

The Regal Fritillary Butterfly

A High-quality Prairie Endemic



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Acknowledgments

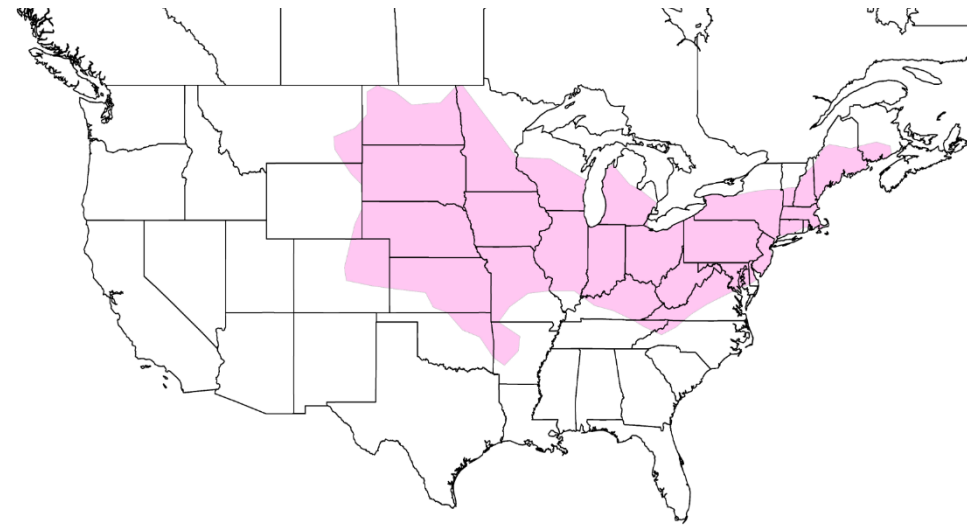
- Missouri Department of Conservation
 - Missouri Prairie Foundation
 - Missouri State Parks
 - Private landowners
-
- Surveys
 - T Doak, M Engel, M Ginestra, E Gregg, A Gooden Herman, K Hotmer, K Kuck, A Lyons, A Mueller, A Riedel, A Staab, E Trani, C Weathers, C Youtzy, J Ziesmer



Regal Fritillary

(*Argynnis idalia*)

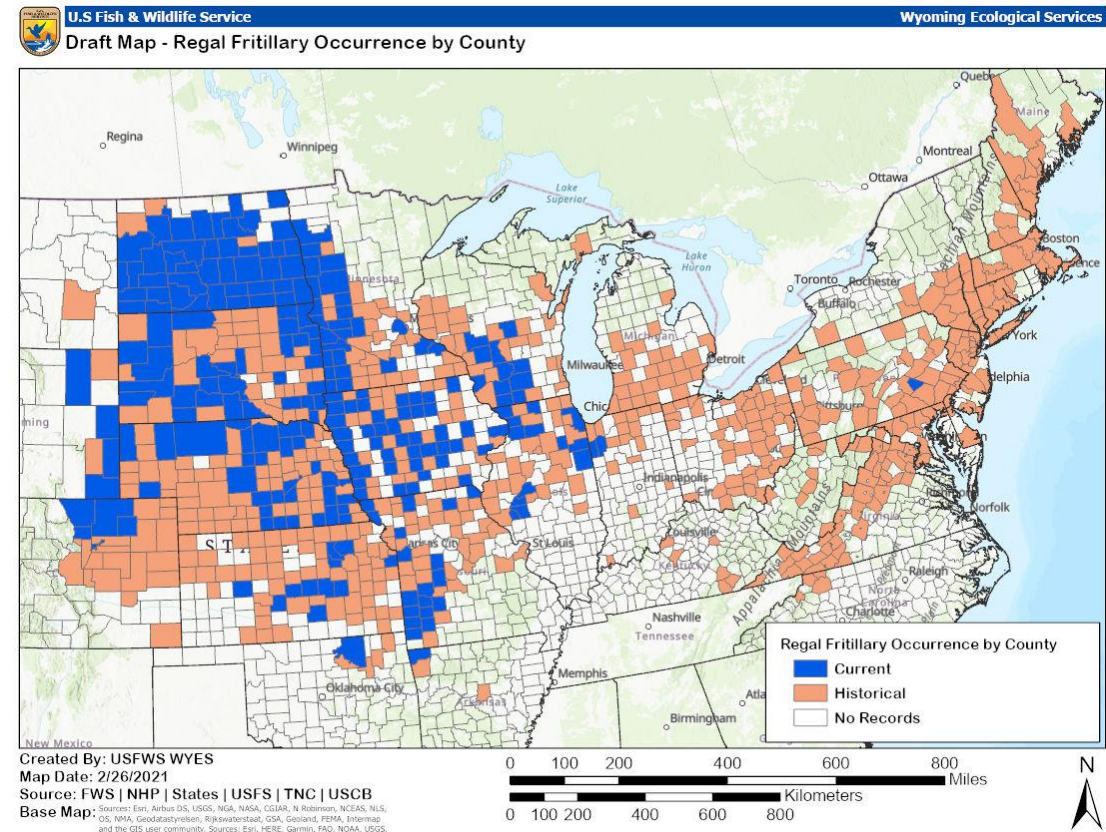
- Prairie endemic
- Habitat threatened (Noss & Peters 1995, Samson & Knopf 1994)



