

Southern Oregon Climate Action Now

SOCAN

Confronting Climate Change

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Alan R.P. Journet Ph.D.

Co-Facilitator

Southern Oregon Climate Action Now

7113 Griffin Lane

Jacksonville

OR 97530-9342

alan@socan.eco

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SOCAN Comments on SB 762-1

Chair Golden and members of the Senate Committee on Natural Resources and Wildfire Recovery:

I write as co-facilitator of Southern Oregon Climate Action Now on behalf of the 1500 + Southern Oregonians who are SOCAN to express our opinion on SB762-1.

Decisions regarding the management of Oregon's forests are complicated by the array of objectives and values we maintain for these natural resources. Historically, a prime objective has been timber harvest. This has always competed with maintaining forest health as a goal that serves wildlife, recreation, and tourism. To these we must now add the increasing threat of wildfire, the avoidance of smoke which comprises a health hazard, and the value of sequestering carbon as a means for assisting us in combatting the climate chaos that an excess of greenhouse gases in our atmosphere is promoting. This last value is recognized in Governor Brown's Executive Order 20-04 where promoting carbon sequestration in our forests is a designated expectation.

The multiplicity of goals is further complicated by our recognition that Oregon forests have evolved in a Mediterranean winter wet/summer dry climate where dry soils and vegetation annually generate fire risk, a condition likely exacerbated by both fire suppression and climate shifts imposed naturally by the Pacific Decadal Oscillation, and more recently by human-induced global warming resulting from increasing atmospheric greenhouse gas concentrations. Essentially, Oregon's forests are fire prone, fire adapted, and fire dependent. Unfortunately, while our forests need fire, climate change is moving so rapidly that climatic conditions are causing regions of the state to shift out of the appropriate climatic range for some of our ecologically and commercially most important species. It thus becomes unclear what species

will be present in post-fire recovery areas. While the proposed wildfire risk management program may serve effectively to reduce fire and smoke risk, it potentially compromises those species that are fire dependent, and does nothing to stem the shifting climate. Indeed, it may actually exacerbate climate change by promoting greenhouse gas emissions.

The problem becomes clear when we realize that any management choice is unlikely to be optimal for promoting all forest values.

While there is evidence that thinning overly dense forests results in reduced fire risk, this seems to not always be the case. Kalies and Yocom Kent (2016) reviewed 56 studies to assess whether thinning and prescribed burning in western forests had the beneficial effect of reducing subsequent fire damage. They reported that “Several studies found that thin + burn treatments had the greatest positive effects, while burning or thinning alone had either less of an effect or none at all.” They also reported that: “In at least two cases, thinning alone actually increased [subsequent] burn severity compared to untreated sites.” The implication is that thinning alone is inadequate and should be accompanied by prescribed fire treatment to be effective. This, of course, requires at least two management passes through a treatment area, once to thin, and a second to burn.

The above discussion is based on studies where a subsequent fire has occurred. However, there is no certainty that a treated area will encounter a fire during the 20 or so years before it returns to its previous vegetative density and thus requires a repeat treatment. In an analysis of western state Ponderosa pine stands, in an admittedly rather old study, Rhodes and Baker (2008) reported: “the probability of fire of any severity encountering treatments within 20 years is approximately 7.15-16.5%...” This was echoed by Campbell *et al.* (2011) who suggested only 1 - 20% of treated areas are likely to experience subsequent fire within the 20-25-year life expectancy of the treatment. While there may be some benefit in those treated areas subsequently burning, the vast majority of treated area will not exhibit such benefit.

The Kalies and Yocom Kent (2016) review also reported on the effects of treatments on carbon storage. They reported that treated sites exhibited less carbon loss in subsequent fires but that untreated sites contained more carbon, though this may be stored in dead trees. Meanwhile, the treatment itself results in both carbon emissions and the removal of trees that have sequestration potential. Clark *et al.* (2011) assessed the carbon content of plots subjected to three types of thinning (designated light, break-even, and heavy) compared to un-thinned controls in Oregon east and west coniferous forests. They reported that in both regions, after 50 years, carbon sequestration was greater in the control than the three treatments. They concluded: “All thinning scenarios on all plots without exception resulted in a significant loss of carbon relative to a control scenario.” Meanwhile, Hoover and Stout (2007) assessing carbon storage in a northwestern Pennsylvania hardwood stands reported that carbon stocks in stands

experiencing light thinning were equivalent to the control after 25 years while middle and heavily thinned plots exhibited reduced carbon storage. As an illustration of the difficulty of optimizing for multiple goals, it appears that thinning to reduce fire risk may have a profoundly negative impact on carbon storage in Oregon's eastside and westside forests.

