Plant Pollinator Interactions

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Introduction

- **Increasing Plant Diversity in Agricultural Setting:**

The addition of native plants in farm setting will increase the pollinator density and help to yield better and healthier crops(**Rao et al, 2010**)

- **Gap: what are the most beneficial plants that farmers could be planting.**
- **Reduction of invasive plants:**

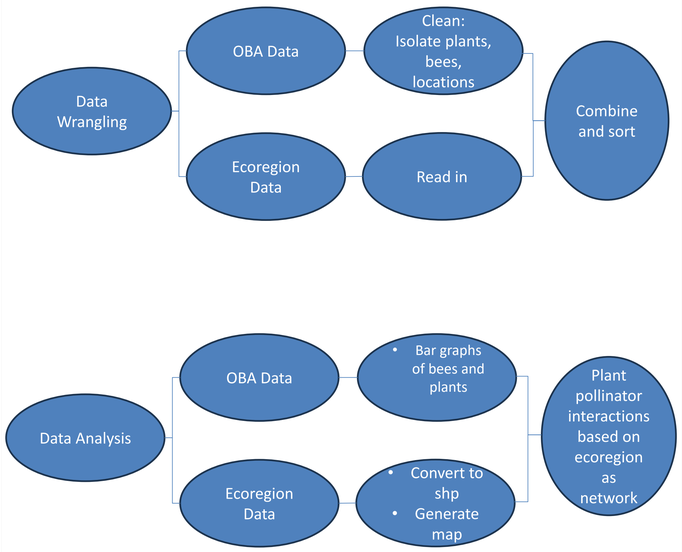
If a particularly attractive invasive plant is introduced, it could increase the pollinator density, but they could potentially increase the spread of invasive plants(Mciver et al. 2009)

- Assessing the most commonly visited plants across multiple ecoregions and creating a way for farmers to access this data can help to increase biodiversity within farming communities and improve pollinator density.
- **Gap: Improper management of both forests and agricultural land can lead to a decline in the pollinator population.**

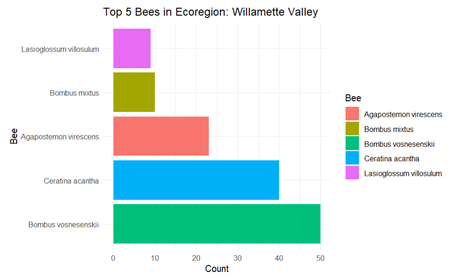
Research Question

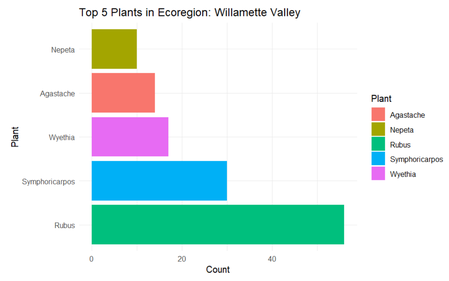
- What are the most common native/non-native plants visited by pollinators across multiple ecoregions?
- How can the addition of these plants be helpful in agricultural settings?
- How can this data be made accessible to farmers?

Methods

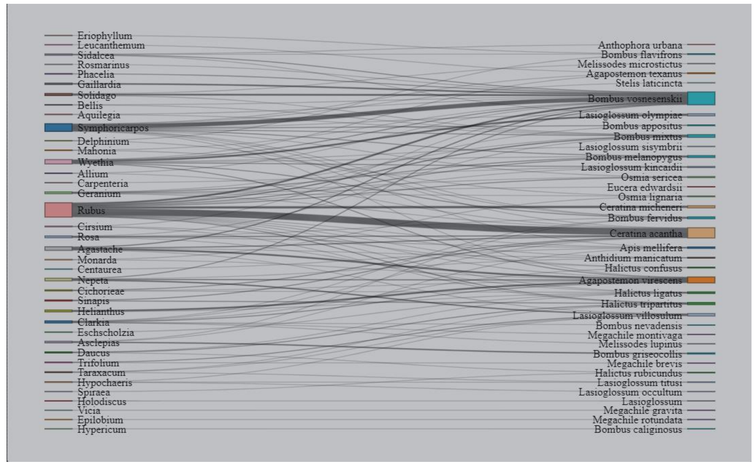


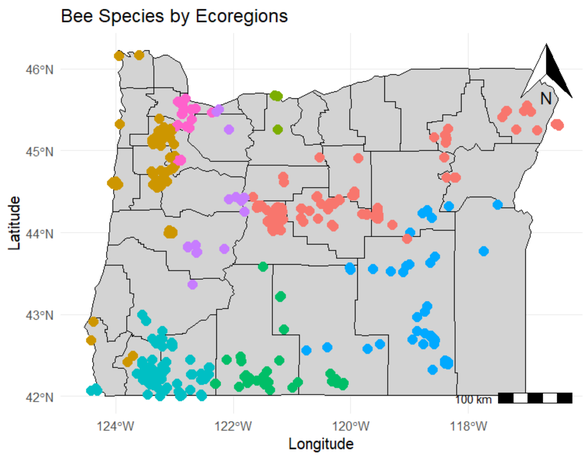
Result 1





Result 2





Conclusions

Top 10 most visited plants:

- Lupinus
- Eriophyllum
- Eschscholzia
- Penstemon
- Spiraea
- Solidago
- Phacelia
- Ericameria
- Rubus

Top 10 most common bees:

- Halictus farinosus
- Bombus bifarius
- Anthophora urbana
- Halictus rubicundus
- Apis melliferia
- Bombus mixus
- Bombus vosnesenskii
- Halictus tripartitus
- Halictus ligatus
- Ceratina acantha

Pollinator Density in relation to Plant composition

- Find correlation between pollinators and plants using networks to see which bees in each ecoregion visits which plants
- This can be used figure out what the best plant species are to plant in agricultural settings to increase pollinator density for the specific region.
- Knowing which bees are most common per different ecoregion allows farmers to appeal to them rather than guessing

Increasing Biodiversity

- By appealing to specific species, you can increase a regions biodiversity by planting abundant native plants that will bring in more pollinators.
- The increased biodiversity will bring other native pollinators like butterflies, birds and other animals that will strengthen the land

References

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Acknowledgments