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Comments: [transcribed from hand written letter that was mailed via priority mail received April 18, 2022; some errors transcription may occur scanned copy of letter attached, field notes were not transcribed but reviewed when referenced in comment letter]

Additional Ellis PEIS comments from Blue Mountains Biodiversity Project

Re: p. 11, Ember Reduction and Low-Intensity Zones:

The extent of these "fuel" reduction zones for both the low intensity and the ember reduction zones appear to the just a rationale for more commercial logging, as the DEIS fails to disclose scientific controversy over the width of such fuel breaks and their efficacy, neglection to use the full range of the best available science. The Forest Service is depending on just one study (Moghaddas and Craggs 2007) to make their case for the innermost zone (the "low intensity zone") extending a full quarter mile out from human infrastructure and private inholdings and for the "Ember Reduction zone" to extend out one and one-half miles from human infrastructure and private inholdings - an extraordinarily long distance width for a fuel break compared to fuel breaks planned for past timber sales across the region, including on the Umatilla National Forest, such as the Ten Cent sale near the town of Granite. The Forest Service has failed to consider the significant ecological and social impacts of such extensive "fuel" breaks, which based on the high road density and multiple inholdings and human structures in the Ellis project area would cumulatively entail logging most of the forest on a landscape scale. This would eliminate considerable wildlife habitat, including deer and elk security and hiding cover near roads; make the whole area heavily and obviously managed to the detriment of high recreational use of the are and treaty rights and cultural uses of the forest of the Confederated Tribes of the Umatilla and the Warm Springs tribes; dry out the moist cool and cold forest areas involved and reduce mature (and potentially large) more fire-resistant trees, reduce shading and needed snag and log structure, and leave more flammable slash in its wake. Further those fuel breaks alone would be wide enough and extensive enough to eliminate significant carbon storage and sequestration needed to[MBFUO1] reduce or slow extreme climate change, as well as dry out the forest more, making it more vulnerable to fires, not less. Such extensive, wide, and evident "fuel" breaks would also destroy recreational aesthetic values throughout the area, especially for pleasure driving, ATV riding, hunting, camping, mountain bike riding, wildlife observation, and nature photography, as well as horseback riding and many other forms of recreation that are accessed by the road system or occur next to infrastructure like campgrounds or on the roads themselves. From the roads and for up to a mile and a half in from them, the forest would be very unnatural looking - ugly in fact - which is not what recreationists come to see and experience. The whole "Ember Reduction" and "Low Intensity" zone planning seems like a devious means to commercially log virtually the whole forest despite already significant concern expressed by the public regarding the proposed scale and intensity of logging planned.

Further the Forest Service is completely ignoring and not disclosing much current credible science regarding wildfire and forests that stresses that the priority for "fuel" (biomass) reduction should be immediately adjacent to occupied homes - within 100 foot zones. Back country logging and extensive commercial logging, as planned, is not necessary or efficient for reducing intensity or providing safer egress along major access routs. The maps showing the affected areas of the [frac14] to [frac12] mile "fuel" buffers in the project area are buried in an appendix - Appendix A, maps A-5, A-6, & A-7 on pages 171-173, and clearly show that most or all of the high use recreation areas would be severely degraded for recreational uses across the entire north end along the major road 53, south along the major road 21, and even around the Potamus view point in the southeast corner of the sale. The forest area affected area appears to encompass about half of the entire project area with no

internal breaks from[MBFUO2] this heavy management across the entire north and the entire mid-west side, negatively affecting all of the best elk habitat, most or all of the cool moist forest so important for continued viability of management Indicator and focal species, including Pileated Woodpecker, many Primary Cavity Excavator woodpecker species, American Marten, Northers goshawk, Cooper's hawk, and Great Grey owl, as well as Threatened Canada lynx, Gray wolf, and sensitive Pacific fisher. Commercially logging half or almost half of the entire project area under the guise of fire risk reduction is completely unacceptable. There are many DEIS omissions in considering and disclosing the impacts of such widespread and seamless logging, including that this fuel break logging is targeting the moistest mixed conifer forest which is more likely to survive wildfire at a mosaic of burning or mixed severity due to the moisture retention. Other impacts of this huge block of logging ostensibly to reduce fire intensity (which is not proven in the science to accomplish that goal) include loss of mature and large trees more resistant to fire; opening up the stands to higher wind speeds and greater fire intensity by logging; significantly fragmenting wildlife habitat and eliminating functional wildlife migration and dispersal habitat, as well as most elk security habitat and thermal cover; and reducing the current levels of carbon storage and sequestration to very low levels in the most productive part of the forest in the project area.

We are enclosing science articles, studies, and science that refute the perceived "need" for such wide and extensive "fuel" breaks to reduce fire intensity for occupied residences and structures. The extent of these so-called "defensible space" zones makes the WUI only[MBFUO3] into "urban interface" with no "wildland" left across huge blocks encompassing about half the project area. This makes a travesty of the "wildland-urban Interface[MBFUO4] " concept legitimacy. This is especially ridiculous and unjustifiable since the Ellis project are does not encompass a single urban area and the Forest Service Handbook warns forest visitors (and inholding owners) that people using the National Forests do so at their own risk. The Forest Service also fails to disclose that the whole National Forest system was devised originally to protect forest reserves as public lands for multiple uses and values from rampant commercial logging already devouring most of the other forest.

Re: DEIS p. 11 Roadside "treatments" (commercial logging, etc.):

It's absurd to plan for roadside "fuel" breaks along 273 miles of roads in the Ellis area. This is clearly more about maximizing commercial logging that it is about buffering major egress/ingress routes. Most dispersed camping is only short distances off major roads. Most inholdings are short distances from major roads. There is no legitimate "need" to implement commercial logging fuel breaks, as most the tree density along roads is small diameter young trees up to about 9-10" dbh at the most. Most of major rd. 53 has already been logged, NCTed, and burned with "fuel" breaks - recently. The topography along the north part of rd. 21 is mostly steep slopes above and below the road with mostly small trees. It makes no sense to remove commercial size trees up to 21" dbh in these fuel breaks from a fire intensity reduction standpoint, as these are the more fire resistant trees that would develop even more resiliency to fire as they grow larger. These are also the shade-producing trees retaining ground level moisture. In 30 years of monitoring timber sales and reading EAs and EISs, I have never seen a proposal by the Forest Service for such extensive "fuel" breaks and at such high road mileage extent. We did stop a Categorical Exclusion-based excessive road fuel break plan for wildfire "salvage" hazard trees that extended way off main roads to encompass small roads and skid trails. It looks like Forest Service staff just did a mapping exercise[MBFUO5] [hellip]

(page 5 missing)

[hellip]cover, ground cover complexity with down wood, higher canopy closure, multilayered canopy, or contiguous forest cover, species needing this forest structure that would be lost include woodpeckers, including Plieated, Northern Three-toed, and Blackbacked; American marten; Canada Lynx; Northern Goshawk and Canada lynx; Pacific fisher; and a variety of small rodents that also serve as prey, many Neotropical migratory songbirds, and other birds requiring more tree density such as the Northern pygmy owl. These are all species that either exist in the area now or currently have suitable habitat in the Ellis sale area that would be lost to logging. When all these various types of logging and clearing management plans are combined, the effects to

native wildlife species, soil fertility, and carbon sequestration are drastic. The Ellis area would be unrecognizable to recreationists and people who have habitually visited the area and spent time there over many years, like me - at 30 years.

Additional Comments, continued:

Re: Alternative 5 description on DEIS p. 18:

It is very unlikely that many or most trees 150 years old or older would be retained, for various reasons:

First, large firs are a primary target for Forest Service, even though large firs, like Ponderosa pine and larch, are also more fire resistant, as well as being at a great deficit compared to historical conditions. The Van Pelt study admits that there is no thoroughly tested or fool-proof way to assess accurately the age of firs from visual characteristics. Since the Forest Service has no intention of coring all the large trees before logging them, subjective visual assessment, under the goal of logging large trees, will inevitably result in logging many old growth trees.

Based on visual characteristics the Forest Service is using to determine which large trees are as old as or older than 150 years, we have repeatedly measured first from 21-30" dbh and photographed their visual old growth characteristics,[hellip]

(Page 7 unreadable[MBFUO6])

Further, the Ellis DEIS language is carefully worded not to guarantee that the sale won't include logging large trees:

"The retention and recruitment of trees 150 years and older, regardless of size, would be emphasized." (DEIS p. 18, emphasis ours.) Not guaranteed, not enforced, but merely "emphasized", whatever that means. There would be no accountability for the Forest Service or timber industry logging many old growth trees, increasing the deficit in large and old structure significantly and incrementally with each timber sale or most timber sales that area allowed to log large trees. The large tree logging could also include Ponderosa pine and Western larch, as the Regional amendment is only a voluntary guideline, not an enforceable standard. Any timber sale, like Ellis, that involves logging large trees [ge] 21" dbh will undoubtedly be litigated - potentially by the multiple organizations. We have no hesitation about stopping the entire Ellis timber sale as we don't see any ecological need for it. The Forest Service needs to shift its mission from commercial logging to ecologically sound restoration, which is not represented by landscape scale, fast rotation, or high intensity logging or logging or large trees. "Vegetation Project" is code for a commercial timber sale, with no claim that this is primarily a restoration project - at least in the title.

The 21" dbh limit was set for logging due to statistical evidence that most Ponderosa pines are already at least 150 years old by 21" dbh. This is still true, and generally applies to most individuals of other tree species. I suspect that both Wester Larch + Englemann spruce are actually mostly statistically 150 years old at a slightly lover dbh girth, based on visual characteristics and tighter grain for Englemann spruce, which is why spruce are used for hardwood-like fine woodworking for violin making.

The Deschutes National Forest systematically measured and cored Grand firs to determine the average size of 150[MBFUO7] year old or older Grand first for the Ursus sale on the Bend-Fort Rock District and discovered that most Grand first there were 22" dbh were at least 150 years old - not much difference from the 21" dbh limit. Yet Region 6 and other National Forests on the East side of the Cscades have ignored this evidence. Based on our visual assessment of Douglas firs for old growth characteristics, most Douglas first achieve old growth status at 21" dbh. So by logging large firs [ge] 21" dbh, the Forest Service would be logging

many old growth trees - potentially of all tree species (as there is apparently no clear limit to large tree logging in the Ellis DEIS as to number of large trees logged.) Logging old growth trees and degrading old growth habitat structure this are contrary to existing Umatilla Forest Plan goals and standards, and would thereby violate the Forest Plan. This violation is not limited to the Eastside Screens, as there are other parts of the Forest Plan that emphasize retention and increase of both large trees and old forest as part of Forest Plan goals and objectives.

Further, large tree logging is ecologically and socially unsustainable, regardless of the age of the large trees removed. The majority of the public wants to see and experience large trees in the National Forest. Wildlife species depend on large tree structure, not just old tree structure. The following is just a limited sample of wildlife species that require large tree structure: For nesting and perching or foraging: Pileated woodpecker, Northern Flicker, Williamson's Sapsucker, White-headed woodpecker, Northern goshawk, Great Gray owl, Great Horned owl. (*Also Bald eagles, Osprey, & others) For foraging and/or denning in large down logs or at the base of large trees: Black bear, Pileated woodpecker, American marten. For pools in streams and debris jams to create pools - large logs: Bull trout, Mid-Columbia Steelhead trout, Cutthroat trout, Redband trout, American beaver. Large tree structure is still at a great deficit compared to historic abundance[MBFUO8] .

Further, retention and increase of large tree structure is essential for forests to function as major carbon sinks to reduce and slow extensive climate change effects, which threaten to exacerbate the sixth Mass Extinction caused by humans, potentially resulting in 10-50% of all species by the end of the century, which means key elements of the interconnected web of life on this planet being lost, such as pollinators who make crop growing possible. This means that the human population on Earth would be greatly reduced if not lost altogether, due also to other climate change effects, including droughts, famines, extreme heat waves, more severe storms & floods, sea level rise, increased fire intensity, increased epidemics, and greatly increased human conflicts over scarce resources such a livable land base, fresh water & food, and the strife caused by mass emigration and immigrations with millions of people fleeing war and un-survivable conditions from a climate change. Maintaining and increasing mature, large, and old growth forest cover is necessary worldwide to counter and reduce climate change, as well as bringing back ocean vitality and maintaining soil carbon sequestration. Yet the brief and cursory three paragraph "analysis" of Climate Change on DEIS p. 137 fails to address these issues related to losing forest carbon storage and sequestration from commercial logging and biomass reduction at a landscape scale. This is a grossly biased and insufficient climate change analysis that fails to prepare a Greenhouse gas and carbon storage and sequestration budget in the Ellis project that would show the effects to climate change from proposed management actions. The Climate change "analysis" only includes one scientific citation and fails to consider all the other current best available science that refutes the agency's plans as being the right thing to do regarding[MBFUO9] climate change. We will be sending examples of science studies and citations that refute the agency's large scale logging plans regarding effects to climate change as part of these comments.

Re: Alternative 5, DEIS "Mechanical Treatments" (i.e. logging) on pp 18-19:

The DEIS gives numerous blatantly false rationales for planned logging under alternative 5 of large (and inevitably, old) firs up to 30" dbh. Since large trees in general are at a known severe deficit on the landscape and first are no exception, it makes no sense for the Forest Service to claim that large firs > 21" dbh up to 30"dbh would be logged "to achieve forest health, density, and tree species composition objectives" (DEIS p. 18) Large tree structure is essential to retain for ecological processes, wildlife habitat needs, carbon storage and sequestration, fire resilience, and recreational values - all of which are applicable to large firs. Ecological process and wildlife viability should be considered fundamental to "forest health", as without functioning ecosystems and biodiversity, "forest health" lacks any rational meaning. Large trees in general, regardless of species, are more resistant to fire due to thicker bark and higher crowns. Since large trees are very scarce on the landscape compared to historic conditions, logging large trees will not significantly reduce forest density, which is mostly only small young trees <9-10" dbh. Instead, logging large trees simply removes large structure, already at a severe deficit, that is badly needed for wildlife structure, replenishing soil nutrients and carbon, fire resiliency,

carbon sequestration as live trees, and well into the future for up to 150-200 years or more, with continued carbon storage for up to decades as snags and logs. Further, the Forest Service should not continue its outdated mission to convert moisture-retaining mixed conifers forest to drier and virtually sterile Ponderosa pine and/or larch plantations for[MBFUO10] the timber industry. The whole north end of the Ellis sale is mostly moist, cool mixed conifer or cold lodgepole pine forest where firs naturally exist at higher elevations and often on ash soils, and in the midst of higher retention snowpack stream systems, seeps, springs, and wet meadows. If there are any "excess" firs in the these areas, (which is doubtful), they are only small young trees generally up to 9-10" dbh. There is much evidence of past high grade logging of large and old growth fir in the whole moist mixed conifer zone, as well as high graded Douglas fir in the drier mixed conifer Douglas fir/Ponderosa pine forest in the middle (from North to South) section of the sale. So there is no logical need to log large firs to achieve "species composition objectives" as the large first are generally older and mostly probably [ge] 150 years old and naturally, historically exist where they are, if any firs are "encroaching", these are young, small firs, generally only up to 9-10"dbh. And again, there are very few large (and old) firs left from past logging compared to historic abundance of large and old firs in the Ellis are, based on heavy high grading of large and old firs throughout most of the sale area, and as can be seen from residual big old growth firs - live, snags, and logs, there should be more mature trees protected from logging less than 21"dbh to allow for the development of more large trees - live, snags, and logs - over time, not logging reduction of large trees - including fir species.

This is a very strained and fallacious argument in the DEIS for logging large trees. For instance, large trees, not just old trees, need to be "left to maintain a large tree component on the landscape and provide valuable wildlife habitat, fire resistance, structural diversity, and large persistent snags" (DEIS p, 18) - and logs, as demonstrated in our comments above. Commercial[MBFUO11] logging of large trees (which also includes hazard tree snags and live trees in old forest multi-strata to move stand structure on "a trajectory" toward old Forest single stratum by logical definition does result in a net loss of old growth structure, as old growth habitat is defined under the Umatilla Forest Plan by the number of large live trees per acre plus requisite large snags and logs. Old growth habitat quality is judged by the amount of large live, snag, and log structure available per acre to wildlife. I know this because I did old growth inventory for the Heppner Ranger District in 1992. So even if the are (of OFSS) is still considered old growth after conversion from OFMS, there is still a net loss of large structure, threatening its future downgrading from old growth to non old growth as the more limited number of large live trees become snags and logs, potentially reducing the number of large live trees below the numeric threshold for definition as old growth. Logging already limited numbers of large live trees degrades old growth habitat quality degrades old growth habitat quality for wildlife - especially as large firs are generally old enough to not be representative of fir "encroachment" of historic OFSS, but are naturally and historically part of historic OFMS. Logging large trees is inherently a net loss of old structure, making large tree logging in OFMS (or in OFSS) a violation of the Umatilla Forest Plan.

Re: Effects to American Marten DEIS p. 89:

As marten are becoming increasingly rare, it is not surprising that there have been few sightings in the Ellis area. Marten are also very fast moving animals, which makes it harder to positively identify them. At a distance, they could be mistaken to be a squirrel or a smaller weasel. So confirmed marten sightings are relatively rare, but don't necessarily reflect the relative abundance of marten in an area. Further, when a species is low enough in numbers to be ranked as "vulnerable", all suitable habitat is important and should be fully[MBFUO12] protected from loss or degradation. In 30 years in the field on National Forests in eastern and central Oregon, covering thousands of acres of forest in planned timber sales, I have only had two positive sightings of marten - one on the Ochoco NF & one on the Deschutes NF. One of our volunteers definitely saw a marten in the Wallowa-Whitman NF and another volunteer saw a marten on the Malheur NF - both clear daylight sightings, yet none of these sightings could be confirmed, because we were unable to photograph the martens and didn't have an agency Biologist on hand to confirm the sightings. So there are far fewer confirmed sightings than there may be marten in any given area. Arguably, the Umatilla NF has much more suitable habitat for marten than the Ochoco, or the Deschutes, or the Malheur. This includes the Ellis project area's north end

where there is cool moist and cold forest with higher canopy closure and abundant logs and some large snags. The DEIS effect analysis for marten is outdated in its science assumptions, as there is new science that marten use habitat at much lover elevation than previously assumed. Thus the following DEIS assumption on p. 89, par. 2, may not be accurate: "It is not expected to be a prime area [the Ellis project area] for marten due to the project area largely being lower elevation than what marten prefer." Yet the north part of the sale unit is relatively high elevation and has suitable marten habitat, based on our field surveys in commercial sale units. The DEIS admits that: "the source habitat should be able to support approximately 7 individuals." (DEIS p. 89, par. 2) This means there be three reproductive pairs and either a juvenile or a dispersing male. The American Marten is a Management Indicator species, whose viability must be protected under NFMA as a signifier for the viability of many other wildlife species with similar habitat needs. Further, the marten is ranked as "vulnerable" in the state of Oregon - at risk of further decline and extirpation. Since the Forest Service is not doing any current studies to determine marten population status on the Umatilla NF and the Heppner or North Fork John Day Ranger Districts, the agency cannot assume continued[MBFUO13] viability of the species on the Forest or in the Ellis project area if currently suitable source habitat (and dispersal connectivity habitat) is lost or degraded to unsuitability by planned commercial logging and widespread biomass reduction through planned expansive fuel breaks and prescribed burning, or through loss of large snags through hazard tree removal and too much removal of mature forest that would otherwise become large trees. While commercial logging and planned "fuel" breaks are the most likely sources of definite habitat loss and severe degradation , the cumulative effects of this management plus prescribed burning and hazard tree removal in the cool moist and cold dry forest types would be overwhelming, likely resulting in extirpation of marten in the Ellis project area. Yet the DEIS admits that: "Analysis is focused on where commercial thinning and fuel breaks are planned" under the assumption that: "The other treatments in the project area are not expected to affect canopy cover as greatly and therefore would not reduce habitat suitability." (DEIS p, 89, 3rd par.) Marten do need sufficient canopy closure, which would be lost through tree removal in the commercial logging and fuel break areas, but that's not all they need for habitat suitability, as assumed apparently in the DEIS. Marten also require abundant down and elevated wood for foraging and large snags for denning, as well as contiguous blocks of forest cover, as they won't usually cross large openings. They need abundant down wood both for their prey's habitat and for sub-nivean winter foraging air pockets under the snow. The DEIS analysis makes the strange decision to assume all of the landscape scale expansive management in contiguous blocks across the project area, with logging and fuel break management bringing tree cover basal area to very low levels, as well as creating numerous openings would result in only "short-term" impacts to marten, which is simply not true, or that analysis would only address potential short-term impacts, not long-term impacts, to evade responsibility for disclosing potential loss of the species' viability in the project area or[MBFUO14] contributing to a trend to up-listing for a species already in danger of uplisting and extirpation: "Source habitat analysis for MIS described above speak to the short-term impacts of all treatments." (DEIS p. 89, par. 3, emphasis ours)

The description of effects to marten of the No Action alternative starts out refreshingly honest: "In the long term (75 years), the quality and distribution of marten habitat would likely change. In this timeframe, old forest and young forest stands in the moist and cold upland forest would continue to develop multiple canopy layers and greater canopy density. Mortality resulting from insects and disease in stressed stands would increase snag and downed wood densities, improving the condition of foraging habitat for the marten." (DEIS p.89, par. 4) However then the analysis reverts to the unproven implicit assumption that planned management of the Ellis sale would decrease the "risk" of high severity wildfire in these stands, compared to No Action, ignoring the fact that high severity wildfire might not happen in the Ellis are even under No Action over the "long-term" of over 5 years, and high severity wildfire could take place after management proposed is implemented under the Action alternatives in either the short or long-term, which is especially the case under current extreme climate change effects such as low humidity, droughts, extreme heat waves, and more intense winds. There is no guarantee that all this ecologically unnatural and detrimental management would reduce the "risk" of high severity fire any more than No Action, as high severity fire is more influenced by low humidity, high temperatures, and high winds than it is by biomass levels. In fact, biomass and forest cover reduction in cool moist and cold "dry" forest types could reduce these forest types' moisture retention and make them less resilient to wildfire under the action alternatives

- especially if there is (as planned except under Alts 1&3) extensive significant forest cover removal of mature and potentially large trees. Extensive heavy logging, as in "fuel" breaks extending 1 [frac12] miles out and forming[MBFUO15] contiguous blocks that are very open and with very flammable slash over up to 3-5 years or more would increase wind speeds through the stands, as well as potentially having many piles of more flammable dead trees left to burn. None of this is considered in the analysis for the relative effects to marten of No Action versus the action alternatives. Further, American marten evolved with stand replacement, high severity wildfire, but are not adapted to commercial logging and biomass "fuel" reduction removing needed habitat structure that is often greater after wildfires, such as down logs and snags. This is a very biased and inadequate effects analysis. Further, the conclusion for the "No Action" alternative analysis for marten is disingenuous, as it fails to disclose that commercial logging and "fuel" break management would also leave the stands such that "it would take upward of 80-100 years for mixed conifer stands to develop a composition and structure that would provide marten source habitat" after logging and burning, not just after wildfire. Not does the DEIS analysis disclose or analyze the reality that the logging and burning effects would definitely happen, while wildfire effects are not only natural, but also speculative as to timing, severity, and effects to contiguous blocks that would be left wide open under alternatives 2, 4, and 5.

