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**Comments on the proposed Knox Hazardous Fuels/Forest Health Project EA**

The Oregon Chapter Sierra Club and the League Of Wilderness Defenders-Blue Mountains Biodiversity Project have reviewed the EA the proposed Knox Hazardous Fuels/Forest Health Project and the legal notice published in the Blue Mountain Eagle on Sept. 24, 2008. The Sierra Club represents over 23,000 members throughout Oregon, including over 1,000 Juniper Group members throughout central and eastern Oregon. LOWD-Blue Mountains Biodiversity Project has many members and volunteers throughout the Northwest. Sierra Club members feel strongly about nature, wilderness, wildlife and the environment. Our members regularly enjoy hiking, camping, birding, wildlife watching, and ecological study within the national forests of central and eastern Oregon, including the project area within the Malheur National Forest. Members and volunteers of the LOWD-Blue Mountains Biodiversity Project regularly use the Malheur National Forest, including the project area, for hiking, ecological study, watching wildlife, viewing forest native botanical diversity, and avian species study. Our organizations are concerned that the Knox project as currently proposed would not meet its ecological purpose and need goals. If implemented the project would harm the interests of our organizations members, by further degrading the ecological integrity of the area's interior forest ecosystems, harming wildlife, aquatic, and native botanical species habitat and populations, and further jeopardizing the viability of ESA and Oregon state listed species and regionally listed species of concern.

***The Knox Project:***
The Forest Service's "recommended alternative" 3 involves:

- 507 acres of group selection to remove grand fir (openings <2 acres)
- 513 acres of commercial thinning from below
- 5.6 mmbf
- Ground-based logging
- 1269 acres of precommercial thinning
- 1102 acres of biomass utilization
- 6557 acres of prescribed fire
- 90 acres of aspen enhancement by removing conifers in both upland and RHCA
- 26.3 miles of road closure
- 11.7 miles of road decommissioning
- 1038 acres machine slash treatment

- 1.5 miles of temporary road construction
- 48 miles of road maintenance
- Old trees would be retained regardless of species or size
- Habitat would be degraded for pine marten, Pileated woodpecker, goshawks,

Alternative 2 involves more commercial thinning and no group selection, non-commercial aspen release in RHCAs, reduced timber volume yield, and an additional 15 miles of road maintenance:
*Commercial logging:*
• Commercial Thinning – 1,734 acres
• Precommercial Thinning – 1,128 acres
• Biomass Utilization – 1,102 acres
*Fuel Treatments:*
• Prescribed Burning – 6,557 acres
• Hand Pile – 90 acres
• Machine Slash Treatment – 1,038 acres
• Whole Tree Yarding – 1,787
*Aspen Restoration:*
• Aspen Release with Lop and Scatter – 95 acres
• Aspen Release with Commercial Removal – 55 acres in uplands
• Aspen Caging – 3 acres
*Transportation System:*
• Temporary Roads – 1.5 miles
• Road Maintenance – 63 miles
• Road Closures – 26.3 miles
• Road Decommissioning – 11.7 miles

A note regarding the unbound loose-page EA format: We recommend the agency facilitate public review and shelf storage for future reference of its EA documents by binding all of these as is the usual accepted practice. The unbound loose-sheet format used for the Knox EA is professionally negligent and hinders review and later reference of this document.

**Need to Bring the Project into Compliance with Scientific Research and NEPA**

As noted below in detail, this project fails to disclose and incorporate sound scientific research on ecological restoration and fire severity risk and fuels reduction (see Exhibit A cd of pertinent scientific research and environmental policy laws). We strongly recommend that this project be modified to incorporate the recommendations of credible peer reviewed scientific research on fire risk and fuels reduction, and on the restoration and maintenance of forest ecological integrity, resilience, and biodiversity. As this project implies within the ecological provisions of its purpose and need, any commercial timber removed must be in accord with the ecological restoration objectives of this project, and not be driven by timber volume economic goals. Needed changes to the project include (but are not limited to):

A. Eliminate scientifically insupportable and/or scientifically controversial fuels reduction logging in mixed conifer mixed and high severity fire habitat, including all commercial logging actions in cool moist, cool dry, and cold dry forest areas;
B. Eliminate or significantly modify all commercial logging activities that occur in old growth forest-dependent native wildlife species habitat in remaining hot dry, warm dry,

and warm moist forest areas. If commercial thinning is employed to accomplish ecological objectives, the modified project should utilize variable 10" to 14" diameter limits for ponderosa pine, western larch, Douglas fir; a 12" to 16" variable diameter limit for grand fir; and a 14" to 18" variable diameter limit for lodgepole pine. Additional provisions protecting all species of trees with old and mature characteristics and inherent fire resistance regardless of diameter must be adapted.

C. Eliminate all road construction, including so-called "temporary road" construction, and the reconstruction of closed and/or resource damaging roads;
D. Eliminate all commercial logging activities that occur in goshawk post fledgling areas;
E. Implement seasonal restrictions or protective provisions on thinning, burning, and fuels reduction activities to protect nesting and fledging native and neotropical migrant birds, denning mammals, emerging spring plants and native invertebrate species;
F. Eliminate all units that would commercially log in old growth habitat;
G. Eliminate all commercial logging and related activities (including but not limited to commercial logging, road crossings, landings, skid trails, etc.) from Riparian Habitat Conservation Areas. Conifer removal in aspen areas must have a maximum 16" diameter cutting limit, with provisions for the retention of all mature and old characteristic trees regardless of diameter;
H. Eliminate all commercial logging-thinning units located on sensitive soils, steep slopes, or with potential to harm listed and/or species of concern wildlife and aquatic species and their habitat;
I. Eliminate livestock grazing in project activity areas, including thinning and burning areas, for a minimum of 5 years post project, or longer as needed for the area to ecologically recover. Rested areas must be effectively fenced and maintained. Reduce livestock grazing numbers and seasonal use in adjoining non-activity allotment areas as needed in correspondence with the remaining allotment area's ecological resource capacities, or rest the entire allotment area if effective fencing and enforcement is not possible;
J. Revise this project to ensure consistency with the Administrative Procedures Act, Clean Water Act, Endangered Species Act, National Environmental Policy Act, National Forest Management Act, Migratory Bird Treaty Act, these statutes' implementing regulations, and the Malheur National Forest Land and Resource Management Plan as amended by the Regional Forester's Amendment Number 2 (Eastside Screens).

***Scientifically Controversial & Insupportable Actions***

The EA is premised in significant part upon erroneous and scientifically controversial management assumptions and actions, which are incapable of fully meeting the ecological goals and objectives of the project's purported purpose and need.

The EA identifies the purpose and need of the Knox Project as:

"1. Reduce the risk of uncharacteristically intense fire behavior by reducing surface fuels, duff and litter, lowering the risk of damage to the soil; reducing crown fuels, lowering the risk of excessive mortality in old forest and future old forest from wildfires; and returning stands to a condition consistent with the natural fire return interval.
2. Reduce conifer encroachment of aspen stands within Riparian Habitat Conservation Areas (RHCAs), and non-anadromous riparian areas (Management Area 3A), therefore reducing competition with riparian aspen.
3. Reduce stand densities and species competition to reduce the risk of bark beetles and other insects that cause mortality by decreasing the susceptibility of forest stands to bark beetle outbreaks; and to lower the risk of spruce budworm by reducing encroachment of fir species.

4. Capture the economic value of trees that are surplus to other resource needs such as for scenic value and to provide raw materials and jobs to aid in community stability.
5. Reduce the road density within the subwatershed to increase big game security by reducing the accessibility of the area, and to reduce road impacts to riparian areas."

The Knox Project EA identifies the following "needs:"

- Fuel hazard reduction need;
- Aspen protection need;
- Forest composition and density reduction need;
- Timber production need;
- Road reduction need;

The needs as expressed above are a largely unfounded and contradictory mix of legitimate restoration needs coupled with illegal and ecologically harmful illusory needs. The logging premised purpose and need provisions and corresponding EA analysis are scientifically and legally insupportable for at least two reasons. First, the historic forest conditions and forest health justification for this project is inherently flawed due to the belief that logging can correct past bad management practices, including fire suppression.

While there is limited scientific support for the removal of small diameter trees and flash fuels in frequent fire-interval low elevation ponderosa pine forests, there is significant scientific controversy and strong recommendations against logging-thinning in mid and high elevation mixed conifer forests to: "reduce forest fuel loads and to promote long-term forest stand structure and tree stocking densities that are more consistent with historic conditions;" and to "promote forest resilience to large-scale wildfire, disease and insect infestations and the long-term sustainability of forest and associated resources (such as fish, wildlife, scenic values, and recreation)."

Indeed, the EA ignores and fails to disclose the majority of credible peer-reviewed scientific research that clearly indicates the project's actions are incapable of achieving its stated ecological purposes quoted above, and instead would increase the risk and extent of severe fires in the project area (see Exhibit A). The underlying assumption that a forest is generally healthier if properly functioning parts of the forest are removed is similarly unsupported by fact.

The agency's interpretations of scientifically controversial research addressing regional forest ecology is based upon the selective and contextually inappropriate misuse of a combination of limited scientific studies, agency assumptions, and politically-contrived timber volume agendas. While there is emerging scientific consensus concerning pre-European settlement era forest stand compositions and varied historical fire patterns in the region, the Forest Service has largely misapplied scientific conjecture in this project's interpretation of "historic conditions" and in developing its planned actions within the planning area. The resulting project is a hodge-podge of only partially accurate historic stand assumptions mixed with erroneous and misapplied scientific interpretations. Consequently, overall the project's logging plans will result in far more ecological harm than benefit to the area's complex ponderosa pine and mixed conifer forest ecosystems and their dependent wildlife, native plant, and aquatic species. Agency contentions regarding "historic forest stand conditions" are ecologically simplistic, and largely incapable of factually representing area plant associations and forest conditions that occurred prior to human manipulation of the environment.

Forest stand overstocking is a term that applies to lower elevation frequent fire cycle forests, not high elevation mixed conifer forests which are naturally more varied and dense. Due to past logging in the area, what "overstocking" exists occurs primarily among young understory trees that have little if any merchantable timber value. Significant portions of the project also contain areas with unnatural logging created openings, old logging skid trails, far too many resource damaging unmaintained logging created

roads, and overall degraded forest ecosystem conditions due to a combination of past and ongoing management, including logging, road building, fire suppression, invasive plant introduction and spread, and livestock grazing, and OHV use and abuse is also a growing concern.

