Research Brief

Policy Research Program
Project 0092-24-17
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Wildlife Crossing Hotspot Analyses for Major Highways in Wisconsin

Objectives

- Explore ways to enhance road safety by reducing collisions with large wild animals
- Ensure safe crossing opportunities for wildlife
- Identify and prioritize road sections along state routes that have a high concentration of collisions involving large animals

Benefits

- Reduce collisions with wild animals and provide them safe passage
- Reduce road mortality for species that are of conservation concern

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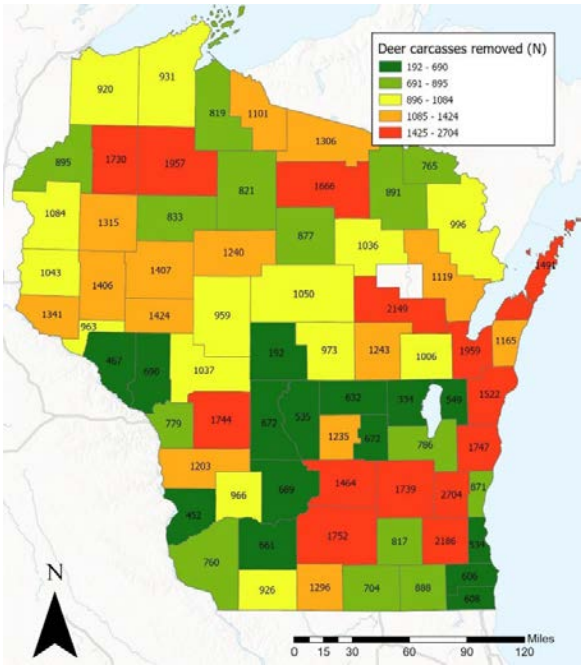
Background

Wildlife-vehicle collisions are becoming increasingly common across much of North America, posing risks to both human safety and the individual animals involved. In the United States alone, several million collisions with large wild mammals occur annually. These collisions nearly always result in vehicle damage and costly repairs, but they also cause tens of thousands of human injuries and hundreds of human fatalities each year.

Much emphasis has been placed on mitigating vehicle collisions with large animals, but there are other reasons to consider wildlife mitigation along highways. This report identifies five categories of road and traffic impacts on wildlife: habitat loss, wildlife mortality, barriers to wildlife movement, decrease in habitat quality near roads and right-of-way habitat corridors.

Methodology

Researchers identified and prioritized road sections in Wisconsin along state-maintained routes that have a relatively high concentration of collisions involving large wild mammals, mostly with white-tailed deer. Using large wild mammal crash and carcass data to conduct cost-benefit analyses, researchers identified road sections where the implementation of mitigation measures may be less expensive than doing nothing and letting these types of collisions continue to occur.



Deer carcasses removed from roads by county 2018-2023

"This research provided WisDOT valuable insight into wildlife-vehicle collision hotspots and tools to aid our agency in prioritizing mitigation efforts. The report will support WisDOT's continued effort to develop a wildlife collision reduction and crossing opportunity strategy."

– Jennifer Gibson, WisDOT

Results

Researchers identified 36 species of conservation concern in Wisconsin. The species of conservation concern included 4 amphibian species (3 frog species, 1 salamander species), 20 reptile species (3 lizard species, 13 snake species, 4 turtle species), and 12 mammal species (1 insectivore species, 5 rodent species, 1 mustelid species, 1 canid species, 2 felid species, 2 ungulate species).

Researchers identified road sections, or counties, where species of conservation concern have been observed. Road sections that would need to be prioritized for reducing collisions with common large mammals are mostly in the eastern and southeastern parts of Wisconsin. Areas where a relatively high number of species occur that are of conservation concern are predominantly in the southwestern parts of Wisconsin.

Fences or barrier walls in combination with wildlife crossing structures are the most robust and effective mitigation measure package to both reduce collisions with large and small animal species and maintain or improve connectivity for wildlife. However, it is also important to be aware of the limitations of existing crossing structures that were not built for wildlife versus designated wildlife crossing structures. While designated wildlife crossing structures should be located where connectivity for wildlife is needed most, existing structures that were not built for wildlife are not necessarily located where connectivity for wildlife is needed most.

Recommendations for Implementation

- When starting a project, researchers recommend starting by identifying objectives and how they relate to improving human safety through reducing collisions with large animals. Or, if they benefit biological conservation through reducing direct road mortality by reducing the barrier effect of roads and traffic
- Devising a strategic plan around these objectives including policies, funding mechanisms and implementation programs increase the likelihood of the project objectives being met
- Action plans should be species-specific, meaning conservation-related objectives need to consider the landscape in which the animals live, not just the road and associated right-of-way. Species-specific action plans should be compiled in coordination with natural resource management agencies, counties, NGOs and volunteers

Interested in finding out more?
Final report is available at:
WisDOT Research website

This brief summarizes Project 0092-24-17
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