

# Sustainability in the City and Beyond

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## Are drainage culverts an adequate substitute for designated wildlife structures for small- and medium-sized mammals?

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Roads present a significant barrier to wildlife movement for many species. While designated wildlife crossing structures have been heralded as an attractive solution to many of the problems associated with roads, they are often prohibitively expensive. Autoroute 10 in Southern Quebec is one of many highways in Canada that would benefit from such structures, but currently has none in place. However, the highway has a series of periodically placed drainage culverts designed to allow water to cross underneath the road surface. Through monitoring wildlife road mortality, trail camera footage inside of 14 drainage culverts, and animal track stations along a 20 kilometre stretch of highway A10, this project aims to (1) determine if drainage culverts can act as alternatives to wildlife crossings for small to medium-sized mammals, and (2) determine the relationship, if any, that animal-road mortality has with proximity to drainage culverts. In total, 1566 camera detections spanning 21 mammal species were recorded at the culvert sites, and 1109 footprint samples from 15 species were collected from track boxes placed into the forest 40 meters from the culvert entrance. Moving forward, this data will be invaluable in determining where best to focus future habitat fragmentation mitigation efforts along highway 10, as well as provide meaningful data that will contribute to the growing body of literature surrounding animals' relationship with roads. This study is conducted in collaboration with Appalachian Corridor, a non-profit conservation organization dedicated to protecting biodiversity, habitats and ecological connectivity in the Appalachian region of Southern Quebec.



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