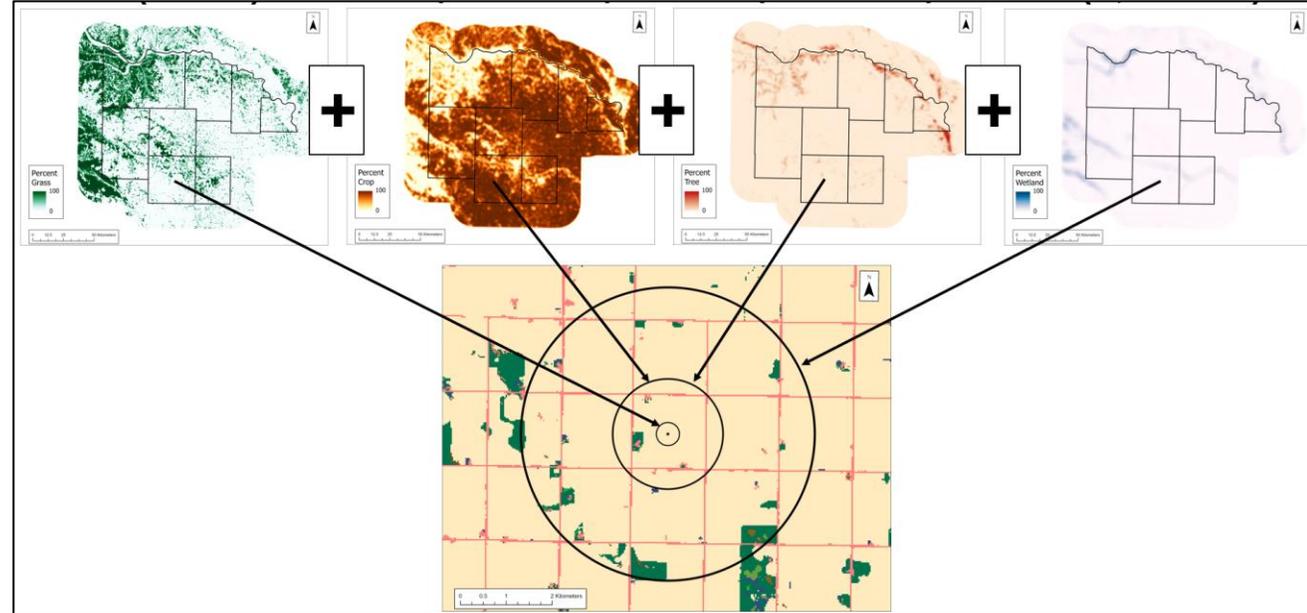


Development of a Digital Tool for Pheasant Habitat Conservation



Dan Uden – UNL
March 12, 2026
Rainwater Basin Joint Venture



Institute of Agriculture and Natural Resources
SCHOOL OF NATURAL RESOURCES



School of Natural Resources
APPLIED WILDLIFE ECOLOGY & SPATIAL MOVEMENT LAB



Andy Little



Alli Barg

***Dissertation Defense
March 26 – 11:00am***



Dan Uden

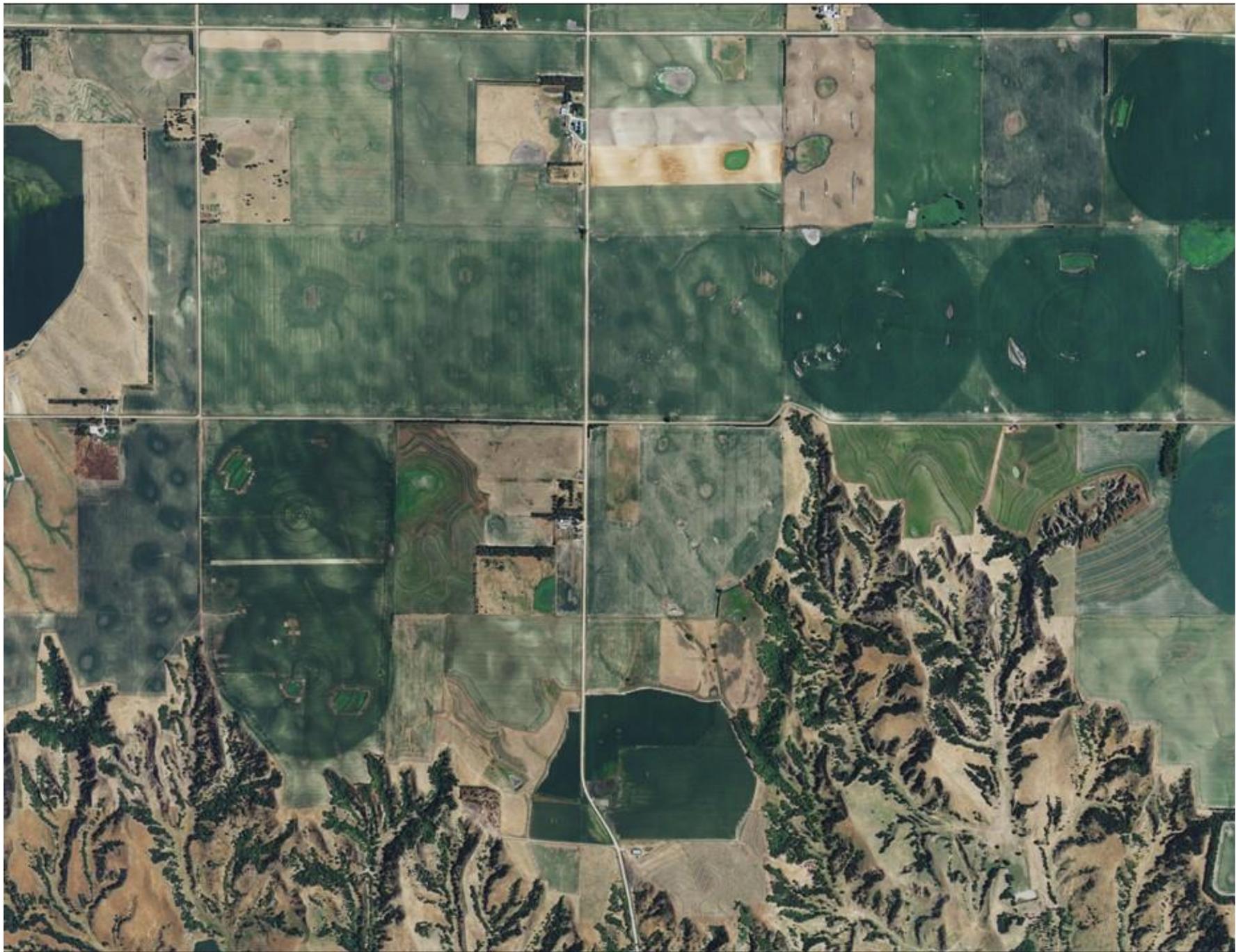


Megan Baldissara



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DIGITAL AG



Home

Digital Agriculture
Networking and
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For more than 30 years, Nebraska has been a leader in the development and testing of new digital ag tools and strategies.



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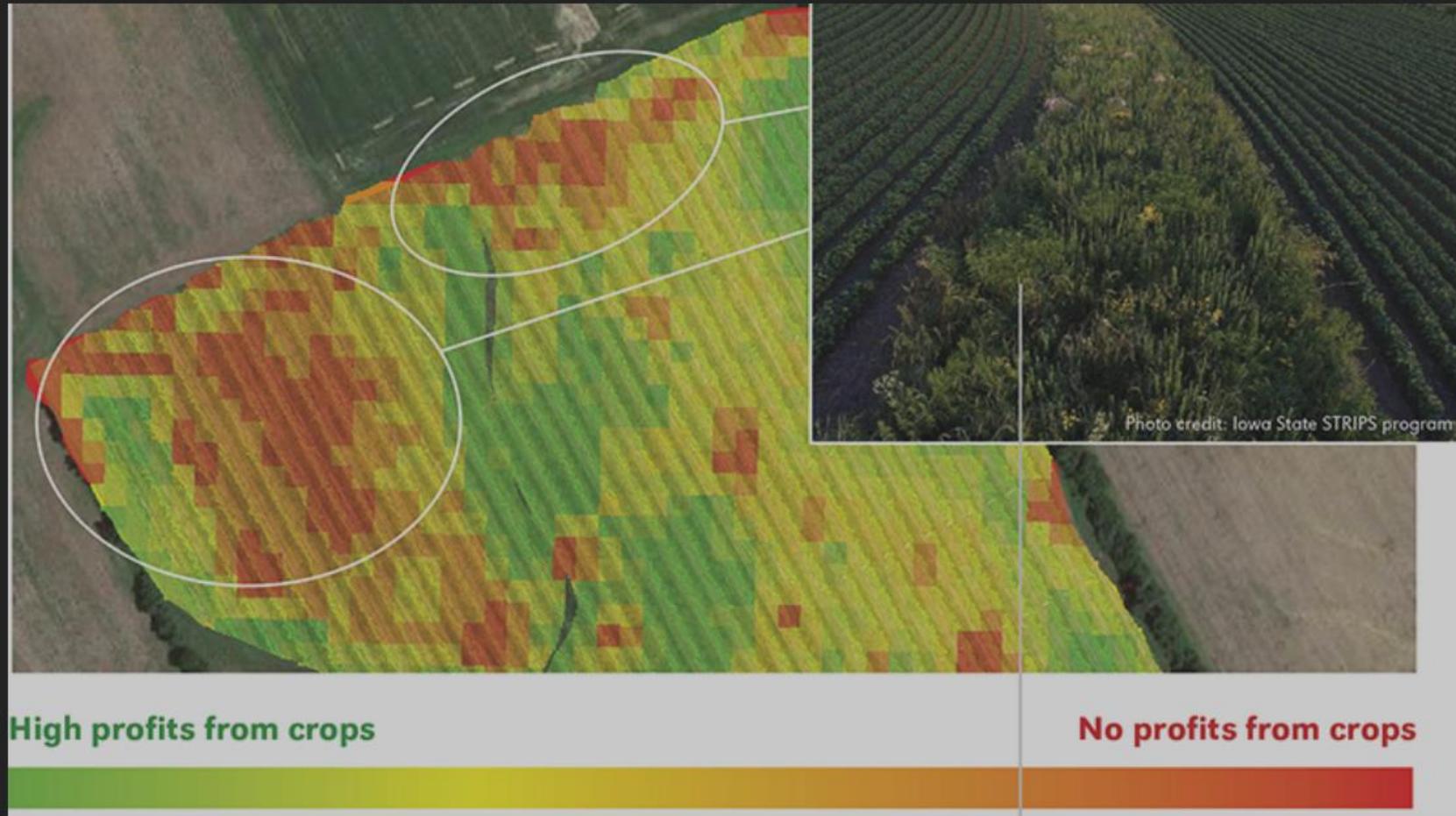
Building Bridges in Conservation: Nebraska hosts inaugural natural resources workshop

By [Iris McFarlin](#) | School of Natural Resources



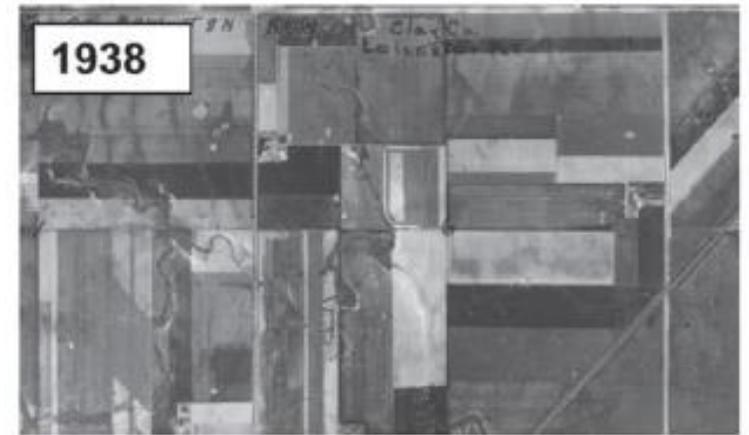
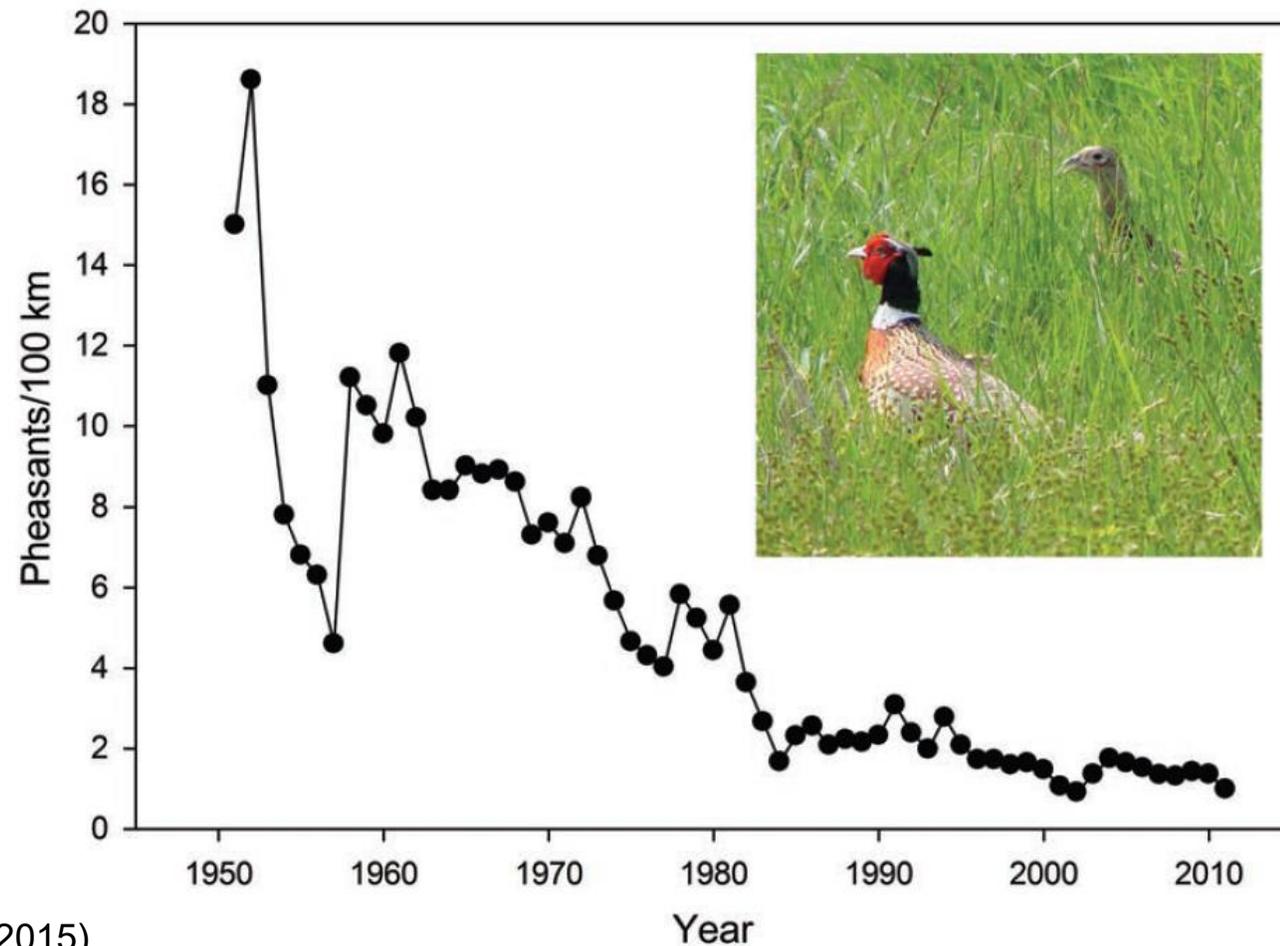
Over 100 natural resource professionals and students met on Wednesday, April 10th to build and foster new collaborations to help solve complex ecological challenges in Nebraska. --

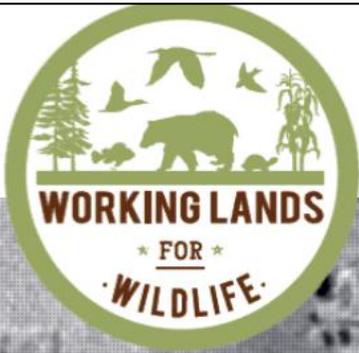
Increase Farm Profitability While Conserving Soil, Water, and Wildlife



Declining pheasant populations past 70 years

LARKIN POWELL





📍 Landscape Explorer

📍 Lost Landscapes

☰ How To Use



Landscape Explorer

Explore past and present landscapes from the Great Plains to the Pacific coast. This easy-to-use map uses historic and current aerial imagery to highlight how our

