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Submitted by email to BLM_OR_SA_Mail@blm.gov

RE: EA Comments for the Take 3 Timber Sale (1790 ORS040)

Dear Mr. Huston,

The following are Bark's comments on the Environmental Assessment for the Take 3 Timber Sale. This project would log approximately 340 acres in the Eagle Creek Watershed, and construct/re-build 1.25 miles of road.

Bark has over 5,000 supporters who use the public land forests surrounding Mt. Hood, many with a special affinity for the Eagle Creek Watershed. Bark supporters use the area for a wide range of uses including, but not limited to: clean drinking water, hiking, nature study, non-timber forest product collection, spiritual renewal, and recreation. We submit these comments on behalf of our supporters.

Bark staff and volunteers have hiked through every unit of the proposed timber sale and observed the significant variation in forest age and health scattered throughout the project area. We offer these observations to the BLM to encourage you to make some changes in the Take 3 Timber Sale to ensure that the sale complies with the Northwest Forest Plan and the Salem Resource Management Plan, as well as better manage older forests and watershed health.

Thinning Science

The Take 3 Timber Sale is premised on the assumption that thinning grows bigger trees faster and that this benefit outweighs the ecological impacts of increasing soil compaction, sedimentation, and peak flows while decreasing wildlife habitat, down woody debris and snags. This assumption is neither fully supported in scientific literature, nor does it apply equally to every stand of trees in the Take 3 project area.

The silvicultural approach of active thinning to restore forests is fairly new, and yet proven. One important body of research on restoring young forests has come from the Pacific Northwest Coastal Forest Restoration Learning Network. The Learning Network was created in an effort to facilitate communication between managers and scientists, and catalyze growth in practical restoration knowledge. The learning network includes members from restoration projects within young-managed forest landscapes throughout the Pacific Northwest Coast (SE Alaska, British Columbia, Washington, Oregon, northern California) and parts of the West Cascades, North Cascades, and Pacific Ranges.

Far from making the sweeping claims that the BLM presents in the Take 3 EA, the Learning Network has identified several remaining questions about the impacts of thinning. (Davis, 2008). Of particular interest to the Take 3 sale are the following questions identified by the Learning Network, followed by suggestions for further research:

How will stands develop if they are left unthinned?

We are not certain how stands will develop if they are left unthinned. Because so much of the landscape remains in a younger condition (under 80 years), we still have little empirical data on the development of unthinned stands. Often, the decision to thin a stand or not thin a stand is a decision based on operational logistics, economics, and expectations of improving ecological conditions of the system.

How do treatments interact with the natural processes of the forest system?

It is not clear how restoration treatments may interact with or change disturbance regimes or alter hydrologic regimes. For example, it is possible that thinned trees may become wind-firm and reduce the amount of windthrow patches in the future stand. Alternatively, thinning could encourage increases in forest pathogens (e.g., Annossus root rot in western hemlock) that may prevent the stand from reaching a late-seral state. In addition, thinning can alter wildlife behavior (e.g., increase bear damage, alter ungulate browse).

These may have unanticipated impacts on stand development and should be considered from the outset.

If a young stand is treated, what type of treatment should be used?
Knowledge on the impacts of variable density thinning and the inclusion of skips and gaps, including size and spatial arrangement, is still unknown. Results from most studies that have investigated these are still in early stages of development, so long-term trends remain clouded. The tradeoffs of one entry versus multiple entries are also unclear. Many believe that multiple entries may be necessary to achieve late-successional habitat, especially where western hemlock is prevalent. However, the repeated disturbance from tree felling and harvesting equipment on other elements of stand structure and composition are not known. (Davis, 2008).

Bark echoes these uncertainties about thinning and requests that the BLM engage with this scientific uncertainty rather than making fairly untested conclusions about the unequivocal benefits of thinning.

