

**The Friends of Nachusa Grasslands
2017 Scientific Research Project Grant Report
Due June 30, 2018**

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2017 grant amount: \$2000

Research Project Topic: Can bird-provisioned pest control integrate agriculture and prairie bird conservation?

Research Project Purpose: To determine if grassland and prairie birds provide services or disservices on nearby agricultural fields through consumption of pest or beneficial arthropods. I collected fecal samples from birds in prairie and adjacent agriculture and conducted a DNA analysis to determine the species of arthropod prey in the birds' diets.

Research Project Outcomes to date: I have completed the DNA barcoding of 124 grassland bird fecal samples collected in 2016. I established a bioinformatics analysis pipeline to analyze the resulting DNA sequence data. I have begun to prepare a manuscript to publish the results.

Describe how the grant funds you have received from the Friends of Nachusa Grasslands have been used in regard to the above topic, purpose, and/or outcomes: I used the funds to partially pay for the DNA extraction, amplification, and sequencing at the UIC DNA services facility.

Describe how your project has benefited the work and goals of Nachusa Grasslands: This project helps to demonstrate the amount of influence prairies at Nachusa have on the larger agricultural landscape. This information will be useful to help educate stakeholders as well as the public on the large-scale benefits of prairie restorations.

Describe how your findings can be applied to challenges in management practices for restoration effectiveness and species of concern: The fecal DNA data on bird diets tells us more about the key resources used by grassland bird species, many of which are declining. This will allow us to determine the best ways to continue to maintain healthy prairie bird populations at Nachusa.

Please list presentations/posters you have given on your research:

Do prairie birds provide services or disservices on adjacent conventional farms? Oral presentation at Friends of Nachusa Science Symposium, Franklin Grove, IL. October 2017.

Invited Speaker. Can birds provide ecosystem services in North American industrial agriculture? Symposium oral presentation at the American Ornithological Society Conference, East Lansing, MI. August 2017.

Bird provisioned pest removal services on conventional farms: an evaluation of an ecosystem services approach as a tool for prairie bird conservation. Poster presented at Friends of Nachusa Science Symposium, Franklin Grove, IL. October 2016.

Invited Speaker. Future directions for bird-provisioned pest control studies in conventional agricultural systems. Symposium oral presentation at North American Ornithological Conference, Washington D.C. August 2016.

Have you submitted manuscripts to scientific journals? If so, which ones? If not, do you anticipate doing so? (Please keep us informed on publications.)

I am currently preparing a manuscript and anticipate submitting it within approximately two months.

Optional: Offer suggestions for improving the application and award process for future Friends of Nachusa Grasslands Scientific Research Grants:

No suggestions, I have found the process to be easy and straightforward.