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Comments: Revised Ten Cent Community Wildfire Protection Project - scoping

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RE: Revised Ten Cent Community Wildfire Protection Project - scoping

Please accept the following comments from Oregon Wild regarding the proposed Revised Ten Cent Community Wildfire Protection Project. Oregon Wild represents approximately 15,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife and waters as an enduring legacy.

This project involves:

*6000 acres of commercial fuel reduction logging
*38,000 acres of prescribed fire, including 29,000 acres outside of mechanical treatment units and 9500 acres in NFJD wilderness
*equal spacing of leave trees
*1887 acres very heavily thinned to 40 ft2/acre
*3540 acres of fuel reduction in RHCA (all non-commercial??)
*plan amendment to allow degradation of big game habitat
*5 miles of new temporary roads
*93 miles of closed roads re-opened

These comments are intended to supplement Oregon Wild's scoping comments dated 6 Oct 2014.

This project is much too focused on fuel reduction even in places that should be managed for a wider variety of values. The scoping notice reveals that the FS is putting fuel reduction ahead of other equally important forest values. Examples include equilateral spacing of retained trees and very heavy thinning that will leave large areas of the forest virtually devoid of snag habitat for decades to come. This project needs to be re-imagined so that fuel reduction is better harmonized with other objectives. We are fine with a narrow focus on fuel reduction but only within the structure ignition zone, i.e., within 100 feet of buildings. Beyond that distance, the FS should focus on ecological restoration and expect that moderated fire behavior is a beneficial by-product of restoration.

An example of how fuel reduction and ecological restoration can be better harmonized. Equal spacing of trees is not ecologically appropriate. Yet fire behavior can be modified quite well while using variable thinning prescriptions such as "ICO" (individuals, clumps, openings), or variable density thinning with generous unthinned "skips" and heavily thinned "gaps." See Churchill, D.J., M.C. Dalhgreen, A.J. Larson, and J.F. Franklin. 2013. The ICO approach to restoring spatial pattern in dry forests: Implementation guide. Version 1.0. Stewardship Forestry, Vashon, Washington, USA.http://www.cfc.umt.edu/ForestEcology/files/ICO_Manager_Guide.pdf and Derek J. Churchill, Andrew J. Larson, Matthew C. Dahlgreen, Jerry F. Franklin, Paul F. Hessburg, and James A. Lutz.

2013. Restoring forest resilience: From reference spatial patterns to silvicultural prescriptions and monitoring. Forest Ecology and Management 291 (2013) 442-457.
http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5428873.pdf

If the goal of even spacing is to create a fuel-deprived gap around each tree, ask yourself why does that fuel deprived gap have to be around every tree, why not around small groups of trees? As long as there are well distributed fuel discontinuities, there is not reason that thy need be around every single tree. Thus fuel reduction can be harmonized with ecologcial goals emphasizing tree clumps and patches. See also, the discussion below regarding our concerns about heavy thinning of canopy fuels.

NOTE: We are unfamiliar with the term "equilateral spacing" as applied to tree retention. What does this mean? Is it the same as equal spacing.

Another way to harmonize fuel reduction and other objectives is to follow the forest plan. The FS was well aware of fire hazard when it designated this area as big game habitat and specified standards & guidelines for conserving that habitat. The FS can still achieve a large degree of fuel hazard reduction while still meeting LRMP requirements for big game habitat. The FS is not amending the forest plan to better meet big game objectives, it is shifting the goals of the plan from big game to fuel reduction to the detriment of big game. There is no justification for this. Changing the goals of the plan is a significant amendment and requires an EIS.

We are concerned that the purpose of prescribed fire in the NFJD Wilderness is something other than protecting wilderness values. The revised scoping notice says one of the purposes of prescribed fire in the wilderness is to "protect values at risk" and since this project is very focused on WUI fuel reduction, we are concerned that the wilderness is being modified in unnatural ways to benefit resources other than wilderness. This would be a violation of the wilderness act. To be clear, we are OK with carefully implemented prescribed fire in the wilderness if is done for the sole purpose of protecting wilderness values.

