January 31, 2020

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Ms. Anderson;

In addition to the Alliance for the Wild Rockies (AWR) January 29, 2020 comments, these are also AWR's comments on the December 20, 2019 cover letter and Scoping Document for the Westside Restoration Project timber sale proposal.

Quotes in these comments are from the Scoping Document unless attributed otherwise.

The Westside Restoration Project (Westside) proposal would implement the 2015 revised Forest Plan. In carrying out its mission, AWR has participated in the public processes concerning management of the Idaho Panhandle National Forests (IPNF) since the early days of original 1987 Forest Plan implementation, and has taken legal action a few times to force the Forest Service (FS) to manage in conformance with environmental laws such as the Endangered Species Act (ESA), the National Forest Management Act (NFMA), and the National Environmental Policy Act (NEPA). AWR also participated fully in the public process as the FS developed its revised Forest Plan, including commenting at every stage and submitting a formal objection. And because the FS provided essentially no relief in response to the formal objection, AWR incorporates the documentation of our public participation in the revised Forest Plan public process within these comments on the Westside timber sale proposal. By implementing the revised Forest Plan with this project as described in the Scoping Document, the FS would be operating in violation of environmental laws and regulations.

AWR participated in the public process during the development of the Access Amendments, and we incorporate AWR's comments and appeal of that Decision within these comments. AWR also participated during the public process as the Northern Rockies Lynx Management Direction (NRLMD) was developed, and continues to believe that the Forest Plan/NRLMD does not

consider the best available science. AWR incorporates the documentation of its participation in the NRLMD public process within this comment on the Westside proposal.

"The project interdisciplinary team is planning to prepare an Environmental Assessment (EA) on the proposed action and any alternatives that are analyzed, and make that draft EA available for a formal 30-day comment period." As we discuss in these comments, multiple aspects of the Westside proposal raise questions of significant and/or cumulative effects, necessitating the preparation of an Environmental Impact Statement (EIS) under NEPA. Twenty miles of road construction, 40 miles of road reconstruction, 2,256 acres of clearcut-type logging and 7,276 acres of additional logging would not be "insignificant" under any definition, nor without significant cumulative effects.

Taken together, the admission that "Fire suppression has played a role in the fuel buildup and congested stand conditions present today" and the alleged "conditions of the fuels in the project area and the risks to people, property, infrastructure and natural resource values" leading to the claimed "need to mitigate fuels on public lands" means the FS must prepare an EIS that analyzes and discloses the significance of the impacts of agency fire suppression policies' on the conditions in the project area.

AWR supports some of the actions proposed, specifically those reducing road density and restoring aquatic habitat and watersheds, especially for important native trout streams. We request the FS includes an alternative which takes a more comprehensive approach to restoring aquatic habitat and watersheds than is included in the Scoping Document. Please include and fully analyze an alternative that results in a road system which is fully affordable to maintain on an annual basis, within all of the watersheds affected by the proposal. Please use expected appropriations as the yardstick to measure "affordable", based on recent years' funding levels.

"(O)ur objectives include a road system which can be efficiently maintained while minimizing impacts to resources…" Whereas that sounds good, in practice what the FS means by "efficiently maintain… while minimizing impacts to resources" simply means doing road work while conducting timber sales, not really creating a comprehensive restoration plan so ongoing road impacts are truly minimized over time, which is what our alternative would accomplish.

Although "Road surveys were conducted throughout the project area to assess erosion and sediment delivery potential from the current road system" our alternative would upgrade those surveys significantly to be like the methodology (GRAIP) the FS utilizes in its own Fly et al., 2011.

The actions needed to reduce the road system to this affordable level need not themselves be within expected budgets. Indeed, few restoration projects proposed or implemented by the FS are fully funded by appropriated dollars. Figuring out a way to fund road decommissioning would follow from a Decision to implement it. That would be a legitimate way to invoke collaboration.

In analyzing such an alternative, it may turn out that some of the actions mentioned in the Scoping Document would be unnecessary or would be modified. For example, some roads proposed for maintenance, upgrading, or adding to the system may not be affordable to maintain,

or may be located where chronic sedimentation into streams persists. In such cases consideration of highest restoration priorities would require full road obliteration.

Such an alternative would avoid impacting the Inventoried Roadless Areas (IRAs) and thereby fully maintain its current corridor value to other areas for movement of wolverines, the threatened Canada lynx and grizzly bear, big game species and other wildlife.

Such an alternative would reduce the road network in the project area watersheds consistent with the forest plan and with best available science for maintaining robust populations of native trout.

By reducing the footprint of roads, such an alternative would reduce the spread of noxious weeds and their associated costs and environmental damage.

Such an alternative would be in compliance with the Travel Management Rule Subpart A, which requires the Forest Service to identify the forestwide minimum road system—itself necessarily being maintainable using expected annual appropriations. This alternative would recognize as a legitimate objective for national forest lands in the project area—as stated in Montana Forest Restoration Committee (2007) at Principle #13: "Establish and maintain a safe road and trail system that is ecologically sustainable."

Such an alternative would fully decommission/obliterate the entire length of unauthorized ATV/OHV routes and other unauthorized roads on national forest land in the project area to restore hydrologic functioning and soil productivity, reduce spread of noxious weeds, and promote ecosystem integrity.

Such an alternative would not construct any new roads, including temporary roads. The FS is aware that temporary roads potentially create much of the same impact as system roads.

Such an alternative would not log, mechanically treat or build roads within unroaded/roadless areas. The Scientific Assessment which was a basis for the ICBEMP EIS, along with volumes of other scientific research, point out that Wilderness and roadless areas already have the highest ecological integrity of all national forest lands.

Such an alternative would maximize the short-term sequestration of carbon in the forest, because already dangerously elevated greenhouse gases are an immediate issue that must be addressed.

Such an alternative would maximize the integration of wildland fire use in the project area, prioritizing forest plan direction the agency has as yet not taken seriously.

"A resilient ecosystem is one capable of withstanding a disturbance by resisting damage and recovering over time to its original state." Please describe in detail what is meant by "original state" as applied to this project area in the EIS.

"Prior to successful fire suppression and the introduction of blister rust, white pine, western larch, and ponderosa pine (on drier sites) were abundant." The EIS must explain what "abundant" means in terms of numerical estimates/ranges of white pine, western larch, and

ponderosa pine within the project area. In other words, their Historic Range of Variability (HRV) in the project area.

"We also see a need to expand the acres where hardwoods such as quaking aspen, paper birch, and cottonwood are significant components." Please disclose in the EIS the HRV of these trees in terms of numerical estimates/ranges within the project area. Also, the EIS must disclose the significance of the role of management causality (including fire suppression) creating this alleged need.

"(F)orage for wildlife is limited." The EIS must disclose the HRV of "forage for wildlife" in terms of numerical estimates/ranges within the project area.