Past and recent logging projects have exacerbated current fire risk throughout the area by removing fire resistant old growth, mature, and maturing trees, leaving high levels of logging slash in piles and spread across the forest floors. Fire resistant trees removed by logging have been – and are being - replaced relatively quickly with more fire prone vegetation including grasses, invasive plants, shrubs, forest vegetation, and small seedling and young trees.

Still, despite the presence of widespread cumulative management harms, a considerable portion of the planning area contains healthy maturing and old growth trees and forest stands, as well as more unmanaged roadless areas. As past high-grade logging removed many of the largest diameter trees, significantly altering the area forests, much of the project's forest stands are still in the process of natural recovery from past over-logging. Old, mature, and maturing trees, including many of those planned for logging removal, play an essential role in the ongoing natural recovery process of the area's forests. As many of the area's old growth and large mature trees have been removed during past logging, the area's remaining trees greater than 12" to 16" diameter provide essential forest stand structure for wildlife habitat viability and the long term ecological integrity and recovery of the area. Removing many of these inherently fire resistant old and maturing trees as planned would be in contravention to the recommendations of the majority of scientific research studies and to the purported ecological portions of the project's purpose (above). Such logging removal also cannot be justified under the stated ecological "needs" for this project.

As noted by scientific research, trees begin to exhibit fire resistant characteristics as they mature, with increased height of branches, thickening bark, vigorous growth, deepening roots, and greater moisture capacity retention. Varying somewhat by tree species and localized conditions, inherent effective fire resistance of growing trees begins to be attained between 5" to 10" diameter. Former Forest Service Chief Dombeck has been quoted as stating there is no valid rationale for removing trees greater than 12" diameter to meet fuels and fire risk reduction goals. As noted herein, removing too much of an area's basically fire resistant maturing tree forest stand structure actually increases the risk of fire severity and extent of spread, due to greater solar drying, higher wind speeds, and greater prevalence of fire prone brush, vegetation and small diameter trees that soon replaces the more fire-resistant shade-providing/moisture retaining trees removed.

Additionally, logging slash that remains in the forest increases the risk and extent of severe fires far above the pre-project implementation risks. Yet this purported "fuels reduction" project fails to adequately disclose or address cumulative issues of logging slash from other past and current projects, as well as project generated "fuels" that currently exist or will exist post-project in the area. Removal and/or reduction of existent logging and thinning generated fuels where appropriate should have been effectively addressed by the EA, especially given the purported purpose and need for the project.

As planned, the project would further harm the ecological integrity or the area by its planned removal of far too many of the area's old and mature trees, including the scientifically insupportable logging in cool dry and moist, and cold moist high elevation mixed conifer forests, and the logging of inherently fire resistant mature and old growth trees. Such scientifically and ecologically unwarranted logging will seriously degrade existent wildlife habitat, jeopardizing the viability of forest-dependent species of concern throughout the greater project area. The planned logging violates the purpose and need for the project and the high quality science, expert advice, and reasonableness requirements of the NEPA. Project logging actions violate the qualified scientific objectives that comprise the foundation of the Eastside Screens. Project logging violates fire and fuels reduction scientific recommendations. Project logging of mature and old trees and degradation of forest habitat would likely extirpate or harm the habitat and

populations of affected ESA listed species and imperiled forest dependent native species of concern in violation of the NFMA.

Scientific research noted herein, and contained within Exhibit A, clearly recommends against commercial logging-thinning as proposed by this EA. With the limited and illegal exception of the agency's fourth purpose and need goal ("economic value purpose & timber production need" above - addressed more fully later herein), the agency's ecological purpose and need goals will not be met by the planned logging. Instead this project if implemented would:

- Unreasonably log in cool dry, cool moist, and cold moist mid to high elevation mixed conifer, mixed fire severity forest ecosystems;
- Remove fire resistant mature and old trees,
- Increase forest fuels by increasing the presence of logging slash, woody debris, and the growth of fire-prone brush, vegetation, and small diameter seedling trees;
- Increase risk of severe fires by increased solar exposure and reduced forest and soil moisture; resulting in increased risk of fire intensity and extent, and reduced capabilities to control of wildfire.
- Endanger firefighter and public safety, by degrading the resiliency of area forests and increasing the risk of severe widespread fires,
- Irreparably degrade wildlife habitat, forest ecological integrity, and related critically important forest ecosystem values,
- Irretrievably harm riparian areas and salmonid waterways,
- Irreparably degrade forest soils and impair hydrological functioning;
- Increase the risk of the spread and new introduction of invasive exotic plants;
- Provide raw forest materials and jobs inconsistent with, and at the irreparable sacrifice and violation of, federal environmental policy laws and ecological scientific research recommendations.
- Further undermine long-term community sustainability with ecologically unsustainable logging.

In brief, if implemented the project would increase the risk of severe fire by: excessive opening of the forest structure and canopy and resultant increased solar exposure and drying; and by the increased presence in subsequent post-project years of fire-susceptible brush, grasses, invasive plants, small diameter trees and other small diameter flash-fuel prone vegetation where fire resistant maturing and older trees had previously stood. It would also harm forest resilience, violate forest natural/historic range of variability, degrade wildlife and aquatic habitat, irreparably harm forest soils, and fragment the areas forest harming its ecological integrity. Its economic goals – by which the agency plans to sacrifice the ecological integrity of the project area, are also illusory, especially given the ongoing economic collapse and lack of need or demand for wood products throughout the region and nation. Simply put, the project defies federal laws and policy, credible science, economic realities, and plain common sense.

The agency's inferred premise that it can somehow improve upon nature's millenas long forest ecological and natural recovery processes by thousands of acres of widespread logging is scientifically controversial its best stretch – especially in cool dry, cool moist, and cold moist mid to high elevation mixed conifer forests - and largely insupportable when weighed in light of the full extent of credible peer reviewed scientific research, especially within the area's mixed conifer forests, and to the extent of commercial logging removal of essential maturing/mature forest structure in mixed conifer stands. Issues regarding scientific controversy were raised earlier in the scoping process, and are raised again herein with Exhibit A of applicable scientific research studies as part of our comments. We request these studies' recommendations be addressed and incorporated into the project, and that the agency disclose and address the ongoing scientific controversy concerning its proposed management actions. It is the agency's legal responsibility to found its NEPA projects upon the best available science and expert advice, to develop a

full range of varied alternatives based upon pertinent science, and to disclose the full extent of applicable science and the existence of scientific controversy and scientific recommendations that differ with proposed agency actions. The EA however, in clear violation of the requirements of the NEPA, chose to ignore substantive issues of scientific controversy, failing to disclose or address scientific research that contradicts or recommends against the project's actions. Agency dismissal of scientifically based concerns and recommendations, and the EA's mere listing of scientific research reports, fails to meet the requirements of the NEPA to meaningfully and reasonably incorporate, disclose, and address applicable science within the EA, including the development of proposed actions and project analysis.

We also request that the agency substantiate the scientific basis of its proposed alternatives and selected management actions. The EA notes selective scientific research to support its thinning contentions, but fails to correlate the extent of its thinning with these studies, in particular as related to mid and high elevation mixed conifer forest ecosystems, the forests natural range of variability, area fire ecology cycles and patterns, affected wildlife and aquatic species habitat needs and occurrence, forest structural integrity, ongoing natural recovery processes, and the full range of cumulative impacts from past and ongoing management. The agency fails to develop a range of reasonable alternatives based upon credible scientific research that is not in accord with the myopic logging-permitting research cited, thus failing to provide the decision-maker and the public with a full range of reasonable scientifically supported alternatives, or even the awareness that the planned actions are scientifically controversial and largely scientifically insupportable at best.

The agency may not arbitrarily selectively pick only among the limited scientific studies that appear to support its logging plans. It may not just merely list scientific studies in its index, as if these were all incorporated or consulted. The analysis within the EA must disclose which studies were incorporated in its planned actions, and must also disclose which studies recommend against such actions, providing the public and decision-maker with NEPA's requisite scientifically and meaningfully informed analysis on which to weigh the impacts, benefits and harms, and efficacy or lack thereof, of proposed agency actions. Alternatives presented where there exists credible scientific controversy must reasonably include a range of actions substantiated by the varied research, so the public and decision-maker can choose which actions may be most effective or desirable in the long-term in a given project area. The project however, only develops two action "alternatives" (in addition to the no action 'alternative' - which the agency generally never selects), both of which are commercial logging proposals that differ only marginally in the number of acres logged. Both action alternatives are based upon the same controversial logging premises. Despite NEPA's legal requirements the EA contains no action alternatives that are developed based upon the preponderance of credible peer reviewed ecological science.

In its arbitrary dismissal of other potential alternatives, the agency fails to appreciably disclose or address the existence of scientific controversy. Instead the agency misuses its limited selective studies, internal agency premises, and the apparent proposed logging-alternative biased prerogatives of its EA planning team staff to arbitrarily and capriciously dismiss a wealth of substantive pertinent peer reviewed scientific research, management directives, the Eastside Screens - ICBEMP science recommendations and goals, and accurate site-specific conditions and concerns. These serious analysis development deficiencies violate the requirements of the NEPA, and have resulted in this ecologically harmful, legally non-compliant, logging focused timber volume EA.

Further, the agency fails to effectively and adequately modify its logging plans to incorporate the recommendations of scientific research on the habitat and viability needs of the many affected native forest-dependent species in the greater project area. Here again, to a large extent, the EA fails to adequately disclose pertinent scientific research on affected native species. The EA fails to adequately inform the public or decision-maker of scientific recommendations against such logging, overall wildlife viability recovery objectives, cumulative impacts issues, and the accurate extent of the likely harmful consequences of its actions to species of concern that are or may be within the project area.

The depletion of the HRV of LOS forests is represented by the many old clearcuts and widespread past high grading of mixed conifer forests, which removed old and mature sized trees of all species throughout the project area. The project as proposed would only further harm the areas forests, and must be withdrawn or significantly revised. Given all the above, it defies common sense, and NEPA's reasonableness and accuracy requirements, for the EA to make its many scientifically controversial and insupportable claims that extensively logging the project area as planned could do anything other than further degrade and harm the project area forests and salmonid watersystems.

**National Environmental Policy Act Issues**

1. **The EA does not analyze a full range of alternatives**

***The EA does not include a restoration alternative, or a range of other scientifically-based alternatives, even though it is "reasonable" to include a restoration alternative, and even though NEPA requires a full range of reasonable scientifically sound alternatives.***

Analyzing alternatives is "the heart of the environmental impact statement." 40 C.F.R. 1502.14. An agency is required under NEPA to "rigorously explore and objectively evaluate *all reasonable* alternatives." 40 C.F.R. 1502.14(a) (emphasis added). An agency may not decline to evaluate an alternative simply on the grounds that it is not a "complete solution" to the agency's goals. Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908, 933 (1977). Furthermore, an agency should use the NEPA process to "identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 50 C.F.R. 1500.2(e).

