

IR7-3 Vehicle Collisions with Wildlife

References:

EIS Addendum, Chapter 6, Section 6.2.7 (CIAR# [727](#))

Related Comments:

Impact Assessment Agency of Canada - Crown Consultation Division and Ministry of Energy, Northern Development and Mines (CIAR# [903](#))

Rationale:

The EIS Addendum states that traffic has the biggest effect on wildlife as it may result in mortality or injury, which depends on the frequency of vehicle trips and longer stopping distances for large trucks. It is noted that daily traffic (24hr) to the site will be 10-40 large trucks and 150 passenger vehicles during operations.

The EIS Addendum further states that road salt is one of the attractions that increases the potential risk of collisions, particularly for moose. Based on the mitigation measures proposed to reduce the risk of vehicle collisions with wildlife, GenPGM concludes that there will not be a significant effect on wildlife populations in the Local or Regional Study Area.

The Impact Assessment Agency of Canada and the Ministry of Energy, Northern Development and Mines submit that Indigenous groups have expressed concerns about collisions with wildlife, however this information is not reflected in the assessment.

Additional detail is required for the assessment of effects on wildlife due to risk to wildlife from collisions with vehicles from the Project.

Information Request:

1. Discuss the potential for an increased risk of vehicle collision with wildlife along Highway 17 from the creation of an east-west barrier due to the Project.
2. Provide technical and economically viable alternatives to road salt that could reduce attracting wildlife. Indicate if any other viable mitigation measures such as wildlife passages or fences have been considered and if so, a rationale as to why they have not been brought forward.
3. Discuss if and how vehicle collisions with wildlife will be reported to the local Indigenous groups and if the meat and/or furs will be offered if requested.
4. Should incidences of vehicle collisions with wildlife exceed the predictions, clarify if and how the mitigation measures will be revisited through consultation with Indigenous groups.

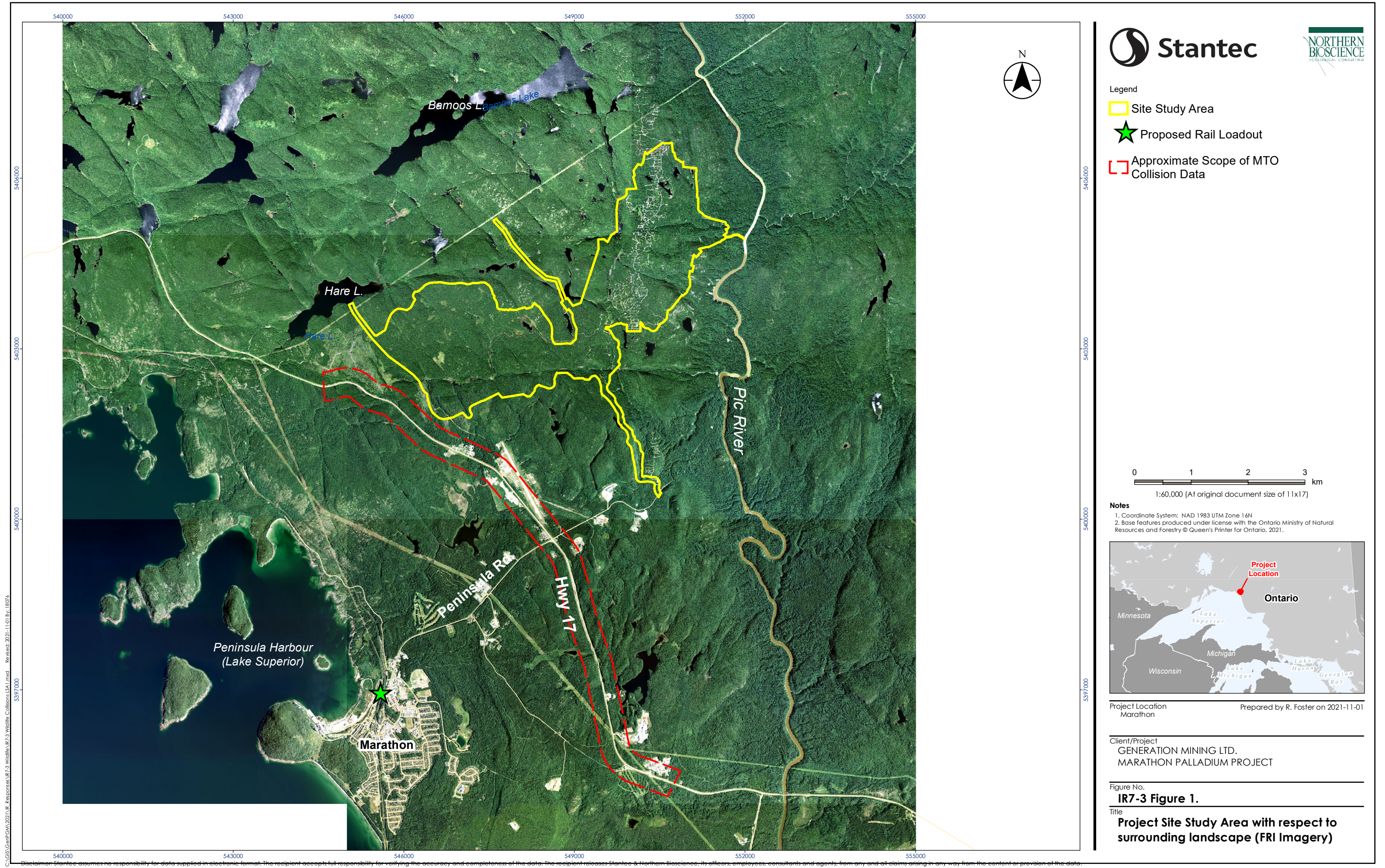
GenPGM Response:

