Cascadia Wildlands Project

Educating, Organizing, and Agitating for the Ecosystems of Cascadia

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April 25, 2008

Delivered by First Class Mail and e-mail

Re: Appeal of the Record of Decision for the Thorn Fire Salvage Recovery Project and Finding of Non-Significant Forest Plan Amendment #63.

Pursuant to 36 CFR § 215, the interested parties below hereby appeal the decision to implement Alternative 3 of the Thorn Fire Salvage Recovery Project.

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TITLE OF DECISION: Record of Decision for Thorn Fire Salvage Recovery Project.
DATE DECISION SIGNED: March 7, 2008
DATE DECISION PUBLISHED: March 12, 2008
DESCRIPTION OF PROJECT: Post-fire logging of 2,529 acres, felling of dead trees along 24.2 miles of haul roads, maintenance of 70.8 miles of road, construction of 53 log landings, planting of conifers on 3,742 acres, and amendments to the Malheur National Forest Plan.
LOCATION: T14S, R28E, Sections 3-24 and 28, 32 and 33, Willamette Meridian
DECIDING OFFICIAL: Gary L. "Stan" Benes, Malheur National Forest Supervisor

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APPELLANT'S INTEREST

Appellants maintain specific interests in the Thorn Fire Salvage Recovery Project. Appellants expressly indicated interest at the earliest stages of planning by submitting scoping letters and timely comment on the draft environmental impact statement, and earned standing to appeal the Record of Decision (ROD) under 36 C.F.R. 215.13.

Appellant Cascadia Wildlands Project (CWP) is a 501(c)(3) non-profit public interest organization based in Eugene, Oregon, dedicated to the defense and restoration of forests, waters and wildlife in the Pacific Northwest. CWP directors, staff and 800 members use and enjoy the Malheur National Forest for hiking, botanizing, bird watching, photography, aesthetic pleasure, spiritual fulfillment and education about the natural world. They value the solitude, primitive character and biological diversity of the Aldrich Mountain and Chrome Ridge areas in the upper Dry Creek, Todd Creek, Fields Creek and Duncan Creek watersheds. Moreover, CWP values natural post-fire recovery on burned forest landscapes and the blackened snags (dead trees) and wildlife uniquely associated with severely burned areas.

Appellant Blue Mountains Biodiversity Project (BMBP) is a project of the League of Wilderness Defenders (LOWD), a 501(c)(3) non-profit organization providing fiscal sponsorship to grassroots projects and organizations throughout Oregon who work to defend wilderness. BMBP monitors federal agency management of public lands in northeast Oregon and uses litigation and grassroots organizing to protect native biological diversity and ecological integrity. BMBP also raises public awareness of the need to end corporate domination over ecosystems and communities by exposing undemocratic systems of corporate governance. Staff and supporters of BMBP-LOWD regularly use the Malheur National Forest including the Thorn Project area for hiking, ecological study, watching wildlife, viewing forest native botanical diversity and avian species study, and shall continue to use the area in the future.

Appellant Oregon Wild is a 501(c)(3) non-profit organization that represents thousands of Oregonians who use and enjoy the area affected by this project for various recreational, esthetic, and scientific pursuits including but not limited to: hiking, nature study, solitude, bird watching, fishing, and hunting. In accordance with Pub. L. 102-381, Title III, Sec. 322(c), Oct. 5, 1992 and 36 CFR 215.11, Oregon Wild submitted comments on, and expressed interest in, this project and is entitled to appeal.

Appellant Sierra Club-Oregon Chapter represents over 23,000 members throughout Oregon, including over 1,000 Juniper Group members in central and eastern Oregon. Sierra Club members feel strongly about nature, wilderness, wildlife and the environment. Its members regularly enjoy hiking, camping, birding, wildlife watching, recreation and ecological study within the national forests of central and eastern Oregon, including the Thorn Project area within the Malheur National Forest.

Appellants' interests and activities will be irreparably damaged by ground disturbance including tree felling, log extraction and landing construction in the Thorn Project area. Appellants possess the right to demand Forest Service compliance with applicable environmental laws and agency policies.

REQUEST FOR STAY

An automatic stay is in effect for pursuant to 36 C.F.R. 215.9(b), and appellants request a stay of sale preparation, layout, sale advertisement and auction, logging, road maintenance or other site preparation by the Forest Service or contractors pending a final administrative decision on this appeal. A stay is needed to prevent irreversible environmental damage and harm to Appellants' clearly articulated interests, as well as unnecessary expenditure of public money to implement a project that violates federal law and policy. Forests committed to a timber sale cannot be restored in any reasonable amount of time, such as in a human lifetime, let alone in the lifetime of a wild animal that otherwise would reside, forage or reproduce in or downstream of the project area. Eroded soil cannot be replaced. To proceed before a final decision on the merits of this appeal would unnecessarily expose the government to liability should a court find fault with the ROD. There is no harm to the government from granting the stay. A stay will maintain the status quo. The Forest Service should grant the requested stay.

RELIEF SOUGHT

1. Withdraw the Thorn Project ROD.

2. Modify the Thorn Project and revise the environmental impact statement (EIS) to properly disclose environment impacts in accordance with the National Environmental Policy Act.

STATEMENT OF REASONS

1. Authorized Forest Plan amendments violate the National Forest Management Act.

The Malheur National Forest Land and Resource Management Plan (LRMP or "Forest Plan") establishes 24 distinct management areas (MA) in the Malheur National Forest (LRMP at IV-50 to IV-139). It describes broad goals and sets specific standards for each management area (see id; id. at IV-46 ("The National Forest land administered by the Malheur National Forest has been divided into management areas, each with different management goals, resource potentials, and limitations."). Implementation of plan standards in each management area ensures that the Forest Service will meet stated goals. The LRMP also establishes forest-wide standards that apply to all of the management areas (id. at IV-24 to IV-45).

The Malheur LRMP also establishes limitations on "nonsignificant" amendments that can be used to change standards of the Forest Plan:

> If it is determined during project analysis that the best way to meet the management area goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve a nonsignificant amendment to that standard for that project; such exceptions and the rational must be described in the project's documentation (LRMP at IV-25 (Forest Wide Standard # 3)).

The Thorn Project ROD authorizes Forest Plan amendments that violate the LRMP because the Forest Service never determined that "the best way" to meet its management area goals conflict

with the standards to be amended. There is no evidence, nor even any suggestion, that the current standards conflict with the management area goals, and there is likewise no evidence that the amendments are "the best way" to meet the management area goals. The only purpose given for the amendments is to "maximize economic benefits" from logging (FEIS at 5), which the Forest Service admits is "inconsistent with existing management area goals" (ROD at 19). Indeed, the record establishes that the Forest Service is not amending Forest Plan standards to harmonize them with the management area goals, but rather to "deviate from the [management area] goals" (DEIS at 255 and 275). That is clearly inconsistent with Forest Wide Standard #3 and violates the National Forest Management Act (NFMA).

Even if the Forest Service made the requisite determinations, amendments to MA-20A still would not comply with the Malheur LRMP because they change the goals of the Forest Plan. Forest Wide Standard #3, which is not amended, permits the use of nonsignificant amendments only to change Forest Plan standards. Moreover, it only permits such amendments in situations where the existing standard does not allow the Forest Service to "best" meet stated management goals (LRMP at IV-25). Forest Service directives establish that "changes to the Forest Plan that are not significant can result from… minor changes in standards and guidelines" (FSM 1926.51; ROD at 19 – emphasis added). *Significant* amendments change the multiple use goals and objectives for land and resource management or the long-term balance of resource outputs from a national forest (FSM 1926.51, 1926.52). Here, the authorized plan amendments are not limited to changes of standards and guidelines. Revision of entire management goals fundamentally alter the balance of resource outputs anticipated in the forest planning process and therefore are by definition "significant." The agency's conclusion that such a change is "nonsignificant" is arbitrary, capricious and plainly inconsistent with the LRMP and NFMA.

2. The ROD violates Forest Plan standards for MA-20A.

Two standards for the MA-20A land allocation in the Malheur LRMP require the Forest Service to maintain the natural appearance of the landscape. Standard #1 states that the agency must "manage dispersed recreation for goals of semiprimitive nonmotorized recreation in a natural appearing environment" (LRMP at IV-121). Standard #13 states that it must "design timber harvest to maintain a natural appearing landscape and quality wildlife habitat" (id. at IV-123).

The Thorn Project ROD authorizes an amendment to Standard #1 "because harvest activities may result in changes from a naturally appearing environment to a modified setting" (FEIS at 5; see also ROD at 19-20). However, the ROD does not consider or approve any amendment to Standard #13. Timber harvest activities authorized by the ROD violate Standard #13 for the same reason that the Forest Service proposed amending Standard #1. The Forest Service never designed the Thorn Project "to maintain a natural appearing landscape and quality wildlife habitat" because logging "may result in changes from a naturally appearing environment to a modified setting." Indeed, the Forest Service admits that the Thorn Project will "degrade" the natural appearance and primitive character of the MA-20A land allocation (ROD at 19-20). It makes no effort to harmonize this admission with the clear mandate of Standard #13 to "maintain" a natural appearance.

