Southern Oregon Climate Action Now

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Reference Bill Number HB4133

Chair Nathanson and Members of the House Committee on Revenue:

I write as cofacilitator of Southern Oregon Climate Action Now, an organization of some 2,000 Southern Oregonians who are concerned about the climate crisis and encourage state action to address it. As rural Oregonians, we live on the frontlines of the warming, reducing snowpack, heatwaves, drought and the increasing wildfire risk that these trends conspire to produce. Because of this, we pay close attention to what is happening in Salem in terms of legislative proposals. Living in rural Oregon, we are naturally quite aware of and concerned about the problem of wildfire since it poses a direct risk to us on an annual basis.

I write today to offer our perspective on HB4133. Before commenting on the proposal itself I offer a little fire ecology background.

Oregonians live in a Mediterranean-type climate (MTC) where summers are very dry, and winters are wet. This is a very unusual climate, occurring in just a few locations around the globe (e.g., Geodiode undated): around the Mediterranean ocean (of course), western North America (from Washinton down to California), western S. America (especially Chile), western South Africa (around Cape Town), southwestern Australia (around Perth) and South Australia (north of Adelaide). Discussing fire and plant diversification in this climate Rundel et al. (2018) argue: “The onset of MTCs in the middle Miocene brought summer drought, a novel climatic condition, but also a regime of recurrent fire.” They also report the conclusions of Keeley et al. (2012) that: “Mediterranean-type climates with summer drought conditions are conducive to regular fire. The mild wet winter-spring seasons lead to moderate productivity generating broad landscapes of contiguous fuels, and the annual summer drought converts this biomass into available fuels.” I stress this history to underline that fire has been a constant factor influencing the forest ecosystems of Oregon for millennia and certainly throughout the period that our current associations of tree species have occupied the region. As a result, our forests, particularly our dry forests, are fire prone, fire adapted and fire dependent. Ongoing forest health requires recurrent fire. In addition to the impact of climate on fire frequency, Native Americans, who have existed alongside our western forests essentially for thousands of years, have successfully incorporated into their forest management regimes frequent burning (e.g. Philips 2023).

The recent history of climatic conditions has displayed considerable variability. During the last century, for example, we have experienced fluctuations in the Pacific Decadal Oscillation (PDO). The PDO cycles every several decades between a warm and dry climate inland and a cool moist climate. Not surprisingly, the former phase is likely to stimulate dry vegetation and the spread of wildfires once they are ignited, while the latter tends to suppress that risk. For example, over a decade ago,

Keeton et al. (2007) concluded from 20th century data: "Forest fires showed significant correlations with warm/dry phases of the PDO at regional and state scales…" The Oregon Department of Forestry has been reporting data since 1911 on the area under its fire management burned by wildfire. In recent years, this has been related to the PDO transitions (Figure 1 – modified from ODF 2022).

