

# Providing Pollinator Habitat on Western Conservation Reserve Program Lands

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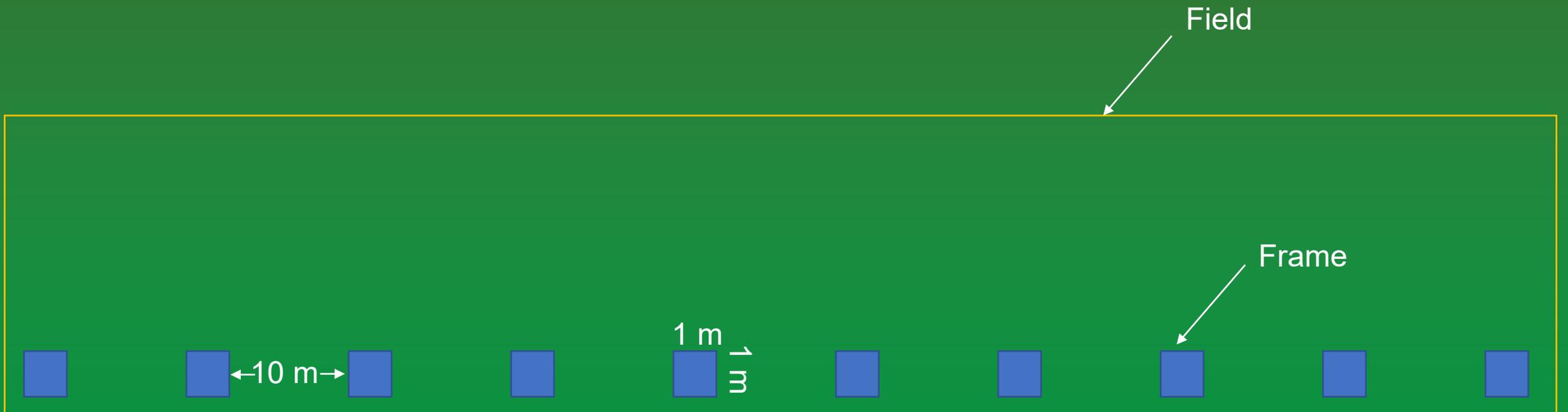
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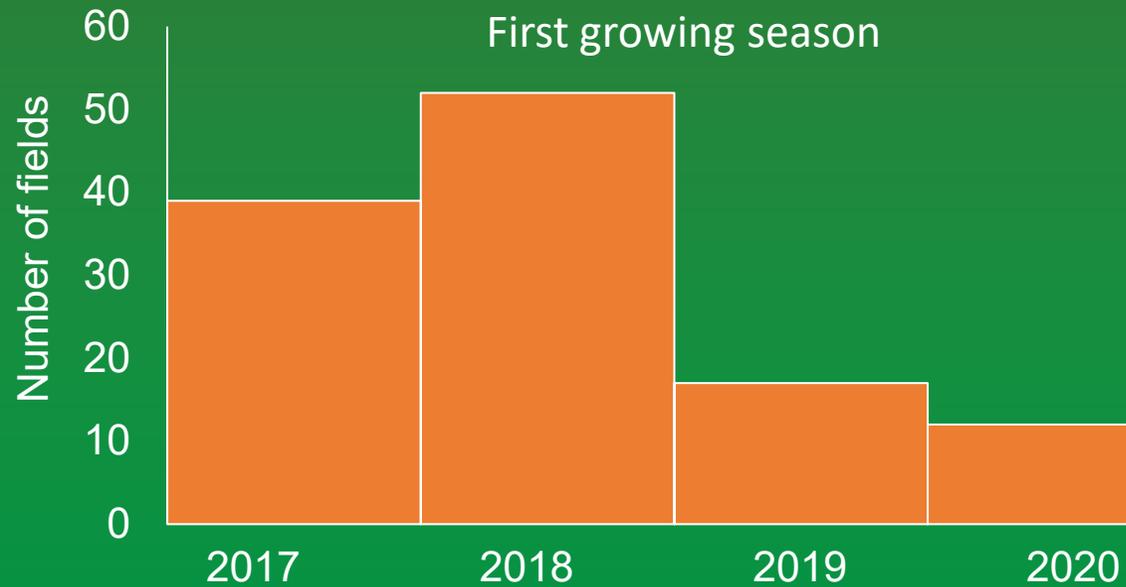
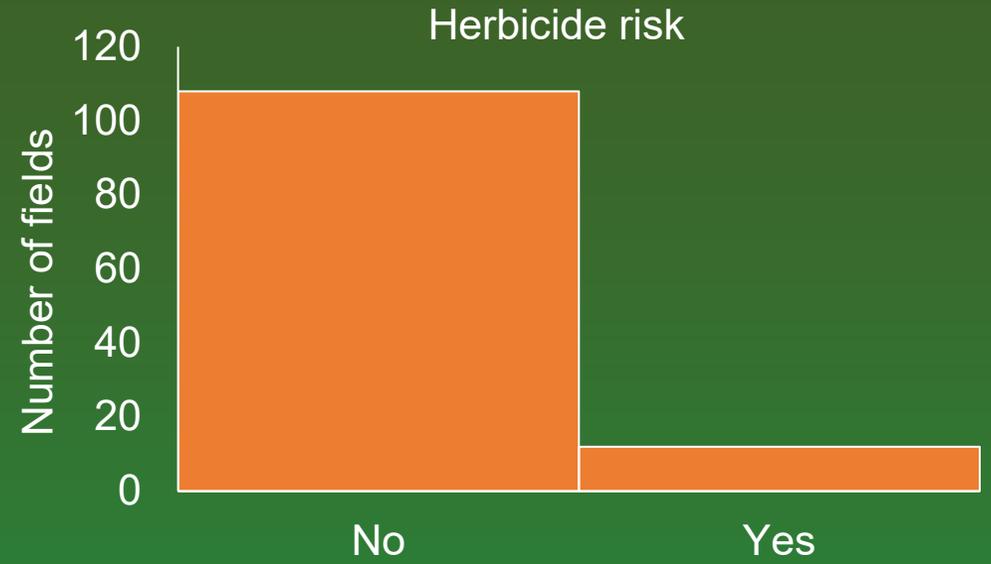
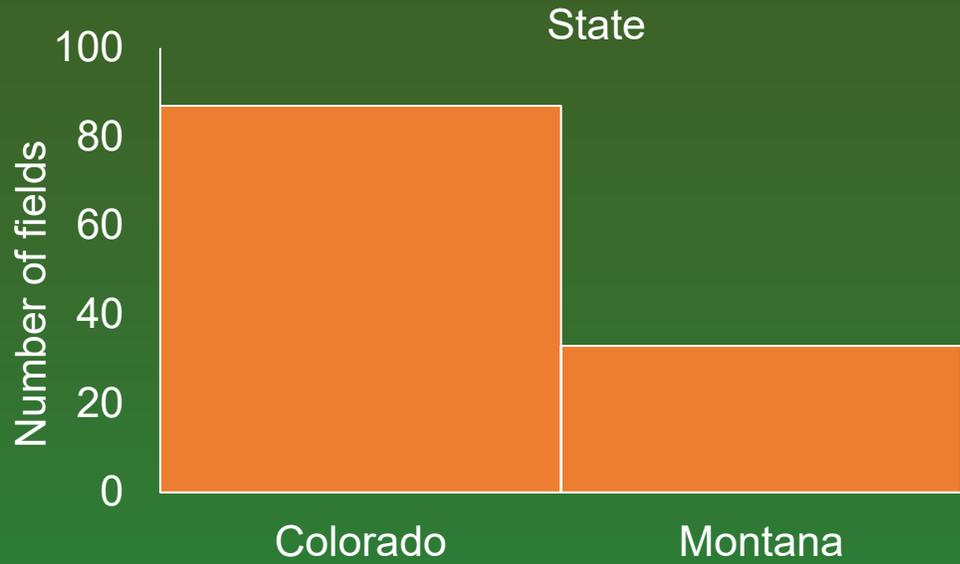
<sup>3</sup>USDA-Natural Resource Conservation Service, Bozeman, MT