Further, the Thorn Project violates MA-20A Standard #1, even with the amendment, because the authorized modification of landscape appearance will outlast five years, which is the timeframe the amended standard would allow (ROD at 20). The Forest Service concludes that the natural appearance and primitive nature of the area will be degraded for three-to-five years after logging, but that conclusion is arbitrary and capricious because the record establishes that such degradation will last for a much longer period of time. The Thorn Project would change the natural setting by logging all but three snags per acre larger than 21 inches in diameter at breast height (dbh) that otherwise would persist on the landscape for as long as 40 years (FEIS at 235 – "larger snags would be on the ground in 10-40 years."). The record also shows that recreation is affected by logging "until the units begin to development the characteristics of a closed canopy, which generally occurs after 15 to 30 years depending on soils, aspect, and vegetative species composition" (id. at 363). Furthermore, according to the record, a primitive setting will not be restored until new trees reach heights of 15-to-20 feet tall (ROD at 20), and there is no evidence that this can happen in five years. The only explanation given to support the conclusion that the natural setting will be restored within five years is that shrubs will hide the stumps after three-to-five years. Shrub cover is not the same as conifer trees growing as tall as 15-to-20 feet. More, the explanation does not account for logging impacts other than the mere presence of stumps. For example, it overlooks the *absence* of trees and snags that are to be removed for timber harvest.

3. Authorized amendment to the Eastside Screens violates NEPA and NFMA.

The Scott Mortality Guidelines are inaccurate, result in false positive findings of tree death, and are not supported by the best available science. The Forest Service should have considered adopting newer and more accurate methods to determine tree mortality. We urge the Forest Service to use the complete absence of green needles as the most accurate indicator of tree death in Douglas fir and Ponderosa pine. Another approach (which is a step in the right direction though still imperfect) is described in Sieg et al (2006).[1] That paper develops a model with accuracy approaching 90%, much higher accuracy than Scott (as reviewed by Royce, Waring and Niwa).

The Amendment Impermissibly Uses Probabilistic Predictions

The Thorn Project proposes to remove fire-killed trees and significant numbers of live trees that the Forest Service predicts may die based on a probability of future mortality. The use of probabilities is inherently flawed because it necessarily results in the removal of mature and old growth trees that would have survived the fire if not logged. For live trees, 21 inches dbh and larger, this proposal is contrary to the very purpose and history of the Screens, the plain language of the Screens, and independent and agency analyses that identifies a significant depletion of old-growth forest in the Blue Mountains Region and the Malheur NF in particular (see N. Langston, *Forest Dreams, Forest Nightmares*, attached to appellant Sierra Club DEIS comments).

The Forest Service introduced the same amendment in at least two recent post-fire logging projects in eastside forests, including the Tripod Project in Washington's Okanogen NF and the

[1] Carolyn Hull Sieg, Joel D. McMillin, James F. Fowler, Kurt K. Allen, Jose´ F. Negron, Linda L. Wadleigh, John A. Anhold, and Ken E. Gibson. 2006. Best Predictors for Postfire Mortality of Ponderosa Pine Trees in the Intermountain West. Forest Science 52(6) 2006.

School Fire Project in Oregon's Umatilla NF. Referring to incorrectly marked old-growth trees, the DEIS for the Tripod Project "acknowledges that these trees are currently living and that a small percentage of these trees that are identified as having a low probability of survival might actually survive." Tripod DEIS at 2-8 (emphasis added). This admission concedes what Appellants have repeatedly argued in the record for the Thorn Project: the use of probabilistic predictions will inherently result in logging live trees that would not have otherwise died. The agency has not provided a scientific justification to permit logging old-growth trees pursuant to the very regulation that has always prohibited it. Appellants, on the other hand, provide numerous scientific determinations by the FS as well as from independent forest scientists including one who contributed directly to the Panel Report that led to the Screens.

The Forest Service is not mandated to use probabilistic predictions to determine the possibility of future mortality and it is particularly inappropriate to do so when it will lead to the removal of the very resource—live old-growth trees—that the Eastside Screens require be maintained or enhanced as much as possible. Many methods have been utilized to provide unequivocal assurance that old-growth that survives a fire will not be logged.

The FS Ignores Numerous Scientific Conclusions Regarding the Significant Depletion of Old Growth East of the Cascade Crest, Guidance Memos, and the Purpose of the Eastside Screens.

The FS ignored abundant scientific analysis regarding the significant depletion of old-growth on the eastside and specifically in the MNF. Despite this data, the FS took the position that it could reduce the amount of old-growth over a vast area in the MNF. Absent changed circumstances or supporting scientific evidence and analysis, this change is impermissible. See Brand X , 545 U.S. at 981; see also Morales-Izquierdo, 486 F.3d at 493.

a. Eastside Forests Scientific Society Panel & Report.

In 1992, a bi-partisan group from the House of Representatives convened the Eastside Scientific Society Panel (the "Panel") and requested that the Scientific Panel prepare a report (the "Panel Report") that "delineate[d] 'remaining old-growth ecosystems, forests associated with old-growth, riparian and management areas, habitats necessary for the protection of wildlife, and fisheries dependent on old growth.'" The Panel focused exclusively on the national forests on the eastside of Oregon and Washington. The Panel found that the "geographical extent of old-growth forests has shrunk dramatically during the twentieth century," and "[c]ontinued logging of old growth outside current reserves will jeopardize unknown numbers of native species." The remaining "patches of old-growth are "too small to provide for the basic needs of many LS/OG [Late Structure/Old-Growth]-associated species." The Panel also found that continued logging of old-growth is "likely to jeopardize many components of the biological diversity of eastside forests and increase numbers of threatened, endangered, and extinct species." The Panel provided suggestions to mitigate the existing damage:

1. Do not long late-successional/old-growth forests (LS/OG) in eastern Oregon and Washington.

   The significantly reduced area, fragmentation, and degraded condition of eastside late-successional/old-growth forests caused by past logging and road construction threaten

> many forest and aquatic species. These impacts – and consequent loss of critical aquatic and terrestrial habitats – have significantly diminished the region's ability to absorb and buffer disturbances, thus leading us to conclude that all remaining LS/OG blocks and fragments are ecologically significant. Deferring LS/OG logging on all remaining LS/OG will create a "time out," allowing scientists and resource specialists to rigorously assess the status of LS/OG forests and develop a strategy to protect them.

2. Cut no trees of any species older than 150 years or with a diameter at breast height (DBH) of 20 inches or greater.

   > It is essential to conserve as many off the mature trees of eastside forests as possible in the short term to sustain these forests in the long term. Mature trees have lived for decades, even centuries; their very existence demonstrates that they have the genetic characteristics to survive the full range of environmental variation present in eastern Oregon and Washington. They serve as reservoirs of genetic diversity and irreplaceable seed sources for forest regeneration; they replenish the depleted supply of large snags and fallen logs, providing nest and den sites for many animals; and they furnish unique historic records. As entomologist Boyd Wickman puts it, "These trees are living examples of our long-term objectives."

The Panel Report "was extensively peer-reviewed by at least 10 distinguished scientists from academic, federal, state, tribal, and environmental (NGO) organizations."

b. Eastside Screens Environmental Analysis.

The FS directly acknowledged the significant depletion of old-growth in its own Eastside EA and DN. The FS' new interpretation of the Eastside Screens is not entitled to deference of a regulation that conflicts with the agency's "intent at the time the regulation was promulgated." See Thomas Jefferson Univ. Hosp. v. Shalala, 512 U.S. 504, 512 (1994) (quoting Gardebring v. Jenkins, 485 U.S. 415, 430 (1988)). In response to a petition to ensure population viability under the NFMA and the information in the Panel Report, the FS adopted the old-growth protection standards and in interim Management Guidelines which became known as the Eastside Screens. The Eastside Screens were to be temporary in nature and replaced after the FS prepared a comprehensive, region-wide, long-term management strategy to protect old-growth forests and the wildlife habitat these forests provide. With this project, the FS gives no weight to its own scientific analysis regarding the very topic at issue. Contrary to the DN for the Screens, the agency has not provided a long-term management strategy to protect old-growth (i.e. the Eastside EIS). The DN specifically stated that the Screens were incorporated "into the Eastside forest plans through amendment and will remain in effect until the Eastside EIS is completed." Under the heading "Rationale," the FS explains its decision to continue to implement the Screens:

> The current status of scientific knowledge, habitat conditions, and public issues surrounding the continuation of timber sales planning and eventual timber harvest on Eastside Forests makes it imperative that I take an appropriate short-term action to assure that certain stands of timber, essentially the late and old structure stands and riparian areas, are not harvested pending the completion of the Eastside EIS which will fully analyze the pertinent information and set new management direction.