1. *Discuss the potential for an increased risk of vehicle collision with wildlife along Highway 17 from the creation of an east-west barrier due to the Project.*

No data is available for vehicle collisions with wildlife along the current access road (i.e., Camp 19 Road) to the Project site. Past and current levels of wildlife mortality from vehicle collisions are expected to be low however, given the limited traffic, at least past the existing landfill, and low vehicle speeds due to the unpaved and winding nature of the road. Between 2016 and the end of 2020, Ministry of Transportation (MTO) (unpublished data) recorded eight animal collisions (moose and white-tailed deer) within 5 km east and west of the intersection of Peninsula Road/ Camp 19 Road and Highway 17 (Figure 1). This is a low density area for white-tailed deer, so most of the collisions likely involve moose. Collision data are thought to be an underestimate of 20-50%, however (Damas and Smith 1982; Miller 1985). Collision data are also limited due to a five-year time lag, high spatial error (2.2 +/- 1.6 km), and the lack of species-specific information, and under-reporting is likely especially high for collisions involving heavy commercial trucks (Carruthers and Gunson no date). The potential for collisions is low within the built-up area of the Town of Marathon to the proposed rail load-out facility.

Moose movement patterns between Marathon and the SSA are poorly known. Moose are present at the SSA (Northern Bioscience, 2020), as well as elsewhere in the LSA based on recent aerial surveys and trail camera deployments (Foster 2014, 2019, 2020; Shuter et al. 2018) and other sources (e.g., iNaturalist 2021b). Behaviour of moose and deer with respect to roads can be variable depending upon attraction to palatable browse or grass along the right-of-way, desire for roadside salt particularly in spring, avoidance of biting insects (due to open habitat and increased windspeed along the right-of-way), risk of predation, as well as disturbance from and degree of habituation to varying levels of traffic (Kelsall and Simpson 1987; Tardif & Associates 2003; Laurian et al. 2008; Loosen et al. 2021). Although they can provide roadside browse and easy travel routes, secondary roads may also increase the risk of predation by wolves that also use these roads (Loosen et al. 2021). Primary roads can have an increased risk of moose-vehicle collisions compared to secondary roads and can be barriers to moose migration (Ball et al. 2001), with vehicle speed, traffic volume, and fencing being primary deterrents (Seiler 2005). Moose along secondary roads typically show less avoidance behaviour than near primary roads (Laurian et al. 2008; Loosen et al. 2021). The Project access road and Camp 19 Road are not predicted to be a substantial barrier to movements of moose, deer, black bear, and other wildlife given the low vehicle speeds and projected low volume of traffic and, therefore, is unlikely to result in increased wildlife collisions on Highway 17.

Black bears (e.g., Farrow 2012; iNaturalist 2021a) and potentially gray wolves are attracted to Marathon's municipal landfill located west of the Project access road, northeast of the Peninsula Road/Camp 19 Road and Highway 17 intersection. No MTO data are currently available on potential roadkill of these species, but it is likely that the attraction of the landfill outweighs Project access road effects, at least for black bear, which habituate well to human activity and routinely enter the landfill as well as urban areas of Marathon.



