



# **Analysis of Forb Community Composition as a Function of Distance from the Forest Edge in a Montane Meadow of the Central Oregon Cascades**

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# Motivation and Objectives

➤ What can surveying a meadow plant community tell us about invasion from the surrounding forest?

**Objective:** Perform forb community survey to observe changes in species richness, dominance, and pairwise similarity with distance from the forest edge.

➤ This can tell us how we might expect meadow plant communities to change as trees continue to encroach.

# Research Questions

- How does the forb community vary with distance from trees?
- How do richness and dominance of the forb plant community change as a function of distance from trees?



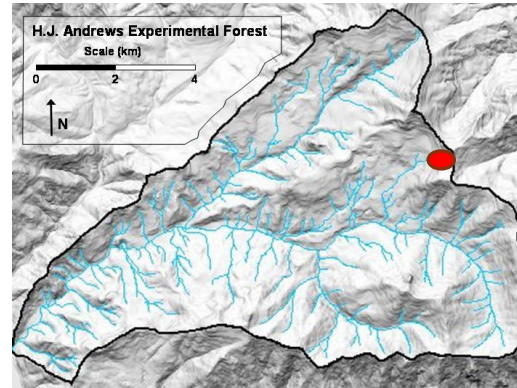


0 20 40 80 Meters

Author: Ruth Mares H.J. Andrews Experimental Forest EISI Pollinator Network 2014



# Study Site and Methods

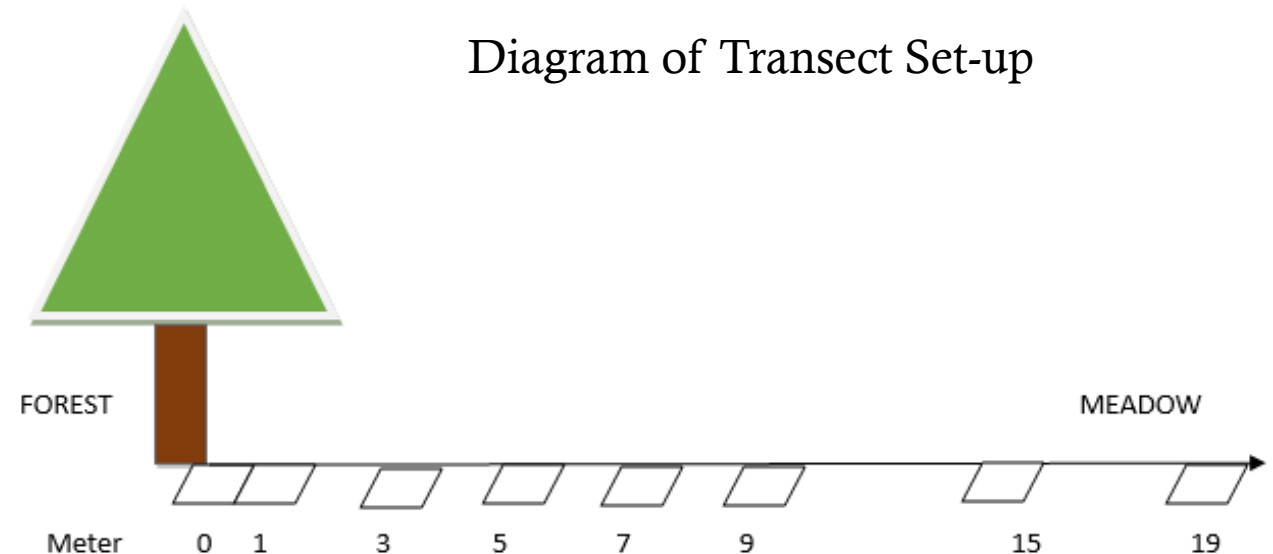


● = area of meadow site

**Measured:** Forb plant counts in 1m<sup>2</sup> quadrats for 7 trees, 0 – 19 meters from trees.

**Calculated:** 1) Species Richness, 2) Species similarity, 3) Dominance

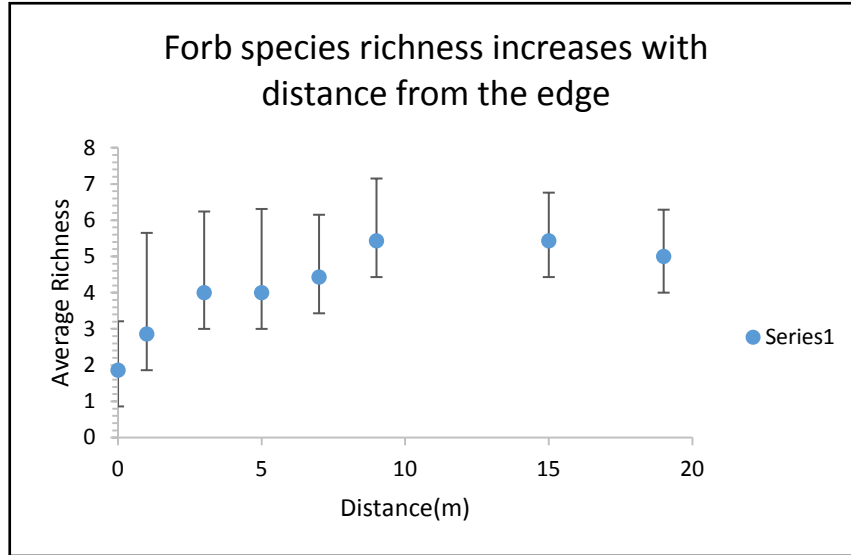
Diagram of Transect Set-up



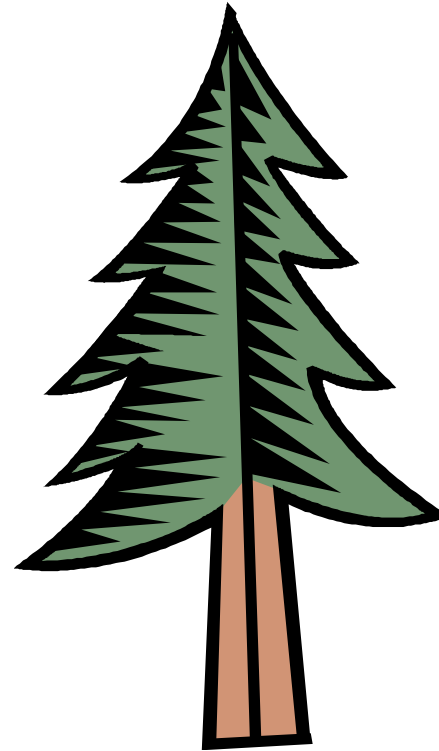
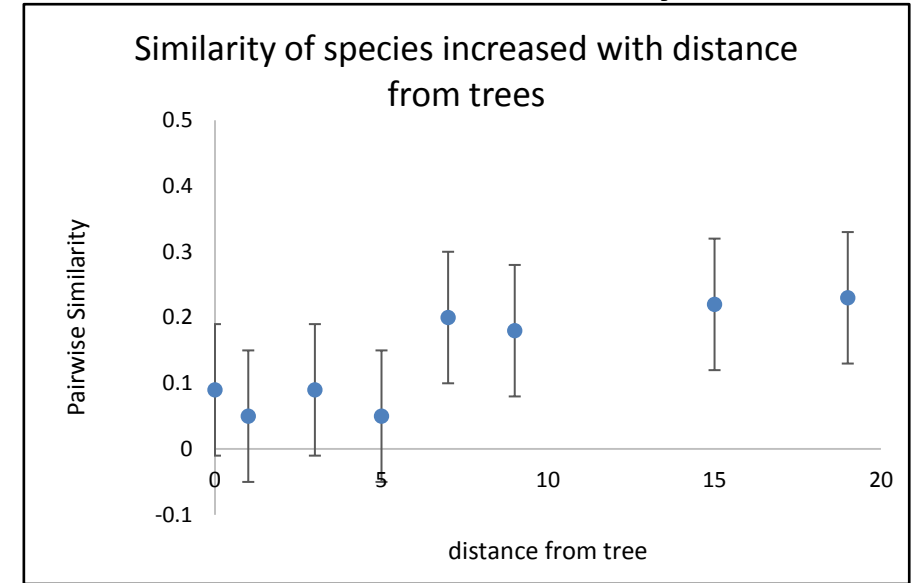
# Results- richness & pairwise similarity

