

NORTHEAST REGIONAL CONSERVATION NEEDS GRANT

2013 PROGRESS REPORT

Quarter: 2013 1st 2013 2nd 2013 3rd 2013 4th

Grant Program, Number and Title: RCN 2011-2, The Wood Turtle in the Northeastern United States: A Status Assessment and Conservation Strategy

Organization: Massachusetts Cooperative Fish and Wildlife Research Unit, University of Massachusetts, Amherst, MA 01003

Project Leader: Paul R. Sievert, Assistant Leader, Massachusetts Cooperative Fish and Wildlife Research Unit

Abstract:

The Massachusetts Cooperative Fish and Wildlife Research Unit at the University of Massachusetts (UMass) is coordinating a twelve-state effort to develop a status assessment and conservation strategy for the North American wood turtle (*Glyptemys insculpta*) in the northeastern United States (inclusive of twelve states with confirmed wood turtle populations from Maine to Virginia). Our primary objectives are to: (A) gather and corroborate available occurrence and population data for the Northeast Region; (B) undertake spatial analyses to evaluate region-wide trends in abundance, occupancy, historic habitat loss, threats, and data deficiencies; and (C) make general and specific recommendations regarding the status and conservation of wood turtles in the Northeast Region and at two finer scales (state and major watershed). In addition, we plan to evaluate detection and monitoring protocols and to test these (where feasible on primarily a volunteer basis) in a pilot framework in 2012–2013. The Status Assessment/Conservation Strategy will identify populations of region-wide significance, assess the historic and current occurrence of wood turtles, and outline a proposed monitoring strategy and standardized protocol. Finally, through this process we are developing Best Management Practices for multiple land-use scenarios (development, forestry, and agriculture). The project will end on schedule in December 2013, although we are establishing a structure to allow additional coordination in 2014 and beyond.

Since 2012, the Northeast Wood Turtle Working Group (NEWTWG) has held monthly conference calls to discuss important aspects of the RCN Conservation Planning process. In the 3rd quarter of 2013, the NEWTWG continued to implement the *Coordinated Monitoring Strategy* (CMS), which we developed in 2012 and updated in 2013 with feedback from state project coordinators and site leaders. The CMS has been implemented to varying extents in ten states (Maine, Massachusetts, New Hampshire, Vermont, New York, New Jersey, Pennsylvania, Maryland, West Virginia, and Virginia), as well as New Brunswick, by approximately 30 lead researchers. The CMS has resulted in 730 surveys of 130 streams, the establishment of at least 23 long-term reference sites with standardized methodology, 1406 wood turtle detections in a standardized framework, and approximately 20 surveys of randomly identified stream habitat. Using survey results, we are finalizing empirical models of the effect of landscape on wood turtle abundance to inform our final estimates of habitat quality and degradation, and we are formalizing a long-term regional monitoring program.

In addition to the development and implementation of the CMS, in the 3rd quarter of 2013 UMass continued to expand a database of corroborated wood turtle occurrences throughout the Northeast Region. This layer is built from element occurrence information, herp atlas data, literature reviews, expert information and personal datasets, interviews, and field survey data. The database of corroborated occurrences was sent to individual states for review and comment and to identify missing data, and is now being used to train predictive models built with stream variables including stream gradient and flow accumulation and landscape variables including elevation, aspect, growing degree days, and other climatological data. Earlier versions of these models enabled us to select random sites for sampling in 2013, which allowed for partial randomization of study site selection

in Massachusetts, New Hampshire, and Virginia in 2013. The new models are allowing us to finalize analyses of wood turtle distribution. The database-building and modeling process has allowed us to identify data-deficient regions and data-deficient watersheds and areas that may harbor populations of regional significance because of their extent and/or habitat quality. Ten of these sites were surveyed in 2013. We anticipate that all components of the project will be finished by December 14, 2013 and the final report and documentation submitted by January 14, 2013.