Preparing an "Eastside EIS" is the proper and legal way to amend the Eastside Screens. Until a region wide assessment is complete, the Interim Screens remain in effect. In the Eastside EA, the FS rejected other alternatives because they would "allow reductions in late and old structural stands." The FS stated that "scientists believe old-growth to be vital to old-forest associated wildlife species." Regional Forester Lowe said that "timber harvesting had the greatest likelihood to affect components of the landscape which developing information suggested were vitally important to certain species of wildlife and fish and to the overall vegetative structure of the forest."

Based on its analysis, the FS concluded that "[t]he purpose [of the Screens] is to preserve those components of the landscape – old forest abundance, wildlife habitat in late and old structural stages, and riparian areas – which new information suggests is vitally important to certain species of wildlife and fish and to the overall vegetative structure of the forest." The FS then amended all LRMPs (i.e. Forest Plans) east of the Cascade crest in Washington and Oregon with the standard 6(d)2a to prevent logging live old-growth:

> 2) Outside of LOS [late and old structural stages], many types of timber sale activities are allowed. The intent is still to maintain and/or enhance LOS components in stands subject to timber harvest as much as possible, by adhering to the following standards:
>
> a) Maintain all remnant late and old seral and/or structural live trees 21" dbh that currently exist within stands proposed for harvest activities.

See Norfolk S. Railway Co. v. Shanklin, 529 U.S. 344, 356 (2000) ("[N]o . . . deference is appropriate [because] [n]ot only is the [agency's] interpretation inconsistent with the text of the [regulation], but it also contradicts the agency's own previous construction"). The standard unequivocally requires that if live old-growth exists then it must be maintained.

c. ICBEMP.

At the request of the President, the FS began a cooperative effort to prepare a science-based ecosystem management strategy for the eastside public lands called the Interior Columbia Basin Environmental Management Project ("ICBEMP"). www.icbemp.gov. The ICBEMP EIS was completed in 1997, but the FS did not sign the ROD. Id. Instead, the FS signed a Memorandum of Understanding in 2003 to guide and incorporate science form ICBEMP into project implementation on the eastside. Id. ICBEMP shows that the "[i]nterior ponderosa pine has decreased across its range, with a significant decrease in the amount of old trees in single story structures," and "[t]here has been a loss of the large tree component (live and dead) within roaded and harvested areas" which "affects terrestrial wildlife species closely associated with these old-forest structures." Id. (ICBEMP FEIS 2-2). ICBEMP underscored the dangers of continued harvest:

> [the] residual large live trees are usually shade-intolerant, and insect- and disease-resistant trees that provide seed for the next forest. Removal of these trees has often resulted in conversion of the seed source from shade-intolerant species to shade-tolerant, fire-, insect- and disease-susceptible species, as well as losing the diverse structure.

Id. (Ch.6 at 169).

d. Controversy from Leading Forest Scientists.

With the Thorn Project ROD, the FS proposes a significant deviation from established policy. They have not justified this change on scientific grounds. In response, a number of leading forest scientists and professors have expressed grave concerns over this change in course. First, a co-author of the Panel Report and Professor Emeritus at the University of Washington (UW), Dr. James R. Karr said that "given the significant depletion of old-growth resources across the landscape east of the Cascades, a conservative approach like the one plainly evident in the Eastside Screens is appropriate." Second, co-author of the Northwest Forest Plan and Professor of Ecosystem Sciences at the University of Washington, Jerry Franklin wrote that the "recommendations of the Eastside Scientific Panel are even more appropriate today than they were in 1994 based on our current understanding of the ecological role of old-growth trees in the eastside landscapes." Third, Professor Emeritus in the College of Forestry at Oregon State University, Dr. Richard Waring stated that "[o]ld-growth pine have weathered a range of climatic conditions and are likely to provide a genetically superior seed source, the amount of which may be enhanced in response to injury," and the "removal of large diameter material east of the Cascade Crest, particularly live trees but also dead trees, has significant negative effects because this large structure is a rare commodity." Without a scientific justification or reasonable explanation, the FS cannot rebuff these contentions.

e. The Amendment is Contrary to the FS' Own Internal Policy Statements and Guidance for Site-specific Amendments to the Eastside Screens.

The FS' current position contradicts the criteria for amending the Screens in FS Guidance Memoranda. The memoranda contain scientific determinations and criteria for amending the Screens that are contrary to the FS' amendment. The amendment is contrary to the October 2, 1997 Guidance Memorandum and that states: "new information from ecological and biological assessments in the [ICBEMP] provides a clear picture about the importance of large trees and the current status of their distribution across the eastside." The guidance further illustrates that amendments to the Screens are to be made consistent with the following:

1. A clear and compelling case can be made for the biological or ecological urgency to cut large trees in the short term (i.e. next 5 years).

2. The amendment is unique or uncommon and is not being commonly applied across landscapes (watersheds and larger).

The proposed amendment is contrary to each factor. There is no compelling "biological or ecological urgency." The only alleged urgency is to "maximize potential economic benefits." The amendment fails to comply with the second factor because it is applied across multiple watersheds in the project area. Moreover, it is has been proposed on multiple landscapes and watersheds in at least three national forests on the eastside. The 1997 guidance memo was superseded by the 2003 memo, but the 1997 memo's reliance on ICBEMP and the ecological and

biological urgency is testament to the sharp contrast to an amendment that authorizes the region-wide removal of live old-growth trees.

The 2003 memo for amending the Screens is contrary to the amendment. The 2003 memo is replete with scientific information that the FS now ignores: recent scientific "findings reinforce the importance of retaining and recruiting large, old trees in the eastside landscape"; "[t]he objectives of increasing the number of large trees and LOS [Late Old Structure] stands on the landscape remains"; "I therefore encourage you to consider site-specific Forest plan amendments where this will better meet LOS objectives by . . . providing LOS for the habitat needs of associated wildlife species"; and "[e]conomic considerations are important but are not considered adequate justifications alone for conducting harvest activities in LOS stands." Here, the amendment would reduce the amount of LOS and reduce the number of old large trees on the eastside landscape and deny potential habitat for LOS associated wildlife species because live old-growth will be logged. Finally, the stated purpose for the amendment is purely economic. The amendment is therefore inconsistent with prior guidance for amending the screens and prior interpretation of the Screens.

f. The FS Failed to Provide a Reasonable Explanation for Removing Live Old-Growth Trees.

The FS concocted an interpretation of the Eastside Screens to permit the very activity that it was designed to prohibit: logging of live-old growth. This approach is contrary to prior interpretation, implementation, and the current condition of eastside forests. This recent interpretation of the Screens cannot continue throughout the eastside without a scientific justification or a reasonable explanation. See Brand X, 545 U.S. at 981; see also Morales-Izquierdo, 486 F.3d at 493. The FS has failed to provide either.

The FS Has Manufactured a Gap in the Forest Plan and Is Not Entitled to Deference.

After its conduct was found to violate the law, the FS decided to manufacture a gap in the Screens so it could continue its plan to remove live old-growth trees even though this is the very event that the Screens sought to prohibit. See Shanklin, 529 U.S. at 356 ("[N]o . . . deference is appropriate [because] [n]ot only is the [agency's] interpretation inconsistent with the text of the [regulation], but it also contradicts the agency's own previous construction"). The Ninth Circuit found that the word live was to be given its plain and ordinary meaning, in other words a tree that is live with green needles. Martin, 479 F.3d at 642. The FS manufactured a gap in the word "live." Agencies are generally free to fill gaps in direction, as they do when the agency interprets its governing statutes. A Chevron analysis therefore controls the issue of whether the FS has permissibly filled a gap. See Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842 (1984).

The application of Chevron entails two inquiries. The first inquiry is whether "the intent . . . is clear" as to "the precise question at issue." Id. If the Court determines that the intent is clear, then "that is the end of the matter." Id. at 842. "[I]f the statute is silent or ambiguous with respect to the specific issue," then the second question is "whether the agency's answer is based on a permissible construction of the statute." Id at 843. "If the agency's reading fills a gap or

defines a term in a reasonable way in light of the . . . design, '[the court] give[s] that reading controlling weight." Regions Hospital v. Shalala, 522 U.S. 488, 457 (1998) (quoting Chevron, 467 U.S. at 843).

"In making the threshold determination under Chevron, "a reviewing court should not confine itself to examining a particular statutory provision in isolation." FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 132 (2000). "Statutory language cannot be construed in a vacuum." Davis v. Michigan Dept. of Treasury, 489 U.S. 803, 809 (1989); see also Senica v. INS, 16 F.3d 1013, 1016 (9th Cir. 1994) (the Court is not obligated to accept an agency's interpretation that is "demonstrably irrational or clearly contrary to the plain and sensible meaning of the statute."). "The meaning – or ambiguity – of certain words or phrases may only become evident when placed in context . . . . It is a 'fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.'" Id. at 132-33 (quoting Davis v. Michigan Dept. of Treasury, 489 U.S. 803, 809 (1989) (emphasis added). When placed in the context of the surrounding language, the term "live" in the Screens can only be interpreted to mean a definition of live where old-growth "that currently exist" is "maintain[ed] and/or enhance[d]" "as much as possible." The Ninth Circuit acknowledged that the phrase "currently exist"' was a contextual clue:

> "[a] contextual clue in the Eastside Screens suggests that this common meaning was intended. The provision protected from harvest "all [old-growth live trees of [a specified minimum size] *that currently exist*. The phrase 'that currently exist' suggests that even trees that are expected to die within a year, but that are not dead, are still "live" because they "currently exist."