The range of alternatives in the Knox EA is inadequate, because the EA never analyzes a restoration-only alternative. A restoration-only alternative is certainly a reasonable alternative to consider for this purported fuels and fire risk reduction project, especially considering that the stated needs of the project are to:

"1. Reduce the risk of uncharacteristically intense fire behavior by reducing surface fuels, duff and litter, lowering the risk of damage to the soil; reducing crown fuels, lowering the risk of excessive mortality in old forest and future old forest from wildfires; and returning stands to a condition consistent with the natural fire return interval.
2. Reduce conifer encroachment of aspen stands within Riparian Habitat Conservation Areas (RHCAs), and non-anadromous riparian areas (Management Area 3A), therefore reducing competition with riparian aspen.
3. Reduce stand densities and species competition to reduce the risk of bark beetles and other insects that cause mortality by decreasing the susceptibility of forest stands to bark beetle outbreaks; and to lower the risk of spruce budworm by reducing encroachment of fir species.
4. Capture the economic value of trees that are surplus to other resource needs such as for scenic value and to provide raw materials and jobs to aid in community stability.
5. Reduce the road density within the subwatershed to increase big game security by reducing the accessibility of the area, and to reduce road impacts to riparian areas."

The Knox Project EA identifies the following "needs:"

- Fuel hazard reduction need;
- Aspen protection need;
- Forest composition and density reduction need;

- Timber production need;
- Road reduction need;

Mechanical fuels treatment, by itself, is not enough to reduce the risk of severe fire; treatments must be accompanied by efforts to remove the underlying causes of fire risk, like logging and fire-suppression. (Rhodes, 2007).

A restoration alternative would focus on maintaining the "ecological integrity" of a forest ecosystem, upholding the overall goals of the NFMA, LRMP, and Eastside Screens. Ecological integrity means ecological wholeness and would consider actual high elevation mixed conifer forest natural range of variability; forest integrity; fire patterns, cycles, and natural risks; and natural roles and fluctuating patterns of insects and disease; protecting and restoring wildlife or fish habitat; and hydrologic condition and functioning. (Brown et al, 2004) "The essence of maintaining ecosystem integrity is to retain the health and resilience of systems so they can accommodate short-term stresses and adapt to long-term change." Id at 19. Neither of the action alternatives focus on restoration of the ecosystem, even though restoration is the best approach for maintaining the wholeness of the forest and its habitat and reducing fire risk in the long-run.

Both action alternatives both focus largely on commercial logging. However, commercial logging is not the only way to reduce the risk of natural disturbances, nor is it the best way. Commercial logging has, in fact, not been shown in any scientific literature to reduce the incidence of large-scale fire. (Carey and Schumann, 2003) Commercial logging in important habitat does not make sense in light of the objective to protect habitat. Cutting maturing and mature and old trees not only degrades wildlife habitat, but it exacerbates wildfire severity. (Brown et al, 2004; Carey and Schumann, 2003; Noss, et al 2006; Rhodes, 2007; Morrison and Smith, 2005) See also additional studies included in Exhibit A.

Managed forests should not only support ecologically appropriate fire regimes and forest resiliency, they should also support viable populations of species. (Noss, et al 2006). The Forest Service must at least *consider* an alternative that will truly protect important habitat without destroying it. NEPA requires the agency develop science-based alternatives, including a restoration-only alternative, as well as a full range of scientifically varied action alternatives. As the project contains logging units within contiguous viable habitat for species of concern, within proximity to old growth, roadless, and wilderness, logging within project units would degrade potential habitat for ESA listed and other imperiled species of concern, disrupting forest connectivity and available habitat. The EA fails to adequately disclose and address this significant issue, and instead proposes to compound existent cumulative impacts habitat degradation with even more logging harms.

Throughout the region the Forest Service has employed dubious fire models to claim that commercial logging is the only way to serve the Forest Service's needs. These models do not give, nor can they give, an adequate explanation of how mechanical fuels treatment can reduce the risk of fire. (Morrison and Smith, 2005; Veblen 2003; Carey and Schumann, 2003, and new science studies by Veblen, Rhodes, and others included in exhibits) The NEPA regulations allow the agency to explain why a particular option is not feasible, or otherwise not reasonable, and hence eliminate it from further consideration. 40 C.F.R. 1502.14. However, the reasons given must be adequately supported. Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 813-15 (9th Cir. 1999). The EA claims that an alternative limiting logging to 12" dbh and/or 16" dbh trees and below does not sufficiently reduce the risk of fire and meet project goals, but fails to include sufficient information to support its scientifically insupportable and/or controversial conclusions. Without fully analyzing a restoration

alternative, the Forest Service and the public will never know how the forest will be affected without commercial logging. The Forest Service cannot make a fully informed decision without full analysis of a restoration alternative.

The Forest Service must analyze an alternative that will eliminate scientifically controversial commercial logging and all fuels treatment that is not based in sound ecological principles, as this is reasonably within the stated purpose and need of the project. Both current action alternatives significantly degrade viable mature and old forest habitat in mixed conifer mature and old forests, in relative proximity to the area's old growth, roadless, salmonid watersystems, and wilderness landscapes. The Forest Service does not present any alternative that actually protects viable old and mature forest habitat, that protects essential forest connectivity, and that addresses cumulative impacts harms throughout the project area. The EA claims that forest habitat is *at risk* of destruction by uncharacteristic serve fire but does not disclose that old and mature forest habitat and connectivity are *certain* to be irreparably injured under this project. The effects to the interior mature and old forest dependent wildlife under this project are immediate and certain, while the risks the project is attempting to avoid are distant, hypothetical, and scientifically insupportable. The Forest Service must analyze an alternative that would actually "avoid or minimize adverse effects of these actions," as NEPA requires it to do. 50 C.F.R. 1500.2(e).

Undisturbed mature forests require little or no restoration. (Baker et al, ) Passive restoration is the best way to return forests back to the condition first perceived by the European settlers. (McIver and Starr, 2001) At a minimum, the Forest Service must analyze an alternative that would exclude the most important mixed conifer and pine mature and old forest habitat from ecologically harmful active forest management actions and protect the area's connective forest habitat, especially linking old growth, roadless, salmonid waterways, and wilderness with the project's mature and old forest, mixed conifer mid and high elevation forest habitat.

**The Need for An EIS**

NEPA requires the Forest Service to prepare an EIS for all major federal actions that "may significantly affect the quality of the human environment." 42 U.S.C. § 4332(2)(C). If an agency decides not to prepare an EIS, it must supply a "convincing statement of reasons" to explain why a project's impacts are insignificant. Blue Mtns. Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998) (also holding that a "plaintiff need not show that significant effects will in fact occur" that it is enough for the plaintiff to raise "substantial questions whether a project may have a significant effect" on the environment). Because this decision includes widespread scientifically controversial commercial logging actions in an area with significant public recreational, ecological, salmonid watersystem, and wildlife values, which has extensive past and ongoing cumulative impacts issues, and the EA has identified a number of significant concerns, NEPA requires an EIS for this proposed project before a decision may be issued. The issues raised herein clearly indicate that the EA's proposed actions are contrived, arbitrary and capricious, and scientifically and legally insupportable for a project of this extent and level of irretrievable impacts.

**The EA only analyzes "alternatives" that are virtually identical to each other**

The Ninth Circuit has found that an EA/EIS that analyzes a no-action and other virtually identical action alternatives violates NEPA. Muckleshoot Indian Tribe v. U.S. Forest Service 177 F.3d 800, 813-15 (9th Cir. 1999). The EA takes this very same approach with its alternatives. There are only logging action alternatives in the project EA: the no action alternative; alternative 2, and alternative 3. The action alternatives are essentially similar, especially in regards to their focus on commercial logging/thinning.

The overwhelming scientific recommendations do not support the EA contention that the *only* possible alternative in this case necessarily involves wide-scale commercial logging in mature and old pine and mixed conifer forest habitat, and as such all of these alternatives violate the NEPA, requiring that actions are based in expert advice and high quality science. In its NEPA analysis, the Forest Service has a duty to fully consider alternatives to the wide-sweeping logging impacts that are posed by this project. The Forest Service must include a sufficient range of scientifically credible alternatives in order to provide a basis for sound forest management decisions.

**Purpose and Need of the Project is Impermissibly Narrow**

An agency must not define the purpose and need of a project so narrowly that the proposed action is the only possible course of action. EPIC v. USFS, D.C. No. CV-04-01705-GEB (9th Cir. 2006)(attached). In the recent EPIC case, the Ninth Circuit found that the purpose and need of a timber sale project was so narrow that it was impermissible. The proposed action was the only possible course of action to fulfill the purpose and need, so there was no real analysis of alternatives. The purpose and need of the Knox EA timber sale is also far too narrow. The Forest Service has limited possible actions to only scientifically controversial and largely insupportable logging actions which are incongruous with its ecological objectives above. The Forest Service narrows their objectives and analysis in the EA, failing to address cumulative impacts issues from past and recent projects, failing to accurately disclose or address the harmful logging impacts of this project, and failing to effectively address a range of restoration actions that encourage and restore forest resiliency and LOS habitat, and instead focusing almost exclusively on scientifically controversial logging actions to accomplish its stated objectives. Given the EA's stated purpose 4 (as noted previously above), the only possible action that could fulfill the need to "capture present economic value of trees that are surplus to other resource needs such as for scenic value and to provide raw materials and jobs to aid in community stability" is commercial logging. Because of the narrow purpose and need, the Forest Service only analyzes alternatives that include commercial logging.

In Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 815, rev'd in part, 490 U.S. 332 (1989) (internal citations omitted) the Court determined that the EIS was inadequate because it failed to examine all reasonable alternatives. The Court held that "the range of alternatives considered must be sufficient to permit a reasoned choice." Here, beyond the statutorily required "no action alternative," only two largely similar logging alternatives were developed and considered. These logging alternatives differ only by extent and focus of acres logged. They do not differ in substance concerning the action methods, scientifically controversial premise, logging impacts, changes to forest stand structure and wildlife habitat, or economic timber volume objectives. The Forest Service failed to consider other reasonable activities in violation of NEPA.

