The assembly of pollinator communities in response to restoration

1 Goals

1. Explore mechanisms underlying the assembly of plant-pollinator communities on on-farm habitat restorations by comparing empirical observations with assembly theory and adaptive foraging
2. How specialization changes in a pollination network during the pollinator guild assembly (colonization, persistence and extirpation processes over time)

2 Data prep

1. starting plant community for each hedgerow summed over the first three years following installment
2. the number of pollinators at each site in the initial three years, and those added/lost after the initial three years
3. the mean, minimum and maximum pollinator species degree, summed over years/for each year

3 Model

1. Use the initial network summed over years 1-3 for each hedgerow, randomly add species (equal to the number added in the observed data) and allow the community to assembly using adaptive foraging
2. Keep track of
   (a) number of species that go extinct at each hedgerow
   (b) the specialization of each plant and pollinator

4 Predictions

1. "generalist" pollinators early in succession will become more specialized
2. "generalist" pollinators early in succession will visit a subset of what they originally visited, mainly the originally "specialist" plants

5 Considerations

1. some plant species that were planted were never visited by pollinators in the first few years. This is likely because they did not produce many/any flowers/nectar resources

2. compare observed data to a model with/without adaptive foraging?

3. all the pollinator species needed (bees, syrphids, wasps etc.?). Not all have been identified to species.

4. weedy plant species "added" to communities by invasion, lost by death