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Short Communication

Production of Redwoods in Riparian Forests of Coastal Redwood Region

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DESCRIPTION

Multiaged management is gaining popularity as a silvicultural and restoration method in California's redwood forests. The ability of a fresh cohort of trees to regenerate beneath the remaining overstory is a prerequisite for the success of multiaged silviculture. We explored the effects of understory light, stand density, and the spatial configuration of remaining trees in a replicated manipulative experiment in coastal northern California on the regeneration of coast redwood (*Sequoia sempervirens*) and tanoak (*Notholithocarpus densiflorus*) stump sprouts following partial conifer harvest of tanoak. On locations with a high concentration of redwoods, four treatments-group selection, aggregated retention, low-density dispersed retention, and high-density dispersed retention-were used at each duplicate [1].

Redwood seedlings grew taller across all treatments by 49% compared to tanoak sprouts. Sprouts of redwood and tanoak were sensitive to the density of the overstory. Around the same residue stand density (39.5 m^2/ha BA), redwood seedlings were somewhat higher under high-density aggregated overstory trees than under scattered overstory trees. Understory light linked with sprout development, and redwood sprouts showed a discernible rise in sensitive to light levels from years 2 to 6. When preserving a residual tree on the same main stem *vs*. sprouts developing on a root system when all redwood stems were severed, no variations in redwood sprout development were found [2].

This analysis has shown that partial harvesting of merchantable conifers along with the trimming of undesirable hardwoods can maintain a competitive advantage for redwood seedlings over tanoaks, which is crucial for maintaining redwood dominance while converting to multiaged management. According to the amount of time since timber harvest and the size of the riparian buffer zone, the structure and composition of riparian forests inside the coastal redwood region were analyzed. In the centre region of the coast redwood forest type, ten sites were sampled at various post-harvest age ranges and riparian buffer zone width. Data were gathered using randomly chosen sample plots near enduring coastal streams [2,3].

According to the analyses, canopy cover was inversely connected with "years since harvest," with the smallest places having the most and the oldest having the least. The basal area of *Alnus rubra* (red alder) and the hardwood to conifer dominance ratio were inversely associated to both "years since harvest" and "buffer width," showing that hardwood species were preferred during timber harvest [4].

Older forests and sites with wider buffer zones were preferred for the presence of late species associates like *Oxalis oregana* (redwood sorrel), *Anthyrium filix-femina* (lady fern), and *Vaccinium parviflorum* (billberry), while forests and locations with smaller buffer zones were preferred for the presence of non-native species like *Hedera helix* (English ivy), *Pampas cortedaria* (pampas grass) [5].

In New Zealand, where radiata pine (*Pinus radiata*) makes up 90% of plantations, the prolific coast redwood (*Sequoia sempervirens*) has significant potential as a plantation species. The volume productivity of radiata pine and potential species like redwood haven't been compared much in analysis.

CONCLUSION

With regard to stem diameters and burn severities, species-specific post fire responses varied, but the capacity of three of the four main woody species to resprout led to a post fire community that was robust and immediately started the recovery process. Regardless of the severity of the fire, large coast redwood parent stems often survived and resprouted from their bole and base, and even the tiniest redwood individuals did so.

The presence, development, and quantity of sprouts as well as other fundamental coast redwood sprouting features were found to positively correlate with increasing burn intensity. The Pacific Northwest's forest communities are more interested in post fire ecological studies than ever before because of expected increases in fire frequency and intensity in the continental United States. It was an once-in-a-lifetime chance to examine early post fire data on the interactions between burn severity, stem size, and species biology on the recovery and survival of coast redwood and forest society associates.

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