Modified from Glassberg (1999), BAMONA (2019)

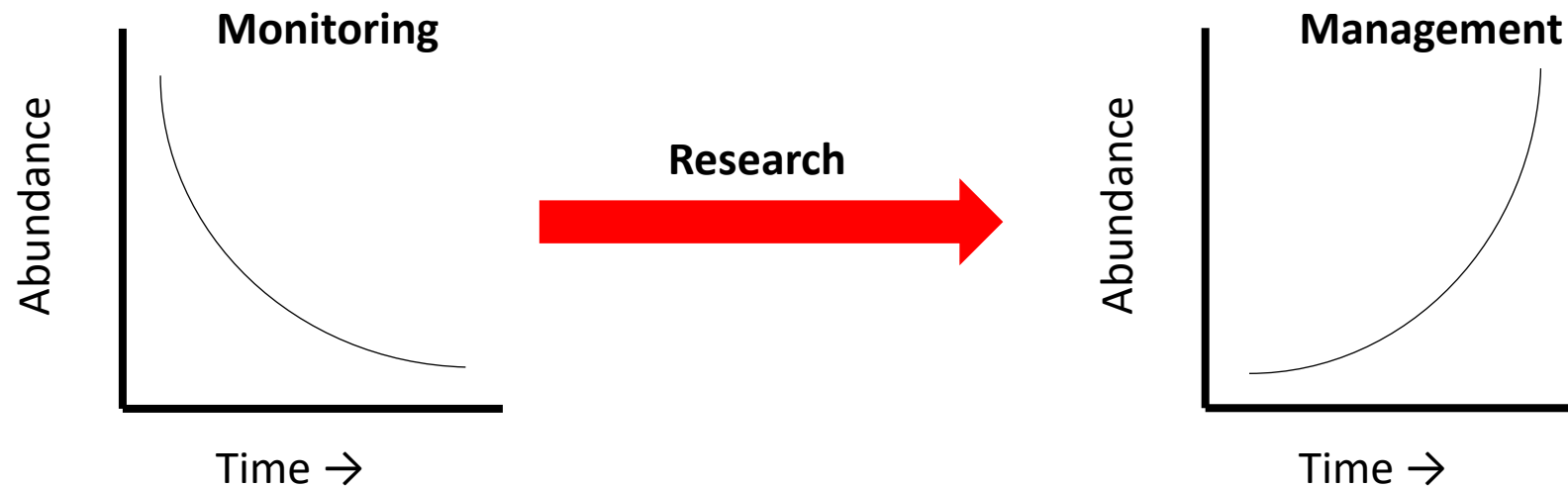
Regal Fritillary

- U.S. Fish & Wildlife Service
 - Current status review
- Missouri Department of Conservation
 - Species of conservation concern
 - S3: Vulnerable



Recent Conservation Efforts

- Captive rearing and reintroductions
- Characterization of vegetation communities
- Describing dispersal across the landscape



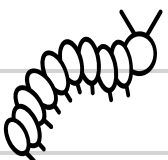
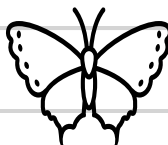
Reintroductions



Reintroductions



Reintroductions

	Site	Number	Date
	La Petite Gemme	640	19-Apr
	Diamond Grove	900	27-Apr
	Schuette	320	1-May
	Schuette	300	3-May
	Cook Meadow	450	2-May
	Wah-Sha-She	450	2-May
	Tucker	450	4-May
	Linden's	44	5/19-6/17
	Total	3554	