# Methods

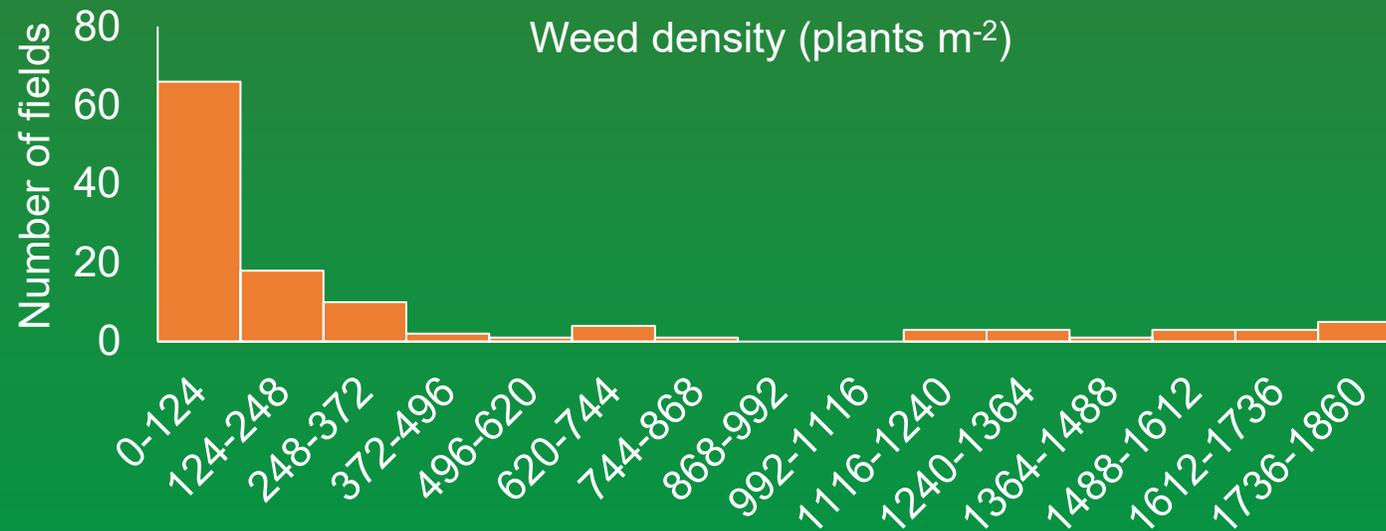
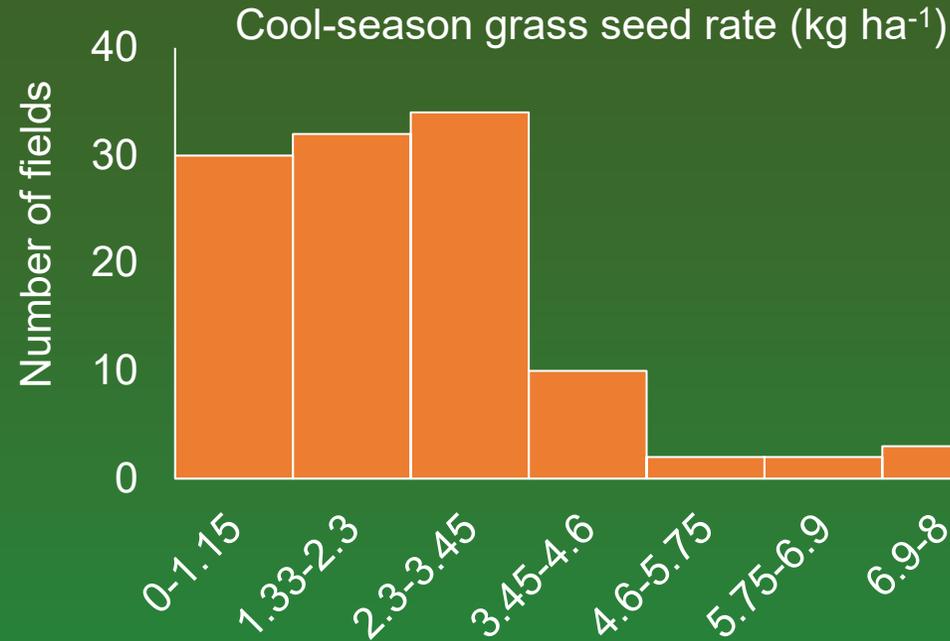
- 120 fields in Montana and Colorado seeded between 2016 and 2020 ( $\geq 2$  flowering plants)
- Seed rates
- Weed density the first growing season
- Herbicide use (metsulfuron methyl, ethalfluralin, triasulfuron)
- In summer 2021, cover of each plant species



# Predictor Variables



# Predictor Variables



# Analyses

25 fields: no seeded flowering plants were observed

Analysis 1: What determined if flowering plants were observed?

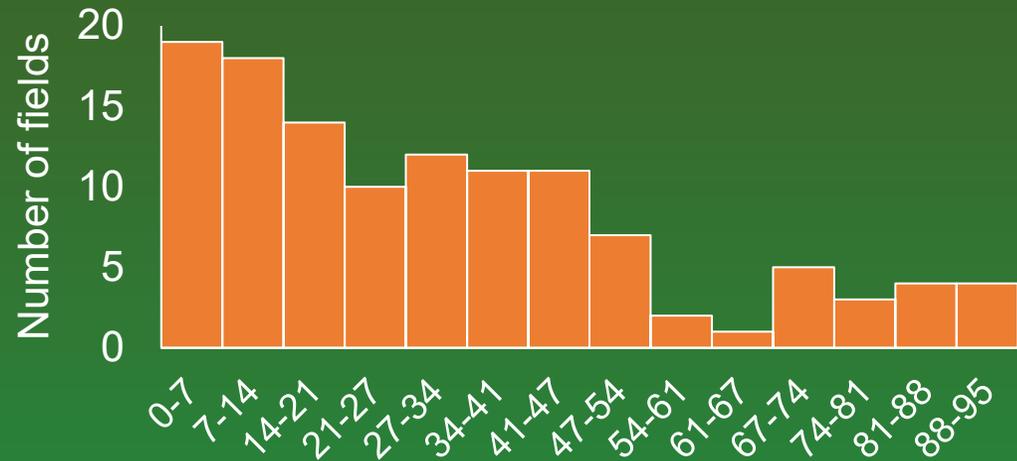
95 fields: some seeded flowering plants were observed

Analysis 2: What determined cover of seeded flowering plants in the 95 fields where they were observed?