**Violations of the Core Tenets of the NEPA**

The EA violates the very core tenets of the NEPA:

1) Directing that actions not harm the environment: "NEPA, CEQ Regulation part 1500 - Purpose Policy and Mandate" "Sec. 1500.1 Purpose. (c) Ultimately, of course, it is not better documents, but better decision that count. NEPA's purpose is not to generate paperwork - even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions **that protect, restore, and enhance the environment**. These regulations provide the direction to achieve this purpose."
2) Directing the agency to develop and analyze a reasonable range of alternatives that avoid or minimize environmental harms: "Sec. 1502

**a.** (e) Use the NEPA process **to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.**

**b.** (f) Use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, **to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."**

3) More directions on the range of alternatives: "Sec. 1502.14 Alternatives including the proposed action. This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall: (a) **Rigorously explore and objectively evaluate all reasonable alternatives**, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."
4) And finally, the very core of NEPA - Congressional intent and directives to "prevent or eliminate damage to the environment" From "The National Environmental Policy Act of 1969; Purpose Sec. 2 [42 USC § 4321]. The purposes of this Act are:
    a. (a) To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality."
    b. (b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may –
        i. 1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
        ii. 2. assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
        iii. 3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
        iv. 4. preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;
        v. 5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
        vi. 6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.
    c. (c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment."

Clearly, the EA itself serves as perhaps the best evidence that the Forest Service fails to begin to meet these most basic NEPA requirements. The project's contrived purpose and need, similar logging

action alternatives, analysis failures, environmental harms, and failure to adequately disclose and address significant scientific controversy and contravention to the selected and presented alternatives violate the most elemental requirements of the NEPA.

While the agency seems to believe – as stated by one regional official - that "NEPA doesn't require decision-makers to choose the best alternative, and instead only requires that impacts be addressed," –this perspective is clearly incorrect regarding NEPA's requirements to utilize sound purpose and need, expert advice and high quality science, develop a full range of reasonable alternatives that "take actions that protect, restore, and enhance the environment" (CEQ 1500 §1501.1(c)) and a host of other NEPA core directives that follow above regarding the development of reasonable alternatives that " identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions" to the final directive above about the responsibility "to contribute to the preservation and enhancement of the environment." Clearly the EA fails the requirements of the NEPA, necessitating that this EA be withdrawn and project be revised in a new legally compliant EIS analysis process that develops a full range of environmentally beneficial, scientifically based, LRMP, Eastside Screens, and legally compliant action alternatives.

**Science Inadequate**

The NEPA regulations require the Forest Service to "insure the professional integrity, including scientific integrity, of the discussions and analyses" in the NEPA documents that it prepares. 40 C.F.R. § 1502.24. Furthermore, the Forest Service must disclose the extent to which the impact of the proposed action is scientifically controversial. See id. §§ 1508.27(b)(4), 1508.27(b)(5).

***Purpose and Need as Applied is Not Based on Best Available Science and is Scientifically Controversial***

The project purports it will reduce fuel loadings through mechanical fuels treatments, including over one thousand acres of commercial logging. However, the mechanical fuels treatments would actually degrade and destroy habitat in both the short and long-term. The planning area includes diverse stands of forest that are green, healthy and thriving. The project area is home to a diverse array of species, many of which depend upon complex interior forest. The Forest Service's proposal to "protect" wildlife habitat in the future by destroying wildlife habitat in the present fails to make ecological sense, and is scientifically insupportable.

The Forest Service never presents science showing that wildlife habitat and biodiversity is benefited in the future by destroying habitat in the present. To the Forest Service, the theoretical risks of fire, insects, and other disturbances are just as great as the actual impact of logging. Where is the science to support this hypothesis? The Forest Service's plan to protect forest habitat with mature, late, and old-structured stands and mature and large trees is to remove essential forest stand structure and irreparably degrade forest ecological integrity. The actual planned action is, then, inherently antithetical to its stated purpose.

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Part of the stated and implied purpose and need of the project is to protect habitat, however, the project does the exact opposite. The activities planned for this sale may cause both a short-term *and* a long-term degradation of suitable habitat. Area forest species of concern, including lynx, wolverine, wolves, salmonid species, goshawk, marten, pileated and three toed woodpeckers, neotropical and migrant native bird species, and others, require extensive connective forests with mature and late-successional characteristics, including large diameter trees and healthy functioning watersheds and water systems. (Lint, 2005) It is these forests that are most fire resistant, as they have moist interiors, a complex canopy, and are impenetrable to wind. (Rhodes, 2007 and others – see below) Commercial

logging the area's mature and old fire resistant trees up to 21 inches in diameter (DBH) would irreparably degrade wildlife species of concern and listed-species habitat, including connectivity, *and* increasing the risk of fire. It is well documented that mechanical logging fuels treatments may not reduce the risk of fire, but it does certainly destroy habitat.

The Forest Service fails to address cumulative impacts properly, and fails to provide any science showing that destroying viable mature and old mixed conifer and pine forest habitat in the present benefits the area's many diverse forest species of concern in the future. Without protection today, the future viability of the area's listed species and species of concern is absolutely uncertain. In light of the new scientific information revealing the importance of forest connectivity and evidencing population declines of numerous old and mature forest dependent species, the Forest Service makes a very risky move to further stress these populations in the present with this project's planned logging.

Additionally, ongoing scientific research has confirmed that many old growth dependent species of concern continue to use even severely burned mature and old forest habitat, while other research concludes that many forest species of concern are deterred from utilizing forest habitat that has been degraded by commercial logging and thinning. Research concludes that logging extirpates and harms populations of goshawks, marten, lynx, eagles, wolverines, wolves, great gray and other owls, and many other species of concern, as well as populations of their prey species. The failure of the project EA to disclose and address this pertinent information in its analysis deprives the public and the decision-maker of essential information critical to designing a reasonable project with a likelihood of accomplishing its purpose and need goals. The project is premised in large part on the perceived need to protect area forests and wildlife habitat from the effects of severe fire(s). As such, it is extremely important that project analysis address scientific research that indicates affected species of concern are not extirpated from forest habitat from fire – and comparatively assess scientific research that indicates these species are extirpated from forest habitat from commercial logging and thinning. The failure to include this analysis within the EIS, and the failure to include a restoration alternative based upon relevant scientific research violates the NEPA.

***Plan for Reducing Fire Risk does not use the Best Available Science and is Scientifically Controversial***

There is ample scientific controversy about whether mechanical fuels treatment reduces fire risk. Mature, old-growth stands have dense, moist interiors and little wind, which inhibit the spread of wildfire. (Morrison and Smith, 2005; Rhodes, 2007) Fuels treatments that reduce stand density and open up the forest actually enhance fire spread, as fire moves more readily through an open environment. (Morrison and Smith, 2005; Rhodes, 2007) An opened forest allows fuels to dry out faster and winds to blow through the stand. (Morrison and Smith 2005; Rhodes, 2007) Thinning the understory is more effective at reducing fire risk than thinning the overstory. (Carey and Schumann, 2003) Complex and varied canopies may actually prevent the spread of wildfire better than dense, young, single-storied canopies. (Morrison and Smith, 2005) The Forest Service plan to disturb the canopy and interior forest conditions of mixed conifer forests is not based in the best available science. "Although the assertion is frequently made that reducing tree density can reduce wildfire hazard, the scientific literature provides tenuous support for this hypothesis." (Carey and Schumann, 2003, page 14). The Forest Service is at least required to discuss this very lively scientific controversy about the role of mechanical fuels treatment in reducing the risk of fire in the project EIS.

There is no scientific support to show that commercial thinning reduces fire risk. (Carey and Schumann, 2003) Despite the stated intention to protect habitat, the project EA focuses more heavily on commercial logging than it does on needed restoration and protection actions. Commercial thinning is

especially controversial when the permitted diameter limit allows the logging of fire resistant mature and old trees, and maturing trees essential for forest ecological integrity, resilience, wildlife habitat, and watershed functioning. Science overwhelmingly concludes that logging mature and large, fire resistant trees does not reduce the risk of fire and actually can contribute to more intense fires. (Brown et al 2004; Carey and Schumann, 2003; Noss et al, 2006; Rhodes, 2007; Morrison and Smith, 2005; Baker et al, 2006)

A percentage of the trees to be logged in this project will be mature trees up to 21" DBH, yet this total is not accurately disclosed in the EA nor are the impacts adequately assessed and disclosed. The Forest Service apparently erroneously concludes that *commercial logging* of mature and old fire resistant trees is the only way to reduce the risk of fire in the planning area. The Forest Service does not need to cut trees up to 21" DBH, or for that matter to cut any trees in mixed conifer mid to high elevation forests – especially trees that evidence fire resistant mature and old characteristics. The EA plans to cut an undisclosed number of old and mature large fire-resistant trees fail to utilize the best available science. Also, the EA never "disclose[s] the extent to which the impact of the proposed action is scientifically controversial," regarding the Forest Services' decision to reduce fire risk by commercially thinning mature stands of mixed-conifer forest. 40 C.F.R. 1507.27(b)(4).

A significant portion of the commercial thinning and fuels reduction will occur in mixed-conifer forests. However, thinning is not needed in mixed-conifer forest to prevent fire. Mixed-conifer forests are wetter and have a mixed-severity fire regime. (Noss et al, 2006; Rhodes, 2007) The mixed-conifer stands have developed with both low-severity fires and high-severity fires, thus there is no support to show that the stands' fire regimes have been altered. If the fire regime is not altered, then fuel "treatments" do not help to reduce the risk of severe fire or restore the stand to its natural fire behavior. (Rhodes, 2007)

The EA does not present any proof that mixed-conifer forests are at "uncharacteristically severe levels" with their fuel load. The Forest Service just claims that fuels are outside their "desired condition," so a large fire is expected. However, the forest is not outside of its desired condition unless the current time period without fire is longer than any time period in the areas' history. (Rhodes, 2007) The mixed-conifer forests in the project timber sale area do not require fuels management, especially when the "treatment" will destroy important old and mature connective forest habitat for regional species of concern and ESA listed species. Fire is a natural and inevitable component in a functioning forest ecosystem, and the mixed-conifer forests in the project area are within their natural range of fire behavior. The Forest Service has not based its determination to alter the natural fire regime of the mixed-conifer forests in the best available science.

**Timber Volume Targets Driving NW Timber Sales**

Over the past years, conservation efforts have achieved many negotiated changes, upholding federal laws and limiting timber sales to protect old growth, forest ecosystems, wildlife, and fish. Recently negotiation attempts have been detrimentally affected as Forest Service staff throughout the Pacific Northwest region acknowledge they are expected to meet the elevated timber quota targets adopted by the agency in April 2007. Due to the expected quota contribution to timber volumes from local national forests and ranger districts, the ability of agency planners and decision-makers to modify timber sales to lessen harms to wildlife, salmon, and other important ecological concerns has been unreasonably severely reduced. Yet agency NEPA project documents fail to disclose the significant determining role timber quotas have in shaping projects, or the effect these quotas have in discouraging agency decision-makers from modifying the logging extent of projects if such modification would reduce final timber volumes. The region's Forester at the time, Linda Goodman, wrote the following internal agency letter (included *italicized* in full below), confirming the existence of board foot volume targets driving the region's timber sales.