In addition, other research on thinning urges forest managers to approach such projects cautiously, acknowledging their uncertainty and ecological tradeoffs. A team of six scientists recently considered large scale thinning and identified many concerns about the practice. They found that even when confined to previously harvested stands, thinning treatments must be evaluated carefully and implemented in such a way as to avoid negative impacts. (Carroll, 2009). Ground based methods and associated machine piling, burning of activity fuels, construction and increased use of roads and landings can increase soil erosion, compact soils, and elevate surface runoff. (Carroll, 2009).

This study concluded that no evidence exists to support the contention that an extensive thinning program will hasten restoration of historic patterns of forest heterogeneity on a landscape scale. Hence, thinning treatments should be applied cautiously and only where ecologically warranted. Thinning should not be considered a cure-all for forests degraded by fire exclusion or other human activities. (Carroll, 2009). As discussed below, Bark requests that the BLM engage with these questions and cautions and develop more reasoned plan for the Take 3 area – especially in the Riparian Reserves and stands over 80 years of age.

Unit 11D

Unit 11 D contains a healthy, well spaced forest, with many large downed logs

in advanced stages of decay, and large legacy stumps and snags. The EA identifies the unit as an average of 65-96 years old.

Bark is very concerned about the proposed logging and road construction in the unit 11D. The eastern unit boundary is directly adjacent to a recent clearcut and is heavily impacted by blowdown (pictured at right). In some areas, Bark groundtruthers saw blowdown extending 100 feet into the unit. While the EA mentionts that "there are many trees that have blown over from recent events along the property line" (EA at 44) it does not include a discussion of how the proposed thinning, and a new road cooridor leading into the project area from the clearcut will affect future blowdown. Will the road cooridor allow the wind to penetrate deeper into the stand and result in more blowdown? Will decreasing tree density along this edge lead to the remaining trees becoming less wind-firm? The effect of neighboring clearcuts on the proposed project is a cumulative impact that must be addressed.

Unit 11D unit also includes a wide section of seeps full of wet area plants, including skunk cabbage, oxalis, a handful of western Red Cedar with a dbh around 4 feet on the eastern border of the creek extending several hundred feet towards the eastern hillslope. The riparian buffers necessary to protect these seeps are much larger than the small riparian buffers drawn on the scoping map. Indeed, it appears that the BLM plans to log three acres of Riparian Reserves of this unit with ground based yarding. Bark observed that the riparian vegetation was well-spaced and

very moist, and did not identify any areas that would be "enhanced" through logging and yarding. Could you please provide maps with greater specificity regarding the riparian buffers, and proposed yarding corridors? It is hard to understand where the BLM proposes to log and yard in such a way that will not have adverse impacts to this area, and how it is necessary to meet the Aquatic Conservation Strategy Objectives, as required by the Northwest Forest Plan.

Bark is specifically concerned about compliance with ACSO 7 – Maintaining the timing, variability, and duration of floodplain innundation and water table elevation in meadows and wetlands. The BLM says it will meet this by keeping all operations a minimum of 50 feet from intermittent and 100 feet from perennial streams. *EA at 107.* However, the wet area that we observed in unit 11D extends farther than 100 feet from the stream bed. In fact, by their nature floodplains and meadows are often not within 50-100 feet of a stream bed. In addition to the wet area we observed in unit 11D, the EA acknowledges that the small headwater tributary channels in the project area flow intermittently on the surface, before disappearing underground. The EA states that "it's likely that ground water and intricate patterns of subsurface flow, as opposed to surface run-off, is the primary system of water delivery to these channels." *EA at 55.* The high water-table in this area should be further analyzed, to ensure that it is not affected by ground based falling and yarding operations, or new road building. The EA later states that "locations with high water tables, ponds and/or wetlands were identified and excluded from the treatment area." *EA at 57.* **Bark requests a map of these excluded areas, so we can compare them to vegetation and soil conditions that volunteers have found in the project area.**