While I find much laudable in the proposal as a means of addressing the fire and smoke hazard especially facing Oregon's rural residents, I am concerned that there seems little recognition within the proposal that our Mediterranean climate means our forests are fire prone, fire adapted, and fire dependent. This means that fire is (a) inevitable, and (b) essential for maintaining forest health.

I am also concerned that efforts proposed to address the smoke problem may lead to enhanced carbon emissions while compromising the carbon sequestration we need to address the climate chaos that is increasing fire risk.

One problem with the fuel management program proposed is that it may compromise other forest values. Notably, treatments are expensive and require not only at least two initial passes to achieve the thin and burn phases followed by repeat burns or repeats of the entire two-phase sequence. Even in an era where climate change is potentially increasing fire risk throughout the state, the data suggest fuels treatments, if successful at reducing damage from subsequent fires, may well only benefit a small proportion of the state. This, of course, also compromises the reality that our forests are fire dependent and need fire, as well as potentially compromising the carbon sequestration goal embodied in EO 20-04 as discussed above.

In this context, I suggest that the laudable item Section 18 (2) a C: "Focusing on treatments protective of human life, property, critical infrastructure, watershed health and forest and rangeland habitat restoration;" should be elevated in priority such that risk-reduction efforts are clearly targeted to location where human habitation and infrastructure exists.

In addition, it is important that the process of thinning to remove fuels should not be converted on the ground into commercial logging operations. As Stone *et al.* (2004), Ortiz (2020), Schick (2020), and Talberth (2020) have discussed recently, logging does not reduce wildfire intensity. Indeed, logging may well lead to more intense fires. Thus, I suggest Section 18 (3) should be simplified to state: "A project under this section may not include commercial thinning."

In conclusion, we support many aspects of the proposal, such as the requirement that electricity utilities become better prepared for fire, the Oregon Wildfire Workforce Corps is established to assist with fire response, and the wildfire risk mapping program identifies those regions of the state at greatest risk. However, we have concerns about aspects that compromise carbon sequestration and may through the basic treatment proposed or by allowing commercial logging generate massive emissions under the guise of wildfire prevention.

Literature:

Campbell JL, Harmon ME, Mitchell SR 2011 Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? *Frontiers in Ecology and the Environment* 2011; doi:10.1890/110057

<https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/110057#:~:text=By%20evaluating%20how%20fuel%20treatments,that%20this%20is%20extremely%20unlikely>.

Clark J, Sessions J, Krankina O, Maness T. 2011 Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis. College of Forestry, Oregon State University, Final Report.

https://www.nrdc.org/sites/default/files/ene_13041704a.pdf

Hoover C and Stout S 2007 The Carbon Consequences of thinning techniques: Stand structure makes a difference. <https://www.nrs.fs.fed.us/pubs/2575>

Kallies EL, and Yocom Kent LL. 2016 Tamm Review: Are fuel treatments effective at achieving ecological and social objectives? A systematic review *Forest Ecology and Management* 375: 84-95.

<https://www.sciencedirect.com/science/article/abs/pii/S0378112716302626>

Ortiz, D 2020 Five myths about wildfires. *BBC Future*. September 16, 2020.

<https://www.bbc.com/future/article/20181113-five-myths-about-wildfires>

Rhodes JJ, and Baker WL 2008 Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests. *The Open Forest Science Journal*, 2008, 1, 1-7.

<https://santafeforestcoalition.org/images/links/102-Rhodes-Baker.pdf>

Schick T 2020 Despite What the Logging Industry Says, Cutting Down Trees Isn't Stopping Catastrophic Wildfires, *OPB* October 31 2020. <https://www.propublica.org/article/despite-what-the-logging-industry-says-cutting-down-trees-isnt-stopping-catastrophic-wildfires>

Stone, C, Hudak A, Morgan P 2004 Forest Harvest Can Increase Subsequent Forest Fire Severity. Proceedings of the Second International Symposium on Fire Economics, Planning, and Policy: A Global View. https://www.fs.fed.us/psw/publications/documents/psw_gtr208en/psw_gtr208en_525-534_stone.pdf

Talberth J 2020 Logging is not the solution to wildfires or climate change *The Hill* October 23.

<https://thehill.com/opinion/energy-environment/517639-logging-is-not-the-solution-to-wildfires-or-climate-change>