"(W)e have a need to include activities that will contain and limit the spread of …invasive plants." The EIS must explain why this "need" exists, in the context of the FS's ongoing implementation of its Bonners Ferry Noxious Weed EIS.

"We are proposing to incorporate expanded herbicide treatments of non-native, invasive plant populations in the project area." Doesn't the Bonners Ferry Noxious Weed EIS Record of Decision already authorize such herbicide treatments?

"All treatments to control non-native, invasive species … would tier to management direction in the Bonners Ferry Noxious Weed EIS." Tiering this project to the Bonners Ferry Noxious Weed EIS—the NEPA document for another project—is illegitimate under NEPA.

The FS wants to "reduce the vulnerability of the planning area to insect and disease…" Please disclose in the EIS the scientific information indicating insects and disease are not within the HRV.

"Intermediate harvest, such as a commercial thinning, is a cutting designed to enhance growth, quality, vigor, and composition of a stand after regeneration and prior to final harvest." Is all the proposed intermediate harvest logging acreage in areas previously logged via "regeneration" methods? What is the foreseeable "final harvest" for each of the proposed intermediate harvest logging units?

"Most lands within (Backcountry MA 5) occur within Idaho Roadless Areas classified as backcountry/restoration." We incorporate within these comments "The Roadless Report: Analyzing the Impacts of Two Roadless Rules on Forested Wildlands" by Katie Bilodeau and Gary Macfarlane of Friends of the Clearwater (February 2019).

"Approximately 7 percent of the project area occurs within the Forest Plan designation of Recommended Wilderness…" The EIS must analyze the significance of all proposed actions on wilderness character of the forest plan Recommended Wilderness.

"The Westside project is part of a broader collaborative forest landscape restoration program (CFLRP) proposal occurring in the lower Kootenai River Watershed." The EIS must demonstrate compliance with the Omnibus Act of 2009, which authorized the CFLRP.

"Approximately 75% of the project area occurs in the county-defined WUI…" Has the WUI changed anywhere on the IPNF since the Forest Plan was adopted?

"(T)he project area overlaps with both the Myrtle Creek Bear Management Unit (BMU) and the Pack River Bears Outside Recovery Zone (BORZ) for Grizzly Bears…" Since we are awaiting the results of updated ESA consultation on the Forest Plan, the Westside proposal is premature and subverts NEPA and the ESA. Furthermore, this population is currently warranted for uplisting to Endangered, in recognition of its biological and legal status.

The veracity of the FS's inventory of system and nonsystem ("undetermined" or "unauthorized") roads is an issue that needs analysis in the EIS. This is partly because of insufficient commitment to monitoring and because closure violations are not always remedied in a timely manner.

The best Plan direction the FS has adopted to date was established in Flathead Forest Plan Amendment 19.1 It established Open Motorized Route Density (OMRD)/Total Motorized Route Density (TMRD)/Security Core indices. These are based upon the scientific information concerning security from roads and road density requirements for grizzly bears as found in Mace and Manley, 1993 and Mace et al., 1996. Also see McLellan, et al., 1988.

Reducing roads and therefore their impacts beyond what the FS seems willing would benefit not only grizzly bears, but most other natural aspects of the ecosystem, as the Access Amendment Draft SEIS states:

- Alternative D Modified would convert the most roads and consequently would provide the highest degree of habitat security and a lower mortality risk to the **Canada lynx**. (P. 70.)
- Alternative D Modified would provide a higher degree of habitat security (for **gray wolves**) than Alternative E Updated… (P. 74.)
- Alternative D Modified … could contribute to a cumulative increase in habitat security for **black-backed woodpeckers** (and **pileated woodpeckers**) because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in Core Areas. Newly dead trees that support wood boring beetle populations would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified could provide slightly more secure habitat than Alternative E Updated. (P. 84, 112.)
- Alternative D Modified … could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in Core Areas. Snags would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified could provide slightly more secure habitat(for **Townsend's big-eared bats, flammulated owls, fringed myotis bats**) than Alternative E Updated. (Pp. 85, 86, 95.)

[1] Although that Forest Plan has been revised and the Amendment 19 direction dropped and/or weakened, AWR has objected to the Flathead NF's revised forest plan and filed notice of intent to sue on this issue.

- Alternative D Modified and Alternative E Updated provide different levels of habitat security (for **peregrine falcon, fisher, wolverine**) based on the relative amount of wheeled motorized vehicle access. (Pp. 87, 89, 91.)
- Alternative D Modified, which closes the most miles of road in suitable habitat, would be the preferred alternative for the western toad. (P. 101.)
- Alternative D Modified closes the most miles of road in suitable habitat and would provide the greatest benefits for the **goshawk**. (P. 103.)
- Alternative D Modified, which closes the most miles of road in suitable habitat, would be the best Alternative for **elk**. (P. 104.)
- Alternative E Updated would provide some security and reduced vulnerability (for **moose**), but not as much as Alternative D Modified. (P. 104.)
- Although Alternative D Modified and Alternative E Updated would benefit **mountain goats**, Alternative D Modified would improve security and reduce the risk of displacement more than Alternative E Updated. (P. 109.)
- Alternative D Modified would improve security (for **pine marten**) more than Alternative E Updated. (P. 110.)

The EIS must disclose if adverse project or cumulative impacts are consistent with the requirement to prioritize the needs of the grizzly bear for the applicable Management Situation(s).

Schwartz et al. (2010) noted that management for grizzly bears requires not only the provision of security area, but control of open road densities between security areas. Otherwise, grizzly bear mortality risks will be high as bears attempt to move across highly roaded landscapes to another security area. Please disclose existing road densities located outside of and between Bear Management Units (BMUs), both at present and during project implementation.

Please disclose the FS strategy and best available science to provide habitat protections outside Recovery Zones (RZs) that would allow for a larger protected zone and/or natural augmentation from outside the RZs. The FS has no effective strategy to provide scientifically defensible habitat protections inside the RZ that would facilitate functional connectivity between and among BMUs.

Please disclose the impacts of late-season snowmobile use on grizzly bear spring range.

Please analyze and disclose cumulative impacts on grizzly bears from human activities and habitat alternations on land of other ownerships.

"Many of the roads being proposed for storage are unclassified roads, such as old skid trails or brushed in spurs." The EIS must analyze and disclose the amount of unauthorized use occurring on all of these routes.

"(W)e anticipate it could take 10-20 years to complete all of the work." Does the FS anticipate any other logging or burning projects might occur in the project area, in this timeframe?

Project activities and their environmental impacts will extend beyond the mapped project area boundary shown on the map, and the FS is obligated to acknowledge and disclose those impacts. The FS should utilize an analysis area formed by the watershed boundaries encompassing all the logging and any other proposed active management.