The DEIS analysis admits that "Action Alternatives 2, 4, and 5 will cause significant negative effects to marten source habitat within the project area." (DEIS p. 89, par. 5) However, contrary to the DEIS focus on "short term" effects, effects to marten habitat would be very long term, likely taking more than 80 to 100 years to become suitable marten habitat. Further the DEIS analysis is highly disingenuous in claiming that "over time these actions [logging, etc.] may have some benefit to marten habitat through the further growth of large trees and overall forest health and resiliency." In reality, the negative effects of action alternatives 2, 4, and 5 would significantly[MBFUO16] outweigh any perceived long term beneficial effects, as suitable marten habitat would be lost for at least 80-100 years or more. Any "further growth of large trees" would be Nature's doing over time, not a benefit bequeathed by the Forest Service, who would likely then seek to log and remove the future large trees and needed canopy cover. The DEIS admits that Alternative 3 would have much less impact on marten source habitat: "Alternative 3 will have a slight impact on marten habitat, since mechanical treatments are not proposed in old forest structure or cold and moist upland forest types." (DEIS p. 89, par. 5) By contrast, "Alternative 2 and 5 would have a 56% (14,021 acres) reduction of source habitat in the project area." (DEIS p. 89, par. 3, emphasis ours) This is an enormous loss of marten source (reproductive) habitat in the project area that foreseeably would result in loss of marten viability in the project area, in violation of NFMA. Notably, even without logging large live trees [ge]21" dbh, as in Alternative 5, Alternative 2 would also reduce source habitat for marten by 56%, or 14,021 acres. This represents a major departure from Forest Service timber sales in the past, as it would wipe out over half of a Management Indicator species' source habitat with one landscape scale timber sale "project" all at once. Alternative 4 isn't much better, in that it would wipe out 43% of marten source habitat all at once - apparently over 13,630 acres, as it could not possibly be only 3,630 acres, as printed on DEIS p. 89, par. 6.

We are opposed to any logging and prescribed burning removal of marten source habitat, including the 7% (1,663 acres) reduction from Alternative 3. All marten source habitat should be dropped from commercial logging and prescribed burning, both of which would eliminate or greatly degrade suitability of marten[MBFUO17] habitat. All marten source habitat should be protected from preventable logging, prescribed burning, given that the species is already ranked as "Vulnerable" due to its low numbers, decline, and continuing threats to its viability. Further, the American marten is a Management Indicator Species meant to represent the habitat needs. The National Forest Management Act requires ensuring and protecting the viability of all native and desirable vertebrate species, with a special emphasis on Management Indicator species. If the Forest Service doesn't protect sufficient suitable habitat for marten viability, who will?

The cumulative effects analysis for marten is a bad joke. Cumulative effects analysis should not just be confined to the project area when the species' viability is determined in the Forest scale. Further, the cumulative effects analysis is only the three sentences, which do not qualify as the requisite "detailed' and "in-depth" analysis required by NEPA. (see DEIS p. 89, par. 6) "Ongoing, proposed, and past activities which have

cumulative effects include multiple thinning projects." Not only are these "multiple thinning projects" not described as to acreage, location, forest type, or intensity of effects to marten, but "thinning projects" are not the only management and public actions that affect marten. There is no analysis consideration of past clear cutting (not just "thinning"); highgrading (also not just commercial thinning); forest fragmentation and creation of big openings that marten typically won't use; or fur-trapping. This is not adequate cumulative effects analysis by any stretch of the imagination. Further the effects description is just stated as "It is expected for those projects to have the same effects as described for this project[MBFUO18] " (DEIS p. 89, par. 7) It can't be assumed that all the prior "multiple thinning projects" have the same effects as described for this project, as the effects of the Ellis project are on a much larger landscape scale than past commercial timber sales, and the effects of the Ellis sale would occur at a much larger scale all at once, under one decision. Further, there is the significant difference that marten used to be more abundant historically, and when earlier timber sales took place, whereas now the marten is ranked as Vulnerable and at risk of extirpation and extinction. So the effects of such a large timber sale to the existing marten population would be more acute, and more likely to cause an upward trend in federal listing and potential local extirpation compared to past timber sales longer ago. NEPA was designed to ensure good disclosure, detailed in-depth analysis, and public process to support informed public response. Even if some of the inadequate analysis is corrected for the Final EIS, the damage is done for public disclosure and detailed analysis intended to inform the public comments.

The Effects determinations are also based on DEIS analysis. The Effects determination for marten is based on the false assumption that loss of a full 10% of marten source habitat across the entire Forest from the Ellis sale alone (also unprecedented) would not threaten marten viability and would not lead to federal listing, with no substantiation, studies, or other evidence to support this conclusion. This includes no disclosure or analysis regarding ongoing logging and biomass "fuel" reduction on the Forest scale that will result in marten source habitat loss: "Although these effects are significant to source habitat in the project area it is expected that marten populations forest[MBFUO19] wide will remain viable and actions will not lead to federal listing." (DEIS p. 89, par. 7) Just saying so is not enough. The DEIS fails to disclose the population numbers of American marten on the Umatilla National Forest, their reproductive success rate, their viability threshold, and the percentage of the total marten population that is in the Ellis are. Without this information, population viability cannot be determined or ensured.

We are in the midst of the Sixth Mass Extinction of species and can no longer ignore potential extirpations and uplisting of species based on failure to do long-term population studies for agency wildlife species - especially for Management Indicator, federally listed, sensitive, and Vulnerable ranked species. The loss of species and the consequent disintegration of food webs and ecological balancing processes will clearly lead to the loss of human survival on the planet if the these trends are not reversed. Now scientists are estimating that 10-50% of all species may become extinct by the end of the century. Mass extinction of insect species alone are likely to cause the demise of humans or reduce them to extremely small numbers and back to primitive conditions. Declines in species numbers and reproductive success, local extirpations, and species extinctions are Cumulative effects that build on each other as elements of interconnected food webs and habitat structure are lost. These losses need to be reversed, not accelerated.

There is no guarantee that retention of unqualified and undescribed "some" source habitat remaining within the project area to a "lesser" extent will ensure marten viability in the project area or prevent contribution to an uplisting trend, even with wildlife connectivity and riparian areas being retained, which may[MBFUO20] merely allow "some" marten to disperse out of the area, with unknown survival rates.

Northern Three-toed woodpecker:

As with the DEIS effects analysis for American marten, the analysis for the Northern three-toed

woodpecker is quite cursory and inadequate. The determination of suitable habitat was apparently based on only one study - Marshall et al. 2003, and thus identifies only area of recently dead trees killed by mountain pine beetle, instead of considering other habitat elements identified by other studies as indicative of good Norther Three-toed habitat, such as high elevation, old growth Lodgepole pine stands, and the abundance and size of snags that this species needs. These details are usually included in other EIS effects analysis for Northern three-toed mushroom[MBFUO21] , taking into account multiple studies documenting habitat condition. For instance Northern three-toed woodpeckers are for strongly associated with Lodgepole pine on the Deschutes National Forest in the Eastern Cascades than in the Blue Mountains. The last positive sighting I had of a Northern Three-toed woodpecker was on the Umatilla in high elevation mixed conifer forest near a roadless area, but not in or near a large recent mountain pine beetle infestation leaving patches of dead trees. Based on both the current science and my field experience in the Blue Mountains - since 1991 on the Umatilla NF, the Norther Three-toed woodpecker has declined considerably and is not very rare. Thus all suitable habitat and not commercially logged or turned into "fuel" breaks designed to be ridiculously expansive, such as the [frac14] mile to 1 [frac12] miles planned for "fuel" breaks out from roads in the Ellis sale.

The DEIS admits that: "Action Alternatives 2, 4, and 5 will[MBFUO22] cause significant effects to Northern three-toed woodpecker source habitat within the project area." (DEIS . 90, 3rd full par.) However, when remaining source habitat is considered, the analysis language becomes vague, unquantified, and inaccurate: "It is expected that source habitat suitability will be reduced in some areas, but remaining habitat will benefit from overall landscape health and resiliency in the long term." (DEIS p. 90, 3rd full par.) This is a strange and inaccurate assessment, considering that the Northern Three-toed woodpecker is strongly dependent on abundant and recurring snags, primarily from successful Mountain pine beetle infestations. Again, the assumption that remaining habitat would benefit from logging in the long-term is false. "Overall landscape health and resiliency" in a natural forest involves habitat niche creation for fire-adapted native species from periodic and recurring wildfires and insect outbreaks. Logging to "salvage" snags and prevent or reduce wildfires and insect infestation tends to create relatively sterile homogenous plantations for the timber industry, not better habitat for the many species that depend on denser forest conditions, abundant snags, and undisturbed post-fire and insect infestation conditions. Clearly the history of the industrial logging in the U.S. has resulted in many wildlife species' declines, and likely increasing local extirpations and eventual species' extinctions. The species declining from logging likely include both American marten and Northern Three-toed woodpecker, as well as other species dependent on recurrent stand replacement fire and/or flourishing riparian areas, such as Lewis' woodpecker.

It's true that alternative 3 would reduce negative effects to Northern three-toed woodpecker habitat - outside of the[MBFUO23] "Lower intensity zone" fuel break that should be greatly reduced in width out from major roads only or abandoned altogether except for non-commercial thinning up to 9"dbh by hand, combined with prescribed burning only in dry forest types such as Ponderosa pine or Ponderosa pine/Douglas fir.

The effects analysis for Northern three-toed woodpecker as with the analysis for marten, fails to consider Forest-wide ongoing negative management impacts to Northern three-toed woodpecker, such as timber sales being logged now or decided but not yet logged, as well as foreseeable future impacts, such as planned timber sales. Likewise, the effects analysis is flawed for both species regarding the determination of viability continuing, since there are no disclosed studies that would establish the Northern three-toed woodpecker's current population trends, and viability threshold. Without this scientific data, there can be not reasonable assumption of continued species viability in the project area or across the Forest after the Ellis timber sale is logged and other timber sales are logged. The Forest Service cannot continue to base continued species viability determinations on assumed sufficient habitat availability with no scientific studies establishing whether the species is even present in the habitat considered suitable, and long-term population trends, reproductive success rates, and current population status - all of which are necessary to determine species viability threshold and continued or lost viability predicted outcomes. The Forest Service's inadequate process for determining species viability is inaccurate use of the science that is based on inadequate analysis, including an insufficient basis in science.

Effects to Pileated woodpecker[MBFUO24] :

The DEIS analysis for effects to Pileated woodpecker is virtually indistinguishable from the analysis for effects to Northern Three-toed woodpecker and even for American marten. It is now obvious that this is a rubber-stamping exercise to approve the effects of the action alternatives. The analysis of effects to Pileated woodpecker includes many of the same omissions of critical information needed to determine species viability, including current population status, long term population trends, reproductive success rates, and viability thresholds derived from this biological data.

The effects analysis for the No Action Alternative repeats the same pattern as the other MI species, first admitting that continued No Action would benefit Pileated woodpecker , then raising the public relations specter of wildfire, as if that couldn't achieve high severity effects if the area was logged and all the other planned management happened such as "fuel" breaks and prescribed burning. Indeed, taking no action would be very positive for Pileated woodpecker: "In the long term (>5 years)[hellip].multi-strata conditions in pileated woodpecker source habitat would continue to develop; stand densities would increase and locally high concentration of insects and disease would provide foraging and nesting habitat by creating snags. Young dry and moist upland forest stands in an unsuitable condition for pileated woodpecker foraging or nesting would also develop multi-strata characteristics in the long term, increasing the amount of source habitat in the analysis area and improving its distribution." We agree that the No Action alternative would result in these positive conditions for Pileated woodpeckers, although no timber sale effects would improve the quality of the habitat for Pileated woodpeckers by allowing for more development of large[MBFUO25] trees due to mature trees being able to grow bigger as described above. There is still a deficit in large and old trees in the Ellis area compared to historical conditions, due to past high grade logging, hazard tree logging, and clearcutting. Pileated woodpeckers are showing indications of population declines after about a century of selective logging of large trees, clear cutting, and other heavy logging. The DEIS analysis fails to cite and describe any science regarding Pileated woodpecker habitat needs and current population status in the Ellis project area and in the Umatilla National Forest. Such lack of disclosure and grossly inadequate analysis is startling by comparison with past EISes on the Umatilla National Forest, which used to include such information and detailed effects analysis.

The DEIS does acknowledge that:

"The home range of Pileated woodpecker can be between 1,000 to 2,000 acres, and with a maximum overlap of 30% between breeding pairs, the source habitat could support 25-56 approximate breeding pairs" (DEIS p. 90 5th full par.) There is no science citation given for these statements. NEPA requires disclosure of science used and science methodologies used for the analysis.

The assumption of potentially 25-56 breeding pairs Pileated woodpecker, while likely inflated for the Ellis project area, indicates that the Ellis area is a stronghold for Pileated woodpecker populations. We area appalled that the proposed Ellis timber sale management actions would log and otherwise degrade such a high proportion of the existing suitable Pileated habitat: 41,402 acres of the 43,578 acres of Pileated source habitat under Alternative 2, with the same acreage of management detrimental to Pileated woodpeckers under Alternative 5, with the additional crippling removal of large trees up to 30" dbh as part of the extensive commercial logging; 41,109 acres of detrimental management of the 43,578 acres of source habitat under[MBFUO26] Alternative 4, and even 35,285 acres of the detrimental management of the 43,578 acres of source habitat for Pileated woodpecker under Alternative 3. We want none of the Pileated woodpecker source habitat to be commercially logged or prescribed burned. We recognize that the 43,578 acres identified Pileated source habitat may not incorporate habitat structure needed, including adequate canopy closure and large tree structure, including snags and logs for foraging and nesting in snags. Often the Forest Service tends to inflate the

total acreage of suitable or source habitat for Management Indicator species, which has the effect of making it look like the species could survive substantial loss of habitat. We are shocked that such a high percentage of identified source habitat for Pileated woodpecker would be planned for logging and "fuel" reduction removal form suitability. About 95% of the Pileated source habitat would likely not longer be suitable for Pileated woodpeckers under alternatives 2 and 5, and not much less under alt. 4. Even alternative 3 would remove about 80% of the existing Pileated woodpecker source habitat in the Ellis area. This is like brutal warfare being waged against Management Indicator species. The very high percentage of source habitat removal seems unprecedented within the last 30 years that I have been monitoring timber sales on the Umatilla National Forest.

We disagree with the DEIS claim that many of the managed acres would not cause major impacts to snags and down wood important to Pileated woodpeckers. (see DEIS p. 91, par. 2) Prescribed burning and hazard tree removal usually results in disproportionate loss of soft, more decayed Grand fir logs and snags that Pileated woodpeckers prefer (as well as Black bears). The Forest Service should be fully aware of this and should have considered this in the effects analysis.

We also disagree with the DEIS assertion that:

"In[MBFUO27] the long-term the treatments will be highly beneficial for the health and resiliency of the landscape and will benefit Pileated woodpeckers." (DEIS p. 91, par. 2) This is in direct contradiction to the DEIS characterization of the benefits to the Pileated woodpecker form the No Action alternative discussed above. The so-called "treatments", a public relations euphemism for commercial logging and other unnatural management associated with timber sales and "fuel" reduction, do not result in suitable habitat for Pileated woodpeckers over the long-term. The extensive logging and biomass removal would result in significant loss of snags and logs - both existing and future structure due to widespread removal of mature tree cover. The forest stands would be converted to wide open conditions with very low basal area retention and canopy closure. By contrast, Pileated woodpeckers need at least 40% canopy closure for foraging and least 60% canopy closure for nesting, neither of which is likely to be retained over the vast majority of the commercially logged stands and the "fuel" break areas. It would take at least 80-100+ years for sufficient canopy closure and mature and large trees to grow back. As discussed above, "health and resiliency of the landscape" is public relations code for widely spaced trees, with forest lacking structural complexity, snag and log structure, and large trees, with low canopy closure. This transition effectively results in relatively biologically sterile tree plantations by any other name. Mostly even-aged, widely spaced trees with little biomass on the ground and reduced in tree species diversity with emphasis on eliminating firs and spruce - especially Grand fir, greatly degrades or eliminates suitable habitat for Pileated woodpecker, American marten, Northern three-toed woodpecker, and many other species requiring similar habitat to those MIs.

As with[MBFUO28] other wildlife species effects analysis, the cumulative effects analysis for Pileated woodpecker is ridiculously inadequate at only three sentences, with virtually the same wording for American marten, even though these two species have different habitat needs and are not even in the same genus or family. (see DEIS p. 89, last three sentences of the second to last par. And DEIS p. 91, 3rd par, for marten and Pileated woodpecker respectively.) The Northern Three-toed woodpecker analysis section skips cumulative effects analysis altogether. (see DEIS p. 90)

It is standard in EISes in eastern and central Oregon to extend the scope of cumulative effects analysis for species with larger ranges, such as American marten and Pileated woodpecker beyond the immediate project boundary. For instance, a pair of Pileated woodpeckers are not constrained to existing only with the artificially determined "project"/timber sale boundaries, and are therefore affected by cumulative effects beyond the project area boundary - especially those individuals' home ranges that extend beyond the project area boundaries. Likewise, marten need to be able to disperse and find mats to establish new territories which may partially but not totally overlap the project/timber sale area. Yet the DEIS confines cumulative effect evaluation to the project area:

"All the action alternatives cumulative effects are evaluated at the project area scale." (DEIS p. 91, par. 3)

Again, it is not adequate or in depth analysis to simply state: "Ongoing, proposed, and past activities which have cumulative effects include multiple thinning projects which have been approved. It is expected for these projects to have the same effects as described for this project." (DEIS p. 91, par. 3) This grossly inadequate cumulative effects analysis fails to identify the size or intensity of past timber sales (aka "thinning projects"), including clear cuts and high grade logging, which are more intensive than just "thinning", and their specific effects to Pileated woodpeckers. The DEIS analysis for[MBFUO29] cumulative effects to Pileated woodpecker also fails to consider any other possible cumulative effects to Pileated woodpeckers, including predation from larger raptors and owls when their habitat is opened up too much from logging. The analysis is inaccurate and misleading when it asserts that: "It is expected for these projects to have the same effects as described for this project," as clearcuts and high grade logging, which have certainly taken place across the Ellis project area, would have more severe negative effects to Pileated woodpeckers than just commercial thinning without logging large trees. Further, the analysis does not consider the greater intensity of Ellis planned logging where it overlaps the excessively extensive "fuel" breaks of the so-called "lower-intensity" and "Ember reduction" zones, falsely implying that the Ellis timber sale only involves commercial thinning. The cumulative effects analysis fails to specify how the cumulative effects would add up and how the combined totally of cumulative effects of past, ongoing, and foreseeable future management plus the Ellis project would affect the viability of the Pileated woodpecker in the Ellis are and across the Umatilla National Forest. There is no consideration of foreseeable future management affecting Pileated woodpeckers across the Umatilla National Forest and in the Ellis project area, such as timber sales that are already planned but have not yet been approved with a decision. Instead the analysis only considers "multiple thinning projects which have been approved." (DEIS p. 91, par. 3) This is also true for the virtually identical cumulative effects analysis for American marten. It is a clear violation of NEPA not to consider future foreseeable management impacts, and other foreseeable future impacts to species such as intensifying climate changes as part of cumulative effects analysis for a species, in these cases[MBFUO30] , for Management Indicator species. MIs need to be closely monitored to ensure their viability under NFMA. Failure to identify cumulative negative effects to Management Indicator species and to consider how the cumulative impacts affects the species could result in failure to protect the species sufficiently to ensure its continued viability and/or to prevent an upward listing trend under the Endangered Species Act.

The Effects determination for Pileated woodpecker has the same basic flaws as for the other species. The DEIS admits that: "All action alternatives will cause significant effects to Pileated woodpecker source habitat within the project area." However then the analysis characterizes the reduction of "some" source habitats as only being "short term", when actually the effects of commercial logging and biomass "fuel" reduction would be long-term - at least 80-100+ years. Then comes the misleading claim that "over time, these actions will likely benefit Pileated woodpecker habitat through the further growth of large trees and overall landscape health and resiliency," when actually the negative effects of proposed commercial logging, biomass/ "fuel" reduction, prescribed burning, and associated hazard tree removal would greatly outweigh any future theoretical positive effects of the action alternatives to Pileated woodpeckers. The "further growth of large trees" would be immediate under the No Action alternative, as opposed to taking decades under the action alternatives, in the form of smaller mature trees recovering from the negative effects of the planned logging through natural processes, not due to any beneficial effects from the action alternatives. Alternatives 5 and hazard tree logging would both remove existing large trees and alternatives 2, 3, and 4 would all remove mature trees that would otherwise become large trees, snags, and logs, all of which are important for Pileated woodpecker foraging, and large snags for nesting. The[MBFUO31] Forest Service needs to quit pretending that short-term (or in this case, actually long-term) negative effects can be compensated by theoretical long-term benefits. This trade-off especially doesn't work for species already in decline or ranked as Vulnerable, as with the Northern Three-toed woodpecker and the American marten, and also doesn't help species like the Pileated woodpecker, whose habitat is targeted for destruction or decimation with virtually every timber sale that include Pileated woodpecker source habitat. These species at risk from standard (and new completely unsustainable) timber sales may be

extirpated locally before any theoretical future benefits to the species could be realized, thus contributing to an upward trend in their federal listing and their eventual extinction. Further, the Forest Service definition of "landscape health and resiliency" future conditions does not represent conditions necessary for suitable and good quality Pileated woodpecker habitat. Suitable and good quality Pileated habitat requires 40-60% canopy closure, with a minimum of 60% for nesting; and abundant large and old live trees, snags, and logs - and especially Grand fir for foraging, which the Forest Service is targeting for elimination or significant reduction, as usual. Logging mature tree cover into wide-open "fuel breaks", opening canopy closure significantly and creating more openings through commercial thinning of mature trees, and reducing existing large trees (as in Alt. 5 and with hazard tree logging) and/or future large trees by logging significant numbers of mature trees over a large area as planned, result in loss or significant degradation of Pileated woodpecker source habitat or analyze any of this. The analysis for effects to Pileated woodpecker also fails to disclose and consider the cumulative effects of foreseeable future timber sales and biomass reduction to Pileated woodpeckers, including[MBFUO32] timber sales with signed decisions that have not been logged yet - at the Forest scale. There is not methodology disclosed for calculating that there are still 343,000 acres of Pileated source habitat across the Umatilla National Forest. Some of these acres may not have all the suitable habitat requirements of high canopy closure, sufficient large snags and logs for foraging, suitable large snags for nesting, and large trees for perching - in big enough blocks to avoid the woodpeckers having to cross large openings that expose them to predation by raptors and large owls. It is impossible to tell how accurate the acreage of suitable habitat is without disclosure of the methodology used to determine suitable habitat.

Another consideration not disclosed to analyzed is that even if 343,000 acres of Pileated woodpecker source habitat across the Umatilla NF do exist, how does this compare with historic abundance of Pileated source habitat? Based on the extensive clear cutting, high grading, and other intensive logging for about a century on the Umatilla, it seems that there must be a great deficit in Pileated woodpecker source habitat compared to historic conditions in suitable forest types outside of the wilderness areas and roadless areas, that were not logged. Planning to log 12% of Pileated woodpecker available suitable habitat on the Forest scale is still a probably unprecedented loss of Pileated source habitat for just one timber sale "project". This is a very significant loss of Pileated woodpecker source habitat, considering that virtually every timber sale eliminates suitable Pileated habitat across the Forest, and all of the loss of Pileated habitat (and marten, and Three-toed woodpecker habitat) already and pending to foreseeably happen is not quantified in the analysis at all Such high losses of declining and Management Indicator species' source habitat is unreasonable and unacceptable - at a 43-56% reduction for marten at the project area scale for alt.s 4 (43%) and 2&5 (56%); loss of up to 7% for[MBFUO33] Northern Three-toed woodpecker, apparently at the Forest scale (with the scale unspecified); and 12% loss of suitable source habitat for Pileated woodpecker, apparently also at the Forest scale. The DEIS also fails to consider the cumulative negative effects to those species from a growing number of huge timber sales, with the scale of the Ellis sale likely being unprecedented in easter Oregon, this includes the very fast rotation of these timber sales of only about 30 years or less, not allowing the forest to grow back to it's former mature forest cover, let alone to old growth status, before the next round of logging in the same place. Also missing from consideration for foreseeable future negative impacts to these species is the Forest Service's return from more moderate commercial thinning during the Clinton administration to now virtual clear cutting through logging to very low basal area retention. In combination, the accelerated scale, pace, and intensity of currently implemented and planned timber sales under the guise of "accelerated forest restoration", a misnomer, is completely unsustainable ecologically, socially, and economically. This trend amounts to systematic forest liquidation, yet this trend is not disclosed or considered in the cumulative effects analysis sections of the Ellis DEIS. Examples of this trend include: the Crow sale on the Ochoco NF; the Austin and Cliff Knox sales on the Malheur; the combination of the adjacent and nearly adjacent Ragged Ruby, Camp Lick, Magone, and Big Mosquito sales along the Middle Fork John Day River on the Malheur; the Green Ridge sale on the Deschutes; the Patrick and Morgan Nesbit sales on the Wallowa-Whitman NF; and now the Ellis sale on the Umatilla NF. The DEIS also fails to consider how the Ellis sale contributes to this regional trend of forest liquidation, or incremental deforestation, and how this trend affects the[MBFUO34] visibility of many wildlife species, carbon sequestration and storage to reduce or slow extreme climate change effects; plant and wildlife biodiversity; soil integrity; and basic ecological

processes and functions that are based on natural levels of biomass and include more large tree structure and greater structural complexity. NEPA requires full public disclosure and in-depth, detailed analysis of cumulative effects of past, current, and foreseeable future management and other impacts (such as climate change, road construction, livestock grazing, and toxic herbicide use) in order to prevent foreseeable heavy losses of species' habitat, biodiversity, and ecological functions. Without detailed in-depth cumulative (and direct and indirect) effects analysis and disclosure, disastrous trends such as the current planned landscape scale forest degradation and associated losses of species viability, biodiversity, and functioning forest ecosystems continue unchecked, like a runaway steam roller on a multi-National Forest landscape scale.

