST**

Amend the Forest Plan to formally adopt and actively implement the Federal Wildland Fire Policy. The first and highest priority is completion of a strategic fire management plan that will guide fire recovery activities, fuels management treatments, community fire education programs, and appropriate management responses to wildland fires. This will initiate a process of determining where prescribed burning may be applied and where natural fire can be allowed to burn without suppression activities.

This responds to two issues:

1. Ecosystems need fire to play its natural role in the ecosystem.
2. Wildfires must not cause unwanted damage to homes and other structures.

## **FUEL REDUCTION THROUGH NATURAL FIRE**

Applicable areas. All areas outside of the Wildland-Urban Interface that do not threaten homes. In those areas not significantly outside the normal range of vegetative conditions due to previous fire exclusion, delineate where natural fire would be allowed to burn, when caused by lightning. This includes all unroaded areas and all stand types in the Rio

Grande National Forest other than some ponderosa pine/ Douglas fir stands that are not near the Wildland-Urban Interface.

Management action. Monitor fire to insure that it does not cause harm to life or homes.

## **FUEL REDUCTION THROUGH PRESCRIBED FIRE**

Applicable areas. In those areas deemed to be outside the normal range of vegetative conditions due to previous fire exclusion.

Management action. In areas unlikely to burn outside the normal range of intensity, apply prescribed fire. In those areas deemed to be outside the normal range of vegetative conditions due to previous fire exclusion and where a prescribed fire would be likely to burn outside the normal range of intensity, perform manual pretreatments in preparation for prescribed fire and wildland fire use before conducting prescribed burns.

### **4. PROVIDE ACCESS FOR TRADITIONAL WOOD PRODUCTS**

Roadside harvest areas along currently open roads in the Million fire area shall be opened to forest users through the standard Forest Service permitting procedure. Where environmental impacts are determined through the NEPA to be insignificant, permitted woodcutters would have access to pre-determined harvest areas for collection of firewood, viga/latilla, house logs and other specialty products.

### **5. DEVELOP SCIENCE**

The Million fire areas provide an opportunity to develop badly needed information for understanding fire. (*Schmoldt, Daniel L., et. al., PNW-GTR-455, USFS, 1999*). The alternative includes the designation of study areas to assess the effectiveness of various treatments proposed in the current literature, compared to natural succession.

Two study areas of about 20 acres each will be selected for the following treatments:

1. Contour felling.
2. Permitted woodcutting activities.
3. Prescribed burn.
4. Unmanaged.

### **Funding and Contracting**

This alternative would not require that funding be immediately or imminently available for all activities. However, the Forest Service would rank all activities by priority based upon their necessity to restore ecological functioning, so that appropriate requests will be made in future budgets, and so as to be able to respond as funding does become available.

Many of these actions might be financed under the funds made available to Counties by the Secure Rural Schools and Community Self-Determination Act of 2000 (the County Payments bill) that was signed into law by President Clinton on October 30, 2000 (Public Law 106-393). It would require cooperation of County Government and Resource Advisory Council, as well as acceptance by the Forest Service.

Additional funding sources might include the Salvage Sale Fund<sup>22</sup> as well as U.S. Fish and Wildlife Service and iJobs in the Woods funds. For example, in Oregon, the USFWS funded a total of \$1.55 million in 1997 resulting in 37 miles of stream habitat enhancement, 53 linear miles of stream bank fencing, and 770 acres of riparian and upland habitat improvements, employing 133 workers at an average rate of \$11 per hour plus benefits and training.

Contracts shall be structured so that the size and content fit the capabilities of local contractors. Hiring for the Community Conservation Corps shall begin with solicitation of workers from the host and neighboring counties County. All of the active restoration activities outlined above would have the potential to generate jobs and income in the local area through contracts with the Forest Service.

Sincerely,

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Dolan, 1998a. This document was included as Appeal Attachment 7 of Appellantsí Lolo Post-Burn appeal, and is incorporated by reference, within this appeal. However, if the Regional Office wishes to see another for its review of this appeal, Appellants will be happy to provide it, if requested.

Dolan, 1998b. This document was included as Appeal Attachment 8 of Appellantsí Lolo Post-Burn appeal, and is incorporated by reference, within this appeal. However, if the Regional Office wishes to see another for its review of this appeal, Appellants will be happy to provide it, if requested.

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