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Sept. 15, 2009

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"Deadlog" Vegetation Management Project DEIS Comments

The Oregon Chapter Sierra Club and the League Of Wilderness Defenders – Blue Mountains Biodiversity Project have reviewed the Draft EIS for the proposed "Deadlog" Vegetation Management Project. Sierra Club staff and volunteers have participated since the inception of this project in a series of Fire Learning Network meetings addressing the Deadlog Project including field trips to the project area. Our organizations have independently visited the area, with an emphasis on surveying proposed commercial logging units in the project's approximately 900 acre old growth area located in the Quartz Mountain portion of the project, and in surveys of surrounding younger forest stands. Our two organizations jointly have the following comments, concerns, and recommendations concerning the proposed Deadlog Project analysis and actions.

Due to a misunderstanding, our organizations calculated the DEIS comment due date using the published date for the legal notice of the Deadlog DEIS in the newspaper of record, instead of the Federal Register; believing that we had until Sept. 18th to submit our comments. Belated confirmation on Sept. 15 that the July 31 publication of the legal notice in the Federal Register set the due date as Sept. 14 has necessitated the unduly quick completion of our comments, a day past the Sept. 14 due date, but three days prior to our believed due date of Sept. 18. We apologize for our misunderstanding, and the consequent submission of these comments one day beyond the Federal Register deadline. We request that our comments be accepted into the official public record for this project, as it has been general accustomed practice to utilize the newspaper of record publication date for project comments, and as our organizations have participated in the public NEPA process, and FLN process, since the inception of the Deadlog Project. The Sierra Club has a significant long standing record of involvement in Deschutes National Forest projects. Our organization represents many thousands of Oregonians, and almost

a million American citizens across the nation that care deeply about the management of our public lands. Our comment represent significant scientific and ecological contributions that as incorporated into project design and implementation will help in the development of an ecologically beneficial restoration project, upholding the intent of the NEPA in facilitating informed public involvement, projects founded in scientific integrity and expert advice, and the achievement of the best environmental objectives and outcome for the Deadlog Project.

The Sierra Club represents over 20,000 members throughout Oregon, including the Club's Juniper Group, which has over 1,000 members throughout central and eastern Oregon. Sierra Club members feel strongly about nature, wilderness, natural forest ecosystems, wildlife, fisheries, and the environment. Sierra Club members regularly enjoy hiking, camping, wildlife watching, birding, ecological study, photography, natural solitude, and recreation within the national forests of central and eastern Oregon, including the forests of Quartz Mountain, Deadlog, Sixteen, and Rogers Buttes in and around the Deadlog project area.

LOWD-Blue Mountains Biodiversity Project has many members and volunteers throughout the Northwest. Members and volunteers of the LOWD-Blue Mountains Biodiversity Project regularly use the Deschutes National Forest, including the Deadlog project area, for hiking, ecological study, watching wildlife, viewing forest native botanical diversity, and avian species study.

Description of Project

Analysis Area Location and Size: 35 miles southeast of Bend, Deschutes County, Oregon, spanning approximately 16,055 acres including Quartz Mountain, Sixteen Butte, Rogers Butte, Deadlog Butte, Dry Butte, and No Name Buttes.

Elevation: 4,800 to 6,260 ft.

The preferred alternative 3 involves:

- 11,281 acres to be treated
- 6,660 acres commercial removal
    - 157 acres of overstory removal
    - 592 acres of thinning/salvage
    - 5489 acres commercial thinning
    - 422 acres of thinning/biomass
    - 899 acres of biomass only removal
- 24.8 mmbf
- 8586 acres of non-commercial thinning
- 9443 acres of underburning
- 6668 acres mow shrubs
- 15.3 miles of new temporary roads
- 2391 acres of mule deer hiding cover reduction
- plan amendment to waive big game cover requirements (forest plan requires 30% cover, existing condition is 18% cover, to be reduced to 4% cover by this project)
- 17 miles road closure
- 21 miles road decommissioning
- 15 miles temporary road construction

- 8220 acres of degraded goshawk habitat

Overview of Conservation Concerns

The Deadlog Project is located in an area that historically evidences extensive recurrent low and mixed severity fire. Throughout much of the analysis area's 16,055 acres, widespread logging has removed almost all of the area's once numerous inherently fire resistant old growth trees. Only approximately 900 acres of relatively contiguous mature and old growth forest remains in the Deadlog Project area. This critical ecologically important old growth habitat is located in the Quartz Mountain area, surrounded by thousands of acres of much younger forest stand structure due to prior logging clearcuts and heavy logging removal of old and mature trees.

