

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

1. Please save this form to your desktop with a unique file name that includes “Friends 2016 Science Grant Report” and your last name.
2. Complete the form using the headings in bold as your guide.
3. Save the file as a Word document or a PDF.
4. Attach the file to an e-mail, and send it to: nachusafriendsscience@gmail.com no later than June 30, 2017.
5. The subject of the e-mail should be “2016 Scientific Research Grant Report” and your last name.
6. After your research project is complete, please contact Friends so that we may learn from and publicize the outcomes as appropriate.

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2016 grant amount: \$1,500

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

Research Project Topic: Small mammal responses to bison reintroduction and prescribed fire in tallgrass prairies.

Research Project Purpose: To document the responses of small mammal communities to disturbance related management strategies of grazing bison and prescribed fire in restored tallgrass prairies in Illinois.

Research Project Outcomes to date:

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: The grant funds were used to purchase bait (\$350) and cleaning supplies (\$50) for Sherman traps used during small mammal trapping sessions and for travel (\$1,100) from DeKalb, IL to Nachusa for sampling events that occurred on April 15th-26th, June 7th- 19th, August 2nd-14th 2016.

Describe how your project has benefited the work and goals of Nachusa Grasslands: This project has benefited the work and goals of Nachusa Grasslands by documenting the small mammal communities within restored and remnant prairie plots before and after bison reintroduction with differential prescribed fire application. This project collected the foundational data for a long-term study focused on how various management actions and strategies influence the small mammal populations in restored tallgrass prairies of Illinois; additional research projects have been created that use the

sampling protocol developed for this project as well as the data collected within to investigate additional aspects of small mammal populations at Nachusa Grasslands.

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

The statistical models created from this data demonstrate how bison grazing, frequency of prescribed fire, restoration age, vegetation composition, and precipitation influence the relative abundance and diversity of small mammal communities; which will allow managers to make informed decisions to maximize restoration effectiveness. Small mammal communities can influence vegetation through herbivory and seed predation and serve as prey for predator species and thus these models can be used to help inform decisions for those trophic levels at Nachusa Grasslands.

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

1. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Northern Illinois University Phi Sigma Science Symposium: DeKalb, Illinois. April 2015. Poster Presentation.
2. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Nachusa Grasslands Annual Meeting: Franklin Grove, Illinois. July 2015. Invited.
3. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Nachusa Grasslands Annual Science Symposium: Grist Mill Franklin Grove, Illinois. October 2015. Invited.
4. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Nachusa Grasslands Annual Science Symposium: Grist Mill Franklin Grove, Illinois. October 2015. Invited. Poster Presentation.
5. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Natural Areas Conference: Little Rock, Arkansas. November 2015. Poster Presentation. Abstracted: <http://naturalareasconference.org/poster-session>
6. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Midwest Ecology and Evolution Conference: University of Miami Oxford, Ohio. March 2016. Poster Presentation. Abstracted: https://meec2016.files.wordpress.com/2015/01/meec_2016_program_online2.pdf

7. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Northern Illinois University Phi Sigma Science Symposium: DeKalb, Illinois. April 2016. Poster Presentation.
8. Small mammal responses to bison reintroduction in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. American Society of Mammalogists Conference, Minneapolis, Minnesota. June 2016. Oral Presentation.
9. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Northern Illinois University. October 2016. Thesis Defense.
10. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Nachusa Grasslands Annual Science Symposium: Grist Mill Franklin Grove, Illinois. October 2016. Invited. Oral Presentation.
11. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. Rockford University: Rockford, Illinois. October 2016. Invited. Oral Presentation.
12. Small mammal responses to bison reintroduction and prescribed fire in one of the world's most threatened ecosystems. Angela M. Burke* and Dr. Holly P. Jones. The Prairie Enthusiast Conference. Galena, Illinois. March 2017. Invited. Oral Presentation.

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

My thesis work was published through ProQuest online as a requirement of my graduate degree and a copy was sent along with this document.

We are preparing this data for publication in Restoration Ecology. We will send the published version when accepted into a scientific journal.

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