While the agency may believe it has the discretion to impose timber volume quotas, continuing to issue logging project "purpose and need" statements and analysis documents that fail to publicly disclose timber volumes are a major purpose behind the region's projects violates environmental policy laws. NEPA requires that the public as well as the decision-maker have all pertinent information concerning proposed projects. As these quotas exist, the agency must comply with environmental policy laws and clearly disclose their existence, the specific timber target goals for the affected forest and district, and the percentage of these the particular project is expected to contribute.

The failure of the NEPA analysis to disclose the existence of Pacific Northwest Regional timber volume target quotas, and their expected local national forest and ranger district percentages, driving agency projects and influencing the development and selection of alternatives violates the clear disclosure requirements of the NEPA. The failure to disclose that decision-makers are influenced in their selection of an alternative by the expectation that their forest must meet its expected contribution to the region's timber quotas violates the requirements of the NEPA. Holding appeal resolution meetings wherein undisclosed quotas set the parameters limiting the decision-maker's ability to modify a project violates the NEPA, violates agency compliance with environmental policy laws, and violates agency accountability to the affected public.

NEPA requires unbiased, scientifically-based, objective analysis and a full range of reasonable scientifically-sound alternatives. The existence of undisclosed quotas unduly influencing this project towards meeting predetermined agency timber volume targets violates the requirements of the NEPA. Quotas sabotage agency projects, illegally predisposing agency analysis towards developing ecologically unwarranted logging-driven alternatives. This predisposes decision-makers to approve scientifically controversial or unfounded logging that is likely to result in significant harms to imperiled wildlife and biodiverse forest ecosystems. Such is the case with this project, which fails to disclose the existence or influence of timber volume quotas.

> Written in "obfuscate-speak" style, one doesn't have to work hard to read between the lines of the former Regional Forester's April 2007 internal letter to understand timber corporation economics trump wildlife and ecological concerns in Pacific Northwest Region Forest Service projects. Among the ever-growing ranks of harmful sales spawned by timber quotas are: Five Buttes, Snow Fuels, BLT, Black Crater, and GW in the Deschutes; Spears and East Maury in the Ochoco; Thorn, **Knox,** Black Rock, Crawford, and Egley in the Malheur; and Farley, Wildcat, Monument, Skull, Flat, Sugarbowl, and Otter Fire in the Umatilla. Together these and other sales total many thousands of acres and millions of board feet. The logging they plan to implement would harm wildlife and salmonid spawning habitat, destroy spotted owl nesting habitat; harm pileated, black-backed, and white-headed woodpeckers; degrade habitat for marten; wolverine; lynx; goshawk; neotropical migrant and native birds; pygmy, flammulated, and great gray owls; and many other biodiverse native species of concern.

It is doubly ironic that this is done under Northwest Forest Plan cover – prioritizing timber volume goals above this plan's original focal objectives of recovering the populations of threatened-listed spotted owl and other imperiled old growth forest-dependent species of concern and protecting essential forest habitat from logging and other management harms. The plan has failed dismally to meet population recovery and old growth habitat protection goals for spotted owls and other wildlife, whose populations continue to decline steadily. As noted in the letter, eastside forests are expected to meet westside NFP timber targets – jeopardizing eastside wildlife and forests as well. This latter is illegal, as eastside volume must be based upon LRMPs and site-specific project analysis, not westside timber volume targets which have no relevance or legal bearing on eastside national forests. The agency's blanket requirement of the region's forests to meet arbitrary timber targets violates federal environmental policy laws. Failure to disclose and analyze the impacts of this additional timber directive violates the NEPA. The following is

the timber quota letter announcing the increased timber quotas in the Pacific Northwest Regional Forester's own words:

*"Linda Goodman - Regional Forester, Pacific Northwest Region:"*

*"As we get older, we accumulate things. Sometimes our closets show our life story by the old shirts, slacks or shoes that "hang out" in them. And sometimes, we face the need to downsize our closets and find the usable items that may have benefit to others. We often provide clothes, appliances and other useful items for the greater good of others.*

*Sometimes, our forests resemble those closets—a bit cluttered and in need of "tidying up." This tidying up not only aids the environment by creating a healthier forest, it also can provide benefits to our local communities.*

*It takes money and time to do this. For a long time, we have known we didn't have the funds to get this work done. That has changed.*

*The President and Congress have given us an additional 24.7 million dollars to use for our fuels management and timber program. These dollars come with an expectation for us to increase our timber volume for the Northwest Forest Plan and also the east-side Forests.*

*We're going to increase our timber offered program to 675 million board feet this year, and 800 million board feet in fiscal year 2008. That is up from 520 million board feet last year. We're going to do this in both young and mature stands to accelerate growth, reduce hazardous fuels, and improve wildlife habitat. This work will help us fulfill the requirements of the Northwest Forest Plan.*

*One of the key provisions of the Northwest Forest Plan is to provide economic stability to local communities. Unfortunately, due to a host of factors, the local communities have not seen the stability as envisioned by the Plan. By offering an increased volume of timber, local communities will benefit, both in terms of jobs, revenue, and healthy forests.*

*I realize this work, so late in the fiscal year, won't be easy, and will require a united approach to handle the work. I've appointed Willamette National Forest Supervisor Dallas Emch to spearhead our efforts. Dallas will be working with Forests to make sure we can get the work done in a timely and efficient manner. We know you already had a full schedule of work so we want to look at a full range of options to assist employees in meeting our work. Our goal remains to do this work in a collaborative effort, with counties, partners and citizens all working together for the good of the land and the people*

*"Tidying up" our forests and providing benefits to local communities makes good sense."*

Interesting letter for interesting times? Yet forests are not "closets." Forests are an integral part of Earth's interwoven ecosystems, supporting innumerable biodiverse species, supplying clean waters, and providing all with the wondrous beauty of untrammeled nature. Forests should not be subject to the political wiles of corporate timber, which has already imperiled not only spotted owls but numerous other LOS dependent wildlife and salmonid species, decimated old growth, and left forest ecosystems in fragmented tatters. We respectfully call for these Northwest Forest Plan dollars to be employed for legitimate restoration, forest protection, and recovery of imperiled species – and not used to toss more irreplaceable trees into the black hole of insatiable timber profits. The agency must begin to responsibly address the failure of their Northwest Forest Plan provisions to prevent the continuing serious decline of ESA threatened-listed spotted owls, and a host of other imperiled forest species of concern. Similarly, the agency must also address the failure of their Eastside "Screens" provisions to adequately protect and recover the populations and habitat of numerous old growth forest dependent species of concern. A scientifically and ecologically based restoration project needs to be developed for the project analysis area, and the current legally non-compliant logging project needs to be withdrawn.

**Mycorrhizae**.

The EA did not sufficiently recognize the importance of mycorrhizal fungi on forest growth and productivity. The Forest Service failed to adequately discuss how mycorrhizae will be impacted by the proposed timber project. The project analysis failed to sufficiently assess how logging has affected mycorrhizae in areas nearby the analysis area. Mature and old growth forests within the project area are rare within the Malheur, and must be protected from adverse logging impacts. Scientific evidence suggests that mycorrhizae and other soil organisms and processes are extremely important and are easily destroyed by ground-based logging, including thinning using BMPs as well as post-logging subsoiling, which devastates subsurface soil microbial communities upon which healthy functioning forests depend. Affected wildlife species, including prey species for raptors and predators also rely on the fungi, but there is no discussion of how the project will affect this important food source for these species. Without an adequate discussion of the impacts to soil mycorrhizae, including the harmful impacts of subsoiling and ineffectiveness of BMPs, the public and the decisionmaker are precluded from making an informed decision regarding the proposed project, and the USFS cannot assert that there will be no permanent impairment of the soil. 30 C.F.R. §§ 219.27(a)(1), 219.14(a)(2) (prohibiting activities unless technology is available to prevent impairment of soil or water resources).

## Lynx

Among our many concerns is that of this proposed project's effect on lynx. Based on data from the U.S. Fish and Wildlife Service's (USFWS) Portland office, there have been past sightings of lynx in the Oregon Cascades region, including the Malheur NF. Historic evidence of lynx in these areas include positive occurrence records, lynx bounty claims, and Forest Service Wildlife Statistical Reports. Positive reports of lynx occur as far south as Modoc County, California. As this is the case, the project area may be important to lynx recovery. It is plausible that lynx are rare in the project area (and in Oregon on the whole) due to bounties, aerial poisonings, and other efforts to eliminate them (and other predators) that were performed systematically for decades, and not due to a lack of habitat, as is the current situation with wolves as well.

The USFS should have adequately addressed how further fragmentation of the planning area will affect lynx. It is clear that lynx habitat is very fragmented, and that large blocks of intact forest are required to maintain viable populations of the species. Without these large blocks, lynx may need larger ranges to survive. Portions of the project are located in mid to high elevation Prairie City District forests, both including and within range of mixed conifer forest habitat known to be preferred by lynx, including mixed conifer forests, and connective forest habitat helping link the greater region's old growth, roadless, and wilderness areas. The proposed logging in the planning area may adversely affect whatever lynx recovery is occurring, as lynx may use portions of this area for both nocturnal foraging as well as migratory and dispersal routes and refuge. Continuing to squeeze lynx out of their habitat range by intensively managing the land runs afoul of NFMA's requirement that the agency maintain viable populations of wildlife that are well distributed across the landscape. 36 C.F.R. § 219.19. The USFS has an obligation to accurately assess the impacts of its project on lynx.

Next, it is clear that data is lacking on the food habits of lynx in Oregon's forests, which represents a critical research need. Ruggiero, 1999b; Aubry, 1999. It is well accepted that lynx are dependant on snowshoe hares as a prey base, but in the southern portions of lynx range squirrels, other rabbits, small rodents, birds and other wildlife may always be an important part of lynx diet. Some of these same prey species may also be important to raptors and other wildlife species of concern. It is critical to understanding how this project may impact lynx to examine how it will impact lynx prey.

