

Estimating baseline monarch habitat value of common CRP practices

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Monarch recovery in the Corn Belt

The key role of CRP

Eastern monarch continues to decline

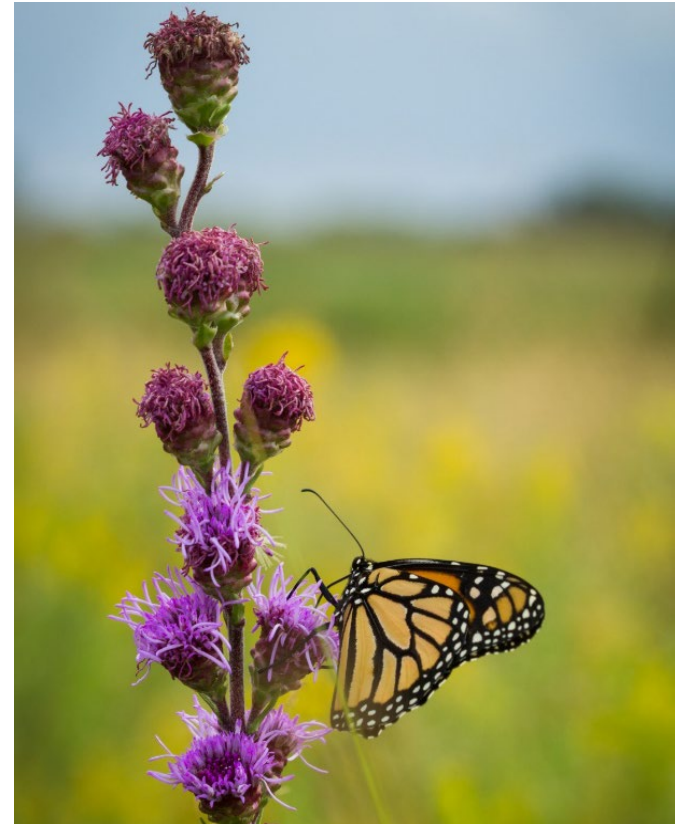
- Potential for ESA listing in 2024
- Likely low population again in 2021-22



Relying on CRP to avoid listing

The Iowa Monarch Recovery Plan

- Ag. sector responsible (62-70% of all milkweed stems)
- CRP further responsible for over 80% of all milkweeds



Monarch habitat in CRP

Existing estimates

Monarch habitat quality in CRP fields not well studied

Pleasants 2017/Hartzler and Buhler 2000

- 430 stems/ha
- Most monarch recovery models based on this data
- Practices not differentiated (but upland/wetland land use was)

Lukens et al. 2020

- 1864 stems/ha
- Practices not differentiated, included with other conservation grasslands (USFWS, DNR, etc)





Objectives

Research Objective

Characterize monarch habitat provision in typical CRP plantings likely to contribute to future monarch habitat enhancement

