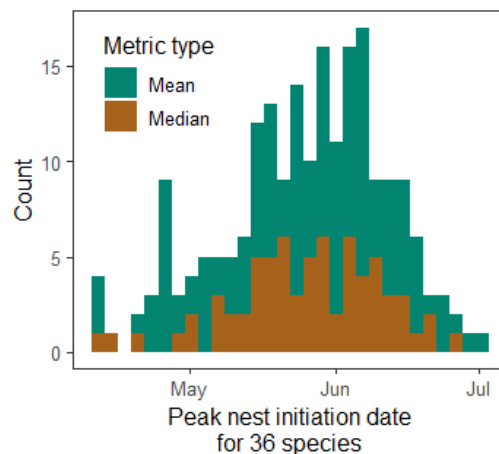


Project background

Throughout the North American midcontinent, many land management agencies strive to use the best available information to time grassland management actions (e.g., haying, prescribed fire) to avoid adversely affecting grassland-nesting birds. As the number and complexity of grassland conservation programs being delivered in the midcontinent continues to expand, so has the need for resources to inform the timing of grassland management actions. Consequently, detailed information about when grassland-nesting birds are actively nesting and how nesting phenology varies in relation to species, geography, and climatic conditions is needed to inform decisions about the optimal timing of these management actions.

We conducted an initial literature review ([Anteau et al. 2023](#)) using search terms that would allow us to identify publications where a primary objective was to estimate nest success of focal species (listed below). We assumed that these studies involved rigorous nest monitoring procedures and would provide relevant summaries of nest initiation dates. Less than 25% of the publications we reviewed ($n > 350$) included exact dates associated with the central tendency of nest initiation and even less included dates associated with the first or last nests initiated.

Focal species	
American Bittern	Nelson's Sparrow
Baird's Sparrow	Northern Bobwhite
Bobolink	Northern Harrier
Brewer's Sparrow	Ring-necked Pheasant
Chestnut-collared Longspur	Savannah Sparrow
Clay-colored Sparrow	Short-eared Owl
Dickcissel	Sedge Wren
Eastern Meadowlark	Sprague's Pipit
Field Sparrow	Sharp-tailed Grouse
Gray Partridge	Thick-billed Longspur
Greater Prairie-Chicken	Upland Sandpiper
Greater Sage-Grouse	Vesper Sparrow
Grasshopper Sparrow	Western Meadowlark
Henslow's Sparrow	Willet
Horned Lark	Wilson's Phalarope
Lark Bunting	
Lark Sparrow	
Long-billed Curlew	
LeConte's Sparrow	
Lesser Prairie-Chicken	
Marbled Godwit	
Mountain Plover	



Project objectives

1. Combine available data on nest initiation dates and use those data to inform simulations of nest initiation dates from published studies, where data could not be acquired. This effort will result in a combined dataset of empirical and simulated data on nest initiation date distributions.
2. Conduct summary analyses on combined (acquired and simulated) nest initiation data and identify which metrics of nesting phenology (e.g., median or other percentile dates) are the most biologically relevant in describing nesting patterns for grassland bird species.
3. Develop a spatially explicit model to predict the dates that certain proportions (e.g., focusing on the latter half of nesting phenologies) of grassland-nesting bird nests are no longer active, while accounting for uncertainty in nest duration.

Data sharing and co-authorship

1. All collaborators sharing data will be offered co-authorship. Collaborators have the possibility to provide names of up to 3 people that have been involved in data collection, and which in their opinion also deserve co-authorship.
2. We will cite any original publications that include shared data.
3. Collaborators will be regularly updated on the development of data analyses. We will engage with and involve all collaborators during the process of manuscript writing.
4. We will only use data shared for the research question outlined above, which is expected to result in one, multi-authored publication. Data will not be made available to the public or other collaborators on the project. We will be releasing data owned by our research team and are willing to release data shared if requested by the contributor. Please indicate if you do not want analysis-ready data to be made publicly available depending on specific journal requirements.

Timeline

Summer 2023 – Begin acquiring datasets from collaborators.

Fall 2023-Winter 2024 – Preliminary data analysis and continue collection of datasets.

May 2024 – Approximate deadline for accepting cooperator datasets.

Summer 2024 – Complete analysis and prepare manuscript.