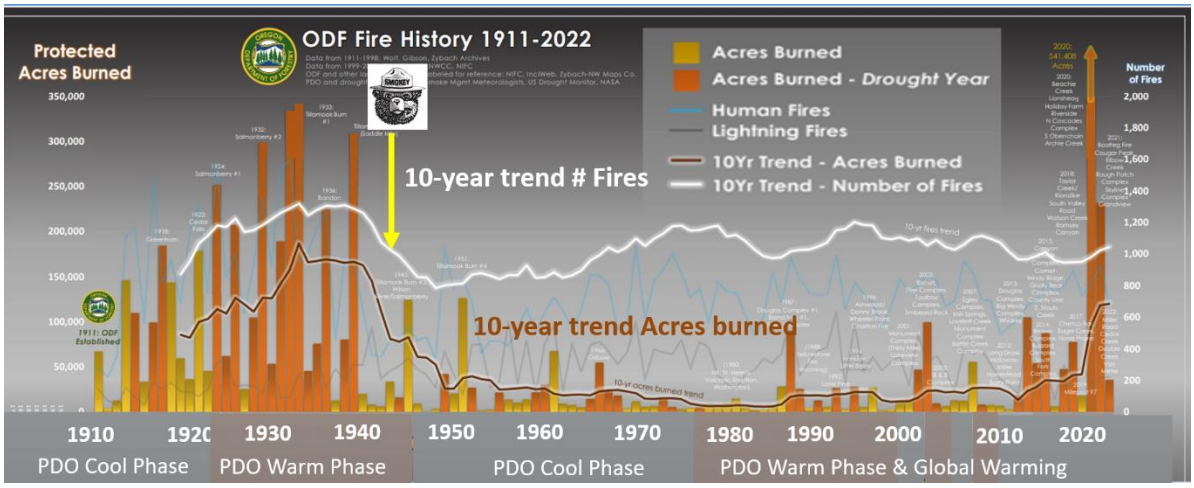

Figure 1. Historical trends in Area burned in relation to the Pacific Decadal Oscillation and wildfire suppression efforts (modified from ODF 2022)

Many Oregonians are surprised to discover that, with the exception of the remarkable year of 2020, the area annually burned during the early decades of the last century exceeded that burning recently. Note the graph indicates that fire initiations, though variable year-to-year, show no overall trend. Meanwhile, on the other hand, the area burned was clearly greater in the early years of the 20th century than now – with the singular exception of 2020. Note also how the decline in area burned in the early 1940s coincided both with the transition in the PDO from a warm to a cool phase, and with the launch of the Smokey Bear campaign of fire suppression (added to depict its potential relevance). Then the recent increase in area burned from the late 1980s coincides first with the return of the PDO warm phase but also with the statewide increase in temperature consequent upon global warming (Figure 2) where we can see that the recent warming phase started its upward climb in the mid-1980s and has continued essentially unabated.

One consequence of the successful fire suppression campaign has been an extension in the historic Fire Return Interval (FRI), particularly in our dry forests. The FRI in the Southwest historically ranged from single digits to the low teens (e.g., Metlen et al. 2018). With successful fire suppression, the FRI has lengthened substantially. This has resulted in the invasion into the forests of fire intolerant species (Zouhar et al. 2008) and an increased density of vegetation serving as fuel for fires once ignited (e.g., Philips 2023). Thus, we can reasonably infer that the data on the area burned display a correlation with both climatic shifts

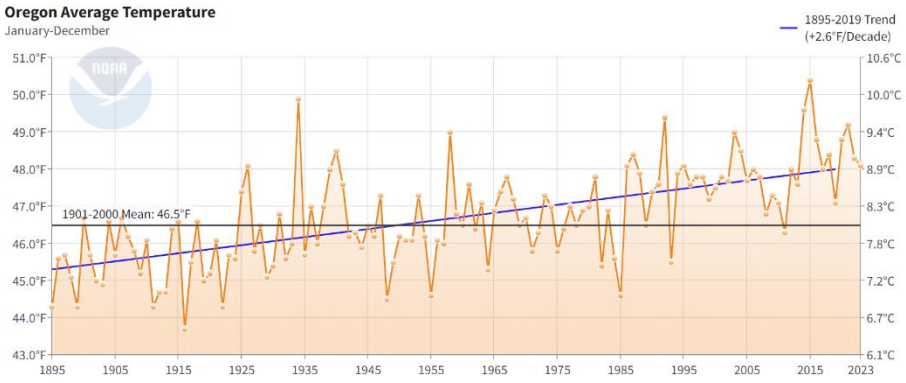

Figure 2. Historical average annual temperature for Oregon 1895-2023 (NOAA 2024).

and human fire suppression efforts. While correlations don't necessarily imply cause and effect, it seems reasonable to infer that climate and fire suppression have been implicated in the increase in area burned over the last few decades. Interestingly, these trends, notably climate and fire suppression influencing fire risk, are not restricted to the Mediterranean climate of the western United States but are described elsewhere, for example in the Appalachian forests (Reilly et al. 2022).

The patterns described above are compounded by current climate projections available from the USGS (Alder and Hostettler 2013). These projections rely on the latest Intergovernmental Panel on Climate Change scenarios (IPCC 2023) involving an array of Shared Socioeconomic Pathways (SSPs) that depict different future human behaviors and their atmospheric and climate consequences. In the following graphs, the blue lines and shading represent the SSP 4.5 scenario, the orange line and shading represent the SSP7.0 scenario and the red line and scenario represent the SSP 8.5 scenario. These are discussed by Haaufather (2019). Schaumann (2022), meanwhile, states "RCP-8.5 is not only the arguably most popular climate change scenario, it is also often framed in a very specific manner: as the business-as-usual trajectory that humanity is on if no climate change policies are adopted." Since managing climate change comprises risk management, it seems rational to focus on what may be the most serious outcome which is reflected in the 8.5 future.