It is vital that the results of past monitoring be incorporated into this project analysis and planning. We request the following be disclosed:

- A list of all past projects (completed or ongoing) implemented in the analysis area.
- A list of the monitoring commitments made in all previous NEPA documents covering the analysis area.
- The results of all that monitoring.
- A description of any monitoring, specified in those past project NEPA for the analysis area, which has yet to be gathered and/or reported.
- A summary of all monitoring of resources and conditions relevant to the proposal or analysis area as a part of the Forest Plan monitoring and evaluation effort.
- A cumulative effects analysis which includes the results from the monitoring required by the Forest Plan.

Please provide an analysis of how well those past FS projects met the goals, objectives, desired conditions, etc. stated in the corresponding NEPA documents, and how well the projects conformed to forest plan standards and guidelines.

Those items are a critical part of the NEPA analysis. Without this critical link the validity of the FS's current assumptions are baseless. Without analyzing the accuracy and validity of the assumptions used in previous NEPA processes one has no way to judge the accuracy and validity of the current proposal. The predictions made in previous NEPA processes also need to be disclosed and analyzed because if these were not accurate, and the agency is making similar decisions, then the process will lead to failure. For instance, if in previous processes the FS said they were going to do a certain monitoring plan or implement a certain type of management and these were never effectively implemented, it is important for the public and the decision maker to know. If there have been problems with FS implementation in the past, it is not logical to assume that implementation will now all of a sudden be appropriate. If prior logging, prescribed fire and other "forest health treatments" have not been monitored appropriately, then there is no valid reason for this project.

Please provide an analysis to determine if implementation of past projects contributed to the spread of insects and disease in the Westside project area.

Since the FS has been claiming for decades that its IPNF timber sales are managing to prevent excessive insect and disease effects, the IPNF's widespread insect and disease designation is a ringing indictment of the failure of FS management.

Please disclose any evidence that demonstrates the root disease and decay, stem and crown diseases, bark beetles, defoliaters and other insects and diseases and potential future insect outbreak risks in the project area are in any way unusual or uncharacteristic of the forests in this ecosystem.

Please analyze and disclose the cumulative snag loss in areas previously logged or subject to other causes of snag loss in the EIS.

Is the inventory of allocated old growth on the IPNF maintained for public review? Also, how much of that old growth actually meets the relevant old-growth criteria?

Please provide an **estimate** of how much old growth in the project area has been destroyed by logging. What is the HRV for old growth forestwide?

How many FIA plot locations in the project area demonstrate the plot is within old growth?

Please disclose the natural historic range vs. current conditions regarding patch size, edge effect, and amount of interior forest old growth in the project area and forestwide.

Has the FS compared all stands proposed for logging to old growth criteria? Did the FS considered retaining such stands to be as best-closest to old-growth conditions, recruitment to compensate for deficits compared to the historic range?

Recruitment potential old growth is defined in the forest plan (p. 121) as forest stands that do not meet the definition of old growth currently but that are being managed with the goal of meeting that definition in the future. This is another erratic characteristic of the Forest Plan; although the Glossary mentions some "goal" of meeting the old growth definition in the future, the Forest Plan actually contains no such goal. Does the IPNF have an inventory of forestwide and project area "recruitment potential old growth?" If so, please display these areas on a map and provide links on the Forest website to the forestwide spreadsheet of stands which are designated or otherwise considered to be "recruitment potential old growth."

What are the official decision document(s) designating "recruitment potential old growth" in the project area? Allocated old growth? What will be the official decision document designating additional "recruitment potential old growth" in the project area? How does the IPNF officially document its (apparently) forestwide old-growth recruitment policy?

Please disclose the best available science the IPNF uses to implement active management in old growth or recruitment potential old growth stands.

USDA Forest Service, 1987b contains a list of "species …(which) find optimum habitat in the "old" successional stage…" Please disclose the wildlife species the IPNF considers to be strongly associated with old growth.

The IPNF's 1987 Forest Plan included standards for protection of old growth and associated wildlife (USDA Forest Service 1987c). 1987 Forest Plan Appendix 27 (USDA Forest Service, 1987d) provided other direction and biological information concerning old growth and old-growth associated wildlife species. The EIS must explain what it is about the IPNF's 1987 Forest Plan's old-growth standards and that Appendix 27 which is inconsistent with what the FS now considers to be the best available science.

Likewise the adjacent Kootenai National Forest's 1987 Forest Plan included standards for protection of old growth and associated wildlife, along with Appendix 17 (USDA Forest Service 1987a, USDA Forest Service 1987b). The EIS must explain what it is about USDA Forest Service 1987a, USDA Forest Service 1987b which is inconsistent with what the FS now considers to be the best available science.

To address its unsustainable and deteriorating road system, the FS promulgated the Roads Rule (referred to as "subpart A") in 2001. The rule directs each national forest to conduct "a science-based roads analysis," generally referred to as the "travel analysis process." The Forest Service Washington Office, through a series of directive memoranda, instructed forests to use the Subpart A process to "maintain an appropriately sized and environmentally sustainable road system that is responsive to ecological, economic, and social concerns." These memoranda also outline core elements that must be included in each Travel Analysis Report.

The Washington Office memorandum dated March 29, 2012 (USDA Forest Service, 2012d) directed the following:

- A TAP must analyze all roads (maintenance levels 1 through 5);
- The Travel Analysis Report must include a map displaying roads that will inform the Minimum Road System pursuant to 36 C.F.R. § 212.5(b), and an explanation of the underlying analysis;
- The TAP and Watershed Condition Framework process should inform one another so that they can be integrated and updated with new information or where conditions change.

The December 17, 2013 Washington Office memorandum (USDA Forest Service, 2013b) clarifies that by the September 30, 2015 deadline each forest must:

- Produce a Travel Analysis Report summarizing the travel analysis;
- Produce a list of roads *likely not needed for future use*; and
- Synthesize the results in a map displaying roads that are *likely needed* and *likely not needed in the future* that conforms to the provided template.

The Subpart A analysis is intended to account for benefits and risks of each road, and especially to account for affordability. The TAP must account for the cost of maintaining roads to standard, including costs required to comply with Best Management Practices related to road maintenance.

The Travel Management Regulations at 36 CFR § 212.5 state:

> (b) Road system—(1) *Identification of road system.* For each national forest, national grassland, experimental forest, and any other units of the National Forest System (§ 212.1), the responsible official must identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based roads analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations,

to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.

The EIS should analyze and disclose how the project area is being managed in compliance with the Travel Management Regulations at 36 CFR 212 (Subparts, A, B, and C) and the Executive Orders related to Subpart B. Subpart A requires the FS to involve the public in a scientifically based process which designates the Minimum Road System both in the analysis area and forestwide, so that unnecessary or ecologically damaging roads are targeted for decommissioning and the economic liabilities of roads are minimized.

Please disclose compliance with motorized route restrictions, and if violations exist, perform an analysis of the resultant harm to wildlife habitat, soil, and water.