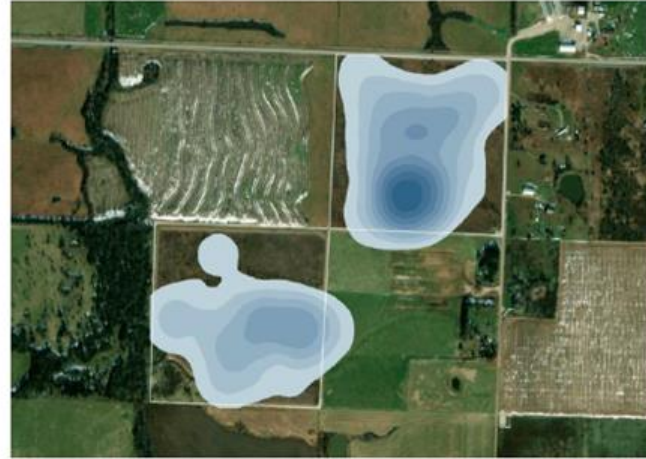


Reintroductions

- Adults were observed at 5 of 6 larva release sites in June 2022



Vegetation



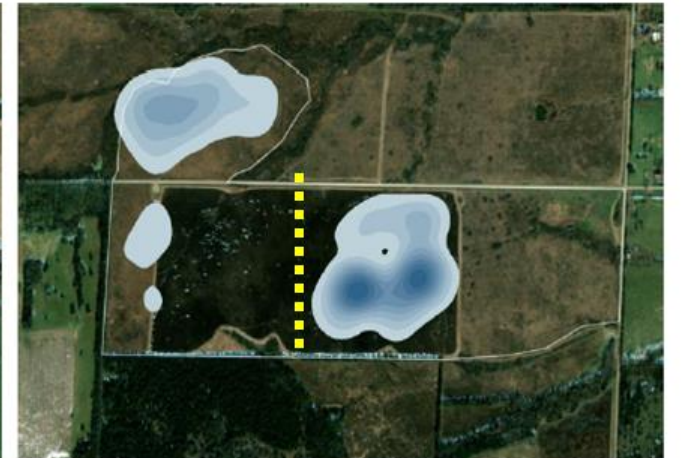
Drover's Prairie



Friendly Prairie



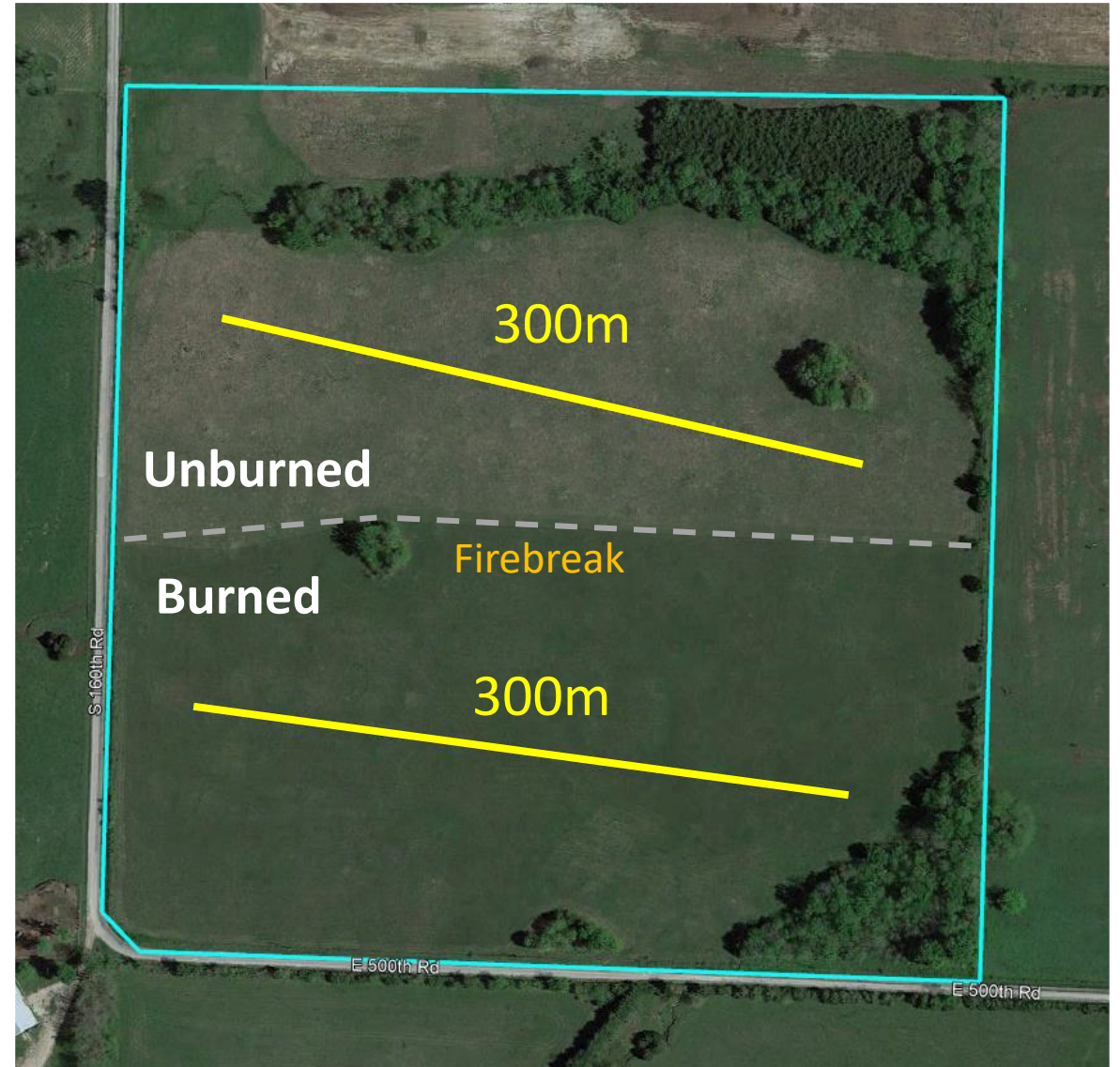
Marker's Prairie



Paint Brush Prairie

Vegetation

