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Durango, CO

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Pagosa Ranger District  
San Juan National Forest  
Attn: Jackson Mountain project  
P.O. Box 310  
Pagosa Springs, CO 81147

Dear Pagosa Ranger District,

According to the San Juan Forest Plan, ecological restoration and best available science should guide all actions. Please implement these requirements under the Forest Plan. Ecological restoration is also very appropriate for heavy-use recreational areas, as may occur with the Jackson Mountain project. Ecological restoration should guide vegetation thinning for the 2,500 acres of proposed hand thinning in this project, but also all prescribed burning.

Ecological restoration generally means restoring: (1) the historical spatial pattern of ponderosa pine and dry mixed conifer forests, which included a mixture of isolated trees, clumps of trees, and openings (ICO; Churchill et al. 2013), (2) historical tree-density levels, including historical variability (Allen et al. 2002, Baker 2020 Table 6), while (3) retaining all larger trees that were depleted in past logging (Allen et al. 2002, Baker 2021). I strongly suggest retaining all trees in ponderosa pine forests  $\geq 16"$  dbh (diameter at breast height), which is the regional standard for ecological restoration in these forests (Allen et al. 2002). This will also identify and protect almost all historical (pre-1880) trees now about 140 years old in ponderosa pine forests on the San Juan NF (Baker 2021 p. 4090). In dry mixed conifer, it is essential to retain all trees  $\geq 14"$  (Baker 2021 p. 4090) to keep all historical trees (pre-1880).

The proposed treatment methods include "mowing, mastication, chipping, and hand thinning," listed in the January 9, 2023 "Interested Party" letter. There should be no mechanical thinning in this area, as that has too much negative impact on soils and vegetation on sloping lands, which may be why hand thinning is proposed. Mowing and mastication do not mimic any natural process that ever created or maintained vegetation structure historically. The product of these mechanical methods is not similar to any natural product produced by fire or other natural disturbances, so they most certainly are not going achieve "ecological restoration" as is mandated by the Forest Plan. Please do not use mowing or mastication at all. Those are fuel-reduction methods, not ecological restoration methods.

There is also no reason that hand thinning, as opposed to just prescribed burning, should be used in this area. Thinning prior to prescribed burning is not necessary for ecological restoration, as is well established, and prescribed burning has the significant advantage of: (1) beginning to ecologically restore within-stand forest spatial structure mentioned in item (1) in the previous paragraph, (2) naturally restoring shrub structure that is more adapted to fire, (3) naturally restoring fuel loads, and (4) restoring fire to understory non-shrubby vegetation, so the understory begins to also be fire-adapted. No mechanical methods can possibly better "ecologically restore" these essential components of ponderosa pine and mixed-conifer forests, as is mandated by the Forest Plan.

Having said this for the project area in general, I think there may be a need for limited mechanical thinning very near roads, trailheads, and other access points to protect the built environment (e.g., public restrooms, nearby privately-owned structures), only if prescribed burning is not feasible near the built environment. Please minimize the use of mechanical treatments of any kind, as they do not mimic any natural process.

I did not find the forest-health tour to be an adequate presentation of the scientific situation regarding ecological restoration needs for the warm, dry mixed-conifer forests on Jackson Mountain. Tim Leishman said something to the effect that Jackson Mountain is a landscape dominated by dense white-fir stands except where some contracting was done. Adam Tlachas described the situation on Jackson Mountain as lots of ponderosa pine with short-lived flammable white fir. These are contradictory descriptions that likely have confused the public at this key stage of scoping, not a good situation to begin this project in my opinion.

Please instead use or acquire new CSE data that will allow you to quantify the current forest situation in detail across Jackson Mountain, and plan for ecological restoration. We need to know how the forest across Jackson Mountain varies in terms of tree-species composition, tree ages, tree sizes etc. and from this evidence we need to know what is proposed to change these relative to what is known about the historical range of variability (HRV) in this area. I hope trees  $\geq$  120 years of age will be protected, and if there is any tree removal to accomplish ecological restoration, that it is justified ecologically and concentrated in smaller and younger trees. I include a pdf of Baker (2021) that explains the ecological importance of trees  $\geq$  120 years in age in dry forests across the SJNF, and a pdf of Baker (2020), which used General Land Office Surveys to reconstruct HRV in montane forests in the southwestern San Juans. I would also like to see a science-based proposal for restoring historical fire on Jackson Mountain. To design this, please cite and use evidence about the historical fire regime in R. Wu's (1999) thesis and Baker (2018), which I include.

Sincerely,

Dr. William L. Baker, Emeritus Professor  
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