

Background

Insect pollinators in forest ecosystems are understudied and may have less pressure from competition, disease, and pesticides compared to those in agricultural systems.

Roads in forested systems may benefit pollinators by maintaining canopy gaps with increased floral and nesting resources.

To better understand pollinator use of these vegetation types, we compared both pollinator occurrence and floral abundance and diversity between roads and adjacent stands.

Methods

We evaluated bee communities and floral resources in stands of different ages, from clear cut to old growth (>100 years), in western Oregon and northern California (n = 81 stands).

We visited each site up to 4 times (March-August).

We hand-netted insects and surveyed blooming plant species, counting blooms along six stand transects and one roadside transect.



Floral species richness and pollinator presence in interior forest stands and roadside transects Claire Massaro¹, Chelcie Pierce¹, Jess Fan Brown¹, Lincoln Best², Deanna Williams³, Laura Six⁴, Katie Moriarty¹ ¹National Council of Air and Stream Improvement, ²Oregon State University, ³United States Forest Service, ⁴Weyerhaeuser Company



Commonly visited flower species differed greatly. Only 3 species were represented in the 10 most common species of both stand and road transects.

Flower visitation occurred 80% of the time on native plants in stands, compared to 40% on roads, likely due to greater disturbance.

References

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Bee photographs by Timothy Lawes

Chamerion angustifolium Hypochaeris radicata Phacelia hastata Hypochaeris radicata Hypericum perforatum

Fig. 1 (left). The 10 most commonly visited flowers of stand and road transects and images of the three most common flowers of each.



We collected 633 and 171 insects from stand and road transects respectively, averaging 1.30 and 2.11 insects per net survey.

We compared stand and road transects' collected insect percentages, respectively: 52% and 30% *Bombus* spp., 26% and 7% *Apis* spp., 13% and 40% solitary bees, 6% and 19% flies, and 3% and 4% other insects.



Future Work Preliminary observations suggest floral resources were more abundant and diverse along roads than inside forest stands throughout the growing season, and species composition differs and the types of insects using these resources differ.

Canopy gaps, even as small as dirt roads, could provide valuable forage resources for bees in forested environments.





transects throughout the season.