- 2023 Surveys
 - 54 sites, 159 transects
 - 300m transects centered within management unit

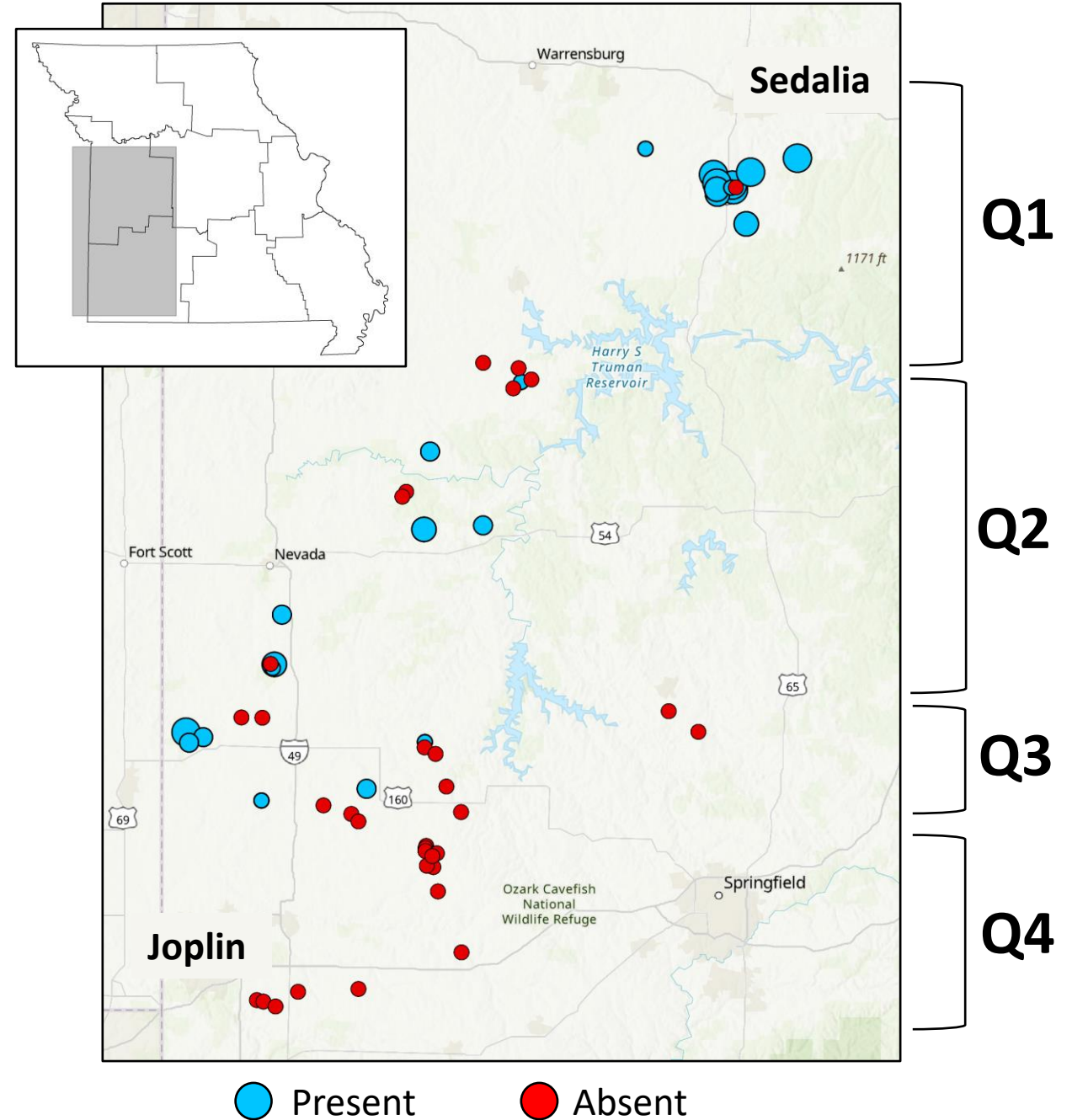


2023 Regal Distribution

- 1 of 5 reintroduction sites
- Lost 12 of 29 sites

Latitude Quartile	Count per Transect	% Transects Occupied
Q1	10.0	75%
Q2	1.9	38%
Q3	1.7	33%
Q4	0.0	0%