Martin, 479 F.3d at 642. The Ninth Circuit also said: "the phrase 'currently exist' modifies 'trees,'" and "[u]nder the Forest Service's reading, the phrase 'that currently exist' would be superfluous, so we reject that interpretation." Id n.8; see also TRW Inc. v. Andrews, 534 U.S. 19, 31 (2001) ("It is a cardinal principle of statutory construction that a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void, or insignificant." (internal quotation marks omitted)). Two more contextual clues (e.g. "maintain and/or enhance" and "as much as possible") suggest the goal and purpose of the standard in the Screens was to be protective of these resources.

The Eastside EA documented the intention and rationale of the FS when they proposed the Screens: "[t]he purpose [of the Screens] is to preserve those components of the landscape – old forest abundance, wildlife habitat in late and old structural stages, and riparian areas – which new information suggests is vitally important to certain species of wildlife and fish and to the overall vegetative structure of the forest." The only reasonable interpretation of "live"[2] can be one that preserves the status quo, not one that permits live trees to be capriciously removed. The Eastside EA, scientific evidence, the contrary prior interpretation and implementation, and Guidance Memoranda illustrate the background in which the Screens were conceived, and the new definition of "live" flies in the face of all this evidence.

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[2] This Court has already rejected the FS's contention that "live" is a technical term. See Martin, 479 F.3d at 642 ("We need not decide whether, in theory, we must employ a technical definition in a Forest Plan because there is no evidence in this record that the Forest Service adopted a technical meaning.").

The Scott Guidelines Fail To Insure Scientific Integrity.

Under the NEPA, "agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements." Earth Island Institute, 442 F.3d at 1159-60 (quoting 40 CFR § 1502.24). "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are truly significant to the action in question . . . ." 40 CFR § 1500.1(b). The FS employs the Scott Guidelines to implement the amendment, but the Guidelines do not insure scientific integrity. The agency's decision to couple the removal of live-old growth with a set of Guidelines that lack scientific integrity only serves to further compound the arbitrary and capricious nature of the amendment.

The Guidelines have not been successfully and independently field verified. In addition to several independent scientists and members of the public, at least one FS researcher has also invalidated the guidelines. On four different occasions the Guidelines have been found to be highly inaccurate. After the High Roberts fire, Dan Becker field-verified marking that had been done pursuant to the Guidelines, and found many live large diameter trees marked for harvest. Dr. Edwin B. Royce also field verified the High Roberts fire and determined that 85% of trees marked for harvest were actually live and unlikely to die form fire scarring. Dr. William B. Ferrell, Professor Emeritus from Oregon State University, also reviewed the evidence from the site and confirmed this determination. Dr. Royce then returned four years later and determined that the trees marked for logging because they were assigned a "low" or "moderate probability of survival" were still alive.

Dr. Christine Niwa, a FS researcher, found 97% of trees predicted to have a 50% chance of living using the Guidelines were still alive two years after the Monument fire. Kevin Ryan, the FS Program Manager at the FS Fire Science Laboratory, acknowledged that "you can expect about 95% of the trees that die will do so by the end of the second growing season" and by the third year after the fire, "one would only be looking at the survivors." Dr. Richard Waring also reviewed the marking at the High Roberts fire three years after the fire, and determined that the trees were alive and unlikely to die.

Numerous prominent forest ecologists have criticized the guidelines for their lack of a scientific integrity and administratively commented on this project. They explain that the guidelines do not exhibit the hallmarks of science and have repeatedly proven to be inaccurate. The FS has repeatedly turned its back to the management suggestions and scientific data of prominent forest ecologists. These scientists have little interest in this case beyond the appropriate application of sound scientific methodology and accuracy. The FS, on the other hand, "has a substantial financial interest in harvesting timber." Earth Island, 442 F.3d at 1178.

Dr. Jerry Franklin stated that "[n]o technical or scientific understanding of 'live' would include trees that are predicted die at some future point in time." Dr. Karr expressed "concern[] about the lack of scientific foundation in the defined procedure for marking trees expected to die in the next 5 (or some other arbitrary number) years," and that "it is virtually impossible to know with

any level of accuracy which individuals in a population of live (and thus destined to die) trees will die 1 day, 1 year, 10 years, or 100 years from today." Furthermore, Dr. Karr says, referring to the Scott guidelines, that the "marking approach of the [FS] does not even meet a minimum scientific standard." In particular, the guidelines have not been "empirically validated by long-term peer reviewed studies" and "[t]hey continue to be revised in substantial ways suggesting it is at best a work in progress." Dr. Waring also expressed serious reservations about the integrity of the Guidelines, stating that they "are based on superficial classification of injury with different, often questionable, weighing factors. If the goal is scientific integrity, this classification system does not fit the bill." Dr. Waring stated that:

> [t]he overall weakness of the Scott Mortality Guideline's untested ranking system for predicting the chance that a given tree may die in the future. Even if accurate, this prediction would only be appropriate in situations where the management direction calls for it. This determination, however, seems inappropriate when the direction focuses on maintaining and enhancing live trees that currently exist as much as possible – as the Eastside Screens currently provide for large old growth trees.

Dr. Royce echoed the reservations of other scientists that the "Scott Guidelines have neither been peer-reviewed with the rigor practiced by the scientific journals nor validated in the field by the observation that trees predicted to live or die by the guidelines actually do some years hence." (explaining that 80% of the trees marked for harvest in the High Roberts Fire in the MNF were still alive four years later). Dr. Royce pointed out that the Guidelines cause cambial damage when "chopping into the bole [of the tree] with an ax." which produces "unnecessary damage to trees that are alive and unlikely to die and frequently produces an incorrect conclusion that the cambium is dead."

The Amendment is Arbitrary and Capricious because it is Significant.

36 C.F.R. § 219.10(f) directs that determinations of significance be "based on an analysis of the objectives, guidelines, and other contents of the forest plan." See Sierra Club v. Cargill, 11 F.3d 1545, 1548 (10th Cir. 1994) (explaining that the NFMA "regulations provide little guidance as to when a change is significant"). The FS handbook (FSH) lists several factors[3] that may be considered. See Christiansen v. Harris County, 529 U.S. 576, 587 (2000) ("interpretations such as those in . . . policy statements, agency manuals, and enforcement guidelines, all of which lack the force of law – do not warrant Chevron-style deference"). The FSH expressly states, "other factors may also be considered, depending on the circumstances." Prairie Wood Products v. Glickman, 971 F.Supp. 457, 463 (D. Or. 1997) (emphasis added). The unique circumstances on

[3] At 1909, 12, ch.5.32 of the FSH lists the following criteria: "a. Timing. Identify when the change is to take place. Determine whether the change is necessary during or after the plan period (the first decade) or whether the change is to take place after the next scheduled revision of the forest plan. In most cases, the later the change, the less likely it is to be significant for the current forest plan. b. Location and size. Determine the location and size of the area involved in the change. Define the relationship of the affected area to the overall planning area. c. Goals, Objectives, and Outputs. Determine whether the change alters long-term relationships between the levels of goods and services projected by the forest plan. d. Management Prescription. Determine whether the change in a management prescription is only for a specific situation or whether it would apply to future decisions throughout the planning area. Determine whether or not the change alters the desired future condition of the land and resources or the anticipated goods and services to be produced." Wyoming Sawmills Inc. v. Forest Serv. 179 F.Supp.2d 1279, 1301-1302 (2001).

the eastside compel the FS to consider other factors, such as the significant depletion of old-growth, the continued loss of old-growth associated wildlife habitat, the application of the amendment throughout the eastside, the scientific integrity of the guidelines, the use of probabilities that necessarily remove live old-growth that would have survived the fire, and so forth.

i. Timing of the Amendment is Significant.

The timing of the amendment is significant. The FS has not fulfilled its obligation to provide a long-term management plan (i.e. Eastside EIS) to address the significant depletion of old-growth, and the amendment removes the very resource that takes over a century to produce. The FS claims that the amendment is limited for the duration of the Project and asks this Court to ignore the fact that this amendment has been introduced throughout the region and the resource proposed to be removed has already been severely depleted. The continual and unrestrained use of this particular amendment serves to effectively deny preserving the status quo before the FS has provided the public with a scientifically-based management strategy for old-growth. The FS attempts to temporally gerrymander significance by saying that it will be able to log the live old-growth trees in a short time despite the fact that this very resource takes well-over a century to produce. The temporal factor is not limited to the duration of the project. The timing of this amendment is significant.

ii. The Location and Size of the Amendment is Significant

The same amendment to the Eastside Screens is being implemented cross eastern Oregon and Washington. These allegedly "site-specific" amendments "are so related as to be, in truth, one" permanent and significant amendment to the Screens throughout the region that undermines the substantive protections embodied in the Screens. Native Ecosystems Council v. Dombeck, 304 F.3d 886, 900 (9th Cir. 2002). It must also be considered within the context of the rare resource it seeks to remove and the dependence of wildlife on this resource. The amendment is therefore significant.

iii. Goals and Objectives of the Amendment.