1953

US Meat Animal
Research Center

Rd 313

Rd K

Rd K



2025

Crooked Creek
Country Club

Dollar General

Rd 313

Clay Center

14

41

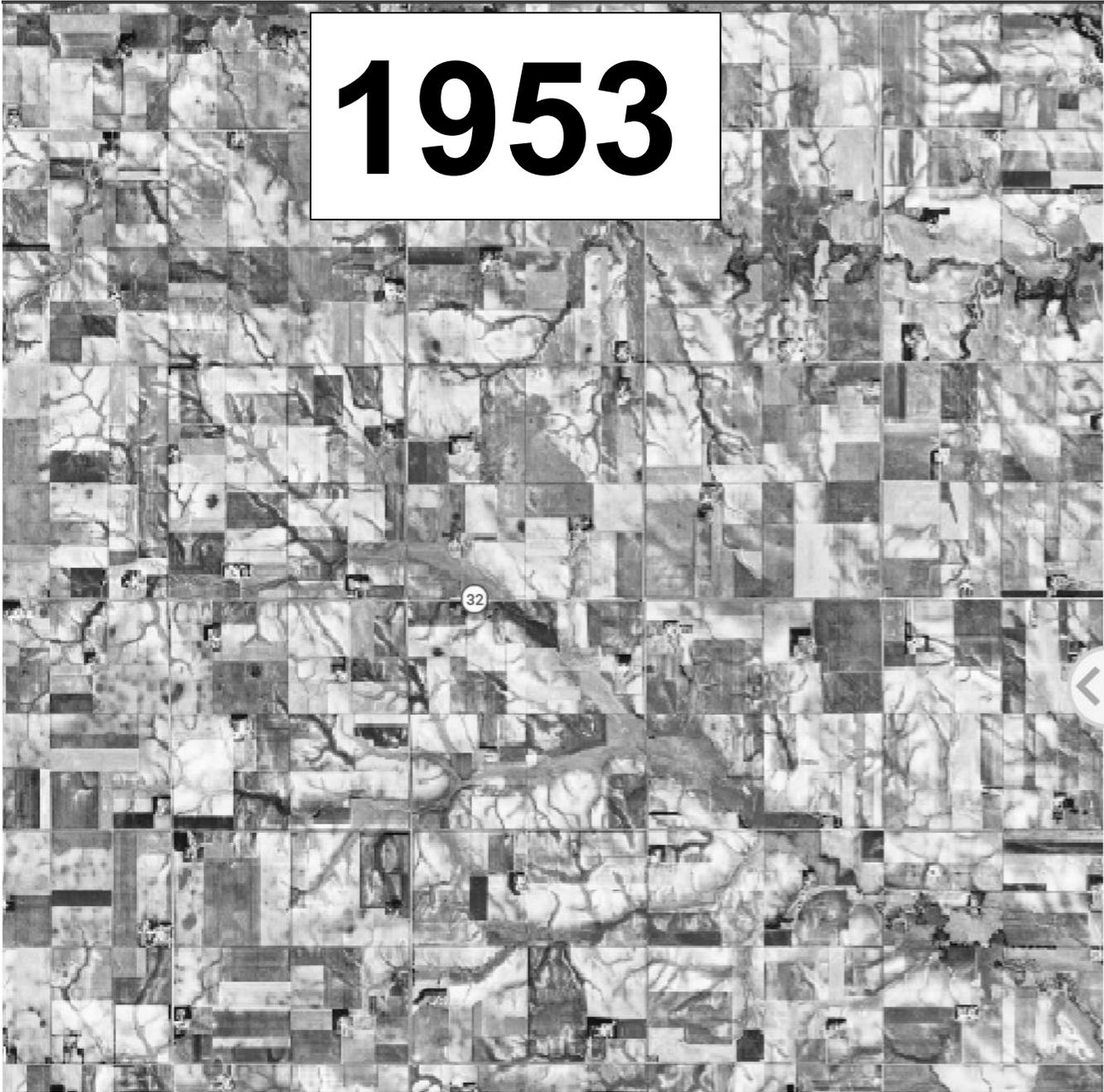
Rd 313

14

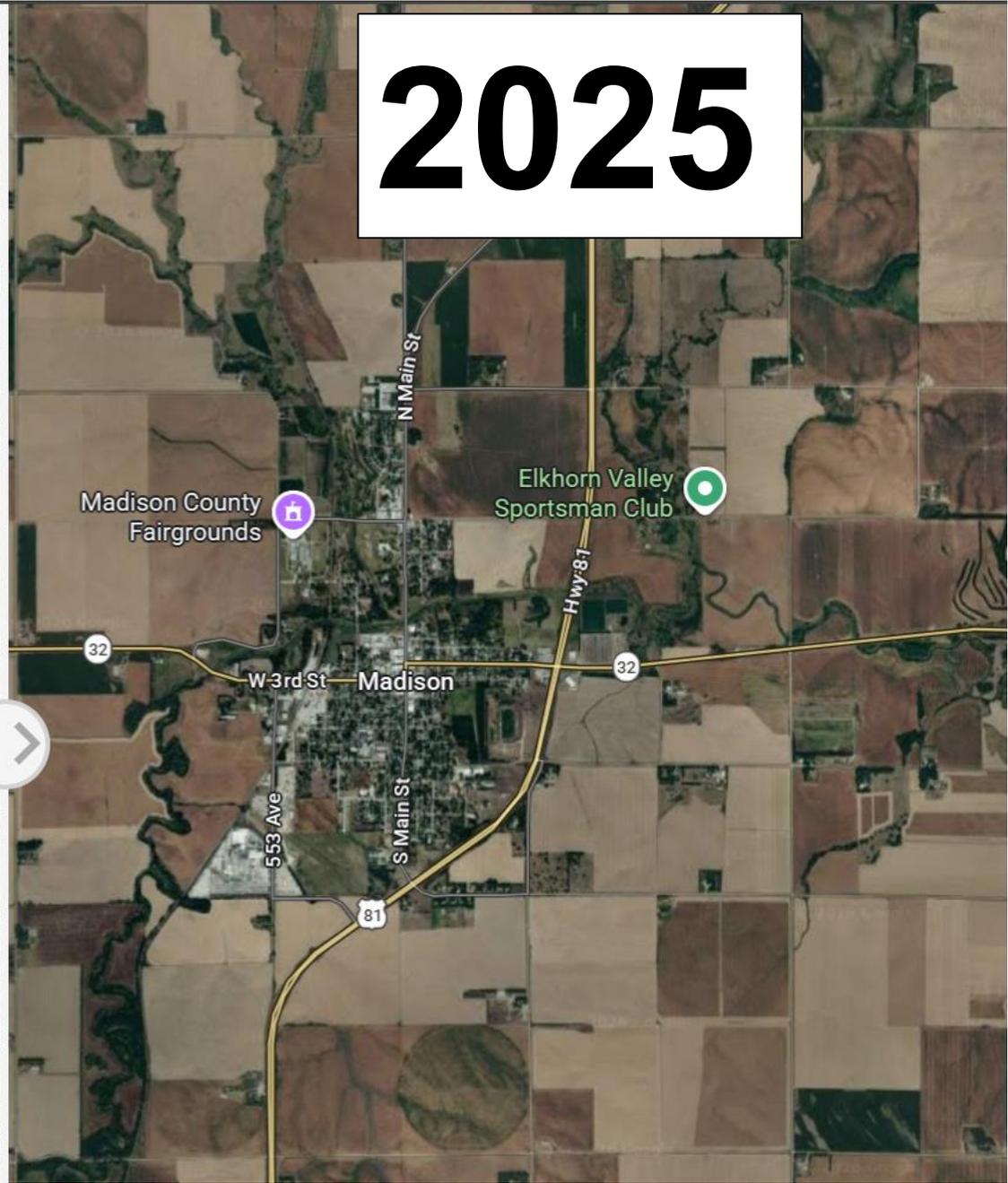
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14

1953

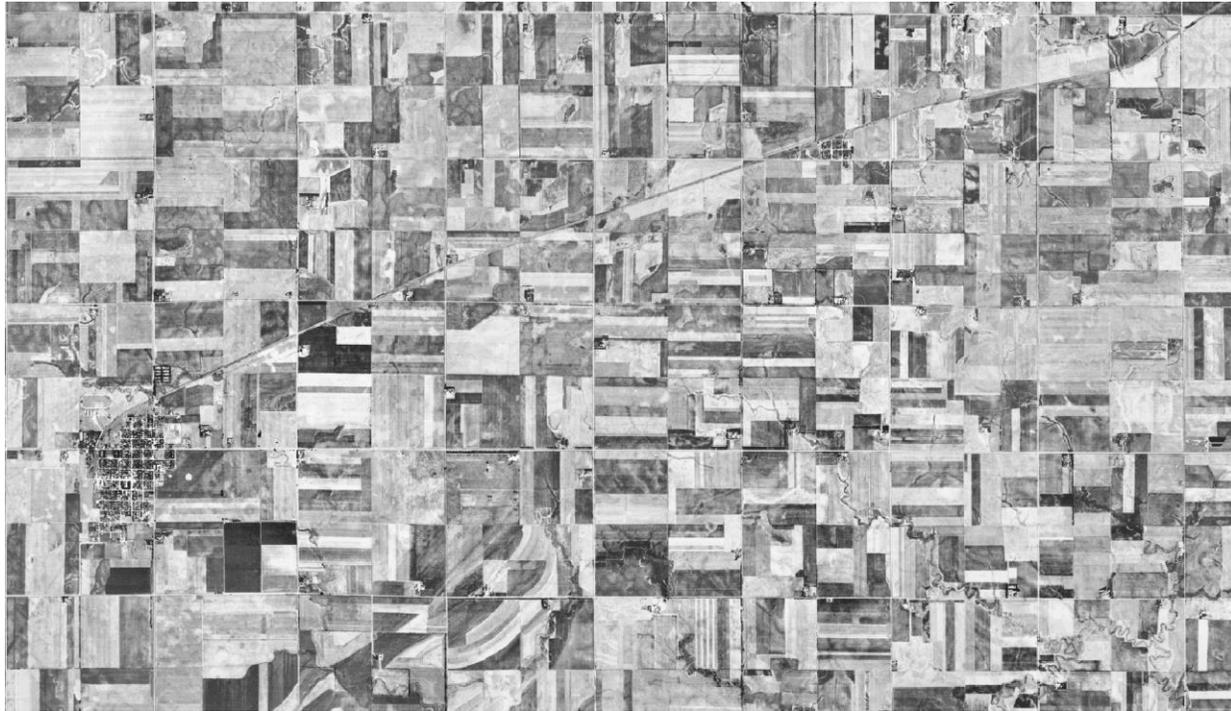


2025

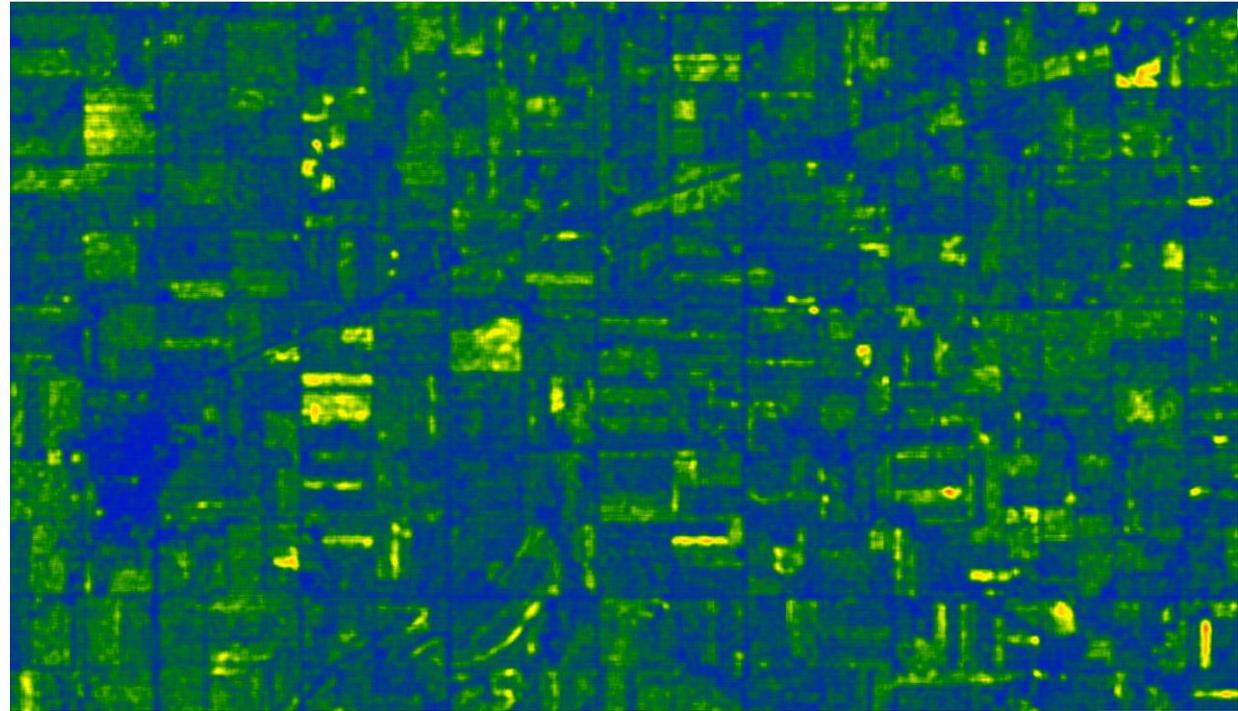


September 1953

Grayscale aerial

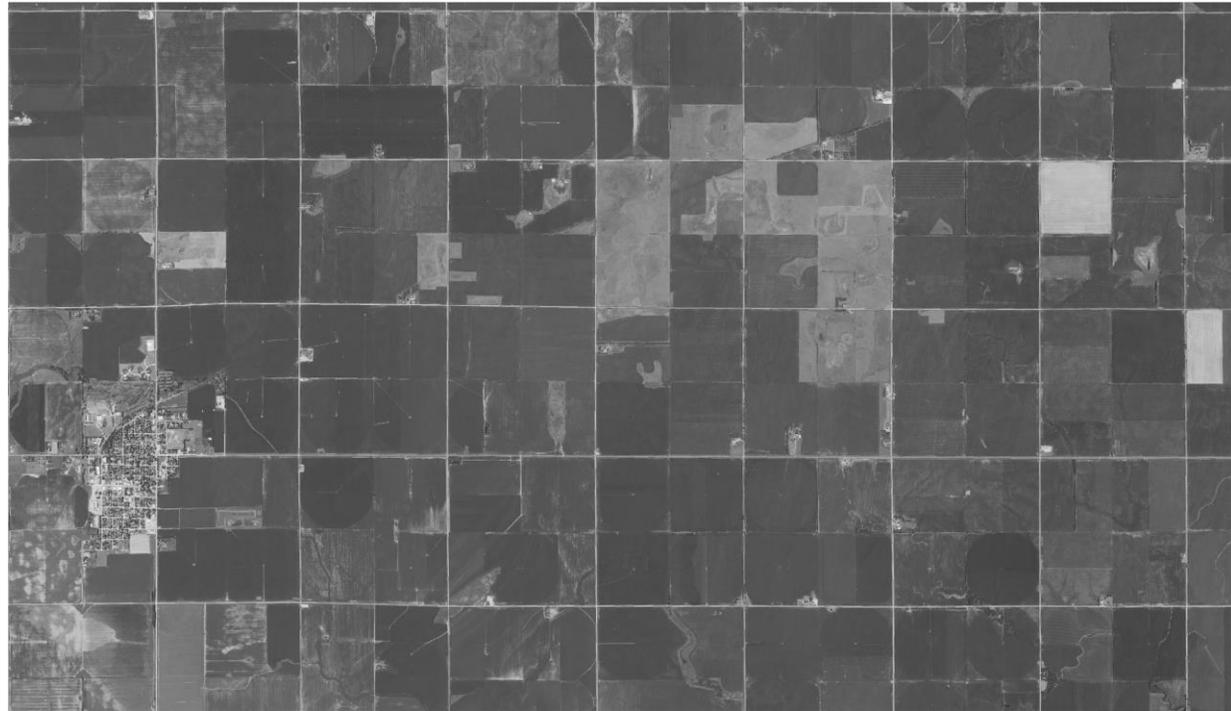


Homogeneity index

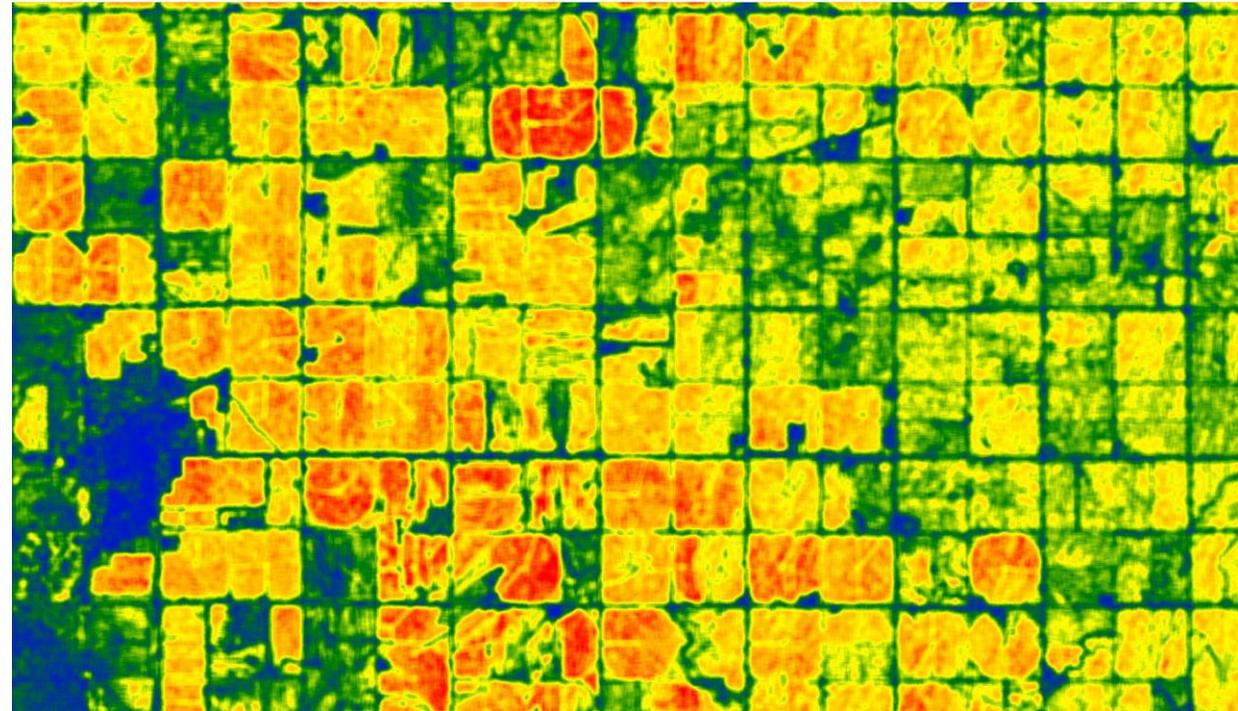


July 2022

Grayscale aerial



Homogeneity index

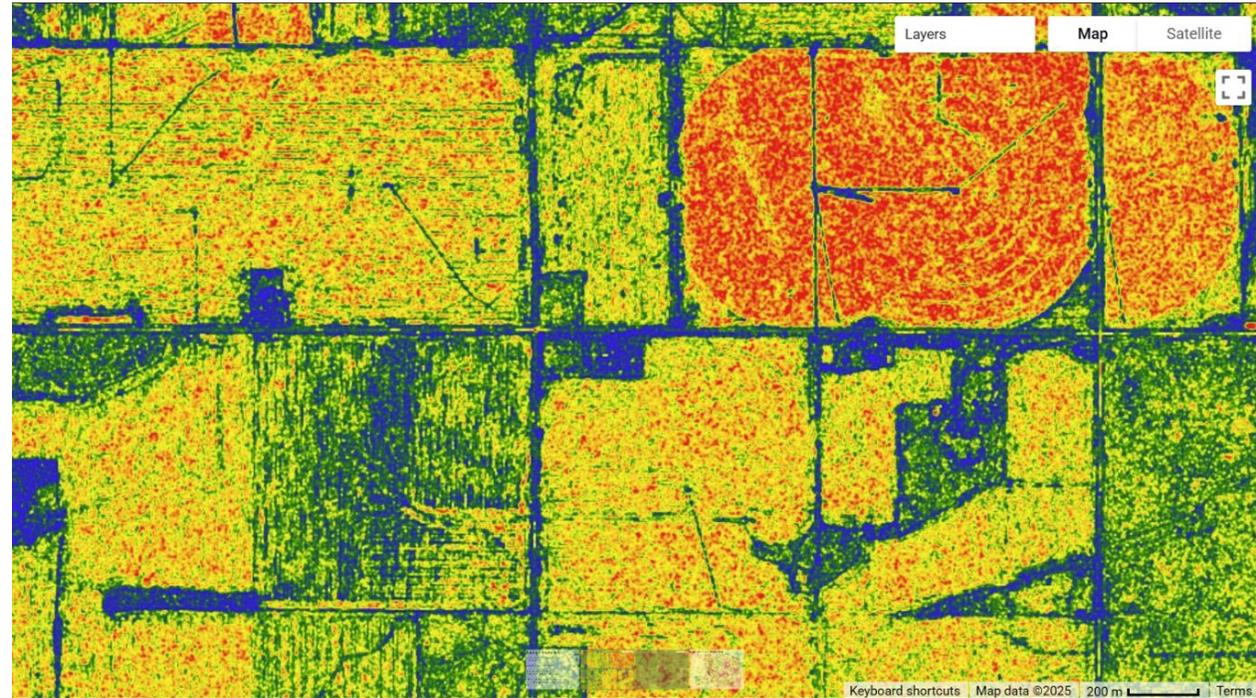


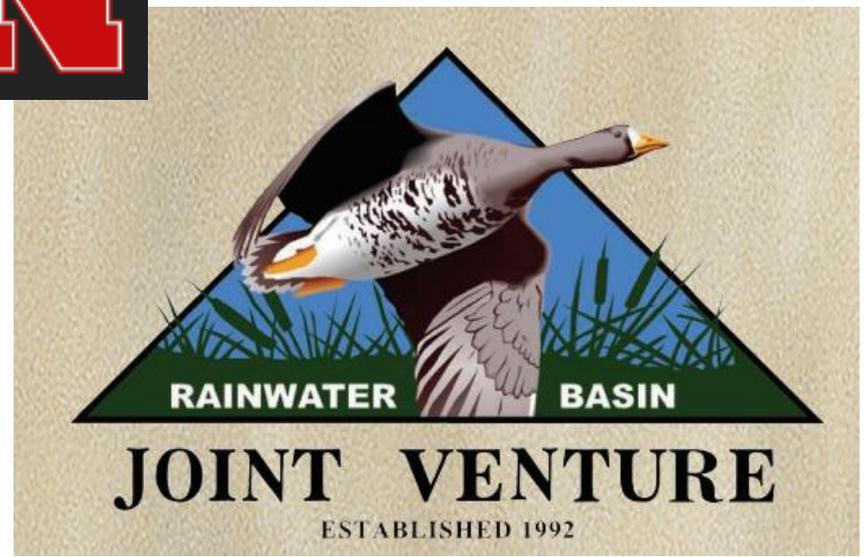
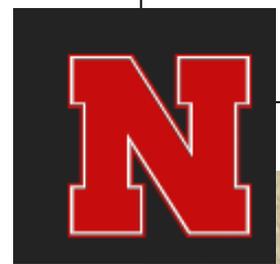
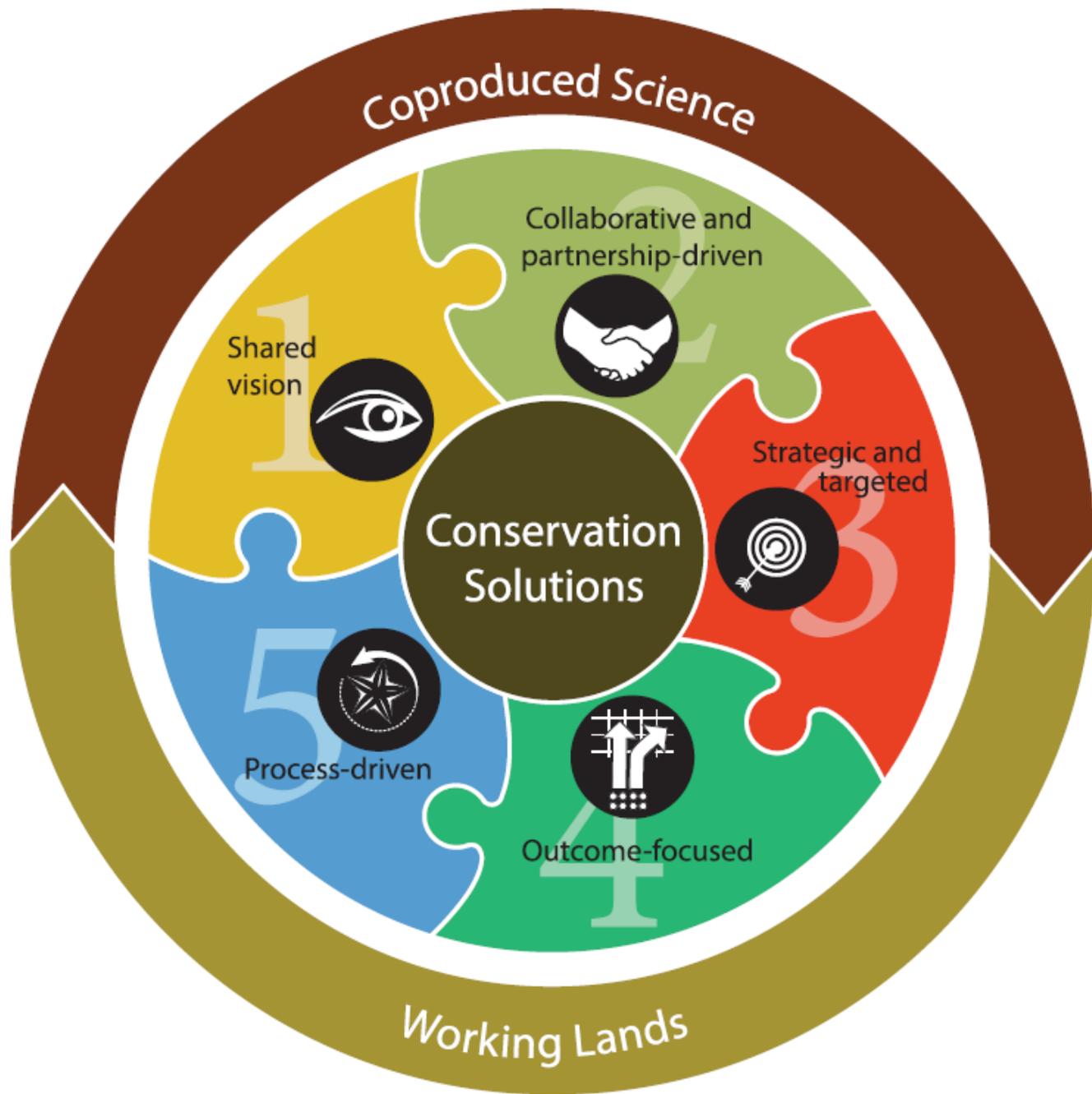
July 2022