Bark's concerns about increased blow-down and ground-based yarding and machine logging in the riparian areas are exacerbated by the proposed new road construction, and associated landings, into unit 11D. The EA acknowledges that the road clearing would be approximately 30 feet wide, but it never acknowledges the size or number of log landings associtated with the new road construction. In fact, the EA is nearly silent as concerns landings – although landings are well known to have impacts on vegetation, soils, and erosion similar to roads in their persistence and severity. (Karr et al., 2004). The severity of landing impacts partly depends on whether they are re-used, reconstructed, or constructed. While re-use and reconstruction elevate soil impacts, irretrievably reverse all soil recovery that has accrued during the period of non-use, and persistently degrade *all* soil functions, new landing construction causes immediate, persistent, and especially severe losses of soil productivity and losses of soil functions. As Analyses of numerous thinning projects indicate that area of landings typically comprises 1-2% of the area logged. Using the median value in this range (1.5%), it is likely that the area of landings in the Take 3 Timber Sale will be over 5 acres, the impacts of which

which need to be seriously analyzed in the EA, especially the new landings in 11D.

As the ecological impacts of roadbuilding and yarding far outweigh the small amount of valuable timber in a small unit with some of the most well-functioning older forest in the whole project area, Bark requests that the BLM remove unit 11D from the timber sale proposal.

Other Section 11 units

Along the northern portion of section 11 there are steep slopes (45 to 60%) directly above clearcuts and the N. Fork of Eagle Creek. We are curious how the agency plans on logging this area? And what will be done to ensure there is not further damage done to the N. Fork? We would also request that the EA include an analysis of the cost for different methods used to log the area.

We are curious as to how you propose yarding the eastern most portion of the southern section in 11? It seems a bit far from any roads, and we encourage you to drop any portions that cannot be accessed by road 3-5E-11.1.

Section 13

Bark volunteers identified a very healthy forest patch in the unit 13C. They found many snags up to 4' dbh, abundant CWD, well-spaced trees with well developed undersory that includes many hardwoods, oxalis, bleeding heart, lady ferns, and salmonberry which all indicate wetter soils than rest of unit. Even the EA also identifies that there are several large trees over 36 inches dbh – again indicating that this is a diverse, healthy forest stand. Bark volunteers discovered a 3' dbh Noble Fir and Western Hemlock. There are also two Doug-Firs with 4' dbh and two approximately 3' dbh along the western portion of 13C. Another interesting feature in Unit 13C is that Western Hemlock is the most prevalent tree suggesting that these stands have naturally regenerated from past disturbance. As the vast majority of the landsacpe surrounding the area is plantations, these naturally regenrated landscapes are an anolmaly in the area and should be excluded from further consideration.

That pockets of dwarf mistletoe exist in the hemlock is important for future snag creation and forest health in this snag deficient landscape. This is a very small unit – only eight acres – that should be dropped from the sale as the forest already has the big trees and late successional characteriestics the Take 3 project is seeking to create.

The proposed new permanent road in unit 13A, Road P4, is on a slope that Bark ground-truthers estimated as greater than 30%, the maximum slope identified in the road building Best Management Practices. If the BLM is relying on the BMPs to offset environmental impact, the new road construction

must fall within the scope of impact that the BMPs are supposed to ensure. Additionally, this is a permanent new road. The EA states that the new road mileage will be offset by other road mileage decommissioned elsewhere in the watershed by the Forest Service, and also by decommissioning a portion of 3-5E-13. *EA at 70*. However, this lacks both specificity and surety. Which USFS road segments is the EA referring to? Have they already been decommissioned? If not, is there a guarantee that they will be? Similarly, it appears that there is no timeline or guarantee that the decommissioning proposed in the Take 3 EA will, in fact, occur as it is not ties to project implementation. The BLM should not be increasing net road mileage in the Eagle Creek watershed, and needs to provide specific assurances that this new road will not do so.

Riparian Reserve Logging

The language in the EA states that the proposed action would not "retard or prevent the attainment of any of the nine ACS objectives". *EA at 105*. While this is the standard for projects that log outside of the Riparian Reserves, the standard for logging in them is much higher - commercial logging in Riparian Reserves is allowed only when *necessary* to "acquire the desired vegetation characteristics needed to attain ACS objectives." *NFP at C-33*.

