

Eliminate Road Mortality Driven by Wildlife Vehicular Collision

POSITION STATEMENT BY JOHN MICHAEL ARNETT

Each year roads cause millions of human and wildlife deaths and injuries. But its 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.

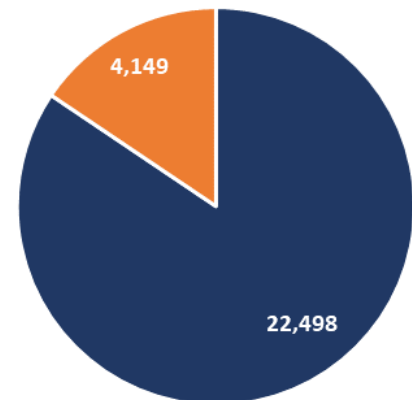
WHY IT MATTERS

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)

VEHICLE COLLISIONS RESULTING IN HUMAN INJURY IN 2001 (5)



■ Wildlife Collisions ■ Non-Wildlife Collisions

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

90.2%

White-tailed deer

100%

Moose

100%

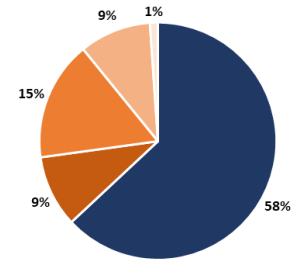
Elk

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

Animals caused most fatal collisions in the U.S. annually (5)

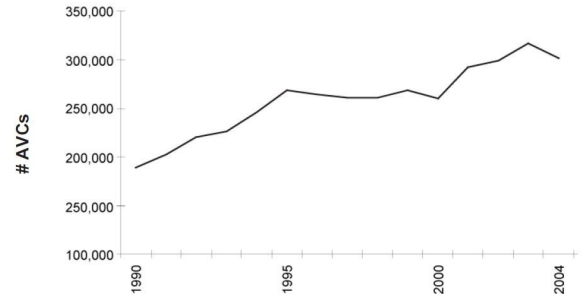


■ Animal ■ Overturned ■ Other Vehicle ■ Object ■ Other

Detection systems decrease collisions with animals (5)

Location	Before Installation			After Installation			Reduction		
	Coll. (N)	Yrs.	Coll./yr	Coll. (N)	Yrs.	Coll./yr	Coll./yr	%	
Warth	14	7	2.00	3	10	0.30	1.70	85.00	
Soolsteg	8	11	0.73	1	6	0.17	0.56	77.08	
Val Maliens	7	3	2.33	6	5	1.20	1.13	48.57	
Marcau	12	4	3.00	6	5	1.20	1.80	60.00	
Schafrein	26	8	3.25	0	6	0.00	3.25	100.00	
Duftbächli	18	8	2.25	0	6	0.00	2.25	100.00	
Grünenwald	6	8	0.75	0	7	0.00	0.75	100.00	
Average Reduction								81.52	

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



ONLY THE DEPARTMENT OF TRANSPORTATION CAN STOP WILDLIFE VEHICULAR COLLISIONS

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