True-color aerial



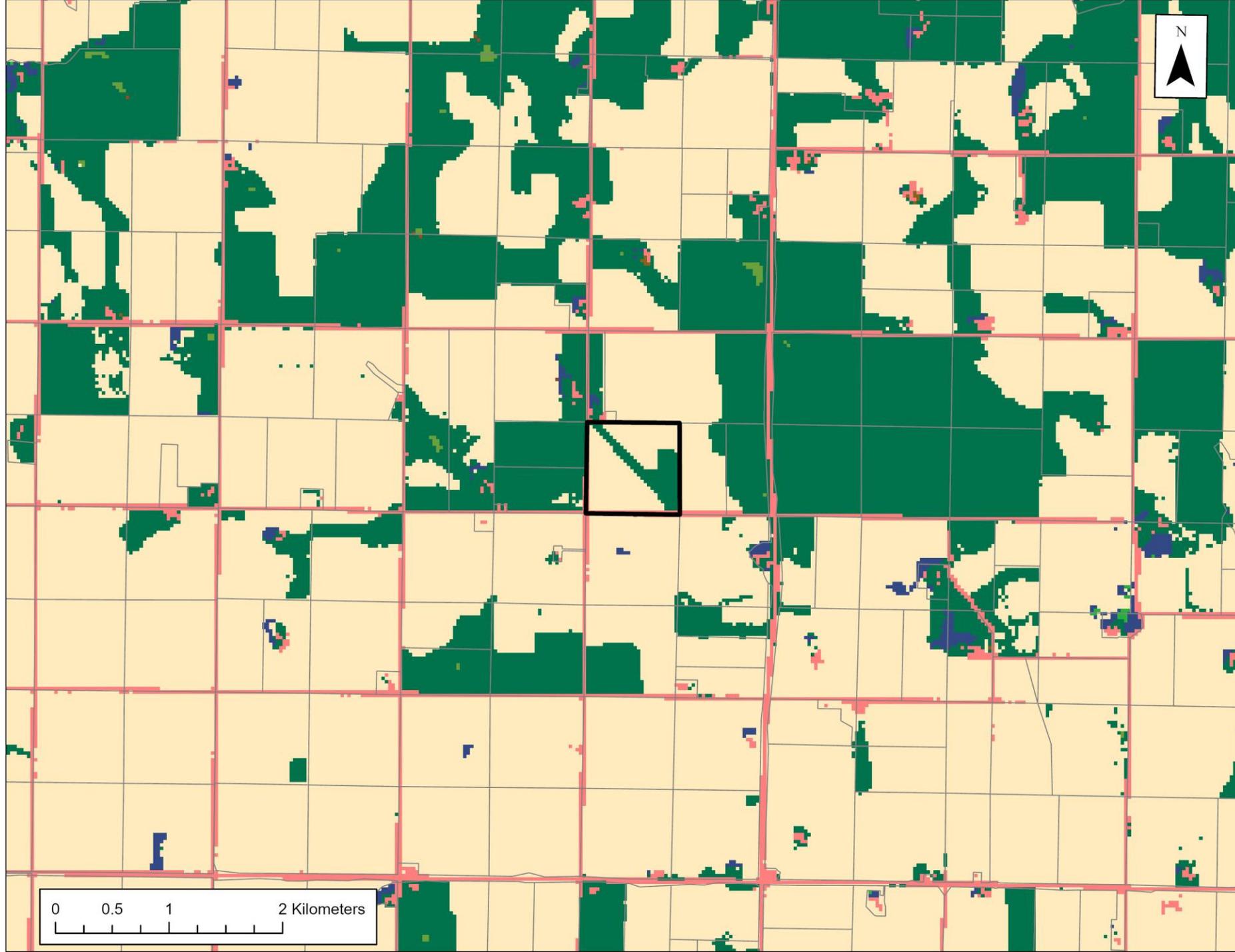
Fine-scale homogeneity

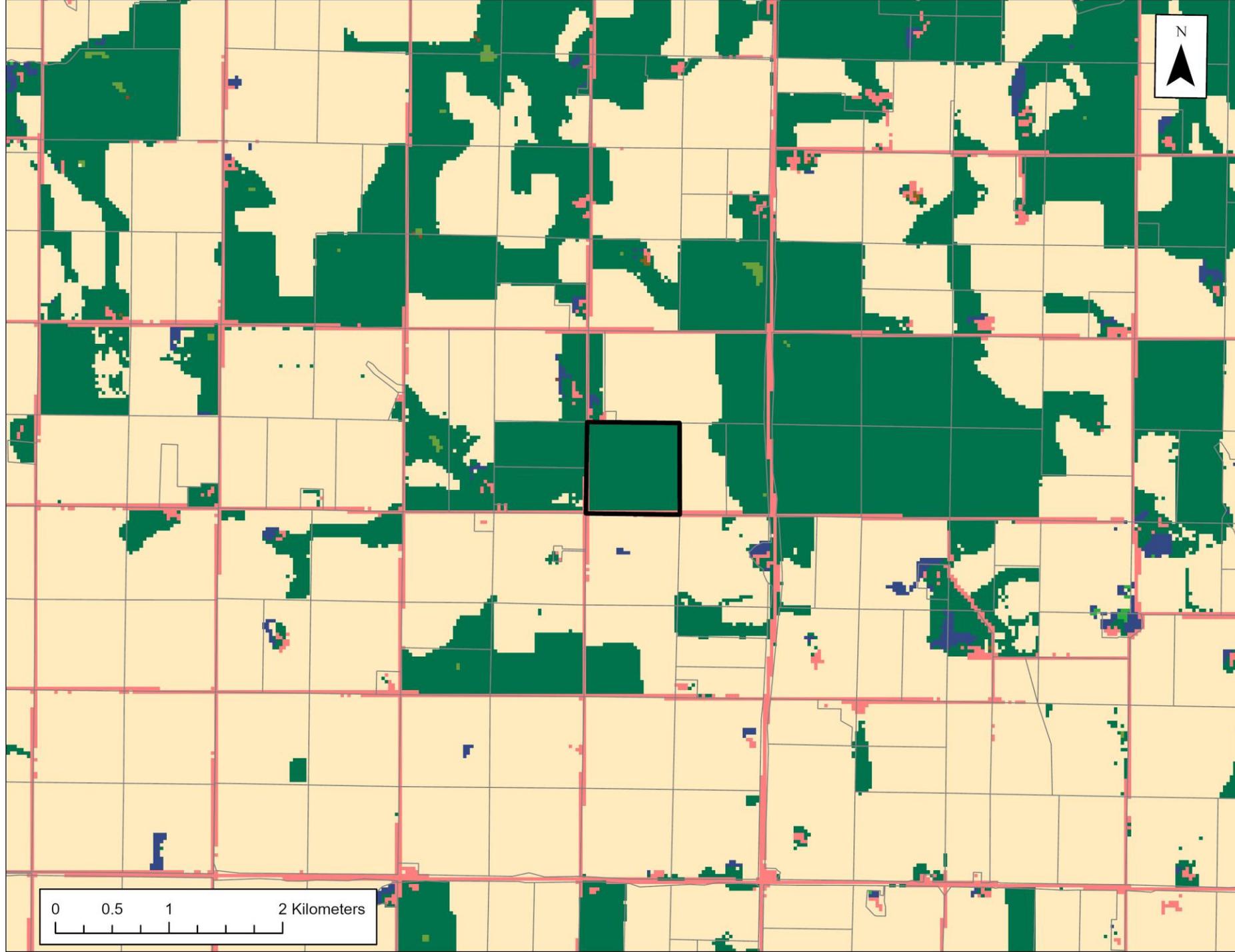


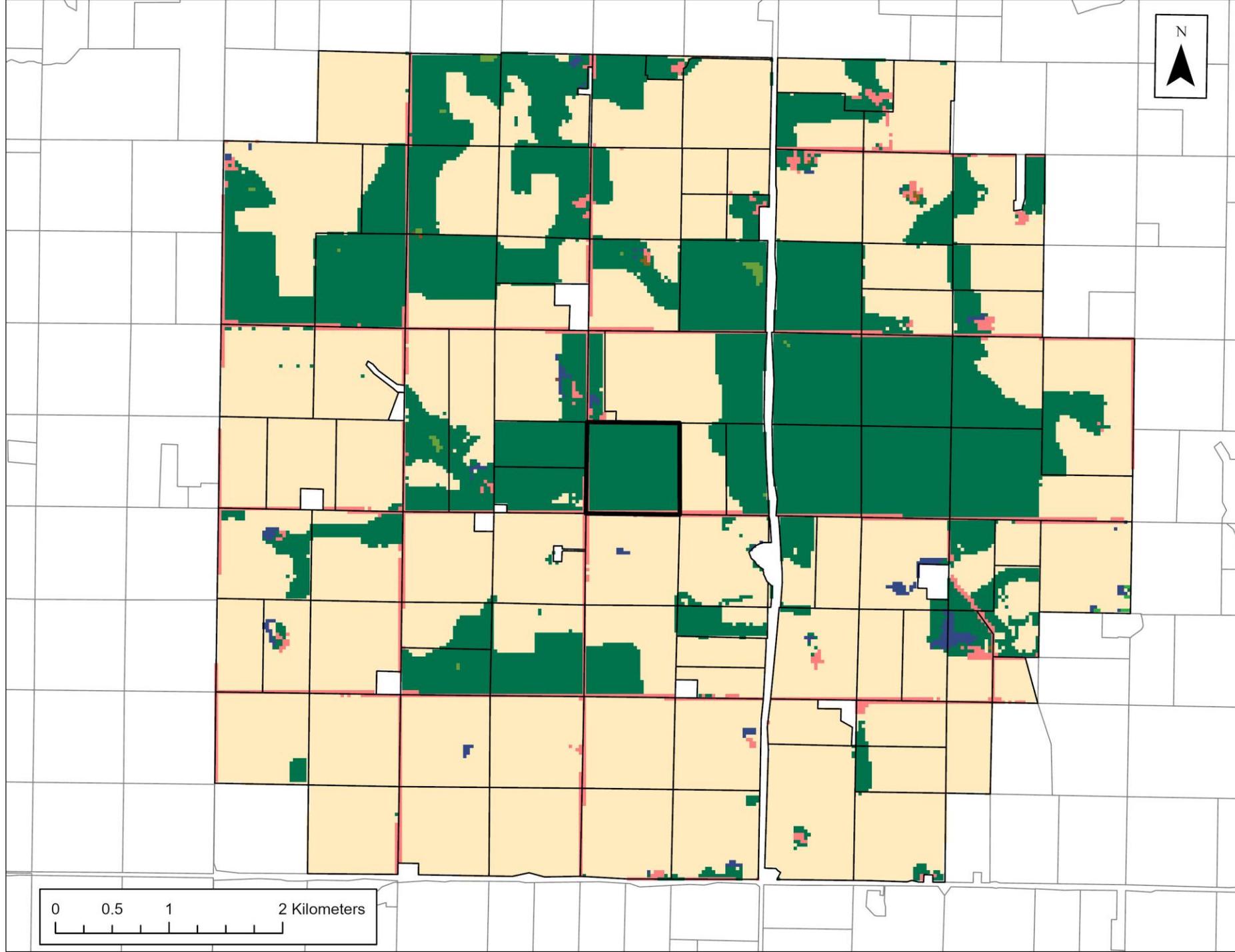


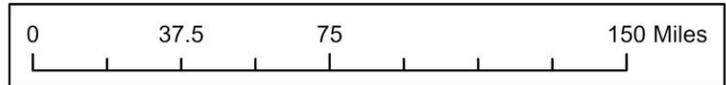
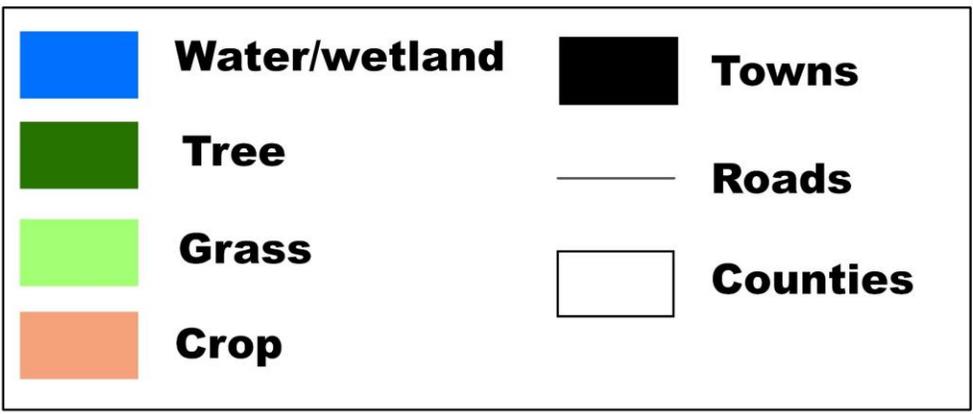
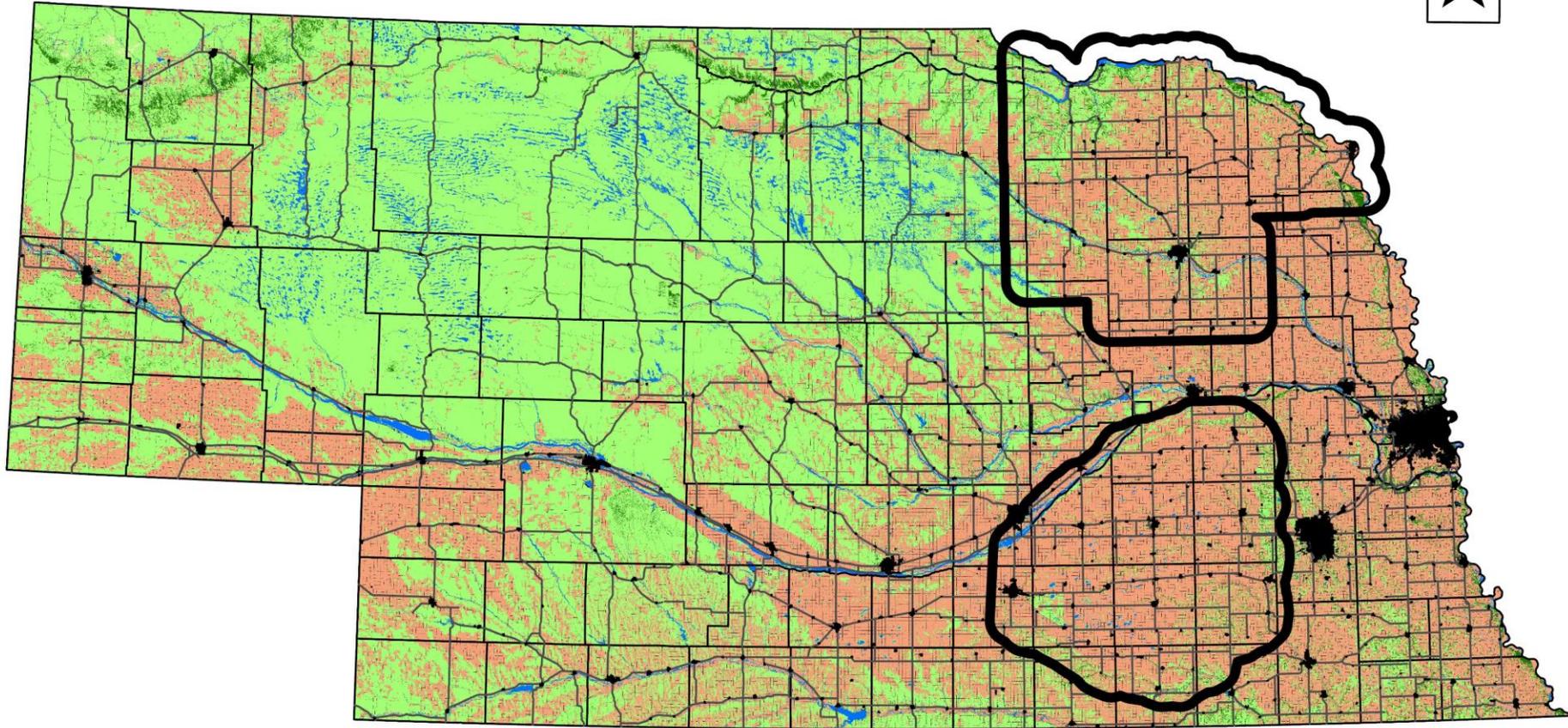
Getting to the right questions

- What qualifies as pheasant habitat?
- How much habitat is needed to meet conservation goals? Where? In what configuration?
- How important is each habitat patch to the landscape pheasant population?
- How does landuse change affect pheasants?