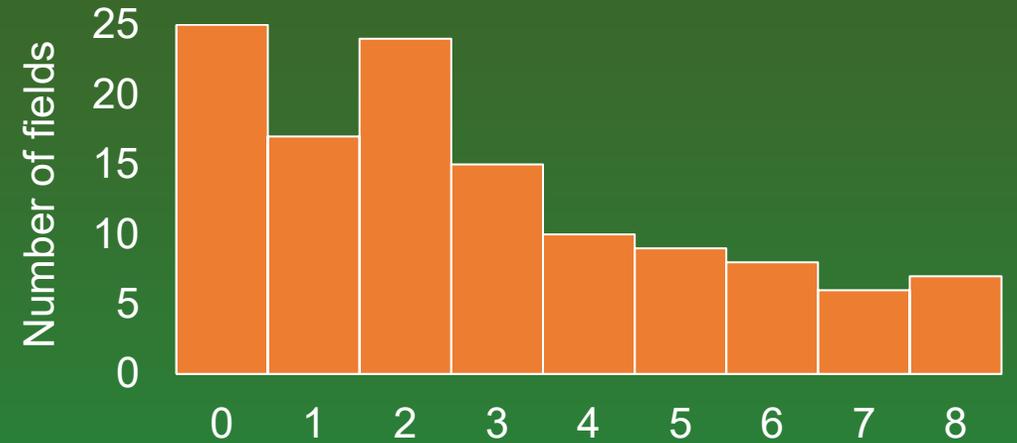
Analysis 3: What was the probability each species was observed given that it was seeded?