The goal, objectives, and outputs of the amendment are significant because it is contrary to the goals of the forest plan, and it "alters the long-term relationship between the level of goods and services in the overall planning area." The goal of the Screens is to retain old-growth as much as possible that currently exist. The "primary purpose" of the Screens "is to conserve those components of the landscape - old forest abundance, wildlife habitat in Late and Old structural stages – in relation to larger ecosystem management to protect habitat for certain species of wildfire and to promote the vigor and health of the forests." The FS failed to consider whether the project would adversely affect the forest plan goal to "provide, develop, and enhance effective and well-distributed habitats throughout the Forest for all existing . . . wildlife species." Old growth trees take hundreds of years grow back. The amendment, therefore, significantly affects forest plan goals and the goals of the Eastside Screens.

iv. Other Circumstances.

Given the circumstances, the FS must consider "other factors." Prairie Wood, 971 F.Supp. at 463. The FS must consider the purpose of the Screens as illustrated in the Eastside EA, the multiple amendments throughout the region, the lack of an Eastside EIS, the lack of a scientific justification, the significant depletion of old-growth, the region-wide implementation, the scientific determinations of its own scientists and the other prominent forest ecologists and scientists, the guidelines for amending the Eastside Screens, and the application of inherently erroneous probabilistic predictions. For these reasons, the FS is compelled to consider other factors, and the failure to do so is arbitrary.

4. The ROD does not ensure viability of sensitive wildlife.

Management indicator species

The Malheur Forest Plan identifies **black-backed woodpecker** (*Picoides arcticus*) as a "management indicator species" (MIS) for primary cavity excavators associated with coarse woody habitat (LRMP at IV-32 – Forest Wide Standard #61). In the MA-13 land allocation, the Forest Plan requires the Forest Service to "Maintain dead and defective tree habitat capable of supporting 100% of the potential population of the management indicator species for primary excavators" (id. at IV-106 – Standard #5). And in MA-20A, the Forest Plan requires the Forest Service to "Provide necessary habitat to contribute to Forest-wide maintenance of viable populations of management indicator species and featured species" (id. at IV-121 – Standard #4). It also requires in MA-20A, "Maintain dead and defective tree habitat capable of supporting 60-100% of the potential population of management indicator species for primary excavators" (id. at IV-123 – Standard #7).

The Oregon Department of Fish and Wildlife (ODFW) ranks black-backed woodpecker as "critical," a species for which listing as "threatened" or "endangered" under the Endangered Species Act would be appropriate if immediate conservation actions are not taken (FEIS at 233). In 2007, the Oregon Natural Heritage Program (ONHP) ranked black-backed woodpecker as "S3," indicating that the species is vulnerable to extirpation in Oregon.

The record establishes that black-backed woodpecker strongly favors habitat with high snag densities, and that early post-fire conditions (one-to-five years after fire) are "critical" for supporting black-backed woodpecker source populations (id. at 225). According to the FEIS,

> Hutto (1995) found that of 77 species only two were more specialized than the black-backed woodpecker. He suggested that the relatively low number of black-backed woodpeckers in unburned forests may be sink populations (populations that are generally decreasing), maintained by emigrants from burns when conditions become less suitable for the species 5 years after a fire; in other words, burns support source populations of black-backed woodpeckers (populations that increase and spread). Consequently, burned habitats may be of critical importance to this species (id. at 232).

The record also shows that nesting blacked-backed woodpeckers favor unlogged stands compared to salvage logged stands of burned forests (id. at 232 and 235 – nesting densities of black-backed woodpeckers are "significantly higher" in burned landscapes that are unlogged.).

"It is unlikely that [black-backed woodpeckers] would use salvage logged units for nesting and foraging" (id. at 245). The FEIS continues,

> DecAID suggests that snag level and down log levels for some primary cavity excavators may need to be higher than the levels based on 100% of biological potential population models. Post-fire habitats may need to provide much higher levels of snags than live, unburned forests to support use by primary cavity excavators (id. at 231).

By logging all but three snags per acre across more than 1,400 acres (ROD at 7 – Table 2 shows project area lands burned at "High" and "Very High" Severity to total 1,464 acres), the Thorn Project will not "provide necessary habitat to contribute to Forest-wide maintenance of viable populations" of black-backed woodpecker. Forest Service analysis shows that many more snags are needed to provide such habitat. Even if the project leaves 19 times as many snags (57 per acre), habitat would only exist at a 30% tolerance level for black-backed woodpecker, which provides a "low" level of assurance that viable populations will be maintained (FEIS at 230-231 – "areas with <57 snags/acre would be expected to be used for nesting by only 30% of the individuals within the population of black-backed woodpeckers.").

Scientific controversy and uncertainty about population potential assumptions are not disclosed.

The adequacy of this level of snag retention to meet standards and guidelines for wildlife population viability is a matter of undisclosed scientific uncertainty and controversy because it assumes the provision of minimum nesting habitat requirements of cavity-dwelling species.

According to the Final Environmental Impact Statement for the Land and Resource Management Plan of the Deschutes National Forest at page 3-17,

> It is widely thought that the absence of suitable nest-sites is the usual limiting factor for cavity-nesting birds. Also, a direct relationship is assumed between the number of snags and the number of snag-dependent wildlife in a forest. To measure habitat capability for woodpeckers, an index can be used based on the percent of maximum woodpecker population expected when snag habitat ceases to be the limiting factor of a population (Thomas et al, 1979) [sic]. This level is a function of the amount of forest area containing snags and the number of snags present.

The Malheur LRMP references the same literature as support for its standards regarding snag habitat management to meet minimum population potential thresholds (see LRMP at IV-29 – "Manage dead tree (snag) habitat to provide for at least 40% of the potential populations of primary excavator species throughout stand rotations (Wildlife Habitat in Managed Forests, 1979).[4] Indeed, the Thorn FEIS states on page 226,

> The Forest Plan, as amended, requires that an at least 2.39 snags per acre, 21 inches dbh and greater, be retained. Amended standards for down logs are as follows: 20-40 lineal feet per acre for ponderosa pine types, 100-140 lineal feet for mixed conifer types, and 120-160 linear

[4] Thomas, J.W. 1979. *Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington.* USDA For. Serv. Agriculture Handbook No. 553. Washington, D.C.

> feet for lodgepole pine types. It is assumed that these snag and down log levels will provide the minimum level required for 100% of potential population levels of primary cavity excavators (LRMP 1990, Thomas 1979).

The assumption of the Malheur Forest Plan and the Thorn FEIS that nest-site availability is the limiting factor for cavity-nesting bird populations was empirically tested and found inaccurate. Hutto and Gallo (2006) compared habitat use of several cavity-nesting bird species in recently burned mixed conifer forest that were and were not salvage logged after a 1991 fire. They found that primary cavity excavators present on the Malheur Forest were abundant in forests that burned and were not logged, but completely absent from sites where logging occurred, even with retention of six-to-eight nest quality snags per acre, in keeping with standards and guidelines of the relevant forest management plan. According to Hutto and Gallo (2006:825-828),

> Snags have traditionally been viewed as valuable for cavity-nesting birds exclusively in terms of their potential to be used as nest sites. Indeed, snag-management guidelines were originally based on meeting the nesting requirements of cavity-nesting birds (Thomas 1979). If nest trees were limiting bird densities in salvage logged plots, then the density of suitable nest trees should have decreased to a number well below 6–8 trees per ha—the minimum number believed necessary to support maximum population densities of most cavity-nesting species (Thomas 1979: appendices 22, 23). We tested this hypothesis by calculating the percentage of randomly selected trees in both uncut and salvage-logged plots that could be considered suitable for nesting by each species. Most cavity-nesting species used snags rather than live trees for nesting, and several species used broken-topped snags more than expected based on their availability. All but one species (Mountain Chickadee) used nest trees that had significantly larger diameters than randomly selected trees in salvage-logged areas. The selective removal of economically valuable larger-diameter trees clearly reduced the density and average size of snags in salvage-logged areas and, therefore, reduced the amount of suitable nesting habitat. Nevertheless, the decline in density of snags that might be used as nest sites by those bird species that were most negatively affected by logging still far exceeded the 6–8 snags per ha recommended as a minimum number needed to maintain maximum population densities.