Pheasants 365: A Review of Seasonal Ring-Necked Pheasant Habitat in Central North America

Allison J. Barg¹ | Megan Baldissara¹ | Daniel R. Uden² | John P. Carroll¹ | Andrew Little¹

¹School of Natural Resources, University of Nebraska-Lincoln, Lincoln, Nebraska, USA | ²School of Natural Resources, Department of Agronomy and Horticulture, Center for Resilience in Agricultural Working Landscapes, University of Nebraska-Lincoln, Lincoln, Nebraska, USA

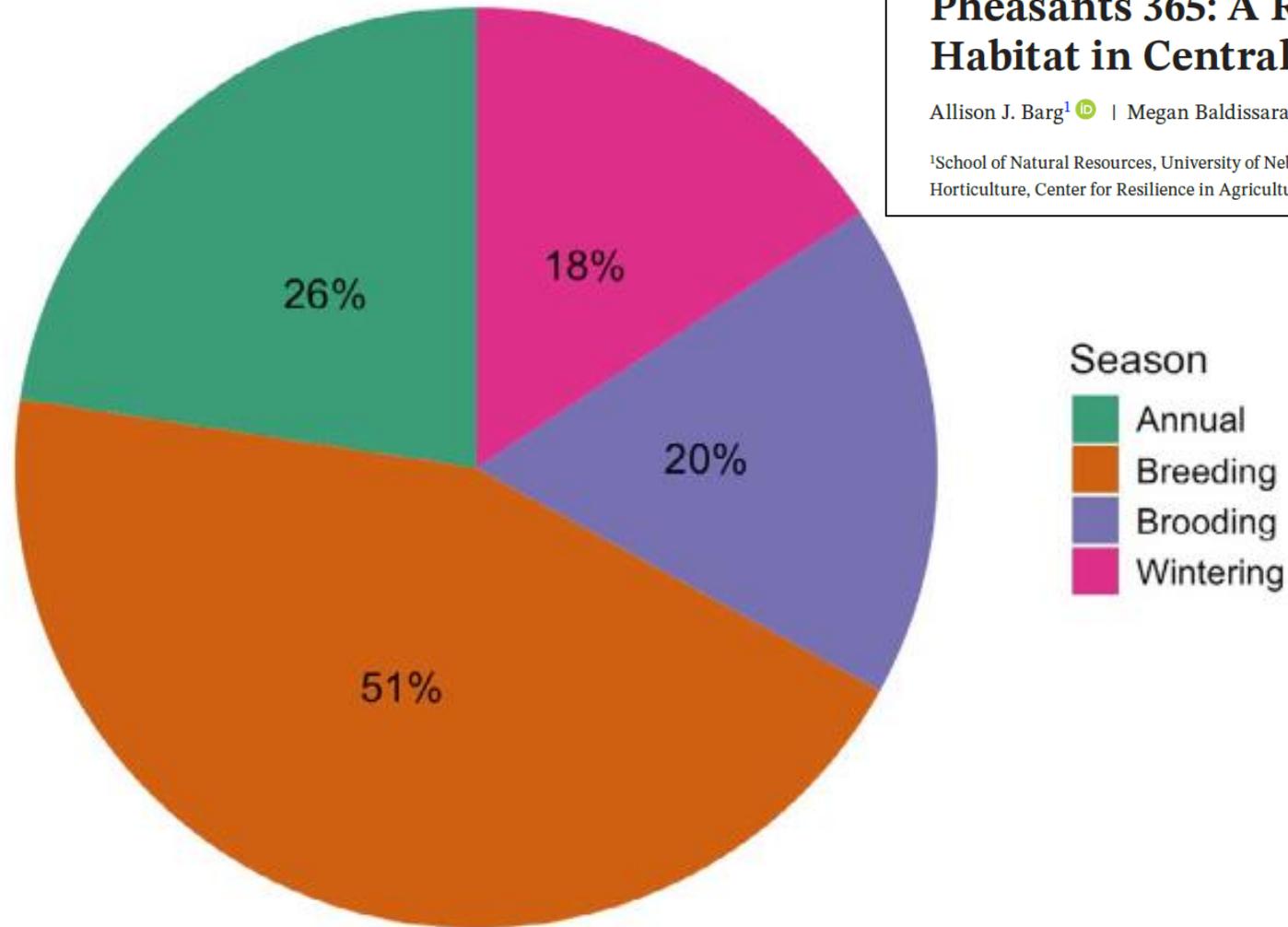


FIGURE 2 | Percentage of papers reporting results for each of the key life stages for pheasants.

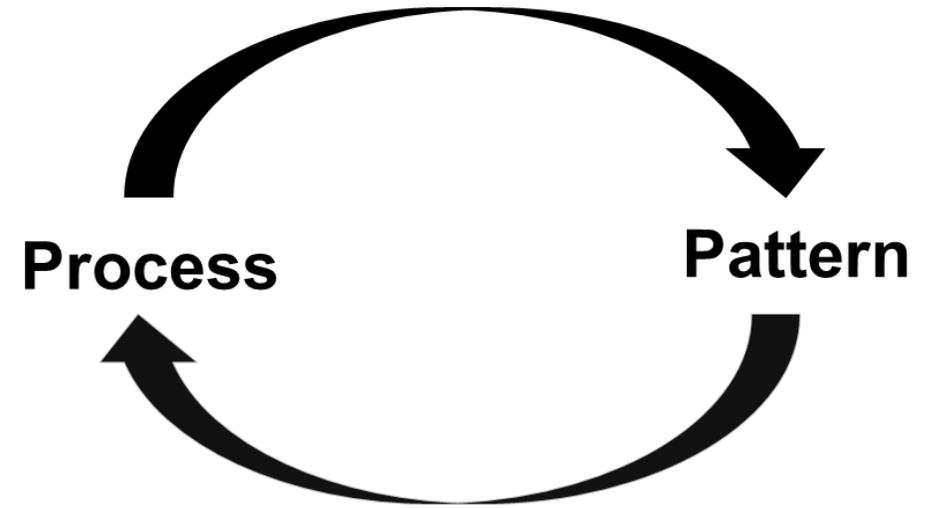
Spatial pattern: two components

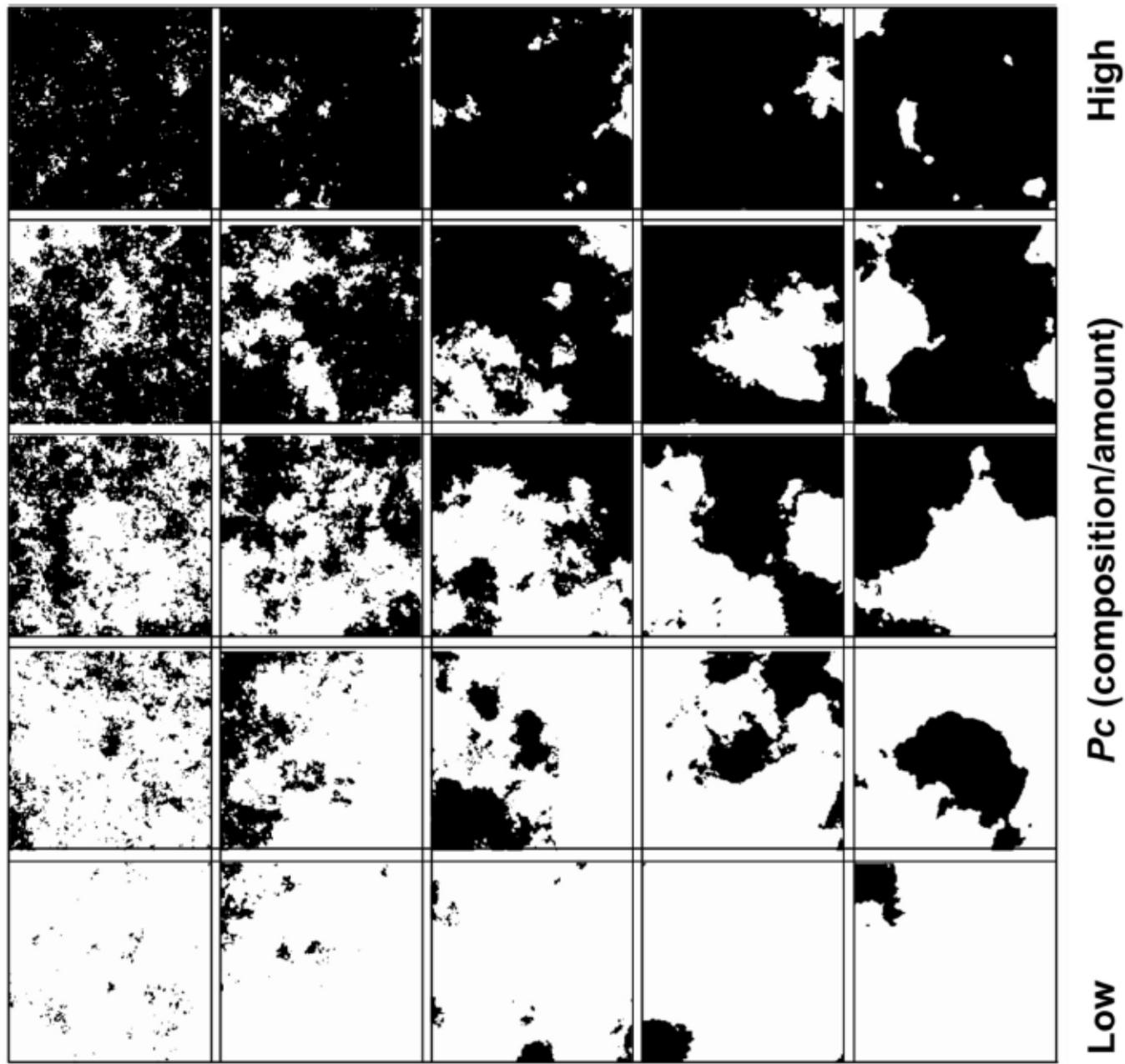
Composition: What or how much of something there is (e.g., wetland or grassland habitat)

- Presence/absence
- Abundance

Configuration: Spatial arrangement of something (e.g., wetland or grassland)

- Connectivity
- Density





Low

H (configuration /connectivity)

High

Landscape mosaics

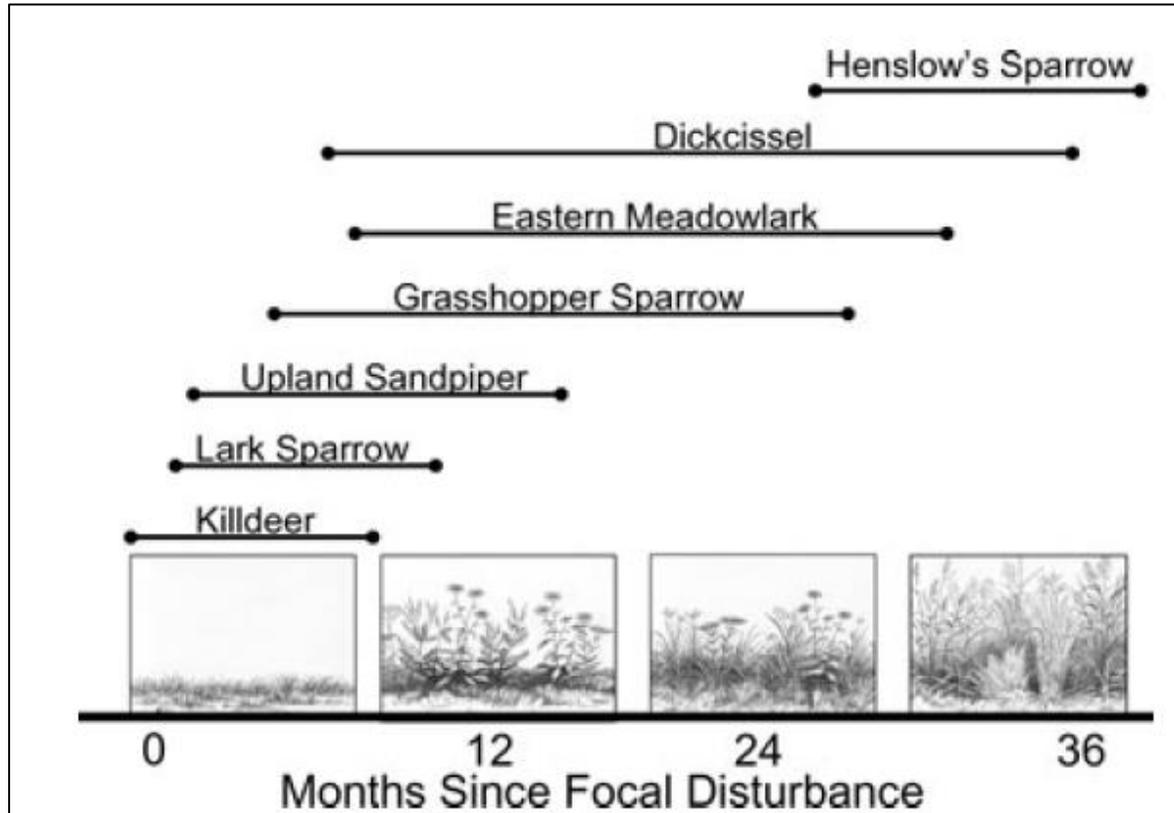
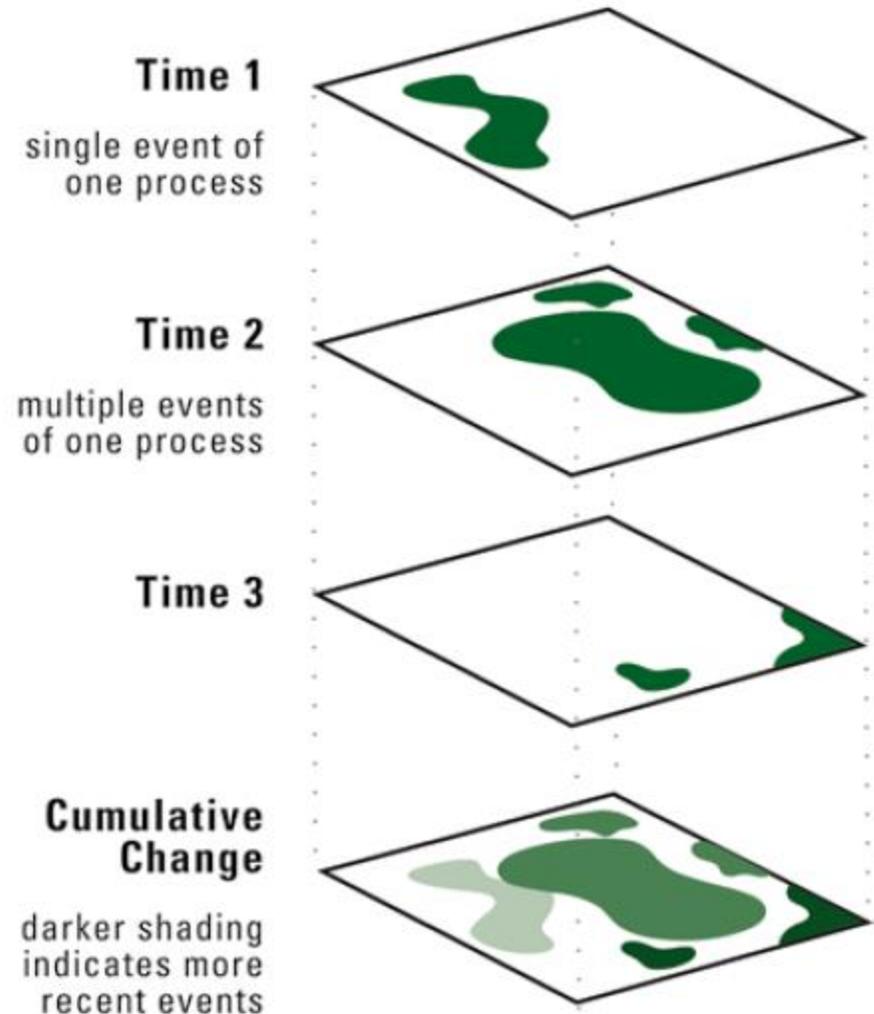
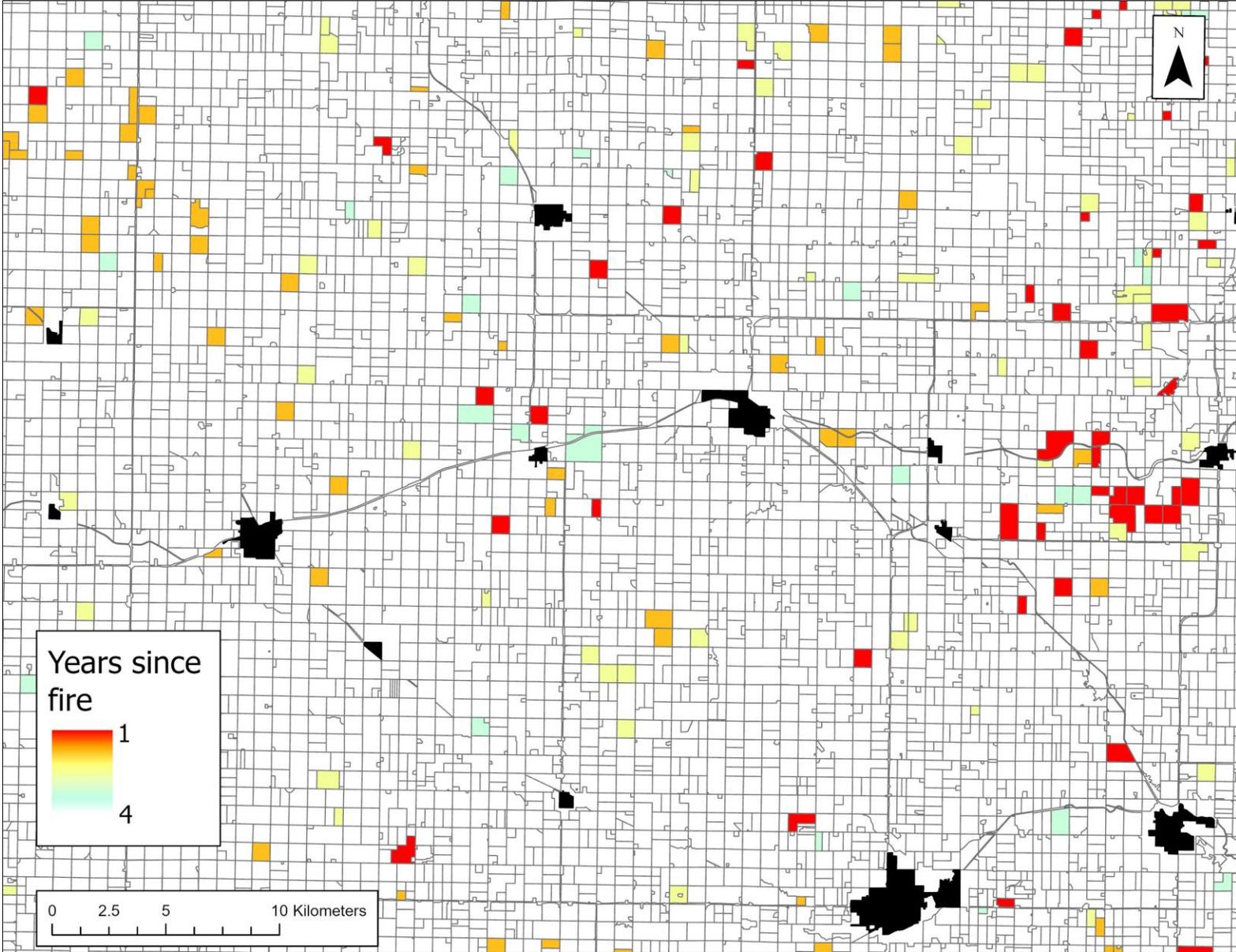


Figure 5. Response of grassland birds to time since focal disturbance by fire and grazing at the Tallgrass Prairie Preserve from 2001 to 2003. Art work in the figure courtesy of Gary Kerby.

