

**NEW ENGLAND TRANSPORTATION CONSORTIUM  
QUARTERLY PROJECT PROGRESS REPORT**

**A. PROJECT NUMBER AND TITLE:** NETC 15-1, Use of Forested Habitat Adjacent to Highways by Northern Long-Eared Bats

**B. PRINCIPAL INVESTIGATORS & UNIVERSITIES:**

Jeffrey Foster, Ph.D.  
University of New Hampshire

Erik Blomberg, Ph.D.  
University of Maine

Dan Linden, Ph.D.  
National Oceanic and Atmospheric Administration

**C. WEBSITE ADDRESS:** fozlab.weebly.com

**D. START DATE:** 12/1/2016

**E. END DATE:** 11/30/2018

**F. ANTICIPATED COMPLETION DATE:** 11/30/2018

**G. PROJECT OBJECTIVES:** Our overall objective addresses several major gaps in the knowledge of Northern long-eared bat (NLEB; *Myotis septentrionalis*) distributions and activity as they relate to the use of highway habitat in New England.

The research objectives will be achieved by accomplishing 8 tasks:

- Task 1. Literature review on NLEB habitat requirements and effects of anthropogenic disturbance, focusing on the effects of roadways.
- Task 2. Develop a “Zone of Influence” matrix for highway induced stressors.
- Task 3. Compile existing data on NLEB and other rare bat species distributions.
- Task 4. Request presence/absence data from State Depts of Transportation and other sources.
- Task 5. Determine land cover (habitat) being used or not used by NLEB.
- Task 6. Determine data gathering needs to improve model inference.
- Task 7. Identify data gaps in sampling of NLEB in specific habitats that may require additional data collection on presence/absence.
- Task 8. Develop screening tool and GIS model that would show zones of influence around highways.

**H. REPORT PERIOD:** July – September 2017

**I. ACCOMPLISHMENTS THIS PERIOD:**

–Completed literature review (Task 1). This compilation of papers can be found at:  
<https://unh.box.com/s/rrep5rctxsea4z5rjsvjdb4l1z0vclnf>

In the previous quarterly report, we had outlined the overall findings of our Literature review. We now present a more detailed review. See attached literature review report.

–Identified the main stressors of roads on bats, which include direct mortality and movement barrier due to reduced landscape permeability and vehicle noise. See attached literature review report for more details (Task 2).

–Continued compilation of NLEB distribution data (Task 3).

–Presence/Absence data have been received from some transportation departments, such as MA (Task 4).

–We have collated landscape data including road variables such as the traffic level and width of nearest road (Task 5).

–Compiled Presence/Absence data; have very few presences, thus we may need to combine these data with presence-only data from other sources (Task 6).

**J. PROBLEMS ENCOUNTERED:** None.

**K. TECHNOLOGY TRANSFER ACTIVITIES:** None

**L. STATUS BY TASK:**

Task 1. NLEB Literature review:	100%
Task 2. Develop a Zone of Influence matrix:	50%
Task 3. Compile NLEB distribution data:	50%
Task 4. Request presence/absence data:	100%
Task 5. Determine NLEB land cover use:	20%
Task 6. Determine additional data needs:	20%
Task 7. Identify presence/absence data gaps:	0%
Task 8. Develop GIS screening tool:	0%

**M. PERCENT COMPLETION OF TOTAL PROJECT:** 25 %

**N. ACTIVITIES PLANNED FOR NEXT QUARTER:**

–Complete compilation of all NLEB and other bat distribution data (Task 3)

–Complete dataset of NLEB and other bat presence/absence data (Task 4) from State DOTs and other sources

–Complete Zone of Influence Matrix (Task 2) and build bat occupancy models (part of Task 5).

**O. FINANCIAL STATUS:**

*As of: September 30, 2017*

**Total Project Budget: \$ 164,970**

**Total Expenditures: \$ 41,243**