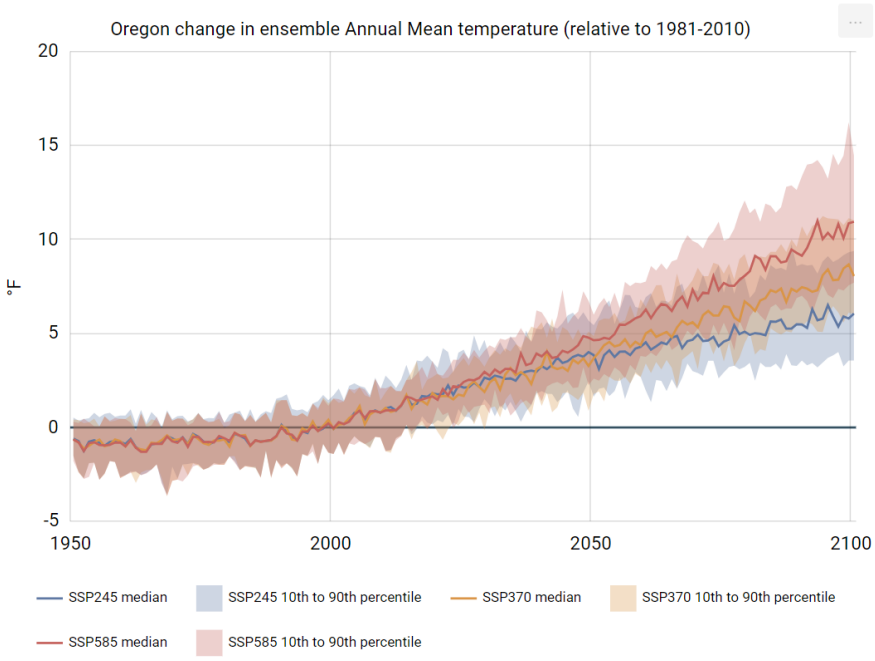

Figure 3. USGS modeled projections of annual temperature change trend relative to the 1981-2010 average this century for Oregon under three Shared Socioeconomic Pathway scenarios. (Alder and Hostetler, 2013).

If Oregon follows the temperature trend consistent with the recent past (Figure 3), by the end of the century, annual temperatures will likely climb over 10°F (about 6°C) above the 1981-2010 average. The same source indicates that the projected trend of increasing temperature is greater during summer months than winter months.

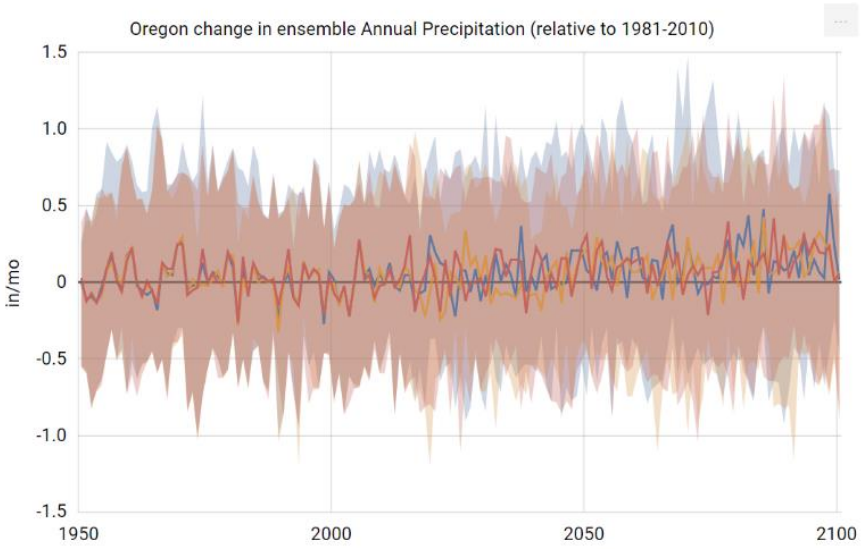

Figure 4. USGS modeled projections of annual precipitation change trend relative to the 1981-2010 average this century for Oregon under three Shared Socioeconomic Pathway scenarios. (Alder and Hostetler, 2013).