(a) Spatial and Temporal Change of a Single Process at a Site



Turner & Gardner (2015)



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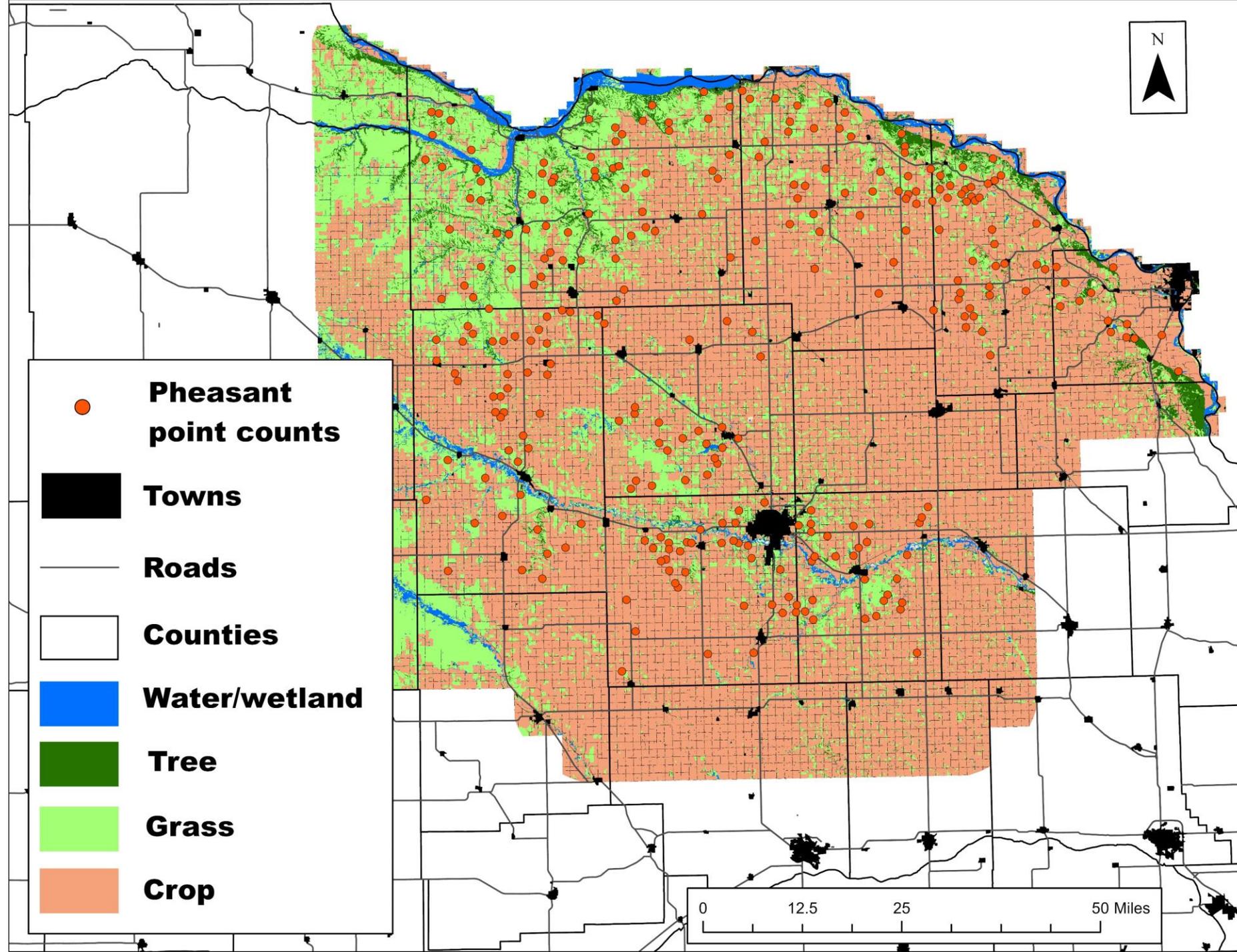
Dissertations and Doctoral Documents from
University of Nebraska-Lincoln, 2023-

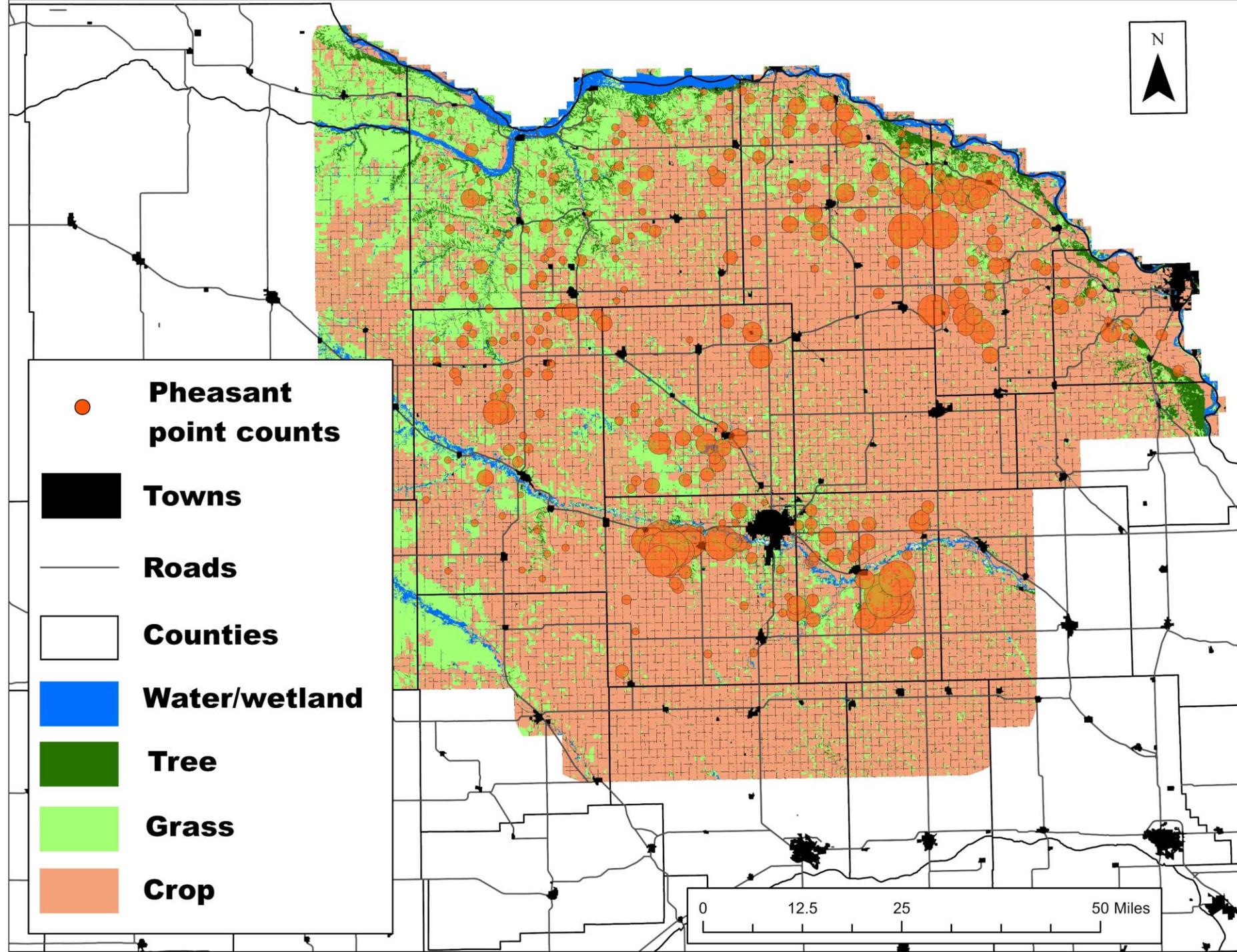
Graduate Studies, UNL

12-2025

Detecting Prescribed Fire, Haying and Grazing Events via Remote Sensing to Create Grassland Disturbance Landcovers for the Ring-necked Pheasant (*Phasianus colchicus*)

Megan Amy Baldissara
University of Nebraska-Lincoln



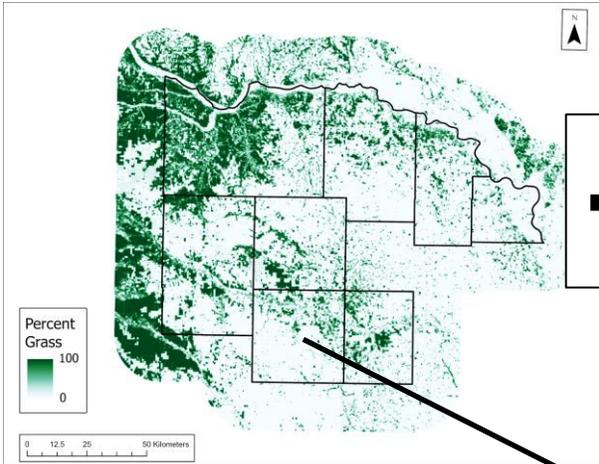


% Grass (50 ac)

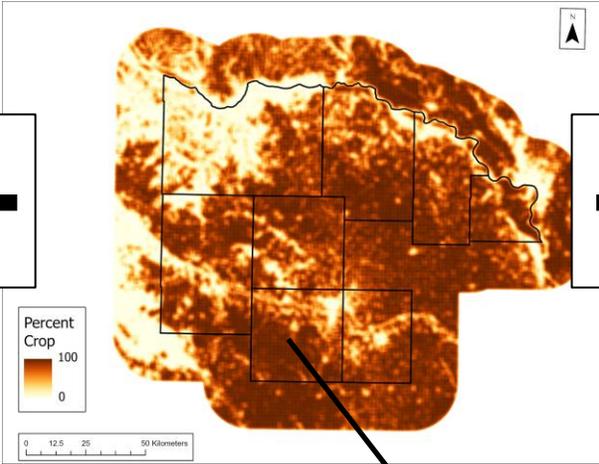
% Crop (1,100 ac)

% Tree (1,100 ac)

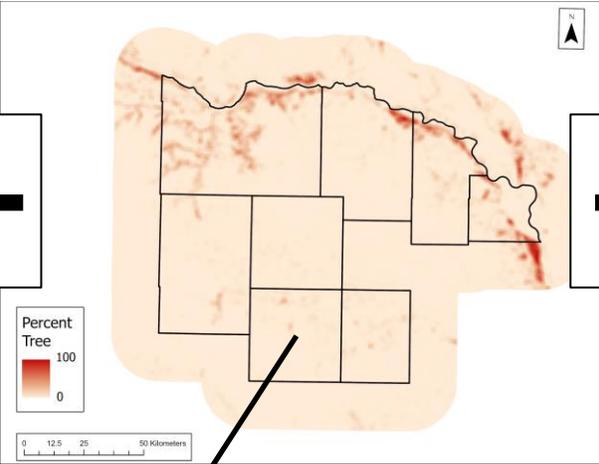
% Wetland (8,000 ac)



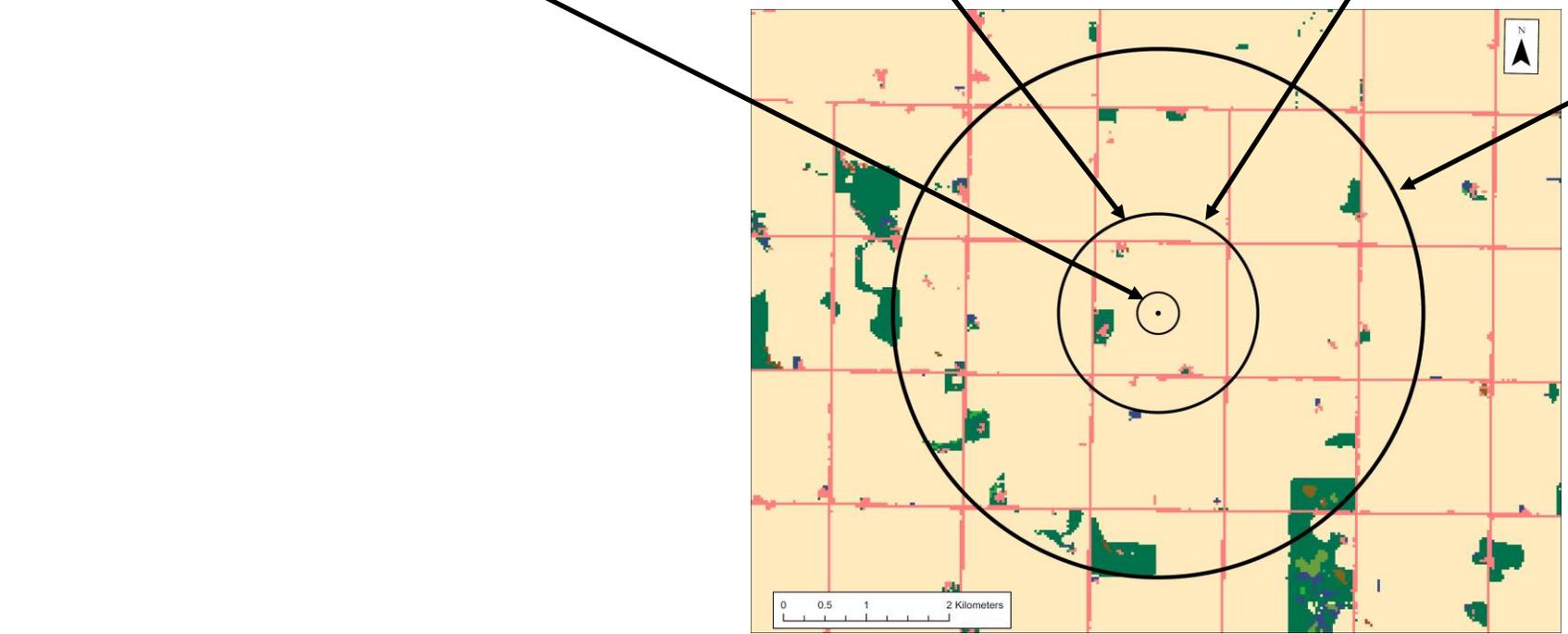
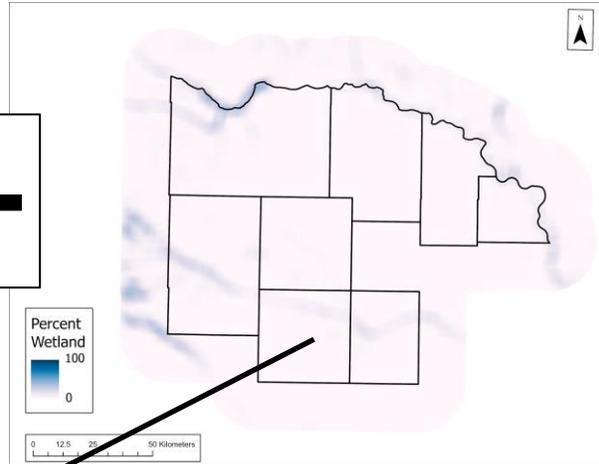
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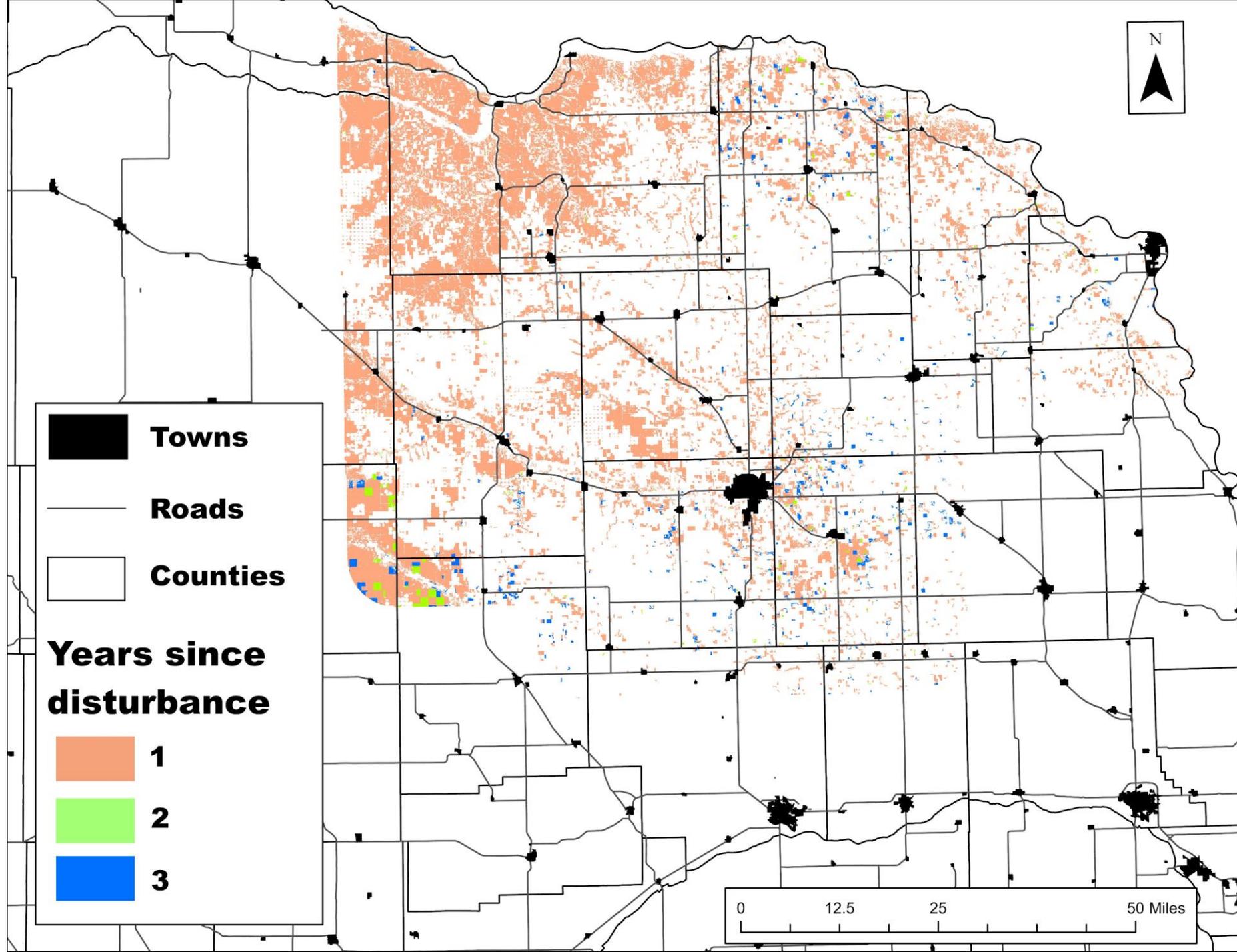


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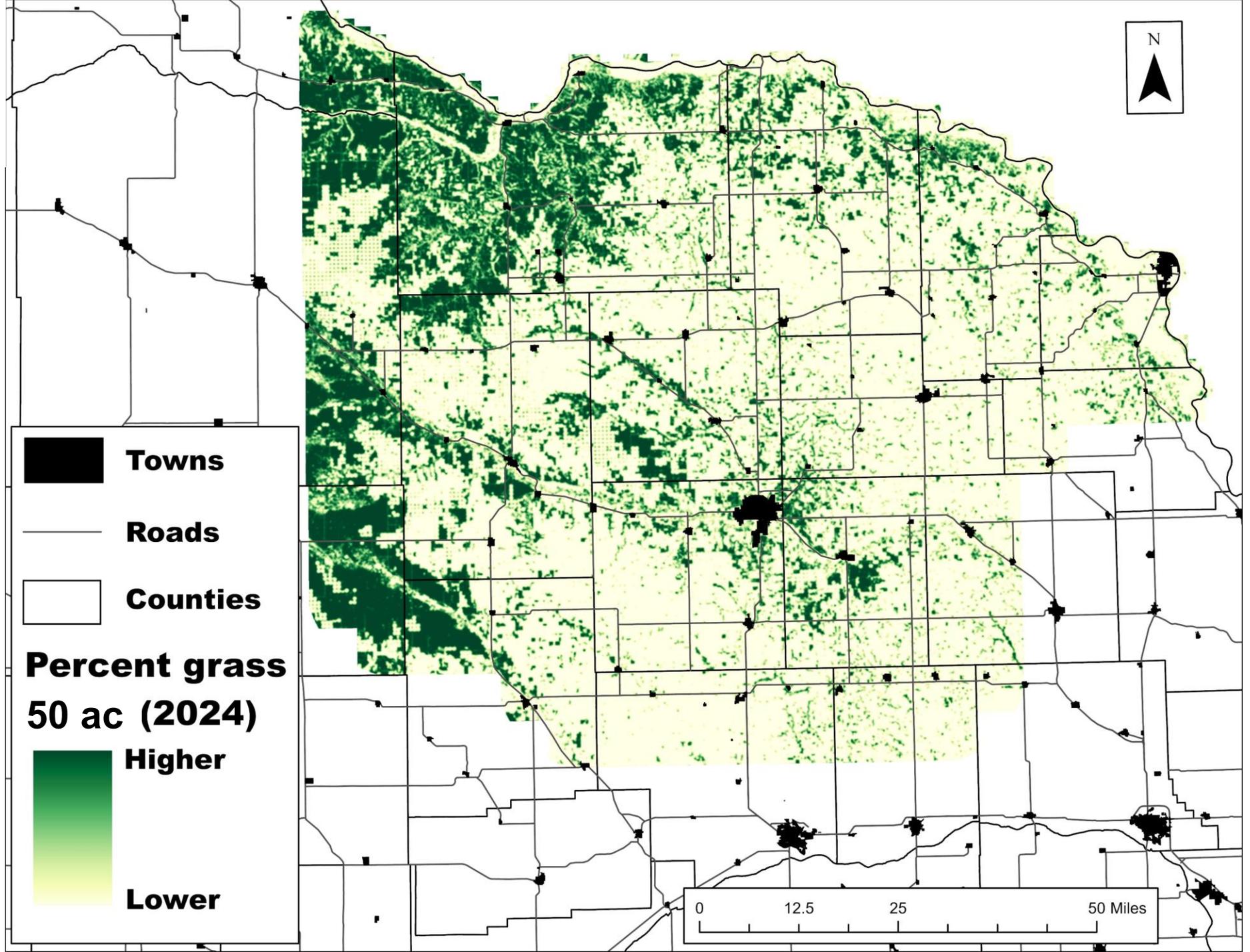