We urge the FS to minimize re-opening closed roads and avoid construction of new roads. Temporary roads are temporary in name only. They have long-term impacts on soil, vegetation, water, and habitat. Not every acre needs to be treated. Untreated areas provide diverse ecosystem benefits, such as habitat for species that prefer complex forest structure, snag habitat, and carbon storage. Inaccessible areas should be allocated to providing these benefits. See section below on finding the optimal mix of treated and untreated areas.

Focus on surface and ladder fuels, not canopy fuels.

We are concerned that heavy thinning to 40 ft2/acre on 1887 acres will conflict with desired results. The FS should focus on treating surface and ladder fuels while retaining more canopy fuels. Most structures that are burned by wildfire as ignited by surface fires as opposed to canopy fires. U.S. Dep't of Agriculture Forest Service Rocky Mountain Research Station, FOURMILE CANYON PRELIMINARY FINDINGS 69, 90 (Oct. 2011), available at http://www.scribd.com/doc/68850263/Fourmile-Canyon-Fire-Prelim-Report (83% of the homes that burned were ignited by surface fire as opposed to crown fire. This indicates that the "survival or loss of homes exposed to wildfire flames and firebrands (lofted burning embers) is not determined by the overall fire behavior or distance of firebrand lofting but rather, the condition of the Home Ignition Zone (HIZ) - the design, materials and maintenance of the home in relation to its immediate surroundings within 100 feet.")

It is not a good idea to focus too much on canopy fuel and canopy fire hazard, because forest canopy has complex interactions with fire hazard. Canopy fuels might burn, but forest canopy also helps maintain a cool, moist, less windy microclimate that is less favorable to severe fire. Maintaining forest canopy also helps limit light and nutrients thus suppressing the growth of surface and ladder fuels. Removing canopy not only adversely modifies fire climate, and stimulates growth of hazardous fuels, but also increases fire hazard by creating more slash that is not always properly disposed of. Finally, canopy retention provides a wide variety of other ecosystem benefits including, habitat, future snags, watershed protection, carbon storage, etc...

Before embarking on an aggressive strategy of crown fuel reduction, the agency must address the responsible opposing viewpoints regarding the manifold values of retaining more canopy to retain cooler temperatures and moisture. Responsible opposing experts say that reducing ground fuels and ladder fuels should be the first priority and reducing canopy fuels a lesser priority.

Omi and Martinson (2012) prepared a review of the literature for managers and concluded -

That no relationship (r2<0.06) was found between canopy fuel variables and the effectiveness of either surface reduction treatments without thinning or thinning treatments without subsequent slash treatment supports the assertion that surface fuel reduction is of primary importance in influencing treatment effectiveness.

Omi & Martinson 2012. Effectiveness of Fuel Treatments for Mitigating Wildfire Severity: A Manager-Focused Review and Synthesis. Joint Fire Science Program. Final Report. JFSP Project Number 08-2-1-09 http://www.firescience.gov/projects/08-2-1-09/project/08-2-1-09_finalreport08-2-1-09.pdf

"Thinning is most effective when it removes understory trees, because larger overstory trees are more resistant to heat injury (Agee and Skinner 2005). In addition, shade and competition from larger trees slows the recruitment of younger trees in the understory." Keeley, J.E.; Aplet, G.H.; Christensen, N.L.; Conard, S.C.; Johnson, E.A.; Omi, P.N.; Peterson, D.L.; Swetnam, T.W. 2009. Ecological foundations for fire management in North American forest and shrubland ecosystems. Gen. Tech. Rep. PNW-GTR-779. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 92 p. http://www.fs.fed.us/pnw/pubs/pnw_gtr779.pdf.

Modeling shows that canopy fuel reduction is accomplished at the expense of increasing surface fire intensity.

