

2019 PROGRESS REPORT

Quarter: (circle one) 2019 1st 2021 2nd 2019 3rd 2019 4th

Grant Program, Number and Title: GSA 00046 Amendment 1

Organization: The Mid-Atlantic Center for Herpetology and Conservation

Project Leader: Brandon Ruhe and Lori Erb

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.

The Mid-Atlantic Center for Herpetology and Conservation (MACHAC), in coordination with the Delaware Department of Natural Resources and Environmental Control (DNREC), received permits and authorizations to Begin Spotted Turtle field studies during the reporting period. Two sites in New Castle County, Delaware were studied via Demographic Assessments (DA; three 4-day trap periods) and visual assessments. Trapping efforts were unsuccessful at potentially suitable sites on state land including a large wetland complex.

Were planned goals/objectives achieved last quarter? Yes

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

1. Prior to beginning field work in 2019, the Contractor will coordinate selection of study areas with the State, and permissions and permits that will be required. In each study area the Contractor will place up to four 200-m radius plots centered on potential spotted turtle habitat with plot centroids 400-800 m apart. These plots will be used in 2019 and 2020 to conduct Trap-based Rapid Assessments (TRA; one 4-day trap period), Trap-based Demographic Assessments (DA; three 4-day trap periods), or Visual Rapid Assessments (VRA; three daytime sampling periods).

Actual Accomplishments: *Three study sites were selected in New Castle County in coordination with DNREC: BP, LP, and WC (site names obscured in coordination with Delaware Department of Natural Resources and Environmental Control). BP and LP were selected for DA surveys in 2019. WC for surveys in 2021. The 2020 field season was abandoned due to the Covid pandemics and out of state travel restrictions. Permits were acquired from both DNREC and Delaware State Parks.*

2. During the 2019 and 2020 field seasons, the contractor will conduct TRA, DA, or VRA surveys for spotted turtles. More than one survey type may be used at the same study area, but not at the same time.

Actual Accomplishments: *DA Surveys were conducted at BP and LP in May and June of 2019, and WC in May and June of 2021.*

3. Traps used by the Contractor for TRAs and DAs will be ProMar TR-502 or TR-503 24" or 36" x 12"

collapsible turtle traps, crab traps, or standard turtle traps. The contractor will confirm traps are equipped with flotation devices (empty plastic bottle, floats, or pool noodles) to ensure adequate air space for any animals captured. Traps will be firmly staked to the ground or affixed to adjacent structures to keep them in place. Each trap will be numbered sequentially, marked, and have GPS location recorded by the Contractor.

Actual Accomplishments: *All DAs (BP, LP, and WC) were trapped to the above specifications.*

4. For TRAs, the Contractor will place five traps ~30m apart within each reference plot for a potential total of 20 traps per study area (Note: this should adhere to the most recent version of the Protocol). Traps may be set anytime during the Spotted Turtle activity season. Each trap will be baited with half can of sardines in oil and checked every 24 hours for four consecutive days, rebaiting each trap daily.

Actual Accomplishments: *All DAs (BP, LP, and WC) were trapped to the above specifications.*

5. For DAs, the same protocol as for TRAs will be conducted three times (for a total of 12 days) by the contractor through the spotted turtle activity season.

Actual Accomplishments: *All DAs (BP, LP, and WC) were trapped to the above specifications.*

6. VRA surveys are visual encounter surveys conducted while the Contractor walks within each 200-m radius plots and records all spotted turtles observed. Hand or dip net capture will be attempted. A total of three VRA surveys will be conducted by the Contractor within a 4-week window during the spotted turtle active season. VRA surveys will be either time-constrained (20 min. per plot) or unconstrained (record start and end times, and GPS travel route). Surveys will be momentarily stopped to process each spotted turtle encountered and will continue once the animal is released. GPS locations of each capture are required.

Actual Accomplishments: *VRAs were conducted at WC and several additional New Castle County sites in 2021.*

7. VRA surveys will be conducted by only 1 observer per plot; however if possible, observers should be alternated by visit to reduce sampling bias.

Actual Accomplishments: *VRAs were conducted at WC and several additional New Castle County sites in 2021 as per recommendations.*

8. Regardless of survey technique, the Contractor will completely fill out the standardized individual turtle capture forms provided by the State for all animals trapped or encountered. Standard shell measurements (± 1 mm), mass (± 1 g), sex, age class, and turtle identification will be recorded by the Contractor. The Contractor will also determine the reproductive status of adult females by palpation. The contractor will also completely fill out standardized TRA, DA, and VRA survey forms provided by the State.

Actual Accomplishments: *All unique Spotted Turtles captured during the reporting period (52) at BP and LP were recorded by the above methods and survey forms were completed for DA surveys. No Spotted Turtles were captured at WC sites despite intensive effort.*

9. The contractor will enter data from all field forms into a standardized Excel spreadsheet which will be submitted to the State.

Actual Accomplishments: *The spreadsheet with 2019 and 2021 data was created and submitted to the*

state as per specifications.

10. All new spotted turtles will be marked individually by the Contractor using a marking system agreed upon between the Contractor and State. The Contractor will collect DNA samples of each individual spotted turtle captured by either blood from the caudal vein or by removing the distal tip of the tail (0.5 mm). Regardless of extraction method, DNA will be collected from sites selected by DNREC in an attempt to collect the minimum sample sizes required by the protocol. . Efforts will be made by the Contractor to avoid contamination of individual DNA samples with other DNA by changing needles and razor blades between samples. DNA samples will be stored by the Contractor on FTA cards or in 95% ethanol and individually labelled with date, state, study area, sex, and turtle ID. DNA collection materials will be provided by DNREC in advance.

Actual Accomplishments: *All captured Spotted Turtles that were large enough to be marked (50 total) were given unique notches as coordinated prior to the DA surveys with DNREC. Ten (10) Spotted Turtle tissue samples were collected and are in the possession of DNREC.*

11. DNA will be delivered at the end of each field season by the Contractor to DNREC.

Actual Accomplishments: *Ten (10) Spotted Turtle tissue samples were collected and are in the possession of DNREC.*

Difficulties Encountered: The Covid pandemic of 2020 and 2021.

Activities Anticipated Next Quarter:

- None

Expected End Date: The end date of the next quarter is July 1, 2021

Costs:

Total life to date expenses (include this quarter): \$5,000.00

Total Approved Budgeted Funds: \$5,000.00

Are you within the approved budget plan and categories? Yes

Signature: 

Date: 6/29/2021