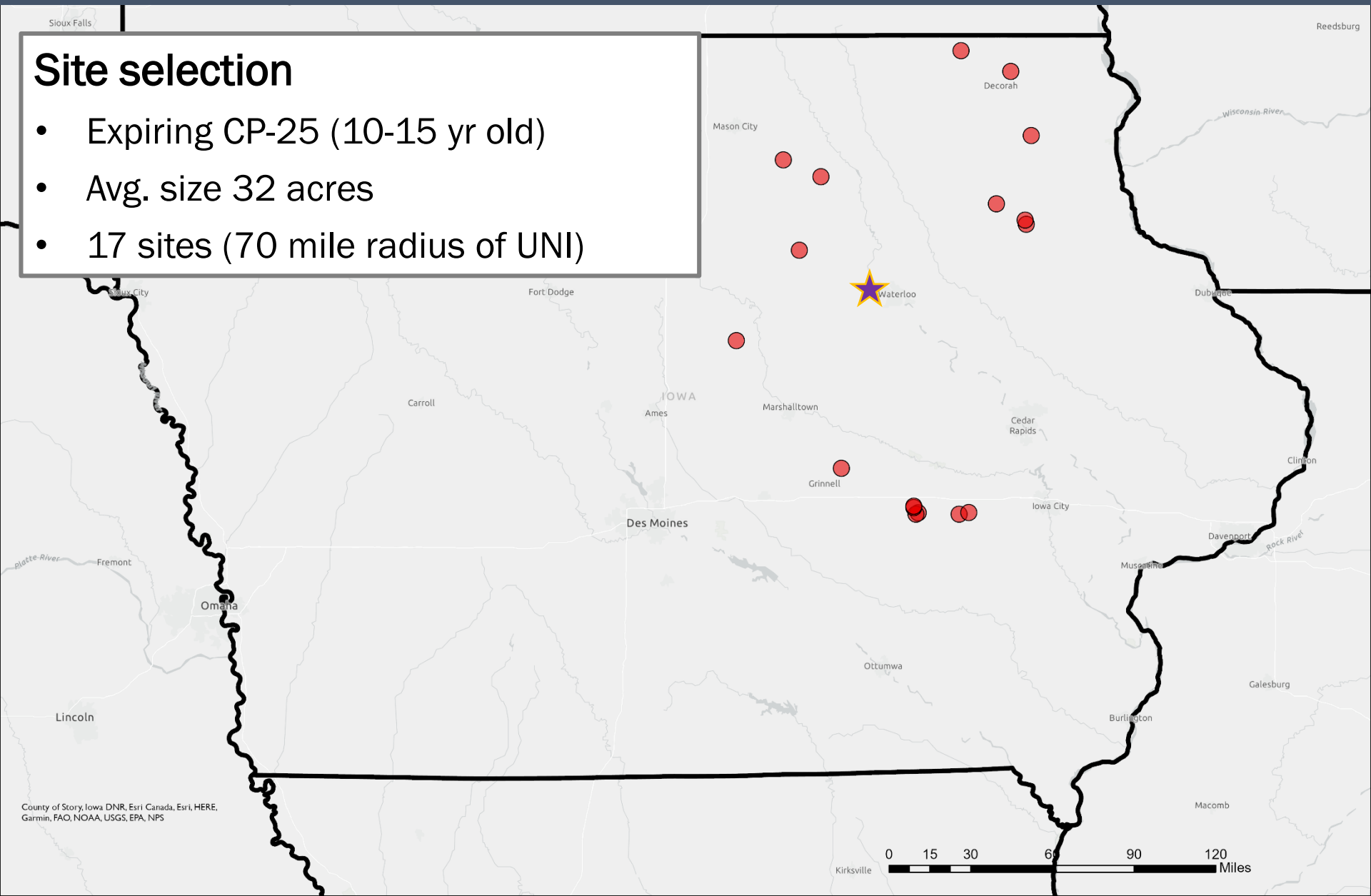


Methods

Observational Study

Site selection

- Expiring CP-25 (10-15 yr old)
- Avg. size 32 acres
- 17 sites (70 mile radius of UNI)