Logging, extensive roads, and associated management impacts and intrusion have resulted in the loss of almost all of the area's original ancient forest systems, disrupting natural ecological cycles and functioning across most of the project area. Logging and road networks have caused landscape scale degradation to the area's once natural habitat quality; diminishing the populations and distribution of numerous species dependent upon functioning mature and old forest systems. Forest soil communities and hydrological functioning, as well as vegetation, have been significantly harmed from past logging-caused solar exposure, disturbance, and compaction. Carbon sequestration capabilities of the area's forests have been severely diminished throughout most of the project area. Natural fire cycles have been altered since at least the late 1940's as mechanized ground and aerial equipment exponentially increased effective fire suppression in more remote forest locations.

The loss of most of the area's fire resistant maturing, mature, and old trees; increased levels of fire prone brush and small diameter trees; impaired soil moisture retention; increased solar exposure; the disruption of natural recurrent fire cycles; and growing patterns of climate change; synergistically increase the risk of widespread stand replacement fire throughout the area. The loss of so many of the area's mature and old characteristic trees, and widespread logging and road caused habitat alteration and fragmentation throughout the area; give increased importance to the roles of remaining mature and old forest habitat.

There are numerous species of concern in the Deschutes National Forest, some of which have historic habitat and presence within the project area. Some of these imperiled species are still present, albeit in diminished populations and distribution patterns, largely within the remaining more ecologically intact old and mature forest portions of the Deadlog Project. Proposed management actions in the 900+ acre old growth area of the project must be revised to retain critically important fire-resistant trees, and essential habitat structure to ensure the maintenance, recovery, and viability of the area's forest dependent species of concern, and as applicable these species prey and interwoven sources of foraging sustenance.

Similarly, management actions throughout the thousands of acres of predominantly younger forest stands across the project must be revised to provide for the maintenance and restoration of naturally varied forest mosaic structure and important habitat features. Ecological objectives of forest habitat connectivity; retention of fire resistant maturing, mature, and old characteristic trees; establishing natural mosaic diversity over time; ensuring habitat structure and sustenance for diverse species of concern; protecting and restoring forest soil communities; providing for the significant importance of forest and soil carbon sequestration; significantly reducing road density levels; strategically locating management action units to facilitate a mix of mechanical, fire, and natural restoration; and minimizing the levels of mechanized disturbance

throughout the project area are essential to incorporating the range of pertinent scientific research recommendations and achieving the stated ecological objectives of this project.

