QUARTERLY PROGRESS REPORT

Quarter: (circle one)   2019 1st   2019 2nd   (2019 3rd)   2019 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. The project contract was finalized and signed four months ago – this is the first full-quarter. Accomplishments in this quarter included presentations and discussions with stake-holders and key informants, and initiation of the literature reviews. Next quarter objectives include a survey and follow-up calls with partner agencies on past and current agency and partners' projects related to turtles and roads. The project is funded through 2022.

Were planned goals/objectives achieved last quarter? Yes.

Progress Achieved: I have recruited and am now training two graduate students on aspects of the project.

I attended and presented a poster on this project at the 2019 ICOET (International Conference on Ecology and Transportation) at Sacramento CA. I am now following up with contacts I made at the conference who have information relevant to this project.

I am in the midst of reviewing, evaluating, and synthesizing current hotspot identification methods for turtles, and current practices in monitoring turtle road encounters. I am currently reviewing very different approaches (road-kill road-encounter surveys, predictive models based on behavior or survey data, predictive models based on habitat and species occurrence, citizen science surveys, expert opinion surveys), and am in the process of evaluating how to adapt for each of the focal turtle species, based on information from working groups on each species and published literature.

I am continuing follow-up contacts with partner agencies on past and current agency and partners' projects related to turtles and roads, including new projects that I was made aware of at ICOET.

I am in the midst of reviewing, evaluating, and synthesizing current published practices for monitoring effectiveness of mitigation for turtles and other small vertebrates. I am also contacting project managers and wildlife researchers who have experience with mitigation monitoring for small vertebrates.

The review of existing published studies has been initiated. I am now soliciting unpublished assessments of mitigation action effectiveness as a component of follow-up surveys of mitigation projects for Task B.

<u>Difficulties Encountered in Meeting Goals and Objectives</u>: None.

<u>Activities Anticipated Next Quarter</u>: Continue to review, evaluate, and synthesize current hotspot identification methods for turtles, and current practices in monitoring turtle road encounters. By the end of this fall semester, a draft of the background review and synthesis will be completed, and focal turtle species species-specific recommendations for locating road mortality hotspots will be drafted. The goal is to have a working draft product to send out for review and comment by the start of the new year.

I have conducted initial survey and follow-up calls with partner agencies on past and current agency and partners' projects related to turtles and roads. Some preliminary findings were presented in a poster at ICOET (at Sacramento CA) in Sept. 2019. The goal is to have a first draft database completed for review and comment by winter 2020. In Spring/Summer 2020, I will visit selected projects, aggregate follow-up data and interview project managers to finalize the database, and format in a form useful to stakeholders.

I am in the midst of reviewing, evaluating, and synthesizing current published practices for monitoring effectiveness of mitigation for turtles and other small vertebrates. The goal is to have a working review by the end of fall semester 2019. 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 by late spring 2020.

The review of existing published studies has been initiated. A goal is to complete targeted site visits and a draft of this meta-analysis next summer (2020), for initial stakeholder review and comments in fall 2020.

<u>Expected End Date</u>: 31 December 2022

<u>Costs</u>:

      Total life to date expenses (include this quarter): $13,203.92

      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 Langen
Title: Professor, Dept. of Biology, Clarkson University
Date: 14 October 2019