

Lucille F. Stickel Box Turtle Research Award Progress Report

Project Title:

The Maryland Zoo Eastern Box Turtle Monitoring and Citizen Science Program

Principal Investigator(s):

Katharine Mantzouris – The Maryland Zoo in Baltimore

Kevin Barrett – The Maryland Zoo in Baltimore

Dr. Ellen Bronson – The Maryland Zoo in Baltimore

Amount Received:

\$1,000

Items Purchased with Funds:

Item	Quantity	Amount
24" Digital Calipers	1	\$150
GPS Unit	1	\$150
Microchip Scanner	1	\$380
Ipad Mini & Case	1	\$320
Total:		\$1,000

Hypotheses & Goals:

The goals of this renewed phase of monitoring were: a) to gain greater insight into the health and local population of Eastern box turtles by intensifying monitoring efforts and broadening the scope of the study to new research areas; and b) to increase conservation awareness and develop a model of citizen science education by increasing the number of monitoring participants to Zoo staff, volunteers, and possibly school groups trained in field observation and data collection.

We hypothesized that with more active monitoring and awareness, an increased number of turtles will be found and processed on a yearly basis. This will generate more accurate data regarding the health of the wild box turtles around the Zoo.

Project Update:

Spring/Summer 2018

- Received funds in March 2018
- Continued to increase awareness of the box turtle project throughout the zoo via All Staff Meetings and internal newsletters.
- Purchased initial equipment made possible by the Stickel grant
- Revised our data sheets and protocols to standardize processing of turtles with the new equipment and to prioritize data and efficiency.
- 2018 was our most successful sighting year (15 turtles through incidental findings) since 2001 due to increased awareness of the project, accomplishing one of our major goals.
- Turtles found for the first time per season or via transects are transported to the Zoo's Animal Hospital for physical examination, blood sampling, and virus screening.
- Received additional grant money through a grant from AAZK for the purchase of radio telemetry equipment for the project.

Fall 2018

- Additional equipment, funded through other grants, arrived in September 2018 following a long lead time for transmitters and receiver.
- We decided to wait on putting transmitters on the turtles until spring 2019 because we were nearing the end of the active season and did not want to 'waste' batteries (~24 months) on inactive/brumating turtles.

Winter 2018/2019

- Trained six Zoo Teen Volunteers as program leaders on radio tracking equipment and hosted several practice sessions, in preparation to start in full force come spring.

Spring 2019

- In conjunction with 'Zoo Teen' and 'Conservation Volunteers' we established our survey site, started surveys, and tracked current turtles with radio transmitters.
- Turtles found for the first time per season or via transects are transported to the Zoo's Animal Hospital for physical examination, blood sampling, and virus screening.
- Surveys have resulted in locating two turtles that received radio transmitters in April 2019 and are being routinely tracked.
- Incidental findings thus far have resulted in two additional turtles, both juveniles too small for transmitters, but included in the health monitoring portion of the study.
- We are in the process of integrating other Zoo Departments to assist with tracking transmitter turtles as well as surveys. To date, a total of eight volunteers, six Zoo teens, two Conservation Club members and nine staff have been trained in tracking and surveying box turtles.

- Kat Mantzouris presented on two topics at the 2019 Box Turtle Workshop in Haw River State Park, NC. : The Maryland Zoo Box Turtle Monitoring and Citizen Science Program: Moving 20 Years of Research to the Next Level. Confirmation of Successful Brumation: A Comparison of Resident vs Translocated Box Turtles through Incidental Encounters at the Maryland Zoo.

Conclusions:

Through the funds awarded by the Lucille F. Stickel Award and other funding, we achieved the following outcomes:

- We made dramatic improvements in documenting and collecting data on box turtles so that this process is much more efficient and straight forward by revising our data collection sheets and protocols to standardize processing of turtles with the new equipment.
- 2018 was our most successful sighting year (15 turtles through incidental findings) since 2001 due to increased awareness of the project, accomplishing one of our major goals.
- Radio telemetry equipment and two transmitters were obtained in the fall of 2018 and surveys in spring 2019 resulted in locating two additional turtles that received radio transmitters and will be tracked. Incidental findings so far in 2019 have included two turtles, both juveniles too small for transmitters.
- We trained six 'Zoo Teens' as program leaders on radio tracking equipment and hosted several practice sessions in preparation to start in full force come spring 2019.
- We spread the word to approximately 150 Zoo staff about being on the lookout for box turtles and increased awareness and knowledge so that staff and volunteers are interested and challenged to find a turtle. We are in the process of integrating other Zoo Departments to assist with tracking turtles with transmitters as well as with surveys. To date, a total of eight volunteers, six Zoo Teens, 2 Conservation Club and nine staff members have been trained in tracking and surveys box turtles
- Kat Mantzouris presented on two topics at the 2019 Box Turtle Workshop in Haw River State Park, NC: The Maryland Zoo Box Turtle Monitoring and Citizen Science Program: Moving 20 Years of Research to the Next Level. Confirmation of Successful Brumation: A Comparison of Resident vs Translocated Box Turtles through Incidental Encounters at the Maryland Zoo.

2018 was our most successful year since 2001 and this improved success can give us the proper data to look critically at our native population and expand our research. The involvement of other Zoo Departments as well as adult and teen volunteers has been tremendous. Giving people hands on insight to field work and conservation has been rewarding for the participants, Zoo staff, and hopefully the turtles as well. The first publication has been submitted and is currently under review for *Herpetological Review*.

We thank the North American Box Turtle Conservation Committee for awarding the Lucille F. Stickle Box Turtle Research Award to The Maryland Zoo in Baltimore. This support has significantly improved our research and brought attention to the box turtle population among Zoo staff and Zoo volunteers. The Zoo will continue our efforts with the box turtle population within and around the Maryland Zoo in hopes to make lasting contributions towards its conservation.

Photos:

Attached in email