The Hutto and Gallo (2006) study cited above casts doubt upon the validity of the habitat-proxy assumption employed by the Forest Service as its primary means of complying with Forest Plan requirements to maintain viable wildlife populations. It highlights the need to appreciate fire-killed snags "as food resources as well as nest-site resources and that, for timber-drilling woodpecker species in particular, the number of snags needed to meet food resource needs appears to be much greater than the number needed to meet nesting requirements" (Hutto and Gallo 2006:828).

It is not valid to assume that salvage units retaining at least three snags per acre larger 21" dbh will support viability of black-backed woodpecker. Virtually every study of salvage logging effects on cavity-nesting birds shows that these species not only are more abundant in burned conifer forest than in any other vegetation type, but also are relatively restricted to such conditions, and that salvage logging can render their habitat unsuitable (Cahall 2007, Haggard and Gaines 2001, Hutto and Gallo 2006, Hutto 1995, Koivula and Schmiegelow 2007, Kotliar et al. 2002, Saab et al. 2007, Saab et al. 2004, Saab and Dudley 1998).

Post-fire logging and its clearly demonstrated adverse effects on habitat suitability for woodpeckers poses a unique challenge to the Forest Service's ability to meet Forest Plan wildlife viability requirements given its assumption that, "The composite snag needs of woodpeckers as a group … represent all wildlife species which use cavities for nesting or denning" (LRMP FEIS at 3-17). "Fewer breeding primary cavity nesters in salvage logged areas create fewer nest cavities, and this may force secondary cavity-nesting birds to reuse a small number of older cavities, which could also affect their nest success, in salvage logged forests" (Hutto and Gallo 2006:829).

In order for its habitat-proxy assumption to be valid, the Forest Service must show through site-specific analysis that:

1. Its unit-scale snag retention prescription provides for the nesting and foraging requirements of viable woodpecker populations.

2. Its unit-scale snag retention prescription provides for the nesting and denning requirements of viable cavity-dependent wildlife populations other than woodpeckers.

At a landscape sale, wildland fires create patches of highly attractive habitat for a distinct array of rare avian wildlife species including cavity nesters (Hutto 2006). Increased abundance of certain insects in burned stands attracts insectivorous birds. One consequence of changes in food composition and breeding habitat is that burned forests support different bird communities, with many species dependent on stand-replacement fires (McIver and Starr 2000). Indeed, the Shaketable fire created optimal habitat for black-backed woodpecker and other insectivorous birds for which the Malheur Forest Plan mandates conservation of habitat for a minimum threshold of population viability.

Post-fire logging changes bird species composition in burned forests, reflecting effects of large woody debris removal on foraging and nesting habitat of cavity-nesting species (Smucker et al. 2005). For example, black-backed woodpecker consistently shows negative responses to post-fire logging, with significantly more nests found in unlogged sites (Hutto 1995, Saab and Dudley 1998).

It is arbitrary and capricious of the Forest Service to (1) note that the black-backed woodpecker is vulnerable to extirpation in Oregon and that it needs "immediate conservation actions" to avoid listing as a threatened or endangered species, (2) recognize that retaining three snags per acres will provide just one-nineteenth of what is needed to support 30% of individual black-backed woodpeckers in the population, (3) cite literature proving that the minimum snag retention standards in the Forest Plan are unsuitable for post-fire landscapes, (4) authorize logging of all but three snags per acre on at least 1,450 acres of the available habitat that is considered "critical" for the species, and (5) assert that the Thorn Project will meet the population potential and viability requirements of the Malheur Forest Plan.

Sensitive species

The Forest Service defines "Sensitive Species" as:

> those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and habitat capability that would reduce a species' existing distribution (FSM 2670.5). Management of sensitive species "must not result in a loss of species viability or create significant trends toward federal listing" (FSM 2670.32). The Regional Forester is responsible for identifying sensitive species and shall coordinate with federal and state agencies and other sources, as appropriate, in order to focus conservation management strategies and to avert the need for Federal or State listing as a result of National Forest management activities.
>
> - *Interagency Special Status / Sensitive Species Program (ISSSSP) website* at http://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/ accessed on April 23, 2008.

The Regional Forester's Special Status Species List includes **Lewis' woodpecker** (*Melanerpes lewis*) and **white-headed woodpecker** (*Picoides albolarvatus*) as "Sensitive Species" (see FSM 2670-1950-enc1-fs-tes-list-2008-01-24.xls from http://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/ accessed on April 23, 2008).

ODFW also lists Lewis' and white-headed woodpeckers as "critical" species for which listing as "Threatened" or "Endangered" under the Endangered Species Act would be appropriate if immediate conservation actions are not taken (FEIS at 234). And ONHP ranks both species as "S2S3" and has determined both to be "imperiled" and vulnerable to extirpation in Oregon (FEIS at 234). The Forest Service found in its Interior Columbia Basin Ecosystem Management Project (ICBEMP) analysis that Lewis' woodpecker showed the strongest declines in habitat of the 97 species analyzed, with a decline of 83 percent from historic conditions, while the decline of white-headed woodpecker habitat exceeded 60 percent.

The record again establishes that logging all but three snags per acre would leave just one-eighth of the snags that would be needed to provide "adequate habitat" at a 50% tolerance level, which offers a "moderate" assurance of population viability (FEIS at 233 – "Current science suggests that retention of 24 snags per acre greater than 10 inches with six of those snags being 21 inches or greater provides adequate habitat.").

The Forest Service acknowledges that "Forest Plan standards at 2.39 snags per acre, 21 inches dbh or greater, will provide little nesting habitat for woodpeckers in post-fire habitats." FEIS at 237. Table 125 shows that under alternative 3 there will be a 26% reduction in black-backed woodpecker habitat, a 28% reduction of white-headed woodpecker habitat, and a 30% reduction of Lewis' woodpecker habitat.

> The most recent large-scale assessment conducted under ICBEMP indicates strong declines in habitat for two of the post-fire associated species, white-headed woodpecker and Lewis' woodpecker across the Columbia Basin and the Blue Mountains (Hutto 2006, Wisdom et al. 2000). There are no reliable data on actual population trends for these species, but a downward trend for populations is assumed based on the magnitude of habitat loss. All action alternatives will be expected to further reduce habitat suitability and capability for these two woodpeckers.

FEIS at 246 (emphasis added). The Thorn Project will not "provide a diversity of habitat sufficient to maintain viable populations" of white-headed woodpecker and Lewis' woodpecker, particularly given the acknowledgement in the record that both species will be listed and possibly extirpated if conservation actions are not taken.

5. The ROD violates Forest Plan standards for coarse wood retention.

The FEIS states that standards for down wood are not currently being met, but as snags fall, the standard will eventually be met (FEIS at 203, 207-208). If the authorized logging activities leave behind only three large snags per acre, and if compliance with down wood standards is dependant on those snags falling down, is there any point in time where both snag standards and down wood standards will be met? The FEIS admits that "snags will fall below Forest Plan standards within the salvage units more quickly than under the No Action Alternative" (id. at 248). The Thorn Project will not meet Forest Plan standards for snags and downed wood.

6. Cumulative effects remain undisclosed in violation of NEPA.

The FEIS states,

> A full listing of potential cumulative actions in provided in FEIS Appendix N. Each cumulative effects analysis, for each environmental component or resource area, is guided by and consistent with the Council on Environmental Quality letter, 'Guidance on the Consideration of Past Actions in Cumulative Effects Analysis' of June 24, 2005 (FEIS at 76).

The Forest Service's interpretation of NEPA as expressed in this guidance memorandum violates NEPA and has already been rejected several times by the 9th Circuit. Oregon Natural Resources Council v. Bureau of Land Management, 470 F.3d 818 (9th Cir. 2006); KS Wild v. BLM, 387 F.3d. at 997); Brong, 492 F.3d at 1133; Lands Council, 395 F.3d at 1028.

a. Firefighting Impacts on Numerous Resources.

Wildland firefighting has numerous significant adverse effects on the environment including:

- Direct soil damage resulting from emergency road, fire line, and helispot construction.
- Hydrological impacts caused by fire lines, which route overland water flow and disrupt soil infiltration.
- Chemical pollution of water and soil from aerial flame retardant drops.
- Destruction of snags and other ecologically significant large woody debris.
- Spread of highly flammable exotic plants.

Backer and colleagues (2004 – attached) offer detailed analysis of fire suppression impacts that cumulatively harm the environment when taken together with past management, the Shaketable fire event, and the proposed action. NEPA demands full disclosure of cumulative effects of fire

suppression operations in addition to proposed post-fire logging in the project area. The public and the decision maker must be able to discern from this analysis whether these factors combined might result in significant cumulative adverse effects.

Moreover, the Shaketable fire caused elevated watershed sensitivity to human disturbances, and post-fire logging compounds effects of lost vegetative cover, soil erosion, mass wasting, increased overland water flow, increased sedimentation in creeks, and reduced cover for wildlife (Beschta et al. 2004, Beschta et al. 1995, Karr 2005, Karr 2004, Reeves 2006 – attached). Such effects already have occurred on lands throughout the fire area, making the proposed action a potentially significant cumulative effect on the environment.

b. Soil.