# Plant Abundances

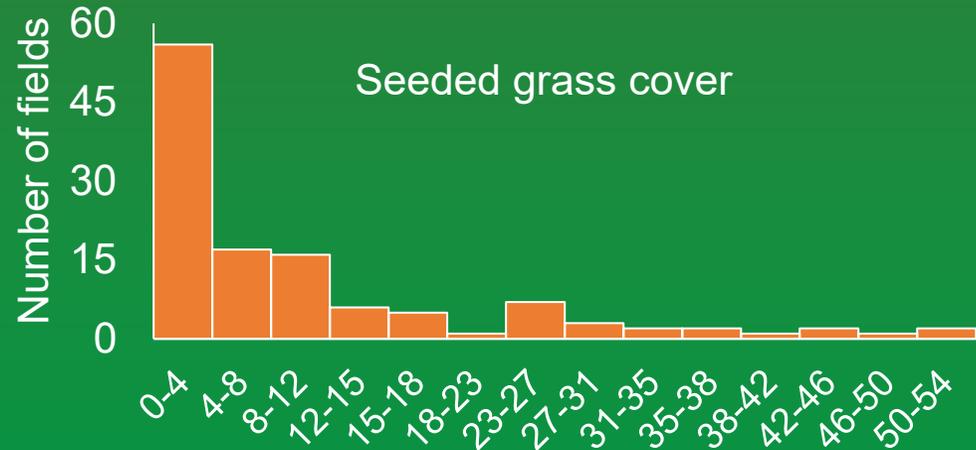
Weed cover



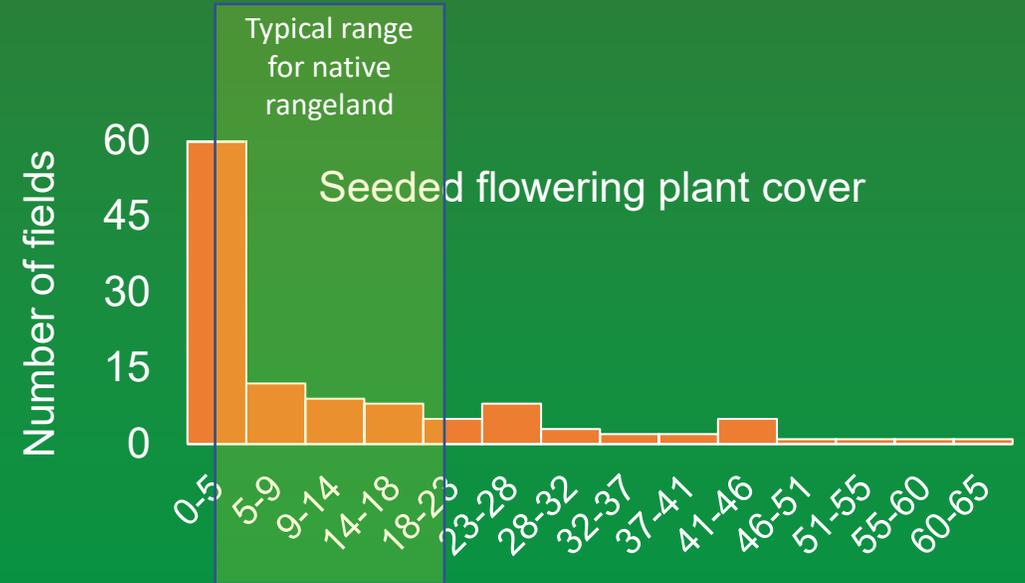
# of seeded flowering plant species



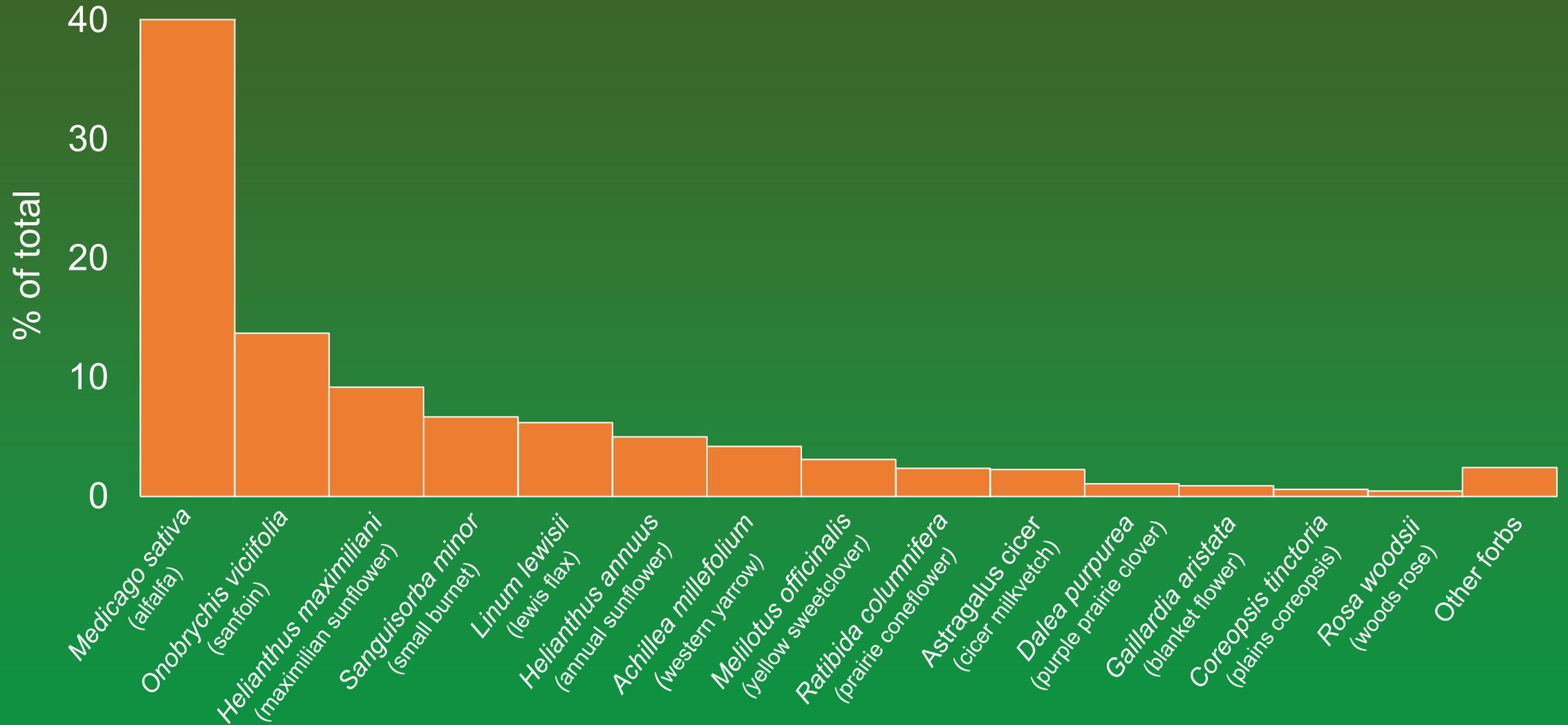
Seeded grass cover

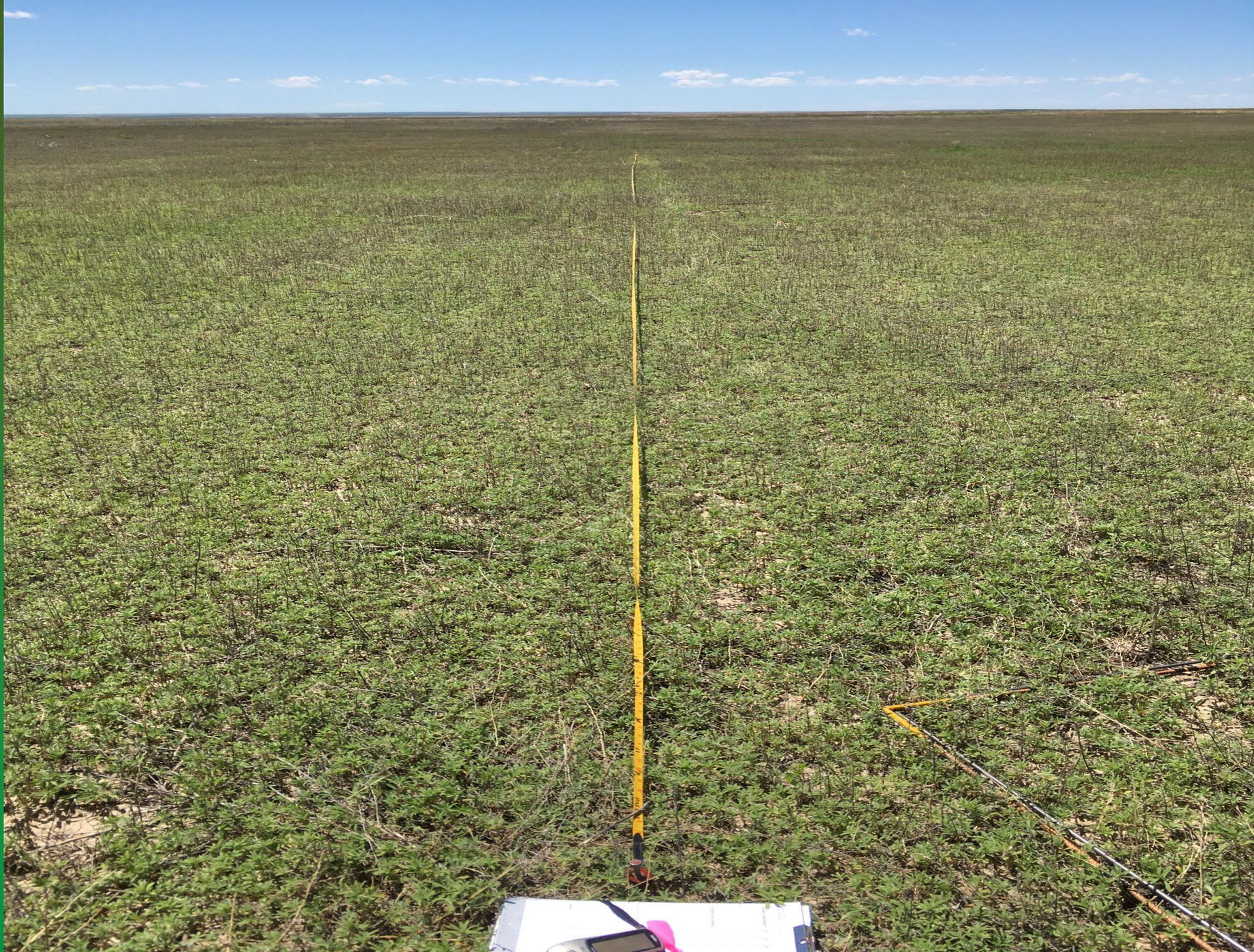


