Historic Spatial Arrangement and Potential Fire and Disease Risk Reduction in Coastal Forests

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Forest management over the past two decades has focused on encouraging evenly spaced mature trees with the idea that they would resist fire. This works for prescribed fires, but once the fire moves into the crowns, even old growth trees, thinned at two diameter widths will burn, as demonstrated in the Thomas Creek Fire (LCRI, 2018). Studies have been conducted across Eastern Oregon in order to determine the spatial arrangement of old-growth forest. These studies have produced ICO mosaics, forests with individual and clumped trees along with open spaces. These forests are proving to be remarkably fire and disease resistant. The purpose of this study is to examine areas of Western Oregon for similar mosaic patterns of anchor trees, western red cedars that made up the bulk of the old-growth and survived several major fires, and compare them to the studies done east of the Cascades in order to determine how different climates affected forests suffering from similar problems (fire, disease and insects). After examining our sites we determined that, despite the differences in climate, Western Oregon old-growth forests mimic the same mosaic pattern found in Eastern Oregon. However, hydric forests are much denser in trees per acre than dry-mixed coniferous forests. This mosaic pattern discovered among anchor trees speaks to the fire-resistant qualities of the old-growth forest, as these trees survived 3-5 major stand-replacing fires, as well as numerous tree-plagues and insect waves. Implementing ICO forest management across federal forests that are currently being managed leaving evenly spaced trees may reduce some of the ecological issues plaguing forests currently.

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