

**The Friends of Nachusa Grasslands  
2019 Scientific Research Project Grant Report  
Due April 30, 2020**

1. Please save this form to your desktop with a unique file name that includes “Friends 2019 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 April 30, 2020.
5. The subject of the e-mail should be “2019 Scientific Research Grant Report” and your last name.
6. After your research project is complete, please contact Friends so that we may learn from and publicize the outcomes as appropriate.

**Name: Devin Edmonds**

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**2019 grant amount: \$1,860**

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

**Research Project Topic:** When do ornate box turtles emerge from hibernation? A study informing timing of prescribed burns.

**Research Project Purpose:** Determine when Ornate Box Turtles emerge from hibernation to better inform TNC and other Illinois land management agencies about the time of year it is safe to burn land with the least risk of harming turtles.

**Research Project Outcomes to date:** We have temperature data from 9 of 10 turtles recovered. We have soil temperature data from two locations near hibernation sites starting at ground level and going down to 1.8 meters below the surface. Despite COVID 19 restrictions, we were still able to get some preliminary data on the week of first emergence for several turtles.

**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 provided travel from Champaign, IL to Nachusa Grasslands in August and October 2019 to attach data loggers to turtles and position data loggers in soil to record temperatures. We also were able to purchase data loggers with the funds as well as return to Nachusa June 2020 to collect the data loggers.

**Describe how your project has benefited the work and goals of Nachusa Grasslands:** We do not have results yet, but we expect to be able to have preliminary data to help predict when turtles will emerge from hibernation in the spring by the end of

the year. Once we download the temperature data from loggers, we will also be sending it to Elizabeth Bach so she can share it with other researchers for their use in other studies as needed.

**Describe how your findings can be applied to challenges in management practices for restoration effectiveness and species of concern:** The Ornate Box Turtle is a threatened species in Illinois. Because very few turtles make it to sexual maturity, losing even one adult turtle annually to prescribed burns could be enough to cause an otherwise stable population at Nachusa to decline. The data we collected this spring is critical for learning when turtles emerge from hibernation so that management can burn before turtles are above ground and at risk from fire.

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

October, 2019. "When do Ornate Box Turtles Emerge from Hibernation?" Poster. Nachusa Science Symposium. Dixon, Illinois.

We will also be presenting preliminary results from the project virtually at this year's Turtle Survival Alliance conference in September, 2020.

**Have you submitted manuscripts to scientific journals? If so, which ones? If not, do you anticipate doing so?** We do not have enough data yet to publish. In addition to Nachusa, we are monitoring turtle hibernation emergence at three other sites in Illinois. Because of travel restrictions, only Nachusa has preliminary data. We have already received approval to extend the project at the other sites for an additional year and we expect to be able to combine datasets to produce at least one publication in late 2021 or early 2022. This year, we are focusing on analyzing Nachusa's data and redeploying data loggers for another year.

**What follow-up research work related to this project do you anticipate (if any)?** We need to repeat the project another year.

**Optional: Suggestions for improving the application and award process for future Friends of Nachusa Grasslands Scientific Research Grants:** None. It is a truly wonderful way to support research at Nachusa Grasslands. The process was not too difficult or time consuming compared to other small grants.