Modifying canopy fuels as prescribed in this method may lead to increased surface fire intensity and spread rate under the same environmental conditions, even if surface fuels are the same before and after canopy treatment. Reducing CBD to preclude crown fire leads to increases in the wind adjustment factor (the proportion of 20-ft windspeed that reaches midflame height). Also, a more open canopy may lead to lower fine dead fuel moisture content. These factors increase surface fire intensity and spread rate. Therefore, canopy fuel treatments reduce the potential for crown fire at the expense of slightly increased surface fire spread rate and intensity.

Scott, Joe. 2003. Canopy Fuel Treatment Standards for the Wildland-Urban Interface. USDA Forest Service Proceedings RMRS-P-29. 2003. http://www.fs.fed.us/rm/pubs/rmrs_p029/rmrs_p029_029_038.pdf.

Opening up the stand significantly will dry surface fuels due to increased light levels, surface winds and temperatures. This may increase surface fire intensity and rate of spread unless total surface fuel loading is reduced. In addition, thinning that allows significant light to reach the forest floor may result in the regrowth of small trees and shrubs, which over time become new ladder fuels.

Stephen Fitzgerald and Max Bennett. 2013. A Land Manager's Guide for Creating Fire-Resistant Forests. EM 9087. OSU Extension.
http://www.nwfirescience.org/sites/default/files/publications/A%20Land%20Managers%20Guide%20for%20Creating%20Fire-resistant%20Forests%20.pdf

Johnson et al (2009) simulated thinning in a densely stocked stand of Ponderosa pine with an understory of Douglas-fir and grand fir.

The predicted fire type after treatment is surface fire for all thinning options, but the more open stands are characterized predominantly by fuel model 2, so flame lengths increase and potential BA mortality remains above 20 percent regardless of surface fuel treatment. The 200 and 300 TPA... treatments have a more closed canopy and fire behavior is influenced less by grass fuels, so flame lengths and potential BA mortality are lower than the more open stands.
...
The 200 TPA treatment has the greatest long-term effect on crown fire potential, with a predicted surface fire type for 50 years with pile-and burn or no surface fuel treatment and 40 years with prescribed fire treatment. The 50 TPA (124 TPH) treatment had the most short-lived effect on crown fire potential, with regeneration causing a drop in canopy base height in 30 years regardless of surface fuel treatment.

Morris Johnson, David L. Peterson, and Crystal Raymond 2009. Fuel treatment guidebook: illustrating treatment effects on Fire hazard. Fire Management Today 69(2)
http://www.fs.fed.us/fire/fmt/fmt_pdfs/FMT69-2.pdf p 32-33.

See also, Jim Agee. Risk Assessment for Decision-making Related to Uncharacteristic Wildfire, Conference Portland, Oregon Nov 17-20, 2003 http://www.docstoc.com/docs/37210605/Risk-Assessment-for-Decision-Making-Related-to-Uncharacteristic. ("Reduce Crown Density * Important to address once surface fire and torching are addressed. * DON'T START HERE!!!!! … Treatments that reduced surface fuels, treated ladder fuels, and kept the big trees fared best.") An EIS is needed to respond to opposing viewpoints and consider the consequences of alternative approaches to fuel reduction.
http://www.fws.gov/oregonfwo/ExternalAffairs/Topics/DryForestWorkshop/Documents/2005/PowerPoints/Agee%20NSO-Bend-Agee.ppt.

Mark Finney and Warren Cohen also emphasize the three step approach to fuel reduction that places reduced emphasis on canopy fuel reduction.

Thus, Van Wagner's (1977) relationships suggest that fuel management prescriptions can limit crown fire activity by first reducing surface fuels to limit fireline intensity, then thinning the smallest trees or pruning to elevate the base of aerial fuels from the ground surface. A final measure may involve crown thinning (removal of some canopy level trees) to make difficult the transition to active crowning.

Finney and Cohen. 2003. Expectation and Evaluation of Fuel Management Objectives. USDA Forest Service Proceedings RMRS-P-29. http://www.fs.fed.us/rm/pubs/rmrs_p029/rmrs_p029_351_366.pdf.