Effects to Primary Cavity excavators: See DEIS p. 91-92, then below

There are other problems with the effects analysis for Primary Cavity Excavators. The analysis fails to correctly identify the cause for the landscape scale deficiency in large down wood as being from numerous timber sales throughout the Ellis "project" area that removed large trees that would otherwise become large snags and logs through clear cutting, high grading, and hazard tree removal. Instead the DEIS analysis implies that the deficiency in large down wood is solely from fire suppression: "In a landscape that has been fire suppressed, as expected, there is an abundance of small down wood present across all habitat types and the landscape is deficient in large down wood." (DEIS[MBFUO35] . 92, 1st par.) This is inaccurate and misleading analysis. Then the analysis shunts all the rest of the detail of the analysis to the Wildlife Report, which may or may not be accessible to the reader, and likely won't be read, as like myself, most[MBFUO36] people don't have time to read through many different documents and expected to see the information fully disclosed in the analysis, and/or don't have readily available internet access. NEPA requires disclosure of science and methodology used for the analysis (there are no science citations given within the analysis text, as required, except for Thomas, 1979) and that the DEIS provide detailed, in-depth effects analysis, not just cursory summaries that are not clearly substantiated and omit a lot of key information for assessing the validity of analysis conclusions. We should not have to go searching for the elusive Wildlife Report to find the "visual comparison of reference versus the Current Condition for snag[s] and down logs for Ponderosa pine/Douglas fir, eastside mixed conifer, and mixed conifer habitat types" (DEIS p. 92, par. 1) that usually is incorporated within the DEIS to meet NEPA requirements for public disclosure. This is an exceedingly sloppy and inadequate DEIS, especially considering how long its preparation and release were delayed. In some cases, out comments on section of the analysis are longer than the analysis itself because we are flagging the competing science not presented, and the omissions of: detailed analysis, disclosure of science and information we can easily brainstorm or have already learned from more detailed analysis in other EISes that is critical to understanding the effects to species and other receptors, such as riparian ecosystems or soil integrity.

While the DEIS analysis for the effects of No Action in Alternative 1 admits the benefits to Primary Cavity excavating woodpeckers, as usual the latter part of this analysis section reverts to the usual implication that the No Action alternative "would contribute to high fuel loading in some areas and increase the risk of wildfire" while the action alternatives are characterized as "reducing the potential for hot, crown fires to occur in the project area" due to "(t)imber harvest and fuel reduction activities" reducing "ladder fuels and tree crown biomass." (DEIS p. 92, 2nd to last par.) Actually the science isn't so clear on this, - i.e[MBFUO37] . that logging and biomass reduction actually reduces the potential for hot crown fires to occur in the area of this management. Instead despite decades now of such logging and "fuel" reduction on an ever-increasing scale across the west under the auspices of reducing the "risk" or severity and extent of wildfire. There is little or no evidence overall that this logging and biomass reduction has any significant effect on reducing the incidence, severity, or extent of fire. Yet the Forest Service refuses, as an agency, to learn from scientific evidence that contradicts their foundational assumption used to justify ever increasing scale and intensity of logging and faster timber sale rotations. This represents a profound failure to use the full range of best available science to learn from past mistakes and practice and adaptive management. See the supporting science for this argument that we are

enclosing as example of science the Forest Service is failing to disclose or consider, which is contrary to their justifications for ever more logging. The Forest Service typically gets most of its funding dedicated for logging, so it's not as if they aren't invested in promoting more logging. In fact the logging pays for most of their staff salaries and the Knutson-Vanderberg Act has been used to apply revenue from timber sales to do restoration work - a "we destroyed the village in order to save it" scenario.

Further, under extreme climate change, which exacerbates the main drivers of fires - low humidity, high temperatures, and high wind speeds - (notably not high "fuel" loads) there is very little chance that any of the planned logging and biomass reduction will have any significant effects of reducing wildfire incidence, extent, or severity. (Again, see our enclosed science citations and articles.)

The analysis for effects to Primary Cavity Excavators makes its case through omission of relevant information. For instance[MBFUO38] , fire suppression is likely to continue not only under No Action but also under all the action alternatives, yet this is not acknowledged. The analysis states that "Continued fire suppression would exacerbate the change in the context of snag habitat from more open stands to close canopy, multi-layer stands" (DEIS p. 92 par. 3) without disclosing that more closed canopy multilayered stands are beneficial to primary cavity excavators due to more abundant snags of various size from inter-tree natural competition for water, soil, nutrients, and sunlight, where as more open, simplified, logged stands are detrimental to primary cavity excavators since existing snags would be reduced. It is also too simplistic to assume that No Action (i.e. no artificial management impacts) would result in "species requiring snags in open forests would have less available habitat." (DEIS p. 92, par. 3) How does the Forest Service think those species evolved? They evolved with natural disturbances, including wildfire, droughts, wind-throw, root rot openings, inter-tree competition, etc., not with logging creating openings by removing trees.

It is laughable that the analysis keeps repeating the worn-out rationale that commercial logging (aka "treatments" "aimed to thin stands") would "accelerate the development of large trees in the project area", which as far as I know has never been scientifically documented, and "over the long term, lead to diameter snags and down logs" (DEIS p. 92, par. 4) over some undefined timeline that could be decades or even a century or more into the future and certainly not "accelerated" through logging removal mature - and potentially large - trees.

The Umatilla Forest Plan is very outdated, including its snag retention guidelines. The DEIS admits "there may be a slight decline in snags in some areas in the short term." (DEIS p. 92, par. 4) with no quantification of "slight" and "some". The loss of snags[MBFUO39] would be long term, not "short" term - decades, not less than 5 years. These disingenuous DEIS arguments are not supported by science studies, and are kept afloat by not quantifying the most outcomes, instead using weasel words like "slight" and "some" to make the negative impacts sound negligible.

The "Effects Determinations" section of the Primary Cavity Excavators analysis does not address the issue of whether or not remaining or resulting down wood levels after timber sale/project implementation would meet Forest Plan standards for down wood. This indicates no method devised to intention to meet Forest Plan standards for down wood. As usual, the effects determination, which actually falls very short of determining effects to down wood levels, postulates a trade-off between unquantified reduction in snags and down wood (that I think would be substantial) for very theoretical long-term benefits after removing an enormous quantity of trees on a landscape scale that could otherwise eventually become snags and down logs. By the time saplings regrowing have had time to become mature or large trees to theoretically replace the mature and large structure removed, the damage is done. All the species dependent of abundant down wood and/or snags will have suffered their fates of reduced populations, upward listing under the Endangered Species Act, and/or local extirpation, which cumulatively leads to species extinction. Again, the effects determination wording implies that the remaining trees are only able "to reach larger mature stages through treatments [logging, etc.] designed to help increase tree vigor." (DEIS p. 93, par. 2) Throughout the DEIS, there is little analysis disclosing all the unnatural impacts of logging, such as extensive heavy removal of biomass, including existing and future down

wood; disruption of mycorrhizal fungal communities essential to forest health due to nutrient and carbon transfers to trees[MBFUO40] (including different tree species transferring nutrients to each other when the recipient trees are stressed and old growth trees transferring carbon to their young seedling - see Suzanne Simard's research since about 1997, as described and cited in her book Finding the Mother Tree, Discovering the Wisdom of the Forest); and depleting soils of existing and future nutrients and carbon from commercial logging and biomass removal. Other unnatural impacts of commercial logging and biomass reduction include commercial thinning's role in turning diverse mixed conifer forest with structural complexity into relatively biologically sterile plantation-like stands where most tree species diversity has been eliminated to favor the timber industry preferred tree - Ponderosa pine Western larch.

Rocky Mountain Elk see 1st, the p. 93 lowest comments

Further, the road management for elk security blocks should not work against itself by re-opening closed roads that are not maintained for seasonal or year round use and by constructing so-called "temporary" roads built for a precious timber sale that were never decommissioned as promised. This makes "temporary" de facto system roads. Re-opening closed roads and constructing or re-using "temporary" roads increases human disturbance to elk, which is already excessive in this area. Planned contiguous blocks of commercial logging and biomass "fuel" reduction could force elk off the National Forest lands in this area completely, causing even greater economic loss to local ranchers and frustrating hunters and wildlife viewing recreationists. This negative effect to elk, ranchers, and recreationists would be especially pronounced under action alternatives 2, 4, and 5. We are opposed to re-opening closed roads that: were closed for ecological protection reasons[MBFUO41] , including elk security, detrimental fine sediment loading to streams due to erosion and hydrological connection, and reduction of road density to meet Forest Plan standards. We are also opposed to re-opening of closed roads that are overgrown, effectively blocked, redundant, or unnecessary. We are strongly opposed to any construction of "temporary" roads which increase access to ATVs, livestock, illegal firewood cutting, fur trapping, and introduction and dispersal of invasive plants.

We strongly support full decommissioning of all unnecessary or ecologically damaging roads, including all "temporary" roads and unregenerated skid trails that are being used for illegal firewood butting or cross-country ATV use. The planned landscape scale logging and biomass/ "fuel" breaks would greatly reduce elk security, for as the DEIS admits, elk "-also require dense forested stands for hiding cover. These stands are used for escaping predators (including humans) and during periods of high disturbance, including hunting seasons." (DEIS p. 93, par. 3) While we were field surveying the Ellis timber sale during bow hunting season, we found it very hard to avoid bow hunters, who were virtually everywhere. We found their trucks parked adjacent to most of the commercial sale units and also frequently saw or heard hunters withing the sale units. We also found permanent hunters' blinds in various sale units - especially in the north half of the sale area, which has better elk security habitat in the moist cool mixed conifer and lodgepole pine mixed conifer forest. Bow hunters were also camped in virtually every dispersed camp site, making it so difficult to find a big enough dispersed campsite for our group. We had to settle for a campsite at the far northeast edge of the sale area. It was obvious that there were far too many hunters in the area - and that was just the bowhunting! Compared to the number[MBFUO42] of bowhunters, we had very few elk sightings and mostly not much elk sign. This is not how this area was in the 1990's and even in the early 2000's when we used to have more elk sightings, found more elk sign, and notably, saw far fewer bow hunters in particular. We only saw a small herd of about 4-5 elk in one area near Divide Well Campground (i.e. the north mid-section of the sale) and a small herd in a sale unit in a commercial sale unit adjacent to rd 53, north of the road in the middle stretch of rd. 53, and one or two lone elk. The few elk we saw seemed to be constantly on the move to evade the bowhunters, expending energy that fat reserves needed to survive a harsh winter. So over-hunting can't be ignored as a root cause of elk displacement from the Ellis sale area to private lands. Elk decline on the Umatilla NF, and in particular on the Heppner and North Fork John Day Districts was foreseeable since the mid-1990's based on very poor mature bull to cow eld ratios, which were

about 1 mature bull to 150 cow elk. This is due to trophy hunting of big bull elk. The Forest Service needs to actively address the cumulative impacts to elk in this area - both in analysis and taking action, such as by immediately reducing detrimental cattle overgrazing - especially in riparian areas - that is clearly not meeting Forest Plan standards. See our sample photos of these degraded conditions in RHCAs from cattle overgrazing, as well as descriptions of cattle over-grazing on our survey sheets. The Forest Service also needs to negotiate with the Oregon Dept. of Fish and Wildlife regarding elk displacement and disturbance from too many permits given out for hunting in this area. These suggestions are not outside the scope of this DEIS, as the Ellis sale planning includes an emphasis on providing[MBFUO43] for greater elk security based on the science to reduce displacement of eld onto private lands and to keep the displacement from being permanent. Rocky Mountain elk is a Management Indicator species, whose viability must be ensured under the Forest Plan and NFMA. Ensuring continued viability and population health and reproductive success includes seriously addressing all the cumulative effects to eld in the Ellis project area, not just using eld security as an excuse to log to create more opening for forage. Arguably, the Forest Service is also using the need for elk security by closing (and decommissioning!) more roads as a form of blackmail leverage used against environmentalists in an attempt to get them to agree to more logging to pay for road closures and decommissioning. We reject this common FS false choice. There needs to be far less or no commercial logging and more road closures and decommissioning, which could be funded by restoration funds, including Biden's recent windfall funding gift to the Forest Service.

*Continued comments on Rocky Mt. elk after comments written on DEIS p. 94:

The Forest Service should not be "storing" roads for future use, but closing and fully decommissioning them for recovery of habitat and long-term wildlife security, not just re-opening them for future timber sales endlessly. The Forest Service needs to be putting the needs of wildlife, ecological functioning, and long-term ecologically sound restoration first, not a pipe dream of endless unsustainable timber sales - especially not with extreme climate change threatening life on the planet - including human life - in combination with the ongoing sixth mass extinction. Business can not go on as usual. It's critical to maximize natural carbon sinks - in this mature forest cover and soils - by protecting and increasing forest cover and water retention - not removing it.

Re: Figure 3-7 re: Habitat[MBFUO44] Effectiveness Index Analysis Area on DEIS p. 94, The Forest Service staff should have at least explained the legend regarding Management Areas. It's striking that the DEIS apparently never disclose the Management Area descriptions, the Forest Plan standards and guidelines associated with them, and how they relate to limitations on negative effects to Forest Plan values, including wildlife habitat, recreational uses, forest structure such as old growth, etc. I don't think I've ever read a DEIS that omits discussion of Forest Plan Management Areas and how they govern management in different parts of the Forest and the project area. This is an astounding omission that basically throws out Forest Plan standards and guidelines by failing to consider these requirements in the planning document.

The only DEIS references to Forest Plan Management Areas in the Rocky Mountain elk section appears to be Figure 3-7, with Management areas undefined, the rather ambiguous statement on p. 94: "The Forest Plan standard that applied to analysis area was the standard associated with the predominant management area," which also failed to disclose the Management Area standards and guidelines, and Table 3-35 on DEIS p. 96 that has Management Area acronyms in parentheses, but still fails to identify each Management Area in words (e.g. Old Growth Management Area, elk winter range, etc.) and still doesn't disclose the standards and guidelines associated with each Management Area, and fails to disclose whether these standards and guidelines would be met and followed. These are Forest Plan standards given in Table 3-35 for Satisfactory Cover, Total Cover, HEI, and Open Road Density, but no standards and guidelines disclosed for the Management Areas. Usually an EIS at least discusses the purpose of the Winter Range Management Area for supporting elk viability and then identifies what management would take place in the Winter Range MA and how this[MBFUO45] management would affect elk. Ideally that analysis would also discuss how that planned management would be consistent or inconsistent with the purpose of the Winter Range Management Area designation. Yet no such discussion of effects to Winter Range takes place in the appropriate Rocky Mountain

elk analysis section. The public is left to wonder what parts of the Ellis project area are elk summer and winter range and how the related Forest Plan requirements would be met or not met under each alternative based on the elk use of these winter and/or summer range areas and how the elk use of these areas would be affected.

"Management Areas" is not included in the DEIS index or the glossary and specific acronyms for Management Areas, such as "C4, C3, C5", and "E2" (from Figure 3-7 p. 94) are not listed, defined, or described in the index or glossary. I finally found a list of Forest Plan Management Areas and their goals in Appendix B on DEIS p. 181 but these Management Areas and their goals must be considered for effects of management to Forest values (such as elk) within the relevant issue analysis. Otherwise there is no analysis that determines whether these Management Area goals would be met and whether proposed management actions under each action alternative would be consistent with the Forest Plan regarding Management Area goals, & related standards, and guidelines. This is a violation of the National Forest Management Act, as well as in violation of NEPA requirements.

For instance, there is no evident analysis consideration for the effects of each action alternative to meeting C3 - Big Game Winter Range "goals" (or standards?) "to provide high levels of potential habitat effectiveness" (DEIS p. 181, Table B-1) with regard to retaining sufficient thermal and hiding cover to protect elk from severe winter storms and predators (including hunter.)

Likewise,[MBFUO46] lack of specificity with regard to Management Area requirements leaves the analysis inconclusive to whether Management Area Forest Plan guidance is being followed for C4 Wildlife Habitat: "Manage forest lands to provide high levels of potential habitat effectiveness for big game and other wildlife species with emphasis on size and distribution of habitat components (forage and cover areas for elk, and snags and dead and down materials for all cavity users" or for C5 Riparian and Wildlife Habitat in "providing for a high level of habitat effectiveness for big game." (DEIS p. 181, Table B-1).

The effects analysis also fails to identify Forest Plan standards which are requited in various sections of analysis for effects to wildlife species. For instance the wording of some Management Area "goals" in Table B-1 are also standards, based on their wording. For example, under C4, "unique wildlife habitats and key use areas will be retained or protected." (DEIS p. 181, Table B-1) Readers of the DEIS from the general public usually do not have the 30 years of experience that I do in reading many Forest Service EISes for the Blue Mountains and Central Oregon Cascades timber sales for identifying what is missing from the Ellis DEIS and knowing what many of the Forest Plan standards and guidelines require, this leaves most of the public at a tremendous disadvantage for knowing whether Forest Plan standards and guidelines would be violated, and as a consequence, the negative effects in detail regarding proposed management consequences to aspects of the Forest that they value, such as elk for hunting or wildlife biodiversity for nature study, birdwatching, wildlife viewing, & for nature photography. This disadvantage is completely contrary to the intent of NEPA for the agency to fully disclose potential effects to Forest values. There[MBFUO47] is no analysis showing how all action alternatives would still meet Forest Plan standards for cover (except for winter range) when this seems highly counter-intuitive, especially for alternatives 2, 4, and 5, based on contiguous blocks of heavy biomass reduction and the displayed scale and distribution of commercial logging in Appendix A maps labeled "Ellis Project Vegetation Management" for Alternatives 2 and 5 on DEIS p. 168, Alt. 3 on p. 169, and Alt. 4 on p. 170. Clearly the scale of forest cover removal would be overwhelming under Alts 2 and 5, smaller scale but still very intensive in North and West parts of the sale under Alt. 4, and much more likely (although not definitive) to meet Forest Plan cover standards under Alt. 3. However the DEIS skips analysis of any of these significant differences for the elk and other wildlife species, even as the analysis admits that the reduction of forest cover under all the action alternatives would persist over the next 40-50 years, with "many" of the acres affected only recovering to marginal cover within 20 years. The lack of quantification for how many acres would only recover to marginal cover in 20 years is glaring. Marginal cover is far less protective for increasing summer heat relief and shelter from sever storms, which now occur more often under global warming effects - for elk and for many other wildlife species. Reduction of much of the forest managed to only marginal cover for 20 years could drive remaining elk

off the Forest completely or cause population decline. Such significant reduction of forest cover for 40-50 years (and likely much longer - at least 80-100 years for manure and large tree cover) could cause species extirpations for upward listing trends for many forest cover-dependent species at such a large landscape scale, including: American marten, Pileated woodpecker, Northern Three-toed woodpecker, Northern goshawk, Cooper's hawk, and Northern pygmy owl, as well as many Neotropical migratory songbirds adapted to multi-layered[MBFUO48] tree canopy or denser forest. No wonder the Forest Service is avoiding quantification of effects and detailed, in-depth analysis of effects to wildlife species, as the results would be damning and should result in a significant scaling down of the timber sale "project" and less intense logging to less than the cover removal of alternative 3 or No Action.

The avoidance of disclosure of significant information is infuriating. For instance, the DEIS states that "area 1 would meet Forest Plan standards in the long terms [without defining how many years that would take] or "not drop below existing conditions", with no disclosure of the methodology or science used to make that determination. Based on Table 3-35 on DEIS p. 96, Area 1 (Big Game Winter Range & Riparian & Wildlife Habitat) already does not meet Forest Plan standards for total cover, "HEI (Habitat Effectiveness Index), and open road density, with these inadequate conditions being exacerbated much further by the action alternatives - including alts 2, 3, and 5 also violating the Forest Plan standard for Satisfactory Cover, with Alts. 2+5 taking satisfactory (thermal protection) cover down to only 5.9%. Area 1 currently fails to meet the paltry 30% outdated Forest Plan standard for total forest cover, yet the Forest Service is planning to further reduce total forest cover to 9.8% under Alts 2 and 5, 10.6% under Alt 3 and 15.4% under Alt. 4. Likewise, Area 1 (winter range) already fails to meet the Forest Plan standard for HEI at 60 rather than 70, and alts 2&5 would be allowed to drive this habitat effectiveness value further down to 57 under Alts 2+5, 56 under Alt 3, and 59 under Alt. 4. Currently Area 1 road density exceeds the <1.5 miles per square mile standard at 1.7 while alts 3&4 would only reduce the road density to 1.6, still in violation. This[MBFUO49] begs the question of why the Forest Service deems it necessary to log and otherwise reduce forest cover (as well as not reduce the road density more in alts 3&4) in a southwester dry, sparse part of the project area that has already been substantially logged and has marginal growing conditions. I'm familiar with this area from past timber sale field surveys - and it's also close to where I live. The Forest Service should not be planning to violate or further violate Forest Plan standards. Elk and deer need the cover provided in winter range - and more totally cover. Pronghorns fawn in this vicinity as well. All management that would reduce forest cover in this area should be dropped and more roads should be closed under alts 3 and 4, to match the goals set for road reduction in alts 2&5, but without re-opening so many closed roads for logging and building "temporary" roads. This contrast between planning to meed the open road density under Alts 2 and 5 but not under Alts 3&4 shows up in Table 3-35 also in Areas 2&4 and for Alt. 3 in Area 5. The Forest Service should meet all Forest Plan standards under all action alternatives. Otherwise what is the purpose of having Forest Plan with standards and guidelines? Planning to violate Forest Plan standards when this is avoidable is a violation of NFMA.

The analysis for effects to elk admits that while the "increase in forage resulting from prescribed fire and silviculture treatments under these alternatives would be beneficial to elk" (as it wildfire would also be under the No Action alternative, although this isn't disclosed), the beneficial effect to elk would be "particularly where forage is enhanced within adjacent to security habitat" (DEIS p. 95, par. 2), which includes thermal and hiding cover by definition, not just few roads. For instance, cougar and wolf[MBFUO50] predation of elk would not be deterred by fewer roads, but potentially increased by fewer roads re: human predation of cougars and wolves are more likely with more road access.

