

**The Friends of Nachusa Grasslands
2022 Scientific Research Project Grant Report
Due June 30, 2023**

Please answer the following questions with clearly written summaries to give Nachusa Friends' science committee members, officers, and board members a good idea of what you accomplished using your grant money. Unless you object to the Friends doing so, your report will be uploaded into the science section of the Friends' website: nachusagrasslands.org. Donors and prospective researchers often read these reports after they are posted.

1. Please save this form to your desktop with a unique file name that includes "Friends 2022 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, 2023.
5. The subject of the e-mail should be "2022 Scientific Research Grant Report" and your last name.
6. If you have not completed your work, please submit this form anyway by the June 30 deadline and plan to contact Friends after your project is complete so that we may learn from and publicize the outcomes as appropriate.

Name: Jesse Sikora

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2022 grant amount: \$6000

Research Project Topic: Potential restorative impacts of beaver dams on agriculturally degraded streams

Research Project Purpose: Collect foundational data on beaver dams at Nachusa and the current morphological stages of streams throughout the preserve.

Research Project Outcomes to date: Map of beaver dam and lodge locations, data collection of 25 dams in more detail (size of dam, floodplain connectivity of surrounding stream, and sediment and stream discharge filtration at dams, completed Master's thesis, currently working on publishing in a peer-reviewed journal.

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 Nachusa Grant funds were used to pay for field assistance, field equipment, and lab costs of water samples.

Describe how your project has benefited the work and goals of Nachusa Grasslands: This project was one of high interest for Nachusa Grasslands because little was known about the beaver activity across the streams in the preserve. With the data from this project, Nachusa Grasslands managers will have a better understanding of the presence of beaver modifications in Nachusa streams and the current morphological aspects of the stream surrounding beaver dams. These data can help inform management decisions of beaver conflict and stream restoration.

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

Beavers are keystone species, building crucial stream habitats for diverse species of macroinvertebrates, fish, amphibians, mammals, and birds. This research garners a more indepth understanding of the impacts variable beaver dams have on the rehabilitation of Nachusa Grassland's streams. These incites will help contribute to the decision making of beaver population management, beaver dam management, stream restoration, and habitat restoration for species of concern.

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

Sikora, J.S. 2023. Exploring beaver-facilitated restoration in grassland channelized streams. Northern Illinois University. DeKalb, IL. Oral Presentation of Thesis Defense

Sikora, J.S. 2022. Measuring beaver dams and their impacts at Nachusa Grasslands: implications of beaver facilitated stream restoration. BeaverCON 2022. Baltimore, Maryland. Oral Presentation

Sikora, J.S, C.N. Wails, L. Small, H.P. Jones. 2022 Well Dam: Assessing Restoration Potential of Grassland Beaver Dams in Channelized Streams. Montreal, CA. Poster

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.)

No, but I do intend to submit a manuscript to the Restoration Ecology journal.

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

I hope that other graduate students will benefit from this foundational data I've collected and build upon what I've learned and studied.

Optional: Suggestions for improving the application and award process for future Friends of Nachusa Grasslands Scientific Research Grants: You all are doing a

fantastic job! I really appreciate all your help through these years and supporting my research.