Unroaded Areas

Please try to avoid commercial logging in the ecologically significant unroaded areas shown in purple below: If commercial logging is proposed please prepare an EIS and fully disclose the significant adverse effects of interfering in natural processes in these rare unmanaged areas.

Optimal Mix of Treated and Untreated

Oregon Wild supports thinning of dense young trees when such projects are well planned and designed to accomplish comprehensive restoration objectives and carefully implemented to avoid unintended consequences. One of the key considerations is to find the optimal mix of treated and untreated patches within and between stands. This is because thinning benefits some aspects of late successional forest conditions such as large trees and vegetation diversity, but thinning also has adverse effects on other aspects of late successional forests such as dead wood recruitment, biomass accumulation, wildlife cover, soil quality, and microclimate conditions. In order to achieve all the objectives for optimal late successional forest conditions, restoration projects must contain both thinned and unthinned patches. Finding the right mix should not be an accident based mostly on operational feasibility and site constraints, but should be a conscious decision based on quantitative analysis showing how best to achieve optimal late successional conditions. Since thinning has a long-term negative effect on reducing recruitment of dead wood, it should be treated as a limiting factor and used to drive the search for an alternative with the most appropriate mix of treated and untreated stands.

It is useful to apply the concept of "habitat complementation" based on proximity of different stand types and different needs of wildlife. Some stand types provide shelter from predators and weather, while other stand types

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provide foraging opportunities. Recognize that the thoughtful juxtaposition of thinned and unthinned areas can provide habitat benefits greater than large homogeneous areas of either thinned or unthinned. There is a synergy to creation of a mosaic of thinned and unthinned stands that is greater than the sum of its parts. With this recognition, an important purpose of the NEPA document and the ultimate decision is to seek and find the most optimal mix of treated and untreated areas. Instead of an 80/20 mix of treated/untreated areas, consider a variety of combinations such as 60/40, 50/50, 40/60, and 20/80. Note that both the absolute proportion and the spatial pattern of treated and untreated must be considered.

Consider the ecological costs and benefits of both thinned areas and unthinned areas. Thinned areas grow big trees (but fewer of them), while unthinned areas recruit more dead wood habitat structure in the short and long-term. In order to accomplish real ecological restoration in young stands we need to plan for and implement both thinned areas and unthinned areas.

Determining the appropriate scale of thinned and unthinned areas is a critical decision which requires clear objectives and quantitative analysis. One necessary component of such an analysis is to determine how many green trees are needed at what density in order to recruit sufficient snags over time (both short and long-term) to achieve 50-80% DecAID tolerance levels across the project area.

It is important to integrate the analysis of road access and the optimal mix of treated and untreated areas. Since road construction has serious adverse impacts on soil, water, weeds, and wildlife, and because some areas will contribute to ecological goals while not being thinned, the agency should just allocate inaccessible areas to the untreated portion of the mix. This will lead to complementary benefits - avoided road impacts, and ecological benefits associated with dense forest and long-term dead wood recruitment.

Big game cover and forage requirements, and dead wood habitat recruitment represent good tools to help optimize the mix of treated and untreated stands and the scale and extent of untreated skips and heavily-thinned "gaps" within treated stands. Thinned areas may provide better forage opportunities for big game, while untreated skips offer essential hiding cover for big game and other wildlife. Thinned and regenerated areas are not expected to recruit adequate numbers of snags and dead wood habitat over time, while untreated areas will recruit near-natural levels of dead wood habitat. The need for well-distributed patches of relatively dense forest where snags are continuously recruited is a good lens through which to think about optimizing the mix of treated and untreated stands, as well as the scale and extent of skips and heavily-thinned "gaps" within treated stands. The agency should consider alternatives with different mixes of treated and untreated areas for this purpose.

Sincerely,

/s/

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Oregon Wild's mission is to protect and restore Oregon's wildlands, wildlife, and waters as an enduring legacy for future generations.