Seeded flowering plant cover



# Cover by Seeded Flowering Species



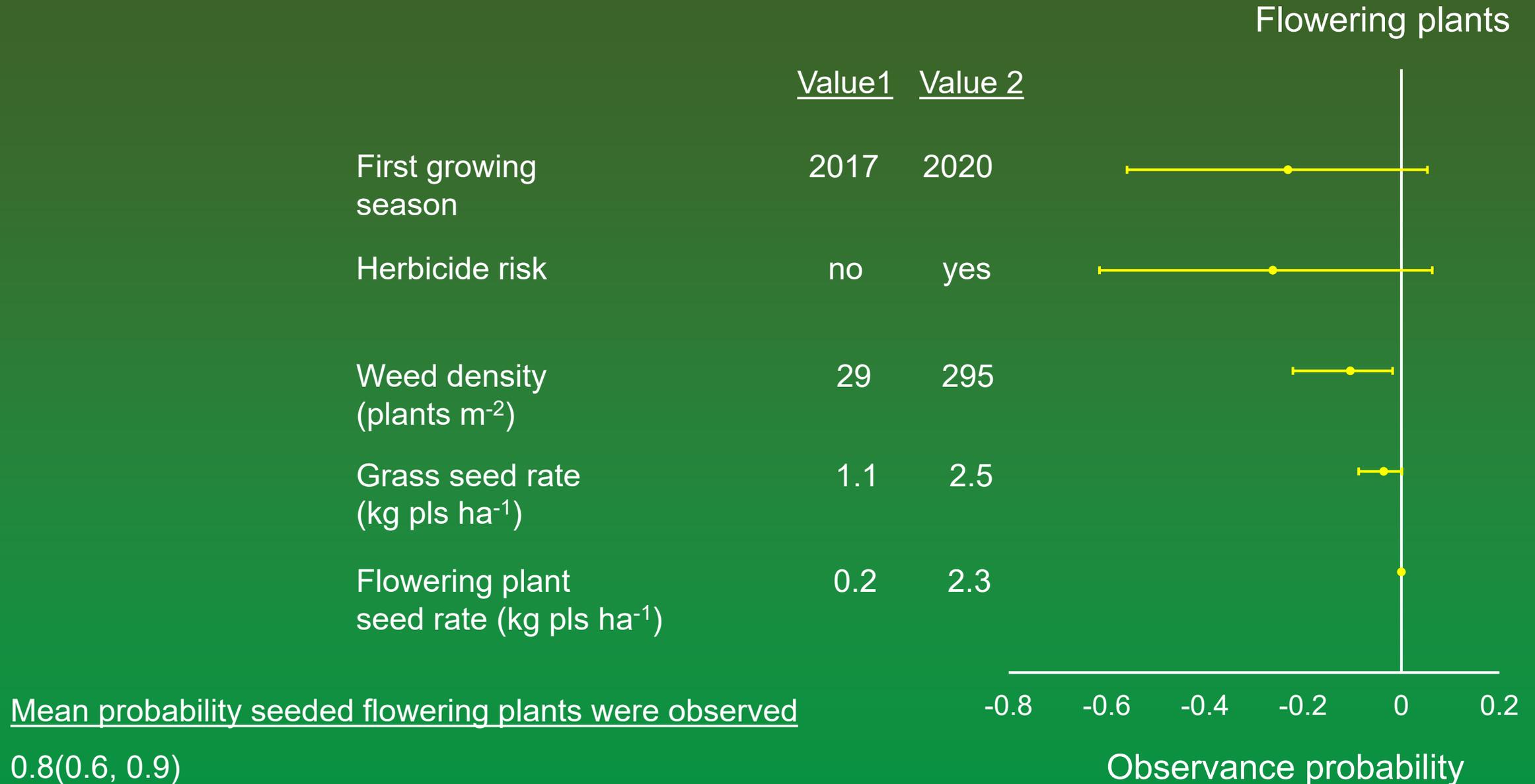








# Probability Seeded Flowering Plant were Observed



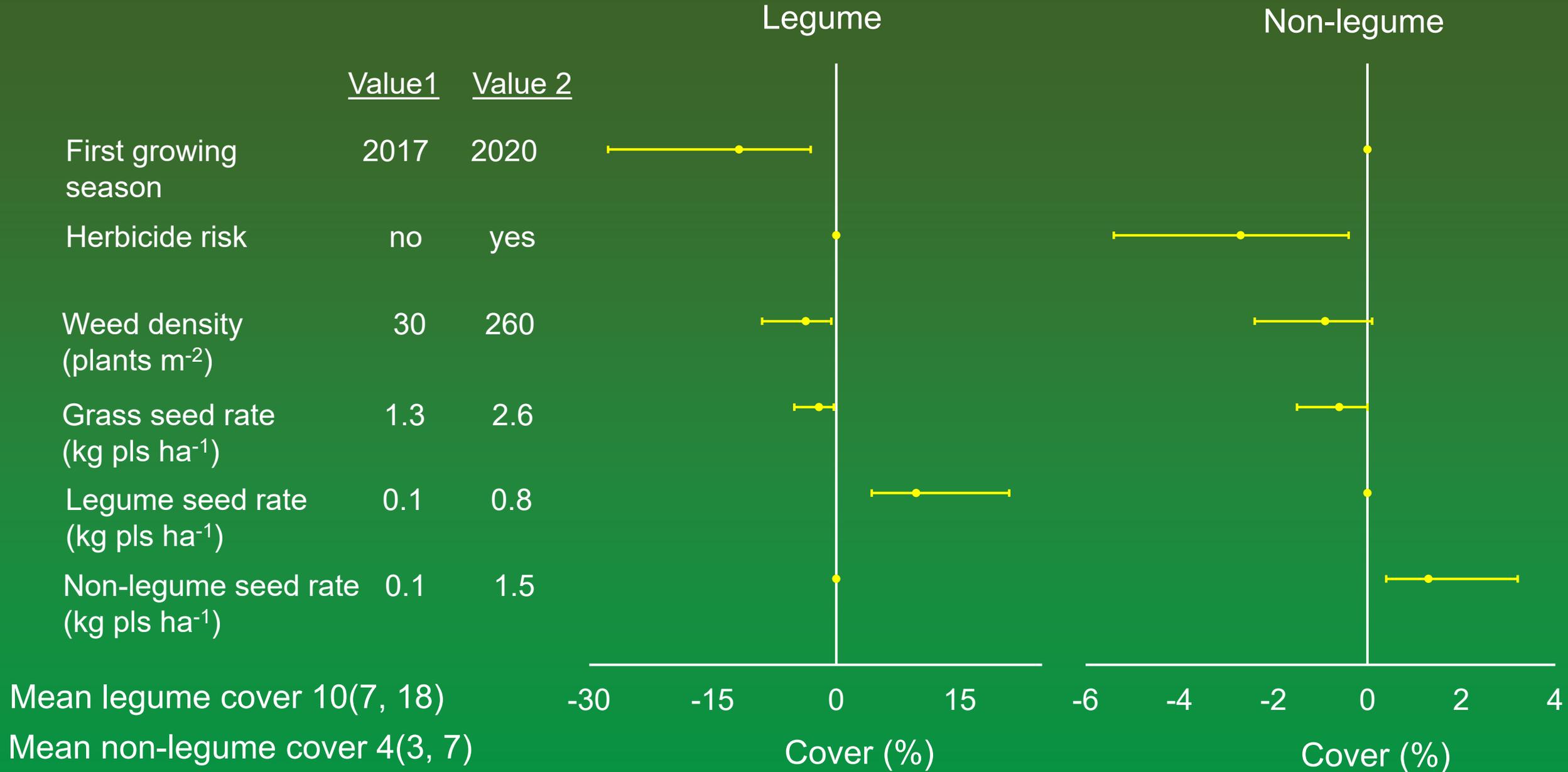
## Non-legumes

Fourwing saltbush (*Atriplex canescens*)  
Woods rose (*Rosa woodsii*)  
Plains coreopsis (*Coreopsis tinctoria*)  
Blanket flower (*Gaillardia aristata*)  
Illinois bundleflower (*Desmanthus illinoensis*)  
Small burnet (*Sanguisorba minor*)  
Annual sunflower (*Helianthus annuus*)  
Western yarrow (*Achillea millefolium*)  
Prairie coneflower (*Ratibida columnifera*)  
Rocky mountain bee plant (*Cleome serrulata*)  
Lewis flax (*Linum lewisii*)  
Maximilian sunflower (*Helianthus maximiliani*)  
Rocky mountain penstemon (*Penstemon strictus*)

