

The Friends of Nachusa Grasslands 2019 Scientific Research Project Grant Report

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2019 grant amount: \$6,500

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

Research Project Topic: We seek to develop and implement management strategies for the Blanding's Turtle, an Illinois endangered species, at Nachusa Grasslands and elsewhere in north-central Illinois.

Research Project Purpose: The goals for our 2019 grant were to:

- (1) Conduct 10 days of intensive trapping for Blanding's Turtles on TNC and adjacent property
- (2) Replace existing radio transmitters and mount new transmitters on any additional adults encountered
- (3) Track adult females to their nest sites, protect those nests, and ensure hatchlings successfully find their way to maternal wetlands
- (4) Temporarily house female L1R1 with a male to ensure mating
- (5) Consult with Nachusa and Richardson Wildlife Foundation staff regarding the feasibility of initiating a Blanding's Turtle head-starting program

Modifications to these goals are included with project outcomes below.

Research Project Outcomes to date:

- (1) Trapping during May 2019 on TNC property and property owned by C. Walgreen and by J. and S. Meiners resulted in the capture of a new adult female. Trapping during May 2020 (supported in part by our 2019 grant) resulted in the capture a new adult female and a new adult male. A total of 15 Blanding's Turtles have been captured through trapping efforts since 2014. Included among these are two juveniles, four adult males and 11 adult females; 13 reside on TNC and adjacent property within the Franklin Creek corridor; two reside on property owned by J. and S. Meiners within the Clear Creek drainage. Three Blanding's Turtles are known to have died, a juvenile in 2018 and two adult females in 2019.
- (2) Existing radio transmitters were replaced in 2019 and new transmitters were affixed to adults first captured in 2019 (1) and 2020 (2). Expected battery life of transmitters is ca. three years (into 2022). Currently, eight adults are equipped with transmitters, three males and five females.
- (3) All five transmitter-equipped adult females were successfully tracked to their nest sites in 2019. Rather than protecting those nests as in 2016-2018, eggs (n = 41)

were collected for head-starting (see (5) below). Two of five transmitter-equipped adult females were successful tracked to their nest sites in 2020 and eggs (n = 17) were collected for head-starting. Other females were on private land and unavailable for tracking or nested undetected despite checks every evening from 1-15 June 2020.

- (4) Female L1R1 was found dead in March 2019, making goal 4 moot.
- (5) Managers at Nachusa Grasslands and Richardson Wildlife Foundation decided to initiate a joint head-starting program for Blandings Turtles in 2019 in cooperation with the Forest Preserve District of DuPage County (FPDDC) and the Lake County Forest Preserve District (LCFPD). Eggs were collected from nests (see goal (3) above at both sites, were incubated by the FPDDC and hatchlings were reared by the LCFPD. Thirty-seven surviving head-starts were released at each site in May and June 2020. At Nachusa Grasslands, eight were released at wetlands on property owned by J. and S. Meiners, 14 were released at wetlands in the Bivins unit, and 15 were released at wetlands in the Tellabs units. Ten head-starts released in the Bivins unit and 10 released in the Tellabs unit were equipped with transmitters and are currently being monitored to characterize movements, growth, and survival.

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:

2019	D. Mauger – 10 days of trapping	\$3000.00
2019	J. Flieger – field technician, 143 hr @ \$11/hr	\$1559.00
2019	R. King – partial mileage reimbursement for travel between NIU and Nachusa Grasslands	\$ 500.00
2019	Supplies	\$ 75.00
2020	D. Mauger – 14 days of trapping (partial)	<u>\$1366.00</u>
	total	\$6500.00

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

- Determination of the timing and location (habitat) of key life-history events (active season, nesting, hatching, overwintering)
- Collection of eggs and release of head-starts in wetland habitats
- Contributions to regional and state-wide Blanding’s Turtle management efforts

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

- This project has identified areas where encroachment by woody vegetation may reduce habitat quality for Blanding’s Turtles, areas where care should be exercised in the application of management practices to avoid negative impacts on Blanding’s Turtles, and areas adjacent to Nachusa Grasslands that are utilized by Blanding’s Turtles

- This project has identified areas for possible manipulation of hydrology to benefit Blanding's Turtles, including the discovery (in spring 2019) of drainage tile impacting hydrology within the Tellabs unit. Plans to disable this tile line in winter 2019/2020 were postponed because excavation requires an extended period of below-freezing temperatures; current plans are to complete this project in winter 2020/2021.

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

Head-starting: a New Phase in Nachusa Blanding's Turtle Management. R. King, D. Mauger, T. Anton, J. Fliginger, B. Towey, C. Considine, and E. Bach. Poster presentation, Nachusa Grasslands Science Symposium, 19 Oct 2019, Dixon, IL.

Strategies for Blanding's Turtle Recovery in Illinois. R. King. Invited talk, Forest Preserves of Winnebago County, 22 Oct 2019, Freeport, IL.

Strategies for Blanding's Turtle Recovery in Illinois. R. King. Invited talk, Northwest Illinois Audubon Society, 5 Nov 2019, Freeport, IL.

Blanding's Turtle Population Viability: Population Size, Connectivity, and Sensitivity. R. King, C. K. Golba, and G. Glowacki. Contributed talk, Turtle Research and Conservation Management Symposium, Midwest Fish and Wildlife Conference, 28 Jan 2020, Springfield, IL.

Have you submitted manuscripts to scientific journals? If so, which ones? If not, do you anticipate doing so?

Blanding's Turtle Hatchling Survival and Movements Following Natural vs. Artificial Incubation. In preparation for submission to Journal of Herpetology (includes data on transmitter-equipped hatchlings at Nachusa Grasslands in 2016 along with data from other sites).

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

- Eggs collected in 2020 are being incubated at FPDDC and hatchlings will be reared at LCFPD for release at Nachusa Grasslands in 2021
- Head-starts released in 2020 and equipped with transmitters will be tracked until September, a subset will be tracked until summer 2021
- Trapping and monitoring of adults will continue