Please analyze how proposed management actions would be affected by likely climate change scenarios. Please quantify all human-caused CO_2 emissions for all project activities. Please quantify carbon sequestration for each alternative. Please disclose how climate change has affected ecological conditions in the project area, and include an analysis of these conditions under climate change scenarios.

Global warming and its consequences are effectively *irreversible* which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). All net carbon emissions from logging represent "irretrievable and irreversible commitments of resources."

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of *Ecosystem services*, the "Benefits people obtain from ecosystems, including: (2) *Regulating services,* such as long term storage of carbon; climate regulation…"

What is the best available science for sustaining viable populations of ESA-listed, management indicator species and all sensitive species on the Forest? Past timber harvest activities, roads, mining and related activities (OHV use, including closed roads and trails illegally accessed) must be analyzed in the context of the importance of habitat capability and suitability, as well as connectivity.

Please disclose ongoing soil and water impacts from roads not being adequately maintained. Please disclose the impacts of roads that are not maintained because they are unauthorized or non-system.

The EIS must disclose the documentation which determined that the specific areas proposed for logging in this proposal are suitable for timber production.

The EIS must disclose how much snag loss would be expected because of safety concerns and also from the proposed methods of log removal.

The Forest Plan FEIS includes a "Large/Very Large" size class (20"+ dbh). Please disclose how many stands in the project area fall within that Large/Very Large size class, and how many acres of those would be logged. The EIS must disclose estimates of how many total trees $\geq$ 20" dbh would be cut down in each unit.

The Forest Plan contains no minimum acreage or distribution requirements for maintaining old growth, ignoring 36 CFR 219.19 viability provisions that would prevent large areas of the IPNF becoming devoid of old growth or old-growth associated wildlife. The EIS must analyze the wildlife viability implications of managing the IPNF well outside the HRV for old growth, based upon the best available scientific information.

Please compare patch size of the old-growth areas to scientific information on minimum size needed for utilization by old-growth associated wildlife.

What is the scientific basis for the minimum amounts of coarse woody debris to be retained under Guideline FW-GDL-VEG-03?

The EIS must disclose the scientific basis underlying the minimum amounts of snags to be retained under Guideline FW-GDL-VEG-04. Also disclose the scientific basis for the delineation of snags into two diameter groups using 15" d.b.h. as the division point.

Hutto, 2006 addresses this; from the Abstract:

> The bird species in western North America that are most restricted to, and therefore most dependent on, severely burned conifer forests during the first years following a fire event depend heavily on the abundant standing snags for perch sites, nest sites, and food resources. Thus, it is critical to develop and apply appropriate snag-management guidelines to implement postfire timber harvest operations in the same locations. Unfortunately, existing guidelines designed for green-tree forests cannot be applied to postfire salvage sales because the snag needs of snag-dependent species in burned forests are not at all similar to the snag needs of snag-dependent species in green-tree forests. Birds in burned forests have very different snag-retention needs from those cavity-nesting bird species that have served as the focus for the development of existing snag-management guidelines. Specifically, many postfire specialists use standing dead trees not only for nesting purposes but for feeding purposes as well. Woodpeckers, in particular, specialize on wood-boring beetle larvae that are superabundant in fire-killed trees for several years following severe fire. Species such as the Black-backed Woodpecker (Picoides arcticus) are nearly restricted in their habitat distribution to severely burned forests. Moreover, existing postfire salvage-logging studies reveal that most postfire specialist species are completely absent from burned forests that have been (even partially) salvage logged. I call for the long-overdue development and **use of more meaningful snag-retention guidelines for postfire specialists**, and I note that the biology of the most fire-dependent bird species suggests that even a cursory attempt to meet their snag needs would preclude postfire salvage logging in those severely burned conifer forests wherein the maintenance of biological diversity is deemed important. (Emphasis added.)

"The majority of the Westside Restoration project landscape is dominated by moist forest types that evolved with high and mixed severity fires." What is the HRV of tree density of these fire regimes?

Essentially, FW-DC-FIRE-02 and Guideline MA6-GDL-FIRE-01 can be used to justify treatments regardless if they result in forest conditions that would not likely occur naturally, or if the biophysical setting would require frequent, intensive fuel treatments to maintain the desired fuel conditions. The EIS must reconcile the fact that the Westside project area "is dominated by moist forest types that evolved with high and mixed severity fires" with the Forest Plan statement, "Fire behavior is characterized by low-intensity surface fires with limited crown fire potential."

Rhodes (2007) states: "The transient effects of treatments on forest, coupled with the relatively low probability of higher-severity fire, makes it unlikely that fire will affect treated areas while fuel levels are reduced." (Internal citations omitted.) The EIS must disclose the varying effectiveness of fuel reduction activities in various temporal intervals following project treatment.

Rhodes (2007) also points out that using mechanical fuel treatments (MFT) to restore natural fire regimes must take into consideration the root causes of the alleged problem:

> In order to be ultimately effective at helping to restore natural fire regimes, fuel treatments must be part of wider efforts to address the root causes of the alteration in fire behavior. At best, MFT can only address symptoms of fire regime alteration. Evidence indicates that primary causes of altered fire regimes in some forests include changes in fuel character caused by the ongoing effects and legacy of land management activities. These activities include logging, post-disturbance tree planting, livestock grazing, and fire suppression. Many of these activities remain in operation over large areas. Therefore, unless treatments are accompanied by the elimination of or sharp reduction in these activities and their impacts in forests where the fire regime has been altered, MFT alone will not restore fire regimes. (Internal citations omitted.)

Cohen, 1999 recognizes "the imperative to separate the problem of the wildland fire threat to homes from the problem of ecosystem sustainability due to changes in wildland fuels" (Id.). In regards to the latter—ecosystem sustainability—Cohen and Butler (2005) state:

> Realizing that wildland fires are inevitable should urge us to recognize that excluding wildfire does not eliminate fire, it unintentionally selects for only those occurrences that defy our suppression capability—the extreme wildfires that are continuous over extensive areas. If we wish to avoid these extensive wildfires and restore fire to a more normal ecological condition, **our only choice is to allow fire occurrence under conditions other than extremes. Our choices become ones of compatibility with the inevitable fire occurrences rather than ones of attempted exclusion.** (Emphasis added.)