As with other section of effects to wildlife, the inadequate cumulative effects analysis is confined to the same three sentences as for other sections: "Cumulative effects are evaluated at the project area scale. Ongoing, proposed and past activities which have cumulative effects include multiple thinning project which have been approved[hellip].It is expected for these projects to have similar effects as described for this project." (DEIS p. 95, 2nd par.) The only difference from the other Cumulative Effect statements is that this one actually cites a thinning project - "The Popple Aspen Restoration Project." Obviously the Forest Service staff did not take the

time to individualize the cumulative effects analysis for each wildlife species based on the distinct habitat needs and status of each species, instead conveniently circumventing NEPA's requirement for in-depth, detailed analysis.

As with other effects analysis for wildlife species, there is not information disclosed as to the current population status of Rocky Mountain elk, the reproductive success rate for the local population, long-term population trends, and viability threshold. This information is easy to obtain from the Oregon Dept. of Fish and Wildlife (with the possible exception of viability threshold) and is included in other EISes as standard information. Without such information, it is impossible to determine the actual effects to the Rocky Mt. elk population in the project area and the "Effects Determination" makes no attempt to determine the viability (or not) of the species after implementation of the action alternatives, which is the usual purpose of the effects determination. Instead, the

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Information given is just broadly comparative between the action alternatives with no quantifization of combined effects and no metholology cited. The determination does state that all the action alternatives 'will also all reduce the amount of satisfacting cover" and that "Alternative & would have the least impact on elk habitiat," which makes I hard to explain why alternative 5 and 2 are deemed to for Alt 5, "the most beneficial and significant alternative for elk "when Alt 5 would remain the most suitable forest habitat for elk and alt 2 is characterizing no " being the next best alternative for elk" when it Elk will not thrive, and like, not stay in the Ellis area, if such signiforant scales of forest cover are lost on a landscape scale on proposed in alternatives 5, 2 and 4. Avoiding commercial size logging over more of alternative 3 would benefit elk. Elk are well known to prefer denser forest habitat. Anyone spending signifgant time on the forest knows this, including hunters and our long term supervisors. Elk will not persist on the ellis landscape no matter how many roads are closed if there is very little forest cover left across broad swathes of the protect area, as especially would result from alt-5, 2 and 4. This is an inadequate effects determination for continued Rocky mountain elk viability in the Ellis project area[CRFUO51] .

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Last comments on Transportation: Why current we informed of scoping for the Four Corners CE and the Mountain Top CE? I have seen no information about either of these categorical exclusions sales even though we have been on the Heppner district mailing list since 1991 and on the North Fork John Day district mailing list since early 1990's. The first time I became aware of these two CE sales was when reading the ELLIS DEIS on pg 99. Please immediately mail scoping information packets and maps for these two categorical exclusions sales & send me information about their current status and timeline for implementation. I want to field survey both of these CEs[CRFUO52] * if they involve commercial logging, so please send me large scale maps showing boundaries of sale units, what kind of management would take place in each sale unit, the roads and road numbers, section lines and numbers, private property boundaries, closed roads, creeks and other landmark features, and topographic lines, so that we can be sure we are in the right location for sale unit. Please make sure that I receive by mail all current and future NEPA documents regarding timber sales, noncommerical thinning, biomass/fuel reduction, hazard tree logging, post fire "salvage' logging, aquatic restoration projects, livestock grazing allotment permit proposed renewals, mining, herbicide use, and oil and gas leasing.

(Transportation commlative effects analysis fails to consider the combined effects of the Ellis project with past and foreseeable future effects to transportation to specific receptors such as water quality, as streams, hydrology, wildlife specie, and increased access for ATVs, illegal firewood cutting, fur trapping, livestock, and introduction and dispersal of invasive plants- as required by NEPA. It's not sufficient to just list cummlative effects

without considering the real world effects to specific receptors of the effects in combination with effects as the planned management action.

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Social economic effects comments are on DEIS pp. 102-103. Recreations scenery comments- on DEIS pp 103 better comments. Recreation & Scenery: Containing to NEPA requirements, methodology and assumptions used for effects determinations are out sourced to the recreation and scenery report else where, which, preclude access to this key information for determining the validity of Forest Service assumptions and effects determinations if the reader had no access or only difficult access to the internet &/ or not enough time to scratch through multiple reports for the missing information. The Forest Service staff did not even bother to include GIS mapping the "need to portraying spatial relationships between recreation use areas and proposed activities that could affect the use of such areas " (see DEIS pp 103-104) Such maps are standard in EISes to visually portray protentional effects[mdash]in this case showing recreation is to what type of management would effect their recreational use in favorite areas or favorite recreation uses.

The NEPA requirements for an EIS tather than an EA to document management potential effects to Forest values for an unprecedented large and all encompassing timber sale like Ellis with landscape scale and highly invasive effects is meant to trigger more detailed, in-depth analysis of potential effects, as well no full disclosure of assumptions, methodology, and science used- within the text of the DEIS itself, to enable readers to comment in an informed way. The Ellis DEIS makes a mocking of this instead by systematically outsourcing key assumptions and methodology and omitting the specific requirements of Forest Plan standards and guidelines relevant to each management areas under the Forest Plan with standards and guidelines designed to protect multiply use/ areas Forest values across the landscape.

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The effects analysis for recreation and scenery, which are usually addressed in separate effects sections in EISes, is grossly over simplified to encompass only road access to recreational sites and scenic integrity only along the scenic byway, rd 53, as if the reasons for recreationists driving out to the Forest to recreate don't matter. For instance, most recreationist want to enjoy a natural forest setting to get away from industrialized life, cities, towns, or work routines. People who need developed recreation sites like campgrounds, rental cabins, day use areas, and trailheads, want a national forest setting immediately around those recreational developments but also explore and use the greater Forest area, driving to lakes, walking, through the Forest to hunt, fishing, along streams, hiking along trails or off trails, cross country skiing, riding horses out into the forest, mountain biking through the forest etc. likewise dispersed recreation extends throughout the forest area, including mushroom, berry, and medicinal plant gathering; recreational firewood cutting; use of disposed campsites; snowmobiling; sightseeing; and uses not even listed in the analysis, such as nature study, wildlife viewing, nature photography, horseback riding, and family gatherings. Commercial logging[mdash]especially to basal areas and including removal of many mature and/or large trees significantly degrades all these recreational values not just during logging and road construction but for decades after implications. Most recreationists especially those traveling to the Forest from cities don't travel there to see stumps, skidtrails, roads everywhere, or unnatural appearing forest from logging, such as plantations and "fuel" breaks. Recreationists are unlikely to return to areas that have been heavily or extensively logged. These are places like recreated to which I would never return if I knew they had been logged it would be to heart breaking.

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The Ellis area is one those places for me as I live near that part of the Umatilla and have spent time there frequently. Non-commercial thinning, prescribed burning, in the dry forest would be acceptable, but very extreme and intense logging, as other alternatives 2,4, and 5 and to a lesser extent, alternative 3, would lose my sense of place, my fidelity to using and enjoying a particular area habitually and intentionally. The recreation and scenery analysis does not even mention "sense of place" being a recreational value, even though the other natural forests in the Blue mountains and central Oregon have largely adapted sense of place as a recreational value and analyze for effects to this value including in their EISes for timber sales. The 30% increase in the use of dispersed campsites in Ellis area[CRFUO53] ought to be a cue for the Forest Service to give more detailed and comprehensive attention (analysis and protection) to recreational values. Notably, that "spot check" was only done during the second elk season, not the more well attended first elk season and first deer season. The Forest Service apparently also didn't check recreational use during the summer and the bear hunting season, which we experienced during two rounds of field surveying Ellis sale units in two different (most recent) years. The summer recreational use was exceptionally high, possible due to the pandemic, including a lot of local families who have a sense of place for the area. The bear hunting season, as mentioned in other comments re: Rocky Mountain Elk efforts, was unbelievable busy, with bear hunters taking almost every dispersed campsite and hunting activity in most of the area planned for commercial logging especially in the northern part of sale moist mixed conifers, but also in the middle part of the sale where are meadows with good[hellip] PG 57 forest cover at the edge along stream system such as Ditch creek. The Ellis sale area has very high recreational use compared to some of the other Blue Mountains Forest areas. Bet there is no information discloser in the DEIS as to survey results indicating how many people enjoy what kind of recreation and where they live. This kind of information on recreational use is usually disclosed for timber sale EISes for the Southeast Washington part of the Umatilla National Forest, as well as recreational uses, aiding in extending outreach about management plans further out to communities and distant cities whose residents us the area. Were only such surveys done or information gathered at developed campgrounds, trailheads, rental cabins, or day use areas? If so, the information was not used or disclosed for the recreational use of the Ellis area in the DEIS. Those are various other places in the Ellis area where this information could be gathered including at Penland Lake and an adjacent private campground, as well as based on inquiries and solicited at the Ranger district offices and open house or other public meetings.

There must have been a big turn over at district staff and lack of knowledge information transfer for the DEIS to reflect so little knowledge about the Ellis area despite such a long time period of EIS incubation. The staff needs to go back to the drawing board and prepare a SEIS or else abandon this timber sale "project."

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Recreation & scenery Effects continued:

Why Map B-1 of management areas overlapping the Ellis area buried in Appendix B rather than displayed in relevant parts of the effects to analysis? (See DEIS p. 182)

Table B-2[CRFUO54] * is virtually incomprehensible. There is no footnote or written description to define the letters and numbers presented in blocks within the tables. This is like expecting log people to understand strings of computer code. Even where there are words, the associated numbers are not explained. For instance, we are given no clue as to what " BT 6, 41, BT 6.42, CT. 642 #, REC-01, 02, Fuels-14, 15' is supposed to mean under " A-4 view sheds." The whole chart is mystifying like that. Yet the DEIS claims that: "The Table B-2 identifies how each resource element standard and guideline was considered and how the project addressed it." How could we get this information of underlined strings of numbers and letters? The never seen

anything like this in a DEIS-over 30 years of reading EISes. This seems intentionally designed to not relay to the public how each standard and guidelines (which remain undescribed in words) was considered and how the project address it. This is a clear violation of NEPA process and defies the intent of NFMA management area under the Forest Plan. This information should have spelled out in words to inform public comments in each relevant section of effects analysis.

Map B-1 appears to be missing Developed Recreation sites, including the coalmine Hill and Divide Well campgrounds, and the Ditch Creek rental cabin[CRFUO55] .

The No Action alternative effects analysis also fails to disclose that the quality of the recreational experience (such as for camping, hiking, hunting, and fishing) would be higher quality, due to the lack of recent and enjoying logging, road construction, etc over the next 10 or more years[hellip]P 59 after a decision starts the implications of one of the action alternatives. Again, logging and associated timber sale management negativing impacts to recreation and scenery would be definite and long term, with very unnatural appearing consequences, unlike a wildlife (which may also happen despite implementation of the Action alternatives) which is not as definite in when it might happen, normally burns in a mosaic, is a natural event, and has long-term effects which support native wildlife and plant diversity, rather than antisocially homogenizing the forest. (See for comparison DEIS p 105, par 3) The DEIS analysis also trails to recognize that No Action alternative would pressure denser forest cover that elk prefer and need for thermal and hiding cover, benefitting the success of hunters and the overall hunting experience by keeping essential forest cover for suitable elk habitat. Yes, motorizing recreation and too many hunters for the new law resident population would continue to be a problem, but the effects analysis for the No Action to Forest values, such as recreational uses and elk.

As usual for the No Action alternative analysis, the effects are portrayed as if the forest would some kind enter a static condition such as insects and disease not ebbing as well as increasing over time in a long-term balancing of conditions across the landscape, as with wildfire (see DEIS p 105 par 4 for an example of this.)

There should be no management in the MA A-1 semiprimitivity non-motorized recreation area along the "Hell's" Half area " trail, which apparently has been renamed, based on the trail signs we saw in the area. No management for the A-1 MA promised in early pages of the DEIS, possibly in summary, but has not[hellip]P60 been corrected in the recreation and scenery section on DEIS pp. 105-106 in the last poor to first peruse 2nd par. On P. 106 (see comments on DEIS pp 106-top of 107 first before the following comments) RE: Management Area - A-4:

We are strongly opposed to the planned 500 foot "fuel", break on each side of FS rd 53, the Scenic byway. First, there is already a recently implemented fuel break that is still effective. A lot of the retained trees in that ugly fuel break died from apparent cover exposed to prescribed fire. The dead trees could be removed from the fuel break only. These are almost all small trees, including the Western Larch retained. There is no need or justifiable purpose for expanding this fuel break for 500 feet on each side, which is a fuel break in itself, and wide enough to be effective for reattained safe access[CRFUO56] with the existing fuel break. Most of the dispersed campsites off rd. 53 are well within [frac14] mile from road 53. A 500 feet, 300 feet, 200 feet or 150 feet fuel break along scenic byway would destroy the scenic appearance even further on top of the exciting unsightly fuel break.) wrecking the scenic quality of the byway. It's sickening to realize what the scenic byway would look like with a longer fuel break as well as the commercial logging sale units in fire locations within sight of rd 53 that are planned for alternatives 2,4, and 5. Commercial logging along the scenic byway, including the disgusting proposal to have timber sales visible from it, would clearly violated the Forest Plan goals land standards stated in the DEIS) for the Scenic byway, rendering that designation meaningless. The proposed huge fuel break and commercial logging sale units are nothing more than a timber grab for an industry that is inevitable declining from so much[MBFUO57] past overlogging. Such excessive logging plans add insult to existing injuries by making a mockery of Forest Plan guidance to preserve multiple forest values, including recreation and scenic quality Design Criteria would not mask the evidence of extensive logging - especially as many recreationists don't just

drive past this area, but use it for camping, hunting, and berry or mushroom foraging, as well as other recreational uses.

The DEIS admits that under Alternatives 2, 4, and 5, "the fuel break most dense and average density stands to open stands" (i.e. visually, clear cuts or near-clear cuts), which would be a very unnatural condition for these stands. There is nothing wrong or unnatural about 54.9% of the length of the Scenic Byway having dense forest. The areas of greatest density are at higher elevation in cool moist or cold mixed conifer forest types due to higher snow pack retention than the rest of the lower part. There areas are naturally more productive and denser due to higher elevation, precipitation, snow pack, and higher water retention on typically ash soils. We got pretty wet at times in that area from rains in September. There's a lot of our photos that show us in full rain gear with gray skies and obviously wet ground and trees from that time. Open stands from logging would be in stark contrast to naturally denser, moister forest in that area, destroying the sense of place for the many local recreationists who use that area, including myself. Evident recent stumps, skid trails, and slash piles, as well as residual tree marking, would destroy the naturalness of the setting and views for virtually all recreationists. The DEIS admits that: "This would result in a large shift to open density stands in the foreground" and that a return to natural appearing stands would take at least "3-10 years after treatments are completed." (DEIS p. 106, par. 3) However we disagree that these stands would have (PG#61[MBFUO58]) a natural appearance within 3-10 years, as dramatic logging transformations to far more open stands have a very unnatural appearance for decades, as we observed in previously heavily logged and opened stands along rd 53 that were choked with small dense trees, lacking most large tree (overstory) and still showing obvious signs of logging - stumps, skidtrails, logging scars, residual timber sale marking paint on trees, and greatly altered tree species composition and tree size, having reverted to mostly dense, small , and highly flammable lodge pole pine in the moist mixed conifer forest. Opening up the moist mixed conifer forest as much as planned would also make the stands much more flammable within that 3-10 year timeframe and thereafter, completely defeating the purpose of the fuel break. This is the case as there is no reason to expect different results in the same forest type and area, where we witnessed dense young lodgepole pine regrowth in areas that used to be more fire-resistant mature and large mixed conifer that had been more open until it was logged and burnt, compared to the dense lodgepole pine regeneration. We witnessed this across many heavily logged stands in the moist mixed conifer forest along rd 53, the Scenic Byway. The Forest Service has long created it's own rationales for more logging based on trying to correct past mistakes but using the same mistaken management approaches, as in the current planning for the Ellis sale under alternatives 2, 4, and 5 in particular.

The planned removal of "species not suited to site characteristics", which is really code for removing Grand Fir and Doulas Fir, and any (Englemann) Spruce, which are natural climax species for higher elevation moist mixed conifer, and replacing those tree species with early (seral) Western Larch or Ponderosa Pine, would not "increase species (PG#62) diversity and (consegment) resilience of the remaining trees" (DEIS p.106 par3) as the area would then have much smaller, more flammable trees, and would likely have (vigorous) in growth of young, dense, highly flammable Lodgepole Pine. This foreseeable outcome would also not reduce, but increase the risk of crown fires along the Scenic Byway overtime, contrary to the ostensible purpose of the fuel break. Further logged sites- especially heavily logged sites do not "enable remaining trees to better withstand insects and disease" through claimed "improved tree health"(DEIS p.106 par 3), as logging fragments (mycorrhizal) communities that provide for nutrient and carbon transfers between trees - even between different tree species. (see Suzanne Simard's controlled experiments demonstrating these exchanges since about 1997, which are summarized and cited in her book, "Finding the Mothertree, Discover the wisdom of the forest", which should be required reading for all Forest Service staff.) Heavy logging, as planned, would also create many other unnatural negative impacts to the stands along the Scenic Byway, including detrimental soil impacts, significant loss of biomass to replenish soil nutrients and carbon, loss of enough mature trees to supply future abundant snags and logs for wildlife, and overall loss of carbon sequestration and storage by removing many mature trees, as well as loss of biodiversity of both wildlife and plant species, and loss of immediate hiding cover and thermal cover for elk and deer.

Alternatives 1 and 3 are only alternatives offered that could avoid these significant outcomes, but the alternative 3 should noy involve any large diameter thinning and a more narrow fuel break width, only 50-100 feet (up to the tallest tree height able to fall into the road) and only where really needed.

However the fuel break along road 21 under all the action alternatives would cause excessive degradation of scenic integrity (PG#62) along road 21, impoverish soils by removing too much biomass, significantly reduce snag and down log habitat, eliminate the sense of place for that area for long term and local recreationists, reduce carbon storage and (sequestration), etc. as with the proposed excessive fuel break planned for rd. 53. There is no legitimate reason to extend these fuel breaks so far out from the roads, as this will only encourage fast regrowth of smaller, far more flammable trees at greater density, which increases fire risk along rd 21, as would also happen along rd. 53. The northern part along rd. 21 would, like along rd.53, also fill in with dense highly flammable young Lodgepole Pine, as happened there from prior heavy logging. The southern, drier forest along road 21 would likely benefit from non-commercial thinning in some places, but there is no need throughout the rd 21 route to remove mature and large trees, which are more fire resistant and already at a deficit which are more fire resistant and already at a deficit due to past logging of mature and large trees. Both "fuel" breaks should only be up to 50-100' wide and should only include non-commercial thinning by hand or from the road up to (9'dbh) and possible pruning of some mature tree branches along the lower trunks. Prescribed fire could also be used in the dry forest types but should be avoided in the moist mixed conifer and lodgepole pine forest types, as burning would stimulate dense regeneration of small lodgepole pine, as well as eliminating roadside habitat for foraging woodpeckers and other species. There is more at stake than meeting Partial Retention objectives, as the fuel breaks, as proposed, would result in hype contiguous blocks of logging (which was perhaps the true motive of the plan) that would significantly reduce suitable habitat for the variety of species, including Pileated woodpecker; other woodpecker species; Northern (goshawk) and Cooper's hawk; elk and deer; small rodents; and American marten; Northern pygmy owl; and others. The proposed "fuel" breaks, as explained above, would also likely increase fire risk along these roads within 3-10 years.

(PG#63) It is questionable whether the planned fuel break would meet Forest plan visual quality objectives of even partial retention, when this is not expected to be met any sooner than "within 3 years after proposed treatments" (DEIS p. 107, 2nd par.) and there is no guarantee that there would be enough regrowth of trees within three years to meet this standard. Partial retention refers to forest cover, not just "vegetative growth" such as grasses and shrubs. The various descriptions of the effects of creating these enormous "fuel breaks" describe "open stands" and "a large shift to open density stands in the foreground" with no specific limit to how open these areas would be. Where they have few mature or large trees, the "fuel break" results could look like (and be) clearcuts, or virtual clearcuts like seed tree or shelterwood cuts, and would not really meet the partial retention requirements for partial retention undisclosed. This is another example of the Forest Service basically saying throughout the DEIS "just trust us". Since we definitely can't trust the agency, based on 30 years of monitoring timber sales, including the after math devastation, the Forest Service need to fully disclose all relevant forest standards and demonstrate how they would be met - convincingly, through use of the science, past results, and thorough analysis.

As explained above, there is also no guarantee that after implementation of the "fuel breaks", they would be "providing some level of protection to over story trees should a fire occur" (DEIS p. 107, 2nd par.) "Some" theoretical level of protection to over story trees, should a fire occur within 10 years, is hardly sufficient reason to wreak such large scale devastation of contiguous blocks of wildlife habitat and forest carbon sequestration and storage in an area with lots of recreational use in multiple seasons - spring through late fall.

Management areas A6 and A9, and Developed Recreation:

Since there has been a lot of commercial thinning already around and within Penland Lake, Coalmine Hill, and Divide Well campground, and the Ditch Creek rental cabin, and a relatively (PG#64) recent stand replacement severity wild fire around the Willow Creek trailhead, and no significantly high mature tree density at the Bald

Mountain trailhead, Gibson Cave interpretive site (which is actually in MA A-1) and the Potamus interpretive site, only very small non-commercial size thinning or prescribed fire in the dry forest sites would be needed (if anything) to meet the goal to "help increase the likelihood that developed recreation sites would survive a wildfire with their over story intact" (DEIS p. 107 par.3) We have been to all these recreation sites in the course of field surveying commercial logging/fuel break sale units, as almost everywhere in the Ellis sale area was planned for logging originally (and most of that still is.) Based on seeing all of these recreation sites and documenting existing conditions with survey sheets and/or photographs, we see no reason to do anything (and lots of reasons not to do any management) at: the Willow Creek trailhead, the Bald Mt. trailhead, and the Gibson Cave interpretive site (which are all actually in MA A-1.) We also see no reason for any management at the wide open, scenic Potamus interpretive site, except possible prescribed burning. Non-commercial thinning and/or prescribed burning would be sufficient at Penland Lake (which has already had lots of fuel reduction and commercial thinning done not very long ago) and at Coalmine Hill (which has been intensively high graded) [only non-commercial thinning is needed] with Divide Well campground also having been subjected to commercial thinning and hazard tree felling already and needing only non-commercial thinning up to 9" dbh at the most and/or prescribed burning.

The huge blanket "prescriptions" for commercial logging in the Ellis project area seem to be based on either lack of personal staff knowledge of the effected area and/or simply not caring about all the natural values at stake, or frustrated long-term staff having to fight to save anything from over-management by new staff who aren't at all familiar with the area and have no attachment (PG#65) to it. For instance, the questionable rationale for heavy logging throughout the project area and along project area roads of "allowing motorists to see and avoid wildlife collisions" (DEIS p.107) This is ridiculous, as most roads have a maximum speed of 25-35 MPH (including rd.21) and the only exception is rd 53. The Scenic Byway, where there is already a fuel break big enough for drivers to see wildlife and avoid them. The speed limits are mostly followed for the simple reason that it's hard to drive much faster on these roads without causing an accident to yourself. There's also not a lot of conflict between recreational vehicles. Log trucks could cause more accidents, but usually don't due to signage *and radio use* for active logging use of roads. Logging within Penland Lake campground would remove trees providing shade and scenic quality, as claimed on DEIS p.107, par.5 We don't object to small tree thinning up to 9" dbh around and in the Coalmine Hill campground, but we do oppose any management near Gibson Cave, which is MA A-1. Commercial logging would not "make forest vegetation more resilient to insects, disease, and fire" (DEIS p,107, par. 6), but non-commercial thinning only up to 9" dbh at the most and by hand and/or prescribed burning only in dry forest types, could help with forest resilience by thinning out the only size class that has reached much density - small trees. Commercial logging would degrade, not maintain or improve the "overall quality of the recreation experience (such as hiking, foraging, and fishing)"(DEIS p.107 par.6) but in some cases, as outlined above, non-commercial thinning up to only 9" dbh by hand and/or prescribed fire backing into the RHCA, only in dry forest types (other than lodgepole pine.) (PG#66) We support the changes made for alternative 3 of no fuel breaks proposed for Penland Lake campground, Divide Well campground, or the Gibson Cave interpretive site. Samll dbh thinning by hands acceptable in Divide Well campground near sites 1-3, but not in the rather unique RHCA adjacent to the campground. We are opposed to any commercial logging for fuel breaks or otherwise in any of these recreational sites, including these under alternative 3 that overlap the Potamus Point interpretive site, the Ditch Creek rental cabin site, and the Coalmine campground. Lower branches in the area planned for commercial logging in Coalmine campground could be pruned instead.

