

**The Friends of Nachusa Grasslands
2016 Scientific Research Project Grant Report
Due June 30, 2017**

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2016 grant amount: \$1500

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

Research Project Topic: This project looked at bison diet through stable isotope analysis and also testing the limitations of unmanned aerial vehicles to detect changes in plant communities.

Research Project Purpose: The purpose of this project was to inform managers about bison diet. The other portion of the project was to potentially be able to identify plant species with a low-cost drone or at least monitor plant communities in a faster way.

Research Project Outcomes to date: The bison hair samples are still being processed at Northern Illinois University and should be completed in the coming weeks. The remote sensing project has shown that individual species cannot be identified with only the addition of the near infrared (NIR) band to an RGB camera. However, we were able to quantify unburned and burned areas within grazing units to estimate potential impact grazing has on the burned to unburned ratio.

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: These funds were crucial for my project. I have purchased a NIR camera, poles tags for vegetation plots, SD cards for the cameras, travel and running isotope samples.

Describe how your project has benefited the work and goals of Nachusa Grasslands: My project will inform managers about what the bison are eating which is a question they had wanted answered. The managers had also asked about the burned to unburned ratio within the bison unit and I was able to answer that.

Describe how your findings can be applied to challenges in management practices for restoration effectiveness and species of concern: We are continuing to test new UAV sensors and their limitations for use in prairie restoration. We are planning on helping the managers map out grazing lawns this year, which has been a topic of interest. The diet study may open show unexpected diet trends that would be important to know. For example, if the bison are eating more forbs than we would think.

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

Blackburn RC. Diet and vegetation impacts of reintroduced bison in a restored tallgrass prairie. Presentation. 2016, Friends of Nachusa Scientific Research Symposium, Franklin Grove IL

Blackburn RC, Jones HP. 2017 Vegetation impacts of reintroduced bison in a restored tallgrass prairie. Presentation. Midwest Ecology and Evolution Conference, Champagne, IL

Blackburn RC, Jones HP. 2017 Impacts of reintroduced disturbance regimes in a tallgrass prairie. Poster. Phi Sig Symposium, Dekalb, IL

Future

Blackburn RC, Jones HP. 2017. Vegetation impacts of reintroduced bison in a restored tallgrass prairie and the ability of UAV imagery to assess them. Poster. Ecological Society of America, Portland, OR.

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

No

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