"Detrimental soil disturbance from salvage actions could increase soil compaction, decrease site productivity, accelerate erosion, and increase sediment delivery to streams, especially on soils burned with high and moderate severity" (FEIS at 30). There is no discussion of the direct, indirect or cumulative impacts of constructing landings, even though alternative 3 involves 21 helicopter landings and 32 tractor landings (FEIS at 45-46). The FIES says that portions of the project area were "machine-terraced" sometime prior to 1983, but there is no discussion of the environmental impact of this drastic manipulation of the soils (id. at 169). The FIES states, "Soils conditions within the TFSR project area are impaired from the recent Shake Table fire" (id.). Soil exposure that resulted from the fire is "currently a significant source of sedimentation and runoff into the project area streams" (id. at 191). However, the Forest Service's estimation of the current percent of soil disturbance does not account for any disturbance to soils caused by the fire itself (id. at 169 – "No current detrimental disturbance of soils was attributed to the fire."). This is despite the fact that soil disturbance includes erosion and displacement (id. at 163). The failure to consider the impacts to soils from the fire makes the determination that the Thorn Project will not exceed the 20% detrimental soils limit arbitrary and capricious, particularly in units where ground based logging is proposed. Table 104 shows that unit 82 will exceed 20% soils disturbance (id. at 190). The cumulative impacts analysis for soils has no information about the impacts of past projects. It is really much more of a direct impacts analysis.

c. Vegetation.

The FEIS states that fire suppression and grazing have "no effect on vegetation" and were therefore not considered (FEIS at 86). Also, actions on private lands were not considered (id.).

> Salvage harvest and danger tree removal are not expected to have cumulative effects on forest regeneration or structural stage development. No direct or indirect negative effects were identified for the forest vegetation section so cumulative effects cannot occur as a result of those actions (id.).

First, it is illegal to exclude private lands from the cumulative impacts analysis of a post-fire management project on federal land (see Brong, 492 F.3d 1120 (9th Cir. 2007)). Second, the record establishes that dead wood is an "important component in the structure and functioning of ecosystems" (FEIS at 137), and that, "A dead tree, from the time it dies until it is fully

decomposed, contributes to many ecological processes as a standing snag and fallen woody material lying on and incorporated into the soil" (id.). The descriptions of structural classes on FEIS page 94 acknowledge the importance of horizontal diversity and decaying fallen trees. The decision to not discuss the cumulative impacts of the Thorn Project on vegetation is based on the false assumption that removing all but three large dead trees per acre will have no impact on vegetation. Third, cumulative impacts can occur even if the agency believes that the impact will be positive rather than negative, and must be analyzed in either case.

d. Big game.

The cumulative impacts analysis for big game merely states that the Forest Service "considered" the impacts of past actions without actually disclosing or explaining what those past impacts were (FEIS at 221). There is no discussion or disclosure of the cumulative impacts of past actions. This is problematic because the Thorn Project area contains hundreds of acres of MA-4A (Big Game Winter Range) where the Malheur Forest Plan applies exacting standards for management of elk and mule deer habitat (see LRMP at IV-69 to IV-73).

NEPA requires not just that the Forest Service assure the public that it considered the impacts without actually disclosing those impacts in the EIS. In order to be "useful," a cumulative impacts analysis must not only inform the agency decision-maker, it must also inform the public. 40 C.F.R. §1500.1 ("NEPA procedures must insure that environmental information is available to public officials and citizens…")(emphasis added); 40 C.F.R. § 1500.2(b)("Federal agencies shall to the fullest extent possible… Implement procedures to make the NEPA process more useful to decision-makers and the public") (emphasis added); 40 C.F.R. § 1500.2(d) ("Federal agencies shall to the fullest extent possible… Encourage and facilitate public involvement in decisions which affect the quality of the human environment.") NEPA's disclosure goals are two-fold: (1) to insure that the agency has carefully and fully contemplated the environmental effects of its action, and (2) "to insure that the public has sufficient information to challenge the agency." Robertson, 490 U.S. at 349 (emphasis added); Idaho Sporting Congress, 137 F.3d at 1151. To suggest that a NEPA analysis need only be useful to the agency decision-maker is to forget that NEPA's "sweeping commitment" is to "prevent or eliminate damage to the environment and biosphere by focusing government and public attention on the environmental effects of proposed agency action." Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 371 (1989) (citing 42 U.S.C. § 4321)(emphasis added).

The Thorn EIS does not disclose cumulative impacts to the public and therefore violates NEPA, even if the agency assures that it considered information not in the EIS itself. There is no discussion of the actual environmental impact of past actions. The reference to Appendix N is a list of acres cut, but there is no information about impacts of the cutting on big game wildlife. This violates NEPA.

7. Elevated fuel loads left after logging violate NFMA.

The Thorn Project ROD makes no effort to harmonize findings of the FEIS regarding elevated fire hazard that will result from authorized logging activities with Forest Plan direction to "Manage residue profiles at a level that will minimize the potential of high intensity catastrophic

wildfires and provide for other resources objectives in individual management areas" (LRMP at IV-45 – Forest Wide Standard 181).

Post-fire logging creates residual fuel profiles that enhance future fire severity.

The Forest Service admits that slash left after authorized logging activities will significantly increase the hazard of catastrophic fire for a decade or more. The FEIS states on page 150 regarding consequences of implementing Alternative 3,

> 3 Years Post-Fire (2009) - The combination of small woody fuels and CWD is beginning to accumulate to the point beyond desired levels in a majority of the TFSR project area. Fire hazard is transitioning from the low/moderate range to the moderate/high range in approximately 88% of the project area. A fire within the project area at this time would likely be of sufficient severity to kill any conifer regeneration that has become established since the wildfire.
>
> 10 Years Post-Fire – All salvage and planting activities have been completed. The combination of small woody fuels and CWD has accumulated to the point beyond desired levels in some of the TFSR project area. Fire hazard is in the high to extreme range in approximately 41% of the warm-dry and cool-moist PAGs within the project area as demonstrated by slash fuel models 12 and 13. These fuel models exhibit rapidly spreading fires with high intensities. Fires occurring in these fuel models are very difficult to control. The remaining 59% is dominated or co-dominated by fuel model 10 which is characterized by less small woody fuels (compared to FM 12 and 13) with heavy down material resulting in a slower rate of spread but a higher burn severity than FM 12. The differences in fuel models between no action and alternative 3 are due to the removal of coarse wood during the salvage operations. A fire within the project area at this time would likely be of sufficient severity to kill any conifer regeneration that has become established since the wildfire.

This result is plainly inconsistent with the direction of Forest Wide Standard 181 to "minimize" fire hazard and provide for other resource objectives. According to the Forest Service, other resource objectives would be jeopardized by another fire in the project area for at least a decade.

8. Significant effects to landscape fire regime and public health and safety remain undisclosed in violation of NEPA.

NEPA requires federal agencies to assess the direct, indirect and cumulative effects of proposed actions in addition to past, present and reasonably foreseeable future actions (40 C.F.R. 1502.16, 1508.7). The EIS must disclose at a unit scale how much slash would remain on the ground after logging is completed, and what actual fire hazard would result on the landscape. The Thorn FEIS only offers an estimate of residual slash loading at a project scale and suggests that fine woody fuel loads would exceed "optimal" levels under any alternative (FEIS at 92-97). The "optimum" level is based solely on unreviewed grey literature attributed to J.K. Brown (2003) that draws substantially from modeling of the Bitterroot and Lolo National Forests in western Montana. The Thorn FEIS offers no reason why those modeling assumptions should apply to the project area.

Accurate spatial description of wildland fuels is fundamental to assessing fire hazard and risk on a landscape (Chuvieco and Congalton 1989). Therefore, field sampling data should support any

characterization of fuel loading and associated fire hazard in the project area. Planar intercept transects developed by Brown (1971 and 1974) quantify surface wood fuel, litter and duff, and other methods enable description of sub-canopy fuel loading (see Miller et al. 2003). The fuel model description tools created by Anderson (1982) and Scott and Burgan (2005) both cite planar intercept as a defensible verification method. Indeed, Weatherspoon and Skinner (1996: 1488) make clear that field data collection is a fundamental professional standard for project-scale fuels management planning:

> Mapping should utilize the best sampling strategies combining remote sensing imagery (perhaps at several scales) and ground truthing. The reliability of existing vegetation maps should be verified before they are incorporated into the database. Fire-relevant attributes of vegetation (including understory composition and structure, and vertical and horizontal continuity) need to be characterized adequately. Similarly, surface fuels should be described, utilizing field-verified vegetation/fuels correlations to the extent feasible.