It's completely absurd to plan for 500 foot fuel breaks on either side of the recreational trails, as the unnatural, degraded conditions visible for long distance would completely defeat the purpose and enjoyment of the trails. This is just another outrageous timber grab under alternatives 2 and 5. Why is this even planned, unless the planners care about nothing except maximizing profits for the timber industry?

As the DEIS acknowledges on p.108, par.2, "This would reduce shade to cool trail users and take away from the natural appearance along the trail due to the presence of stumps and a consistently open stand of trees. The differences would be most evident where trails wind through dense stands of trees due to the contrasting openness of the immediate foreground. Along hiking/equestrian trails this would likely significantly reduce the

quality of the recreational experience." (DEIS p.108, par, 2) So why log it? Lack of shade could lead to heat stroke and dehydration among recreationists using these trails, especially with much hotter dry summers under climate change.

We don't agree that snowmobile trails would not be affected by logging. Snowmobiler's also come to the forest to enjoy a more natural forest setting. Otherwise they could just stay at home and snowmobile on roads. (PG#67) As much as we want more road closures and decommissioning some of the dispersed campsites are traditionally used and are part of families generational history. The loss of generational campsites would be particularly actute for indigenous people as cultural uses might be tied to specific campsites. Lack of access to traditional sites would not just be "a decrease in their recreational experience for at least a few years' as claimed (DEIS p.108, par.3), but would be a long term loss particularly painful for elders, but also for younger generations that have grown up with special family gatherings or traditional ceremonial uses at these dispersed campsites. The Forest Service should be seeking input as to traditional and generational dispersed campsites' locations and try to avoid cutting off all access to these more meaningful sites. This should be a legal obligation for indigenous people's cultural uses and treaty rights, but also a consideration for other generational dispersed campsites in order to meet recreational needs and preserve family traditions. A lot of dispersed campsites are only a short distance off a major road, so those may not be an issue.

Contrary to the DEIS claim to the contrary in the last par. Of p.108. Alternative 5 would not have the greatest benefits for retaining elk and the related increase in hunting quality and possible success due to Alt.5 entailing the removal of the most cover for elk, along with alt.2, and then alt.4 Elk need extensive denser forest cover, not just increased forage and less road use disturbance. This is a very strong bias toward logging that runs throughout the DEIS.

The cumulative effects analysis exemplifies this bias by stating for Recreation and scenery simply that "In the A4 management area, treatments together with design criteria would combine with past thinning , harvest, and prescribed fire to cumulatively improve visual quality along the Scenic Byway and improve resilience of adjacent stands to withstand insects, disease, and fire in alternatives 2, 4, and 5" (DEIS p.109, par.3) (continued in purple notebook)

(PG#68) Ellis DEIS comments Recreational Scenery effects, continued

There is no analysis within the cumulative effects section justifying this claim that "past thinning, harvest, and prescribed fire" cumulatively improved "visual quality along the Scenic Byway" or that more of the same would also improve scenic quality somehow. There is no analysis showing that landscape scale heavy logging (in expansive "fuel breaks" and commercial thinning an huge contiguous blocks would benefit specific recreational uses, such as hiking, fishing, hunting, mushroom foraging, cross-country skiing, nature study, wildlife viewing, ATV riding, recreational driving, or wildlife and nature photography. This is just a sweeping assumption, not detailed, in-depth analysis of cumulative effects, as required by NEPA. Further, the cumulative effect analysis for recreation and scenery fails to consider any other cumulative effects except timber sales, and fails to discuss the effects of any foreseeable future cumulative effects, such as climate change effects, already planned additional timber sales, and livestock grazing.

Environmentalists in general, and the majority of the regional and national public do not consider commercial logging as beneficial to recreational uses or to scenic quality. The Forest Service staff seem very out of touch with broader public opinion.

The cumulative effects analysis considers negative effects to recreation and scenery from reduced road access to sites, neglecting to consider the cumulative effects of a heavily logged landscape to scenic quality and recreational uses, these include open stands along roads and in contiguous huge blocks extending throughout the northern high elk preference hunting area and throughout the middle elk habitat adjacent to

stream systems with meadows. The only tangible recreational benefit described in the cumulative effects section is the "cumulative increase [from road closures] in recreation

(PG#67) -REPEATED-

(PG#69) activities that involve solitude and self-reliance. There would be a cumulative improvement in the hunting experience for those visitors with the physical ability and desire to go beyond [frac12] mile from open roads"[hellip]. (DEIS p.109, par.4) However there is no mention of the (Faustian) bargain these benefits entail, in that the Forest Service is set up a scenario of more road closures (in storage, with likely future re-opening) being linked to more logging. The more road closures, the more heavy logging impacts across an increasingly enormous area that would be highly detrimental and degrading to most forest recreational uses and to scenic quality. Yet this trade-off of more logging impacts automatically linked to more road closures is not even considered. There are alternative sources of funding for ecologically (sonnd) restoration such as road closures and road decommissioning, yet the Forest Service limits the scope of the analysis to their narrow perspective. The agency avoids offering other alternatives by failing to engage in detailed, in-depth cumulative effects analysis. Action alternative 3, which is otherwise our preferred, although still flawed, action alternative, is held hostage by the Forest Service's refusal to include more road closures - and more importantly, more road decommissioning as part of alternative 3. We support No Action over a lot more logging on a landscape scale (including w/Alt.3) with no significant mileage of road closures and decommissioning.

Effects to soils:

The DEIS admits that "ground based mechanical activities" (ie, logging, road construction, road re-opening, mechanical thinning, etc. as planned) "contribute to the greatest disturbance to soil productivity in ashy and non-ashy soils" The DEIS analysis identifies ashy soil and very shallow soil as "the most sensitive soil to disturbance in the project area" and that ashy soil comprises 67% of the project area. (DEIS p.121 2nd to last par.) This means that 77% (PG#70) of the project area is highly vulnerable to detrimental soil impacts. The DEIS analysis further confirms that: "Past ground based activities left ranging concentrations of soil compaction, displacement, erosion, and less woody material than natural conditions within the current project boundary. (DEIS p.121, 2nd to last par.) Notably the "soils" section of the DEIS analysis fails to quantify or estimate the level pf existing detrimental soil impacts per commercial sale unit and to calculate whether or not these sale units planned for more ground-based machinery soil impacts currently meet forest plan standards for detrimental soil impacts or exceed the forest plan standards. The compaction, displacement, and erosion cited as currently existing in the project area would constitute detrimental soil impacts if they exceed forest plan standards.

Soil surveys are usually conducted to gather all this information to inform the DEIS analysis and to determine whether existing soil conditions in specific sale units meet or exceed forest plan standards. Usually this information is quantified by commercial sale unit and displayed in a table in the DEIS. This is standard across different national forests across eastern and central Oregon - except apparently new for (ElSes) for the Umatilla National Forest. Without the disclosure of site-specific soil conditions for each commercial sale unit, the public is left in the dark as to how bad the soil condition is from past timber sales across the Ellis project area, to what degree (%) soils are detrimentally damaged in each sale unit and whether or not each sale unit meets or exceeds the forest plan 20% of an area limit for detrimental soil impacts. We usually look at the information regarding detrimental soil impacts and ask for all sale units that already exceed the standard or would cumulatively exceed the forest plan standard to be dropped from further ground-based machinery use, such as commercial logging. In this case, the DEIS analysis does not even disclose the 20% limit under the (Page 71) forest[MBFUO59] Plan, let alone the percentage of area in each commercial sale unit that already has detrimental soil impacts, based on soil science transects. Further, EISes usually disclose their estimate of how much overall detrimental soil impacts would be caused by each ground. Public readers can see for themselves if the cumulative total from past and planned logging would exceed the Forest Plan 20% standard. Such disclosures are required by NEPA as part of in-depth, detailed analysis to inform public comments.

The DEIS analysis acknowledges that: "Proposed project activities will add to current levels of soil disturbance and continue to limit the volume of woody material left on the landscape." Yet then the analysis then skips all use of soil survey information to evaluate and quantify potential outcomes of using more ground-based machinery in different areas of the project area that have different soil impacts. Instead, the specific results of the soil surveys in the Ellis project area remain undisclosed in the DEIS and the analysis leaps to the unsubstantiated conclusion that: "with the proper application of mechanical activity, fuels treatments, and Project Design Criteria (PDC's), effects from ground-based activity will be short-lived and not decrease soil productivity in the long term." (DEIS . 121, 2nd to last par.) Obviously just trusting the Forest Service to use "the proper application" (which remains undefined) of "mechanical activity, fuels treatments, and Project Design Criteria" has not worked in the past timber sales in the Ellis area to keep the impacts "short-lived" and "not decrease soil productivity in the long term" when there are still long term detrimental soil impacts evident from past timber sales up to decades ago, such as the acknowledged "soil compaction, displacement, erosion, and less woody material[MBFUO60] than natural conditions within the current project boundary." (DEIS p. 121, 2nd to last par.) Despite this, the DEIS claims that: "Information collected in the field directing application of PDC's will keep soil disturbance and overall soil productivity within levels identified by Forest, Regional, and National recommendations." (DEIS p. 121, 2nd to last par.) Yet the DEIS does not even disclose the specific "Forest, Regional, and National recommendations" or how they would be met by the Project Design Criteria. The consistency of non-disclosure of critical information to the public for evaluating the severity of potential impacts is glaring. The DEIS analysis continues this non-disclosure trend by not allowing the public to examine data on "current forest-wide soil quality conditions and trends as the basis for determination" if soil quality objectives, standards, and guidelines are met and are in accord with current scientific knowledge." (DEIS p. 121, last par.) There are no scientific citations, science finding descriptions, or methodologies disclosed in regarding how determination of no long-term soil impacts being caused was made and how PDCs would keep soil disturbance and overall soil productivity "within levels identified by Forest, Regional, and National recommendations," which are also not disclosed. All this non-disclosure may also violate Forest Service Manual 2520 Region (R6) supplement No. 2520.98-1, "which identifies policy 2521.03 which directs Forests to assess current forest-wide soil quality conditions and trends by conducting monitoring activities to determine if soil quality objectives, standards, and guidelines are met and are in accord with current scientific knowledge." (DEIS p. 121) This process must have been intended to lead the public disclosure of the consequent findings.

As the DEIS states: "Essentially, all laws, regulations, and policies addressing soils on National Forest lands are meant to maintain soil productivity,"[hellip]and "PDCs are[MBFUO61] intended to leave the project area with an acceptable level of detrimental soil conditions, leave soils protected by woody debris, ensure nutrient cycling, and maintain stable landforms." (DEIS p. 122, par. 2 emphasis ours) But just because that is what they are meant to do or intended to do, doesn't mean these positive soil conditions are actually met. The DEIS needs to demonstrate that resulting conditions will meet Forest Plan standards, which is impossible to do without disclosing known existing conditions in a quantified, sale unit-specific manner and without disclosing the likely percentage per area of detrimental soil impacts that would result from planned ground machinery-based or soil disturbing management actions.

The DEIS analysis discloses that:

"Representative areas were visited with traverses collecting multi data points to identify a general level of soil disturbance for the activity unit or localized area.

A comparison of existing condition and estimated desired condition based on observed soil characteristics in the field and from the published soil survey is used to determine the amount of deviation from natural soil productivity." (DEIS p. 122, 1st & 2nd bullet points)

Yet despite the disclosure of methodology, no of the data derived from the field surveys was disclosed

in the DEIS, although such disclosure of available relevant data used to determine effects is standard for EISes and required by NEPA. The findings of "the published soil survey" that was "used to determine the amount of deviation from natural soil productivity" are not disclosed in the DEIS analysis to determine cumulative effects. There is no disclosure of the existing conditions in commercial sale units even though the DEIS claim soil surveys were done - presumably in the Ellis project area. There is also no disclosure of the results of the comparison of the existing soil conditions and the "estimated[MBFUO62] desired condition" in the DEIS soil effects analysis. Strangely, the usual maps and tables for the location of different soil types, unstable land forms prone to landslides, and areas with steep slopes are missing from the Ellis DEIS - even though these evaluations and map analysis were referenced. (see DEIS p. 122, bullet points 1st, 3rd, & 4th) With no disclosure of data or locations for soil types, levels of soil disturbance impacts, results of comparisons of existing and desired soil conditions, and steep slopes, why should we trust any effects analysis for soils in the DEIS? The main intent of NEPA is to fully inform the public of existing conditions and potential effects to Forest values, including soil productivity, and to give the public the necessary information by which to judge the validity of analysis conclusions and provide informed comments for the Forest Service to consider in changing plans.

Please send us all maps and table of available information from soil surveys; map analysis for location of unstable land forms, soil types, and slope steepness; and results of comparisons between observed soil disturbance conditions versus the estimated natural soil productivity - including the Soil Report, if one exists for the Ellis Project.

We are strongly opposed to ground-based equipment use (including all commercialized logging and road construction) on soils that have existing detrimental soil impacts that exceed or are close to the Forest Plan standard limit of 20% of a sale unit area, are on steep slopes of [ge]35%, are on shallow or very ashy soils, or are located on unstable slopes or landforms vulnerable to landslides or mass wasting. Drop all ground based machinery use in soil units with the above soil and/or slope characteristics.

The DEIS clarifies that: "Understanding of soil disturbance by past ground-based mechanical actions is derived from field[MBFUO63] observations of the following indicators as identified by the Regional [sic] supplement to the Forest Plan: soil compaction, soil displacement, soil erosion, and soil cover by material in the project area." (DEIS p. 122, last par.) Yet despite this Region 6 requirement, no measurement results for soil compaction, soil displacement, soil erosion, and soil cover by wood material are disclosed in the analysis to inform the "understanding of soil disturbance by the past mechanical actions" to determine past effects and the existing condition.

It's not sufficient to just list resource indicators such as % of soil compaction and displacement and units of measurement such as miles of roads and skid roads and acres of displacement and exposed subsurface mineral soils or percentage of down wood per acre - without disclosing the measurements of actual mileage extent for compaction, acres of soil displacement, acres of exposed subsurface mineral soil, and amount of down wood per acre in the Ellis project area or in Ellis commercial sale units. (see DEIS Table 3-44, DEIS pages 122-123 with no follow-up tables or description of measurements of these resource indicators in the Ellis project area.

The "Summary of Effects Analysis" makes a strong case for adopting the No Action alternative:

"A no action proposal will allow soil forming processes to continue to act on the landscape. Existing compaction found in the harvest corridors and skid trails will slowly improve with time. Available water capacity of the soil will increase as soil structure improves from platy to subangular blocky[hellip]. Soil compaction of some skid trails, closed roads, and landings will continue to be disturbed by recreational activity but to a significantly less degree than ground-based harvest or thinning activities[hellip]. Areas of soil displacement will continue to develop horizons and stabilize on the landscape. Areas of past disturbance will continue to stabilize and soil erosion/sediment movement would diminish with time to background levels[MBFUO64] [hellip]. Woody material will continue to accumulate and break down providing soil cover from erosion and contribute nutrients into the soil

profile." (DEIS p. 123, par. 1)

Whereas the DEIS characterizes the action alternatives as follows: "For all action alternatives, avoiding ground-based thinning and harvest activities on ashy soils is not possible because they comprise 67% of the total project area and are the most productive soils supporting the greatest tree growth and stand density." (DEIS p. 123, par. 2)

Of course avoiding renewed detrimental soil impacts on ashy soils is possible and should be done to prevent foreseeable widespread detrimental soil impacts in the most productive soils in the area, which would also disrupt and prolong soil recovery from past logging. Alternative 3 would largely reduce detrimental soil impacts to ashy soils by not logging in the moist mixed conifer and lodgepole pine stands except for within the "low intensity" fuel break zones, which is too wide, and within smaller patches of ashy soil-based moister micro-habitat patches within mostly the middle section of the sale (in a North-South gradient). Which should also be avoided with ground-based machinery, compared to alternatives 2, 4, and 5.

Riparian areas are also particularly susceptible to severe detrimental soil impacts. We are very concerned that alternatives 2 and 5 would use ground-based machinery ("mechanical treatment") within aspen stands and meadows with areas of aquic soils that area wet for more than three weeks a year. The DEIS acknowledges that this would cause long-term impacts to soil productivity (which should be avoided):

"Mechanical treatments on aquic soils results in organic matter compaction of a significant portion of the upper soil profile that, if [it] dries out, can impede soil rehydration for tens of years and negatively impact soil productivity." (DEIS . 123, par. 3) This is also a long term effect that is being caused by the cumulative overgrazing by the cattle in RHCAs. The[MBFUO65] chosen alternative for Ellis should not allow ground-based machinery within the RHCAs or conifer removal from within RHCAs, including in aspen stands and meadows. There should be no landings or skid trains constructed or re-used within RHCAs. Likewise, there should be no "temporary" roads constructed or re-used within RHCAs.

The DEIS acknowledges that: "Alternative 3 proposes conifer thinning in aspen and meadows that is consistent with Blue Mountains PDCs and will be the most beneficial to soil productivity of all the alternatives as it opens the canopy and keeps organic material for nutrient cycling in place." (DEIS pp. 123-124, last par. to first par.) This implies alternatives 2, 4, and 5 do not follow Blue Mountains standard Project Design Criteria. The Forest Service should at least follow their own Project Design Criteria that designed to avoid ecologically destructive impacts.

We are opposed to any use of heavy equipment within RHCAs, including Alternative 4 proposing mechanical conifer thinning in the outer 50% of the RHCA, which violates PACFISH and INFISH under the Eastside Screens and would prevent attainment of associated Riparian Management Objectives (RMOs). The science supporting INFISH and PACFISH buffers is solid and has yet to be disputed by the Forest Service to our knowledge.

The DEIS admits that: "Alternative 4 has similar effect as Alternative 3 but has greater potential for soil displacement in the RHCA and removes organic matter from future nutrient cycling in the outer 50% of the RHCA. Alternatives 2 and 5 propose the most disruption because there is no restriction to where ground-based actions will occur in riparian aspen stands and wet meadows." (DEIS . 124, par 1) These foreseeable impacts to soils, moisture retention, organic nutrient cycling, and plant and wildlife biodiversity under alternatives 2, 5, and 4 are outrageous and totally unacceptable.

We are also very concerned about planned logging on steep[MBFUO66] slopes, which could destabilize slopes, cause long-term detrimental soil displacement and erosion, and contribute to overall loss of soil productivity in the Ellis area. Steep slope logging would also be uneconomical, since most tree density is only

small trees and a large percentage of mature forest cover and large trees has already be lost to past logging compared to much higher levels of historical mature forest canopy cover and large and old tree structure. The DEIS discloses that only a little less that 54% of the project area has steep slopes greater than 35% It is common for the Blue Mountains Forest Service staff to drop planned sale units on steep slopes due to steep slope logging now being uneconomical (often even in the few remaining large trees were removed) and destabilizing to the slopes due to past steep slope logging impacts and easily displaced ash soils. We strongly oppose any commercial logging on steep slopes - all steep slope commercial logging should be dropped.

The DEIS acknowledges that timber industry proposed ground-based "tethered assist" logging "has the potential to produce the greatest amount of disturbance to soil productivity on these slopes," (DEIS p. 124, par. 2) While this is true, traditional skyline yarding also leaved long-term skid train impacts that fragment the forest habitat and cause long-term detrimental soil impacts that generally have little or no tree regeneration over decades due to intense soil compaction. In either case, steep slope logging in the Ellis area is not economical based on our field surveying of proposed commercial sale units.

The Forest Service as an agency seems to have collectively gotten out of touch with reality on the ground from past timber sale impacts. The DEIS does admit that the timber industry in this region will continue to decline, regardless of whether the Ellis sale is implemented at the greatest logging intensity of alternatives 2 and 5 or less ecologically harmful alternatives, both of which should have been[MBFUO67] modified to be smaller in scale, with less logging intensity and much smaller major road "fuel" breaks. Ideally, the Ellis project timber sale should be scrapped and only non-commercial small tree thinning by hand, prescribed burning in the dry forest only, and ecologically sound restoration that does not violate PACFISH/INFISH be used. This is our preference. Such an alternative should be possible through the big influx of funding that the Biden Administration is delivering to the Forest Service for restoration and fire risk reduction.

For the Ellis area, none of the action alternatives as currently proposed would result in ecological sustainability or increased forest resilience due to the planned intensity of logging in the all-encompassing "fuel breaks", and the scale of ground-based extraction of biomass, including mature forest cover, large tree structure, snags, and logs, in the wake of substantial past heavy logging. The Ellis area still has not recovered from the clear cutting, high-grading, and commercial thinning of multiple and over-lapping timber sales. The rotation between timber sales is now far too short to be ecologically sustainable, with such fundamental detrimental impacts to water retention, soil nutrient cycling, carbon storage and sequestration, complex forest structure and denser forest areas for wildlife habitat, and basic ecological processes such as sufficient snag and log creation and riparian functioning. These long term losses would be absolutely catastrophic for the area in combination with accelerating extreme climate change and the ongoing sixth mass extinction.

The scale of proposed commercial logging and other mechanical thinning is shocking:

"Alternative 3 proposes 42% and Alternative 4 proposes 50% of the total project area for mechanical thinning compared to Alternatives 2 and 5 which propose 77% of the total project area[MBFUO68] ." (DEISp. 124) This is an unprecedented scale of logging and ground-based machinery use for such a large project area. On the Malheur National Forest, timber industry representatives in the Blue Mountain Forest Partners collaborative group agreed years ago to keep the total timber sales footprint to less than 50% of an identified project area. Only alternative 3 of the action alternatives would meet this criteria. We also prefer alternative 3 to the other action alternatives because "Alternative 3 has the least number of mechanical treatment acres on sensitive soil, greatest number of acres with resilient sensitive soil, and least number of acres with resilient sensitive soil, and least number of acres with proposed ground-based action of steep slopes." (DEIS. 124, par. 3) However we are opposed to any logging on steep slopes and sensitive soils.

The DEIS states that: "Field verification is needed for all ground-based mechanical thinning on steep slopes to identify the presence of desirable soil characteristics prior to action implementation as directed in the

Forest Plan (Forest Plan Appendix II, pg. E-28)." However the DEIS analysis does not say whether or not field verification will actually be done prior to logging the steep slopes.

Table 3-45 on the DEIS p. 124 does quantify the acres per alternative of mechanical "thinning" (logging), ashy soil, more resilient gravelly ashy soil, steep slopes affected, very shallow soil steep slopes and very shallow soils, which is helpful. However we would still like to see this kind of information for each commercial sale unit, as we field surveyed the commercial sale units, and this information could be useful in determining which sale units are the highest priority sale units that should be dropped from commercial logging.

Alternative 3 is also preferable to the other action alternatives because it does not involve construction of so-called "temporary" roads, most of which are never fully decommissioned and often reused with the next timber sale, perpetuating long term soil damage and forest fragmentation. The least[MBFUO69] amount of commercial logging, including the "fuel breaks" equates to the least amount of nutrients lost for landscape-scale nutrient cycling in soils and the most soil protection from erosion and moisture loss through much more down wood retention. Thus we also prefer alternative 3 to the other action alternatives for those reasons, although no action would better protect soil nutrient cycling, moisture retention, down wood erosion control and habitat for down wood associated species, including insects & worms critical for nutrient cycling and soil fertility. There is no guarantee that down wood needs would be met simply by leaving slash on the ground, as naturally fallen trees contribute whole trees to soils, not just small branches.