During prior field trips and FLN meetings, we discussed alternative development, including the revision of the presented alternatives in the DEIS to better incorporate the results of surveys by our organization and by Amy Waltz of the Nature Conservancy. Overall, the Deadlog Project area is lacking in mature and old forests habitat, structure, and outside of the 900 acre old growth area, in mature and old trees and large diameter snags. Within the 900 acre old forest area surveys by all parties found that trees 16" diameter and above are generally lacking. Old growth and mature size trees are present, but in numbers below their original per acre average, due to past selective logging throughout the old growth area. Trees 14" dbh and below are generally present in number suspected to be much higher than natural levels, due to historic fire frequency patterns. This old forest area consequently has higher density levels, and increased susceptibility to disturbance caused mortality, due to a mix of excessive levels of trees below 16" to 14" diameter, brush in scattered logging created openings, road fragmentation, impaired soil communities, diminished localized ecological integrity, and a surrounding landscape of young fire-prone logged over forests, as a cumulative result of past logging and related management actions. The DEIS dismissed an alternative utilizing a 14" diameter limit (DEIS pg. 52), but failed to disclose as we requested of its planning team during FLN meetings, that a 16" dbh limit as recommended with minor exceptions (as noted above) is capable of better achieving ecological restoration and resilience objectives, and is more in accord with scientific research recommendations. The 21" diameter logging limit of the proposed action alternatives fails to be based upon actual stand surveys revealing that trees above 16" dbh are deficient in the old forest area. The DEIS fails to disclose the results of these surveys, provided to the agency's planners during FLN meetings, and fails to disclose that trees above 16" dbh in the old forest area are important to forest ecological structure, wildlife habitat, ecosystem functioning, and future old growth and snag recruitment. The proposed alternatives fail as well to address and incorporate significant cumulative logging and management impacts across the project area, and the habitat needs and recovery objectives for species of concern in the project area. The presented alternatives fail NEPA's scientific and site-specific requirements, and the arbitrarily contrived logging diameter limit of 21" dbh is excessive to that needed to accomplish project goals. Such logging violates the restoration recommendations of significant scientific research (see attached exhibits).

To better achieve ecological objectives, comply with NEPA requirements, and incorporate scientific research recommendations, we recommend the proposed project be modified as follows:

- Retain all trees with mature and old-growth characteristics regardless of size, condition, and species throughout the entire project area;
- Additionally, retain all trees with inherent fire resistant characteristics, regardless of size, condition, and species within the old forest portion of the project;
- Retain most trees with inherent fire resistant characteristics as applicable to the restoration of natural forest mosaic and structure within the younger more dense forest portions of the project;
- Refine basal area formulations to optimum wildlife habitat levels for site-specific stand Plant Association Groups (PAGs) and verifiable area Historic/Natural Range of Variability (HRV/NRV) levels. The area's older forest structure is naturally more ecologically complex, supporting significantly higher basal area levels than proposed.

Revise basal area formulations to incorporate naturally varied mosaic levels between 60 to 120 basal area, averaging 80 to 110 b.a., with mosaic components up to 220 basal area;

- Either drop the approximately 900 acre old forest area, due to cumulative impacts and ecological significance, from commercial logging actions or stringently limit such actions in this area:
    1. locate units in previously logged and roaded portions of the old forest area;
    2. strategically locate units to minimize mechanized disturbance and project duration;
    3. strategically leave large areas untreated to facilitate ongoing natural recovery processes and cycles;
    4. provide between 25% to 35% untreated wildlife habitat in relatively contiguous naturally varied groupings of ½ acre or greater throughout each action unit;
    5. retain all mature and old characteristic mistletoe trees;
    6. retain all trees above 16" diameter, with limited exceptions where such trees are obviously younger than adjacent mature and old trees, and jeopardizing their long term survival;
    7. retain all viable habitat snags and woodpecker foraging trees above 14" dbh;
    8. protect wildlife habitat features, including squirrel middens, seasonally wet areas, drainage draws, invertebrate hives, edge areas and rock outcrops, and ecologically more intact areas;
- Utilize variable and/or species specific diameter limits. Trees above 8" to 12" diameter are generally not legitimate contributors to perceived fire risks. Modify basal area formulas to retain additional trees of naturally occurring species above this size class. Within mature and old forest areas, trees above 16" diameter of all species should not be cut (as noted above). Within young forest stands, trees above 16" dbh should only be cut when such trees are present above natural stand density and mosaic restoration objective levels;
- Retain sufficient available forest structure to meet forest plan requirements and management objectives for wildlife cover, foraging, transit and migratory routes;
- Reduce overall road density, removing and restoring excess roads;
- Do not construct any temporary roads, , and avoid skid trail and soil impact harms from heavy logging machinery by requiring the use of light on the ground machinery or the utilization of horses, employing effective soil and vegetation protection methods;
- Protect, maintain, and facilitate the recovery of soil communities and native vegetative diversity and abundance in all proposed action units throughout the project area;
- Close the project area to ORV use and ensure ORVs do not enter closed road areas;
- Strengthen Best Management Practices provisions for the prevention of invasive plants and protection of soils and habitat features, removing undue loopholes and exceptions to compliance with these provisions;
- Identify areas of invasive exotic plants prior to project implementation and develop effective provisions to ensure the introduction and spread of invasive exotic plants does not result from the direct or cumulative actions of this project;
- Re-assess project impacts utilizing actual impacts from recent and current thinning-logging projects – especially the widespread soil, forest structure, and vegetation harms of the Lava Cast, Oz, and portions of the Sunriver and East Tumbull projects - and