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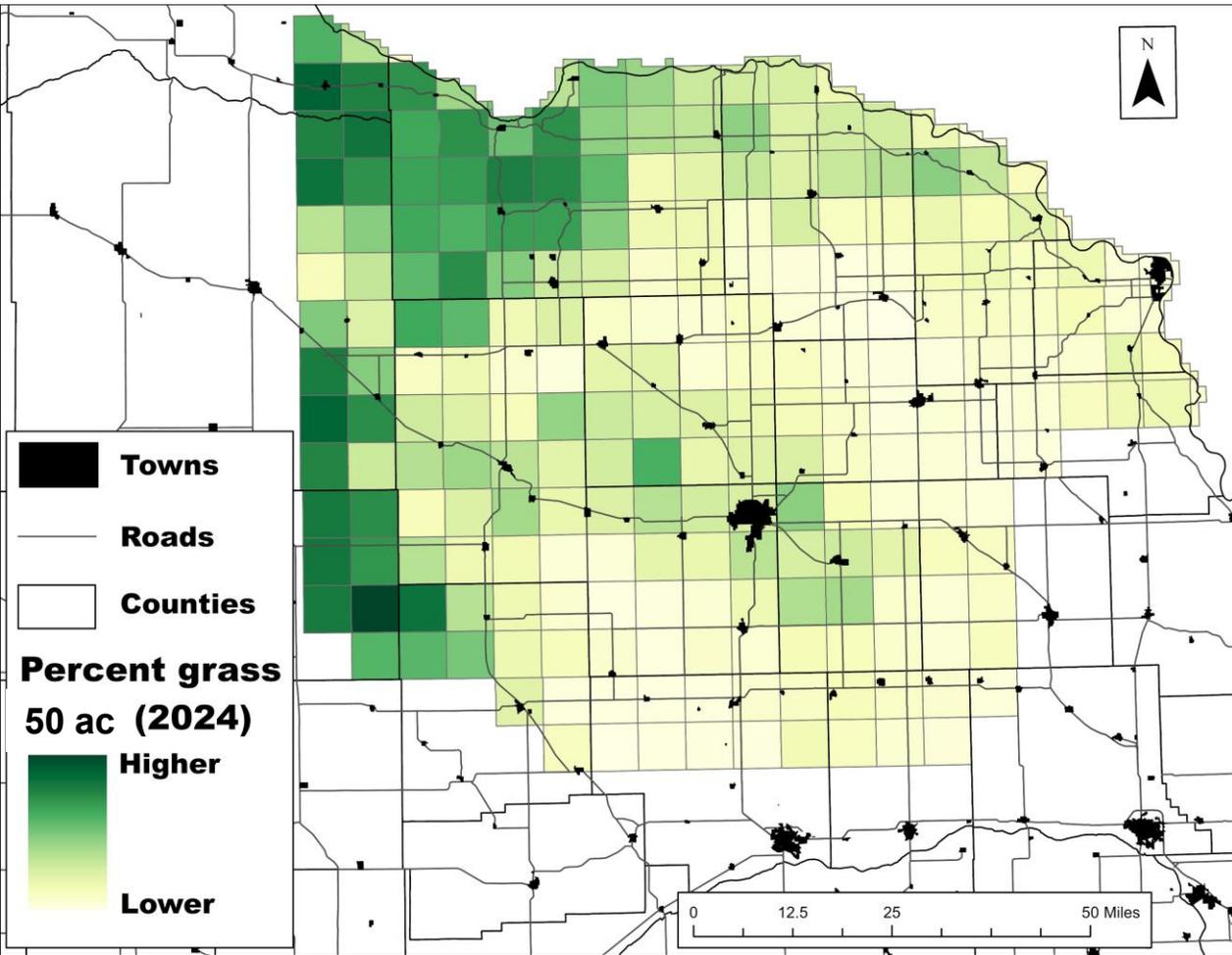




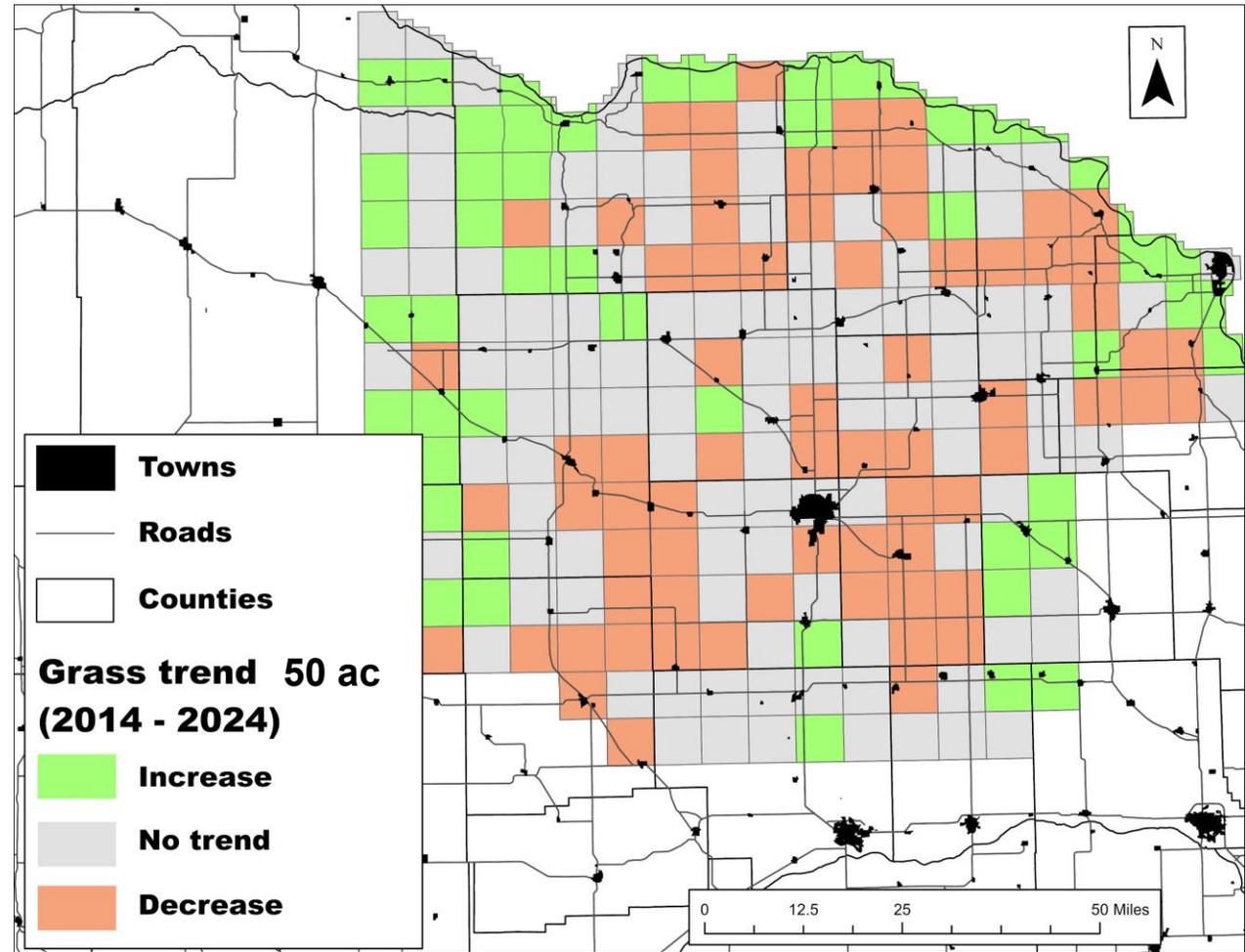
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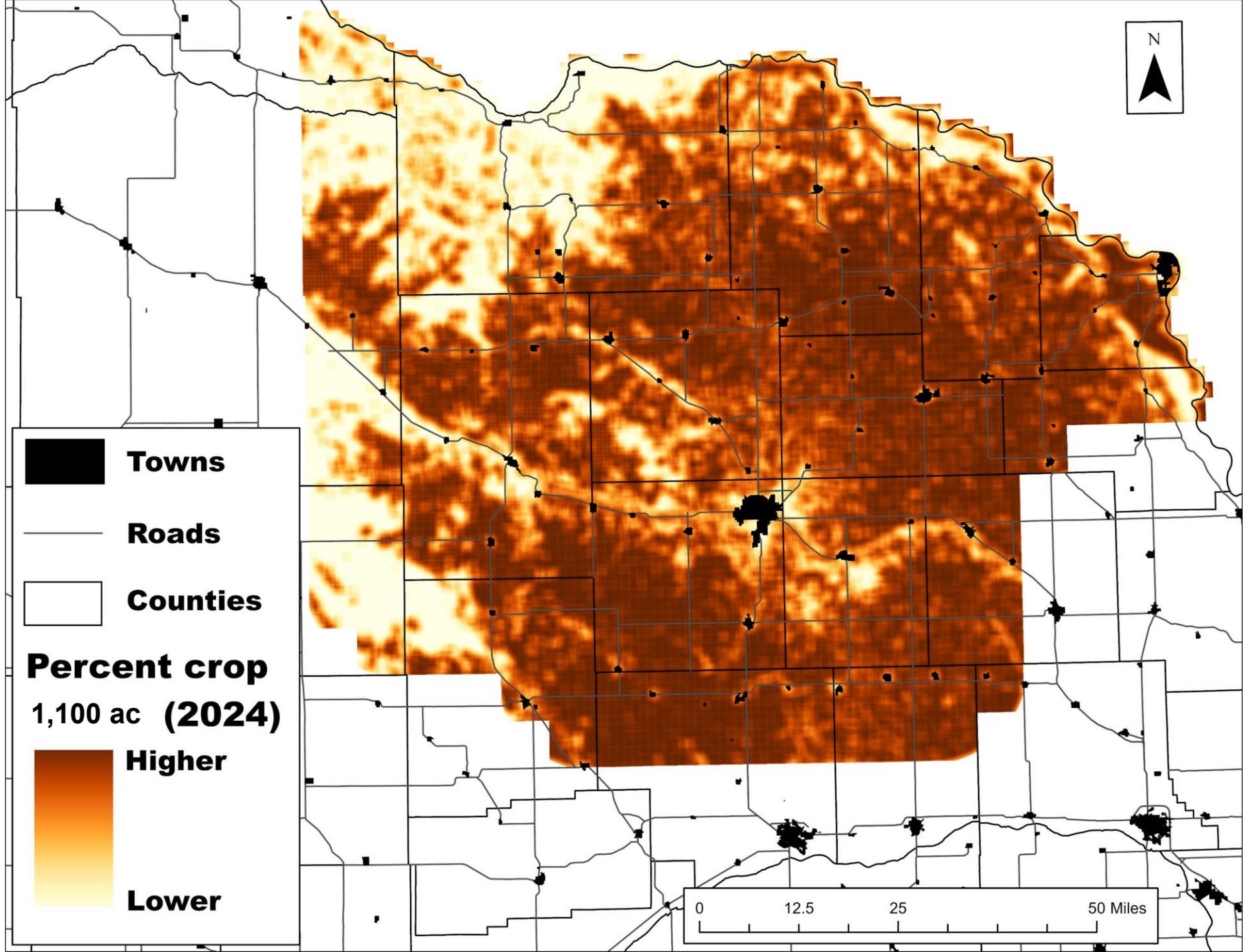
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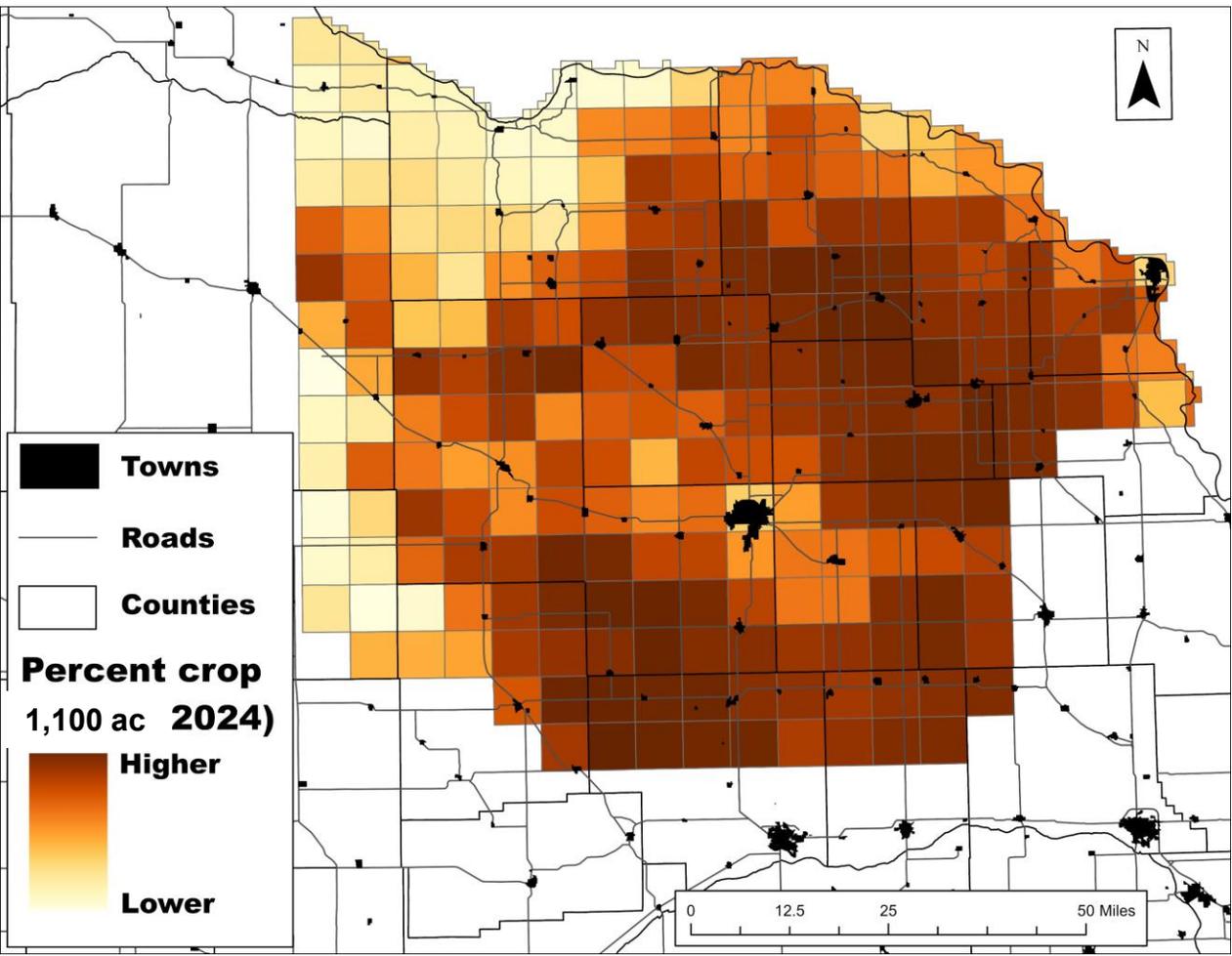
2014-2024