In support of focusing on manipulating limited areas near homes, Finney and Cohen, 2003, state:

> Research findings indicate that a home's characteristics and the characteristics of a home's immediate surroundings within 30 meters principally determine the potential for wildland-urban fire destruction. This area, which includes the home and its immediate surroundings,

> is termed the home ignition zone. The home ignition zone implies that activities to reduce the potential for wildland-urban fire destruction can address the necessary factors that determine ignitions and can be done sufficiently to reduce the likelihood of ignition. Wildland fuel reduction outside and adjacent to a home ignition zone might reduce the potential flame and firebrand exposure to the home ignition zone (i.e., within 30 m of the home). However, the factors contributing to home ignition within this zone have not been mitigated. Given a wildfire, wildland fuel management alone (i.e., outside the home ignition zone) is not sufficient nor does it substitute for mitigations within the home ignition zone. ...(I)t is questionable whether wildland fuel reduction activities are necessary and sufficient for mitigating structure loss in wildland urban fires.
>
> …(W)ildland fuel management changes the … probability of a fire reaching a given location. It also changes the distribution of fire behaviors and ecological effects experienced at each location because of the way fuel treatments alter local and spatial fire behaviors (Finney 2001). **The probability that a structure burns, however, has been shown to depend exclusively on the properties of the structure and its immediate surroundings (Cohen 2000a).**

(Emphasis added.) Our take from Finney and Cohen (2003) is that there is much uncertainty over effects of fuel reduction. The authors point out:

> Although the conceptual basis of fuel management is well supported by ecological and fire behavior research in some vegetation types, the promise of fuel management has lately become loaded with the expectation of a diffuse array of benefits. Presumed benefits range from restoring forest structure and function, bringing fire behavior closer to ecological precedents, reducing suppression costs and acres burned, and preventing losses of ecological and urban values. For any of these benefits to be realized from fuel management, a supporting analysis must be developed to physically relate cause and effect, essentially evaluating how the benefit is physically derived from the management action (i.e. fuel management). Without such an analysis, the results of fuel management can fail to yield the expected return, potentially leading to recriminations and abandonment of a legitimate and generally useful approach to wildland fire management.

In their conclusion, Graham, et al., 1999a state:

> Depending on intensity, thinning from below and possibly free thinning can most effectively alter fire behavior by reducing crown bulk density, increasing crown base height, and changing species composition to lighter crowned and fire-adapted species. Such intermediate treatments can reduce the severity and intensity of wildfires for a given set of physical and weather variables. **But crown and selection thinnings would not reduce crown fire potential.** (Emphasis added.)

The EIS must disclose the proposed project's impacts on the rate of fire spread. Graham, et al., 1999a point out that fire modeling indicates:

> For example, the 20-foot wind speed[2] must exceed 50 miles per hour for midflame wind speeds to reach 5 miles per hour within a dense Stand (0.1 adjustment factor). In contrast,

[2] Velocity of the wind 20 feet above the vegetation, in this case tree tops.

in an open stand (0.3 adjustment factor), the same midflame wind speeds would occur at only a 16-mile-per-hour wind at 20 feet.

The EIS must disclose the implications of how the fire regime is changing due to climate change.

The FS alleges a need to reduce forest fuels in the wildland-urban interface (WUI). The EIS must provide a cumulative effects analysis that compares current project area "needs" to accomplishments (or failures) of past projects in regards to fuel reduction accomplishments.

Aside from urging landowners to adopt firewise measures on their own land, there's little that "management" can accomplish in the way of reducing wildland fire risk. When weather conditions arise that are favorable to high intensity fires, which happens more and more these days due to the effects of climate change, those fires will burn regardless of suppression efforts. Please disclose the relative contribution of weather factors to fire spread, intensity, and severity.

The forest plan Glossary definition of WUI under (A) has allowed entities other than the general public to set WUI boundaries outside of NEPA and NFMA processes, and under (B) defines it so vaguely as to expand the delineation of the WUI greatly—again outside NFMA and NEPA processes.

We want the FS and the public to be comfortable with unplanned wildland fires under some weather conditions in sensible locations, so that the ecosystem benefits can be realized. Simply stated, at the time that response to any given fire is contemplated, we want decision makers to have publicly vetted documentation—for that specific fire area—of the benefits of the process that helps create habitat conditions for wildlife, restores forest composition, recycles soil nutrients, creates large dead logs that fall into streams forming native fish habitat, as well as many others. That will provide the public, the news media, and politicians with a fully vetted set of justifications for managing with—rather than against—the native ecosystem process of fire. We believe that such planning can and must be undertaken for sustainable forest management to evolve away from the unacceptable present situation. If the FS is unwilling to perform such an analysis for projects such as this one, then it must undergo programmatic analysis of its fire suppression policies, disclosing the impacts and ecological harm that the agency will subsequently claim must be later addressed by vegetation management and fuel treatment projects across the landscape. Not to mention the enormous financial costs—also never analyzed or disclosed at any planning level.

Ecological resilience, which the FS implies it would foster with this project, is not the absence of natural disturbances such as wildland fire or insect activity. Rather, it is the opposite (DellaSala and Hanson, 2015, Chapter 1, pp. 12-13). What the FS is promoting here is the human control of the forest ecosystem through mechanical means in order to maintain unnatural stasis by eliminating, suppressing or altering natural disturbances such as wildland fire and insect or disease effects, to maximize the commercial potential of natural resources. In other words, intensive and extensive tree farming—not appropriate for national forest lands.

The EIS must take a hard look at the condition of all streams and water bodies in the affected watersheds, and explain how those conditions contribute to fish population and trends. Please

disclose populations of fish species in the project area, and compare those numbers to minimum viable populations.

Please explain how the timber sale would comply with the Clean Water Act and all state water quality laws and regulations. Please disclose the actual effectiveness of proposed BMPs in preventing sediment from reaching streams in or near the analysis area. What BMP failures have been noted for past projects with similar landtypes? Also, please disclose which segments of roads in the watersheds to be affected by this proposal would not meet BMPs following project activities.

The EIS must disclose the existing conditions of site specific stream reaches and project effects on water quality, fish and other aquatic resources. Please disclose information regarding the existence and effects of bedload and accumulated sediment. Please analyze and disclose channel stability for specific stream reaches. Please disclose the amount of existing accumulated fine and bedload sediment that remains from the previous logging and road construction.

The EIS must provide an analysis of soil conditions in the analysis area, noting any detrimental soil disturbance and its consequences for diminishing soil and land productivity. Please disclose the extent of soils in the analysis area that are already hydrologically impacted, and analyze and disclose their watershed impacts.

The EIS must disclose consistency with "Areas with sensitive and highly erodible soils or land types with mass failure potential are not detrimentally impacted or destabilized as a result of management activities" (FW-DC-SOIL-01)

The FS adopts a proxy—detrimental soil disturbance—rather than more direct measures of management-induced losses or reductions of soil productivity. We are aware of no scientific information based upon IPNF data that correlates the proxy (areal extent of detrimental soil disturbance in activity areas) to metrics of long-term reductions in soil productivity in activity areas, in order to validate the use of the proxy as a scientifically meaningful estimate of changes in soil productivity.

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

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

framework for a positive public lands soil protection law. This article concludes that because soils are critically important building blocks for nearly every ecosystem on earth, a holistic approach to natural resources protection requires that soils be protected to avoid undermining much of the legal protection afforded to other natural resources.

