

**HIGH INCIDENCE OF MORTALITY TO  
GOPHER SNAKES AND OTHER WILDLIFE  
FROM HIGHWAY TRAFFIC NEAR SAVONA,  
BRITISH COLUMBIA**

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Roads, especially highways with high traffic volume, have become a major threat to many wildlife species. For some groups of animals (*e.g.*, snakes) road mortality is considered the primary cause of death and a major threat to populations locally (Shewchuck 1996, Jochimsen 2005, Wyoming Game and Fish News 2007). In British Columbia, this growing concern was recently addressed by the Biodiversity Centre for Wildlife Studies in a special *Roads and Wildlife* supplement to *Wildlife Afield*. Eight articles by 12 authors revealed the magnitude of road mortality on wildlife in the province and encouraged people to document incidences of death

by vehicles (Campbell and Preston 2006).

On 8 July 2006, while travelling along Highway 1 about 12.7 km west of Savona, British Columbia, I noticed an adult Black-billed Magpie feeding on something at the edge of the road. It turned out to be a fresh road-killed adult Gopher Snake, about 145 cm long. Not far away I noticed a small collection of additional carcasses that were all within a two-metre strip also along the edge of the highway. This small cluster contained a freshly killed adult Eastern Kingbird and Gray Catbird and the desiccated remains of a Racer and another Gopher Snake (Figure 1).

The high number of dead animals in such a short distance was a concern so I decided to search both sides of the highway along a 500 m strip to see if the site might be an important corridor for animal movement and/or feeding. In total, the remains of 19 individual animals representing three animal groups and nine species were found (Table 1).

The habitat in the vicinity of the road mortality area was typical for the Southern Interior Ecoprovince with rolling hills of sagebrush steppe and large expanses of invasive grasses. A few



**Figure 1.** Collection of dead animals, including a Racer, Gopher Snake, Eastern Kingbird, and Gray Catbird found along a two-metre stretch of gravel shoulder on Highway 1 near Savona, British Columbia, 8 July 2006 (R. Wayne Campbell). BC Photo 3588.

scattered ponderosa pines (*Pinus ponderosa*) dotted the landscape. The elevation is 488 m.

The number of dead animals tallied represents a minimum since many small carcasses are salvaged

**Table 1.** Wildlife carcasses identified along a 500 m corridor of Highway 1 near Savona, British Columbia, 8 July 2006.

Species	Number (age)	Comments
<b>Reptiles</b>		
Racer ( <i>Coluber constrictor</i> )	2 (adults)	Both desiccated <sup>1</sup>
Gopher Snake ( <i>Pituophis catenifer</i> )	9 (adults)	Two freshly killed <sup>2</sup> , seven desiccated
<b>Birds</b>		
Common Nighthawk ( <i>Chordeiles minor</i> )	1 (adult)	Desiccated
Eastern Kingbird ( <i>Tyrannus tyrannus</i> )	1 (adult)	Freshly killed
Black-billed Magpie ( <i>Pica hudsonia</i> )	2 (juvenile)	Desiccated
Gray Catbird ( <i>Dumetella carolinensis</i> )	1 (adult)	Freshly killed
Vesper Sparrow ( <i>Pooecetes gramineus</i> )	1 (unknown)	Desiccated
Western Meadowlark ( <i>Sturnella neglecta</i> )	1 (unknown)	Desiccated
<b>Mammals</b>		
Coyote ( <i>Canis latrans</i> )	1 (adult)	Freshly killed

<sup>1</sup>Carcass completely dried out.

<sup>2</sup>Carcass within two days of being killed.

and carried off by predators such as Common Raven (*Corvus corax*), American Crow (*Corvus brachyrhynchos*), Black-billed Magpie, and Coyote. The number of dead Gopher Snakes was surprising and suggests the species' ecology and behaviour may be partly responsible for their deaths. These may include the tendency to thermoregulate on warm road surfaces (Klauber 1939), activity patterns such as daily and seasonal dispersal to and from hibernacula and foraging sites (Seigel 2002), and relatively slow movements (Rosen and Lowe 1994, Rudolph et al. 1999). When these coincide with heavy traffic flow mortality is inevitable.

In addition, the area was very busy with excavating equipment digging on side hills on the south side of the highway (Figure 2) and constant large truck and car traffic associated with a new housing development and golf course on the north side. It is likely, given the large number of dead Gopher Snakes, that a communal hibernaculum was disturbed nearby. The main highway had already created fragmented patches of habitat used by the snakes as a home range and the increased human activity in the area further impacted daily snake activities.

The dried bodies of the two juvenile Black-billed Magpies suggest that they were killed at the same time, probably when feeding on a road kill. The Coyote may have been killed in the same manner.



**Figure 2.** Factors influencing the road mortality of Gopher Snakes in southern British Columbia may include the accidental disturbance of hibernacula by heavy excavating equipment. 12.7 km west of Savona, BC. 8 July 2007 (R. Wayne Campbell).

### **Literature Cited**

- Campbell, R.W., and M.I. Preston.** 2006. RoadWatch BC: a program for collecting, centralizing, and synthesizing information from vehicle-induced wildlife mortalities in British Columbia. *Wildlife Afield* 3(1) Supplement: 42-47.
- Jochimsen, D.M.** 2005. Factors influencing the road mortality of snakes on the Upper Snake River Plain, Idaho. Pages 351-365 in C.L. Irwin, P. Garrett, and K.P. McDermott (eds.). *Proceedings of the 2005 International Conference on Ecology and Transportation*. Center for Transportation and the Environment, North Carolina State University, Raleigh, NC.
- Klauber, L.M.** 1939. Studies of reptile life in the arid southwest. Part 1. Night collecting on the desert with ecological statistics. *Bulletin of the Zoological Society of San Diego* 14:2-64.
- Rosen, P.C., and C.H. Lowe.** 1994. Highway mortality of snakes in the Sonoran Desert of southern Arizona. *Biological Conservation* 68:143-148.
- Rudolph, D.C., S.J. Burgdorf, R.N. Conner, and R.R. Schaefer.** 1999. Preliminary evaluation of the impact of roads and associated vehicular traffic on snake populations in eastern Texas. Pages 129-136 in G.L. Evink, P. Garrett, D. Zeigler, and J. Berry (eds.). *Proceedings of the International Conference on Wildlife Ecology and Transportation*. Florida Department of Transportation, Tallahassee, FL.
- Seigel, R.A., R.B. Smith, J. Demuth, L.M. Ehrhart, and F.F. Snelson.** 2002. Amphibians and reptiles of the John F. Kennedy Space Centre, Florida: a long term assessment of a large protected habitat (1975-2000). *Florida Scientist* 65:1-12.
- Shewchuk, C.H.** 1996. The natural history and movement patterns in the Gopher Snake (*Pituophis melanoleucus*) in southern British Columbia. M.Sc. thesis, University of Victoria, BC.
- Wyoming Game and Fish.** 2007. Wyoming Game and Fish news – be kind to your serpentine friends. Wyoming Game and Fish, Lander, WY. 3 pp.
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