The Thorn FEIS does not demonstrate that hazardous fuel load prediction accuracy can be improved through combining gradient modeling (e.g., plant association groups) with maps derived from remotely sensed data, as appears to be presented in Appendix B. Keane et al. (2000) report accuracies between 30 and 40 percent for such an effort in the Gila National Forest, which is low even for generic vegetation mapping projects. Most fuel mapping projects do not report any error analysis, or the reported error analyses are deficient due to a lack of field verification (Keane et al. 2001). The present EIS duplicates this failure to disclose scientific uncertainty. Finer-scale modeling combined with repeatable measurements of sub-canopy forest structure and composition is required, and this information must be included in the EIS.

The residual fuel conditions likely to prevail after logging is completed in the Thorn project would render direct attack of any wildfire impossible under common summer afternoon weather conditions, and indirect suppression measures would become necessary. This, in turn, would increase the size and cost of the next wildfire. Moreover, the project itself would require the Forest Service to pursue total suppression of all ignitions to minimize the area burned and protect its investment in new tree plantations (see analysis below).

Establishment of even-aged tree plantations compounds hazardous fuel conditions and endangers firefighter safety.

Even-aged young tree plantations that will be created after logging in the Thorn project contain unnaturally combustible fuel complexes, which compound the potential severity and difficulty of control of the next wildfire beyond what slash loading alone would produce. Plantations are far more susceptible to severe fire behavior and effects than unmanaged burned forests (Thompson et al. 2007, DellaSala et al. 1995), especially where logging slash remains untreated. The elevated susceptibility of plantations to severe fire is due to:

- Structural characteristics that promote high heat energy output by fire (Sapsis and Brandow 1997).

- Warm, windy and dry microclimates compared to what would exist in an unlogged forest that possessed more structural diversity and ground shading (van Wagtendonk 1996).

- Accumulations of fine logging debris on the ground surface (Weatherspoon and Skinner 1995).

Furthermore, most plantations occur near roads, which spread invasive and exotic plants with poor resistance to fire (DellaSala and Frost 2001) and which elevate risks of human-caused ignitions (USDA 2000).

Research in forest science and landscape ecology notes that the number and distribution of even-aged plantations established after logging has altered fire behavior and effects at both stand and landscape scales (Countryman 1955, Hann et al. 1997, Huff et al. 1995, Lindenmeyer and Franklin 2002). The existence of highly combustible plantations on a forest landscape creates the potential for "a self-reinforcing cycle of catastrophic fire" that post-fire logging and tree planting in the Shaketable fire area would perpetuate (Perry 1995).

Two key considerations with regard to fire suppression are the fuel bed depth and the size and moisture of dead woody fuels. Those factors primarily influence flame length, rate of fire spread and resistance to control (Albini 1977, Andrews 1986, Burgen and Rothermel 1984, Rothermel 1991). Thus, vertical fuel loading is more important to the resistance to control of a wildfire than is horizontal fuel loading. Deeper beds of uncompressed, fine and dry fuels support significantly longer flame lengths and more erratic fire behavior than shallower beds of relatively large and moist fuels, as the Forest Service concedes would exist in a no-action coarse wood deadfall scenario (page 111). In other words, logged plantations with accumulated slash would be far more resistant to control than an unlogged burned forest occupied by live brush, forbs and grass, even with large downed logs on the ground.

In addition, creating new tree plantations after logging will force the agency to suppress wildland ignitions to minimize acres burned and protect its capital investment in plantation establishment. A full suppression response guarantees that firefighters will be sent to defend those plantations, even though post-fire logging and plantation establishment would significantly increase the likelihood of dangerous and unmanageable wildfires.

Large tree removal will increase fire hazard in the project area.

The objective of post-fire salvage logging is to remove large-diameter, commercially valuable trees that were killed but not consumed by fire. Large-diameter snags and downed logs possess several features that mitigate their potential contributions to fire hazard, and depending on weather conditions and time of year, their presence on the landscape can reduce the danger of intense, rapidly spreading fires. In general, fires burning through large-diameter downed logs tend to burn slowly, and depending on their spatial arrangement and moisture levels, large downed logs can dampen a fire's intensity and rate of spread (Rothermel 1991). This is so because large-diameter fuels have low surface area-to-volume ratios, which inhibit the amount of oxygen feeding combustion. Moreover, large-diameter fuels retain moisture later into the dry

season than do smaller fuels, further reducing their flammability precisely when wildfire potential is greatest (Amaranthus et al. 1989). Extremely dry snags and logs that combust into flames can emit burning embers that, if lofted by wind, may cause spot fires, but these embers can only ignite fine fuels and not other large snags or logs.

Fuel moisture levels, which vary according to season and prevailing weather, can further diminish flammability of large-diameter snags and logs. Large-diameter downed logs are capable of storing large amounts of water, especially if the logs lay directly on the ground surface. Indeed, the centers of large logs can actually be cool and moist even when the outer shell of a log is on fire (Amaranthus et al. 1989). Consequently, large logs can provide "fire shelters" that enable a number of wildlife species, as well as fungi and other flora and fauna essential to post-fire natural recovery, to survive fires (Bull et al. 1997, Harrod et al. 1998).

Large standing trees and downed logs also obstruct solar radiation and lateral wind movement. These microclimate influences moderate ground temperatures and surface wind speeds, which translate into greater live and dead fuel moisture levels compared to areas cleared of standing or downed trees (Sexton 1994). Large downed logs also reduce the speed and variability of surface winds, which inhibits extreme or erratic fire behavior (McIver and Starr 2000).

Live vegetation has greater moisture content and is thus less prone to ignite and carry fire than dead woody fuel (Reinhardt and Ryan 1998). The relative moisture in a fire-regenerated, early-successional brush field shaded by standing snags and buffered by downed logs would present a far less extreme fire environment than the slash-loaded, even-age plantations which the Forest Service seeks to create in the instant proposal (Countryman 1955, Odion et al. 2004, Weatherspoon and Skinner 1995).

It is true that when snags fall to the ground their relative flammability increases, but the time required for snags to fall is directly proportional to their size. It may take as long as 20 years for burned ponderosa pine trees between six and nine inches in diameter to fall, and Forest Service research suggests that larger ponderosa pines can remain standing up to 80 years after burning (Harrod et al. 1998). The Thorn draft EIS fails to state the reason behind its modeling assumption that snag fall will peak within 30 years (pages 95-98). Nor does it quantify actual snag fall, which, as described above, is a crucial step in a defensible fire hazard assessment.

Even when dead logs fall to the ground, they logs do not burn well, unless they are very dry and placed in close proximity to each other (*i.e.*, one log diameter apart). Decayed logs with low moisture content can smolder for long periods, but this does not cause intense fire behavior such as large flame lengths, as the Thorn draft EIS suggests (page 89). Instead, log smolder may cause high severity burn effects in the soil, but such effects are spatially localized to the soil underlying and adjacent to the burning log (Sackett and Haase 1996).

9. The ROD violates PACFISH and INFISH standards.

Salvage logging and associated activities will cause cumulative impacts that violate PACFISH and 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. Salvage logging will remove large wood that would otherwise contribute to complex stream habitat and therefore violate PACFISH and INFISH prohibitions on actions that would retard attainment of riparian management objectives, and may be inconsistent with the biological opinions governing PACFISH implementation with respect to Mid-Columbia steelhead and Chinook.

The FEIS admits that salvage logging will increase sediment delivery by 15% but the analysis uses the WEPP model to analyze soil erosion, and this model has limitations that are not fully disclosed in the FEIS, such as: WEPP can only consider one "slope" at a time, and one "activity" at a time and does not adequately integrate multiple slopes and activities. Importantly, the FEIS aquatics cumulative impacts analysis (p 319-322) fails to disclose the total cumulative effects of past management activities, plus the fire, salvage logging, fuel reduction, site prep, planting, road reopening, road maintenance, landings, log hauling, etc.

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

In its analysis of sediment delivery and water quality, the FEIS failed to consider the fact that the fire compromised the RHCA buffers.

In its analysis of sediment delivery and water quality, the FEIS failed to consider the fact that the removal of large wood from upslope areas will reduce the landscape capacity for sediment storage. Large logs on the forest floor act as sediment traps, but it they are removed that function is eliminated.

The FEIS analysis of large wood and sediment failed to consider the impacts of removing hundreds of hazard trees from 10 miles of haul roads in RHCAs. Since the ROD allows removal of the portion of large logs that are felled across roads or outside RHCA boundaries. Fellers are motivated to fall hazard RHCA trees toward the "money spots" (roads and upslope away from RHCAs) and away from streams where they would naturally fall and do the most good. By failing to address the incentive to log RHCAs inconsistent with the RMOs the FEIS under-estimated the impacts.

Road reopening, maintenance, and log hauling will also unavoidably retard attainment of RMOs in violation of PACFISH/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 in uninventoried roadless areas will degrade watershed values by disturbing soil increasing erosion, disrupting nutrient cycles, and depriving streams of potential large structures. The FEIS failed to

adequately disclose the effects of salvage logging and how it will degrade unroaded areas and aquatic systems.

For the reasons stated above, the undersigned Appellants respectfully request that the relief sought be granted and the Thorn ROD be withdrawn.

Sincerely,

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