The goal of "growing bigger trees faster," which seems to be the main justification for logging in the Riparian Reserves, is not necessary to attain any of the ACS objectives. Additionally, there are many possibilities for ecological damage from commercial logging and yarding in Riparian Reserves. Logging, yarding, landings, and roads in riparian zones degrade aquatic environments by lessening the amount of large wood in streams, elevating water temperature, altering near-stream hydrology, and increasing sedimentation. (Karr et al. 2004).

The BLM has failed to establish the need for commercial thinning to attain ACSOs – aside from stating that the riparian vegetation is "overstocked" with relatively uniform trees with low levels of diversity. Bark's experience on the ground in the project area leads us to believe that this is a drastic oversimplification of the riparian areas, which include many spacious, diverse, well-functioning stands. Even if the BLM's generalization were true, this still doesn't support the need to log in Riparian Reserves, as the EA never shows why logging is **needed** to attain ACSOs. Bark requests that the BLM remove all commercial logging from riparian reserves, as it is well-documented to lead to adverse watershed impacts and is not necessary to attain ACSOs.

Roads and Erosion

The Take 3 EA states that "proposed new construction is located on slopes *generally* under 30 percent", will "result in little to no sub-surface disturbance" and "have no effect on sub-surface or groundwater flow". *EA at 62*. This statement not only fails to provide accurate information about the road building (especially which slopes might be *over* 30 percent), it fails to recognize the extent to which road building disrupts and compacts a great deal of soil.

Road construction is by far the greatest contributor of sediment to aquatic habitats of any management activity (Meehan 1991). Even temporary road construction can cause resource damage including erosion and sedimentation, exotic species spread and disruption of wildlife (Trombulak and Frissell 2000). The sediment contribution to streams from the construction, renovation and maintenance of access roads is often much greater than from all other forest management activities combined. (NMFS, 2008). Construction and reconstruction of roads and landings damage soils, destroy or alter vegetation, and accelerate the runoff and erosion harmful to aquatic systems.

Although it is not adequately disclosed in the EA, in addition to construction and reconstruction impacts, elevated road use for log haul will also greatly elevate erosion and sediment delivery on unpaved roads. Research on logging roads has consistently documented that roads used by more than four logging trucks per day generated more than seven times the sediment generated from roads with less use and more than 100 times the sediment from abandoned roads (Reid et al., 1981). The USFS's own summary of scientific information on roads (Gucinski et al., 2001) concluded that "rates of sediment delivery from unpaved roads are . . . closely correlated to traffic volume." Even with a road surface of crushed rock aggregate, which is often used with the intent to reduce sediment production on road surfaces, Foltz (1996) documented that elevated truck traffic increased sediment production by 2 to 25 times that on unused roads in western Oregon, noting that since the processes are the same across regions, a similar range of increases was likely. Primary mechanisms for increased erosion and sediment production from road use are the production of highly mobile fine sediment on road surfaces, road prism damage, disruption of gravel or aggregate surfaces, and rutting.

As with constructed and reconstructed roads, the highly elevated sediment production from roads used for haul is delivered to streams at stream crossings and other points of connectivity between streams and roads, such as gullies and relief drainage features that dump elevated road runoff laden with sediment to areas in relatively close proximity (e.g., less than 300 feet) to

streams. The EA acknowledges that the haul routes in Section 11 cross Little Eagle Creek in ESA-listed fish habitat, and the stream crossing would contribute sediment to the stream if ever used in wet weather. *EA at 71*. The EA suggests that "hauling would be limited to the 'dry season'" therefore habitat would not be impacted by log hauling. This conclusion misses another cause of sediment – dust generated during the dry season. Dry weather hauling can generate significant amounts of very fine dust, that settles over all the streamside vegetation and the road bed itself. The first major rains wash all this very fine sediment directly into creeks.

In addition – BMP #10 does not actually limit hauling to the dry season – only to such times when sediment would not be transported to streams. This is a more subjective BMP than a seasonal limit, which seems like it would be harder to track and enforce. Given the amount of turbid water Bark volunteers observed entering the stream systems in the Annie's Cabin timber sale, we are cautious about trusting subjective standards.

