

The Friends of Nachusa Grasslands 2017 Scientific Research Project Grant Report

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2017 grant amount: \$1500

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

Research Project Topic:

Investigating the unintended effects of coyote exclusion on small mammal communities and vegetation at Nachusa Grasslands. In addition, quantifying coyote diet using stable isotope analysis.

Research Project Purpose:

To determine if coyote exclusion impacts small mammal diversity, abundance, reproduction, and body condition or has indirect impacts grass or forb biomass. I also investigated coyote diet at Nachusa.

Research Project Outcomes to date:

From my thesis work I found that coyote exclusion does not seem to be impacting small mammal or plant communities during the first season since exclusion. In addition, I found that coyotes seem to be eating C₄ plants in highest proportions followed by beetles, ring necked pheasants, and mammal species.

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 I received went to paying for stable isotope analyses, small mammal sampling field supplies, supplies for my lab study conducted on *Peromyscus* stress response to coyote scent and travel. These funds were able to go far and make a huge difference in what I was able to accomplish.

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

Currently, the managers at Nachusa are concerned about potential coyote depredation of ornate box turtles. From my diet analysis using stable isotopes I found that coyotes are not likely eating ornate box turtles in high quantities, if at all. In addition, I found that coyote exclusion fences do not seem to be impacting small mammal or plant communities so far. Should managers choose to build coyote exclosures there may not be a large impact to these species. However, I would caution that more time is necessary to say this confidently.

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

Managers can use my findings to decide how to move forward with protection of ornate box turtles.

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

Posters:

Ecological Society of America (2017)

Phi Sigma (2017, 2018)

Presentations:

Montessori class presentation (2017)

Friend of Nachusa Science Symposium (2017)

Severson Dells Nature Center (2018)

Guest lecturer (2018)

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

Not yet but I intend to submit my diet work to Ecological Applications and my community work to Oecologia.

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

I think you're doing great!