Each year roads cause millions of human and wildlife deaths and injuries. But it’s possible to save these lives, with the help of The Department of Transportation.

**WHY ITS A PROBLEM**

Roads, a byproduct of urbanization and development, have been referred to as the “sleeping giant” and recently biologists have reported on the negative effects’ roads have on the environment (1). Species such as turtles, salamanders, rabbits, meso predators, and deer are especially susceptible to vehicular collision (1, 2, 3). All these species perform seasonal migrations that result in movements across roadways (4). Many salamanders and frogs begin migrating to breeding ponds during spring rain events and will be struck by vehicles during their migration (1). For other species such as turtles, only females travel great distances to lay eggs then return to their body of water (1). This results in more females being killed and could lead to long-term population declines, and extinction of local populations (9). Over 100 mammal and bird species have had road mortality rates sufficient enough to negatively affect a population (1). In the United States alone, one million vertebrate species are killed on roads each year. It’s clear that roads create a major ecological issue. Focusing efforts towards mitigating wildlife deaths in these road mortality “hotspots” maybe the only hope in sustainably protecting many species of wildlife from vehicular mortality (3). “Hotspots” are considered areas with characteristics that lead to a high percentage of road mortality compared to other areas.

**WHY IT MATTERS**

Wildlife road mortality does not just negatively affect biodiversity, it can also negatively affect society. Larger terrestrial species such as moose, deer, bears, and feral hogs all present a danger to the public when crossing roads (1, 5). These species have a higher probability of damage to their vehicle upon collision and in some cases could lead to driver and passenger death (5). The costs human fatalities can be greater than $3,000,000 which includes medical, property, and vehicle costs (5). In total, the DOT calculated that a wildlife vehicular collision annually cost up to $8,388,000,000 nationwide (5). The physical and emotional damage caused by wildlife vehicular collision is also too great to go unnoticed. Changes must be made, not only to benefit biodiversity but also society.

**OTHER KEY POINTS**

- Predators such as canines, felines, and birds will predate upon road kill putting them at risk of vehicular mortality (5)
- More than 98% Wildlife vehicular collisions are single-vehicle crashes (5)
- 89% of wildlife vehicular collisions occur on two lane roads (5)
- The vast majority of of reported wildlife vehicular collisions involve deer (5)
- Wildlife vehicular collisions occur more frequently in spring and fall (5)

**NOVA SCOTIA ACCIDENTS IN 2008 THAT RESULTED IN PROPERTY DAMAGE(5)**

90.2% White-tailed deer  
100% Moose  
100% Elk
Solution and Implementation

Known threatened and endangered species that are threatened by road mortality (5)
- Key deer
- Florida panther
- Red wolf
- Bog turtle
- American Crocodile
- Houston toad
- Audubon's crested caracara
- Hawaiian goose

Detection systems decrease collisions with animals (5)

<table>
<thead>
<tr>
<th>Location</th>
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<th>After Installation</th>
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<td>Average Reduction</td>
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Animals caused most fatal collisions in the U.S. annually (5)

Total Animal vehicle collisions (Wildlife and domestic animals) in the U.S. (5)

Citations:

PROPOSED SOLUTIONS

1. Lower speed limits at key points of animal crossing
   - Benefits
     - Fines collected from regular enforcement
     - Increased fuel economy
     - Reduced emissions
     - Reduced injury severity of crashes

2. Animal detection systems that trigger flashing wildlife signs
   - Benefits
     - Reduction in collisions with large animals
     - Potential reductions in severity of collisions
     - Does not restrict animal movements

3. Closing roads during seasonal periods of mass migrations
   - Benefits
     - No wildlife vehicular collisions
     - Reduced energy demand
     - Reduced pollution

4. Public outreach and new events making aware of wildlife movements
   - Benefits
     - Reduction in wildlife vehicular collisions
     - Reduction in severity
     - Informing the public of “hotspots” for wildlife vehicular collisions