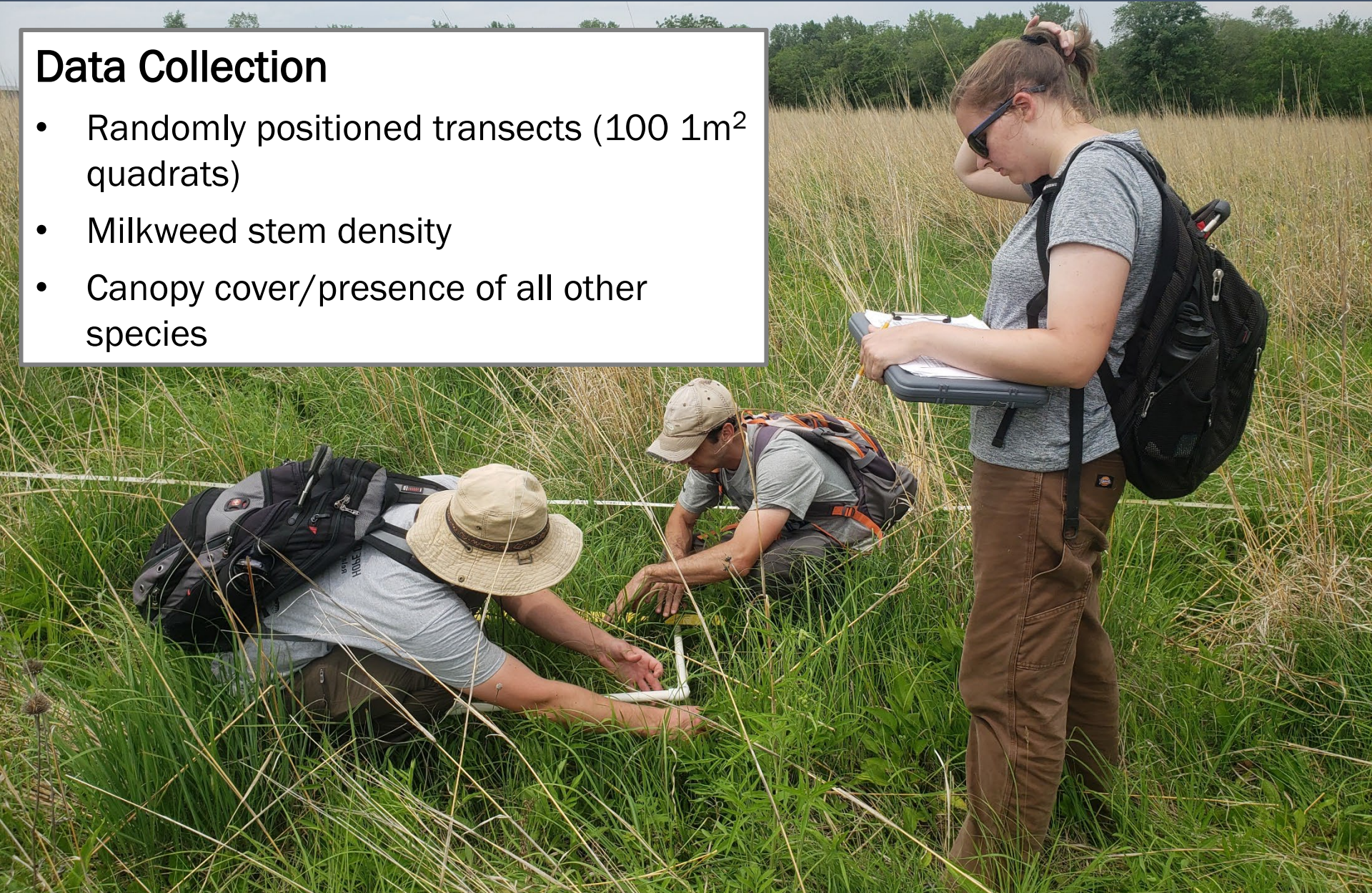


Methods

Observational Study

Data Collection

- Randomly positioned transects (100 1m² quadrats)
- Milkweed stem density
- Canopy cover/presence of all other species