By distance from tree

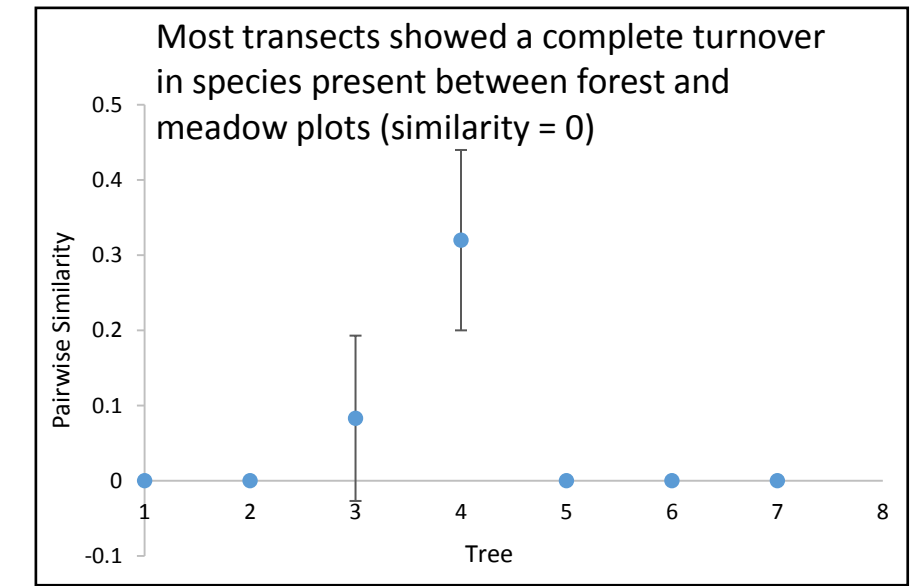
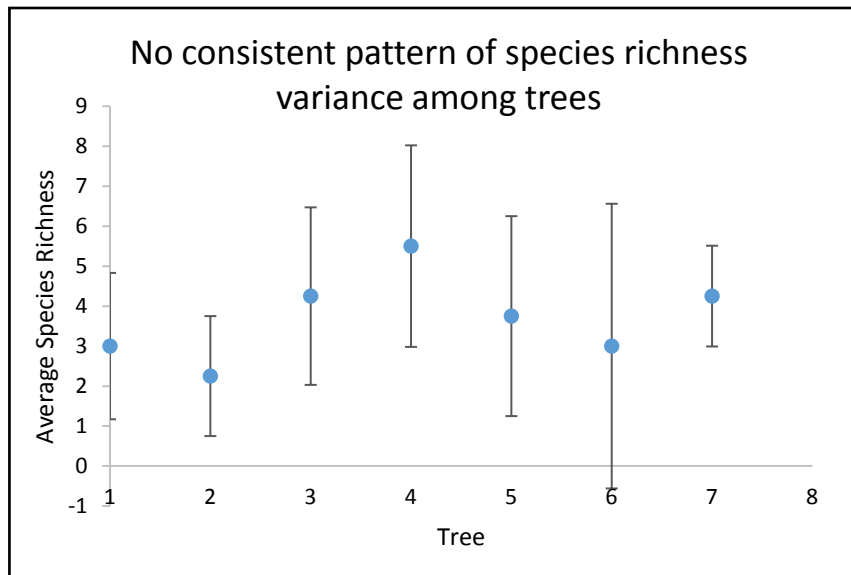
## Species Richness