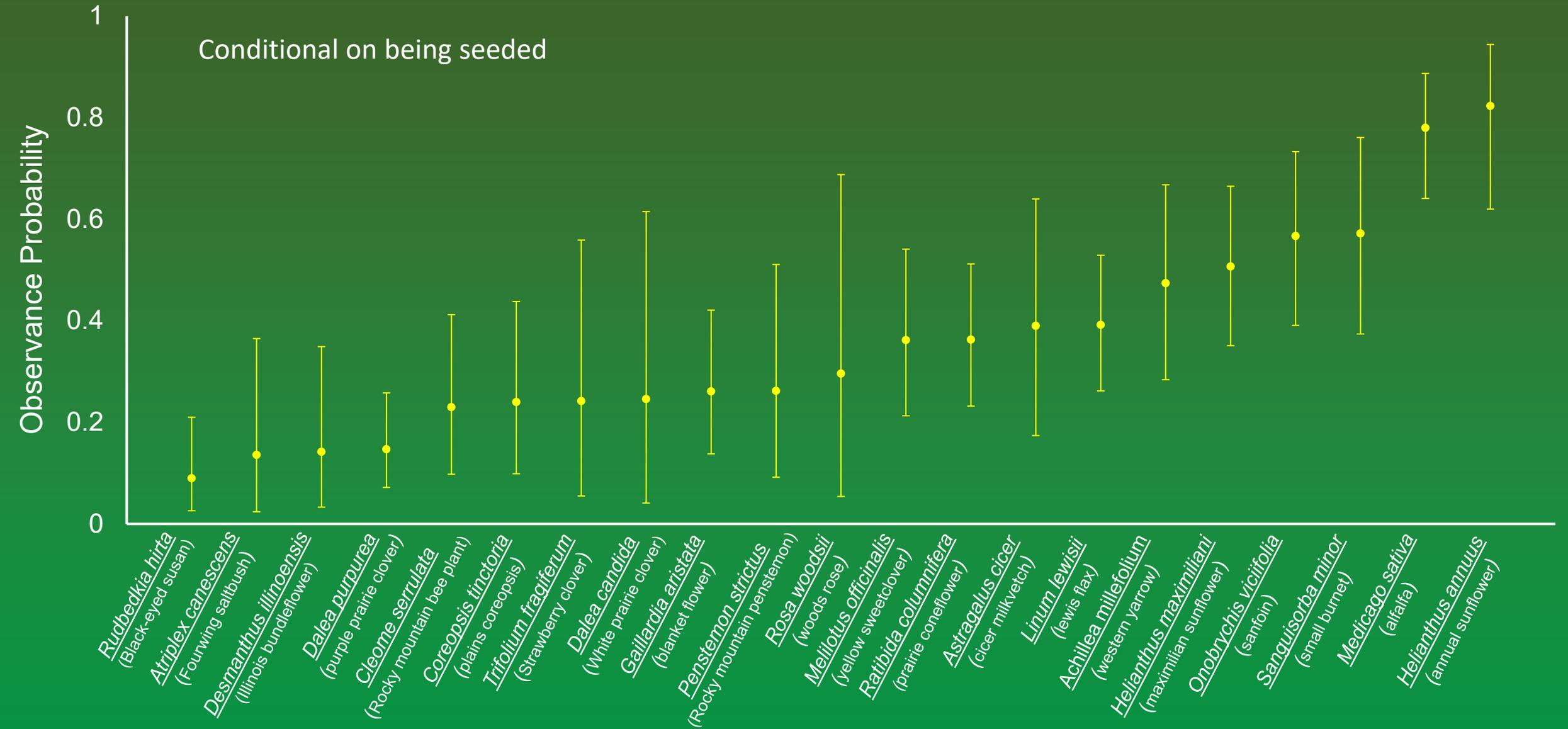
## Legumes

White prairie clover (*Dalea candida*)  
Strawberry clover (*Trifolium fragiferum*)  
Alfalfa (*Medicago sativa*)  
Yellow sweetclover (*Melilotus officinalis*)  
Cicer milkvetch (*Astragalus cicer*)  
Sanfoin (*Onobrychis viciifolia*)

# Seeded Flowering Plant Cover



# Probability Individual Species were Observed



# Management Recommendations

- Herbicide damage to seeded species
- We can provide specific seed mix recommendations based on this study for
  - Flowering plants
  - Grasses
- What can we do about weeds?

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