develop effective provisions to prevent harmful impacts to area soils, forest structure, wildlife habitat, natural plant association group ecological integrity, and natural resources;

- Revise the soil analysis section, proposed actions, and applicable agency standards to incorporate relevant scientific research addressing the importance of foundational soil communities and functioning in forest resilience, including moisture retention, tree growth and vigor, and reduced susceptibility to fire and/insect induced mortality;
- Effectively address issues of project slash and fire-prone fuels, providing for the timely and ecologically safe removal of project generated fuel loads from the area;
- Do not permit the accumulation and burning of large or numerous slash piles as these increase fire risk and irreparably damage forest soils;
- Incorporate effective protection provisions, including additional seasonal implementation restrictions as appropriate for wildlife species of concern known or reported to be within the project area and their prey species and foraging sustenance, including neotropical migrant and native birds, raptors, owls, and small mammals including arboreal and ground squirrels, badgers, bats, and prey species of management indicator and species of concern within the greater project area;
- Revise the project to incorporate the recommendations of pertinent scientific research and keep all project actions within the parameters of greatest scientific consensus;
- Disclose and assess the actual direct and cumulative impact harms of similarly premised fire-risk reduction projects, including Lava Cast, Oz, East Tumbull, and Sunriver, and additional projects including South Bend, Snow Fuels, and SAFR as these are implemented. Revise the proposed Deadlog Project to incorporate lessons learned and avoid the significant environmental harms of these previous and ongoing similar projects.

Given the limited time to complete our comments as planned, due to the deadline misunderstanding, we herein reference the ecological, science, and legal issues addressed in our previous comments, and these comments exhibits, provided to the Bend Fort Rock District on the Snow Fuels, South Bend, Sunriver, Oz, Lava Cast, and other projects; and to the Deschutes National Forest for projects in their other Ranger Districts, including SAFR, BLT, and Five Buttes among others.

We include as part of our comments the accompanying CD compilation of pertinent scientific research, scientific articles, ecological recommendations, and legal requirements applicable to the proposed Deadlog Project, and request these be incorporated into the Deadlog Project analysis and alternative development.

We also reference the comments on Deadlog by FLN and Oregon Wild, augmenting and modifying the issues and recommendations therein by our project revision recommendations above. Additionally, we add the following article addressing some of the core conservation issues concerning proposed commercial logging as part of restoration projects:

Restoring Forest Wildlands

Approaching Nature in humility beyond assumed knowing, in intuition and perceptive awareness inspired by wonder and awe at the depth of inter-relational complexity inherent in Earth's ecosystems, far beyond the capability to fully grasp in a thousand lifetimes; we may

realize nature is ever on a path of resilience, regeneration, and recovery. Patient in inherent wisdoms, nature is our wisest of teachers. It is not for us to "prescribe" treatments for nature; rather 'tis for us to emulate nature's dance and flow. Following ecological paths of balance and least resistance; learn to enjoy, live, and work with nature in harmony and appreciative respect, sustainably beyond the generations yet to be….

Scientists have postulated that we are past the "global tipping point," with industrial impacts bringing unprecedented global climate change. With global pollutants, development, resource depletion, and exponentially increasing human population; changes to Earth's ecological systems will continue exponentially for many decades even if root causes were somehow halted today. Basically, we've just begun this "wild" Earth changes ride, with the climax yet far from sight.