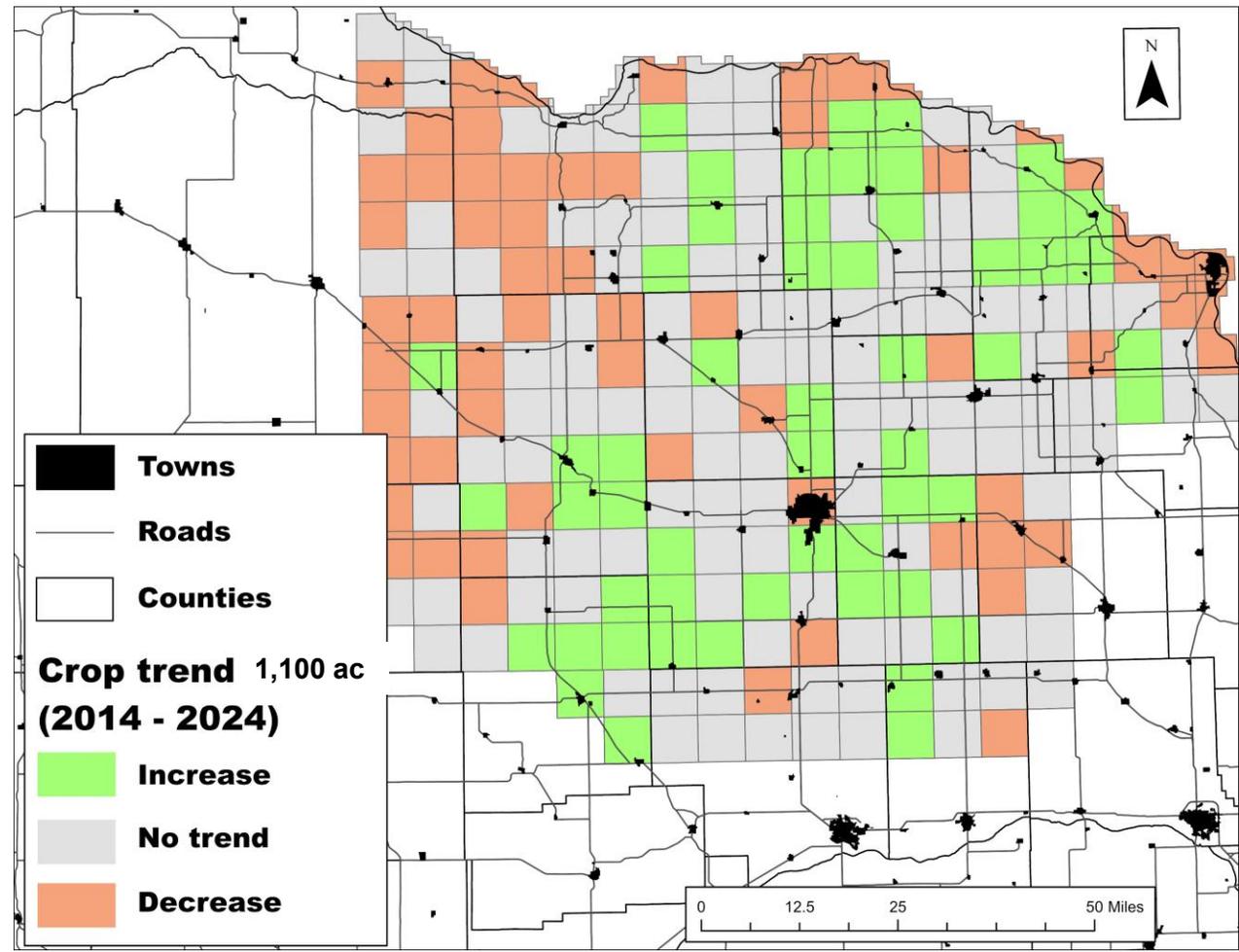
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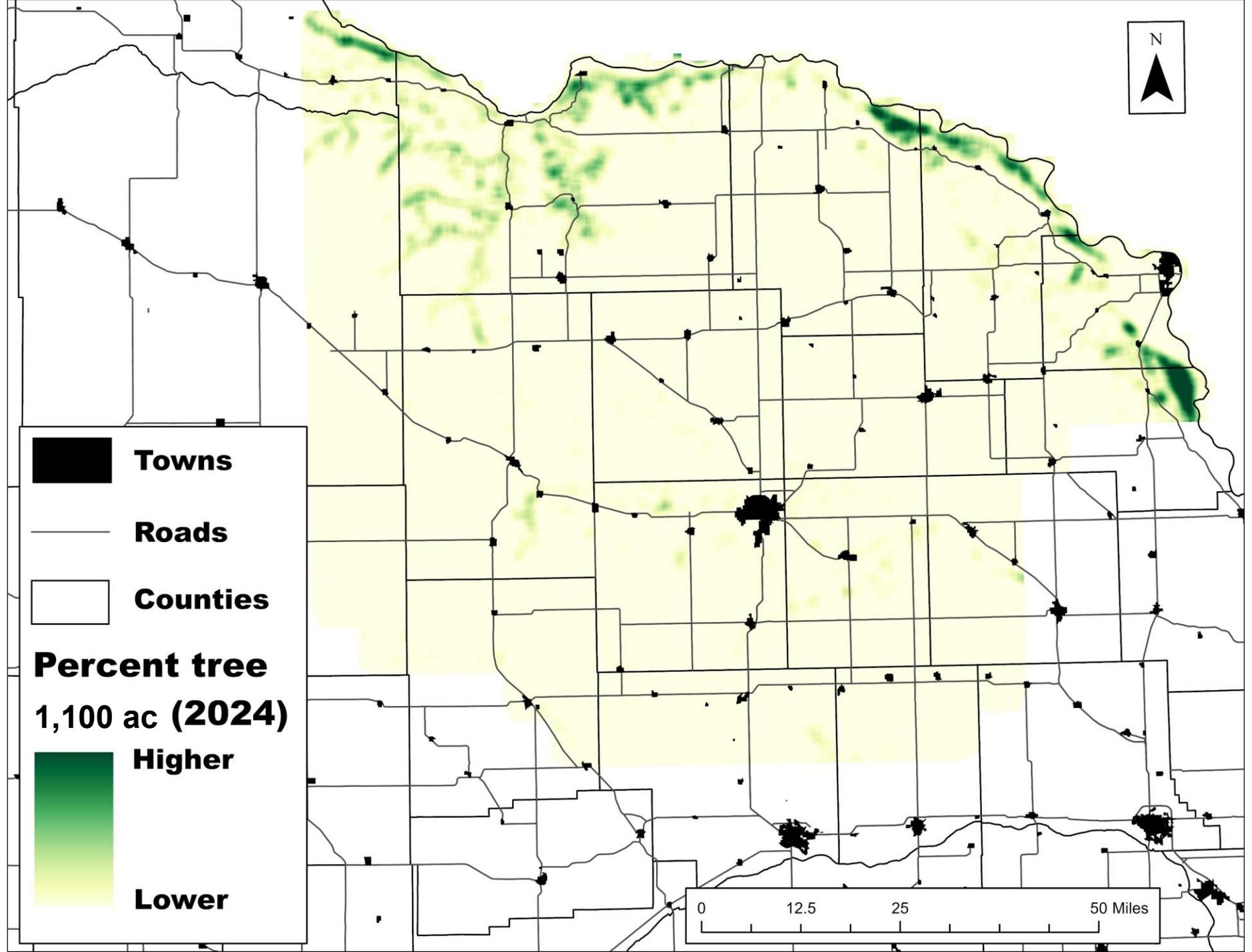
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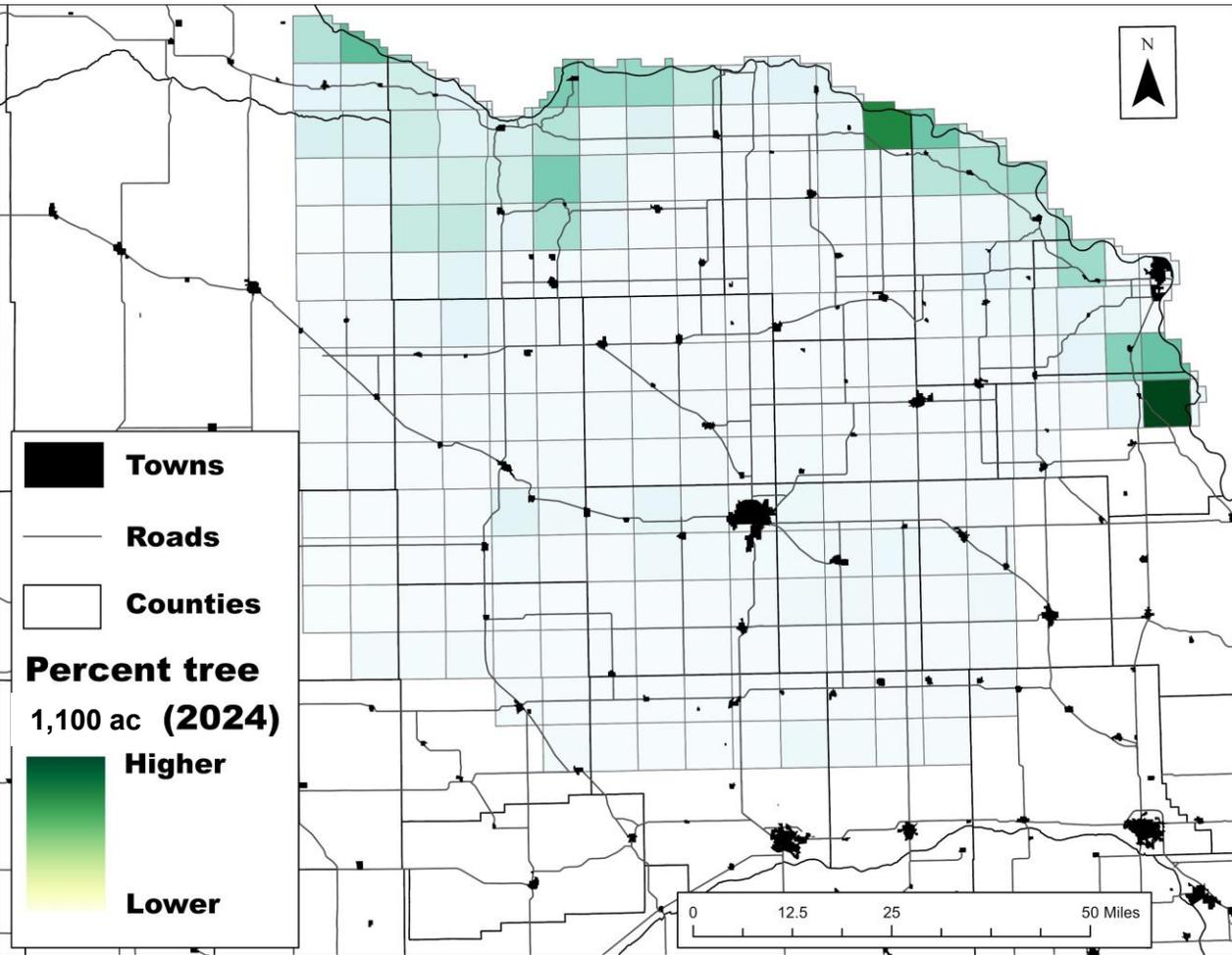
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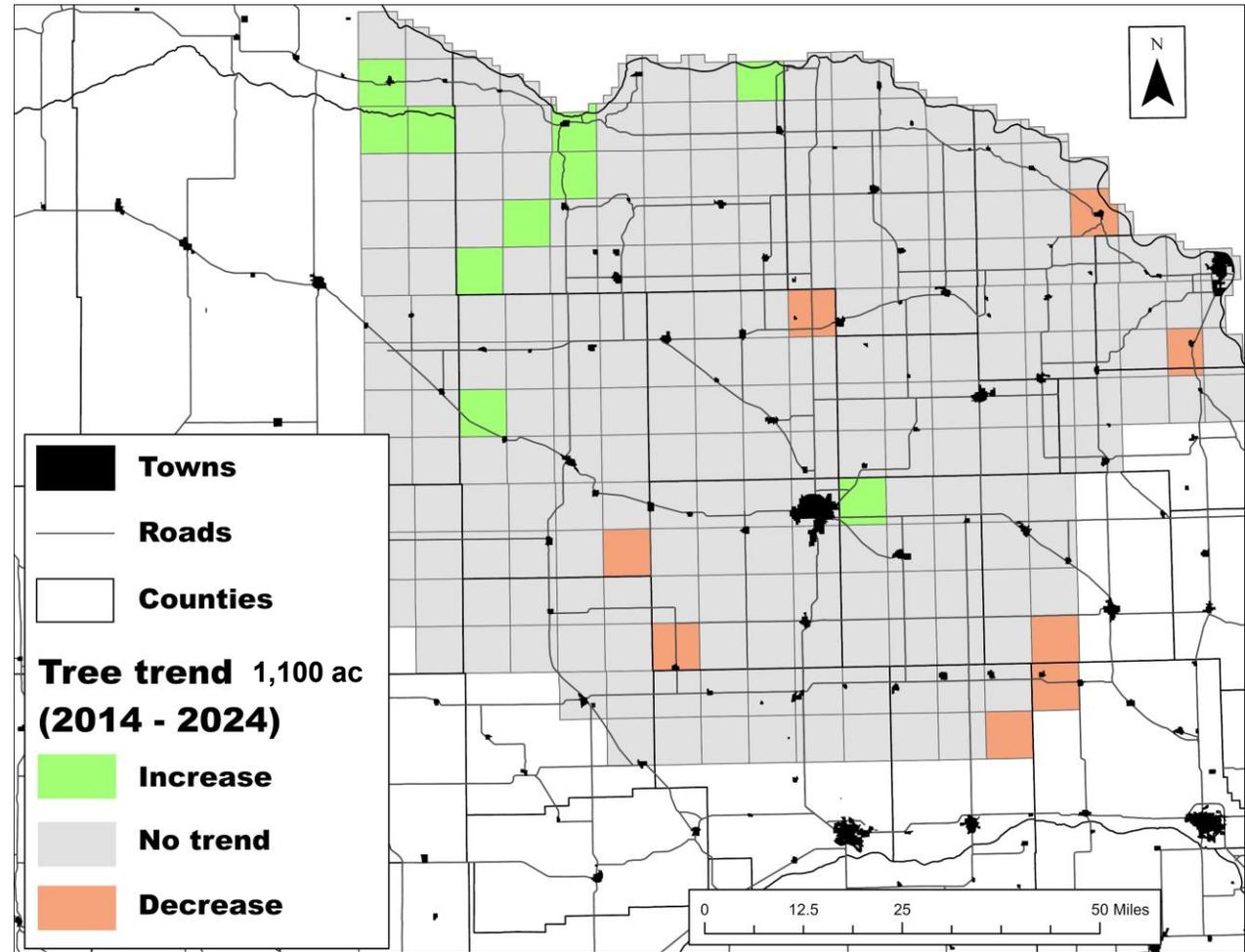
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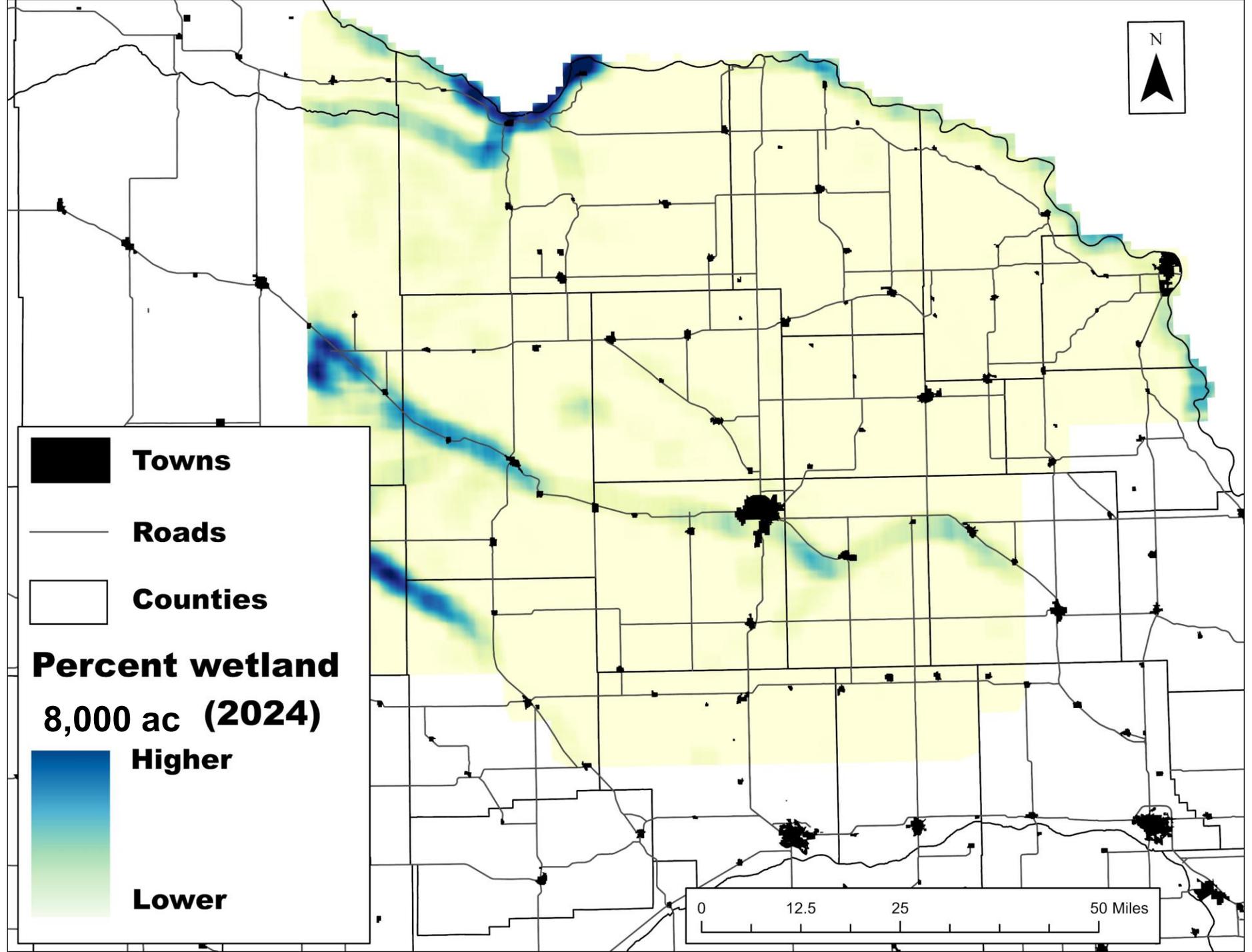
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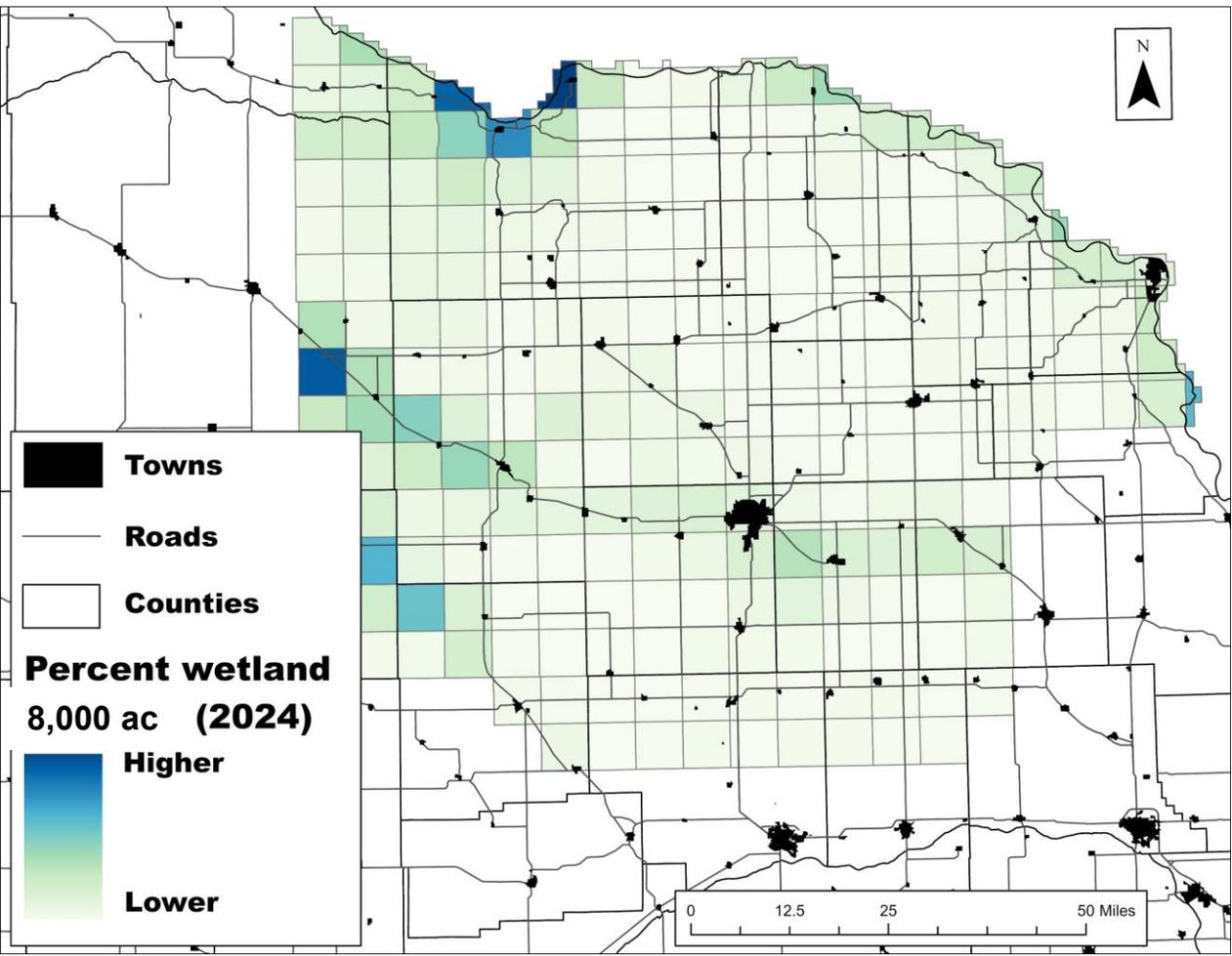
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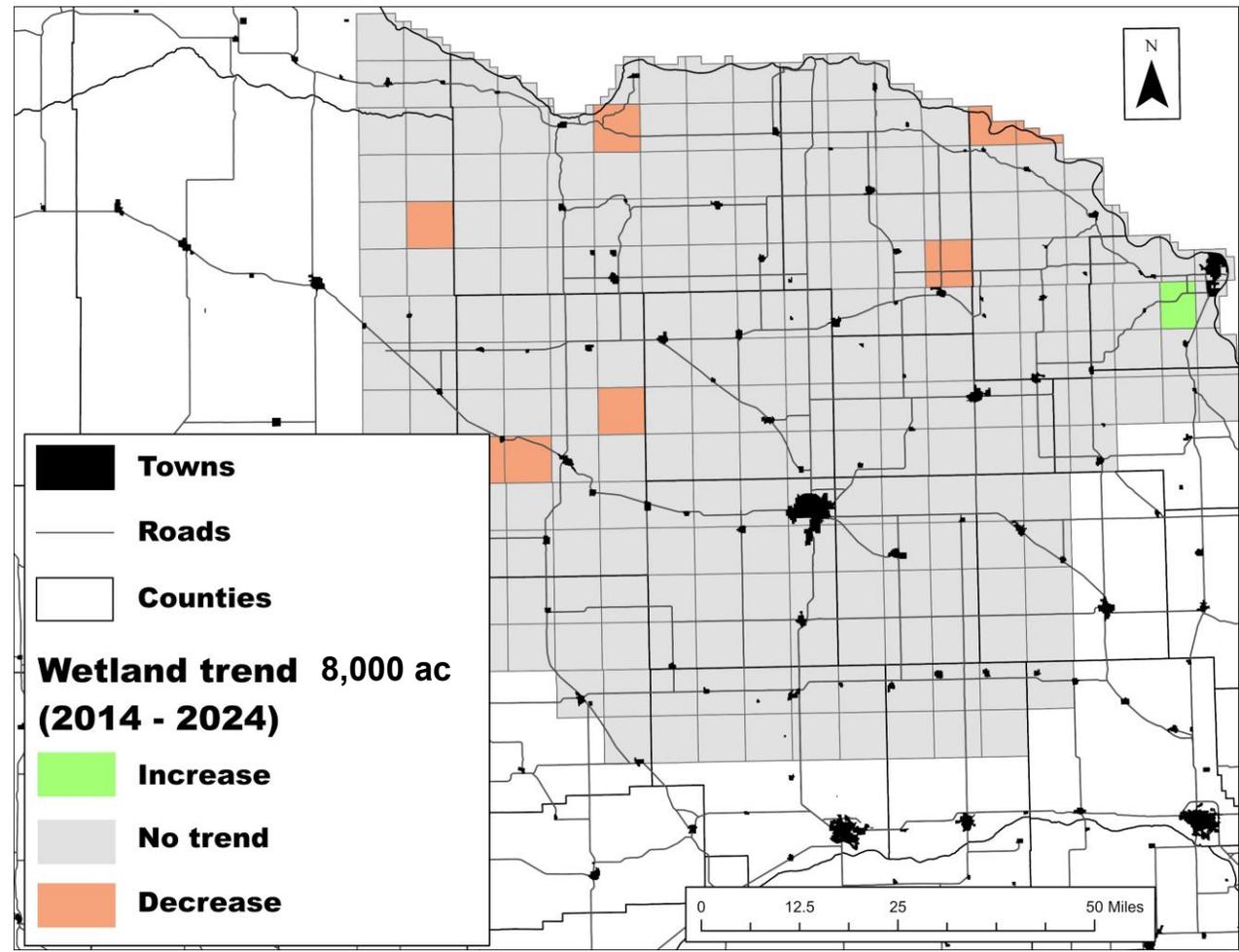
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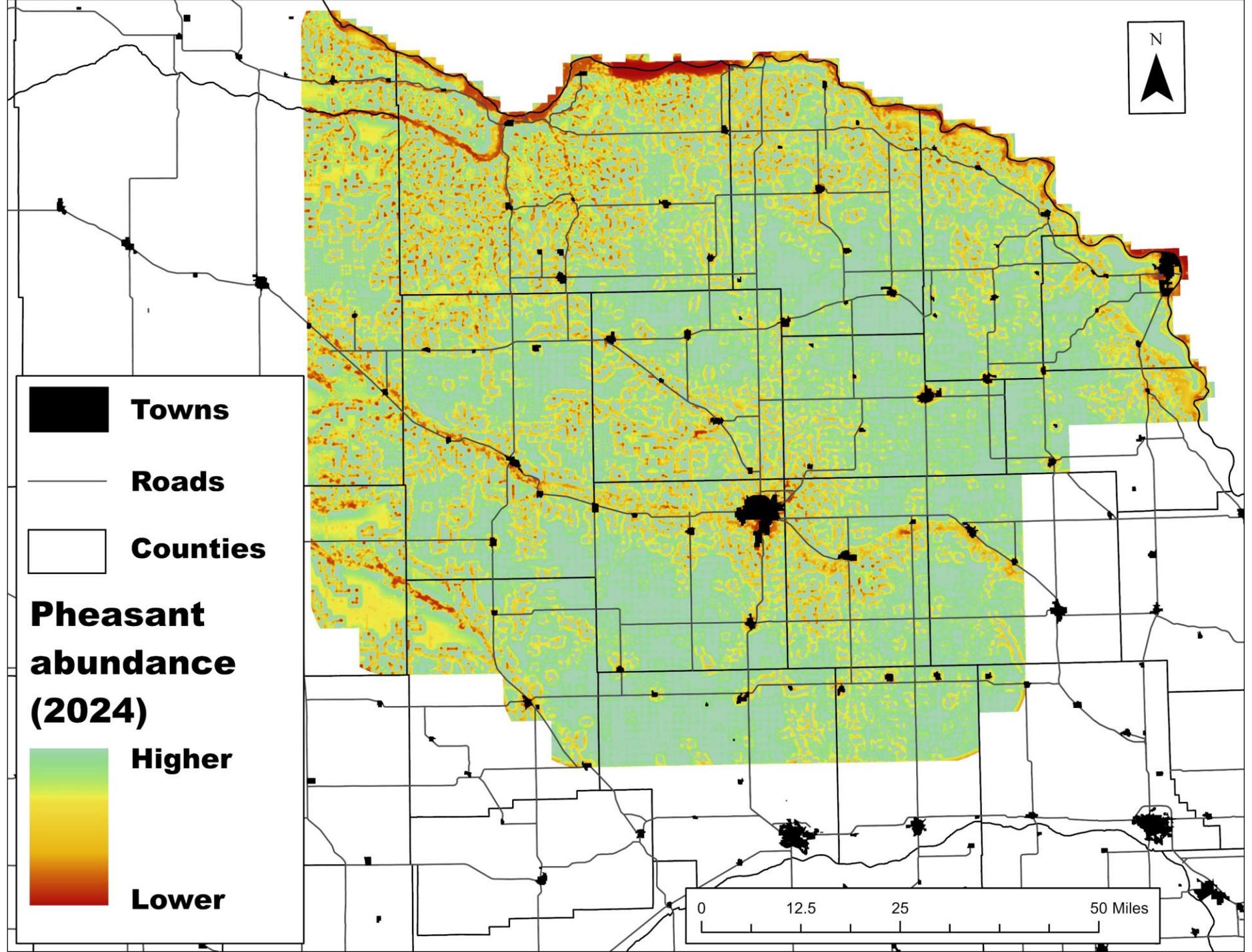
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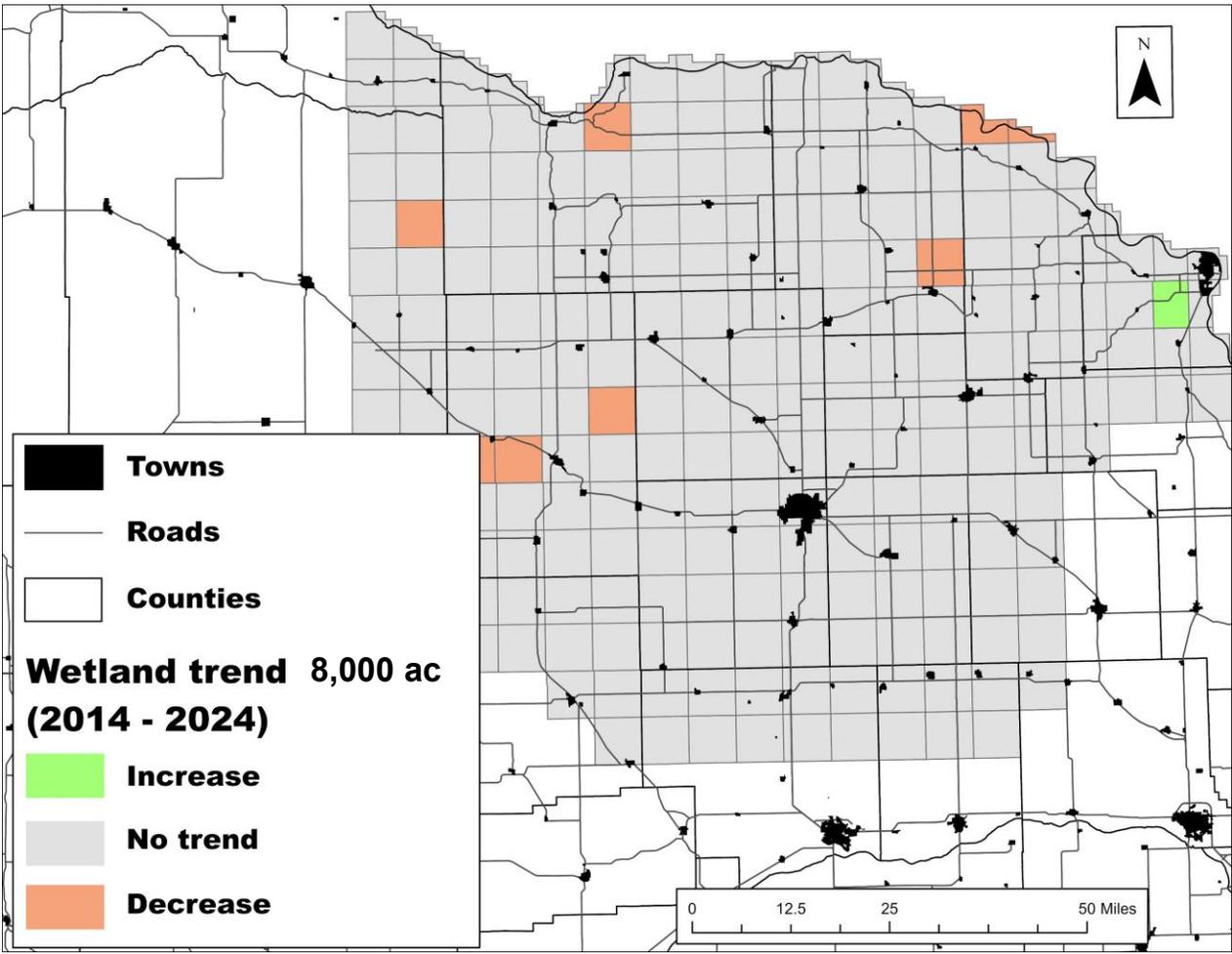
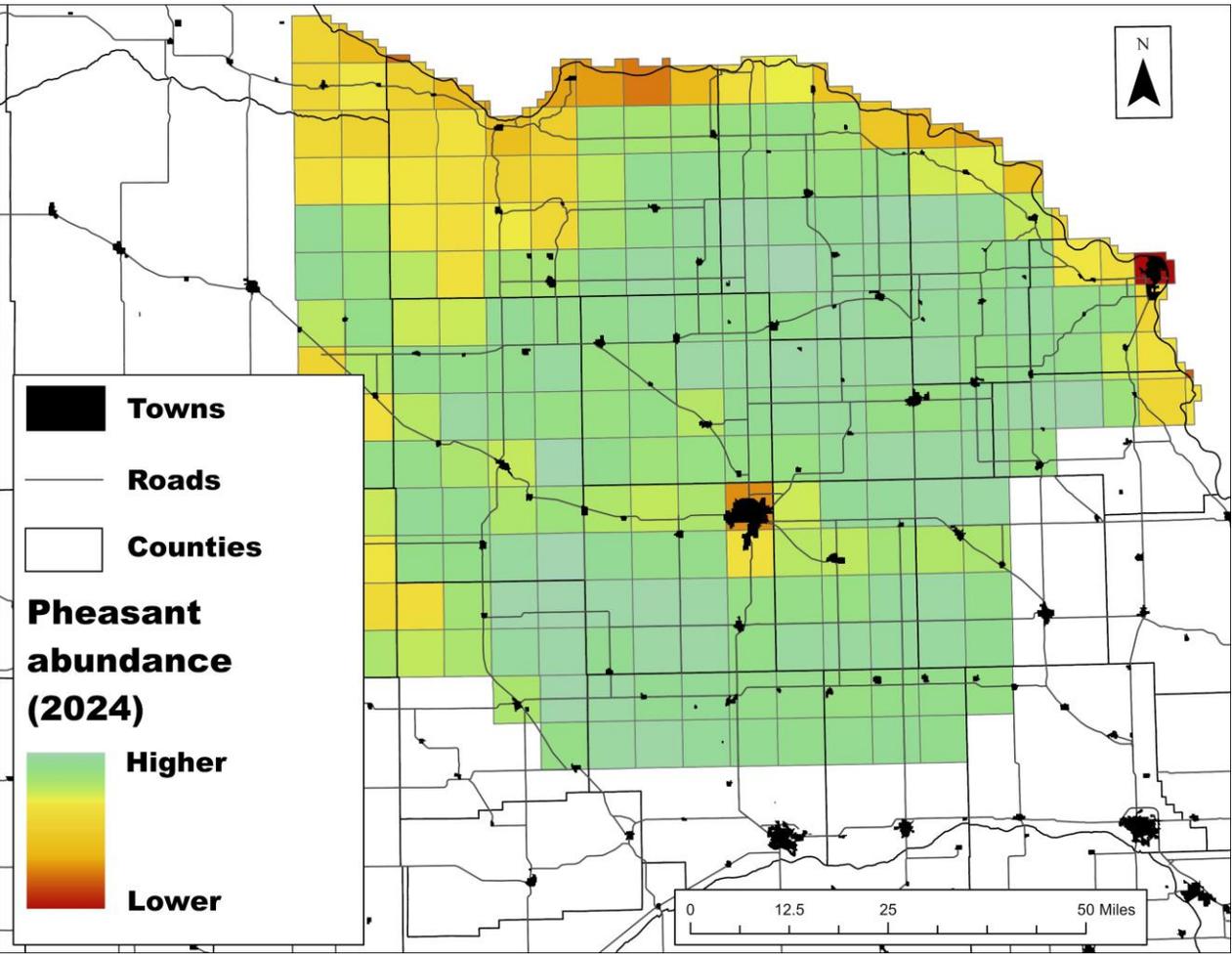


