Evaluating the effects of wildlife exclusion fencing on road mortality for medium-sized and small mammals along Quebec’s Route 175


Abstract

Increasingly, transportation agencies are implementing mitigation measures with the aim of alleviating the negative effects of roads on wildlife. Few studies have examined the responses of medium-sized and small mammals to these mitigation measures. Route 175 between Quebec City and Saguenay was widened from two to four lanes and in conjunction wildlife passages and associated exclusion fencing designated for medium-sized and small mammals were implemented. We surveyed mammal mortality along a 68 km section of Route 175 to address two research questions: (1) Do passages in combination with exclusion fences reduce road mortality? and (2) Are small-meshed fences effective in guiding animals towards the passages or do they displace road mortality to fence-ends? Daily mortality surveys were conducted between June and October 2012 and 2013, detecting 528 road mortalities comprising 18 species or taxonomic groupings. There was no statistically significant reduction in wildlife vehicle collisions (WVCs) with the existing exclusion fencing design. Additionally, WVCs occurred at a higher rate at fence-ends than in unfenced road segments for all medium-sized mammals grouped and for red fox. Habitat variables were found to influence the locations of WVCs, however these effects are highly species-specific. We recommend the implementation of species appropriate exclusion fencing to better guide animals towards wildlife passages. Species morphology, behavior, and daily movement range should be considered in the construction of exclusion fencing.


Carsignol, J., 2005. Aménagements et mesures pour la petite faune : guide technique, Bagneux, SETRA. (en français.)


This research project has three main objectives: (1) To characterize the locations and rates of vehicle collisions with medium-sized and small mammals and to evaluate the changes in the frequency of highway-related mortality due to the mitigation measures; (2) To determine the performance of the five types of wildlife passages for medium-sized and small mammals; (3) To assess how well, the mitigation measures provide for the permeability of the highway for individuals and for gene flow across the road, with a focus on American marten.

Divisions: Concordia University > Faculty of Arts and Sc

For wildlife corridors to alleviate the effects of global warming, regional corridors may need to preserve entire communities and serve as habitat that permits survival and breeding for passage species as well as corridor dwellers, not just linkages for movement (Simberloff et al, 1992). 5. Draw the corridor(s) on a map. • investigate mortality and movement patterns in unsuitable habitat to determine the effect of gaps between refuges. _Evan McKenzie, R.P.Bio. February 1995. • home range sizes, movement, dispersal, and habitat use patterns of target species. • minimum widths for corridors for target species based on corridor length, topography, and vegetation, and corridor location.