Yet, Earth's ecological systems are resilient, adapting beyond our ability to fully understand. In the Pacific Northwest, our forest ecosystems are ecologically dynamic systems of complex biodiversity. Resilient, our forest systems are not truly in "crisis" or at risk of "catastrophic" calamity. European humans did not arrive in the western hemisphere "just in time" to save nature from committing ecocide. This is not to imply that societal intrusions and alterations of natural forest ecosystems have not resulted in ecologically harmful consequences, or that there is not a consequent potential for beneficial forest restoration and protection. However, such management must learn from and work with natural ecological processes, rather than attempt to remake forests to fit societal concepts and desires.

How do we help ensure restoration projects are held within acceptable ecological bounds? Projects must be based upon credible science substantiating an ecological "purpose and need" - if thinning for fires or insects, scientific research must be followed. Science shows thinning is not appropriate in mixed conifer, mixed fire severity forests. Science shows the infeasibility of logging to effectively address insects, especially in lodgepole pine and mixed conifer ecosystems. Scientific research guides projects to provide for the habitat needs and recovery of imperiled forest wildlife. Restoration science addresses the foundationally important role of soils and soil microbial communities, and the harmful impacts of excessive thinning and mechanical equipment. Scientific research addresses the protection and restoration of watersystems and aquatic species. Research recommends habitat and seasonal protections for avian species, and addresses the harmful impacts of extensive thinning to nesting, fledging, foraging, and hiding habitat, (research does the same for small mammals). Research recommends protection and recovery of rare native plants, and measures to prevent the introduction and spread of exotic invasive plants. These significant restoration objectives must be incorporated into recovery projects.

Understanding, let alone restoring complex forest ecosystems, is a challenging process at best. Some forest projects claiming to be restoration have proven to be so ecologically harmful that they need to be stopped outright. The fall 2008 legal victory stopping the Five Buttes timber sale in the Deschutes helped establish some initial legal, scientific, and ecological precedents for projects purporting to be restorative.

Over the past couple years, by working with federal agencies, ecologically inappropriate areas for thinning, including mixed conifer units, moist north slope areas, and high elevation areas have been dropped from unwarranted logging-thinning plans. Up to 30% of areas have been dropped for natural structure and cover. Diameter limits on cutting (16" in recent appeal

settlements) help protect forest structure, habitat, and ecological integrity, along with provisions to retain all mature and old characteristic trees regardless of size.

Collaborative processes allow the involvement of local citizens - a recent HFRA thinning timber sale south of Bend had twelve residents join us in filing objections and changing the project to incorporate many of the above protective provisions. Where needed, conservation organizations must still be prepared for litigation, if this is the only recourse to protecting the ecological integrity of area forests.

There is a growing push to open public lands to "landscape scale thinning" (for fires, insects, disease). Plans for such projects range up to 35,000 to 50,000 acres over a ten-year period. Federal agencies must be held accountable to credible scientific recommendations, addressing not just the density of trees, but the protection and recovery of forest ecosystems and biodiversity. Protection and restoration of forest soils, soil microbial communities, and hydrology - the foundation of resilient forest ecosystems - must fundamentally guide such projects. Similarly, the recovery and protection of imperiled species populations and habitat must be an essential goal of this process.

We must heed caution that today's "thinning" mania echoes past similar processes in Europe, where there was an attempt to "clean-up" the forests. Today affected forests are lacking in biodiversity, wildlife, natural integrity, resilience, and vigor. Hopefully at least we will not repeat the deforestation and desertification accomplished by civilizations of the past - with far less technology and mechanical equipment than available today. Such ecological ruin is still visible in the blowing dusts, sands, and denuded lands of vanished forests spanning across continents and islands from the Pacific Ocean through Asia, and the Mideast, along the continuum to the Mediterranean (archaeological records show Rome before its fall was concerned with deforestation and recycling). This continuum now extends from the sickly forests of Germany, to this hemisphere with our fragmented forests still caught in the grasp of irreparable logging and other management harms.