2. *Provide technical and economically viable alternatives to road salt that could reduce attracting wildlife. Indicate if any other viable mitigation measures such as wildlife passages or fences have been considered and if so, a rationale as to why they have not been brought forward.*

Mitigation measures to reduce wildlife collisions are generally designed to prevent animals from crossing at particular points or to inform motorists that animals are occupying the roadway (Tardif & Associates 2003; WCPP 2021). There are few economically and environmentally viable alternatives to the use of road salt, as evidenced by its continued widespread use on highways in winter across Ontario and Canada.

Road maintenance, including use of treated (or winter) sand, on the access road and Camp 19 Road north of Highway 17 to the SSA will need to ensure health and safety, while limiting potential effects on wildlife and the environment. Treated sand is a mixture of sand and a small percentage of salt.

Road salt usage will be limited to the degree possible while maintaining safe driving conditions, with additional gravel and plowing used where practical. The amount of salt used on the access road will be minor in comparison with the amount used on adjacent Highway 17. Other mitigation measures will be considered for the Project access road, in consultation with potentially affected Indigenous communities (see below), if collision mortality on the Project access road exceeds expectations. Potential options could include:

- a) identifying wildlife-vehicle collision hotspots that may require special attention such as increased signage (Fedorca et al. 2021);
- b) draining roadside salt pools and filling with rocks (Leblond et al. 2007; Grosman et al. 2009) or other materials such as riprap, cedar mulch, and pine logs (Rea et al. 2021);
- c) removal of vegetation adjacent to salt pools to make them less attractive to moose while also increasing visibility for drivers (Leblond et al. 2007); and
- d) conducting roadside brushing during the winter or early in the growing season to reduce nutritional value compared to brushing in mid-summer (Rea 2003).

Road maintenance along Highway 17 is under the purview of MTO and its subcontractors and outside the scope of the Project. If collision mortality increases significantly along Highway 17 near the Project, GenPGM will recommend that MTO install moose crossing signs where appropriate, including models with flashing lights if necessary. However, as discussed previously, this is not anticipated to occur.

Fences can create an impermeable barrier that may result in population viability issues for endangered species (Jaeger and Fahrig 2004). Fences, overpasses, and underpasses are not considered appropriate for either the Project access road or Highway 17 since they could potentially impair connectivity of caribou within the Coastal Range and Discontinuous Distribution. There do not appear to be any concentrations of large wildlife at any specific location near the SSA that would warrant fences or overpasses to concentrate wildlife movements. Overpasses are rarely used in Ontario. Funneling wildlife through underpasses with the use of fences could also potentially increase the risk of predation, particularly for

vulnerable woodland caribou, and would also likely be ineffective because of the lack of large mammal concentrations or known migration corridors in the area.

3. *Discuss if and how vehicle collisions with wildlife will be reported to the local Indigenous groups and if the meat and/or furs will be offered if requested.*

A communications protocol will be developed prior to Project commencement with Biigtigong Nishnaabeg (road corridor within community trapline) for reporting of any road mortality of large mammals (e.g., moose, white-tailed deer, black bear) along the access road and Camp 19 Road between Highway 17 and the SSA so that meat and/or hides can be salvaged, if possible.

4. *Should incidences of vehicle collisions with wildlife exceed the predictions, clarify if and how the mitigation measures will be revisited through consultation with Indigenous groups.*

If the number of vehicle collisions with wildlife are higher than expected on the Project access road, Camp 19 Road or Highway 17 near the Project LSA, then mitigation strategies would be revisited with Biigtigong Nishnaabeg through the Environmental Committee meetings.

References

- Ball, J. P., C. Nordengren, and K. Wallin. 2001. Partial migration by large ungulates: characteristics of seasonal moose *Alces alces* ranges in northern Sweden. *Wildlife Biology* 7:39–47.
- Carruthers, B. and K. Gunson. No date. Development of a province-wide wildlife mitigation strategy for both large and small animals on Ontario's highways. Ontario Ministry of Transportation, St. Catharines, ON. 16 p.
- Damas and Smith. 1982. Wildlife mortality in Transportation Corridors in Canada's National Parks, Vol. I and II. *Cited in* L.-P. Tardif & Associates. 2003.
- Farrow, R. 2012. Big fat dump bears in Marathon Ontario. Website: <https://www.youtube.com/watch?v=jdBtMMlghRc> [accessed October 2021].
- Fedorca, A., M. Fedorca, O. Ionescu, R. Jurj, G. Ionescu, G. and M. Popa. 2021. Sustainable landscape planning to mitigate wildlife–vehicle collisions. *Land*, 10, 737. 13 p.
- Foster, R.F. 2014. East-West Tie Transmission Project Woodland Caribou 2014 Aerial Survey Field Summary Report. Unpublished report prepared for Dillon Consulting Ltd. by Northern Bioscience, Thunder Bay, ON. 16 p.
- Foster, R.F. 2019. SCI 2017-2018 Baseline Environmental & Species at Risk Monitoring. Unpublished report prepared for Stillwater Canada Inc. by Northern Bioscience, Thunder Bay, ON. 157 p.
- Foster, R.F. 2020. East-West Tie March 2020 Aerial Survey. Unpublished report prepared for NextEra Energy Transmission - Canada NextEra Energy Canada, LP. by Northern Bioscience, Thunder Bay, ON. 30 pp.