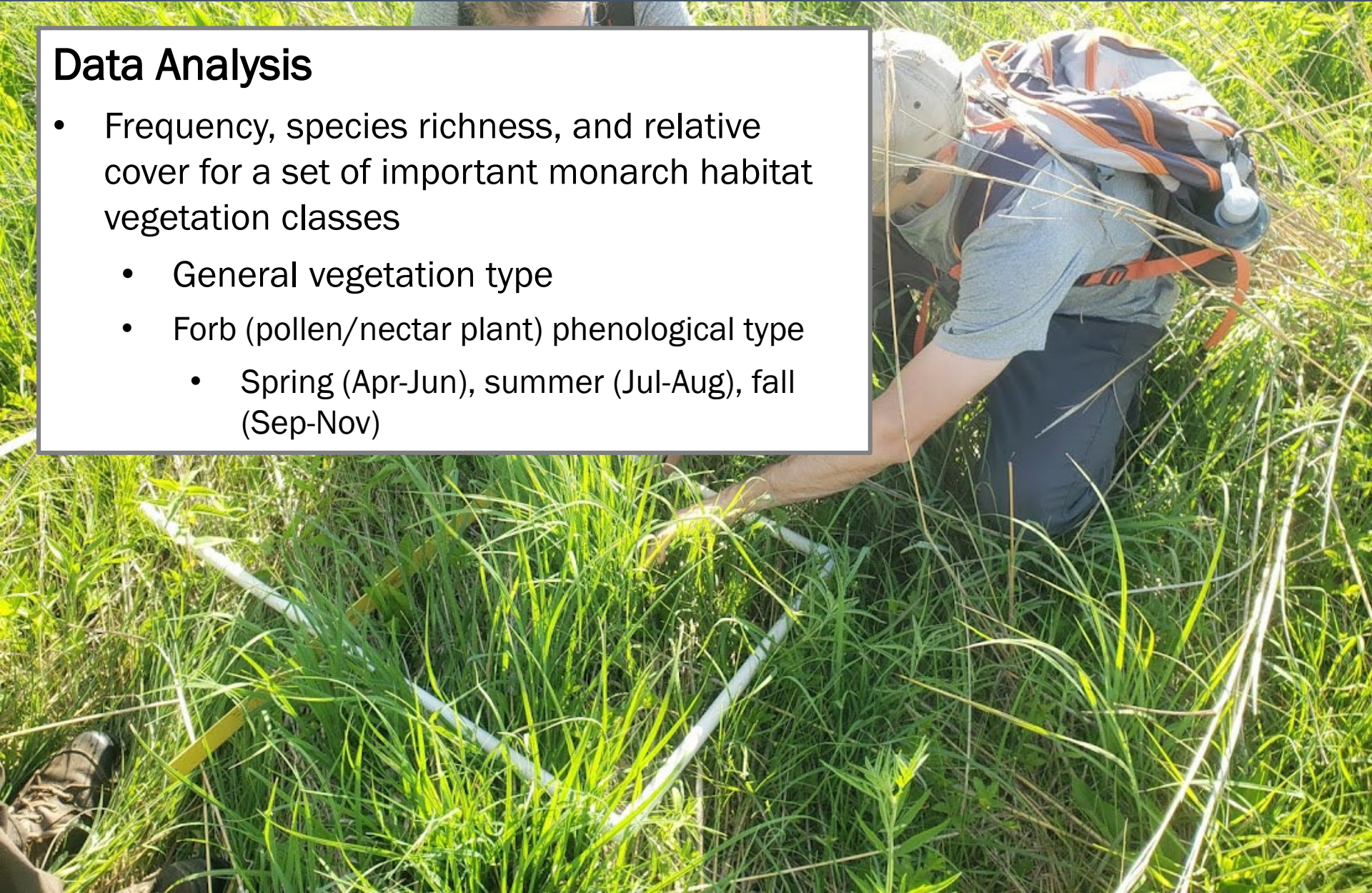


Methods

Observational Study

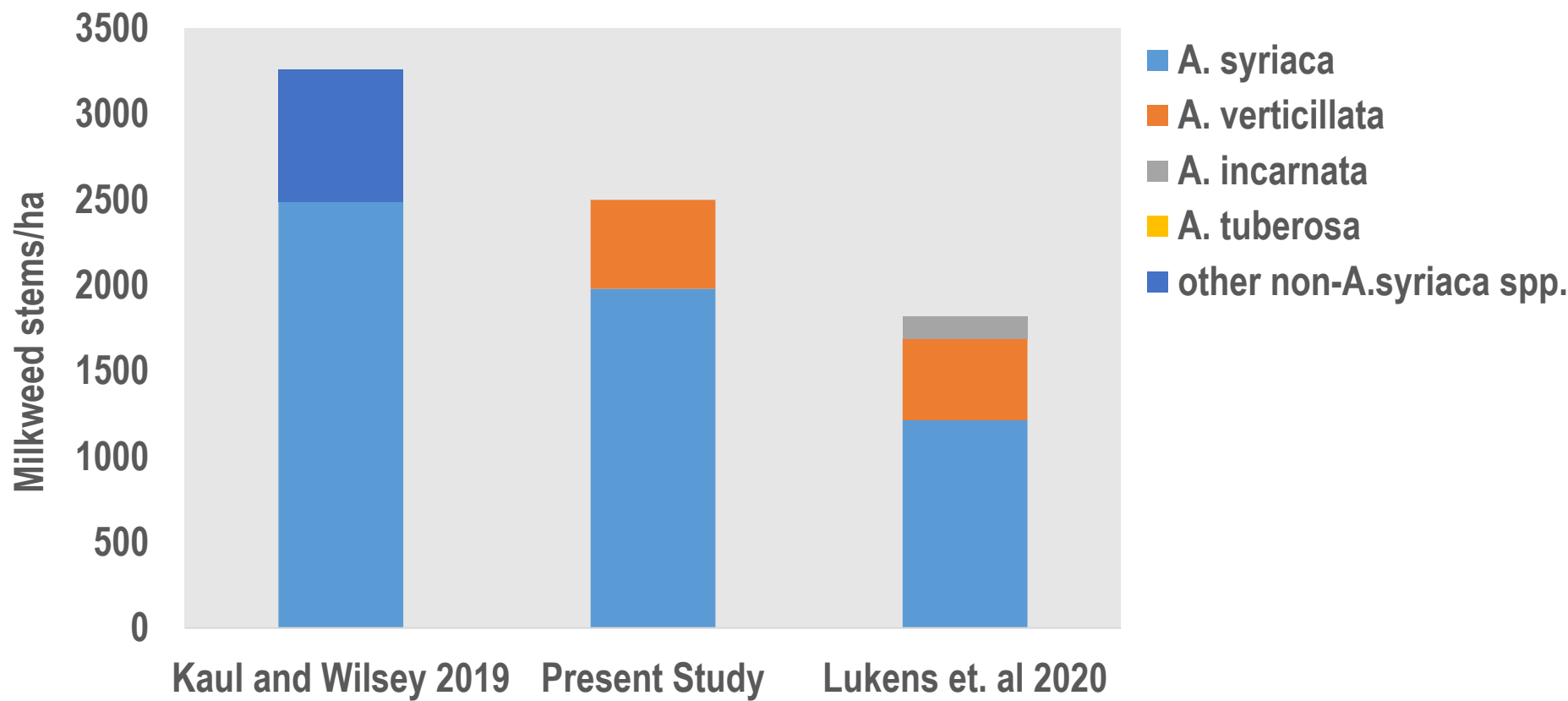
Data Analysis

- Frequency, species richness, and relative cover for a set of important monarch habitat vegetation classes
 - General vegetation type
 - Forb (pollen/nectar plant) phenological type
 - Spring (Apr-Jun), summer (Jul-Aug), fall (Sep-Nov)