Ecological impacts have come full circle; as a global society we either learn from and not repeat the mistakes of the past or - with even greater speed given the available technology and population - continue to unravel earth's natural global ecosystems, exacerbating escalating climate change and ecological instability. Forests play integral roles in earth's ecological functioning. Carbon storage, oxygenation, fresh water systems, treasures of biodiversity - natural forests are irreplaceable and critically important in these "global warming" times.

Forests are also among the last natural refuges from mechanized society, with its incessant noise, stress, and ceaseless varied work. Do we want or need to unleash scientifically controversial large-scale mechanized logging loose throughout our remaining forests - replacing nature's serenity and solitude with mechanized mayhem?

In other words, let's be careful what "well-intentioned" management we unleash on public forest ecosystems. The track record of human management is a litany of "good intentions" gone awry - from clear cuts to supply a growing nation with timber; to creating access to public lands with the largest worst maintained road systems on earth; to "improved selective" logging of "decadent-dying" old growth and the replacement "plantations" of "young vigorous seedling trees;" to efforts to "clean-up" remote forest streams and waterways by clear cut logging; to harmful postfire "salvage" and "forest health" logging of old growth; to the growing call for landscape scale logging-thinning to "reduce the risk of fires, insects, and disease" and generate a "sustainable supply of wood" to economically faltering mills. Looking at the track record of

impacts and scientifically disproven or questionable rationales, it appears insatiable society simply learns deviously new phrases to continue unsustainable demands upon forests and nature.

If agencies are sincere about reducing the risks of uncharacteristic fires and disturbance, restoration must begin by repairing the ecological deficits of the past, rather than incurring new deficits. Initial priorities include the ecological removal of existing slash piles, and the removal of harmful unmaintained roads - returning these to natural contours and native vegetation; projects should focus on restoring degraded salmonid waterways; focus on habitat protection and the recovery of imperiled forest species; revegetation of the region's numerous under-regenerated old clear cuts; etc. Initial restoration objectives could help establish ecological guidance for public lands management; necessary to prevent scientifically controversial landscape projects from becoming just another "less bad" timber sale, with yet another range of harms to forest ecology and biodiversity.

Hopefully humans will someday learn humility - that nature is ever on the path of resilience and self-restoration, healing from the degradations of human tampering. By protecting forest ecosystems, assisting and allowing natural processes rather than remaking nature based upon our limited understanding and assumptions, we may begin to repair the harms of the past, and responsibly address climate change issues affecting the future.

Conclusion

Lastly, we include our previous scoping comments in full, as these – modified by our comments above – are still largely applicable. We look forward to discussing project revision and development to better achieve natural resource objectives in this important remote forest habitat area.

For our natural 'wild' forests,

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From our previous scoping comments:

The scoping notice's proposed Deadlog project actions appear at best to be based upon scientifically controversial assumptions, goals, and management methods. Whether the agency's proposed actions will effectively "restore and maintain fire dependent ecosystems and maintain the forest in a healthy condition" is likely to depend upon the degree in which these actions embody scientifically supportable ecologically appropriate methods to effectively address naturally occurring forest fuels, fire risks, and naturally inherent insect mortality in forest ecosystems. As this project begins its NEPA analysis, it is important the agency assess and disclose the full range of applicable scientific research. Proposed management actions must be supported with analysis disclosures of substantiating science. Accurate site-specific conditions, cumulative impacts analysis, and disclosures and assessments of the proposed projects impacts upon species of concern must be presented in the EIS. The project must base its planned actions on credible scientific recommendations towards protecting, restoring and maintaining the long-term ecological integrity and functioning of the area's forest ecosystems, ensuring the project meets the biodiversity, habitat, and viability requirements of native species of concern. Common conservation ground can best be achieved when proposed actions are based upon credible ecologically non-controversial science research restoration recommendations; avoiding actions that could result in significant harms to natural forest ecology and biodiversity. Proposed actions should not exceed those scientifically necessary and capable of achieving fire risk reduction and ecological purpose and need goals. Removal of mature and old fire resistant trees, unnatural logging removal or excessive manipulation of older established lodgepole pine forest overstory, excessive thinning in ponderosa pine and/or mixed conifer forest habitat, and use of heavy logging machinery would adversely impact forest ecology; biodiversity; vegetation; soils; wildlife, avian, botanical & other species of concern populations and habitat; resulting in further degradation of the ecological integrity, wildlife habitat, soil hydrology, and natural systems in and around the project area.