Lacy, 2001 goes on:

> Countless activities, including livestock grazing, recreation, road building, logging, mining, and irrigation degrade soils on public lands. Because there are no laws that directly address and protect soils on the public lands, consideration of soils in land use planning is usually only in the form of vaguely conceived or discretionary guidelines and monitoring requirements. This is a major gap in the effort to provide ecosystem-level protection for natural resources.
>
> The rise of an "ecosystem approach" in environmental and natural resources law is one of the most significant aspects of the continuing evolution of this area of law and policy. One writer has observed that there is a
>
> > fundamental change occurring in the field of environmental protection, from a narrow focus on individual sources of harm to a more holistic focus on entire ecosystems, including the multiple human sources of harm within ecosystems, and the complex social context of laws, political boundaries, and economic institutions in which those sources exist.
>
> As federal agencies focus increasingly on addressing environmental protection from a holistic perspective under the current regime of environmental laws, a significant gap remains in the federal statutory scheme: protection of soils as a discrete and important natural resource. **Because soils are essential building blocks at the core of nearly every ecosystem on earth, and because soils are critical to the health of so many other natural resources—including, at the broadest level, water, air, and vegetation—they should be protected at a level at least as significant as other natural resources.** Federal soil law (such as it is) is woefully inadequate as it currently stands. It is a missing link in the effort to protect the natural world at a meaningful and effective ecosystem level.
>
> … This analysis concludes that the lack of a public lands soil law leaves the soil resource under-protected and exposed to significant harm, and emasculates the environmental protections afforded to other natural resources.

The Region 1 Soil Quality Standards (SQS) are the only directives limiting damage to soil during industrial extraction on the IPNF, yet they are full of loopholes. Furthermore, they basically boil down to a mitigation of soil productivity losses with an entirely uncertain outcome.

Kuennen et al. 2000 (a collection of Forest Service soil scientists) state:

> An emerging soils issue is the cumulative effects of past logging on soil quality. Pre-project monitoring of existing soil conditions in western Montana is revealing that, where ground-based skidding and/or dozer-piling have occurred on the logged units, soil compaction and displacement still are evident in the upper soil horizons several decades after logging. Transecting these units documents that the degree of compaction is high enough to be

considered detrimental, i.e., the soils now have a greater than 15% increase in bulk density compared with undisturbed soils. Associated tests of infiltration of water into the soil confirm negative soil impacts; **the infiltration** rates on these compacted soils are several-fold slower than rates on undisturbed soil.

…**The effects of extensive areas of compacted and/or displaced soil in watersheds along with impacts from roads, fire, and other activities are cumulative.** A rapid assessment technique to evaluate soil conditions related to past logging in a watershed is based on a step-wise process of aerial photo interpretation, field verification of subsamples, development of a predictive model of expected soil conditions by timber stand, application of this model to each timber stand through GIS, and finally a GIS **summarization of the predicted soil conditions in the watershed.** This information can then be combined with an assessment of road and bank erosion conditions in the watershed to give a holistic description of watershed conditions and to help understand cause/effect relationships. **The information can be related to Region 1 Soil Quality Standards to determine if, on a watershed basis, soil conditions depart from these standards.** Watersheds that do depart from Soil Quality Standards can be flagged for more accurate and intensive field study during landscape level and project level assessments. **This process is essentially the application of Soil Quality Standards at the watershed scale with the intent of maintaining healthy watershed conditions**. (Emphases added.)

The EIS must provide an analysis of the hydrological implications of the cumulative soil damage caused by past management added to timber sale-induced damage in project area watersheds. Kootenai NF hydrologist Johnson, 1995 noted this effect from reading the scientific literature: "Studies by Dennis Harr have consistently pointed out the effects compacted surfaces (roads, skid trails, landings, and firelines) on peak flows." Elevated peak flows harm streams and rivers by increasing both bedload and suspended sediment are effects to be analyzed in a watershed analysis.

The EIS must address the issue of reliability and validity of the FS's soil survey methods. USDA Forest Service, 2012a states:

> The U.S. Forest Service Soil Disturbance Field Guide (Page-Dumroese et al., 2009) was used to establish the sampling protocol.
>
> …Field soil survey methodology based on visual observations, such as the Region 1 Soil Monitoring Guide used here, can produce variable results among observers, and the confidence of results is dependent on the number of observations made in an area (Page-Dumroese et al., 2006). **The existing and estimated values for detrimental soil disturbance (DSD[3]) are not absolute** and best used to describe the existing soil condition. The calculation of the percent of additional DSD from a given activity is an estimate since DSD is a combination of such factors as existing groundcover, soil texture, timing of operations, equipment used, skill of the equipment operator, the amount of wood to be removed, and sale administration.

(Emphasis added.) USDA Forest Service, 2012a admits that DSD estimates are "not absolute."

[3] Detrimental Soil Disturbance (DSD) is equivalent to exceeding soil property thresholds

USDA Forest Service, 2016a explains another major cumulative effect ignored by the SQS, which is the indirect effect of soil damage, or DSD, on sustained yield. It states that the SQS "created the concept of 'Detrimental Soil Disturbance' (DSD) for National Forests in Region One as a measure to be used in assessing potential loss of soil productivity resulting from management activities." USDA Forest Service, 2016a further explains:

> **Without maintaining land productivity, neither multiple use nor sustained (yield) can be supported by our National Forests**. Direct references to maintaining productivity are made in the Sustained Yield Act "…coordinated management of resources without impairment of the productivity of the land" and in the Forest and Rangeland Renewable Resources Act "…substantial and permanent impairment of productivity must be avoided".
>
> Soil quality is a more recent addition to Forest Service Standards. The Forest and Rangeland Renewable Resources Act (1974) appears to be the first legal reference made to protecting the "quality of the soil" in Forest Service directives. **Although the fundamental laws that directly govern policies of the U.S. Forest Service clearly indicate that land productivity must be preserved, increasingly references to land or soil productivity in Forest Service directives were being replaced by references to soil quality as though soil quality was a surrogate for maintaining land productivity. This was unfortunate, since although the two concepts are certainly related, they are not synonymous.**
>
> Our understanding of the relationship between soil productivity and soil quality has continued to evolve since 1974. Amendments to the Forest Service Manual, Chapter 2550 – Soil Management in 2009 and again to 2010 have helped provide some degree of clarity on this issue and acknowledged that **the relationship is not as simple as originally thought**. The 2009 (2500-2009-1) amendment to Chapter 2550 of the Forest Service Manual states in section 2550.43-5, directs the Washington Office Director of Watershed, Fish, Wildlife, Air and Rare plants to "Coordinate validation studies of soil quality criteria and indicators with Forest Service Research and Development staff to ensure soil quality measurements are appropriate to protect soil productivity" (USFS-FSM 2009). **Inadvertently this directive concedes that the relationship between soil productivity and soil quality is not completely understood.** In the end, the primary objective provided by National Laws and Directives relative to the management of Forest Service Lands continues to be to maintain and where possible potentially improve soil productivity. (Emphases added.)

Please provide in the EIS a map showing the locations of all past logging units, including the intensity of the logging activities.

