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Comments: I have two comments: one on the impact of forest treatments on carbon sequestration and the other on the ecology of aspen.

1.Carbon sequestration:

An important unintended consequence of the proposed management actions (e.g. thinning and creating openings) will be the reduction in carbon storage by the forests in the Project Area. The word "carbon" is mentioned only once in the text where on p. 19 it is stated that "…trees… trees … capture common air pollutants, while also sequestering carbon from the atmosphere and mitigating the effects of climate change." While the underlying problem motivating the proposed plan is anthropogenic climate change resulting from increased CO2 emissions, the proposal does not consider the likelihood that the vegetation treatments will decrease the capacity of the the Project Area forests to sequester carbon.

The conflict between fuels reduction to mitigate fire risk and societal goals to use forests to sequester more carbon is well documented and quantified (e.g., Bernal et al. Environ. Res. Lett. 17 (2022) 044047). A recent review written by a group of leading ecosystem scientists (Law et al. Land 2022, 11, 721) states: "Broad-Scale Thinning to Reduce Fire Severity Conflicts with Climate Goals: A reaction to the recent increase in the intensity and frequency of wildfires is to thin forests to reduce the quantity of combustible materials. However, the amount of carbon removed by thinning is much larger than the amount that might be saved from being burned in a fire, and far more area is harvested than would actually burn [42,46-49]. Most analyses of mid- to long-term thinning impacts on forest structure and carbon storage show there is a multi-decadal biomass carbon deficit following moderate to heavy thinning [50]." https://doi.org/10.3390/land11050721.

Even locally, a study underway of the Calwood fire (Buma et al., Boulder County website) has shown that "Carbon loss associated with treatment [i.e. thinning] was not offset by reduced carbon losses in the wildfire; carbon stocks are still higher on untreated wildfire plots than treated."

Given the importance of forests in sequestering carbon, decisions about forest management actions must be informed by a detailed accounting of their likely impacts on carbon flux both at the stand scale and at the scale of the entire project. Modeling and monitoring the impacts of forest treatments on carbon storage needs to be incorporated into the operational procedures of the Project.
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2.Aspen ecology.

The paragraph on aspen ecology (pages 17-18 under Biodiversity Conservation) is not based on any published science and is misleading. The paragraph presents the view that aspen in the Front Range is mostly invaded by conifers and will be replaced by conifers. This is the old view that nearly everywhere aspen should be regarded as seral to conifers. In contrast, for aspen stands in Colorado the criteria for identifying seral versus self-replacing aspen stands have been documented in Kurzel et al. 2007, "A typology of stand structure and dynamics of Quaking aspen in northwestern Colorado" Forest Ecology and Management. Using similar criteria specifically in the northern Front Range, Kashian et al. (Ecological Applications, 2007) found that indeed conifer dominance was increasing in 33% of the aspen forests sampled. However, they found that 52% of the area sampled had multiple cohorts of aspen indicating self-replacement or persistent stands.

The same paragraph mentions "primary threats" to aspen as including "sudden aspen decline" but fails to cite any research on the projected decline in aspen due to climate change. Forest Service scientists Rehfeldt et al.

(Forest Ecology and Management 258 (2009) 2353-2364) project a 45 to 70% decline in the area of climate suitable for aspen in 2060. There are probably more recent climate-model based projections of the climate suitable for aspen which could be used to identify where (most likely at drier low elevations and south-facing slopes) the climate is becoming unsuitable for aspen.

The same paragraph states that aspen forests "potentially provide natural fire resistance." This is a critically important point affecting management decisions which needs to be properly documented. The key reference for this true fact in Colorado is Bigler et al. 2005 "Multiple disturbance interactions and drought influence fire severity in Rocky Mountain subalpine forests," Ecology, 86(11), 2005, pp. 3018-3029. The Bigler study showed that in the 2002 high- severity fires in northwestern Colorado, aspen stands that originated after late-1800s fires were less likely to burn at high severity compared to older conifer-dominated stands. This is important support for "wildfire use" as a way of creating younger aspen-dominated stands that show a long-term reduction in flammability. The Bigler study confirms what has long been known among managers (e.g., Fechner, G.H., Barrows, J.S., 1976. Aspen Stands as Wildfire Fuel Breaks. Eisenhower Consortium Bulletin 4. U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO; DeByle, N. V.; Bevins, C. D.; Fischer, W. C. 1987. Wildfire occurrence in aspen in the interior western United States. Journal of Applied Forestry. 2: 73-76.).