

**Friends of Nachusa Grasslands
2020 Scientific Research Project Grant Report
Due June 30, 2021**

Name: Antonio Del Valle

Address: 2506 Alpha Ct E DeKalb, IL 60115

Phone: 920-287-2111

Current E-mail: adelvalle@niu.edu

2020 grant amount: \$2710

Please answer the following questions with 1- to 2- sentence summaries:

Research Project Topic:

Breeding bird communities: impacts of bison reintroduction, prescribed fire, and restoration chronosequence at Nachusa Grasslands.

Research Project Purpose:

The objectives of this study are to overall understand how different management practices impact grassland bird communities and individual species at Nachusa Grasslands. Specific objectives include:

- Determining Nachusa bird species population trends by comparing historical bird point count data (collected by Ann Haverstock in 1991-2012) to current data
- Quantifying how bird species are being impacted by bison, five years post reintroduction
- Quantifying how bird species are impacted by prescribed fire intervals

Research Project Outcomes to date:

A preliminary analysis of the 2020 data on bird community composition revealed that bison are contributing approximately 19 percent of the variation observed in the bird communities at different survey points. Additionally, bison presence appears to be impacting the abundances of certain grassland bird species such as Grasshopper Sparrows and Sedge Wrens. The addition of the 2021 field season and continued analysis of data will help to further elucidate these patterns, while being able to look at other factors such as prescribed fire, bison activity within bison units, vegetation structure, and restoration age.

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:

Grant funds were used to cover costs of travel to the field site and within the preserve (using personal vehicles was a common occurrence during the pandemic). Additionally, grant funds were used to cover research equipment costs such as: robel poles, flagging tape, and field notebooks/data sheets.

Describe how your project has benefited the work and goals of Nachusa Grasslands:

This research project has built upon the continued research at Nachusa Grasslands by building off of previous historical data sets (Ann Haverstock's point counts) and by focusing on grassland bird

species that are elusive and largely understudied at Nachusa and in the region. By working with managers, stewards, and scientists at Nachusa, this research and its products will help to continue conservation efforts of these sensitive species on the preserve.

Describe how your findings can be applied to challenges in management practices for restoration effectiveness and species of concern:

This research specifically looks at how different management practices (e.g. bison, prescribed fire) may be impacting grassland birds. Looking at how these grassland bird communities and specific species abundances respond to management activities will help provide information to managers. Overall this research can help benefit the continued restoration/management of the preserve and the conservation of these sensitive species.

Please list presentations/posters you have given on your research (*indicates presenter):

- Del Valle, A.*, Jones, H.P. 2021. Grassland bird responses to bison disturbances in tallgrass prairies in Illinois and Indiana. Midwest Ecology and Evolution Conference.
- Del Valle, A.*, Jones, H.P. 2021. Grassland bird conservation in North America and research in restored tallgrass prairies. Northern Illinois University, BIOS 457/557 Biology of Birds and Mammals. Invited Lecture.
- Del Valle, A.*, Jones, H.P. 2021. Grassland bird response to bison and prescribed fire disturbances in restored tallgrass prairie. Midwest Fish and Wildlife Conference.
- Del Valle, A.*, Jones, H.P. 2020. Bison, Birds, and Prairies: How do reintroduced bison impact breeding birds in eastern tallgrass prairies?. Northern Illinois University, Department of Biological Sciences Seminar.
- Del Valle, A.*, Jones, H.P. 2020. Bird Communities at Restored and Remnant Tallgrass Prairies: Historical Trends and Future Research. Midwest Ecology and Evolution Conference. Poster presentation.

Have you submitted manuscripts to scientific journals? If so, which ones? If not, do you anticipate doing so? (Please send digital copies of published articles to the Friends so that we can learn from your work.)

- I have not yet submitted manuscripts for this research yet. I anticipate doing so in the future.

What follow-up research work related to this project do you anticipate (if any)?

- I am collecting a second year of data collection this summer, to build off of data collected last year.

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