

2019 PROGRESS REPORT

Quarter: (circle one)

2019 1st

2019 2nd

2019 3rd

2019 4th

Grant Program, Number and Title: RCN, GSA 00043, Spotted Turtle Assessment in West Virginia

Organization: West Virginia University Research Corporation

Project Leader: Donald Brown

Abstract: Please provide a short (1-2 paragraphs) abstract that addresses EACH of the following: the objectives of your project, accomplishments to date, future plans and timelines with an estimate for when the project will be completed.

Objectives

The objectives of the project include: 1) perform Trap-based Demographic Assessments (DA) at wetlands in West Virginia with known Spotted Turtle populations, 2) perform Trap-based Rapid Assessments (TRA) at wetlands in West Virginia with historical records of Spotted Turtle populations, and 3) assess the success of a Spotted Turtle translocation program in 1985 using intense trap-based population sampling. Unique individuals captured will be measured, marked using carapace notches and/or PIT tags, and a DNA sample will be collected when possible. All sampling and capture data will be provided to the West Virginia Division of Natural Resources, and a target of 20 DNA samples each for the 2 known robust populations in West Virginia will be sent to Dr. Rodney Dyer, Virginia Commonwealth University.

Quarter 1

The agreement was executed in December 2018 and the project was initiated in the 1st quarter of 2019. During the first quarter, we determined the current status (presence/absence) and accessibility of wetlands with historical Spotted Turtle records or sampling in West Virginia, created a 2019 sampling schedule for the sites, and began securing landowner permission for private wetlands and WV DNR permission for public wetlands.

Quarter 2

During the second quarter, we trapped 15 wetlands from 4 April – 23 June. Each site included 1–3 200 m radius plots, depending on wetland size. Following the standardized Spotted Turtle sampling protocol, we placed 5 traps within each plot a minimum of 30 m apart, and baited traps with either cat food or sardines. We placed 5 water temperature loggers and 2 air temperature loggers within each plot to monitor environmental conditions, with loggers attached to individual traps. After traps were set and baited, they were left for 4 consecutive trap nights. We checked traps once every 24-hours and replaced bait daily. Once a trapping session at a site was concluded, all traps were collected and decontaminated with warm soapy water and submerged in a 3% bleach solution. Traps were then allowed to air dry for a minimum of 12 hours.

All sites except one (WV9; Objective 3) adhered to the above sampling design. At WV9, we conducted a trap-based RA followed by intense trap-based population sampling using 51 traps set for 4 days, with distance between traps averaging 13 m. Unfortunately, we did not capture any individuals at site WV9. However, it is known to be occupied based on visual confirmation during our trapping, and previous sampling efforts. Since 2018, 7 unique turtles have been captured at WV9, with an 8th turtle seen but not yet captured. Three turtles at the site are currently being monitored using radio telemetry.

From 4 April – 23 June, we completed 96 days of trapping at 15 sites, for a total of 1,084 trap days (Table 1). We captured Spotted Turtles at 5 of the sites, 3 of which were not known-occupied wetlands prior to this work. We performed trap-based DA's at 4 of the 5 sites with captures. We did not perform a DA at the fifth site because we documented occurrence at this site during the last week of spring sampling. We had 96 total Spotted Turtle capture events, with 80 unique individuals captured. We collected a total of 12 tissue samples from the 2 robust populations for use in the regional genetics project.

Table 1. Summary of Spring 2019 trapping results for Spotted Turtles in West Virginia.

Site Name	# of Traps	# Days Trapped	Total Trap Days	Total Captures	Unique Captures	RCN Tissue Samples
WV1	15	12	180	13	12	4
WV2	10	12	120	19	15	0
WV3	15	12	180	29	28	8
WV4	5	4	20	0	0	0
WV5	10	12	120	34	24	0
WV6	5	4	20	0	0	0
WV7	5	4	20	0	0	0
WV8	10	4	40	0	0	0
WV9 (session 1)	5	4	20	0	0	0
WV9 (session 2)	51	4	204	0	0	0
WV10	5	4	20	0	0	0
WV11	5	4	20	0	0	0
WV12	5	4	20	0	0	0
WV13	10	4	40	0	0	0
WV14	10	4	40	0	0	0
WV15	5	4	20	1	1	0
Total	171	96	1084	96	80	12

Quarter 3

During the third quarter, we compiled, digitized, and performed QA/QC on the Spotted Turtle sampling data. We also continued GIS, ground-truthing, and landowner permission efforts to delineate and secure future sampling locations. We will finish QA/QC work on the site data and submit the data to the regional data manager in Quarter 4. We were unable to complete the planned DA at Site WV15 due to the site being dry during late-summer and early-fall. We intend to perform the remaining DA in Quarter 4 if it becomes suitable for trapping. We also were unable to obtain additional blood samples from our 2 robust populations. However, we collected additional samples in Quarter 2 that we plan to submit to Virginia Commonwealth University in Quarter 4 to achieve approximately 20 samples per site.

Quarter 4

During the fourth quarter, with finished QA/QC and submitted the 2019 Spotted Turtle sampling data to the regional data manager. We also submitted 39 DNA samples from the 2 known robust populations in West Virginia to Dr. Rodney Dyer, Virginia Commonwealth University.

Were planned goals/objectives achieved last quarter? Partially. We achieved data management and submission objectives but did not achieve additional planned data collection due to the wetlands remaining dry until winter.

Progress Achieved: (For each Goal/Objective, list Planned and Actual Accomplishments)

Planned and accomplished:

- (Q1) Determined the current status (presence/absence) and accessibility of wetlands with historical Spotted Turtle records in West Virginia
- (Q1) Created a 2019 sampling schedule for the sites
- (Q1/Q2) Began securing landowner permission for private wetlands and WV DNR permission for public

wetlands

- (Q2) Performed DA sampling at 4 sites, TRA sampling at 11 sites, and intense trap-based sampling at 1 site
- (Q3) Compiled, digitized, and performed QA/QC on Spotted Turtle sampling data
- (Q3) Continued GIS, ground-truthing, and landowner permission efforts to delineate and secure future sampling locations
- (Q4) Finished QA/QC and submitted Spotted Turtle sampling data to the regional data manager
- (Q4) Submitted 39 Spotted Turtle DNA samples to Virginia Commonwealth University

Difficulties Encountered: Weather-related prevention of additional trapping in fall.

Activities Anticipated Next Quarter:

- N/A

Expected End Date: 12/31/2019

Costs:

Total life to date expenses (include this quarter): \$23,097

Total Approved Budgeted Funds: \$23,333

Are you within the approved budget plan and categories? Yes

Signature:

Handwritten signature in black ink, appearing to read "David B." with a long horizontal flourish extending to the right.

Date: 01/31/2020