Results

Milkweed Stems

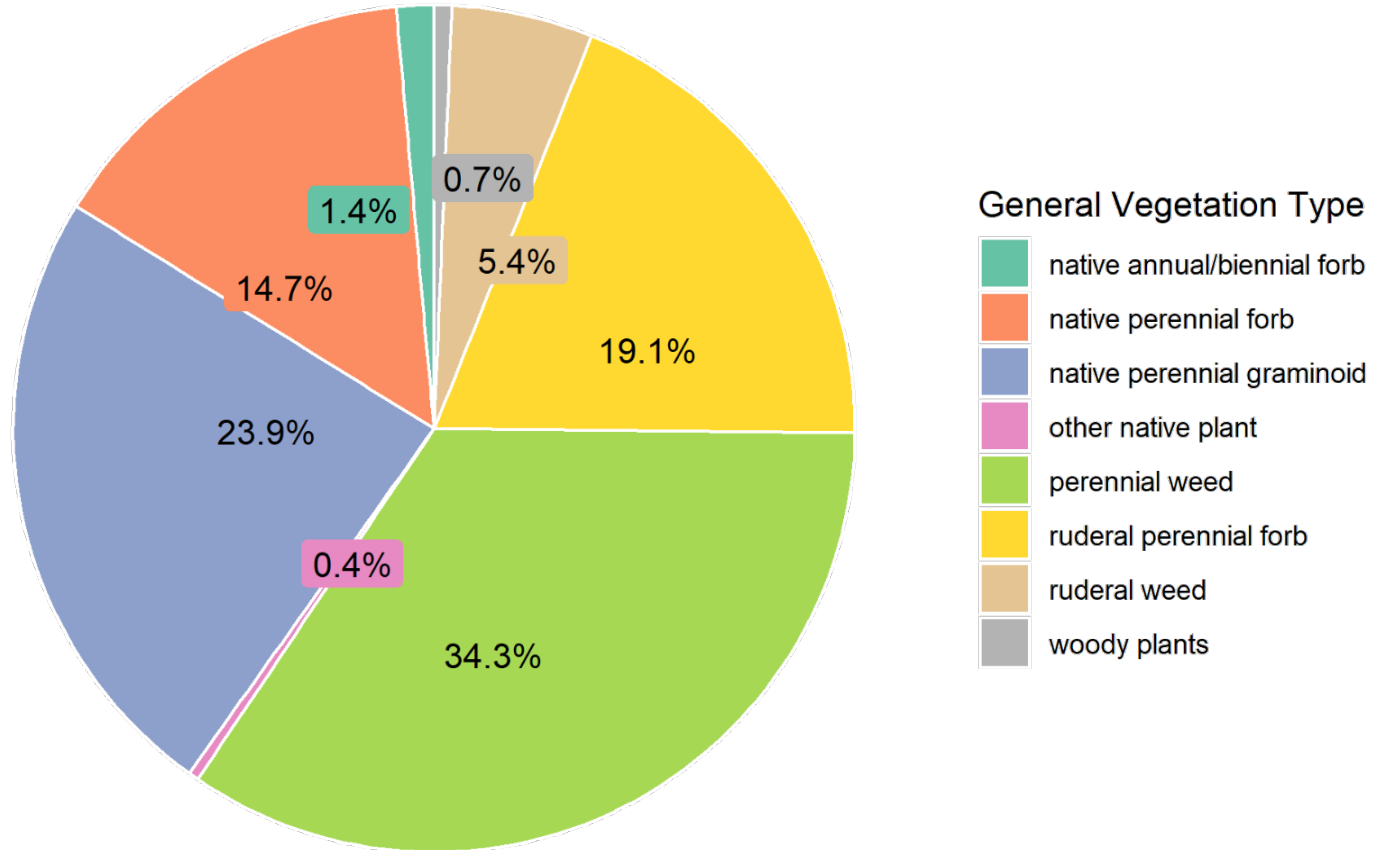


Relatively high milkweed abundance across sites

- Common milkweed by far most abundant, whorled milkweed also important
- On par with other estimates of prairie restorations/CRP in the Upper Midwest