The Forest Service has long been using similar Project Design Criteria to that proposed for the Ellis timber sale, yet as the DEIS notes, levels of down wood from past timber sales are at a significant deficit compared to natural amounts of down wood.

We are opposed to landscape burns in the moist mixed conifer and lodgepole pine forest types, as both would naturally have greater amounts of down wood than the dry and warmer forest types such as Ponderosa pine and Ponderosa pine/Douglas fir co-dominant stands. Prescribed burning eliminates suitable down wood foraging habitat for both Pileated woodpecker and American marten, both Management Indicator species using the moister mixed conifer forest type. Pileated woodpeckers would also lose suitable soft-decayed snags for foraging. The Northern Three-toed woodpecker and the Blackbacked woodpecker both need abundant down and elevated logs, such as in Lodgepole pine and moist mixed conifer for sub-nivean winter foraging.

We are concerned that: "Natural processes acting on pile burn-disturbed areas take tens of years to stabilize and acceptable levels of soil productivity." (DEIS p. 125, par. 5) Instead of pile burning, use landscape under burning or lop and scatter[MBFUO70] or chipping methods for distributing wood back across the forest floor.

Cumulative Effects: The Forest Service really needs to address the tremendous cattle overgrazing impacts to soils, water quality, plant biodiversity, elk and deer forage, fish and other aquatic species, and recreational uses, with the DEIS identifying several livestock pastures overlapping 91% of the Ellis area with 282 watering location that comprise 56% of the project area. (See DEIS p. 125, last par.) As the DEIS analysis points out: "Congregating cattle along watering holes, salt locations, and fence lines affect soil productivity the greatest by soil compaction and displacement[hellip].where the overlapping disturbances [with "mechanical thinning actions" (i.e. logging)] connect in a linear fashion, they produce the greatest potential for soil erosion. Cattle disturbance persists on the landscape for over 5 years and longer when the disturbance overlaps ground-based harvest activities." [i.e. logging] We commonly find completely denuded compacted soil from cattle trails leading directly into streams, following fence lines and along skid trails and old logging roads, perpetuating the long-term lack of soil recovery.

The DEIS cumulative effects analysis for soils admits the significant contribution of commercial logging to perpetuating long-term soil damage. The startling admission that now commercial logging is being repeated on such an unsustainable rotation of only 10 to 15 years, which does not allow for any significant forest recovery in the interim between timber sales appears on DEIS p. 126 (par. 2)

"Repeated mechanical thinning activities on a 10-to-15 year cycle perpetuate soil compaction and displacement on roads, transportation corridors, old skid trails, and activity areas between concentrated vehicle use."

The Forest Service has long claimed that they are using a 30 year timber sale rotation, which is ecologically unsustainable as it is[MBFUO71] . However I have caught the Forest Service twice coming back to the same area again in only 9 years - with a sale on the Malheur NF and one on the Deschutes NF. Within the last 30 years, I have field surveyed multiple timber sales within or adjacent to the Ellis timber sale, including the following timber sales: Sunflower-Bacon, the West End Sale, part of the East End sale, hazard tree logging along rd. 21, Penland lake fuel reduction logging, and possibly others. These were all, implemented within the last 30 years, not 30 years ago. Such a fast timber sale rotation amounts to forest liquidation over time, or incremental deforestation, as the Forest Service is already coming back to log the mature trees they promised the public they would save for the future in the last round of logging. This is why we support No Action over any of the action alternatives - the Ellis area has already been extensively logged to death. All that prior logging evidently did not accomplish all the positive outcomes they promised then and are promising for the Ellis sale, such as wildfire "risk" reduction, increased forest resiliency, and the "accelerated" growth of more large trees due to increased tree vigor due to thinning. There is no credible "need" for the current Ellis timber sale as none of the purpose and need promised outcomes are ever attained. Instead, those purpose and need statements are just deeply flawed rationales for more logging to benefit the timber industry while significantly degrading or eliminating most other Forest values. This pace, scale, and intensity of logging is not sustainable ecologically, economically, and socially. This unsustainability runs counter to Forest Plan goals and standards and to the National Management Act.

The cumulative effects analysis for soils fails to consider in depth how soil impacts affects plant biodiversity; soil carbon storage; wildlife habitat such as deer and elk forage[MBFUO72] ; but also microhabitat for riparian species such as aquatic macroinvertebrates that are essential fish prey, and microhabitat conditions for a wide variety of insects and their predators, such as Neotropical migrating songbirds, and for pollinating insects; and recreational uses such as fishing; hunting; Nature study; Nature photography; camping; and hiking; as well as mushroom and medicinal plant foraging. This is inadequate cumulative effects analysis as it fails to consider effects to all the other Forest values dependent on fertile soil and stable slopes. For instance, logging on steep slopes over streams can cause soil displacement, erosion, and excess fine sediment transport into streams, negatively affecting water quality and fish. Yet none of these cumulative effects are considered in the analysis.

Botany:

With the stroke of a pen (or a keyboard) the Botany effects analysis takes the unprecedented step of rationalizing abandonment of the standard way to quantify effects to Sensitive plants by acreage of individual plant populations, as they are mapped: "The only quantifiable resource indicator for sensitive plants is the number of acres of occupied habitat that may be impacted by the project. Since virtually every habitat has potential to harbor one or more sensitive plant species, it is less useful to quantify the number of acres of potential sensitive plant habitat. Therefore, the discussion of impacts to botanical resources are mostly qualitative." (DEIS p. 126, last par.) There are significant problems with this approach. First, Sensitive plant inventories have already been done across the Umatilla NF (I was one of the plant surveyors on the Heppner

District in 1992.) These plant inventory surveys have already mapped existing sensitive plant populations based on the acreage where an individual plant population is found, as displayed in DEIS Table 3-48, p. 127. These existing Sensitive plant populations need to be protected. Mapping[MBFUO73] existing populations and keeping track of those population is an important way to not only protect the plants that have been found, but also to track population increases or declines of individual sensitive plant species. The DEIS analysis in EISes across the region address the issue of undetected sensitive plants in suitable habitat just as this DEIS does: " It is important to know that surveys were mainly focused on areas subject to ground-disturbing activities, in addition, units are prioritized based on the amount of high to moderate potential habitat for sensitive species. Some sensitive plant species do not produce above-ground plants every year. It is not possible to state with certainly that all sensitive plants will be detected during botanical surveys." (DEIS p. 127, par. 1) So it is common practice to use this disclaimer while continuing to focus prevention of negative impacts to know sensitive plant populations and sometimes expanding sensitive plant population protection to habitat that used to have sensitive plant populations, such as was done in the Surveyors sale on the Deschutes National Forest recently, or to suspected habitat, such as in we zones in riparian areas along streams for moonwort (Bryophyte) species, that do not always produce above-ground plants, which are also difficult to detect. Protection of whole areas that are important habitat for sensitive plants has also been done - notably recently on the Malheur NF in comprehensive protection of fens and one area being excluded from timber sale management in the Big Mosquito sale due to it being rich habitat for sensitive plants. The Malheur NF also protects unique habitats, which are specified under the Blue Mountains Forest Plans for protection from management impacts. For instance, the Malheur staff excluded unique habitat we found while field surveying the Ragged Ruby timber sale from the timber sale management.

So the combined approach of tracking and protecting known sensitive plant populations (which should be quantified) plus[MBFUO74] protecting known historic sensitive plant habitat or likely sensitive plant habitat, as with fens, stream margins, and unique habitats, works best for sensitive plant protection.

However the Ellis DEIS overall tends to be ditching any quantitative analysis, which is not only required under NEPA for in depth, detailed analysis, but is also important for calculating the severity and extent of potential negative effects in order to prevent or avoid these negative impacts. Not using quantitative analysis has also enabled the DEIS to use significant omissions of known potential impacts that could otherwise be quantified and evaluated for severity and/or extent of effects. See, for instance, the omission of much crucial information for determining effects in the wildlife species analysis.

A significant omission in the Botany effects section is disclosure as to whether or not the proposed sale units for the Ellis project have actually been re-surveyed to update detection of sensitive plant populations that were not detected before and to evaluate and quantify evident increases or declines in existing sensitive plant populations. This is standard procedure prior to DEIS analysis writing in the Blue Mountains and Central Oregon National Forests. The results of re-surveying existing plant populations and surveying potential habitat within commercial sale units recently should have been disclosed in the DEIS. Instead the analysis only discloses that: "A pre-field review determined the probability that sensitive plant populations, and potential sensitive plant habitat are located within, or adjacent to, the project planning area. A full list of information sources and data uses is included in the Botany resource report." (DEIS p. 127, 1st par.) The Ellis DEIS keeps outsourcing specific, and often quantitative, information critical to understanding the current status of Forest species to reports outside of the DEIS, such as the Wildlife Report, and in this case, the Botany Report. The reality[MBFUO75] is that most of the public don't have the time to find and go through separate reports to unearth critical information that should have been disclosed in the DEIS, and is generally expected to be found in the DEIS. So not including specific information sources and data in the DEIS analysis effectively hides this information from the public and circumvents NEPA requirements for full disclosure of methodology, transparent accurate use of the science, and detailed, in-depth analysis.

It is standard across the region to individually describe for each sensitive plant species: it's current

population status in terms of state or regional occurrences and relative rarity, any recent knows declines or increases in the plant's populations, suitable habitat, and sensitivity to particular types of management impacts. All of this information is missing for the four sensitive plant species apparently documented "in the vicinity" that are listed in Table 3-48.

Of these four sensitive plant species, I have seen Bolander's spike-rush and Cordilleran sedge listed in other timber sales' analysis for effects to sensitive plants, but not Holmgren's bittercress and Midget quillwort, which may indicate that the latter two species may be very rare. Yet many questions remain unanswered in the analysis. How rare across the region are these sensitive plant species? Are Holmgren's bittercress and Midget quillwort unique to the project area or to a Ranger District, or to the Umatilla National Forest? How much suitable habitat for each of these species would be threatened by management impacts under each action alternative? How long have the existing species populations been monitored and what the trends over time for these species in the project area? How small or large is each existing sensitive population of sensitive plants? Would existing sensitive populations be buffered and flagged, with entry[MBFUO76] for management within the perimeter of the population prohibited? How big would the buffer be for protecting these existing sensitive plant populations? None of these questions are analyzed in the Botany effects analysis, making it impossible for us to judge whether existing sensitive plant populations would be adequately protected from management impacts and whether any of the potential suitable habitat for these sensitive plant species would be protected. There is also thus no indication as to the relative negative impacts to each sensitive plant species under each action alternative. As with a lot of the rest of the Ellis effects analysis, the Botany effects analysis is grossly inadequate, avoiding quantification, and not providing enough for the public to judge the potential for, and severity of negative effects under each action alternative for the receptors of the effects - in this case, sensitive plants.

Based on other EISes that I have read, the Forest Service often does have enough mapping data to at least infer whether a specific suitable habitat type such as rock outcrops, lithosols, or forest plant communities are common or not likely to exist in specific areas of sale units, or alternatively, whether these suitable habitats would be subject to management impacts or not. For instance, there are usually no logging impacts to vertical cliffs, rock outcrops, or talus. Prescribed burning might be the only type of management planned for grasslands or lithosol habitats. In the Ellis project, alternative 3 avoids logging in most of the moist mixed conifer and Lodgepole pine forest types, which may be suitable habitat for particular sensitive plant species. Alternatives 5, 2, and 5 have greater management impacts to riparian areas than alternative 3. Yet the Ellis Botany[MBFUO77] analysis neatly sidesteps the obligation to provide detailed analysis to the extend possible by saying: "since these habitat types tend to overlap, and are not discretely mapped, it is impossible to determine how many acres of each habitat type occur in the project area." (DEIS p. 127, 2nd to last par.) Either the person writing the Botany section is now, not a botanist, or simply doesn't care to look for a way to describe effects in more detail (with examples of how to do this readily available in other EISes) or the details have edited out of the DEIS. Usually an EIS describes the differences between suitable habitat types for sensitive plants, such as for lithosol habitat, rock outcrops, grasslands, or upland forest plant communities, as well as for riparian zones (which weren't mentioned at all in the Ellis Botany analysis as a habitat type for sensitive plants, even though riparian areas often have the most sensitive plant species occurrence.) Instead the Botany analysis outsources the description of habitat types as: "These are defined more in the Botany report." (DEIS . 127, 2nd to last par.)

Specific cumulative effects to sensitive plant species and populations are not identified or described for the Botany effects section of the analysis at all, violating NEPA requirements for detailed analysis of potential cumulative effects from past present, and foreseeable future effects in combination with the proposed action.

The analysis for the effects of the action alternatives to sensitive plant species and existing and potential populations is so vague and over-generalized as to be virtually meaningless. Instead of using detailed analysis to specify differing effects from different action alternatives to different sensitive plant species with different habitat needs, the analysis makes unsubstantiated broad declaratory statements. For[MBFUO78] example:

"The project design features to protect populations [both of which remain undefined and undescribed in the effects analysis] would ensure that implementation of all non-fire activities would have "no impact" to any documented sensitive plant populations in the project are.' (DEIS . 128, 1st par) Without any description of the PDCs that would be used, the sensitive species' habitat needs, the general habitat types where they could be found, and the relative rarity of the species in the project area and the Umatilla NF, including population sizes and trends, it is impossible to determine whether the PDCs would be sufficient to ensure that implementation of all non-fire "activities" (management actions) would have no impact to any documented sensitive plant populations. The general attitude of the DEIS, based on the significant omissions of critical information and detailed analysis in most effects sections is "just trust us", which is contrary to NEPA's intent for full public disclosure by the agency to the public of all relevant information that is available to inform public comments and guide agency decision-making based on public concerns and interests.

Another example of a sweeping generalization is the following: "Although some unquantified amounts of cumulative effects are likely, it is assumed that they won't be of a magnitude that will contribute a trend towards federal listing of sensitive plants or lead to significant impacts as defined by the National Environmental Policy Act." (DEIS p. 128 par.s 1&2) So what specific cumulative effects are thought to be likely? How exactly is it assumed that effects would not reach a level of significance that would contribute to an upward listing trend under the Endangered Species Act? This does not constitute adequate cumulative effects analysis. The criteria for a plants species to be listed as "sensitive" remain undisclosed. It is unclear if the following (PG#91) protection[MBFUO79] for sensitive plants would be implemented for all the action alternatives, or just for alternatives 3 and 4 "All documented populations of sensitive plants will be designated as special management areas. This should protect all known existing sites." (DEIS p.128, par.3 under "alternative 3 and 4")

The effects determination for all sensitive plants known to be in the project area of "may impact individuals or habitat, but will not contribute a trend towards federal listing (MIIH)" is not justified based on the over-generalized effects analysis that fails to disclose available relevant information or to use detailed, in-depth analysis for effects to each sensitive plant species under the different action alternatives.

Invasive plant species:

The DEIS analysis is for effect to non-native invasive plant species identifies alternatives 2 and 5 as having "the highest risk of the establishment and spread of invasive plants" because "These two alternatives have the highest number of acres of mechanical treatments and the highest number of miles [of] temporary roads." (DEIS p.130, par.3) The analysis also finds that; "Alternative 3 has the least amount of acres [of] mechanical treatments and fuel breaks proposed. Alternative 3 does not include any construction of temporary roads." 9ibid.) Alternative 3 would thus cause the least introduction and dispersal of exotic invasive plants of the action alternatives. This aligns with our other reasons for preferring Alternative 3 over the other action alternatives.

However, no action under alternative 1 would likely have the least increase in introduction and dispersal of exotic invasive plants. We favor No Action over alternative 3 accordingly. We concur with DEIS analysis of the relative effects of the different alternatives to the introduction and dispersal of invasive exotic plants.

(PG#92) Invasive plants, cont.:

Reasons supporting No Action as resulting in the least introduction and dispersal of invasive plants one given in the DEIS analysis:

"Alternative 1 would have no new direct, indirect, or cumulative effects to the introduction and spread of non-native invasive plants. The spread of invasive plants from currently existing populations and off-forest seed

sources is not expected to be extensive, as existing populations, both on and off-forest, are relatively small and isolated. Furthermore, existing native plant populations are healthy and thriving in the absence of recent wildfire and other disturbances[hellip].The potential spread of these infestations under Alternative 1 is expected to be low because these infestations are currently being treated and are at low densities." (DEIS p.130, par.2)

Heritage resources:

The effects to heritage sites and culturally significant foods are biased to some extent by typical Forest Service flawed assumptions, such as that the action alternatives would reduce the likelihood for high intensity wildfire in the project area. (See DEIS p.134 full par.2) This is especially doubtful due to a western IS scale study that found no significant difference from "fuel" reduction efforts in reducing the extent, incidence, or intensity of fire, and due to extreme climate change effects of higher ambient temperatures, lower humidity, and higher wind speeds, all of which influence fire intensity more than biomass "fuel" loading. Further, Alternatives 2 and 5 are not the most beneficial to Rocky Mountain elk since elk rely on a mosaic of openings adjacent to denser forest cover. Alternatives 2 and 5 would remove the most forest density and forest cover overall, leaving very little hiding or thermal cover for elk over huge contiguous blocks on a landscape scale. It's doubtful that elk would persist in any significant numbers after such extensive and intensive removal (PG#93[MBFUO80]) of forest cover. Alternative 3 would be the most beneficial action alternative for elk in terms of leaving most of the northern block of elk-preferred moist mixed conifer and lodgepole pine forest cover while creating openings in the drier, naturally more open forest types and reducing conifer encroachment in meadows and along streams, and reducing over-hunting in the area, possibly by restricting the numbers of out of state hunters, elk will still likely be displaced form the Ellis area onto private lands. We advocate for more road closures and decommissioning than in alternative 3 as now proposed, but road closures will not be sufficient by themselves to retain or recover elk use of the area without providing more dense forest cover than in alternatives 2. 4, and 5.

We are glad that the Forest Service is working with the Confederated Tribes of the Umatilla to monitor effects of management to cultural use plants. While many cultural use plants may benefit from prescribed fire, mushrooms also depend on substantial down wood and moisture retention that may not be retained sufficiently under alternatives 2.4 and 5.

We note that there is no DEIS discussion if the need to work with the Confederated Tribes of the Umatilla to protect cultural sites - both for spiritual traditions and for cultural wild food gathering areas.

Undeveloped lands:

We are strongly opposed to commercial logging and any road construction or closed road re-opening in undeveloped lands. There are far too few undeveloped lands left compared to historic conditions to serve as refuge for wildlife, headwaters refuge for fish species spawning, natural carbon sinks, areas of greater biodiversity, and reference conditions for assessing the effects of management (PG#94[MBFUO81]) in nearby areas or similar forest types or habitats. Undeveloped lands also serve as refuge areas for humans to get away from industrial development and resource extraction and experience solitude and solace in a natural setting outside of wilderness areas and inventoried roadless areas, often with easier access for people with disabilities. Agency adaptive management is fostered by retaining last pockets of undeveloped lands across the landscape as these provide more varied geographic situations for comparison with managed lands, such as more undeveloped lower elevation sites that are more similar to adjacent managed lands in precipitation, plant community types, forest types, or wildlife species using the area.

The undeveloped lands effects analysis is extremely biased and (inadegnate) in that none of the benefits described above from leaving undeveloped lands (undevelgsed) appear in the effects analysis except for "apparent naturalness and a sense of remoteness" Evidently whoever wrote the section of analysis for effects to undeveloped lands really doesn't care about their values. Most of the effects descriptions are outsourced to other

sections of the DEIS where there is no disclosure as to whether undeveloped lands exist in the area discussed or how undeveloped lands could benefit the forest values being discussed in those sections. This outsourcing to other sections thus doesn't work for covering effects to undeveloped lands. Instead it's just throw away wording to dispense with the issue, avoiding the NEPA requirement for in-depth detailed analysis of potential effects. For example: "Effects to the (intrinsic) physical and biophysical resources of undeveloped lands within the Ellis planning area (soils, water, wildlife, recreation, etc.) are disclosed in the applicable resource sections above." (DEIS p.136, par.4) And "For undeveloped lands in which project activities would occur, the cumulative effects to soil, water quality, plant[MBFUO82] and animal communities, habitat for threatened, endangered, and sensitive species, recreation, and cultural resources are disclosed in the applicable resource sections of the EIS and are not reiterated here." (DEIS p. 134, par. 1)

So the Undeveloped Lands effects analysis for affected receptors and values such as soils, water quality, wildlife species, biodiversity, recreation, and cultural values are shunted off to sections of analysis that don't consider the value of undeveloped lands to these receptors and values. Thus the Undeveloped Lands analysis section recognizes that there are effects to these receptors and values but willfully fails to analyze these effects in the appropriate section of analysis, dismissing any specific detailed or in-depth consideration of these direct, indirect and cumulative effects in violation of NEPA requirements.

Drop all the commercial logging, road building, re-opening of closed roads, and heavy equipment use in all of the lands identified as undeveloped in Table 3-54, which would affect parts of 16,785 acres, for instance, under alternative 3. We are not objecting to the use of prescribed fire in dry forest types, or to noncommercial thinning in smaller blocks of undeveloped lands such as less that 100 acres. The undeveloped lands analysis failed to follow the standard procedure of regional EISes of displaying on a map where the larger blocks or undeveloped lands occur and how they relate to or connect to any Inventoried Roadless Areas or Wilderness Areas, or to each other, to possibly form an area big enough to potentially be designated as an Inventoried Roadless Area. We are strongly opposed to any management in larger blocks of developed lands such as 500 acres or that connect to other large blocks of undeveloped lands, including IRAs and Wilderness Areas. Table 3-52 should probably read >(greater than) 640 acres - is[MBFUO83] that correct? (see Table 3-52 on DEIS p. 135) Drop all undeveloped lands in the 17 blocks of >640 acres from any management. Drop all management except prescribed fire in dry forest types and non-commercial thinning by hand only, only up to 9"dbh, for the 11-100 acre blocks and the 101-640 acre blocks of undeveloped lands, if identifiable, leave all the 1-10 acre blocks of undeveloped lands as retention patches.

This timber sale needs to be either dramatically scaled down or abandoned altogether. Following the above recommendations for blocks of identified undeveloped lands could be used to help scale down alternative 3 to a level of thinning that we could accept, along with reducing the width of the "lower intensity zone" "fuel breaks" to only 50-100 feet. Note that "thinning" and "mechanical fuels treatment" objectives could still be met through non-commercial size tree thinning by hand or by prescribed burning in drier forest types, as the vast majority of tree density in the Ellis area is just small trees up to 9"dbh.

Climate Change:

Please send me a hard copy by mail of Climate Change Vulnerability and Adaptation in the Blue Mountains Region (Halofsky and Peterson 2017.)

This is the most truncated, inadequate analysis I've seen yet by the Forest Service for climate change effects. There is only one science citation cited. The "analysis" fails to discuss the cumulative negative impacts of commercial logging, road construction, and livestock grazing with climate change, especially regarding removal of forest cover through logging of mature and large trees. More retention of forest cover is critically needed to

retain forests as a carbon sink through preserving more trees - especially mature and large trees to sequester carbon through their full natural life span and continue to store carbon as snags and logs. Climate[MBFUO84] scientist James Hanson has said that unless natural carbon sinks, including forests, are retained, it doesn't matter if we switch entirely to renewable energy sources instead of fossil fuels, as we'll still be doomed. The DEIS analysis also ignores Bev Law's recent study establishing the need to preserve mature, large, and old trees for carbon sequestration and carbon storage. The DEIS analysis also ignores a lot of other science regarding climate change and forests. (see our enclosed science citations and articles, as well as others sent separately by Paula Hood of Blue Mountains Biodiversity Project or by the Western Watersheds Project.) The DEIS analysis fails to disclose scientific controversy between their one cited science study and all of the studies cited or described that we send as part of the comments. There's not even any mention of the CO2 emissions and extensive loss of forest carbon sequestration and storage that would be caused by the Ellis project, with the greatest CO2 emissions foreseeably being from alternatives 2 and 5, the least CO2 emissions from the No Action alternative 1, and the 2nd least emissions from Alternative 3. Likewise, the greatest loss of carbon sequestration and storage would be from Alternatives 2&5, the least loss from No Action, and the second to least from Alternative 3.