- Grosman, P.D. 2009. Reducing Moose–Vehicle Collisions through Salt Pool Removal and Displacement: an Agent-Based Modeling Approach. *Ecology and Society* 14(2):17
<http://www.ecologyandsociety.org/vol14/iss2/art17/> [accessed October 2021].
- iNaturalist. 2021a. American Black Bear. Website: <https://www.inaturalist.org/observations/33347755>
[accessed October 2021].
- iNaturalist. 2021b. Moose. Website:
https://www.inaturalist.org/observations?nelat=48.908140201144064&nelng=-85.52948347538701&place_id=any&subview=map&swlat=48.65930279740395&swlng=-86.98135734781614&taxon_id=522193 [accessed October 2021].
- Jaeger, J. A. G., and L. Fahrig. 2004. Effects of road fencing on population persistence. *Conservation Biology* 18(6):1651-1657.
- Kelsall, J. P., and K. Simpson. 1987. The impacts of highways on ungulates; a review and selected bibliography. Prepared for Ministry of Environment and Parks, Kamloops, British Columbia, Canada.
- Laurian, C. C. Dussault, J.-P. Ouellet, R. Courtois, M. Poulin and L. Breton. 2008. Behavior of moose relative to a road network. *Journal of Wildlife Management* 72(7):1550–1557.
- Leblond, M., C. Dussault, J.-P. Ouellet, M. Poulin, R. Courtois, and J. Fortin. 2007. Management of roadside salt pools to reduce moose–vehicle collisions. *The Journal of Wildlife Management* 71(7):2305-2310.
- Loosen, A. E., O. Devineau, B. Zimmermann, J. P. G. M. Cromsigt, S. E. Pfeffer, C. Skarpe, and K. Marie Mathisen. 2021. Roads, forestry, and wolves interact to drive moose browsing behavior in Scandinavia. *Ecosphere* 12(1): e03358. 10.1002/ecs2.3358
- Miller, H. 1985. Moose Vehicle Collisions in Newfoundland. Research Report # 34, Newfoundland Department of Transportation Planning and Research Division.
- Northern Bioscience. 2020. Marathon Palladium Project Terrestrial Environment Baseline Report Update. (CIAR# [722](#)). Report prepared for Generation PGM Inc. by Northern Bioscience, Thunder Bay, ON. 109 pp.
- Rea, R.V. 2003. Modifying roadside vegetation management practices to reduce vehicular collisions with moose *Alces alces*. *Wildlife Biology* 9: 81-91.
- Rea, R. V., M.C. Scheideman, G. Hesse, and M.A. Mumma. 2021. The effectiveness of decommissioning roadside mineral licks on reducing moose (*Alces alces*) activity near highways: implications for moose-vehicle collisions. *Canadian Journal of Zoology*. e-First <https://doi.org/10.1139/cjz-2021-0046>

Seiler, A. 2005. Predicting locations of moose-vehicle collisions in Sweden. *Journal of Applied Ecology* 42:371–382.

Shuter, J., N.C. Assalin, and A. Rodgers. 2018. Results of the 2016 Lake Superior Coast Range (LSCR) caribou (*Rangifer tarandus caribou*) aerial survey. Unpublished report. Ontario Ministry of Natural Resources and Forestry & Parks Canada. 35 p.

Tardif & Associates. 2003. Collisions involving motor vehicles and large animals in Canada. Report to Transport Canada Road Safety Directorate. 44 pp.

Wildlife Collision Prevention Program (WCPP). 2021. Mitigation. Website:
<https://www.wildlifecollisions.ca/prevention/mitigation.htm> [accessed October 2021].

Workplace Safety North. Oh deer! Avoiding wildlife on the highway. Workplace Safety North, North Bay ON. Website: <https://www.workplacesafetynorth.ca/news/news-post/oh-deer-avoiding-wildlife-highway> [accessed November 2021].