Similar with other projects in the region, project provisions need to include:

A. Providing for the retention of all trees with old and mature characteristics in ponderosa pine and mixed conifer forest areas;
B. Natural interior forest lodgepole pine stands should be ecologically maintained allowing natural cyclic processes, conditions, and functioning as possible. In areas where lodgepole pine's pattern of cyclic stand replacement fire is not feasible, management actions should be designed to augment, rather than hinder, natural processes, and to provide for the viability and habitat needs of dependent forest species;
C. Protecting soils and native plants by requiring low impact light machinery in all interior forest areas where machinery is employed;
D. Protecting localized moist 'riparian' areas where these may seasonally occur, by prohibiting machinery use and commercial felling in these locations;

E. Seasonal restrictions on project implementation protecting avian species during nesting and fledging periods;
F. Other provisions as ecologically appropriate as noted below.

The notice proposes a series of varied thinning actions, including stand density thinning actions to reduce the potential for "mortality related to insects and dwarf mistletoe" and thin to stand densities that maintain and encourage "large diameter trees, open canopy structure." Such actions have equal potential to be beneficial or harmful, dependent upon the extent of thinning employed and the location and timing of thinning actions. Such actions work best when they are kept within the parameters of greater scientific consensus than controversy. Care must be taken limiting thinning to ensure sufficient trees and forest stand structure remain to provide for the diverse habitat needs of dependent wildlife species, and to provide for both localized and landscape scale forest ecological integrity. Management actions that excessively thin forests can be antithetical to project goals of reduced risk of severe fires and enhancing forest ecological resiliency. Excessive logging-thinning actions increase and exacerbate the risk of severe fires, as fire resistant mature and old trees are soon replaced with fire-prone brush and small diameter trees. Soils disturbed and impaired by heavy logging machinery cannot support the healthy subsurface soil microbial communities and hydrological functioning necessary to maintain healthy trees and forests. Existing populations of invasive plants can be further spread, and new introductions of exotic invasive plants may occur as a result of soil disturbing logging-thinning actions.

Limiting thinning to only smaller diameter trees, employing variable diameter thinning limits as appropriate to PAG site-specific conditions, has more scientific and ecological support. For example, limiting felling to trees <12" dbh, or a range of variable diameter limits from 14" to 16" at most, is less scientifically controversial and more ecologically capable of achieving project purpose and need goals.

We look forward to reviewing the draft EIS for this proposed project. The EIS should disclose and analyze:

- Old growth forest areas size and location;
- Listed species and species of concern in and adjacent to the project area;
- Landscape scale and localized wildlife connectivity, including migration, foraging, and dispersal habitat and routes;
- Soil conditions;
- Existing invasive plant population and location concerns, and invasive exotic plant introduction and spread issues;
- Ecosystem and soil hydrological patterns, seasonal moist riparian areas and flows, and any affected aquatic species;
- Excessive road density issues, including plans to remove excess roads and bring the area into compliance with Forest Plan road density standards. No new or temporary roads should be proposed;
- Inventoried and uninventoried roadless areas, and/or areas of significant ecological resource value or concern in or nearby the project area;
- OHV use and issues in and adjacent to the project area;

- The full range of applicable scientific research pertinent to the proposed project, including that which may substantiate proposed actions and that which recommends against such actions or addresses issues of scientific controversy;
- Natural fire cycles, patterns, and conditions that historically occurred in this area and recent current fire and management history;
- Cumulative impacts for past, present, and future projects in and adjacent to the proposed project area;
- Other pertinent information as environmentally, scientifically, and legally appropriate.

