

Forest Under Stress (FUS)

Rachel Lee Hall - Conservationist



(fig. 1-2) This reforestation shows primary and secondary growth after responsible timber harvesting. This is a sustainable, renewable, vigorous young forest--the future of green is a healthy forest, more resilient to disturbances, such as wildfires, insect and disease outbreaks, and a changing climate. This would include reforestation of burns, logging and diseased beetle kill trees. Photosynthesis is necessary for life on earth. When carbon dioxide is exchanged by green plants (forest, roots, leaves) then stored as a carbon in the living forest, the earth is healthy. When this exchange of carbon dioxide for oxygen by the green healthy forest occurs, oxygen is released into the atmosphere. Oregon's forest, including the Northwest, are a "sink" of sequestration (stored carbon) and oxygen architects for the earth's atmosphere.



(fig. 3-5) This healthy mature forest shows the natural fire cycle uninterrupted, before the disturbance of decades of passive forest management (PFM) enforcement consisting of ideological forest science that suggests active forest management is wrong. Historically wildfires moved quickly through the forest floor burning undergrowth, which now are clogged up with fuels. Old growth was not harmed as scaffolding was minimal of dead limbs and shrubs on fuel loaded forest floors. Lack of intervention caused the volatile fuel loaded forest of today. These photos show limited scaffolding to canopy or crown. Scaffolding acts like ladders; they create pathways for crown fires (top of forest), once rare, during lightning strikes or man-made fires. Crown fires result in complete loss of ecological systems from applied flawed science of "passive hands-off" forest management by the Bureau of Land Management, United States Forest Service and, at times, enforced by the Environmental Protection Agency.

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(fig.6-8) Notice scaffolding to canopy in this fuel-loaded, cluttered forest floor. This creates a path for quick access to the canopy during forest fires resulting in crown fires. Overcrowding marginalizes the full potential of the forest to “store” carbon dioxide and create oxygen through photosynthesis.

--Cause: passive forest management--



(fig. 9-11) This is critical to the forest survival, the understory fuel load (including juvenile trees) rapid growth competes for nutrients and water with old growth trees under the drip-line of mature trees for limited resources of water in low rainfall or snow budget years. This adds stress for survival for the mature forests during prolonged drought years. The upper soil horizon where forest clutter roots thrive, because of shallow root systems, receives crucial water first while larger trees with deeper root systems suffer and decline in health, becoming susceptible to disease and insect infestation. These magnificent trees will die or burn, before their historical time, because over-crowding causes competition for nutrients and water, which results in stress.

-- Cause: passive forest management--



(fig. 12-14) Forest clutter creates a fuel-loaded forest floor. When lightening strikes, this provides kindling to scaffolding that are immediate ladders to the canopy during forest fires. Not to be included with forest clutter are snags which harbor habitat, windfall, or naturally dying trees from old age, etc. However, too many snags, resulting from PFM contribute to excessive fuel load causing less resilience to disturbances. Beetle killed forests are not to be confused as viable habitat.

-- Cause: passive forest management--

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(fig. 15-17) Designated burn piles or “slash” in 2018 with viable biomass can be alternate energy sources. This type of fuel management is currently not economically viable; however, it could be with current advances in technology. Notice adequate road access to transport biomass easily accessed, instead of burning. This type of fire prevention is not financially sustainable considering the volume of forest at risk for crucial forest floor clean up in the Northwest. Furthermore, burning releases 100 percent carbon into atmosphere, in addition to loss of jobs and bioproducts to replace fossil fuels, which would reduce carbon footprint of fossil fuels. Recently, biomass uses have turned to more innovative solutions. Economical removal of hazardous fuels for cost-effective biomass uses could create high-value markets for lower-value wood, i.e., hazardous fuels, slash piles and even dirty hog fuel.