Snowshoe hares, squirrels, and other mammals have different habitat needs, but many of these species could be negatively impacted by the fragmentation, logging, road building, and other actions associated with this project. Most of these prey species require adequate cover (USFWS, 1999), especially conifer cover in winter (GTR-RM-254), and foliage that is accessible during winter snowpack conditions. Hares, squirrels, and forest-dependent species are typically associated with dense forest cover, including shrubs and "dog hair" thickets of small trees. McKelevey, 1999a. Many of these prey species also perform important roles in the recovery of fragmented forest habitat, helping to spread seeds of forest plants and trees, distributing nutrients throughout area soils, and loosening compacted soil areas—none of which was sufficiently disclosed or addressed in the EA. Edge areas within and adjacent to dense mixed conifer forests provide viable habitat for many species, including potential prey species for lynx. The greater area's mid to high elevation forests, and adjacent old growth, wilderness, and roadless areas also provide potential habitat, and the project area likely serves as dispersal and migration corridors, as well as supplemental habitat for lynx which may occur within, or traverse through, the project area. The proposed action alternatives which would log connective mature and old forest habitat, would result in significantly further reducing needed cover for wildlife, jeopardizing both lynx and their prey species viability across the area—in violation of the NEPA, NFMA, and the ESA.

Different timber harvest methods can have detrimental impacts on many of these species, including squirrels, rabbits, rodents, and birds, as well as snowshoe hares. Koehler and Brittell (1988) predict that it may take up to seven years after logging an area for hares to recolonize the site and up to 25 years before they reach their highest densities. Bull (1999) examined the results of a variety of harvest prescriptions on hares and found that in lodgepole stands, the number of snowshoe hares decreased in all types of harvest. She reports that mixed conifer stands appear to be "no longer suitable for hares after harvesting." This same is also true for many of the other forest-dependent species which comprise the lynx's diet.

Squirrels have different habitat needs than snowshoe hares and are associated with mature, cone-producing forests. Ruggiero, 1999a; Buskirk, 1999b; McKelvey, 1999a. They tend to reach their highest densities in late-successional, closed-canopy forests with substantial quantities of course woody debris. The EA fails to adequately address potential impacts this project may have on squirrels, and ignores an important component of lynx diet. The discrepancies and deficiencies of EA assertions further underscores the failure of the agency to adequately disclose and analyze this important issue.

The EA failed to provide a thorough examination of how the project will impact both hares and squirrels, as well as other wildlife species which are potential lynx prey. Without complete analysis of how these prey species will be impacted, it is impossible to quantify and qualify the impacts to lynx. The EA must analyze the cumulative impacts of this project on lynx prey in association with other projects on the District, Forest, and surrounding lands.

In sum, The Lynx Conservation Assessment and Strategy (LCAS) clearly asks that the Forest Service perform project specific analysis for each project. The lack of project specific analysis has been a long-standing problem with the Forest Service. The USDA Office of the Inspector General in its January 1999 report (No. 088001-10-At.) tries to correct this problem but the Forest Service has ignored the recommendations of this report. The LCAS executive summary states:

> Plans that incorporate the conservation measures, and projects that implement them, are not generally expected to have adverse effects on lynx…. However, because it is impossible to provide standards and guidelines that will address all possible actions, in all locations across the broad range of the lynx, project specific analysis must be completed.

It is clear that the Forest Service has not completed NEPA required accurate analysis and therefore is in violation of the LCAS, as well as the ESA and NFMA. The EA makes little mention as to any site-

specific to protocol recent surveys supporting its determinations, fails to adequately disclose surveys or survey protocol, methodology, areas or frequency. As such, this determination is arbitrary and capricious and therefore illegal. The EA must be withdrawn and a new EIS conducted which addresses and corrects these analysis deficiencies and illegalities.

**Wolverine**

It is suspected that wolverine may use the planning area as part of their seasonal and nocturnal foraging and territorial wandering patterns. Winter season surveys by our organization over the past decade have found likely wolverine snow tracks within the region's forests. Wolverine are known to have a 150 square mile or more winter range, and are also known to utilize forest landscapes connecting the region's scattered roadless and wilderness areas. It is also well known that human disturbance related to the proposed activities is likely to alter the movement patterns of wolverine and other wildlife species. Failing to adequately and accurately address the likely impacts to wolverine by the proposed projects, given the large home ranges of these animals (approximately a 150 square mile winter range), and the likelihood of wolverines utilizing the project area for some of their sustenance needs and territorial travels, violates both NEPA and NFMA.

The EA fails to adequately analyze how wolverine will be affected by the proposed project. Because it is probable that the species utilizes the planning area for some life cycle needs, the USFS is required to accurately address how the commercial logging and road building projects will affect those needs and the species itself. The EA's failure to do so, and its irresponsible dismissal of the proposed project's likely adverse impacts to wolverine, including the project's likely incremental role in ongoing trends pushing this species towards uplisting under the ESA, violates NEPA and NFMA. 40 C.F.R. § 1502.16 (environmental consequences); 36 C.F.R. § 219.19 (fish and wildlife resources).

Given the sensitive nature of this species, it is likely that the proposed project will decrease Wolverine viability through the actual loss of connective travel, nocturnal, and seasonal foraging habitat, and possible loss of individuals. The project's plans to reduce forest structure and cover across the area, from low to high elevation forests, exposes wolverines in this area to increased risk of mortality through poaching as well as loss of area hunting and hiding viability. This is inconsistent with the Forest Plan as amended and NFMA because the project would contribute incrementally to Wolverine populations trend towards listing, 36 C.F.R. § 219.19.

Wolverine are already listed as "Sensitive" in Oregon by the Oregon Department of Fish and Wildlife, however the Forest Service fails to adequately address this within the EA or disclose any consultation with ODF&W regarding recovering and protecting wolverine and their habitat. These failures are in violation of the requirements of the NEPA, and in contravention to the necessary cooperative interagency efforts needed to begin the recovery of this species and its required habitat.

**Northern Goshawk and Other Forest Raptors**

We have several concerns regarding Northern Goshawk, and related concerns to other forest raptors in the area, including other hawks, eagles, and owls. It is known that Goshawks currently are (and historically have) utilizing the forests of the proposed project and surrounding areas for nesting, fledgling, and foraging. It is also known that Goshawks, similar to many predatory species, rotate their nesting and foraging territories over time, so as to not deplete their prey species populations and thus maintain their viability over the long-term. As such, to ascertain potential Goshawk use, agency surveys must be conducted seasonally each year to determine the rotational patterns of Goshawks for the project and adjacent area forests. Goshawks also have an extensive foraging territory. It is likely that nesting pairs may utilize significant portions of the project area's mature and old forest areas, as well as adjacent wilderness, old growth and mature areas, and roadless forests. It is also known that forest edge areas may be utilized as foraging territory by this species. The EA fails to adequately address impacts to this species

such as how logging removal of forest canopy cover, and further fragmentation of the area's forests, will affect adult and juvenile Goshawks and other raptors, or other direct, indirect, or cumulative effects to goshawks and other raptor species. The EA fails to adequately address impacts to Goshawk nesting areas, including sufficiently assessing historic nesting areas, within or adjacent to the proposed logging project. Similarly, the EA fails to adequately address potential direct and cumulative impacts harms to existing raptor nests of other species in the area.

Several scientific studies exist regarding significantly detrimental logging impacts to Goshawks due to logging within or near Goshawk PFA's, as well as from fragmentation of natural forest habitat. (Reynolds et al, 1982, 1989, 1991; Moore and Henry, 1983; Fleming, 1987; Hall, 1984; Saunders, 1982; Crocker Bedford et al, 1988, 1990, 1991; Patla, 1991; Hayward and Escano, 1989; Kennedy, 1988; Shuster, 1980; Speiser and Bosakoski, 1987; Woodbridge et al, 1988; Bendire, 1892, Bull, 1988; Hargis et al, 1991; Bryan and Forsman, 1987; Andeson and Shommer; among others ). Some of these studies were conducted for the agency. However the EA violates the NEPA by failing to adequately and accurately disclose or assess this pertinent information. As such and the agency fails to uphold its responsibility to address these issues thoroughly as required by both the NEPA and the NFMA. The agency fails to address the cumulative impacts of the proposed project along with past, present, and reasonably foreseeable future actions, in violation of NEPA, 40 C.F.R. § 1508.7.

We are concerned about the affect of the planned transformation of the commercial logging units from mature and old mixed-conifer multi-storied forests, to more open forest areas preferred by other raptors such as red-tailed hawks, which could extirpate goshawks from logged unit areas. It is known that suitable goshawk habitat contains a mix of dense multi-storied stands for nesting – such as currently exists in the project area. The project will remove necessary foraging, fledgling, and nesting habitat, which may result in the loss of potential Goshawk nesting habitat, as these features are inextricably linked within the greater Goshawk territory, thus resulting in fewer pairs of nesting birds within the area, or a loss of either or both fledgling juveniles and/or adults to predation or other mortality associated with logging impacts. The failure of the project's action alternatives to protect goshawk habitat would further reduce potential nesting and foraging habitat and thus violate NFMA's requirement to maintain viable populations of these and many other forest canopy-dependent species, 36 C.F.R. § 219.19. It is clear that the agency must prepare a new EIS to deal with this issue legally and adequately.

**American (Pine) Marten**

There is not sufficient analysis in the EA of the effects of the proposed project on American marten in the planning area. The forests of the Malheur, including the project area, have historically provided marten habitat. It is likely that the project currently provides marten habitat—both for denning and foraging, as well as dispersal and travel corridors. Recent scientific research confirms that old forest dependent wildlife species are well adapted to the cyclic changes in the region's fire ecology forests ever changing mosaic patterns. Many old forest wildlife species, it is being discovered, continue to use even severely burned old forest and roadless area habitat – if these are left unlogged. The EA fails to sufficiently and accurately address this issue.

The agency has an obligation under NEPA to assess the direct, indirect, and cumulative impacts to all species that will be affected by the proposed action. 40 C.F.R. §§ 1502.16. The Forest Service also has an obligation to obtain missing information or state why it could not be obtained if that information is necessary to make an informed decision. *Id*. § 1502.22. Finally, the agency has a duty to prepare a new EIS when there are unknown risks to the environment—and its current NEPA analysis is deficient in addressing these issues. *Id*. § 1508.27.

In this case, the Forest Service failed to accurately and adequately assess how the proposed timber sale will impact marten. The Malheur NF clearly is not meeting the requirements of NEPA and NFMA as they apply to pine marten, and is precluded from implementing the proposed project as a result.

**Neotropical Migrant and Native Birds**

Neo-tropical migrant and native forest-dependent birds (as well as numerous other forest species) are in serious decades-long population declines due to the adverse cumulative impacts from over a century of commercial logging in Oregon (see "Avian Population Trends" by Brian Sharp). The EA for this planned project fails to fully and adequately disclose the current population status and trends of native forest dependent Neotropical migrant and native avian species within the analysis area and adjacent forest. Compliance with both the NFMA and the MBTA requires that all alternatives presented within the EIS must be capable of protecting forest habitat for these many native forest species, and of reversing any current downward population trends. Such a course of proactive protective action is also required by the ESA and the NEPA, Presidential and USFS directives, and the Migratory Bird treaty Act, as well as credible conservation science and ethical integrity. However, in violation of these legal and ethical requirements, the EA presents action alternatives which would degrade habitat and further imperil neotropical and native avian species populations, resulting in both individual mortality to these species as well as irreparable habitat and population level harms.