## Pairwise Similarity

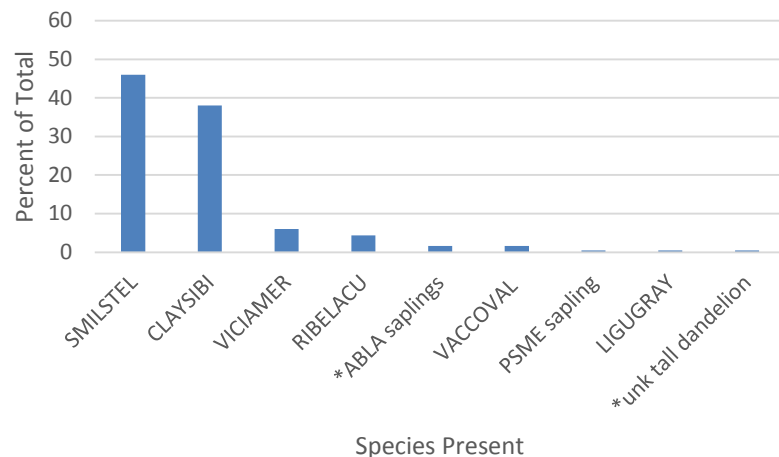


By tree

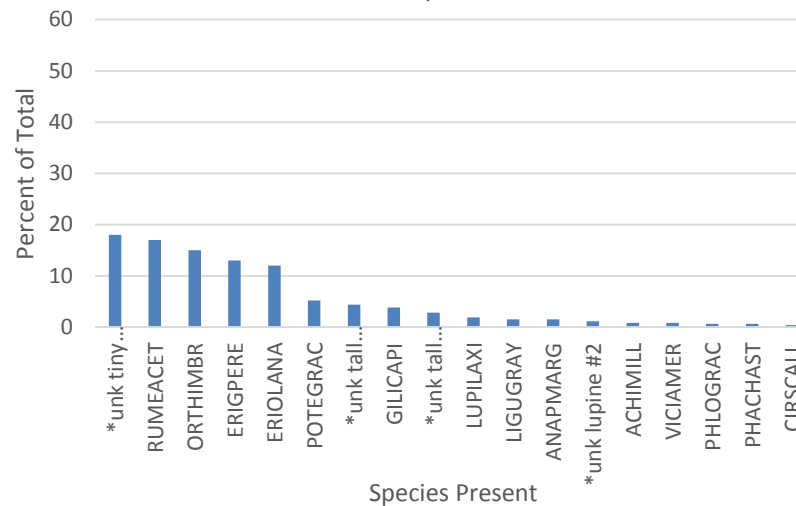


# Results- species dominance

Dominance, Meter 0

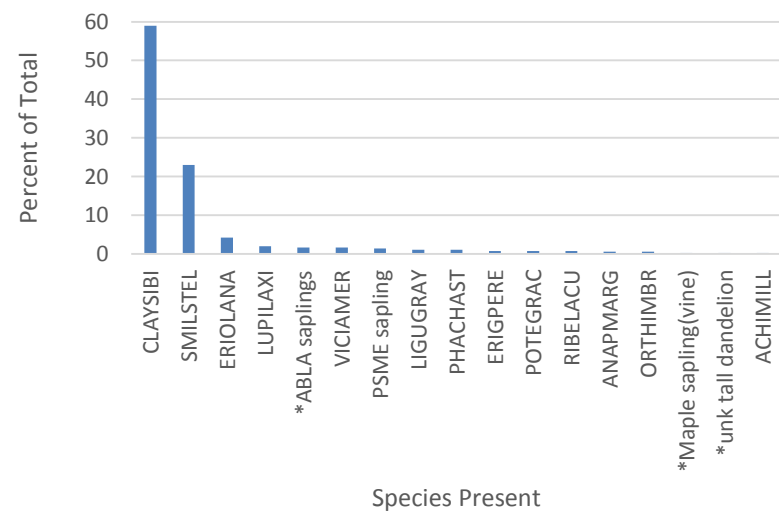


Dominance, Meter 15

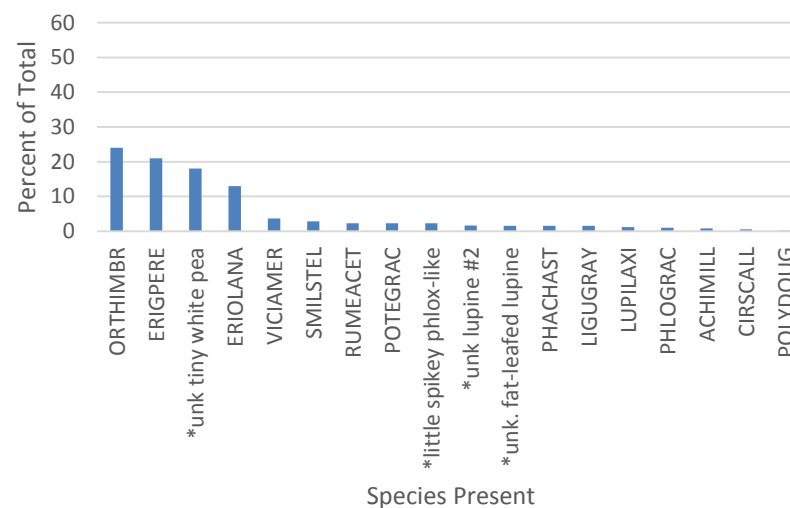


- High dominance of 1-2 species under canopy of trees, 45- 60% of total.

Dominance, Meter 1



Dominance, Meter 19



- Dominance evened out in meadow plots, with multiple species sharing moderate dominance of about 20% of the total.

# Discussion

- What can we expect to see if trees continue to invade the meadow?
- Further forest encroachment, increasing canopy cover of the meadow might:
  - > decrease forb species richness
  - > increase species dominance
  - > eliminate forb species from the meadow

# Conclusions and Further Work

- Meadow forb species are threatened by forest encroachment

## Future research:

- Is this true for all meadows?
- How will changes in meadow forb communities affect our plant- pollinator interactions?





# **Acknowledgements**

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