

QUARTERLY PROGRESS REPORT

Quarter: (circle one)

2021 1st

2021 2nd

2021 3rd

2021 4th

Grant Program, Number and Title: Strategic Implementation of Regional Conservation Priorities for Freshwater Turtles at Risk in the Northeast: RCN Opportunity, Initiative 3. Road Mortality Hotspot Identification, Targeted Road Mitigation Assessment, & Best Management Practices. RCN 17-01 GSA 00033

Contractor: Clarkson University

Project Leader: Tom Langen

Abstract: The purpose of this project is to reduce turtle road mortality through improved mortality “hotspot” identification and mitigation strategies, advancing the goals of the Regional Conservation Priorities for Freshwater Turtles at Risk in the Northeast (Initiative 3), which include: (a) Improving our overall approach to identifying turtle road mortality concentrations, (b) Designing effective mitigation strategies and (c) Assessing the mitigation.

Progress in this quarter included a presentation and distribution of a document to the RCN working group on methods of locating critical road locations (hotspots) for emydine turtles, a presentation on progress to the NE PARC working group, near completion of two Blanding’s turtle hotspot modeling projects (to use as exemplars for others), continued work on the literature reviews. I drafted and distributed two documents for comment (1) ***General Approaches for Locating Road-kill Hotspots or Other Critical Road Locations for Emydine Turtles***, and (2) ***General Guidelines for Evaluating the Effectiveness of Road Mitigation Measures for Emydine Turtles***.

Next quarter objectives include distribution and analysis of results of the survey, continued work on the hotspot models, and continued work on the reviews with the goal of completing some drafts for review and comment. There will be two meetings with the RCN working group on monitoring roads and mitigation projects and on implementation of turtle mitigation projects (barriers, passages, signage, alternative breeding habitat) and evidence of success.

The project is funded through 2023.

Were planned goals/objectives achieved last quarter? Yes, for the most part.

Progress Achieved:

I drafted and distributed two documents for comment (1) ***General Approaches for Locating Road-kill Hotspots or Other Critical Road Locations for Emydine Turtles***, and (2) ***General Guidelines for Evaluating the Effectiveness of Road Mitigation Measures for Emydine Turtles***. I met with representatives from northeast resource agencies on approaches for locating hotspots and other critical road locations.

I have had regular meetings with collaborator Dr. Eric McCluskey on methodologies for identification of hotspots and on survey monitoring methods. We are initiating a validation of Circuitscape as an approach to predicting road-encounter locations by Blanding’s and wood turtles. As reported last quarter, I continued on two road-encounter hotspot-modeling projects intended for locating critical road segments for mitigation to reduce mortality and maintain connectivity for the priority turtle species. I have a graduate student working on this project, currently modeling Blanding’s turtle road encounter hotspots. Results are encouraging that these road encounter hotspots can be localized enough for practical use in mitigation, using wetland and land cover data.

I continue to review, evaluate, and synthesize current hotspot identification methods for turtles, and current practices in monitoring turtle road encounters, and continue to work on a draft written report. I continue reviewing, evaluating, and synthesizing current published practices for monitoring effectiveness of mitigation for turtles and other small vertebrates, and continue working on the written review of existing published studies.

Difficulties Encountered in Meeting Goals and Objectives: As stated in the prior quarterly report, as senior administrator (Interim Dean) who was part of the covid-19 planning and response team, I was distracted from research progress I had hoped to achieve. That burden ended in April.

Activities Anticipated Next Quarter:

A RCN Working Group phone meeting is scheduled for April (*Pre-Post Mitigation Monitoring*), May (*Mitigation*), and June (*Mitigation*). A project progress meeting is planned for June. I will provide deliverable documents for review at the second quarter's end

Distribute a survey the survey-monkey survey on road mitigation practices for turtles in May. Follow up with second requests in June and July, and contacts with informants who want to discuss components of the survey.

Continue to make progress on hotspot modeling projects. Will distribute a template for agencies to do hotspot projects, based on a draft document that has already been distributed for review.

Continue to review, evaluate, and synthesize current hotspot identification methods for turtles, and current practices in monitoring turtle road encounters. Continue writing. The goal is to have a working draft product to send out for review and comment by sometime in Q2 2021.

Continue to review, evaluate, and synthesize current published practices for monitoring effectiveness of mitigation for turtles and other small vertebrates. Continue writing. The goal is to have a working draft product to send out for review and comment by sometime in Q2 2021. I will then create an instructional template for pre- and post-mitigation monitoring, with a goal for sending both (review and monitoring template) for send out for review and comment Q3 2021.

Expected End Date: 31 December 2023

Costs:

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

Total Approved Budgeted Funds: \$137,500.00

Are you within the approved budget plan and categories? Yes

The foregoing information is accurate as of the date set forth below.

CLARKSON UNIVERSITY

By: _____

Name: Tom Langer

Title: Interim Dean of Arts & Sciences, Professor, Dept. of Biology, Clarkson University

Date: 27 April 2021