The proposed timber sale(s) would significantly impact migratory birds in violation of the Migratory Bird Treaty Act, 16 U.S.C. §§ 703—712 (1994). It is well known amongst the conservation-science community that many migratory birds which are currently experiencing severe population decline trends are "strongly associated" with old and mature interior forest and related habitat. The proposed commercial "thinning" logging would likely directly kill nesting and fledgling migratory birds. The proposed logging would significantly reduce existing mature and old forest-dependent migratory bird habitat, which has already been significantly diminished due to the cumulative impacts of past management throughout much of the Malheur National Forest, including the project area.

The proposed logging units would irreparably fragment migratory bird habitat. Areas that were not logged would also be negatively impacted by generalist bird species favored by the environmental conditions created in highly fragmented logged forests. Other avian and predator species more adapted to open logging thinned forests would move into the project area, further adversely impacting interior mature and old forest dependent neotropical and migrant avian species. The impact these abundant and highly competitive bird species would have on sensitive bird species dependent on less fragmented forests should have been adequately disclosed and evaluated in the EA. The adverse impacts that the proposed logging would have on migratory birds are supported by multiple scientific studies.

Forest fragmentation, including loss of viable nesting habitat within central and eastern Oregon's national forests, is considered to be a primary cause behind declines observed in many forest songbird species. Further loss or fragmentation of habitat could lead to a collapse of regional populations of some forest birds (Robinson *et al.* 1995). As landscapes become increasingly fragmented, regional declines of migrant populations may result (*Id).* In the Pacific Northwest, researchers have found that old growth forests and natural forest processes (including natural fire-recovery) are integral to the survival of migratory birds. The past and continuing logging-oriented management of the forests of Oregon and Washington, which provide nesting and fledgling habitat for numerous migratory birds, has resulted in severe ongoing population declines in forest canopy-dependent migratory and native birds. (*reference: "Avian Population Trends in the Pacific Northwest" by Brian Sharp).* Among the many avian species experiencing population declines due to Forest Service logging projects are: band-tailed pigeon, rufous hummingbird, olive-sided flycatcher, winter wren, song sparrow, golden-crowned kinglet, pine siskin, solitary vireo, willow flycatcher, tree swallow, red-eyed vireo, yellow warbler, yellow-breasted chat, and others as well. This information was not adequately addressed in the EA despite the obvious direct adverse impacts to many migratory and native bird species from the removal of forest canopy cover and

forest structural continuity which would occur with the implementation of this project. Failure to sufficiently disclose and comprehensively analyze this pertinent, essential, scientific information violates provisions of the NEPA. Implementation of this project would violate both NFMA and the Migratory Bird Treaty Act. As such the mature and old pine and mixed conifer forest commercial logging portion of this project must either be withdrawn from the proposed action alternatives, or a new EIS must be prepared which addresses these issues.

In August 1999, the FWS outlined what it perceived to be the agency's legal obligation in terms of migratory birds and timber harvest. FWS stated that agencies should take "an extremely cautious position with respect to the intentional take of migratory birds by federal agencies." *Letter from Acting Director, United States Fish and Wildlife Service, to Regional Directors, Regions 1–7 and Assistant Director, Refuges and Wildlife (August 17, 1999), 3.* FWS also cautioned that "the Service should not assert in any communication or correspondence that federal agencies are not covered by the prohibitions of the MBTA [Migratory Bird Treaty Act]." *Id.*

In July 2000, the Eighth Circuit Court of Appeals held that federal agencies are required to obtain a take permit from FWS prior to implementing any project that will result in take of migratory birds. *Humane Soc'y of the United States v. Glickman*, 217 F.3d 882 (8th Cir. 2000). Due to this litigation, the FWS is operating under the assumption that the Migratory Bird Treaty Act applies to the Forest Service and its activities. 16 U.S.C. § 703 et seq. The Act states that "it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill . . . any migratory bird." 16 U.S.C. § 703.

In January 2001, President Clinton signed Executive Order 13,186 that outlined the federal government's responsibility to comply with the Migratory Bird Treaty Act. Exec. Order No. 13,186, 66 Fed. Reg. 3,853 (2001). President Bush has not rescinded this Order. Recent legal analysis confirms that the Forest Service must actively prevent the take of migratory birds, or obtain a permit for incidental take of individual species. *Helen M. Kim, Chopping Down the Birds: Logging and the Migratory Bird Treaty Act, 31 Envtl. L. 125 (2001).*

The Forest Service has failed to comply with these legal and scientific obligations. Until the agency can demonstrate that it has complied with the requirements of the Migratory Bird Treaty Act, the current deficient EA for this project must be withdrawn and a new EIS must be prepared.

Further, the EA did not accurately address the direct, indirect and cumulative impacts that the project would have on migratory birds. The USFS has on record a study by Brian Sharp ("Avian Population Trends in the Pacific Northwest" as cited above), which concludes that commercial logging in public forest lands in Oregon plays a significant role in the continuing population declines of several neotropical migrant bird species. The failure to disclose the full conclusions and implications of this study in the EA is particularly egregious in that the study was done for Region 6 of the Forest Service specifically on Central/Eastern Oregon forests. The lack of adequate scientific assessment of this study fails to meet NEPA's requirement for high quality scientific analysis that would satisfy the "hard look" standard. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353 (1989); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208 (9th Cir. 1998) *cert. denied, Ochoco Lumber Co. v. Blue Mountains Biodiversity Project*, 119 S.Ct. 2337 (1999).

**Salmonid Waterways, Habitat, & Aquatic Resources**:

The project area includes headwaters and tributaries to the area's salmonid waterways. Both Cottonwood and Alder Creeks are on the Oregon 303(d) list for water quality-limited water bodies for high temperatures. The EA fails to sufficiently address potential loss of stream shading trees and vegetation from the project's activities, among these potential increased windthrow due to opened forests and increased wind velocity, as well as impacts from actions in RHCAs from burning and thinning and increased OHV and livestock access.

The EA fails to adequately address or disclose issues of soil stability, displaced soil movement patterns, erosion channels and cumulative impacts issues, sedimentation, airborne sediments from logging activities, stream headwaters and reaches, peak flows, water quality recovery concerns and objectives, salmonid populations and spawning areas, and other concerns. Beyond a mere list of some listed-species and species of concern, and unsubstantiated findings (that the project is not likely to adversely affect, etc.), the project NEPA documents fail to disclose sufficient information and analysis to substantiate the decision's determinations, provisions, and claims. The notice fails to disclose any substantive information regarding riparian associated wildlife and plants, and aquatic habitat and/or species of concern that may be in or near the proposed project areas.

It is clear from pertinent scientific research, that the project as proposed will have significant irreparable harms to the area's salmonid waterways, habitat and populations. The EA fails to adequately and accurately analyze whether the Knox project is consistent with the standards and guidelines of INFISH and PACFISH, or to address and develop other scientifically-sound alternatives that better meet the requirements of these policy directives. Because the Forest Service has failed to reasonably demonstrate that the project is not inconsistent with either INFISH or PACFISH, or that its undeveloped but scientifically and legally sound alternatives would better meet consistency with these requirements, its proposed actions are arbitrary and capricious, and likely to result in irreparable harms.

**Aquatic Species and Watershed Habitat/Water Quality Issues:**

***Interior Redband/Rainbow Trout (sensitive listed), Columbia Spotted Frog (sensitive listed), and Steelhead & Bull Trout designated critical habitat (threatened listed), suspected Westslope Cutthroat Trout (sensitive listed), suspected Malheur Mottled Sculpin (sensitive listed).***

The EA fails to accurately disclose to protocol ongoing and/or recent surveys for these and/or other aquatic species in the affected watersheds. Absent this pertinent site-specific survey information, and in contravention to a wealth scientific research addressing the many known adverse impacts of logging and road building on salmonid species populations, habitat, and water system quality, the EA proposes harmful logging and road construction in both of its action alternatives. The EA itself – even with its limited deficient "analysis" concludes the project may impact individuals and habitat (MIIH) for sensitive listed redband trout and Columbia spotted frog. Yet somehow, despite scientific documentation on irreparable logging harms to imperiled fish species, the EA concludes the project is not likely to adversely affect the above listed species. The EA fails to accurately disclose and address how the project will affect both short and long term salmonid recovery objectives in and downstream of the project area. The analysis presented fails to support the EA's impacts conclusions, and fails to address pertinent scientific research and recommendations for salmonid habitat and populations recovery. The EA fails to disclose the range of scientific controversy concerning logging and road building actions in salmonid waterway forests in violation of the NEPA. The project if implemented would violate the NEPA, NFMA, CWA, and ESA with respect to salmonid species and their habitat, and likely result in further significant incremental and cumulative harms to these species. The EA as such must be withdrawn and these issues responsibly addressed in an EIS, with a range of restoration alternatives capable of protecting and restoring these imperiled species and their habitat.

***Proposed logging and associated activities will cause cumulative impacts that violate INFISH.***

Large logs are an essential feature of healthy complex aquatic habitat, because they armor stream banks, provide pool habitat, help store sediment, help dissipate energy during high flows, and physically partition habitat. Large wood in contributed from both inside and outside the riparian habitat conservation area. Logging will remove large wood that in time may otherwise contribute to complex stream habitat and therefore violate INFISH prohibitions on actions that would retard attainment of riparian management objectives, and may be inconsistent with the biological opinions governing INFISH implementation with respect to salmonid populations and habitat.

Logging is known to increase sediment delivery, both directly and due to cumulative and airborne sedimentation. The EA utilizes scientifically limited models to analyze soil erosion, however these limitations are not fully disclosed or addressed in the EA. Some models, such as WEPP, can only consider one "slope" at a time, and one "activity" at a time and cannot adequately integrate the incremental and cumulative impacts of multiple slopes and activities. Importantly, the EA aquatics cumulative impacts analysis fails to adequately address the total cumulative effects of past management activities, including recent and past fires, past logging actions, other fuels reduction actions, current and future timber sales, previously clear cut areas that are young planted stands, the reopening of closed roads, road maintenance, landings, log hauling, pre- and post project livestock grazing, growing OHV use and increase post project access, and growing recreational impacts – including areas within the project that evidence resource degradation, and address impacts from all of these on both public and private lands in the area and along its watersystems, etc.