$\chi^2 (3) = 16.544, P = 0.001$

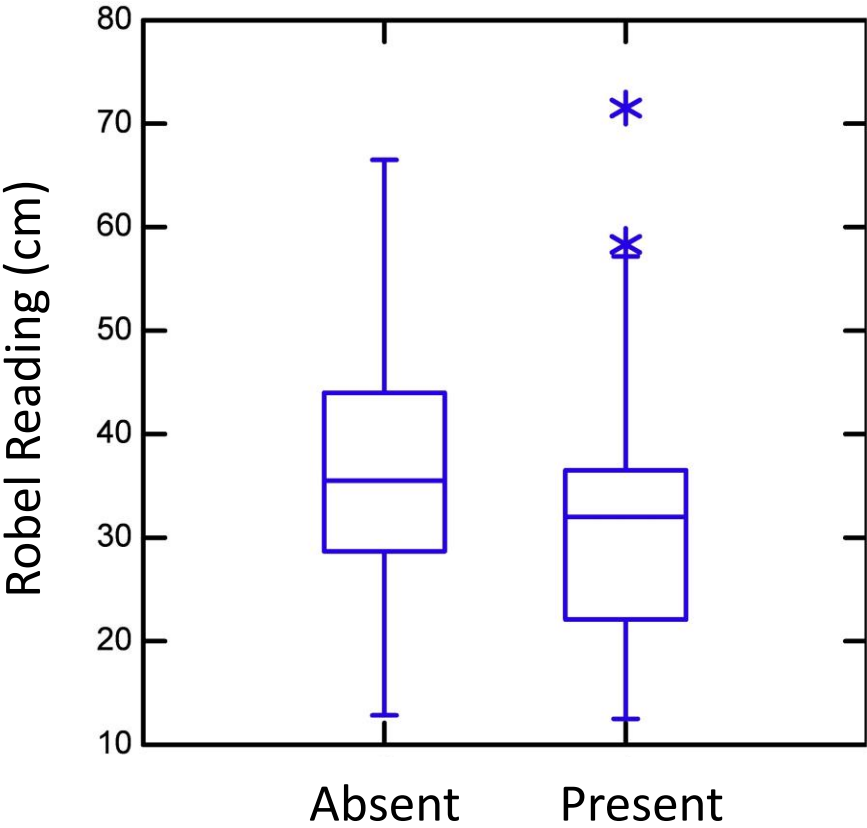
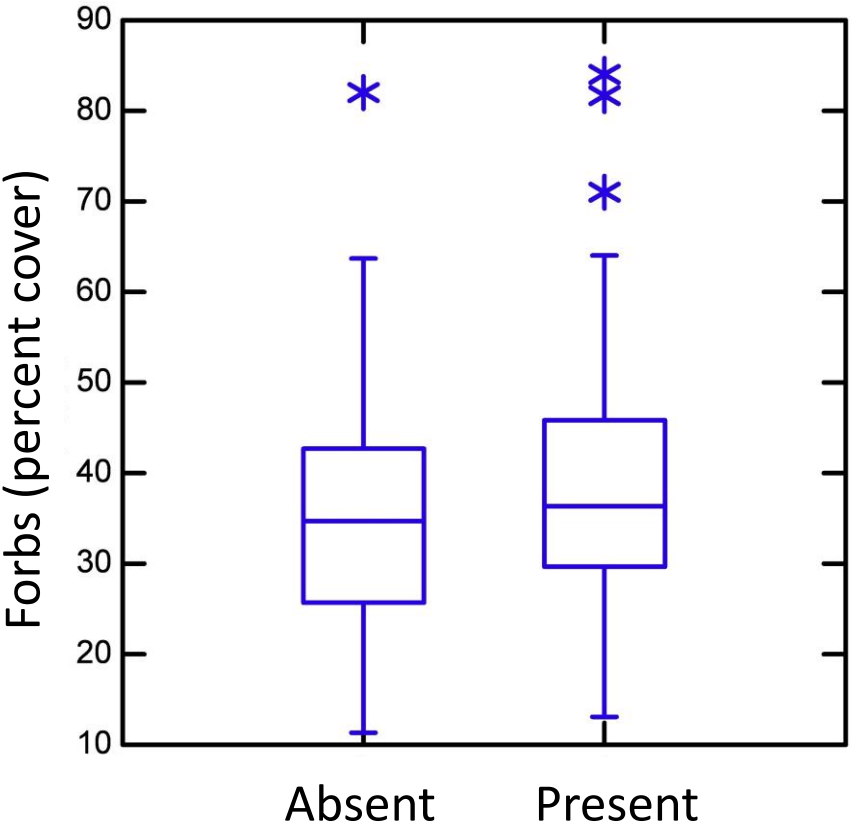