The same USGS source (Alder and Hostettler 2013) provides projections that suggest average annual precipitation will change little (Figure 4) although seasonal patterns are different: winters will likely exhibit a slight increase in precipitation while summers will likely exhibit a slight decrease. As a result, we can expect the very conditions (increasing temperature and decreasing water availability during summer and fall) stimulating wildfire spread will become more severe. A decade ago, Marlon et al. (2012) reported on the historical relationship between climate and areas burned by wildfire over several thousand years. They concluded that the western U.S. is already currently experiencing a substantial fire deficit, meaning that according to climatic patterns, the area burned should currently be much greater than it is. Presumably, the projected climate trends will only exacerbate this problem, creating conditions where even greater risk of megafires can be expected.

This leads to the critical question of what we should do to address and manage this wildfire problem. There is no magic bullet. However, history and evidence tell us that management that simply suppresses and extinguishes all fires, rather than management that recognizes the need for fires in our forests, are doomed to failure. Rather than develop management plans that simply increase our susceptibility to fires spreading once initiated, we need to develop plans that both manage fires once initiated and include prescribed fires that simulate the historic pattern and thus promote healthy forests. This illustrates the problem of unintended consequences. While there is no doubt that Oregonians have recently suffered much from the smoke and disastrous loss that have resulted from fire, it is critical that those making decisions on policy and funding acknowledge the fire ecology of our forests and respond appropriately.

It is also worth recognizing that, a commonly voiced opinion (e.g., VBC 2022) that many Oregonians maintain is that more destructive wildfires start on public than private land. However, in the western United States, fires that cross ownership boundaries (so-called cross boundary fires) more frequently originate on privately owned land and cross onto USFS lands than the reverse (Downing et al. 2022). Lunderberg (2022) summarized these findings with the conclusion: “Of all ignitions that crossed jurisdictional boundaries, a little more than 60% originated on private property, and 28% ignited on national forests. Most of the fires started due to human activity.” Lundquist (2022) summarized the Downing et al. (2022) study by stating: “The data showed that ignitions on Forest Service land resulted in fewer than 25% of the most destructive wildfires – those causing the loss of more than 50 structures.”

Given this context, we offer the following comments on HB4133:

We understand and applaud the basic premise that addressing the confusing system for funding wildfire management is timely. However, we note that the adjusted taxation system involving Privilege and Harvest taxes seems remarkably complex. We do, however, support the inclusion of a Consumer Price Index adjustment to these rates. We are concerned also that, if the comments from the witnesses is accurate (e.g., Weyerhaeuser will pay half a million dollars less than currently) the system of taxation seems likely to raise fewer funds than the current system. Additionally, since the evidence suggests that more fires are initiated on and cross boundaries from private to public lands than the reverse, it seems entirely inappropriate to adopt a fee scale (Section 9) that charges a per acre fee to public landowners twice that charged to private landowners whether the land supports grazing or timber.

We are concerned that a major (maybe unintended) consequence of this proposal is that (a) through the higher per acre charge levied on public lands, taxpayers (especially those in Oregon) will pay more for fire protection than the private timberland owners, where more serious and cross-boundary fire initiations start, who profit most from the timber harvest and fire protection, and (b) the Oregon general fund will continue to subsidize the shortfall in fees collected to address wildfire in Oregon. These two elements in the proposal constitute examples of a public policy that allows private industry to externalize or socialize the costs of their business upon the general taxpaying public. We suggest that a better system would be one that charges the private landowners who are responsible for more cross-boundary and serious fires at least an equal (if not greater) amount to that charged to the less offending publicly owned landowners.

We are also disturbed by the fact that the underlying premise behind this proposal seems to be that the only value in our natural forestland is in the timber that can be harvested from it. Finally, we note that the entire focus in this proposal is on suppressing and extinguishing fire in our forests when forest fire ecology tells us clearly that we need to manage our forest in such a way that fire is maintained in those systems. In short, the proposal accords no recognition to the need to maintain and manage fire and impose prescribed fire.

Respectfully Submitted

Alan Journet

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