GEOS INSTITUTE

September 24, 2019

Re: Oregon Governor's Wildfire Council: Feedback on September 12, 2019 Mitigation Committee Report

I am a conservation scientist with over 200 peer-reviewed publications including books on forest-fire ecology, climate change, and forest management globally and in Oregon. I also served on the Oregon Global Warming Commission Task Force on Carbon, and the Governor's Forest Carbon Stakeholder Group. I have reviewed the report from the mitigation subcommittee and I write to provide input and a summary of the scientific literature on wildfires in a changing climate to help with your deliberations.

* While people may feel that large fires are increasing in their lifetimes, across the West, there is still a fire deficit in terms of acres burning compared to the period from the early 1900s-1940s[1]. As large wildfires are mostly driven by climate (high temperatures, drought, wind), I urge caution in framing up 2017 and 2018 very active wildfire seasons as attributed mainly to a fuels build up. While the number of acres that have burned has been increasing since the 1980s, the size of large (>1,000 acres) high severity burn patches (a key indicator of "megafire" potential) has not gone up since 1991. The most extensive, peer-reviewed dataset ever analyzed on this subject confirms this finding[2]. Large burn patches are not homogenous tree-kill zones nor are they "unprecedented" instead they are complex and internally heterogenous, providing ample opportunity for seeds to recolonize severely burned areas.[2]

* Your draft reports do not confront the substantial damage that post-fire logging has done to sensitive burned ecosystems in Oregon. Logging and tree planting after fire damages fire-dependent ecosystems, degrades water quality, and increases fire risks. The scientific evidence is overwhelming that this activity – along with a dense road network - is very harmful to postfire ecosystems.[3] Hundreds of scientists have published papers, written books and gone on record of how postfire logging increases fire risks and can emit more carbon than forest fires.

* Active management (thinning/logging/road building) in the backcountry will not protect communities, stop fires in extreme conditions, or prevent smoke from affecting our communities. The summers of 2017 and 2018 were both very active fire seasons with Oregon in a region-wide drought. The summer of 2019 was much wetter with little fire activity or smoke. Recent fire seasons show that fire activity in our region and across the West is mainly regulated by top-down climate drivers and less so by "fuels[4]." As the climate changes and we experience more drought and extreme temperatures, we can expect more extreme fire weather that has and will continue to overtake our ability to suppress fire.[4]

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[1] Littell, J.S. et al. 2009. Climate and wildfire area burned in western U.S. ecoprovinces 1916-2003. Ecol. Applic. 19:1003-1021. Also: Egan. T. 2009. The Big Burn. Mariner Books: Boston

[2]DellaSala, D.A. and C.T. Hanson. 2019. Are wildland fires increasing large patches of complex early seral forest habitat? Diversity 2019, 11, 157; doi:10.3390/d11090157

[3] D.B. Lindenmayer, P.J. Burton, and J.F. Franklin. 2008. Salvage logging and its ecological consequences. Island Press: Washington, DC

[4]Abatzoglou, J.T., and A.P. Williams. 2016. Impact of anthropogenic climate change on wildfire across western US forests. PNAS https://www.pnas.org/content/113/42/11770

* The landscape is so vast and efforts to obtain and spend hundreds of millions, if not billions, on thinning are not likely to be effective nor will they make us safer. This is because we don't know exactly where fire will occur, and thinned forests will just grow back. Simply put, we cannot log/manage or suppress our way out of wildfires. We can pursue durable solutions and learn to live with fire via home hardening (95-98% effective), smoke shelters (adaptation), and aid for low-income families[5]. In fact, in 2016, we published the most extensive dataset ever on whether forests with the most active management had the lowest fire severities vs. wilderness and roadless areas[6]. Our peer-reviewed research demonstrates that forests with the most logging burned in the highest severities likely due to extensive flammable tree plantations and logging slash. Oregon's weak logging laws are contributing to uncharacteristically severe fires while impacting water quantity, yet Oregonians would not know it from reading your draft reports.

* Insects and disease are not associated with higher fire risks. The use of risk assessment mapping in the report provides a false sense of comfort that will not make our communities safer or our forests more resilient. The overwhelming scientific evidence from multiple studies in the Pacific Northwest, Pacific Southwest, and Rockies shows that forests recently experiencing large insect outbreaks are actually less susceptible to subsequent fires because there is little fuel remaining in the canopy for fires to crown out.[7] The risk assessment models are, perhaps, better than those in the past, yet they are still coarse and do not reflect empirically based literature.

* The draft report from the Wildfire Council repeatedly refers to wildfires as "catastrophic" while also stating that Oregonians need to "live with wildfire" and understand its beneficial role. While there are certainly risks to people from wildfires, the vast majority of scientific studies shows that forests most often benefit ecologically from what are called mixed-severity fires.[8] These fires produce a patch-work mosaic of different burn intensities (low, moderate, high) and are excellent habitat for wildlife, rivaling the biodiversity of old-growth forests. Using "catastrophic" rhetoric to describe fire directly conflicts with your stated goal of helping Oregonians live with fire. Fires are not ecologically destructive, rather it is logging and suppression before, during, and after wildfires that has the biggest impact on water quantity, quality, wildlife and natural processes.

In closing, I am concerned that the committee is lacking a detailed life-cycle analysis of carbon leaving the forests from wildfires vs. logging. The Oregon Global Warming Commission's 2018 report to the legislature and published literature shows that even in very active wildfire seasons, wildfires average ~10% (some years as low as 3%) of the states' total greenhouse gas emissions compared to at least three times those levels from logging.[9] I urge the committee to work with the Oregon Global Warming Commission and call for an honest carbon accounting of all management activities. In the face of a warming climate, we need to update and modernize our practices to be climate and fire safe.

Sincerely,

Dominick A. DellaSala, Ph.D, Chief Scientist

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[5] Moritz, M. et al. 2014. Learning to coexist with wildfire. Nature 515:58-66. Schoennagel, T. et al. 2017. Adapt to more wildfire in western North American forests as climate changes. PNAS www.pnas.org/cgi/doi/10.1073/pnas.1617464114

[6] Bradley, C.M., et al. 2016. Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States? Ecosphere 7: Ecosphere 7:1-13. Also see Zald, H.S.J., and C. Dunn. 2018. Severe fire weather and intense forest management increase fire severity in a multi-ownership landscape. Ecol. Applic. 28:1068-1080.

[7] E.g., Hart, S.J. et al. 2015. Negative feedbacks on bark beetle outbreaks: widespread and severe spruce beetle infestation restricts subsequent infestation. PlosOne 10(5): e0127975. doi:10.1371/journal.pone.0127975. Meigs, G.W. et al. 2016. Do insect outbreaks reduce the severity of subsequent forest fires? Environ. Res. Letters 11 045008

[8] DellaSala, D.A., and C.T. Hanson. 2015. The ecological importance of mixed-severity fires: nature's phoenix. Elsevier: Boston.

[9] https://energyinfo.oregon.gov/blog/2018/12/13/oregon-global-warming-commission-publishes-biennial-report-to-the-legislature; Law, B.E. et al. 2018. Land use strategies to mitigate climate change in carbon dense temperate forests. PNAS www.pnas.org/cgi/doi/10.1073/pnas.1720064115