(fig. 18-20) The current method of managing forest floor buildup is to burn viable biomass and bioenergy, which are “carbon neutral” in the fall slash burns causing inversion in many cases and ill health to those living near by. In addition, potential regulatory slash burning and unprecedented crown fires imbalance the earth's radiative budget of incoming solar radiation energy (sun-rays). Smoke cloud cover induces “cloud albedo forcing”. The size of particles in smoke clouds and the intensities of fires near earth's surface cause “green house forcing” and traps gases below the smoke cloud therefore warming the earth. Results: rapid climate change.



(fig. 21-22) Designated burns in the Rogue Valley from Costco parking lot, November 2017. A 100 percent carbon emission into atmosphere, and a complete loss of revenue for potential biomass products and jobs. Prescribed fires are an effective tool for fire management; however the disturbances from “lack of” forest management over the decades and a cycle of climate warming continue to create forest conditions that are not susceptible to traditionally prescribed fires, because the fire quickly becomes an escaped intense fire that destroys everything in it's path while severely reducing air quality. In addition, the fire season is longer and the prescribed fire season is shorter. A combination of aggressive forest management includes prescribed fire and a wide range of biomass uses. There are over 30 million acres of forest lands in Oregon. The federal government manages “passively” nearly 60 percent of Oregon's forests, whose management and policies created this current dire situation. Only 40 percent of government-owned land in Oregon has any type of management. This must change! In recent years, Oregon lost several million acres to wildfires.

Three of the greatest threats to our National Forests are unprecedented fuel load buildup by interfering with the natural fire cycle, insect infestation from not removing dying or dead beetle kill stands, and the third, which was the catalyst to our state of affairs: failed ideological policy fraught with bureaucracy and enforced over three decades by environmental legal action. These disturbances were caused by lack of forest management. Good forest management reduces the impact of wildfires and restores forest floor health. This man made disturbance must be reversed.

I am Rachel Lee Hall. For over 40 years, I have lived in the Rogue River Valley with my husband Larry, where our children were born. My interests encompass earth dynamics, geology, and forestry while working in and enjoying farming, soils, water, gardening, and education. My hands planted over 240,000 conifers for the government and private sector in Southern Oregon decades ago. To watch them burn by wildfire is a crime. Forests are lost to the entrenched policies that are destroying our present lives and future. Passive forest management - management by nature - cannot resolve this problem. Lack of forest management is the problem!

No models were run of the consequences of such a massive fuel load buildup, before passive management was enforced in our forests. Clearly, this lies within the citizens to consider the narrow time frame left to save our forests and mitigate rapid climate change.

We must: log and thin with discretion and expediency, use biomass as much as possible without burning viable wood, which exacerbates green house effects. Apply financial soundness though private sector jobs for long term sustainability. Harvest, thin (for stand improvement), and replant forest burns and beetle infestation quickly. Create more sequestration in dead or dying forests (beetle kill) by removal and reforestation with seedlings. Plant seedlings twice as far apart to extend nursery stock, thus doubling acreage coverage. Planting is usually thinned, therefore the need is costly to continue to plant close while demand is high for nursery stock. Decrease erosion and run-off of soil into waterways by prudently reforesting near waterways and steep terrain first, where water moves quickly causing erosion and hindering loss of soil into streams.

Lack of forest management caused the forests to get clogged up. Outdated regulations and lack of funding for fire management are reasons for fires reaching the canopy. The consequences are rampaging wildfires now harder to put out. Results: complete loss of animal and human habitat, including lives.

Reforestation is a priority, as newly planted trees drink first in the forest and grow rapidly, helping to reverse damage and, to some extent, drought conditions since a healthy forest cools the forest floors while sequestering carbon. Finally, limiting litigation to one year or less, instead of open ended costly legal battles resulting in loss of timber sales, including thinning while microbial activity destroys value of wood product (the intent of delay) if left in the forest for two years. This includes beetle kill and burns. The ecological dynamics that sustain life are threatened beyond recovery in a timely manner if critical contemporary thinking and actions are not applied promptly!

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