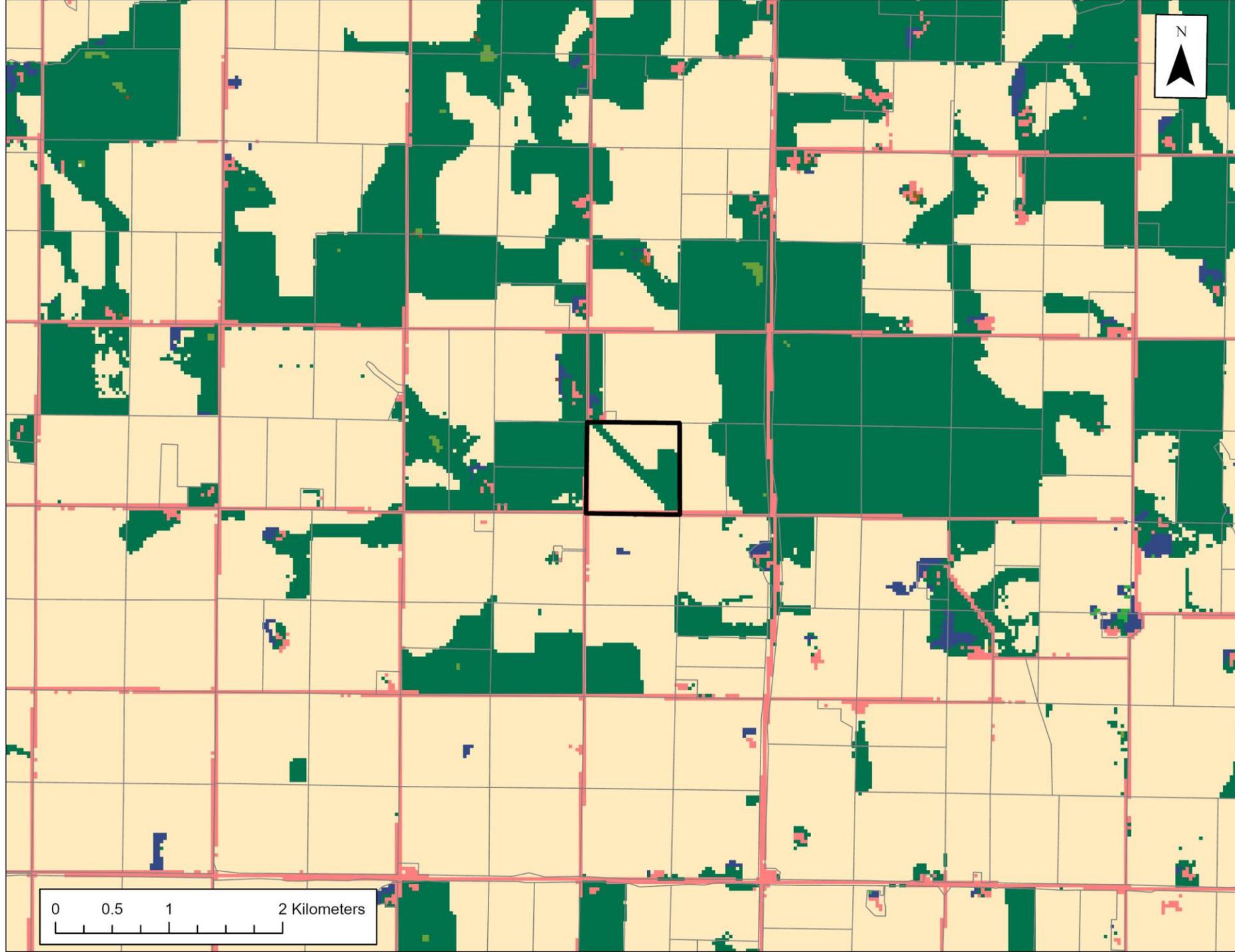
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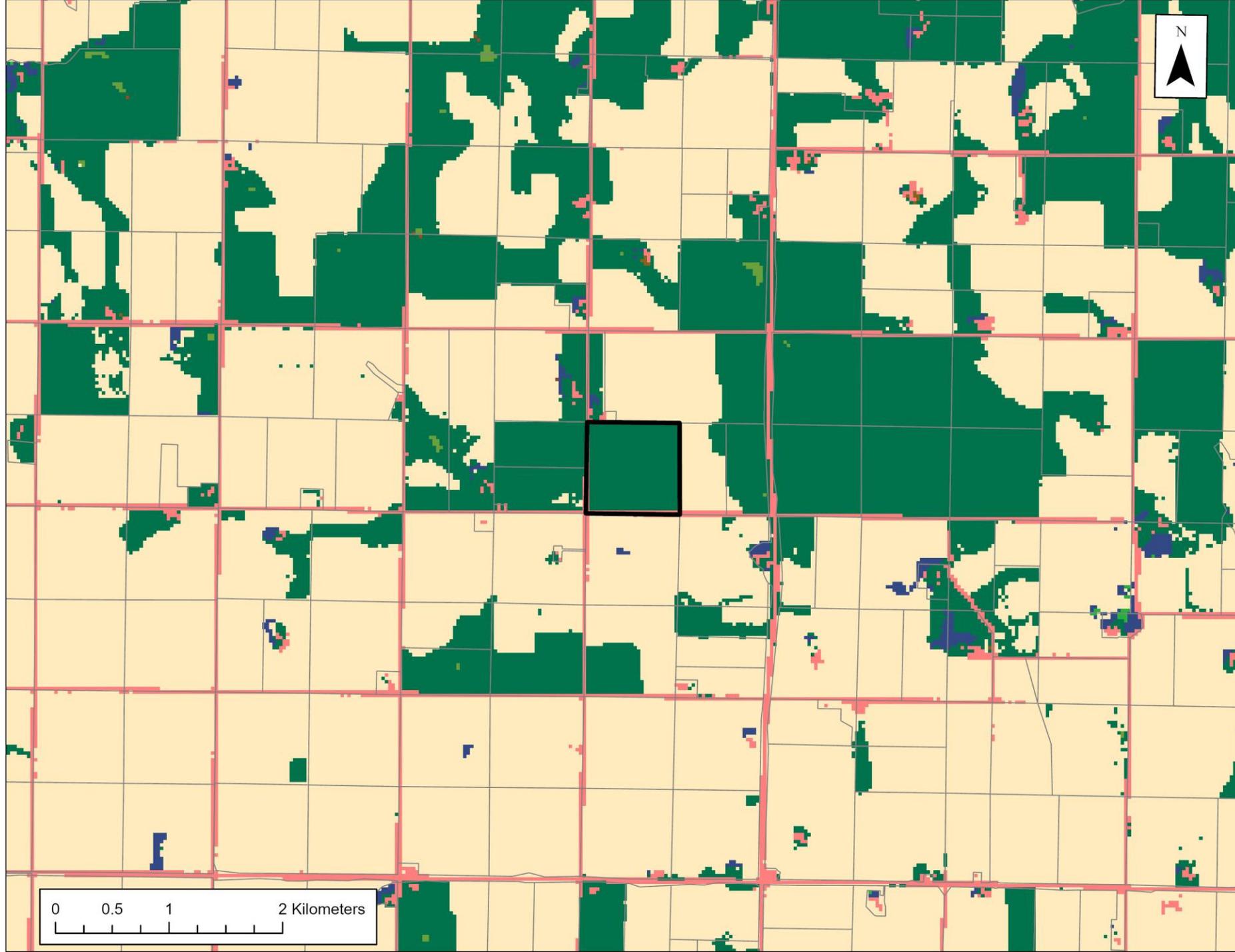
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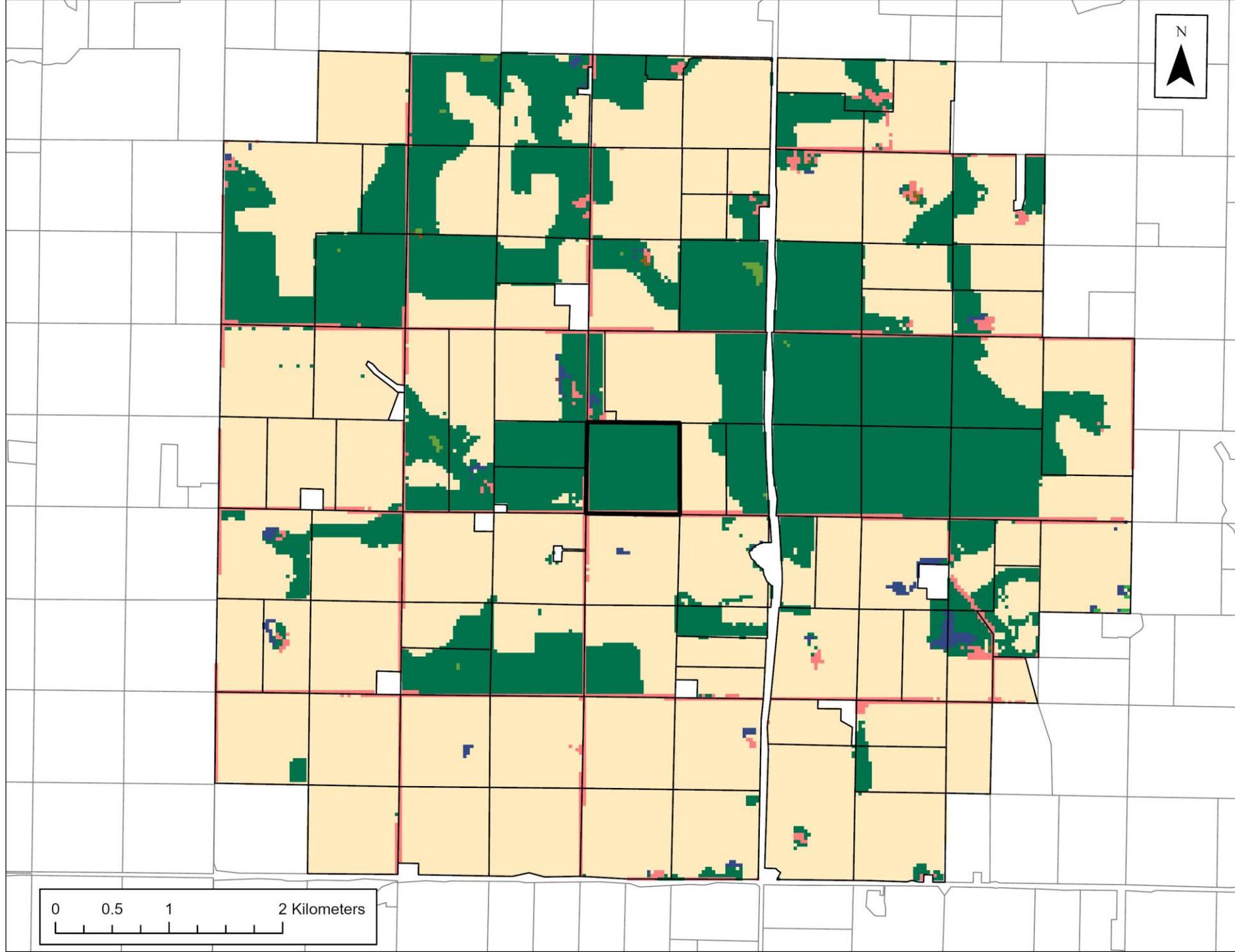
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Next steps

- Finalization of Digital Decision Support Tool
- Validation of predictions
- Refinement of questions and products

