## Red tree vole nesting preferences & use of interspecific nests in stands that differ in age



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#### Introduction

- Red tree voles are arboreal rodents that nest in conifers' live crown, feeding on the needles of Douglas firs near exclusively<sup>1</sup>
- Red tree voles are associated with old growth forests<sup>2</sup>, which have increased structural complexity compared to younger forest
- stands<sup>3</sup>
- We aim to describe patterns in nest selection and micro-site habitat relationships



### **Methods and Study Area**

- We surveyed 46 randomly selected stands (10-30 ha), ranging from 20 to >350 years old
- We conducted ground and arboreal surveys in stands <60 years, surveying 17.8m<sup>2</sup> plots at a density of 1 /hectare, climbing all trees with nests
- We climbed trees within plots for stands >60 years to search for nests in the climbed and adjacent trees
- We collected data on nest type, dimensions, species use, vole sign (resin ducts, cuttings, debarked twigs, fecal droppings)



Figure 3. Map of study area with the 46 selected stands.

#### **Poster Objectives**

- Compare red tree vole nesting structures in Douglas fir stands that vary in age
- Examine tree vole use of arboreal nests constructed by other species across stand age



Figure 1. We show the proportion of nest types (y-axis and colors, also see photos) used by red tree voles in each stand age group (x-axis).



Figure 2. We show a count of how many vole nests were found built atop a nest of a different species (y-axis), broken down by the species of the base nest and stand age group (x-axis).

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Figure 5. Split trunk in 30 year age class Figure 4. Recent vole nest using flying squirrel nest as a **Platform Type** Figure 6. Broken top Broken Top **Figure 7. Fresh** Cavity in 30 year age class. Other Deformity resin ducts Pre-existing Nes Epicormic Branc Moss Mat Split Trunk Whorl Figure 8. Moss mat in 80+ Figure 9. Cavity in 80+ age class. Discussion Not all nest platform types were available in younger stands (moss mat, epicormics, cavity) Moss mats, epicormic branches and cavities provide more cover and concealment for voles than other nest types, likely why they are chosen more frequently when available Species When more platform types are available voles take over Humboldt's flying squirrel
Bushy tailed woodrat
Tree squirrel spp.
Unknown nests of other species at a lower frequency Collecting more robust data on structure availability across stands could provide further insight into nest platform selection and habitat suitability





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**References and Acknowledgements** Forsman, E. D., J. K. Swingle, R. J. Davis, B. L. Biswell, and L. S. Andrews. 2016 Volume Gen. Tech. Rep. PNW-GTR-948. **3.** Franklin, J. F., et al. 2002. Forest Ecology and Management 155:399–423.





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