Vegetation

- Forward stepwise logistic regression results ($P < 0.05$)
 - Latitude
 - Forb cover
 - Robel pole readings
 - Land management



Vegetation



Management



Time Since Burn

**Regal
Presence/Absence**

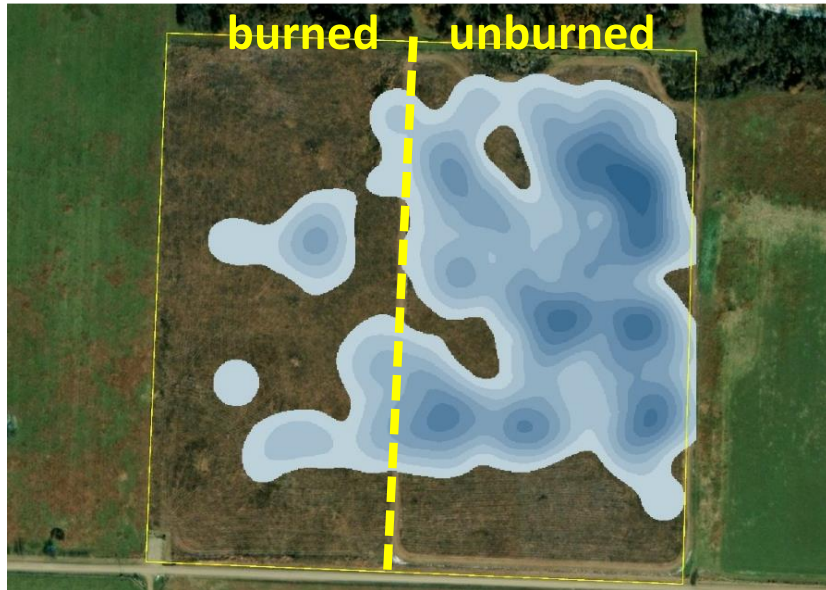
	<1 year	1 year	2 years	3+ years	Total
Absent	27	28	11	19	85
Present	23	25	10	2	60
Total	50	53	21	21	145