Results

General Vegetation Characteristics

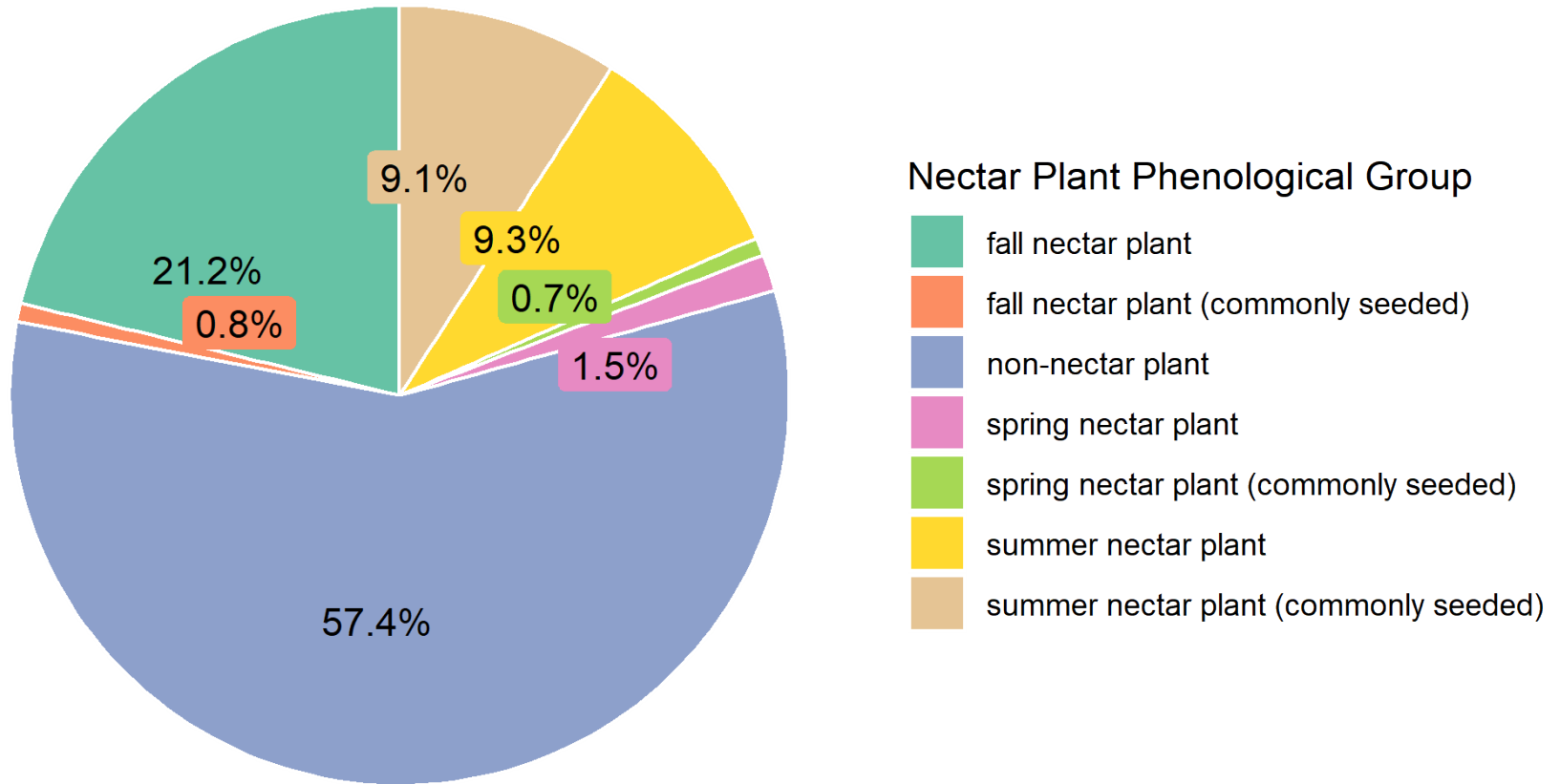


Overall, fields relatively diverse

- Mostly grasses, but “accidental” forbs and planted forbs quite common

Results

Pollen/Nectar Plants



Most fields dominated by non-nectar plants

- Strong representation of fall and summer nectar plants
- Only seeded species were summer blooming

Research Summary

Many expiring CRP plantings provide high quality monarch habitat

- Relatively high milkweed abundance across sites
- Mostly grass, but forbs still there
- Nectar plants well represented, but most are “accidental”



Implications for Policy and Management

Field checks done at the right time by well-trained staff

- Find and keep high quality habitat, don't damage with unnecessary enhancement

More fall and spring nectar plants in seed mixes

- Fall/spring species present mostly “on accident”, more should be planted up front

More CP-25 acres = more monarch habitat

- Enhancement focus on nectar plants, milkweed is generally showing up no matter what



Acknowledgements

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