Detrimental soil compaction cannot be determined by mere visual observations. Kuennen, et al., 1979 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… Furthermore, ... subsurface compaction occurred in glacial deposits to a depth of at least 16 inches."

USDA Forest Service 2014a states:

> Management activities can result in both direct and indirect effects on soil resources. Direct and indirect effects may include alterations to physical, chemical, and/or biological properties. Physical properties of concern include structure, density, porosity, infiltration, permeability, water holding capacity, depth to water table, surface horizon thickness, and organic matter size, quantity, and distribution. Chemical properties include changes in nutrient cycling and availability. Biological concerns commonly include abundance, distribution, and productivity of the many plants, animals, microorganisms that live in and on the soil and organic detritus. (P. 3-279.)

However the SQS definition of DSD considers only alterations to physical properties, but not chemical or biological properties. The SQS is not consistent with best available science.

One of these biological properties is represented by naturally occurring organic debris from dead trees. The SQS recognize the importance of limiting the ecological damage that logging causes due to retaining inadequate amounts of large woody debris, but set no quantitative limits on such losses caused by logging and slash burning. Please disclose in the EIS amounts of large woody debris in the project area following past management activities, in addressing your obligations to consider cumulative effects.

Some chemical properties are discussed in Harvey et al., 1994, including:

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

"(R)esource fluxes though ectomycorrhizal (EM) networks are sufficiently large in some cases to facilitate plant establishment and growth. Resource fluxes through EM networks may thus serve as a method for interactions and cross-scale feedbacks for development of communities, consistent with complex adaptive system theory." (Simard et al., 2015.) The EIS must consider how management-induced damage to EM networks causes site productivity reductions.

"The big trees were subsidizing the young ones through the fungal networks. Without this helping hand, most of the seedlings wouldn't make it." (Suzanne Simard: http://www.ecology.com/2012/10/08/trees-communicate/) "Disrupting network links by reducing diversity of mycorrhizal fungi… can reduce tree seedling survivorship or growth (Simard et al, 1997a; Teste et al., 2009), ultimately affecting recruitment of old-growth trees that provide habitat for cavity nesting birds and mammals and thus dispersed seed for future generations of trees." (Simard et al., 2013.) (Also see the YouTube video "Mother Tree" embedded within the

Suzanne Simard "Trees Communicate" webpage at: https://www.youtube.com/watch?v=-8SORM4dYG8&feature=youtu.be). Gorzelak et al., 2015:

> …found that the behavioural changes in ectomycorrhizal plants depend on environmental cues, the identity of the plant neighbour and the characteristics of the (mycorrhizal network). The hierarchical integration of this phenomenon with other biological networks at broader scales in forest ecosystems, and the consequences we have observed when it is interrupted, indicate that underground "tree talk" is a foundational process in the complex adaptive nature of forest ecosystems.

The scientists involved in research on ectomycorrhizal networks have discovered connectedness, communication, and cooperation between what we traditionally consider to be separate organisms. Such a phenomenon is usually studied within single organisms, such as the interconnections in humans among neurons, sense organs, glands, muscles, other organs, etc. so necessary for individual survival. The EIS must consider the ecosystem impacts from industrial management activities on this mycorrhizal network.

Please disclose if and how the IPNF has determined if management activities have reduced the diversity of mycorrhizal fungi in any treatment area.

USDA Forest Service, 2015a indicates:

> Infestations of weeds can have wide-ranging effects. They can impact soil properties such as erosion rate, soil chemistry, organic matter content, and water infiltration. Noxious weed invasions can alter native plant communities and nutrient cycles, reduce wildlife and livestock forage, modify fire regimes, alter the effects of flood events, and influence other disturbance processes (S-16). As a result, values such as soil productivity, wildlife habitat, watershed stability, and water quality often deteriorate.

We ask the EIS disclose the following information concerning the project area:

- The deferred road maintenance backlog
- The annual road maintenance funding needs
- The annual road maintenance budget
- The capital improvement needs for existing roads
- The road density in the project area
- The number of miles of project area roads that fail to meet BMP standards or design standards

Please disclose the itemized costs for each of the following: new temporary roads, project-related road maintenance, road decommissioning, all other road-related work, sale preparation and administration, project-related weed treatment, other project mitigation, post-project monitoring, environmental analyses and reports, public meetings and field trips, publicity, consultation with other government agencies, responding to comments.

The EIS must disclose scientific justification for the forest plan's adoption of the landbird assemblage (olive-sided flycatcher, hairy woodpecker, chipping sparrow, Hammond's flycatcher and dusky flycatcher) as MIS representing other wildlife (including old-growth associated wildlife species) on the IPNF. Also, please reconcile the fact the EIS contains an explicit

assumption that its implementation cannot possibly affect viability of its chosen indicator species: "These MIS, elk and insectivores, were not selected because of a viability concern."

Please disclose statistically robust estimates of population trends of each Sensitive species. Please disclose the intensity of surveys for Sensitive species that have been conducted in the project area. Please provide a sound scientifically-based explanation for any species' apparent absence from the project area.

Traill et al., 2010 and Reed et al., 2003 are published, peer-reviewed scientific articles addressing what a true "minimum viable population" would be, and how that number is typically drastically underestimated. Please identify the best available science that provides scientifically sound, minimum viable populations of all ESA proposed or listed, Sensitive species and MIS on the IPNF.

In the absence of meaningful thresholds of habitat loss and no monitoring of wildlife populations at the Forest level, projects will continue to degrade wildlife habitat across the IPNF over time. (See Schultz, 2010 and Schultz, 2012.). The FS would never be able to detect the likelihood of complete extirpation of any wildlife species from the IPNF, using such methodology.

Hutto, 2008 cautions against the common practice of landscape scale thinning to "restore" forests to a condition thought to be more congruent with historical conditions:

> Black-backed Woodpeckers …require burned forests that are densely stocked and have an abundance of large, thick-barked trees favored by wood-boring beetles (Hutto 1995, Saab and Dudley 1998, Saab et al. 2002, Russell et al. 2007, Vierling et al. 2008). Indeed, data collected from within a wide variety of burned forest types show that **the probability of Black-backed Woodpecker occurrence decreases dramatically and incrementally as the intensity of traditional (pre-fire) harvest methods increases.** (Emphases added.)

The Hutto, 2008 Abstract states:

> I use data on the pattern of distribution of one bird species (Black-backed Woodpecker, *Picoides arcticus*) as derived from 16,465 sample locations to show that, in western Montana, this bird species is extremely specialized on severely burned forests. Such specialization has profound implications because it suggests that the severe fires we see burning in many forests in the Intermountain West are not entirely "unnatural" or "unhealthy." Instead, severely burned forest conditions have probably occurred naturally across a broad range of forest types for millennia. These findings highlight the fact that severe fire provides an important ecological backdrop for fire specialists like the Black-backed Woodpecker, and that the presence and importance of severe fire may be much broader than commonly appreciated.

