NORTHEAST REGIONAL CONSERVATION NEEDS GRANT 2013 PROGRESS REPORT

Quarter: (circle one) 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, 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. It is further our intention 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 Asssessment/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. Additionally, through this process we will generate Best Management Practices for multiple land-use scenarios, and develop and evaluate detection protocols for the wood turtle in the Northeast Region. We anticipate that this project will end on schedule by December 14, 2013, although we anticipate additional coordination in 2014 and beyond.

From 2009–2012, we identified key collaborators from universities, state agencies, federal agencies and institutions, and NGOs throughout the Northeast Region. This team has become the *Northeast Wood Turtle Working Group* (NEWTWG), and is informally hosted by the Northeast chapter of Partners in Amphibian and Reptile Conservation (PARC). Since 2012, the NEWTWG has held monthly conference calls to discuss key aspects of the RCN Conservation Planning process. The NEWTWG uses a variety of web-based interfaces for decision-making, data entry, and accessing information. In this way the NEWTWG is able to work effectively to provide critical feedback on the project objectives, priorities, and methodology. In 2012, UMass developed a *Coordinated Monitoring Strategy* (CMS) which was implemented in 2012–2013 in 9 states by 25 lead researchers, and resulted in the establishment of more than 30 long-term research sites with standardized methodology, and over 1000 wood turtle detections in a standardized framework. Following an expert-driven poll and preliminary data analysis, we have revised and expanded the CMS to include a randomized component, which should allow for greater extrapolative power. In addition to the development and implementation of the CMS, UMass continues to update a database of confirmed 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. From this layer, we have built coarse predictive models using Classification and Regression Tree analysis of stream variables that include gradient and flow accumulation along with landscape variables such as elevation, aspect, growing degree days, and other climatological data. These models have 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. These

models also allowed us to undertake preliminary analyses of wood turtle resource selection and distributional constraints. The database-building and modeling process have made it possible 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, some of which will be targeted for surveys in 2013 and beyond, where resources allow. The second round of spring surveys has been completed as of June 30, 2013. Several key components need to be completed immediately, including a peer review of the populations data layer by working group members. In addition to these major projects, we have sought feedback on the project through presentations to the World Congress of Herpetology, the Turtle Survival Alliance, Northeast PARC, the Freshwater Turtle Symposium in Baltimore, the New Brunswick Wood Turtle Recovery Team, and other venues. We anticipate that all components of the project will be finished by December 14, 2013.

Were planned goals/objectives achieved last quarter? Yes

Progress Achieved:

1. Northeastern Wood Turtle Working Group

Accomplished

a. *Regional Working Group* continues to meet monthly by phone with broad participation from twelve NE states, and an annual in-person meeting at NEPARC;
b. *Project coordinators* from each of twelve participating state agencies are engaged in the monthly conference calls and project implementation;
c. Continued coordination is underway with wood turtle researchers and specialists in Québec, New Brunswick, and Nova Scotia;
d. A regional meeting (see planned accomplishments, below) is scheduled for July 2013;
e. Web-based two-way data-sharing portal launched in 2012 with continuous updates and new functionality;
f. Developed a *technical review board* including members from outside the *Regional Working Group*.

Planned

g. Hold regional meeting, planning session, and research symposium in concert with meeting of the Northeast Partners in Amphibian and Reptile Conservation July 24, 2013, in Branchville, NJ;
h. Continue to develop web interface to allow secure sharing of data, images, and questions.

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 survey and monitoring data and presented results at Freshwater Turtle Symposium at the International Sea Turtle Conference in Baltimore, MD;
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.

Planned

i. Ideally, expand survey effort to include long-term, standardized study sites in all twelve states and Delaware;
j. Complete analysis of 2012 field data, including detection protocols and abundance estimates.

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.

Planned

i. Distribute state-specific predictive models to remaining state project leaders;
j. Complete analyses of historic range and likely range contraction;
k. Complete randomized field surveys and surveys in data-deficient areas.

Difficulties Encountered: None

Activities Anticipated Next Quarter: Framework of status assessment submitted to NEWTWG members; complete literature review; begin process of soliciting demographic data from partners; complete the predictive models for random site selection in 2013; initiate 2013 field surveys at “long-term” and “rapid”/random sites, initiate surveys in data-deficient areas identified through database building.

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

Costs:

Total life to date expenses (include this quarter): $64,138.18
Total Approved Budgeted Funds: $100,000
Are you within the approved budget plan and categories? Yes

Signature: 

Date: 15 August 2013