The EA also fails to provide any estimate of the additional sediment generated by the construction and reconstruction of landings, particularly those near streams. The EA's failure to estimate erosion from landing activities is significant because on a per unit basis, landings typically generate as much sediment as roads (Menning et al., 1997; Beschta et al., 2004). Landings also have considerable potential to deliver sediment to streams. In their study of sediment travel distance from forest management activities, Ketcheson and Megahan (1996) found that the longest travel distance of sediment originated from a landing. Furthermore, the assumption that future decommissioning will offset the negative impacts of road and landing construction and use is unsound since road construction has immediate negative impacts and benefits of obliteration accrue slowly. (Beschta, 2004). Therefore, the EA's failure to properly assess and make known erosion and sediment delivery impacts from landing & road activities is highly significant and renders the EA's assessment of sediment impacts inadequate.

Best Management Practices

Use of Best Management Practices traces its origins to the Clean Water Act as an approach to minimize impacts from nonpoint sources of water pollution. As defined by the CWA: *Best Management Practices (BMPs),* are methods, measures or practices selected by an agency to help minimize its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during and after pollution-producing activities to reduce or

eliminate the introduction of pollutants into receiving waters. 40 CFR §130.2(m).

It appears that the BLM has gradually expanded the use of "Best Management Practices" beyond limiting nonpoint water pollution, and now uses the term to refer generally to mitigation measures and/or project design that minimizes environmental impact.

The BLM cannot simply rely on untested or unapplied BMPs to mitigate all adverse environmental impacts from increased erosion. This is especially true when the BMPs controlling soil and slope use the words "generally" and "wherever feasible" as in "locate new skidding trails generally on slopes less than 35%" (EA at 32), "generally limit uphill skidding to slopes where skidders would not break traction" (EA at 33), "Locate, design and construct roads wherever feasible to drain surface water . . ."(EA at 33). The inclusion of these wiggle words make the BMPs even less reliable and enforceable.[1] It is clear that the Take 3 Timber Sale may result in increased erosion in the Eagle Creek Watershed. The BLM must make a more realistic analysis of the extent and impact of this erosion, rather than dismissing all concerns by relying on unapplied, or unenforceable, BMPs.

In addition, Bark's recent experience of visiting the freshly logged and yarded Annie's Cabin Timber Sale raises additional questions about the ability of the BLM to ensure that BMPs are, indeed, followed. The two photographs below show extensive rutting and road run-off from wet weather operations, in contravention of the BMPs:

[1] In fact, the insertion of "generally" and "may" essentially negate the "Best" part of the BMPs, and turn them into SMPs, or "Suggested Management Practices".

Not only is the BLM unable to assure that the BMPs will, in fact, be followed and/or mitigate the adverse impacts, many recent studies point to a contrary finding. In the context of road construction BMPs, there is reliable data indicating that BMPs do not consistently reduce the adverse effects of roads on aquatic resources to ecologically negligible levels, especially within the context of pervasive watershed and aquatic degradation (Espinosa et al., 1997; Beschta et al., 2004; GLEC, 2008). The nationwide assessment of BMP effectiveness commissioned by the USEPA performed by the Great Lakes Environmental Center (GLEC) specifically noted that BMPs aimed at reducing road impacts are not 100% effective, and, in particular, that efforts to prevent road drainage to streams have considerable potential for failure, especially in the Pacific Northwest. (GLEC, 2008).

However, the EA does not provide any discussion of the known limited effectiveness of road BMPs. In fact, the EA relies on BMPs to "eliminate and/or limit acceleration of sediment delivery to streams". *EA at 64*. However, in its report, GLEC found that in the Pacific Northwest, "conventional BMPs for road construction may not be sufficient to prevent adverse effects on stream channels and fish habitat." (GLEC, 2008). Activities implemented with somewhat effective BMPs still often contribute to negative cumulative effects on aquatic systems (Espinosa et al. 1997; Beschta et al., 2004; GLEC, 2008). Espinosa et al. (1997) documented that aquatic habitats were severely damaged by roads and logging in several watersheds despite BMP application, and that blind reliance on BMPs in lieu of limiting or avoiding activities that cause aquatic damage serves to increase aquatic damage. The BLM does not acknowledge any of these limitations of BMP implementation or effectiveness in its analysis of the Take 3 Timber Sale – this is an omission that needs to be corrected in the final analysis of significant impact.

