Understanding Interactions between Butterflies and their Floral Resources in Iowa Grasslands

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Benefits of Prairies and Grasslands

- Soil and water retention and quality
- Biodiversity
- Habitats for a whole host of species
- Economically important
- Carbon sequestration
- Aesthetically pleasing and inspiring
The Grand River Grasslands

- Southern Iowa and Northern Missouri
- Assorted prairies, grasslands, and cattle pastures
- Agriculture, recreation, hunting, rural living
- Target for conservation
- Our sites: remnants, restorations, and cattle pastures with varying management histories
Prairie Interactions

• Fire often used for management
  – Promotes new growth of forbs
  – Can control woody species
  – Simulates historic conditions

• Pollinators important for resilience
  – Land managers care

• Nectar used as food resource
  – Flowers attract pollinators
Hypotheses

1. A recent burn will increase nectar production.

2. Greater butterfly activity will be observed as the diversity of floral resources increases.

3. An increase in amount and diversity of floral resources will increase butterfly activity.
Activities Observed

- Fly-through
- Flying
- Nectaring
- Contest behavior
- Patrolling for females
- Resting
- Basking
- Oviposition foraging
- Ovipositing
Butterfly activities increased with floral diversity.
Relationship of burning to volume of nectar produced varied by species.

*Marginally significant
Relationship of burning to mg of sugar produced varied by species.
Conclusions

• Grassland management that includes fire seems to affect the floral resources for pollinators.
• These results are very promising for future studies; further research with more replication is needed to better understand the interactions taking place.
THANK YOU!