

USDA-NRCS FINAL REPORT

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PROJECT NAME: STATEMENT OF WORK FOR THE COOPERATIVE AGREEMENT BETWEEN THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE AND THE UNIVERSITY OF NEW HAMPSHIRE (USDA-NRCS Award #68-3A75-17-474)

REPORTING PERIOD: 08/17/2017 to 09/30/2019

REPORT SUMMARY: Matthew Tarr (UNH) was awarded this grant in the amount of \$29,717.00 for the purpose of determining whether painted turtles, spotted turtles, Blanding's turtles and wood turtles utilize sandy nesting sites created by piling loose sand adjacent to wetland habitats in forested landscapes within Hillsborough, Merrimack, Rockingham, and Stafford County, New Hampshire, including NRCS-Wetland Reserve Easements and Wetlands Reserve Program sites. This will inform NRCS conservation practices for NRCS Working Lands for Wildlife-Northeast Turtles effort. Funding supported the hiring of 2 seasonal biological technicians to complete turtle and turtle nesting monitoring. Joshua Megyesy (NHFG) provided training and field supervision.

This Report Provides:

- A summary of the original project scope, objectives, timeline, and tasks completed
- A summary of original tasks scheduled for completion in 2019
- A complete summary of all tasks completed as part of the complete project with results

OVERVIEW OF ORIGINAL PROJECT: Determine whether painted turtles, spotted turtles, Blanding's turtles and wood turtles utilize sandy nesting sites created by piling loose sand adjacent to wetland habitats in forested landscapes within Hillsborough, Merrimack,

Rockingham, and Stafford County, New Hampshire, including NRCS-Wetland Reserve Easements and Wetlands Reserve Program sites. This will inform NRCS conservation practices for NRCS Working Lands for Wildlife-Northeast Turtles effort.

OBJECTIVES OF ORIGINAL PROJECT:

1. February 1, 2018 Identify representative sample of artificial turtle nesting sites on public and/or private lands to be monitored
2. April 30, 2018 Obtain access to all study sites
3. May-August 2018 Conduct monitoring and telemetry of turtle use of study sites

TIMELINE OF ORIGINAL PROJECT: 08/17/2017 to 09/30/2019

COMPLETION OF TASKS FOLLOWING ORIGINAL PROJECT TIMELINES: All tasks completed on time and as scheduled

COMPLETION OF TASKS SCHEDULED FOR 2019: All tasks completed on time and as scheduled

COMPLETE SUMMARY OF ALL PROJECT ACTIVITIES COMPLETED IN 2019:

Three sites were identified as candidates for artificial nesting monitoring. Sites were selected based on previous NHFG data in Blanding's turtle (*Emydoidea blandingii*) priority areas, in-progress nesting creation, and previous nesting creations on Southeast Land Trust (SELT) property. Sites were in the towns of Durham, Newmarket, Newfields, and Epping, New Hampshire.

Permission to monitor all three sites was obtained from SELT, The Nature Conservancy, The Great Bay Partnership, and the towns of Durham, Newmarket, and Newfields.

Two field technicians funded under this grant conducted 3, 12-night Blanding's turtle trap events (20 traps/site) at 3 long-term priority areas. The goal was to capture reproductive age (or gravid) females to attach radio-transmitters to for nesting season movement monitoring. A total of 25 individuals were captured, processed for data, and released.

One spotted turtle (*Clemmys guttata*) 4-night trap-based rapid assessment (TRA) was conducted in the Durham priority area. No radio-transmitters were used on spotted turtles during this grant period. A total of 22 individual spotted turtles were captured, processed for data, and released.

Five radio-transmitters were deployed on all females at the 3 monitoring sites. The 5 telemetered turtles were tracked weekly in addition to 18 others previously tracked in 2017 by NHFG.

Six trail cameras were deployed at 2 nest creation sites on SELT properties. Cameras were programmed to collect time lapse photos in order to capture images of turtles that would otherwise be missed by motion detection sensors. Only one painted turtle was detected using this technique.

Evening nesting surveys were undertaken during the peak nesting dates of June 1 – June 15. Visual searches for nesting females, nests, and actively locating radio-transmitted females proved to be effective. Nesting survey nights revealed females moving to open canopy areas with sandy substrates. These areas included residential areas, parking lot edges (Figure 1. And 2.), and recent timber harvest plots. A 3-plot timber harvest in the winter of 2018 as part of a Blanding's turtle nesting habitat creation project (under separate funding) (Figure 3.) appeared to attract female turtles within the first nesting season post-harvest (Figure 4.). The project had not yet received the final sand delivery to complete the nesting creation and likely reduced the number of completed turtle nests due to limited suitable substrate.

All data will be included in region-wide analyses as part of 2 Competitive State Wildlife Grants (CSWGs): ADAPTIVE IMPLEMENTATION OF THE REGIONAL CONSERVATION PLAN FOR BLANDING'S TURTLE AND ASSOCIATED WETLAND SGCN IN THE NORTHEAST and CONSERVATION AND MANAGEMENT OF THE SPOTTED TURTLE (*Clemmys guttata*) AND SEASONAL WETLAND HABITATS IN THE EASTERN U.S. and stored in secure centralized databases.

Summary and future conservation needs:

The 3 sites monitored had low juvenile detection rates for this season (Blanding's = 0, spotted = 4), which is consistent with previous years' trapping results. Radio-telemetry results also recorded some female turtles moving nearly a mile to find suitable nesting habitat. These two

factors indicate a lack of suitable nesting habitat or poor quality nesting habitat (i.e., across a road, in a development, or any area that puts females or hatchlings at risk). Creating nesting habitat within the core of the turtle's wetland/upland complex habitat should reduce the number of females crossing roads and facing other mortality risks. The results of the monitoring under this grant period indicate that nesting habitat is limited and females take great risk in finding suitable areas to deposit eggs. However, Blanding's turtles seem to respond quickly to new forest openings with long periods of solar exposure. Adding sand or gravelly sand within these forest openings provides substrate for turtles to nest. Identifying areas where this type of management could be implemented within the core of known populations could be greatly beneficial in enhancing recruitment and long-term persistence of local populations.



Figure 1. Female Blanding's turtle nesting on the edge of a parking area in Durham, NH



Figure 2. Female Blanding's turtle nesting on the edge of a parking area in Durham, NH



Figure 3. Tree clearing in 3 plots completed in winter of 2018 in Durham, NH



Figure 4. Female Blanding's turtle nesting in a recent tree clearing in Durham, NH



Figure 5. Female Blanding's turtle nesting near a public trail in Durham, NH



Figure 6. Female Blanding's turtle nesting near a public trail in Durham, NH