

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

**Name:** Sarah Smith

**2015 grant amount:** \$950

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

**Research Project Topic:** My project was focused on observing the change in dynamic soil properties, or properties that change with time and land use, across different ages and quality of prairie restoration, in comparison with current agricultural land and a never cultivated oak savanna.

**Research Project Purpose:** The purpose of this project was to see if restoring previously cultivated land to a more natural state, such as prairie, could positively impact those soil properties that are easily changed with land use. The best case scenario would show that restoring native vegetation also helps the soil restore its natural physical state.

**Research Project Outcomes to date:** As of 6-8-16, I have completed all necessary field work, all the necessary laboratory work, and all statistical analysis and interpretation. I am in the process of creating a written product to use in the completion of my Masters degree at Northern Illinois University, and for publication.

**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 key in covering all of my transportation costs while collecting soil samples and then transporting them to the lab at Northern Illinois University in DeKalb, IL. Any monies not used for transportation were then used to purchase field and lab equipment, along with materials consumed during laboratory analyses.

**Describe how your project has benefited the work and goals of Nachusa Grasslands:** This project will hopefully show the positive impact the multiple restorations that have been established at Nachusa are having on the soil. It documents the direct impact permanent vegetation and no physical disturbance have on soil, and shows the positive impact restoration work being done at Nachusa has on such a precious resource.

**Describe how your findings can be applied to challenges in management practices for restoration effectiveness and species of concern:** In general, this project shows the positive effects prairies have on the quality of soil, particularly after being cultivated. It may suggest the need for an increase in high quality restorations, but more research should be conducted to build upon that conclusion.

**Please list presentations/posters you have given on your research:** Poster at 2015 Soil Science Society of America national meeting in Minneapolis, MN, Title: Restoration Age and Quality Effects on Dynamic Soil Properties at Nachusa Grasslands in Franklin Grove, IL

**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 have not submitted a manuscript yet, but I do plan on doing so.