Were planned goals/objectives achieved last quarter? Yes

Progress Achieved:

1. Northeastern Wood Turtle Working Group

Accomplished

- a. NEWTWG continues to meet monthly by phone with broad participation from twelve NE states;
- b. NEWTWG has held an annual in-person meeting at Northeast Partners in Amphibian and Reptile Conservation (NEPARC) meeting since 2009;
- c. *Project coordinators* from each of fourteen participating state agencies (including Delaware and the District of Columbia) are engaged in the monthly conference calls and project implementation;
- d. Continued coordination is underway with Wood Turtle researchers and specialists in Québec, New Brunswick, and Nova Scotia;
- e. Web-based two-way data-sharing portal launched in 2012 with continuous updates and new functionality in 2013;
- f. Developed a *technical review board* including members from outside the *Regional Working Group*;
- g. Expanded web interface to allow secure sharing of data and images.

Planned

All items complete.

2. Gather and standardize available population data

Accomplished

- a. We gathered, corroborated, and standardized occurrence data for 12 northeastern states from a variety of sources, including: Natural Heritage Programs, Reptile and Amphibian Atlases, literature records, gray literature, field surveys (led by UMass and described in detail below), expert surveys, rapid assessments conducted by Working Group members, and web-based online data submission;
- b. Completed a fall season of population assessment in ME, NH, VT, MA, NY, PA, NJ, MD, WV, and VA;
- c. Compiled occurrence data into a regional layer of *confirmed wood turtle populations*, now totaling over 1000 confirmed locations throughout the range of the wood turtle;
- d. Delineated known and confirmed populations (multiple animals or evidence of reproduction);
- e. 2013 field surveys launched at Long-Term, Rapid Assessment sites with a randomized component where feasible (ME, NH, MA, NJ, VA);
- f. Completed preliminary analysis of 2012–2013 survey and monitoring data and presented results at Freshwater Turtle Symposium at the International Sea Turtle Conference in Baltimore and Turtle Survival Alliance in Arizona);
- g. Continued field surveys following the *Coordinated Monitoring Strategy*;
- h. Surveys of high-priority sites in Maine, Massachusetts, New Hampshire, and Virginia were completed in 2013;
- i. Expand proposed monitoring effort to include long-term, standardized study sites in all twelve states with confirmed wood turtle populations as well as Delaware (historic occurrence unknown) and the District of Columbia;

Planned

- j. Complete analysis of 2012–2013 field data, including detection protocols and abundance estimates;
- k. Formalize protocols and field sites for 2014.

3. Analysis of occurrence, occupancy, and historic range

Accomplished

- a. We continue to refine, revise, and update a *Coordinated Monitoring Strategy for Wood Turtles in the Northeastern United States* with input from Working Group members and partners;
- b. We continue to implement a pilot, two-year monitoring strategy with Long-Term Intensive Study Sites established in ten northeastern states;
- c. We continue to implement *Rapid Assessments* throughout the Northeast Region in 2013;
- d. We have launched a pilot implementation of randomized rapid assessments at stream segments identified through a multivariate modeling approach;
- e. We have completed preliminary spatially-explicit predictive models of occurrence using the populations data outlined in 2(b);
- f. Statewide predictive models have been distributed to project leaders in MA, NJ, and VA as part of a preliminary assessment of feasibility;
- g. Statewide predictive model outputs have been used to guide randomized site selection and to identify data-deficient areas;
- h. Intensive field work has been conducted at priority populations in Maine and New Hampshire;
- i. Randomized pilot field surveys, and surveys in data-deficient areas, were conducted in 2013;

Planned

- j. Distribute state-specific predictive models to remaining state project leaders for review;
- k. Complete analyses of historic range and likely range contraction.

Difficulties Encountered: None

Activities Anticipated Next Quarter: Finalize all major components of Status Assessment/Conservation Plan and submit final documentation to partners for review.

Expected End Date: **December 14, 2013**

Costs:

Total life to date expenses (include this quarter): **\$80,710.63**

Total Approved Budgeted Funds: \$100,000

Are you within the approved budget plan and categories? Yes

Signature: 

Date: 14 November 2013