

# **The Friends of Nachusa Grasslands 2015 Scientific Research Project Grant Report**

**Name:** Angela Burke

**2015 grant amount:** \$1,200

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 current small mammal population responses to fire and bison grazing at various restored and remnant sites.

**Research Project Outcomes to date:**

Currently there are 547 unique individuals within the study with a total of 350 recapture events. Sites grazed by bison had a change in community composition in the first year after bison reintroduction and prescribed burning is associated with an increase in the number of unique individuals captured within any site, regardless of age or grazing influence, although these data are still preliminary.

**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 that I had received were allocated as outlined below to support the monitoring of small mammal communities at Nachusa Grasslands:

\$1,040 for travel to Nachusa from DeKalb, Illinois from April 15<sup>th</sup>-26<sup>th</sup>, June 7<sup>th</sup>-19<sup>th</sup>, August 2<sup>nd</sup>-14<sup>th</sup>, and September 27<sup>th</sup>- October 9<sup>th</sup> 2015.

\$160 in baiting supplies for 48 trapping nights.

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

Understanding the role of small mammal populations and how they are influenced by varying grazing and fire management strategies can assist in the holistic evaluation of restoration efforts in sites currently undergoing active restoration. This is part of a multi-institutional team of researchers measuring the role that bison and fire will have on vegetation, invertebrates, reptiles, birds, and soil microbiota across prairies.

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

Data on species responses to this management can inform decisions regarding biodiversity for small mammals. Several healthy populations of small mammals

play an important role in the upper tropic level dynamics of tallgrass prairie ecosystems through influencing the vegetation structure via herbivory and as prey for larger fauna.

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

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.

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.

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.

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.

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>

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](https://meec2016.files.wordpress.com/2015/01/meec_2016_program_online2.pdf)

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.

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.

**Have you submitted manuscripts to scientific journals? If so, which ones? If not, do you anticipate doing so?**

No publications have been submitted in regards to this research. I anticipate submitting a manuscript to Restoration Ecology in late 2016 after my graduate research is completed.