The DEIS analysis for Climate Change effects is so bad that it fails to analyze any of the negative effects of the Ellis Project that would exacerbate the effects of climate change, such as extensive loss of forest cover and mature trees on a landscape scale; reducing carbon sequestration; carbon storage from live trees, snags, and logs; carbon inputs to soils from trees; and water retention from forest cover, as well as cooling from forest shading. The DEIS fails to include cumulative effects to wildlife species from Ellis timber sale forest liquidation and climate change. The[MBFUO85] DEIS analysis also fails to include a carbon budget for the Ellis sale or to acknowledge the contribution of timber sale logging to Oregon's CO2 emissions as a leading contributor. There is no consideration of the effects of planned intensive logging over large contiguous blocks of forest to the drying out of microclimate moisture retention, and the consequent loss of water sources such as streams and springs for wildlife, in combination with the expected increased heat waves and droughts under climate change.

The DEIS analysis also fails to consider the crippling effect of removing forest overstory - mature and potentially large trees - to wildlife species trying to survive unprecedented heat waves without the cooling influence of forest overstory canopy. The DEIS analysis also does not disclose the impending need for wildlife species to migrate to higher elevation forest (such as in the Ellis area) to find suitable habitat when lower elevation habitat becomes unsuitable due to heat waves and droughts.

The analysis fails to consider the effects of removing extensive down wood that stores water and protects moisture for soils and plants through huge planned "fuel" breaks.

The DEIS analysis does not even pause to consider and disclose that if the atmosphere is allowed to heat up to 3-6 degrees Celsius over the 21st century, as cited on p. 137, humanity is highly unlikely to survive for long, or at least, there will be massive human conflicts over basic resources such as fresh water, and mass emigration of people fleeing droughts, famines, sea level rise, flooding, and wildfires - which won't be stopped by logging - making organized human civilization impossible by the end of the century. Further, we must allow wildlife species as much natural habitat as possible, as we are dependent as humans on functioning ecosystems supported by biodiversity. Instead[MBFUO86] of discussing these looming realities, the large consensus of the science against further logging of mature and large trees, and the need to support biodiversity by not continuing management mistakes of the past, such as intensive logging a landscape scale on an unsustainable fast rotation, the Forest Service is stuck in a logging road rut of continuing to regurgitate pro-logging public relations propaganda. The Climate Change "analysis" is a disgusting failure to use the full range of best available science, disclosure of scientific controversy, and to do in-depth, detailed analysis that could lead to new insights and direction as to what should be done to preserve functioning ecosystems, and wildlife and plant biodiversity. We need to find innovative ways to us to survive through less consumption of resources and more systemic change.

One of those changes needs to be to leave Nature along as much as possible. Species evolved with natural disturbances, including wildfires, insects, diseases, and droughts, but not with logging, roads, exotic livestock, and toxic herbicides. Management exacerbates risks posed by climate change.

Irreversible and Irretrievable Commitments of Resources:

We agree with the DEIS analysis regarding the irreversible and irretrievable commitment of resources regarding potential soil impacts: "Soil compaction on very shallow soils in an irreversible and irretrievable commitment of resources for ground-based harvest or thinning activities due to the amount of time it takes to restore soil productivity to the very shallow soil area. It affects very few acres of the project area and landscape but has the greatest potential for change in soil productivity viewable by changes in the vegetative community." (DEIS p. 139, par. 1) This is why we oppose any logging or use of ground-based machinery on very shallow soils. Likewise[MBFUO87] , the following DEIS analysis explains one reason why we prefer alternative 3 to the other action alternatives and the No Action alternative to alternative 3:

"Erosion of ashy soil horizons in ground-based activity area is an irreversible and irretrievable commitments of resources for ground-based harvest or thinning activities due to the amount of time it takes for eolian accumulation of similar soil minerology and/or the reoccurrence of volcanic activity to reproduce similar deposits. It took catastrophic volcanic activity to produce the volcanic ash that mantles [the] Ellis project area. For similar ash accumulation to replace eroded soils, much of our region would be negatively affected by tens of centimeters to a meter of volcanic ash accumulation." (DEIS p. 139, par. 2) Notably, ashy soil retains more moisture and supports greater productivity; we need to retain ash soil to offset the effects of drought and support habitat productivity for a variety of plant and wildlife species. Further, Grand fir, a tree species apparently despised by the Forest Service, has the unique ability to lose all its foliage and come back after one wet winter with full green crowns, due to its water storage capacity. Grand firs are these important trees to preserve in the face of increased droughts and defoliating insect infestation under climate change. Grand fir are also prone to internal rot, which not only makes them an unsuitable tree for logging - especially in old age - but also often forms cavities at the base of the trunk that collect water in small pools below the trunk that are accessible to drinking through the hot summers to small rodents, snakes, birds, and other small species.

Project design criteria and Best Management Practices are not always 100% effective or fully implemented, so it is important to be warned that: "If project design criteria and BMPs are not implemented, potential impacts of the proposed treatments would be increased water yield, stream flow[MBFUO88] , and sediments delivery increased stream flow will allow for more sediments to be delivered to streams, increased sedimentation in streams would affect fish habitat within project area. "(DEIS p139, par. 3) This is one of our reasons for strongly opposing any commercial logging or heavy equipment use within RHCAs or on steep slopes.

Inventoried Roadless Areas:

We are opposed to planned fuel breaks along existing roads near the boundary of Potamus IRA, as this is unnecessary due to the open character of the land along this road with only sparse vegetation and trees. Well timed prescribed fire under moist condition could still be need without prior thinning. The fuel breaks would detract from the otherwise natural scenery and views. Also this is not a major access road nor, a heavily used road, also negating the need for fuel breaks. We are opposed to non-commercial thinning in Inventoried Roadless Area.

Appendix C: Present and Future Foreseeable Actions. Considered for Cumulating Effect.

As NEPA requires more than just a listing of potential sources of cumulative effects, this Appendix cannot be used a substitutable for detailed, in-depth cumulative effects analysis in each issue section of the analysis. Cumulative effects analysis also requires consideration of the proposed project management actions in

combination with cumulative effects such as livestock grazing, prior, ongoing, and future timber sales, and private lands timber sales.

Forest Vegetation[CRFUO89] :

The Forest Service is over looking (and possible, misinterpreting) a set of scientists studies (Hesburg et al 1994, 1999) to the exclusion of other science findings. There is no concrete evidence from field that wildfires and periodic insect epidemics a are currently causing 'uncharacteristic' effects, no historically there has been no large scale stand replacement severity wildfires and periodic insect, epidemics or natural disturbances. There is also no wide spread evidence that decades of forest Service commercial logging assumed to have benefitable effects 'to retore stand resiliency to an extent where natural processes such no wildfires, and no endemic levels insects and diseases, occur without causing uncharacteristic effects "(DEIS p 58, par 1 under "Forest Vegetation". Other words there is no evidence that decades of similar logging to 'Change stand structure, species composition, and tree density" has had significant effects overall, throughout the west, to the extent, severity, or incidence of fire, or to insect epidemics or tree diseases other than to make these natural disturbances more unnatural due to human manipulation of the ecosystem. Actually it is the logging itself that causes uncharacteristic effects, as well as wildfires suppression. Logging can increase the intensity of fire by opening up forest stands, thus increasing wind speeds through stands, removing the stands, removing the most fire resistant mature and large trees, drying out microclimates conditions through sun penetration by removing shading and moisture retaining down wood, and leaving heavy slash and highly flammable slash piles, generally left through on to three fire seasons. Logging is also known to spread mistletoe and root disease. Insect epidemics are normal periodic events important for supporting woodpecker. And other birds that are these insects predators. Logging does not stop insect epidemics. Homogenization of the forest through plantation creation (which changes stand structure,[hellip].species[CRFUO90] composition, and tree density enables faster spreading, more intense fires to move through stands and insect epidemics to take advantage of single trees species less separated from each other by other tree species over expansive areas. See our enclosed science documenting those effects and science sent in separately to support our comments by both Blue Mountains Biodiversity Project and Western Watersheds Project. The Ellis DEIS does not disclose the scientific controversy over Hessburg studies and other science findings. If anything logging practices have become more intense in logging effects, more extensive to huge landscape scale timber sales like Ellis, has set the stage for severe uncharacteristic cumulative effects with extreme climate change. Hessburg et al. had no way to anticipate both the sharpe acceleration of more intense logging from more restrained commercial thinning during the Clinton era with devastating effects on the landscape scale, nor the sharp escalation with such extreme logging after all, the Hassburg studies being need date back to 1994 and, ignoring many more recent science studies.

Since numerous studies (cited on p 59, par 2) find that the effects of silviculture "treatments" (management) "would be fading out in about 20 to 30 years after implementation," the chances of all this concentrated management, especially commercial logging having any positive effects in reducing a future wildfire are virtually null, as the statical chances of a fire occurring in the same location as where the management was done during that 20-30 year time frame are extremely low. There is a recent study that finding. So what is the point of all that intensive management under the guise of reducing fire severity when it won't be likely to have that outcome? Especially when such landscape scale intrusive[CRFUO91] commercial logging and other biomass reduction significantly degrades wildlife habitat, carbon storage and sequestration; soil nutrient cycling; plant and tree biodiversity; and recreation uses and indigenous people's cultural uses of the land? This seem to be the product of bureaucratic inertia based on steady stream of agency mismanagement now being accelerated and taken to a landscape scale of destruction.

The "historic range of variability" should not legally over-ride accountability in meeting Forest Plan standards, guidelines, and goals. HRV has been miss used by the Forest Service to rationalize destructive timber

sales, with the historic baseline after being from just a time of early heavy logging instead of pre-European colonization, and/or based on different forest conditions from a site far away that is not actually representative of usually highly variable topographic conditions for the actual Blue Mountains planned timber sale location. "Commercial thinning" these days does not actually just remove 'younger, smaller trees in the understanding" but also most of the mature forest cover, including the overstory, contrary to the stand structure description DEIS p 59 1st bullet point. In the case of alternative 5, large trees and inevitable old trees up to 30" dbh would also be removed. The planned fuel breaks, which constitute most of the planned logging due to their absurdly excessive scale, are described as resulting in "very open stands," not just as thinning out the understory. Thus stand structure will not through logging "shift the size distribution to larger and older trees" as most of the mature tree overstory would be removed especially in alternatives 2,4, and 5, leaving far fever mature trees to grow into large and old trees. This is especially true since the Forest Service could come back to log again within 20-30 years, again removing mature trees.

As[CRFUO92] usual, the commercial logging is also focused on shifting trees species composition away from the firs that obviously were historically there, based on large and old growth residual live trees, snags, logs, and stumps both Doulas Fir and Grand Fir. See our photographs and survey sheets documenting the prevalence of residual old growth fir structure, including old log decks of old growth firs. Instead of retaining more fir on ash soils, high elevations, North to NE slopes, and moister riparian areas, where firs were naturally more common, the Forest Service is once again selectively Ponderosa Pine and Western Larch, the timber industry preferred tree species. This is all part of an outdated conversion of the forest to plantation of timber industry preferred tree species, reducing biodiversity and increasing the severity of subsequence fire, insect epidemics, and spread of root mistletoe. These are obvious consequences of previous logging in the field. The Forest Service creates the conditions they use to rationalize future timber sales.

We do appreciate that in alternatives 2-4 in "stands where late seral trees are dominate in the overstory, even on dry sites, the cover type will not change following treatment [i.e logging] (DEIS pg 59, last bullet point) However there are few "late seral" large and old growth fir trees left, and each timber sale chips away at removing the mature firs that would otherwise be next in line to replace them.

Most of the stand structure, stand diversity, and trees species composition conditions describing under NO Action alternative effects description describe the effects of wild fire suspension (in which the Forest Service is a major player and driver) and past timber sales, not a naturally evolving forest. This a good example of the cycle of over management derived from failure to consider the full range of best available science and to learn from past mistakes through adaptive management[CRFUO93] , not repetition.

The Ellis DEIS reflects a remarkable lack of concern as to whether the public can understand the analysis, an it fairly consistently fails to define numerous acronyms in the text, such as in the 'Forest Vegetation section, not defining SE, UR, etc when they first appear in the text. It's as if the Forest Service is talking in code to each other, not to the public. There is no evident definition of most of these acronyms, even when they are spelled out. Usually in EISes, readers don't have to find and constantly refer to glossary to understand what is being said in the analysis.

Some parts of the stand structure discussion don't seem to make sense, such as: "Commercial and non-commercial thinning will reduce the number of acres in the UR stage [understory reinitiation] by converting them to SE [Stem Exclusion] Both these and treated SE stands will have more open canopies, allowing the residual trees to grow more quickly into larger diameter classes," (DEIS p.61, par 2 below "stand structure") How can understory reinition, which is defined in the glossary as an "overstory [that] has been opened by natural mortally or thinning" be converted into a stem exclusion stand by more logging or small tree thinning, when stem exclusion is " a single canopy stratum of pole to small saw sized timber that excludes an understory" either by shade or big lack of water? Stem exclusion stands are by definition, more closed stands, not stands opened by logging or small tree thinning.

As for "resetting" of lodgepole pine stands "to the underrepresented stand initiation structural stage," that means the would be clear-cut. The DEIS camis tenth obfuscate the reality of how the Ellis area would look after heavy logging by never saying "logging," "timber sale," or "clearcutting" throughout the text. This is misrepresentation to the public, not informing the public and fully disclosing the nature of the logging effects to the forest.

It[CRFUO94] is very unlikely that moist mixed conifer forest in the north part of the sale unit was ever historically more old forest single stratum (OFSS) that old forest muti-stratum (OFMS) due to the greater moisture retention on ash soils and at higher elevations, with consequent denser, multi-strata forest (with multiple canopy layers) None of the moist mixed conifer forest should be converted to OFSS from OFMS. Such conversion in moister mixed conifer (such as with mature old growth Grand Fir and Engelmann Spruce, and typically more Western Larch than Ponderosa Pine) is done in the interest of logging more mature and large trees, not by an accurate portrayal of historic stand structures in this forest type. There are a lot of old growth and mature fir stumps throughout the moist mixed conifer from prior timber sales, as evidence of denser mature and large fir before logging. Further, changing OFMS to OFSS continues a Forest Service logging trend of trying to covert the forest to predominantly ponderosa Pine and Western Larch even though Ponderosa Pine won't usually grow well in what was naturally a different forest type, and even though Western Larch grows best after stand replacement fires, of which these will be many under extreme climate change. Further, such continued artificial covariant removes more mature and large trees that are badly needed now, not in some theoretical future of them not being logged again, to sequester and store carbon throughout their full life cycle and into snags and logs both to help offset climate change by maximizing carbon storage and to provide habitat needed by currently declining wildlife species that depend on moist mixed conifer, denser forest, and/or large and old tree structure that is abundant. These wildlife species include: Pileated woodpecker, Pacific Fisher, American Martin, Northern Goshawk, and for density, Rocky Mountain elk, and Northern Three toed and Black backed wood pecker, multi-layered canopy a variety of[CRFUO95] declining Neotropical migratory songbirds. Northern three toed woodpecker depend on old lodgepole pine structure that would be lost to continued clear cutting. These are some of the reasons why we support either the No Action alternative (over preference) or a scaled down and modified alternative 3. Old Forest multi-strata in the drier Ponderosa Pine dominant forest can be largely returned to Old Forest single strata just by noncommercial thinning since small young trees only up to 9" dbh represent the vast majority of tree density across the Ellis area. Some ladder fuel thinning under the single discipline of old growth ponderosa pine up to 12-14 dbh could also be acceptable, as well as prescribed burning. What does "UF" mean? I couldn't find any definition for it in the glossary. What are these "UF" Potential Vegetation Groups in Table 3-14 and 3-15 on DEIS p 62? Upland Forest? The lack of definitions for acronyms throughout the DEIS makes it frustrating to read and confusing to the average member of the public.

Very few large Douglas and Grand Fir over 21" dbh are likely to not be old growth based on visual characteristics in the Van Pelt guidelines which the authors admit are not necessary accurate for firs. Allowing logging of firs over 21" dbh will inevitable result in many old growth firs being logged as the visual characteristics are highly subjective. Beyond the huge scientific consensus that all old growth trees should be spared from logging, there is also majority near consensus of scientists advocating for all large trees to also be protected from logging. The DEIS carefully avoids disclosing a large and growing number of current science studies that support protecting large trees to also be protected from logging. This represents failure to disclose scientific controverts and to use the full range of best available science to inform effects analysis. Large trees, regardless of age, are critical to protect from for[CRFUO96] the following reasons: There is still a huge deficit in large tree structure (as well as old growth tree structure) compared to historical conditions due to past heavy logging removal of large and old trees. Wildlife species associated with large tree structure (live snags, and logs) are dependent on large trees, regardless of age, for trees big enough fpr perching, large enough nest holes, high canopy closure, big substrate for foraging, or big cavities for denning (e.g. for Pacific Fisher) or big flat topped broken topped snags for nesting (e.g for Great Grey Owl) Focal species, including the Great Gray Owl, are not even mentioned in the DEIS, even though the Great Gray Owl is iconic for the Ellis area. Further, large trees, regardless of age, store

and sequence the most carbon for the forest to still act as a carbon sink to offset extreme climate change effects. Large trees, regardless of age are also more fire resident than smaller trees. These are same of the significant reasons to preserve the 21" dbh logging limit, which should actually be now reduced to at least 15" dbh to allow more large tree structure. We are strongly opposed to planned logging limit, which should actually opposed to planned logging of large fires up to 30" dbh under alternative 5. Alternative 5's large tree logging would also be illegal, since the issue of potentially logging large trees was not raised in the scoping information for the Ellis project/timber sale. The deprives members of the public who only wrote comments during scoping stage from registering their opposition to the proposed logging of large land potentially old trees. The majority of the public including recreationists, strongly support protecting both large and old growth trees. To be able to file an objection. NEPA requires the person to comment either during the scoping stage or during the DEIS comment period but objections have to be based on their comments. The[CRFUO97] whole concept of confirming to a set Historical Range of variability (HRV) is suspect now more than ever, due to climate change. Forest ecosystems have always been dynamic, not static, changing according to evolving conditions. For instance, same of the much agency lamented forest density could be due not to only to wildfire suppression, but due to moister climate change threatening the viability of forests and forest associated wildlife and plant species, the focus for management should for be to leave as much green forest standing as possible, since green forest is needed for carbon sequence especially from mature and large trees, and for wildlife habitat in the midst of the sixth mass extinction, and for water retention through shading multi layer canopy and overstory and presentation of down wood. In dry forest types, some noncommercial sized small tree thinning and prescribed fire could be used in already logged stands to offset wildfire suppression, but moister forest types and high elevation forest needs to be left alone, as wildlife will be dispersing from lower elevations as their habitat becomes unsuitable to higher elevations and northward. The Forest Service needs to undergo a major mission change so future generations of both people and wildlife species can survive.

The DEis ignores current scientific thinking including that out of the Pacific Northwest Research Station that management of the Forests should no longer be focused on an assumed static range of HRV. The Forest Service also needs to rethink the agency's knee jerk reaction to target forest density for logging no matter where it is, what type of forest is naturally more productive and denser, or how forest density is needed for habitat by many wildlife species. It's horrifying that without considering[MBFUO98] these variables and others, such as the natural higher down wood accumulation and snag abundance as compared with post-logging conditions, the proposed alternative 2 would increase low density stands by 59% of the alternative's affected environment. High density forest would be decreased by 54% in the affected area. This dramatic decrease in higher density stands and the great increase in low density stands, which based on other admissions in the DEIS, would be very open stands, is horrifying. This is because alternatives 2, 4, and 5 would all be targeting the moist mixed conifer and lodgepole pine forest types in the north half of the sale that area naturally more productive and denser, 67% of the sale area's forested land has ashy soils, which retain more moisture. There are also adjacent stream systems and we meadows that could be dried out by such heavy forest cover removal. The higher elevation and moister forest types support wildlife species that evolved with denser forests. The extensive (and excessive) fuel breaks planned under these three action alternatives extend out to 1 [frac12] miles on each side of the roads, creating huge contiguous blocks of forest that would be reduced to starkly barren virtual clearcuts. Local populations of wildlife species adapted to, and dependent on, denser forest could plummet as most of their habitat is eradicated in the project area. These species include; Rocky Mountain elk, Pileated woodpecker, American marten, and Northern Three-toed woodpecker, all Management Indicator species; Norther goshawk - a focal or Management Indicator species on the Umatilla that was not analyzed for effects - and Cooper's hawk; Northern Pygmy owl; Blackbacked woodpecker; and a variety of Neotropical migratory songbirds. And this is only considering large mammals and birds, not including all the small mammals that need more down wood, and all the insects and invertebrate species that keep the soil fertile. The DEIS[MBFUO99] analysis of "Forest Vegetation" effects fails to consider all the negative effects of landscape scale forest density reduction - including ripple effects to wildlife, soils, and moisture retention, and cumulative effects of the Ellis project/timber sale to: wildlife species, carbon sequestration and storage, moisture retention, and soil integrity, as well as recreational and cultural uses, from planned logging changing tree species composition, stand structure, and stand density, in combination with other

factors such as extreme climate change and similar timber sales across the entire Forest. Instead, the cumulative effects analysis is unjustifiably narrow, focusing on comparative increases and decreases in tree species, the ridiculous assumption that landscape scale heavy removal of mature forest cover would lead to more late and old structure forest, seral stage shifts, and massive removal of denser forest as a theoretical "trend toward historical composition, structure, and density" assumed regardless of elevation, topography, precipitation levels, soil types, and historic evidence of denser forest in particular areas. The only consideration of negative effects is a focus on "untreated areas" as wholly negative, displaying an overwhelming bias toward logging based on silvicultural dogma:

"Alternative 2 leaves an intermediate amount of moderate and high stand density untreated. [actually a very low amount] Areas that remain untreated [i.e. unmanaged] under Alternative 2 will continue a pathway away from their historical composition, structure, and density. A cumulative effect of this trend is that untreated areas remain with elevated stocking levels, rendering them at high risk for attack by insects and pathogens, and contributing to high levels of future crown fire susceptibility." (DEIS p. 63, 2nd to last par.) This distils down to an Orwellian "Natural forests are bad; managed forests are good," no matter what[MBFUO100] the consequences may be to ecological processes, wildlife species' viability, biodiversity, soil integrity, carbon storage and sequestration, water retention, cultural uses of the land, etc. While the DEIS claimed that alternative 2 would retain an "intermediate" amount of moderate and high stand density unmanaged on p. 63, the DEIS contradicts itself on p. 62 by admitting that "Indirectly, about two-thirds of affected environment in the high density class would be reduced to moderate (14% increase) or low (51% increase) stand density classes. Many treated stands that were moderate density prior to treatment would be reduced to low density." (DEIS p. 62, last par.) A 75% reduction in high density forest is not retaining an "intermediate" amount of moderate and high density forest - especially as "many" moderate density stands would be reduced to low density. Such dramatic reduction in local extirpations of denser forest, associated wildlife species, including vulnerable-ranked marten, already declining Northern three-toed woodpecker, already mostly displaced Rocky Mountain elk, and Pileated woodpecker and Northern goshawk, both of whom require high canopy closure and fairly large territories. Such drastic reduction of forest cover, in combination with cattle overgrazing and increased heat waves and droughts under climate change, could also dry out the forest on a landscape scale, making it difficult to regenerate a moist mixed conifer forest type and dry up streams, wet meadows, aspen stands, and possibly even springs. Yet none of this is considered in the DEIS analysis.