The EIS should develop a full range of different scientifically and ecologically substantiated action alternatives. To help identify additional conservation concerns, we herein reference the substantial ecological, science, and legal concerns and issues noted in our comments (and/or appeals and litigation as applicable) on the Five Buttes, Kelsey, Snow Fuels, South Bend, W. Tumbull, Sunriver, Lava Cast, SAFR, Glaze Meadows, and other fuels reduction thinning styled projects.

We recommend a public open house and a field trip to the proposed Deadlog project. We look forward to discussing these and additional conservation concerns with agency planning staff soon.

For our natural 'wild' forests,

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Oregon Chapter Sierra Club, &
League Of Wilderness Defenders – Blue Mountains Biodiversity Project

Comments on the
Deschutes National Forest
Bend-Fort Rock Ranger District
Deadlog Vegetation Management Project DEIS

Exhibit A
September 15, 2009

John Allen, Forest Supervisor,
Shane Jeffries District Ranger,
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Our organizations joint allied comments include the accompanying CD compilation of pertinent scientific research studies, recommendations, articles, and applicable legal exhibits. In addition to the science exhibits provided as part of our DEIS comments, we also have extensive photos of the 900 acre Deadlog old forest and surrounding areas from our surveys, and herein offer these upon request for use by agency planning staff.

Exhibit A: a CD compilation of applicable scientific research, reports, judicial caselaw, and conservation issues;

Exhibit A - I:

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.

Exhibit A - II:

Fire & Forest 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….

Exhibit A - III:
Neotropical Migrant & Native Birds research.

***Exhibit A - IV*:**
"Forests, Fires, Resilience & Restoration" Sierra Club Presentation.

Exhibit A - V:
Forest Ecological Science and Legal. Vol. III

- Obama Order on Scientific Integrity (also within the text of the appeal);
- Avifaunal Response to Fire…, N. Kotliar et al, 2007;
- Oregon Biodiversity in a Changing Climate, J. Lawler et al, 2008;
- Public land, timber harvests, and climate mitigation: quantifying carbon sequestration potential on US public timberlands, Depro et al, 2007;
- Testimony before the House Subcommittee on National Parks, Forests, and Public Lands… M. Harmon PhD, March 3, 2009;
- Forest fuel reduction alters fire severity and long term carbon storage in three Pacific Northwest ecosystems. S. Mitchell, M. Harmon, K. O'Connell;
- 50 Year Trend in June Temperature, 1951-2006, E. OR, E. CA, ID, S.W. MT, NV, UT, W. WY;
- Olympic Forest Coalition vs. USFS, Case #CO7-5344 RBL, 5-09-08;
- Impacts of timber harvesting on organic matter…, M.F. Jurgensen, 1996;
- Citizens for Better Forestry et al vs. USDA et al, Case # C 08-1927 CW, 6-30-09;
- Surveying the NEPA and the Emerging Issues of Climate Change,…, J. Mendelson III;
- Court Rulings on Climate Change…;
- Fire Ecology in Rocky Mountain Landscapes, W. Baker 2009;
- Historical and Anticipated Changes in Forest Ecosystems of the Inland West of the US, W. Covington et al, 1994;
- Aspen Regeneration in the Blue Mountains of NE Oregon, D. Shirley & V. Erickson, 2001;
- Mountain Pine Beetle Issues in the Western US, G. Wuerthner, 2009;
- Implementation of National Fire Plan Treatments Near the Wildland Urban Interface in the Western US, T. Schoennagel et al, 2009;
- Beetle Infested Forests Are Not "Destroyed", M. Rocca & W. Romme, 2009;
- Changes in Native and Non-Native Fish Assembleges and Habitat Following Wildfire (MT), C. Sestrich, 2005;
- The European Spruce Bark Beetle – From Pest to Keystone Species, J. Muller et al, 2007;
- Bark Beetle Outbreaks and Regeneration, M. Jonasova & K. Prach, 2004;

We offer the above Exhibits towards better foundation and incorporation of ecological scientific research in the agency's current and future management projects, as required by the NEPA.

Sincerely,
For the Natural Heritage of Us All,

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