Finally, it does not appear that the Salem BLM is engaged in any post-logging monitoring to track BLM implementation and effectiveness. This type of monitoring is key to evaluating if the BMPs are indeed mitigating the environmental impacts of the projects as planned and using this information to inform future sales. The presence of a timber sale administrator during the logging of a sale does not serve the same purpose of monitoring impacts after the logging and road work is complete. Please include plans for post-logging BMP monitoring in your final project description.

Low Density Thinning areas

The BLM proposes to implement three one-acre low density thinning areas, two in unit 11A and one in 13D, to provide early seral components in these stands. *EA at 23*. This treatment might make sense if the BLM lands, especially section 11, weren't forested islands in a sea of early seral clearcuts . . .but they are.

There is simply no lack of early seral habitat in the project area, and the EA has not made any such claim. As there is no ecological justification for these low density thinning areas, and Bark requests that they be omitted from the final decision.

Snags and Coarse Woody Debris

Standing dead trees (snags) are important resources for vertebrate and invertebrate species worldwide and to forested ecosystems. They return essential nutrients to the soil and increase soil fertility. In the Douglas-fir and western hemlock forests of the Pacific Northwest, over 100 vertebrate species utilize snags for some part of their life cycle. Approximately 20 percent (34 species) of all bird species in the Pacific Northwest depend on snags for nesting and feeding and the abundance of snag-dependent birds is correlated with the density of suitable snags. (Boleyn, et. al., 2002).

The Take 3 EA acknowledges that the amount of snags in the project area already does not meet the RMP guideline for snags and CWD. *EA at 87*. Bark just went over this issue extensively in its comments, protest, appeals and pending litigation on the Airstrip timber sale. Without rehashing all those arguments, in sum – when the BLM is already snag deficient below the legal standards, any projects that it undertakes must rapidly move the BLM towards greater achievement of those standards, not retard their being met.

Once again, the BLM has planned a sale that both removes existing snags and captures the mortality of the trees that would have become snags in the near future – leaving the landscape denuded of snags for decades to come. The EA tries to mitigate this loss by saying that after thinning, the trees will grow faster quicker – leading to larger snags in the future. *EA at 50*. However, the BLM

provides little to no justification bigger snags in 50 years is better than smaller snags in ten.[2] Many species, including the five woodpeckers, are known to use smaller diameter snags. In fact, Bark volunteers observed many small diameter snags with extensive woodpecker use in the project area. Removing these snags, and the trees that will become snags in the near future, both violates the RMP and will seriously impair the habitat needs of cavity dependent species.

Road Decommissioning

Bark is very pleased to see the decommissioning of Road 3-5E-13.0 road, after the junction with 13.4 to the USFS wilderness boundary. *EA at 27.* Bark suggested this in our comments, after we found evidence of OHV traffic using this road to access the wilderness. However, we are disappointed that it is not part of the project implementation and are curious as to the timeline and/or funding that the BLM is considering for the road decommissioning. As discussed above, Bark is curious is the BLM considering this road decommissioning to offset the new road construction from the project? If so, what guarantees can the BLM provide that the work does, indeed, happen? We believe that the sooner this work be done, the better, and appreciate your inclusion of the analysis in this EA.

Thank you for your consideration of these comments. I am happy to answer any clarifying questions and/or discuss these comments further as necessary.

Sincerely,

Brenna Bell, Esq.
NEPA Coordinator

[2] The EA suggests that the No Action alternative would not create snags that are big enough to meet the RMP standards, but to the best of my knowledge, the RMP doesn't prescribe snag size. There are plenty of examples in the forest of smaller diameter snags that are heavily used by woodpeckers and other cavity dependent species.

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