In its analysis of sediment delivery, water quality, and future large wood input the EA failed to adequately consider and disclose steepness of slope issues, which has a direct bearing on the inevitable movement of soil and wood toward streams.

In its analysis of sediment delivery and water quality, the EA failed to consider the fact the RHCA buffers may be compromised by fires, OHV use, livestock grazing, and future projects, or disclose and address areas where there are existent cumulative impacts within these buffers.

In its analysis of sediment delivery and water quality, the EA failed to consider the fact that the removal of trees and future downed logs from upslope areas will reduce the landscape capacity for sediment storage. Standing trees and medium to large logs on the forest floor act as sediment traps, but if they are removed that function is eliminated.

The EA failed to address cumulative impacts from livestock grazing or to disclose alternative provisions for the removal of livestock from logged and burned areas for a minimum of five or more years to allow the areas to recover post project.

Road reopening, maintenance, and log hauling will also unavoidably retard attainment of RMOs in violation of INFISH. BMPs are inadequate and do not assure that impacts will be avoided.

Large areas undisturbed by roads, landings, burned slash piles, and logging help protect watershed values such as soil conservation, nutrient cycling, water infiltration, and uninterrupted flow of water and materials from uplands to streams. This in turn helps ensure high quality water for listed and unlisted fish and other aquatic organisms. Logging and slash burning across the project area's forests will degrade watershed values by disturbing soil, increasing erosion, disrupting nutrient cycles, and depriving streams of potential large structure. The EA failed to adequately disclose the full effects of logging and how it will

degrade the project area's forest hydrology and aquatic systems. With respect to water quality and salmonid populations and habitat, the EA alternatives, analysis, and conclusion fail the NEPA's high quality science, reasonableness, cumulative impacts, and site-specific accuracy requirements.

**Conclusion:**

We respectfully appreciate those provisions of this project that are founded in scientifically supported ecological restoration – the removal and restoration of excess roads, the return of fire to the area's fire ecology forests, and the intent of various ecologically restorative or protective provisions in the EA's proposed actions. However, overall the impacts of the project as proposed will result in significantly more irreparable ecological degradation that beneficial restoration. As such, we request that this EA and its proposed actions be withdrawn, and a legally compliant, ecologically protective, scientifically-founded EIS restoration project be developed for this area that works with – instead of against – natural forest processes, forest resiliency, and integrity. We look forward to discussing these issues further with agency staff and decision-makers.

*For the Natural Heritage of us all,*

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**&**
**League Of Wilderness Defenders – Blue Mountains Biodiversity Project**

**Comments on the Malheur National Forest**
**Prairie City Ranger District**
**Knox Hazardous Fuels / Forest Health Project EA**

**Exhibit A:**

CD compilation of applicable scientific research, reports, and judicial caselaw, etc. – Fire & Thinning Science Vol. I; Vol. II; Neotropical Migrant & Native Birds; and our original scoping comments on Knox:

- **Fire Thinning Science Volume I *Contents*:**

1. Effects of Fire and Post-fire Salvage Logging on Avian Communities in Conifer-dominated Forests of the Western United States (Kotliar, 2002)
2. Fire on the Mountain: Birds and Burns in the Rocky Mountains (Kotliar, 2005).

   The collective influence of fire and human activities on the landscape influences avian community structure and dynamics.
3. The Effects of Postfire Salvage Logging on Cavity-Nesting Birds (Hutto & Gallo, 2006).
4. Appeal from the United States District Court: Appeal the district court's denial of preliminary injunction to halt the implementation of several United States Forest Service post-fire logging sales in the Umatilla National Forest.
5. Fire, Fuels and restoration of ponderosa pine-Douglas fir forests in the Rocky Mountains, USA (Baker et al, 2005).

   *A restoration model based on low-severity fire modeling, focusing on thinning and prescribed burning to restore historical forest structure.*
6. Be careful what you wish for: the legacy of Smokey Bear (Donovan & Brown, 2007).

   *An alternate approach to wildfire management.*
7. Postfire management on forested public lands on the western United States (Beschta et al, 2004).
8. Overstory and understory development in thinned and under-planted Oregon Coast Range Douglas fir stands. (Chan, et al, 2006).
9. Postfire logging hinders regeneration and increases fire risk (Donato, et al, 2006)
10. Postfire logging hinders regeneration and increases fire risk (Donato, et al, 2006)
11. Postfire impacts on forests and wildlife (Hutto, 2005)
12. Executive Summary: Interim protection for late successional forests, fisheries and watersheds (1993).

13. Study: Reforestation rich after fires: looking at the aftermath of wildfires in the forests of southwestern Oregon and Northern California (Barnard, 2007).
14. Fire regime considerations: Key issues in fire regime research for fuels management and ecological restoration (Veblen, 2003).
15. Forest Dreams, forest nightmares: An ecological and economic look at the Blue Mountains and the changes that have taken place since settlement (Langdon, 1995).
16. Preemptive and salvage harvesting of New England forests: When doing nothing is a viable alternative, (Foster & Orwig, 2006).
17. Changes in downed woody material and forest structures after prescribed fire in ponderosa pine forests, analyze changes in downed woody material and forest structure (trees and snags) measured within one year after prescribed fire treatments completed in Arizona and New Mexico in order to see effects on wildlife populations and their habitat (Saab).
18. Toward meaningful snag-management guidelines for postfire salvage logging in North American conifer forests. Effects of postfire logging on black-backed woodpecker and cavity nesting birds (Hutto, 2006).
19. Birds in the black: *Through following avian wildlife, a UM scientist has discovered that burned forests play a critical role in the health and diversity of the Western landscape* (Jamison, 2005).
20. Research Article: A landscape model quantifies error in reconstructing fire history from scars. *Errors in reconstruction may lead to a misunderstanding of the role of fire or incorrect restoration prescriptions. Here, a stochastic landscape model is used to quantitatively assess the accuracy of a commonly used statistic* (2005).
21. Logging to control insects: The science and myths behind managing forest insect "pests". (Black, the Xerces Society for Invertebrate Conservation, Portland, Oregon, 2005).
22. Neo-tropical migrant and native birds: The impacts of timber logging on neo-tropical migrant and native birds.
23. Fire severity in conifer forests of the Sierra Nevada, California (Odion & Hanson, 2006).

    *A study of both spatial and temporal patterns of contemporary fires in the Sierra Nevada Mountains, California and how they are linked to species diversity.*
24. Fire ecology of Ponderosa Pine and the rebuilding of fire-resilient Ponderosa Pine Ecosystems (Fitzgerald, 2005).
25. Research Proposal: Post fire management of snag forest habitat in the Sierra Nevada, (Hanson, 2006).

*Investigation of the association of three woodpecker species with four habitat strata following fire in the Sierra Nevada, assessment whether one species in particular, the Black-backed Woodpecker, may generally be restricted to forest recently burned at high severity ("snag forest habitat"). Also investigates the factors that best explain post-fire conifer mortality, and thus the creation of snag forest habitat, as well as the extent of natural conifer regeneration in snag forest patches that are left unmanaged following severe fire.*

26. Scorched forests best left alone, study finds. Biscuit salvage – Logging after the fire killed seedlings and added tinder, research by an OSU-led team says. (Milstein, 2006, Oregonian).
27. Summary Report – Winter habitat use by Spotted Owls on BLM within the boundaries of the Timbered Rock fire (Andrews & Anthony, OCFWRU, DFW, OSU, 2004).
28. Short-term effects of wildfires on spotted owl survival, site fidelity, mate fidelity, and reproductive success (Bond et al, 2002).
29. Associations between forest fire and Mexican Spotted Owls, (Jennes et al, 2004).
30. Stress (Waring, OSU, 2004)

    *A brief analysis of the kinds of tolerance and avoidance mechanisms that trees evolved to withstand specific stresses.*

31. Studies to find danger to forests in thinning without burning (Robbins, New York Times, 2006).

    *Missoula, Montana – Thinning forests without also burning accumulated brush and deadwood may increase forest fire damage rather than reduce it, researchers at the Forest Service reported in two recent studies.*

32. Thinning and nitrogen fertilization in a Grand Fir stand infested with Western Spruce Budworm. Part IV: An ecosystem management perspective (Waring, 1992).

    *Allowing pine forests to be replaced with fir through fire protection and selective logging has increased the nitrogen demand beyond that readily supplied in the ponderosa pine/true fir type. Fertilizing with one application of nitrogen at the time of an insect outbreak may reduce mortality and associated fire hazard through a period of up to 5 years.*

33. United States Court of Appeals – Oregon Natural Resources vs. Timber Products.
34. Assessment of site index and forest growth capacity across the Pacific and Inland Northwest U.S.A. with a MODIS satellite-derived vegetation index (Waring et al, 2006).

*Foresters, scientists, and policy makers would benefit if region-wide maps of potential forest productivity were available at decadal intervals to record changes, seek causes, and plan for the future.*

35. The watershed impacts of forest treatments to reduce fuels and modify fire behavior (Rhodes, 2007). (Pacific Rivers Council)

    *This report examines the effects on watersheds and aquatic resources from forest fuel reduction treatments aimed at modifying wildland fire behavior on public lands.*

- **Fire & Thinning Science Vol. II Contents:**
  - Wildfire Charcoal and Soil Processes, Thomas H. DeLuca et al
  - Contributions of Pinus Ponderosa Charcoal to Soil Chemical and Physical Properties, Christopher M. Briggs in Briggs, Breiner, Graham, 9 May 2005.
  - Chemical composition of forest floor and consequences for nutrient availability after wildfire and harvesting in the boreal forest, E. Thiffault[1] , K. D. Hannam[2], S. A. Quideau[2], D. Paré[1], N. Bélanger[3], S.-W. Oh[4] and A. D. Munson[5] , March 2008.
  - Nitrogen mineralization and phenol accumulation along a fire chronosequence in northern Sweden, Zhanna Yermakov[1, 2] and David E. Rothstein[1], May 2006.
  - Changes in understory composition following catastrophic windthrow and salvage logging in a subalpine forest ecosystem, Cristina M. Rumbaitis del Rio, 2006
  - Contributions of Pinus Ponderosa Charcoal to Soil Chemical and Physical Properties, Christopher Briggs, 2005.
  - Biochar: A Soil Amendment that Combats Global Warming and Improves Agricultural Sustainability and Environmental Impacts, recent report compilation of scientific research.
  - Communication on BioChar and its implications for forest and societal management, and role in ongoing climatic change.
  - Biogeochemical Consequences of Wind and Salvage Logging Disturbances in a Spruce-Fir Forest Ecosystem, C.M. Rumbaitis-del Rio and C.A. Wessman.
  - And Several Additional New Studies also….
- Neotropical Migrant & Native Birds research