

**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: Jennifer Bell

Address:

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2022 grant amount:

Research Project Topic: Arbuscular mycorrhizal community structure in achronosequence of tallgrass prairie restoration

Research Project Purpose: This project will examine the community structure of arbuscular mycorrhizal fungi (AMF) from remnant prairie to recently restored tallgrass prairie at both Nachusa and the Morton Arboretum. The aim of this study is to determine if AMF community structure eventually converges on that of remnant sites and are these effects site specific.

Research Project Outcomes to date: This project has been completed. All the samples have been collected and the sequencing done. The analysis and manuscript have been completed as well. The co-authors are revising the manuscript before submission.

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 funds were used to purchase DNA extraction kits and to pay for sequencing at Rush University. These were needed to achieve the core objectives of this project and were successful.

Describe how your project has benefited the work and goals of Nachusa Grasslands: This project was the first survey of AMF communities at Nachusa using sequencing. Sequencing allows for a much deeper look into the AMF communities present in the soil and helps us to see how the restoration practices are shaping them.

Describe how your findings can be applied to challenges in management practices for restoration effectiveness and species of concern: I found that bison impact the AMF communities as does annual burning. However, the AMF communities present in the remnants and the restorations were not very different from one another. This suggests that these belowground communities are being restored alongside the aboveground plant communities. This is good news for land managers because it means that they do not need to worry about these communities, as they are restoring without our intervention.

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

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.)

I have not submitted yet, however the manuscript is with the coauthors and once they sign off I will be submitting to Restoration Ecology.

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

Monitoring the AMF communities at Nachusa would be a good idea as would examining their temporal dynamics.

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