

# NHDOT SPR2 PROGRAM RESEARCH PROGRESS REPORT

## RESEARCH PROGRESS REPORT

<b>Project #</b> 42372P	<b>Report Period</b> Year 2023 <input type="checkbox"/> Q1 (Jan-Mar) <input type="checkbox"/> Q2 (Apr-Jun) <input checked="" type="checkbox"/> Q3 (Jul-Sep) <input type="checkbox"/> Q4 (Oct-Dec)	
<b>Project Title:</b> Wildlife Vehicle Collisions Data Gathering and Best Management Practices Part 2		
<b>Project Investigator:</b> Remington Moll, University of New Hampshire <b>Phone:</b> 603-862-3054 <b>E-mail:</b> <a href="mailto:remington.moll@unh.edu">remington.moll@unh.edu</a>		
<b>Project Start Date:</b> 6/14/2023	<b>Project End Date:</b> 6/30/2025	<b>Project schedule status:</b> <input checked="" type="checkbox"/> On schedule <input type="checkbox"/> Ahead of schedule <input type="checkbox"/> Behind schedule

### Brief Project Description:

Wildlife vehicular collisions (WVCs) pose inherent threats to wildlife populations and human safety throughout the State. Roads create barriers that reduce free movements of wildlife species. Plymouth State University Wildlife Vehicle Collisions Data Gathering and Best Management Practices Study (Part 1) has synthesized the available data about WVCs in NH and developed a statistical model to analyze road, temporal, and wildlife specific factors that contribute to areas with more collisions. The study found positive relationships between WVCs and local road density, which corresponds to population centers within the state. However, it also revealed that there is more variability and less predictability in the data than was expected.

This research will refine the model and complete on-the-ground research to identify some hot spots where mitigation should be considered in New Hampshire. The proposed research includes:

- Continuing data analysis from Part 1 of the project,
- Using cameras, wildlife tracking, or roadkill surveys to evaluate the presence of wildlife and analyze the data to identify locations for WVC mitigation projects,
- Investigate the 23 USC 171: Wildlife crossings pilot program and make recommendations to the Technical Advisory Group,
- Develop a guidance document for Wildlife Crossing Best Management Practices (BMPs)
- Facilitate a meeting to include NHDOT personnel from Operations, Project Development and NH F&G to workshop a crossing project proposal.

The project could result in design features to mitigate WVCs in the vicinity of WVC hot spots and future stand-alone projects to reduce WVCs. The BMP manual could lead to reduced WVCs throughout New Hampshire, providing a safer travelling environment for drivers and for wildlife.

### Progress this Quarter (include meetings, installations, equipment purchases, significant progress, etc.):

- Recruited a graduate student to lead many aspects of the project. This student, Clara Dawson, began in the M.S. degree program in Wildlife and Conservation Biology at the University of New Hampshire (UNH) under the supervision of project PI Remington Moll. Also hired two undergraduate students, one at UNH and one at Plymouth State University, to assist with field work and data collection.
- Dr. Amy Villamagna (PI of Phase 1 [SPR 42372I ] of the project and collaborator on this project) completed the spatial vehicle collision hotspot analysis begun in Phase 1 and identified 40 potential wildlife-vehicle collision hotspots to consider for field monitoring. Following additional site-specific analysis and field site visits, 12 focal sites were selected for monitoring. These sites will be monitored by deploying up to 6 infrared motion-triggered wildlife camera traps (“trail cams”) at each site. These camera traps will monitor road crossings (e.g., culverts, bridges) and roadsides for a comprehensive assessment of wildlife activity at the focal sites.
- Secured permission to monitor all potential field sites from NHDOT Operations (facilitated by project liaison Rebecca Martin and Matt Urban).
- Purchased camera traps and associated supplies required for field monitoring.

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- Deployed camera traps at 4 of the 12 focal sites.
- PI Remington Moll attended the Wildlife and Transportation Working Group meeting on June 27<sup>th</sup> held at NHDOT headquarters and provided a project update.
- Clara Dawson attended the Wildlife and Transportation Working Group meeting on September 26<sup>th</sup> held at NHDOT headquarters and provided a project update.
- Began prepping ancillary data (wildlife habitat maps) for future analysis to inform mitigation planning.

**Items needed from NHDOT (i.e., Concurrence, Sub-contract, Assignments, Samples, Testing, etc...):**

None at this time.

**Anticipated research next three(3) months:**

- Complete field monitoring camera trap deployment at all sites.
- Begin analysis of land connectivity maps to evaluate their relevancy for predicting wildlife-vehicle collisions or wildlife distributions. These efforts will inform the Best Practices document as well as help guide applications to the Wildlife Pilot Program.
- Evaluate efficacy of using the Survey123 application ROaDS Roadkill Survey to collect data on statewide road wildlife mortalities.
- Explore optimal timing of future NHDOT and NHFG meetings with project liaison Rebecca Martin.
- Begin literature review for Best Management Practices document.

**Circumstances affecting project:**

No challenges encountered since project start are expected to significantly affect project completion timelines.

<b>Tasks (from Work Plan)</b>	<b>Planned % Complete</b>	<b>Actual % Complete</b>
<i>Continue data analysis from Part 1 of the project (hotspot mapping) (2023 Q3)</i>	<i>100</i>	<i>100</i>
<i>Field monitoring of hotspot locations (2023 Q3 - 2025 Q1)</i>	<i>25</i>	<i>25</i>
<i>Investigate the 23 USC 171: Wildlife crossings pilot program and make recommendations (2024 Q1 – 2024 Q4)</i>	<i>0</i>	<i>0</i>
<i>Analyze ancillary data (wildlife habitat maps) to inform mitigation analysis (2023 Q4 – 2025 Q1)</i>	<i>0</i>	<i>5</i>
<i>Analyze field data to inform mitigation analysis (2023 Q2 – 2025 Q1)</i>	<i>0</i>	<i>0</i>
<i>Develop Best Management Practices document (2024 Q1 – 2024 Q3)</i>	<i>0</i>	<i>0</i>
<i>Facilitate a meeting to include NHDOT personnel from Operations, Project Development and NH F&amp;G to inform crossing project proposal (2023 Q4, 2024 Q4)</i>	<i>0</i>	<i>0</i>
<i>Update StoryMap from Phase 1 (2023 Q4 – 2025 Q2)</i>	<i>0</i>	<i>0</i>
<i>Write technical report (2025 Q2)</i>	<i>0</i>	<i>0</i>
<i>Present results and prepare manuscript for publication (2024 Q3 – 2025 Q2)</i>	<i>0</i>	<i>0</i>

**Barriers or constraints to implementing research results**

None to report at this time.