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Comments: Please see attached objection text "Markevich objections.pdf" and additional attachments.

Alex

Content in the Objection Letter

July 5, 2023

Dear Mr. Williams,

This submission notifies you that we are objecting to the proposed decision by District Ranger Dennis Kuhnel to approve the Black Diamond Landscape Resiliency and Risk Reduction Project on the Canyon Lakes Ranger District of the Arapaho-Roosevelt National Forest.

Alex Markevich, Ph.D.

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OBJECTIONS AND SUGGESTED REMEDIES

1. PROJECT WOULD ALLOW POD WIDTHS GREATER THAN NECESSARY FOR FIREFIGHTER SAFETY

Proposed POD widths are excessive for the stated purpose of holding control lines in fire weather conditions that support large fire growth in all but rare circumstance that are unlikely to be present in actual proposed POD boundaries. The cited guidelines developed by Butler and Cohen (1998) mention only one example of flame height above 60 meters: the Butte Fire that burned on steep slopes covered by mature Lodgepole Pine and Douglas Fir. POD boundaries running along roads and ridgeline will typically be on flatter terrain or surrounded by vegetation of lower height.

Suggested Remedies

Explicitly link POD width to a realistic assessment of maximum potential flame height at any given location so as to limit width of treatment to only that which is necessary for firefighter safety. This is particularly important in POD boundaries located above Lower Montane or in ecologically sensitive areas so as to minimize the negative impacts of treatment.

References

Butler, B. W. & Cohen, J. D. (1998). Firefighter Safety Zones: A Theoretical Model Based on Radiative Heating. Int. J. Wildland Fire, 8(2), 73-77.

2. PROJECT WOULD ALLOW FOREST TREATMENTS 1/8 MILE FROM KNOWN WOLF DENS

Wildlife 16 in Appendix B, Design Features, appropriately affords a seasonal 1-mile activity buffer around active wolf dens, recognizing that human activity can significantly impact offspring survival among large predators (Frame et al., 2007). This policy follows sensible and tested wolf management methods. However, Wildlife 10 does not contain similarly appropriately stringent standards to prevent the Black Diamond project from adversely impacting state-mandated wolf recovery.

Scientific research has demonstrated that human activity, including forest treatments, significantly alters wolves' movements throughout the year, notably including denning and rendezvous periods (Houle et al., 2010; Lesmerises, 2012). Such changes in movement patterns suggest gradients in habitat suitability (and, consequently, impacts on survival) caused by these anthropogenic ecosystem alterations. Furthermore, wolves select dens to match specific habitat requirements and provide easy access to critical resources (Trapp, 2004). Poorer den sites lead to decreased pup survival (Benson et al., 2015).

Thus, the currently designated 1/8 mile treatment buffer around known wolf dens and rendezvous sites could impact wolf recovery in two unacceptable ways. First, the treatments could cause wolves to relocate to new, potentially less favorable, denning and rendezvous areas, limiting pup survival. Second, wolves could experience reduced reproductive success if they persist in using denning and rendezvous sites near treatments. Although we are unaware of research defining appropriate year-round treatment buffers surrounding wolf dens, the current 1/8 mile buffer ignores the ecological impacts of forest treatments on den site suitability.

Suggested Remedies

The year-round 1/8 mile buffer in Wildlife 10 should be extended to allow for uncertainty in the impacts of forest treatments on dens site suitability. A 1/2 buffer mile is a minimum precaution, given the extensive territories of wolves. However, given the uncertainties and lack of an empirically based numerical suggestion, we suggest a 1-mile buffer as a more appropriate policy.

References

Benson, J. F., Mills, K. J., & Patterson, B. R. (2015). Resource selection by wolves at dens and rendezvous sites in Algonquin park, Canada. Biological Conservation, 182, 223-232.

Frame, P. F., Cluff, H. D., & Hik, D. S. (2007). Response of wolves to experimental disturbance at homesites. The Journal of wildlife management, 71(2), 316-320.

Houle, M., Fortin, D., Dussault, C., Courtois, R., & Ouellet, J. P. (2010). Cumulative effects of forestry on habitat use by gray wolf (Canis lupus) in the boreal forest. Landscape ecology, 25,

419-433.

Lesmerises, F., Dussault, C., & St-Laurent, M. H. (2012). Wolf habitat selection is shaped by human activities in a highly managed boreal forest. Forest ecology and management, 276, 125-

131.

Trapp, J. R. (2004). Wolf den site selection and characteristics in the northern Rocky Mountains: a multi-scale analysis (Doctoral dissertation, Prescott College Master of Arts Program).

3. PROJECT UNDEREMPHASIZES THE POTENTIAL OF PRESCRIBED FIRE IN WILDERNESS

Appendix A, Activity Card 14, overlooks the utility of prescribed fire as a weed management approach. Broadcast herbicide applications carry significant environmental risks and shouldn't be utilized in the Black Diamond project, especially since this project concerns many relatively pristine natural forests. However, prescribed burns provide a valuable alternative to petrochemicals as this treatment method can control many weed species while benefiting native plants and regenerating natural ecosystem function. For instance, contrary to popular belief, fire can reduce cheatgrass infestation in numerous Rocky Mountain ecosystems. While cheatgrass is notorious for the cheatgrass-fire cycle that prevails in the Great Basin area (Porensky & Blumenthal, 2016), research in fire-adapted high-altitude ecosystems similar to those surrounding the Black Diamond project has consistently found fire effective at limiting cheatgrass infestation (Sherrill & Romme, 2012; White & Currie, 1983; Urza et al., 2019). Our pre-publication research project (included as an attachment) found similar results after the Calwood fire in Boulder County. Another local example is the Winiger Ridge Project, where prescribed fire successfully controlled patches of cheatgrass and other invasives over a large area

(see attached photographs).

Suggested Remedies

Acknowledge the effectiveness of prescribed fire in weed management and develop a plan to utilize this method in areas with widespread weed infestation. Do not utilize broadcast herbicide applications.

References

Porensky, L. M., & Blumenthal, D. M. (2016). Historical wildfires do not promote cheatgrass invasion in a western Great Plains steppe. Biological Invasions, 18, 3333-3349.

Sherrill, K. R., & Romme, W. H. (2012). Spatial variation in postfire cheatgrass: Dinosaur National Monument, USA. Fire Ecology, 8(2), 38-56.

White, R. S., & Currie, P. O. (1983). Prescribed burning in the northern Great Plains: yield and cover responses of 3 forage species in the mixed grass prairie. Rangeland Ecology &

Management/Journal of Range Management Archives, 36(2), 179-183.

Urza, A. K., Weisberg, P. J., Chambers, J. C., Board, D., & Flake, S. W. (2019). Seeding native species increases resistance to annual grass invasion following prescribed burning of semiarid

woodlands. Biological Invasions, 21, 1993-2007.