The EIS must evaluate impacts on species that are affected by human activity including the fisher, pine marten, wolverine, Canada lynx, native trout and other fish, elk, woodpeckers, pygmy nuthatches, northern goshawks, flammulated owls and other raptors, fringed myotis, Townsend's big-eared bats, amphibians (such as western toad and Coeur d'Alene salamander), and reptiles. Please disclose data and the best available science concerning biological relationships and population trends of these species on the IPNF.

Climate change science suggests that logging for sequestration of carbon, logging to reduce wild fire, and other manipulation of forest stands does not offer benefits to climate. Rather, increases in carbon emissions from soil disturbance and drying out of forest floors are the result. Managers of national forest lands can best address climate change through minimizing development of forest stands, especially stands that have not been previously logged, by allowing natural processes to function. Furthermore, any supposedly carbon sequestration from logging are usually more than offset by carbon release from ground disturbing activities and from the burning of fossil fuels to accomplish the timber sale, even when couched in the language of restoration. Reducing fossil fuel use is vital. Please analyze, disclose, and consider the full range of scientific information on carbon storage, vegetation management, and wildfire.

There is scientific certainty that climate change has reset the deck for future ecological conditions. For example, Sallabanks, et al., 2001:

> (L)ong-term evolutionary potentials can be met only by accounting for potential future changes in conditions. …Impending changes in regional climates …have the capacity for causing great shifts in composition of ecological communities.

In other words, the Desired Conditions the Forest Plan relies upon must be evaluated in the context of how realistic—or even "desirable"—achieving them really is in the context of rapidly changing climate.

The EIS must reexamine the assumptions relating to timber suitability, resilience and sustainability as a result of recent fires, past regeneration success/failures, and especially climate-risk science.

Conventional wisdom dictates that forests regenerate and recover from wildfire. If that's true, then it's logical to conclude that forests can regenerate and recover from logging. And these days, "resilience" is a core tenant of FS planning. Unfortunately, FS assumptions relating to desired conditions are questionable. NEPA requires a "hard look" at the best available science relating to future concentrations of greenhouse gases and gathering climate risk as we move forward into an increasingly uncertain and uncharted climate future. This has not been done. The EIS must include a legitimate climate-risk analysis.

Scientific research indicates that increasing CO2 and other greenhouse gas concentrations may preclude maintaining and attaining the anticipated forest conditions in the project area and across the IPNF.

No amount of logging, thinning and prescribes burning will cure the cumulative effects (irretrievable loss) already baked into the foreseeably impending climate chaos. "Treatments" must be acknowledged for what they are: adverse cumulative environmental effects.

Please disclose the statistical reliability of all data the FS relies upon for the Westside project analysis. Since "an instrument's data must be reliable if they are valid" (Huck, 2000) this means the data that is input to a model must accurately measure that aspect of the world it is claimed to measure, or else the data is invalid for use by that model. Also, Beck and Suring, 2011 "remind

practitioners that if available data are poor quality or fail to adequately describe variables critical to the habitat requirements of a species, then only poor quality outputs will result. Thus, obtaining quality input data is paramount in modeling activities." And Larson et al. 2011 state: "Although the presence of sampling error in habitat attribute data gathered in the field is well known, the measurement error associated with remotely sensed data and other GIS databases may not be as widely appreciated."

The next level of scientific integrity is the notion of "validity." So even if FS data input to its models are reliable, a question remains of the models' validity. In other words, are the models scientifically appropriate for the uses for which the FS is utilizing them? As Huck, (2000) explains, the degree of "content validity," or accuracy of the model or methodology is established by utilizing other experts. This, in turn, demonstrates the necessity for utilizing the peer review process.

Ruggiero, 2007 (a scientist from the research branch of the FS) recognizes a fundamental need to demonstrate the proper use of scientific information, in order to overcome issues of decisionmaking integrity that arise from bureaucratic inertia and political influence. Ruggiero, 2007 and Sullivan et al., 2006 provide a commentary on the scientific integrity and agency use and misuse of science. And the Committee of Scientists (1999) recommend "independent scientific review of proposed conservation strategies…"

Roger Sedjo, member of the Committee of Scientists, expresses his concerns in Appendix A of their 1999 Report about the discrepancy between forest plans and Congressional allocations, leading to issues not considered in forest plans such as the IPNF's:

> (A)s currently structured there are essentially two independent planning processes in operation for the management of the National Forest System: forest planning as called for in the legislation; and the Congressional budgeting process, which budgets on a project basis. The major problem is that there are essentially two independent planning processes occurring simultaneously: one involving the creation of individual forest plans and a second that involves congressionally authorized appropriations for the Forest Service. Congressional funding for the Forest Service is on the basis of programs, rather than plans, which bear little or no relation to the forest plans generated by the planning process. There is little evidence that forest plans have been seriously considered in recent years when the budget is being formulated. Also, the total budget appropriated by the Congress is typically less than what is required to finance forest plans. Furthermore, the Forest Service is limited in its ability to reallocate funds within the budget to activities not specifically designated. Thus, the budget process commonly provides fewer resources than anticipated by the forest plan and often also negates the "balance" across activities that have carefully been crafted into forest plans. Balance is a requisite part of any meaningful plan. Finally, as noted by the GAO Report (1997), fundamental problems abound in the implementation of the planning process as an effective decision making instrument. Plans without corresponding budgets cannot be implemented. Thus forest plans are poorly and weakly implemented at best. Major reforms need to be implemented to coordinate and unify the budget process.

A Science Consistency Review is long overdue for the revised Forest Plan. The FS prepared Guldin et al. (2003) which:

> ...outlines a process called the science consistency review, which can be used to evaluate the use of scientific information in land management decisions. Developed with specific reference to land management decisions in the U.S. Department of Agriculture Forest Service, the process involves assembling a team of reviewers under a review administrator to constructively criticize draft analysis and decision documents. Reviews are then forwarded to the responsible official, whose team of technical experts may revise the draft documents in response to reviewer concerns. The process is designed to proceed iteratively until reviewers are satisfied that key elements are **consistent with available scientific information.**

The Committee of Scientists (1999) state:

> To ensure the development of scientifically credible conservation strategies, the Committee recommends a process that includes (1) scientific involvement in the selection of focal species, in the development of measures of species viability and ecological integrity, and in the definition of key elements of conservation strategies; (2) independent scientific review of proposed conservation strategies before plans are published; (3) scientific involvement in designing monitoring protocols and adaptive management; and (4) a national scientific committee to advise the Chief of the Forest Service on scientific issues in assessment and planning.

We ask that you please keep us fully informed of all further developments on the Westside proposal. It is our intention that the references cited in this letter be included it in the project file. Please contact us if you need a copy of any of the cited references. Please notify us when Biological Assessment(s) and the US Fish & Wildlife Service's Biological Opinion or letter of concurrence are available.

Sincerely,

/s/

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