$$\chi^2 (3) = 10.295, P = 0.016$$

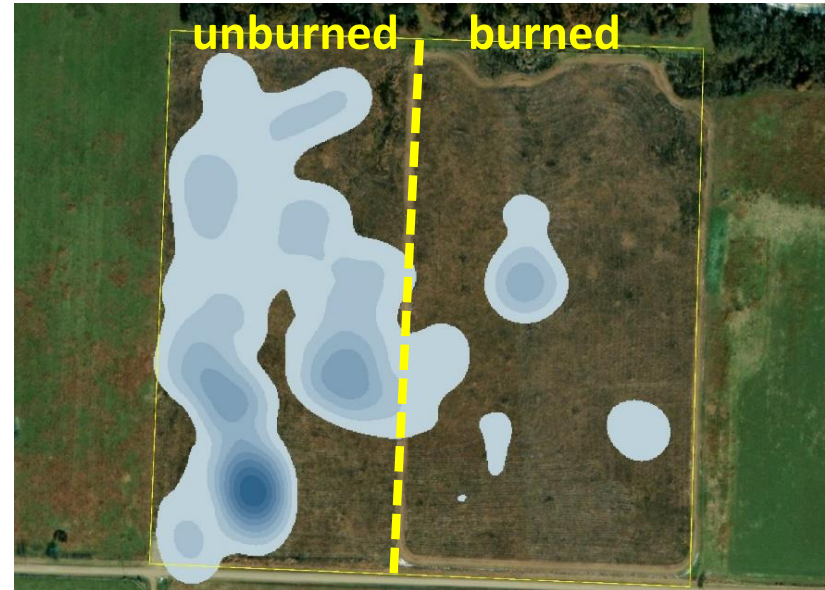
Management



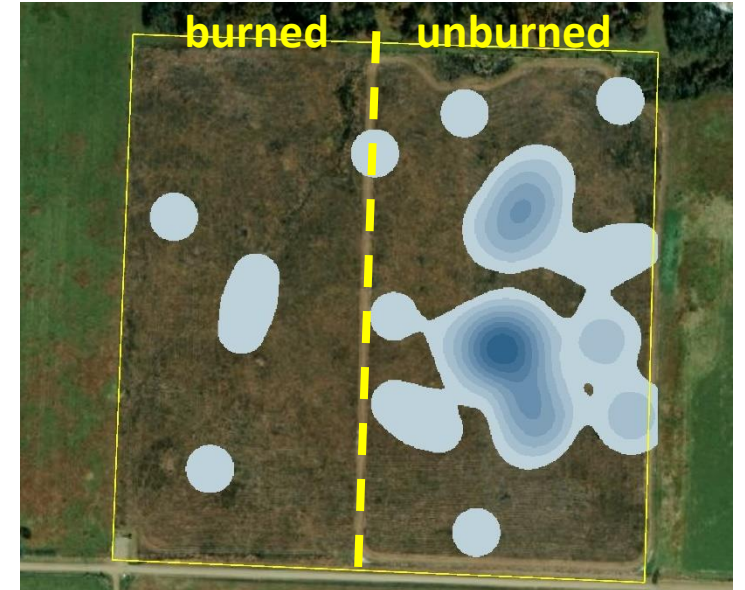
2020



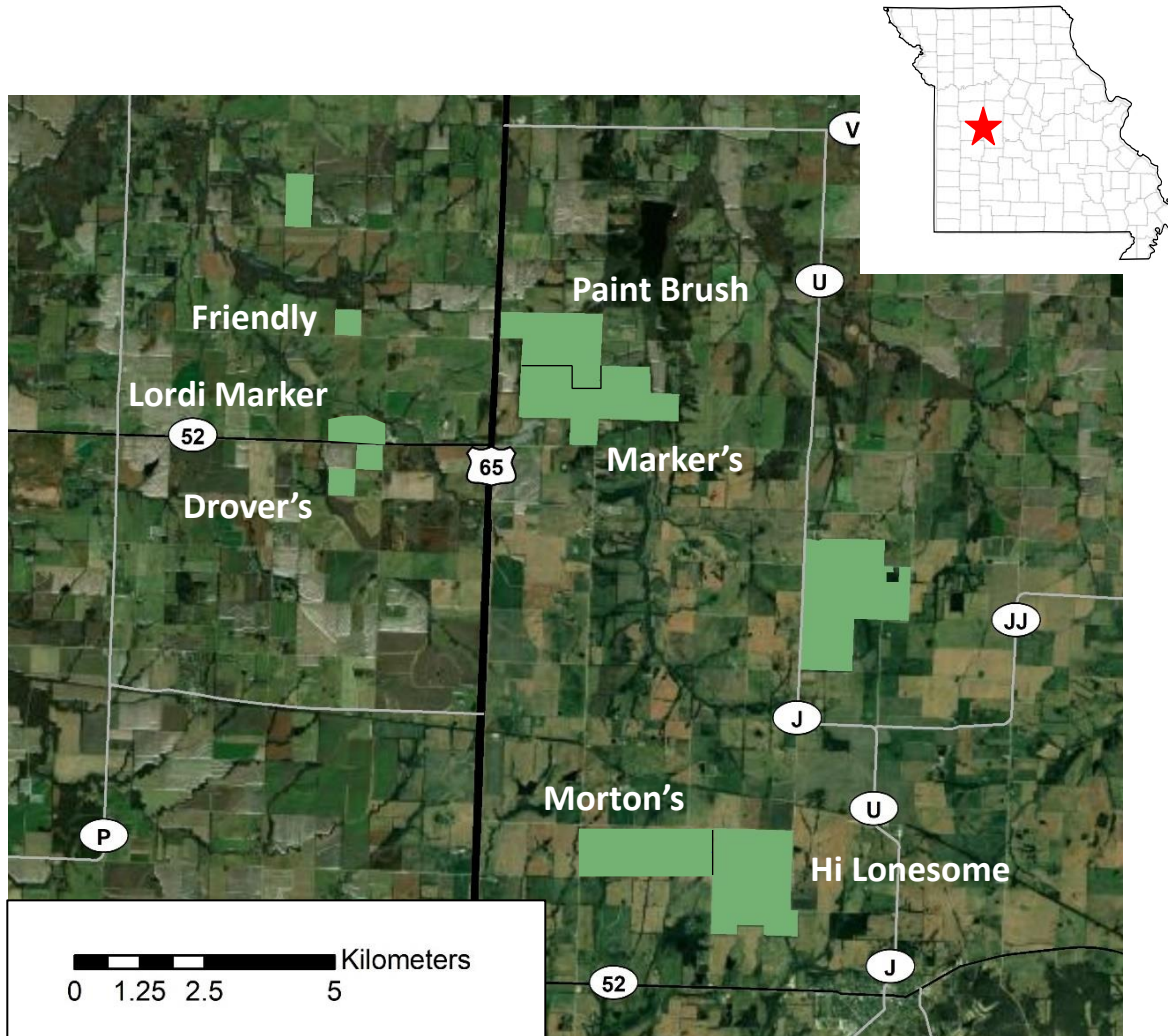
2021



2022

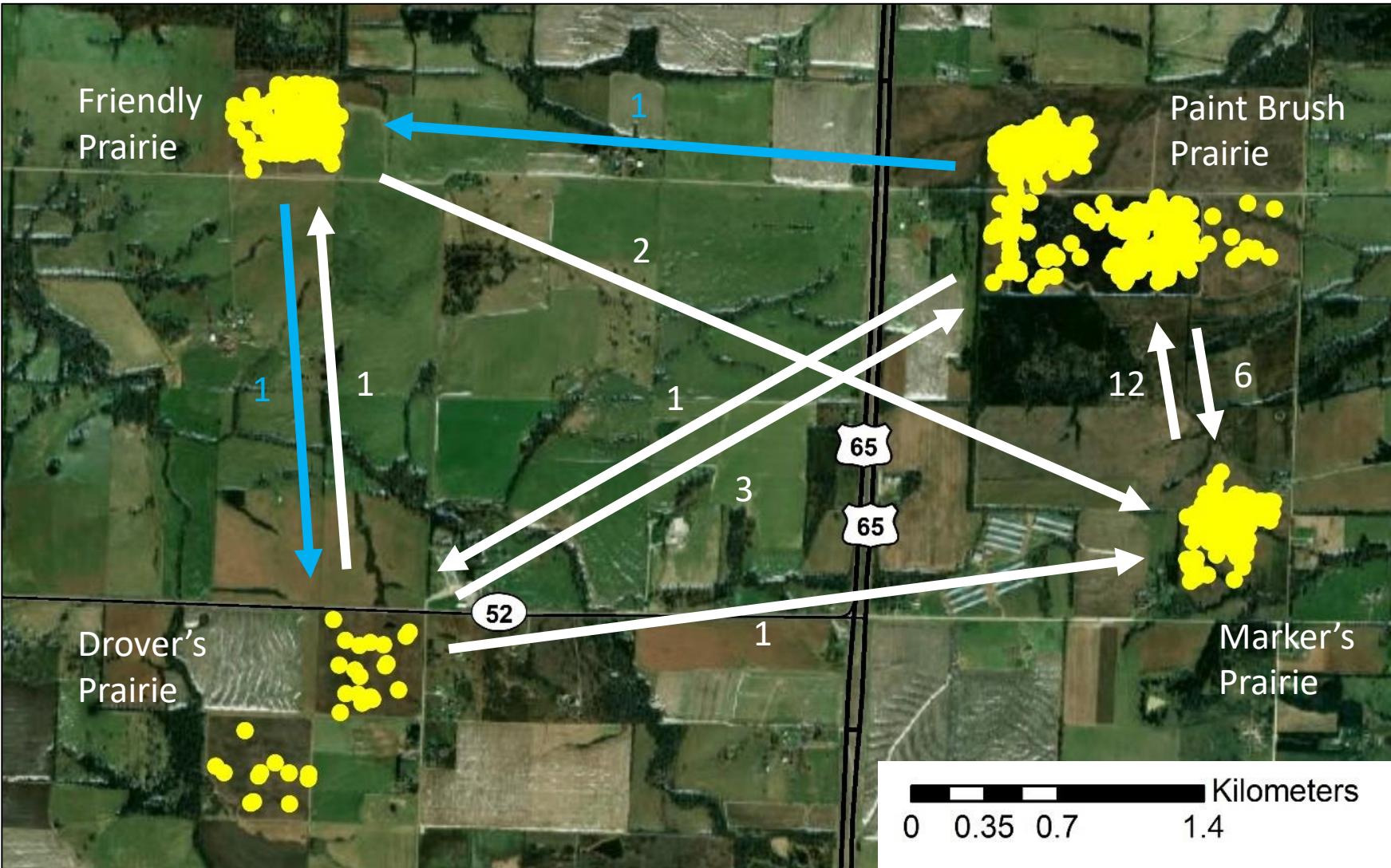


Dispersal



2019
2020

Dispersal



Future Work

- Habitat and landscape effects
 - Floral data
 - Landscape arrangement
 - Violet quality
- 2024 surveys
 - Repeated surveys to compare yearly fluctuations
 - Regal use of refuge vs. recently burned areas



Questions?

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