



FACT SHEET

Use of Forested Habitat Adjacent to Highways by Northern Long-Eared Bats

RESEARCH PROJECT TITLE

Use of Forested Habitat Adjacent to Highways by Northern Long-Eared Bats

STUDY TIMELINE

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MORE INFORMATION

https://www.newenglandtransportationconsortium.org/wp-content/uploads/NETC_15-1_FinalReport_FinalVersion.pdf

The New England Transportation Consortium, a cooperative effort of the transportation agencies of the six New England States, funded this research. Through the Consortium, the states pool professional, academic and financial resources for transportation research leading to the development of improved methods for dealing with common problems associated with the administration, planning, design, construction, rehabilitation, reconstruction, operation and maintenance of the region's transportation system.

The NETC is hosted by the University of Vermont Transportation Research Center.



TRANSPORTATION RESEARCH CENTER

Introduction

Bat populations throughout the Northeast have undergone precipitous declines in less than a decade due to the fungal disease white-nose syndrome, with Northern long-eared bat (*Myotis septentrionalis*) suffering the most severe declines of any species. The overarching objective of the proposed research was to address several major gaps in the knowledge of Northern long-eared bat distributions and activity as they relate to the use of habitat along or adjacent to highways in New England.

Methodology

We compiled all available survey data from New England to determine Northern long-eared bat distributions in the region and assess potential road and landscape effects. While we collated over a thousand survey points, once we excluded problematic data (e.g. uncertain species ID), only 65 of 711 survey points had a verified Northern long-eared bat presence. We applied cutting-edge presence-absence occupancy modeling to assess the relationship of 20 highway and landscape variables on Northern long-eared bat presence.

Conclusion

Occupancy models indicate that Northern long-eared bat distribution change spatially across New England, with highest occupancy in Northern Maine but were generally low overall, ranging from 0.01–0.4 chance of occupancy. Moreover, we found no strong relationship between Northern long-eared bat distributions and highway or other landscape features.

What are potential impacts?

Northern long-eared bat populations have declined so drastically that even with more extensive sampling, sufficient detections may not be achievable for robust estimates of occupancy and to assess potential landscape and road effects.

To evaluate potential stressors of roads on bats, such as noise creating a “zone of influence” near roadways, surveys should be established at increasing distances perpendicular to the road using an appropriate experimental design.