The DEIS analysis strong bias toward heavier and more expansive logging is obvious in the description of alt. 3 effects, where denser stands "remain overstocked" as if the forest were a grocery store, and would have "increasing vulnerability to disturbance agents [i.e. natural disturbances that create wildlife habitat niches and naturally thin the forest] and[MBFUO101] density-dependent tree mortality." [otherwise known as snags used for foraging and nesting by woodpecker species and other birds that are insect predators]. "Many trees in lower or middle canopy layers also increases susceptibility of mid - and late seral species to defoliating insects." (DEIS p. 65, 2nd to last par.) Yet a balance is needed of tree mortality to support healthy populations of woodpeckers who then prey upon the defoliating insects, along with other birds who prefer multi-canopy layered forest. The DEIS analysis is seen through a very dated silvicultural lens, not changing based on new conditions, many new and different science findings, and adaptive management - learning from mistakes, based on greater objectivity.

Yet the DEIS admits that alternative 3 would also increase lower density stands, largely based on small tree noncommercially thinning and focusing on the drier forest types that were historically more open than the moist mixed conifer and lodgepole pine stands. The high density stand class would still be reduced by 54%. The DEIS analysis then recognizes that most of alternative 3's still substantial density reduction is due to most density being small trees - especially in the dries forest types: "The high density class would decrease from 83% to 19%, which is only a 1% difference from Alternative 2. This is because nearly all high density stands may still be treated manually, with chainsaws, to thin out any dense pockets of small diameter trees and reduce ladder fuels. The combination of untreated high density stands, along with some treated stands that remain at high density, would provide habitat for wildlife species requiring closed canopy condition." (DEIS p. 66, par.2)

While we area still concerned that there is too much commercial logging in alternative 3, and that the fuel breaks would still be far too big, at least the analysis shows that different approaches can still meet[MBFUO102] purpose and need objectives for the sale, with much less commercial logging in the naturally denser forest types and more emphasis on thinning small trees up to 9"dbh, which comprise most of the tree density. We remain strongly opposed to commercial logging in old growth forest - both OFMS and OFSS - including within the roadside fuel breaks, which may never have any influence on a wildfire other than to better protect people driving to get out of the fire - which could be done with only small tree thinning only up to 50 to 100 feet from the road edge, depending on tree heights. There really aren't that many mature trees near the road edges. With thinning the smallest, most flammable trees, possibly some lower limb pruning on mature trees, and prescribed burning in the dry forest types, objectives of safer escape on roads from a fire could still be met with only 50 to 100 feet buffers.

The "Forest Vegetation" analysis has surprisingly little reference to, or basis in, current science, except for the many citation given for research findings that the initial effects of silvicultural management (logging, noncommercial thinning, and prescribed fire) implemented with the Ellis action alternative "would be fading in about 20 to 30 years after implementation." (DEIS p. 59, par. 2) This means that this is set up to be an endless cycle of job-perpetuating logging, noncommercial thinning, and prescribed burning on an unsustainable fast rotation of only 20 to 30 years. This also means that all this management provides no guarantee of reducing fire incidence, extent, or severity due to rapidly changing conditions (such as small tree fast regrowth) and the very low statistical probability of a fire occurring within a very narrow window timeframe of possible effectiveness. Add the increasing high temperatures, droughts, and wind speeds under extreme climate changes the primary drivers of intense fire, and there is hardly any chance[MBFUO103] that temporary reductions of biomass "fuels" would make much difference in the event of wildfire. Indeed, I have witnessed in the McCache Fire on the Deschutes NF, how the fire burned hot and fast across a clear cut and a younger pine plantation with wide spacing between the trees, designed for "fuel" reduction, while when the fire met the edge of cool, moist mixed conifer mature forest, the fire became just a limited spot fire, burning only small openings and leaving most of the green forest intact - apparently because of higher moisture retention from shading and cooler micro-climate conditions - notably, in denser forest with more firs.

The analysis discussion for alternative 5 suddenly allows for the logging of tree species other than Douglas fir and Grand fir to be subject to large tree logging, contrary to the early part of the DEIS asserting that only large Douglas and Grand firs would be logged up t 30"dbh: "[hellip]Alternative 5 considers the ability to remove large trees (between 21 and 30 inches for grand fir, white fir [which in this region is actually Grand fir] and Douglas fir; but seldom trees greater than 21 inches for other species)." (DEIS pp. 70-71, last to first par.) This is a significant contradiction that was not disclosed in the rest of the DEIS. Would the large trees of "other species" be hazard trees only, or widespread logging of large trees of other species? We are opposed to all logging of large trees, regardless of the species.

The methodology for forecasting future consequent logging reductions in stand density through direct versus indirect effects is not disclosed in the DEIS analysis as it should be.

The rationale given for alternative 5's removal of large trees to further reduce stand density is outrageous and disingenuous, considering how few large trees are left from past logging in the Ellis area compared to historic condition. The duplicity of claiming that density reduction through[MBFUO104] the logging removal of large trees would be "particularly beneficial in protecting large, old residual trees" is disgusting, as large trees that would be removed would otherwise become the next generation of old growth trees, if they aren't already old growth - which most large trees are. This amounts to incremental deforestation of old growth by logging removal of already old large trees that are not perceived to be old and/or by removing the next generation of old trees and not allowing more mature and large trees to become old.

As the Forest Service should no[MBFUO105] perfectly well, the vast majority of tree density in the Ellis area is only small young trees up to about 9"dbh, not large trees over 21'dbh. The Forest Service should also be aware that thinning small trees up to about 9"dbh would have much more of an effect in reducing tree density than logging large trees, such that thinning small trees would be more likely to have significant effects "by opening the surrounding canopy, removing ladder fuels, decreasing competition for resources, and encouraging photosynthetic allocation for oleoresin (defensive chemical) production" and potentially causing "a corresponding reduction in the influence of extended drought on stand resilience (sohn et al. 2016)." (DEIS p. 72, last par.)

The Cumulative Effects analysis for alternative 5 forest condition effects is grossly inadequate, simply stating that: "Existing projects, along with proposed management actions in Alternative 5, will have positive, synergistic effects on improving species, stand structure, and "stand density." (DEIS p. 73 under "Cumulative Effects") Yet alternative 5 would maximize planned heavy logging and landscape scale intensive biomass removal by additionally logging large trees - firs up to 30"dbh and possibly large trees of the other species (see p. 71, 1st line) even though large and old trees are at a great deficit[MBFUO106] in the Ellis area compared to historical conditions. Logging removal of large trees should have been analyzed for cumulative effects for alternative 5. The one sentence cumulative effects analysis fails to consider any negative effects from planned logging of large trees, or any negative cumulative effects of alternative 5 at all, violating NEPA requirements for detailed in-depth analysis. Even the "existing projects" are not described, and there is no analysis considering potential foreseeable future or past cumulative effects.

Yet the DEIS analysis for effects of alternative 5 for forest conditions admits that: "For Ellis, not enough stands currently exist in a late - old structure (LOS) condition." (DEIS p. 73) This realization should have triggered detailed cumulative effects analysis regarding more large tree logging under alternative 5 increasing the existing deficit in late-old structure forest in the Ellis area, as LOS structure is defined by a minimum number of larger trees per acre, plus large snags and logs. Logging larger existing trees would obviously reduce he numbers and abundance of existing large live trees and future large snags and logs. Notably late and old forest are not defined by coring large trees for age, but counting large live trees and large snags and logs per acre. Since large trees > 21" DBH are usually also old trees (thus the established 21: DBH cutting limit, based on Ponderosa pine, 21" DBH correspondence with being 150 years old or older), logging large trees would inevitably result in loss of old trees as well. Even is this wasn't the case, large trees are the next future generation size class of trees to become old growth to replace the numerous old growth trees lost to logging and the existing live old growth trees that die. The Blue Mountains Forest Plans, including the Umatilla NF Forest Plan, have goals of growing large and old trees to retain and increase large and old growth trees on the landscape, yet this isn't disclosed in the DEIS. The DEIS fails to consider if alternative 5 would[MBFUO107] violate Forest Plan goals and standards.

The DEIS also fails to include a specific section of effects analysis for effects to late and old forest structure (commonly known as "old growth", which is standard in EIS's throughout the region. Thus the DEIS analysis of "forest vegetation" conveniently neglects to consider the effects of logging manipulation of tree species composition, stand structure, and stand density to wildlife species dependent on large and old forest structure. These wildlife species include MIS Pileated woodpecker and American marten, as well as Northern goshawk, Great Gary owl, Northern Flicker, Lewis's sapsucker, and potential Pacific fisher. Analysis for effects of alternative 5 should also have considered how loss of large tree structure would greatly increase loss of carbon sequestration and storage needed to reduce or slow climate change effects. Loss of large tree structure would also reduce soil carbon storage and affect soil nutrient cycling, as well as reduce future large snags and large down logs also used by small mammals, and a variety of insects, yet none of these cumulative effects of large tree logging are considered for alternative 5. As we have stated elsewhere in these comments, alternative 5 large tree logging is also not legal, as the possibility of logging large trees under the Ellis project/timber sale was not raised during the scoping public process.

The DEIS claims that: "A desired future condition for the Ellis project area is to have a diverse mosaic of stand structure across the landscape." (DEIS p.73, 3rd to last par.) get extensive commercial logging and

biomass reduction on a landscape scale tends to homogenize the forest, not maintain a diverse mosaic stand structures across the landscape. This is especially the case when the Forest Service is focused on changing tree species composition to shift to more Ponderosa pine and Western larch, reducing overall tree species diversity; change stand structures by removing mature forest cover, and under alternative 5, removing large trees, on a landscape scale; and generally reduce overall presence of higher density forest on a landscape scale. The DEIS analysis for alternative 5 effects to forest "vegetation" admits that; "Direct effects of silvicultural treatments proposed for Alternative 5 will substantially reduce the percentage of high density forest stands in the Ellis planning area. This change will result in most high density stands moving into the moderate or low density classes." (DEIS p.74, 3rd par.) Shifting most stands would not retain "a diverse mosaic of stand structures across the landscape"/ This is the case for alternative 2, 5, and 4. Alternative 3 would better maintain a diverse mosaic of stands structures across the landscape as naturally denser moist mixed conifer and lodgepole pine would still mostly have senser mature and large midstory and overstory except for the "low intensity" fuel breakzone and would commercially log more in drier forest types that were historically more open than the moist and cold forest types. This would better replicate a natural mosaic of different stand structures and tree densities than alternatives 5, 2, and 4. However, leaving the forest alone would best support natural conditions under the No Action Alternative 1, with evolving shifts in stand structures, tree species composition, and stand densities based on natural disturbances, including wild fire, defoliating insect outbreaks, tree diseases such as root rot, natural competition for water and sunlight, and the effects of climate change. This would allow the forest to diversify naturally and to respond to climate change based on ecological processes rather than an abrupt unnatural timber sale manipulations and impacts.

The[MBFUO108] DEIS analysis is able to project only positive outcomes of alternative 5 regarding forest conditions based on no reference to the large body of science that finds detrimental effects from logging large and old trees. The homogenizing effects of landscape scale silvicultural practices of artificially changing the species composition to timber indictory - preferred tree species, reducing large and old tree structure, and reducing stand density substantially on a landscape scale, are ignored in the analysis by omitting the relevant science that highlight these homogenizing effects of heavy logging towards toward plantation-like tree growth and structure. Natural disturbances create a diverse mosaic of stand structures, not landscape scale density reduction, removal of "undesired" tree species, and great loss of mature forest cover.

The DEIS paints a rosy picture of alternative 5 in par. 4 of p.74 by ignoring science that challenges multiple assumptions made in that paragraph, including that extensive and heavy commercial logging on a landscape scale would move "toward a desired future condition of improved resistance and resilience to disturbance," including whether "resistance" to disturbance is always beneficial ecologically, such as by reducing production of snags and logs over time; that this would result in "increased heterogeneity of wildlife habitats; and whether stand density reductions would actually "allow trees to grow more quickly into larger diameter classes, thereby contributing to future increases in late-old forest structure."(DEIS p. 74, par 4) All of these assumptions are disputed in current science findings, see our science enclosures, including those submitted by Paula Hood on Western Watersheds Project.

Fire and Fuels:

The DEIS analysis admits that: "Increased fuel loads will exist within the units until prescribed or mechanical methods reduce[MBFUO109] the loading. These treatments usually occur 2-3 years after slash has been created." (DEIS p. 74, 2nd to last par.) Thus the heavy, extensive planned logging would increase fire risk for at least 2 to 3 years, including during the peak of those fire seasons.

The DEIS then suggests that: "Prescribed fire and small diameter maintenance treatments should be applied during appropriate intervals to improve the long-term benefits of the treatments proposed in this analysis." (DEIS p.74, 2nd to last par.) In our experience, timely prescribed fire and small diameter thinning maintenance rarely happen on the Blue Mountains National Forests until the next timber sale. Thus, the current condition in the Ellis

area of dense in-growth of young trees on a landscape scale since past logging.

It's striking that all this planned management-ostensibly to reduce fire "risk"- would only theoretically have that effect for up to 10 years before that theoretical fire "risk" reduction effect would be reduced:

"The temporal boundary used for analyzing the cumulative effects to fire behavior and movement is 10 years because after that time, continued tree and shrub growth and accumulation of dropped needles and branches from trees will gradually reduce the effectiveness of these treatments as time passes (generally not more than 20 years post treatment)."(DEIS p. 74, 2nd to last par.)

So all this planned timber sale destruction of suitable habitat for management indicator and declining wildlife species, all this loss of vital carbon sequestration and storage, all these potentially irreversible soil damages, etc. would be done on the basis of an incredibly low statistical probability that a wildfire would occur in the Ellis area over the next 10-20 years and that all this management actually reduced the severity or extent of that fire under already extreme climate change.

The[MBFUO110] ostensible reason for logging the forest to death on a landscape scale, only to return in 20 to 30 years to log again, increasing all the negative impacts, is not credible. A wild fire has natural effects with which native species and the forests have evolved, but logging and all the rest of the timber sale management and manipulation has unnatural negative effects. The real motive seems to be just keeping short-term timber industry profits flowing, along with the current revenue stream for Forest Service staff. Neither is sustainable.

Basing fire simulations on 97th percentile (extreme) weather conditions makes no sense, as under those conditions, it's almost impossible to have any effect on the wildfire, other than to possibly contain it within perimeters-even that would be very difficult. The amount of biomass "fuel loading" would have little effect under such extreme weather conditions. However, using 97th percentile weather conditions can be used to rationalize extremely heavy widespread logging, as is currently planned for the Ellis area - especially when the competing or contractor science is suppressed by non-disclosure in the DEIS analysis, as it is in the Ellis DEIS. See our enclosed wildfire and logging information and science citations in "Everything you Wanted to Know About Wildland Fires in Forests but were Afraid to Ask: Lessons Learned, Ways Forward", written by three Ph.D. scientists: Dominicka Della Salla, Timothy Ingalsbee, and Chad T. Hanson, along with other science articles and citations sent as part of our comments.

The DEIS analysis for fire and "fuels" does not disclose the specific methodology, as required by NEPA. Science citations for resource indicators used are disclosed in Table 3-29, DEIS p.75, but not the methodology used to determine outcomes for each action alternative.

The[MBFUO111] fire and fuels analysis reflects use of badly outdated Forest Plan. Never logged areas tend to have much more biomass left on the ground than previously logged areas. Larger amounts of down wood and other biomass on the ground can increase moisture retention and species richness. "Fuels" or biomass are not the driving force determing fire incidence, intensity, or extent. The driving factors instead are relative ambient air humidity, ambient air temperatures, and windspeeds, all of which can be exacerbated by climate change through higher air temperatures, lower humidity drought conditions, and higher wind speeds. So Forest Plan standards setting "fuel" loading not to exceed 9 tons per acre in 0-3 inch size classes seem like an arbitrary restriction that serves more to rationalize continuous logging and biomass reduction than to represent highly variable natural conditions that can depend a great deal on forest type. Likewise canopy heights and ladder fuels vary naturally across different forest types, but the distinction between moist mixed conifer(including Grandfir and Englemann's spruce) naturally having lower crown heights and more multilayered canopy ("ladder fuels") than drier, less productive Ponderosa pine/Douglas fir sites is not recognized in the analysis. The Ellis project area does have distinctly different forest types. Both historically and now, there are drier Ponderosa pine dominant forest types typically (but not always) being subject to more frequent fire historically, and thus having higher crowns and less

multilayered canopy "ladder fuels", but also, at higher elevations where there is greater snowpack accumulation and more ash soils, and along riparian zones and on North-Northeast slopes, there are moist mixed conifer and lodgepole pine forest types that have longer fire return intervals due to higher moisture retention. These forest types should not all be characterized the same ways regarding the different natural levels of surface, "ladder", and canopy biomass "fuels", as[MBFUO112] is done in the DEIS analysis. For instance, lodgepole pines and western larch have high crowns since they are adapted to grow inro openings created by wildfire. Forest wildlife, plant biodiversity, and critical interconnected ecological processes are dependent on diverse forest types. Forest management should not be aiming to reduce biomass "fuel loading", tree density and multilayered canopy equally across diverse forest types, regardless of different natural conditions for these forest types. Canopy base heights vary by tree species and their adaptations to different ecological conditions, and should not all be expected or forced to be high. "Crown bulk densities" also vary naturally based on forest types, moisture gradients, topography, and elevation, as well as on soil types. Lodgepole pine and Western Larch have smaller crowns because they are adapted to newly created openings, where they quickly grow taller to ensure enough access to sun, while Grand fir and Douglas fir are more shade-tolerant. "High canopy fuels hazard" assumptions based on higher crown bulk densities are over-rated as a contributor to intense fires, as small flammable woody biomass close to the ground is much more critical in regard to enabling crown fires. The emphasis is on crown bulk density seems to be geared toward rationalizing heavier commercial logging of mature and large trees. Most tree species grow naturally in clumps, not widely spaced apart, as usually the result of logging to reduce crown bulk density. Trees growing near each other are more resilient to insect outbreaks, and possibly to droughts, due to their ability to communicate with each other and share resources such as nutrients and carbon through underground mycelium networks. See Suzanne Simard's controlled *experiments* demonstrating this since about 1997, with summaries and citations in her book. Finding the Mother Tree, Discovering the Wisdom of the Forest.

In the[MBFUO113] characterization of fire and "fuel" effects under alt. 1, why is No Action expected to result in the following situation? "New growth continues to be unchecked by change agents like infestation or wildfire."(DEIS p.76, 2nd full par.) Insect infestations and wildfire both would occur and have effects, including thinning and creating opening, as natural disturbances under no management. The DEIS statement makes no sense.

Fire Intensity and Wildfire Hazard:

Basing fire simulations on 97th percentile weather conditions skews results so these will be a higher percentage of expected flame lengths over 4 feet, resulting in the determination that: "This fire intensity is likely to cause substantial mortality both of understory plants and overstory trees."(DEIS p.76, 3rd full par.) These assumptions set the stage for rationalizing more intensive and extensive commercial logging: "More than half(54%) of the landscape is projected to burn with flame lengths greater than 11 feet. Crowning, spotting, and major fire runs would be common. Control efforts at the head of the fire would be ineffective."(DEIS p.76, ibid) of course these effects would be expected for such extreme weather conditions. Recent more intense fast moving fires that may now be a result of extreme climate change will not be stopped by any amount of commercial logging and other biomass reduction. The Camp Fire that incinerated the town of Paradise apparently moved very rapidly through areas around the town that had already been commercially logged and subject to fuel reduction. What might have really helped was maintaining the powerlines that caused the fire and not having propane tanks near homes, which exploded. Even major wild fires without the effects of climate change may be natural stand replacement severity fires (crown fires) that can't be controlled at the head of the fire.

The[MBFUO114] doom and gloom scenarios given for the No Action alternative notably don't have any disclosed methodology for how these assumptions were derived. Does the model project out to 2030 just continued tree growth and increased density "unchecked by change agents like infestation or wildfire"? This is an unrealistic assumption that over-simplifies any consequent modeling results, as there are many natural disturbances that operate to thin the forest and create openings without human intervention. These include insect outbreaks, root rot, inter-tree competition for water and sun, windthrow, wildfire. As these can't be predicted with any accuracy,

the agency models tend to exclude important variables that could change the outcomes.

Cumulative Effects re: Fire and "Fuels":

The Cumulative Effects section for the action alternatives are inadequate because they don't consider negative cumulative effects of fire and biomass reduction combined with planned commercial logging to wildlife habitat, moisture retention, carbon storage and sequestration, water quality, recreational and cultural uses, or any other Forest values that could be negatively affected by the planned expansive fuel break zones (both the "Lower Intensity zone" and the Ember Reduction zone") and the associated biomass removal and prescribed burning. Instead the effects analysis is primarily comparative for each alternative and focused on how much each alternative would achieve the intended outcomes. In other words, the analysis fails to consider potential negative effects to receptors or values other than the desired goals of increased public and firefighting safety, reduce build-up of biomass "fuels", and limiting mortality to overstory trees. For instance, the combination of extensive biomass removal in huge, contiguous fuel break block of forest down to very low basal area, plus additional commercial logging and landscape scale prescribed burning, especially under alts. 2 & 5, but also to a lesser extent under alts. 3 & 4, would[MBFUO115] leave the vast majority of the Ellis project/timber sale area starkly barren and open, with very little biomass left, including hardly any down wood, fewer snags, little mature canopy cover, hardly any forest density, and under alt. 5, even extensive loss of large trees - all on a landscape scale. Nowhere is this picture painted of the results of all the combined biomass removal in the analysis, including in the highly relevant sections pertaining to "Forest Vegetation" and "Fire and Fuels". Yet these combined management actions would cause many negative cumulative effects to significant ecological processes such as soil nutrient cycling, carbon sequestration and storage, hydrologic water retention, and provision of sufficient down wood, large down logs, abundant and large snags, and abundant mature and large live trees for wildlife.

There are some generalized statements in the Cumulative Effects section for alternative 2 that should have led to further in-depth, detailed analysis regarding potential effects to all the ecological processes and forest values listed above. For instance, the analysis admits that: "Maintaining impacts from prescribed fire surface fuel reductions through follow-up treatments of under burning, will have a long-term effect. In doing so, surface fuels will not be allowed to accumulate across the landscape." (DEIS p.79, 1st Par.) Yet there is no follow-up to this, such as by considering what this means, that surface biomass would no longer be allowed to accumulate across the landscapes- to: plant growth; soil nutrient cycling; complex species food webs such as biomass accumulation supporting insects that feed birds, etc.; carbon storage in soils; mushrooms, moisture retention; and snag and log abundance for wildlife. Very few negative effects are mentioned compared to the plethora of negative effects that were missing in the analysis is in the lists above.

It's notable[MBFUO116] that unplanned wildfire ignition management is mentioned in the context of the 1995(?) Forest Plan (which Forest Plan is that?) and then quickly dismissed: "While this is an option for fire management, it is generally not done due to risks associated with managing unplanned ignitions."(DEIS p79, par. 4) Yet successful management of an unplanned wildfire ignition took place right on the Heppner District near the Ellis project boundary in the summer of 2020 or 2019. Further, the Malheur Forest staff recently successfully managed (rather than suppressed) a wildfire in another recent summer. Managing unplanned wild fire ignitions rather than suppressing wildfires is gaining popularity with the Forest Service and is now being practiced, with acceptable results. Did the writer of this section not know about these local developments?

There is no clear evidence that "-the treatments proposed under alternative [2] of the Ellis project would reduce the rate of fire growth through treated units" and that therefore, "the cumulative effect would be to reduce the rate of fire growth across the landscape to some degree."(DEIS p.79, 3rd to last par.) This is inaccurate use of the science, which is also not cited.

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[CRFUO51]This the end of pg 51. No PG 52

[middot] [CRFUO52]This spring or early summer* side note

[CRFUO53]*during the second elk season in 2019

[CRFUO54](DEIS pp. 183-184)

[CRFUO55]See DEIS p 105 for comments 1st

[CRFUO56]*from a fire

[MBFUO57]There are two different page 61s. The first starts here.

[MBFUO58]The 2nd page 61 starts here.

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