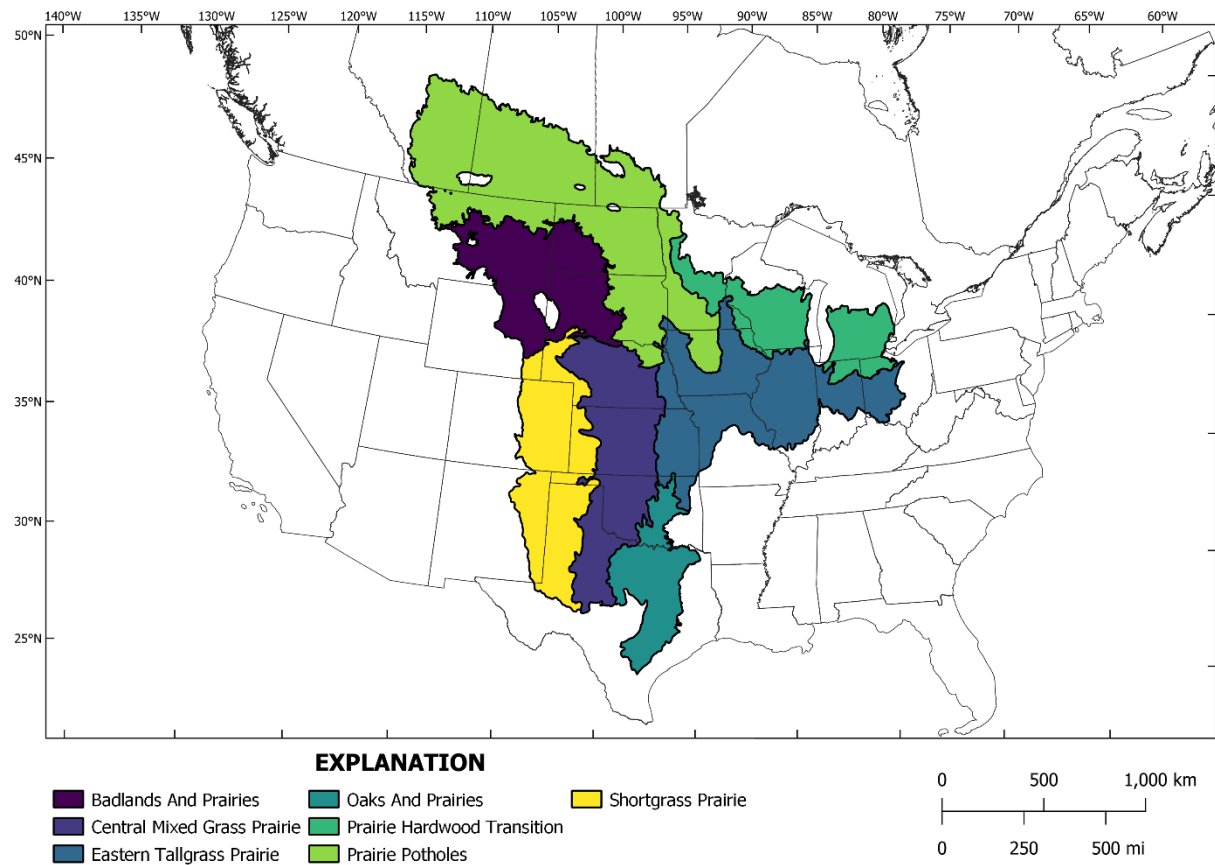
Research team

USGS Northern Prairie Wildlife Research Center: Kristen Ellis, Michael Anteau, Lawrence Igl, Jill Shaffer, Garrett MacDonald, and Thomas Buhl.

U.S. Fish and Wildlife Service: Neal Niemuth (Habitat and Population Evaluation Team) and Josh Vest (Prairie Pothole Joint Venture).

University of Wisconsin-Madison: Chris Ribic (Professor Emerita; Department of Forest and Wildlife Ecology)

Please reach out to Kristen Ellis with additional questions at kellis@usgs.gov; phone: (701) 253-5505



We will prioritize datasets collected within the focal study area (Figure taken from [MacDonald et al. 2024](#)) with the understanding that flexibility will be necessary, particularly for species with broad ranges or ranges that only partially overlap the focal area.