

## Appendix D Wildlife-Vehicle Monitoring and Management Plan

### D.1 Background

Site-specific and species-specific wildlife vehicle collision data are required to inform the effectiveness of mitigation measures and to identify requirements for corrective actions, if required. Wildlife movement in and around the Project site, and the effectiveness of measures to mitigate vehicle collisions will be monitored through driver reporting and systematic monitoring surveys.

Populations of species with small populations (e.g., species at risk or species of conservation concern), with low reproductive rates (e.g., turtles), and those with an inability to avoid cars (e.g., turtles and amphibians) are considered to be more vulnerable from road mortality.

Wildlife using the Project area that are most at risk of mortality from vehicle incidents are primarily amphibians and large mammals (e.g., moose), though other groups may also experience mortality (e.g., small mammals or birds such as common nighthawk).

Amphibians are actively dispersing in the spring and summer and the highest risk period for vehicle-related amphibian mortality is April to June. For moose the highest risk periods are spring and fall. For both groups, dusk and dawn are considered higher risk time periods. May and June are the most common times of the year for reported road mortalities (Ontario Road Ecology Group 2010).

### D.2 Mitigation

During all phases:

- Implement road safety measures (e.g., speed limits and signage) to reduce wildlife road mortality at potential wildlife crossings during the construction and operation phases of the Project

Operation:

- Implement road safety measures on Project access and haul roads (e.g., speed limits and signage) and yield the right of way to wildlife
- If safe to do so, move slow-moving wildlife (e.g. turtles, snakes) off the road by gently moving the individual in the direction it was traveling. For turtles, use the Turtle Handling guidelines in Attachment D1
- Where Project site roads run through forest or treed wetland communities, implement a regular vegetation cutting regime along the edges roadsides to increase driver visibility and reduce their attractiveness as moose browse (Tanner and Leroux 2015)

### D.3 Monitoring

Wildlife movement in and around the Project site, and the effectiveness of measures to mitigate vehicle collisions, will be monitored through mandatory driver reporting. All drivers of Project-related vehicles will be required and encouraged to report wildlife-vehicle encounters roadside observations of wildlife, and wildlife road mortalities. For each vehicle encounter or roadside observation of wildlife, drivers will record details including: date, time, road conditions, lighting, weather), characteristics of the animal(s) (species, and number, injury severity if struck by the vehicle), and location of the incident including UTM, if possible. Visible risk factors will be identified and recorded (e.g., garbage or carcasses present along roadside, vegetation that obscures visibility).

The following will be undertaken to enhance the effectiveness of the wildlife monitoring program:

- Training to understand the Program Purpose - All environmental monitors and drivers will be educated on the purpose of the program: to identify areas of high mortality, and to review conditions and species affected in order to adjust activities to lower vehicle-wildlife mortality.
- Training on Wildlife Behavior - Education should include pictures and description of various wildlife (mammals, reptiles, amphibians, etc.), general habitats or conditions where wildlife are frequently encountered (salt areas/licks, creeks, wetland areas, timber cuts, wildlife trails, etc.), as well as seasonal changes in wildlife behavior, rutting movement, amphibian breeding, turtle nesting.
- Training on Wildlife Encounter Form - Supervisors will be trained on how to complete the Wildlife Encounter Form (Table 7-1) quickly and effectively.
- Mortality Location and Species Detail Survey - All mortality incidents where the carcass is present on or adjacent to the road will be surveyed by an environmental monitor to confirm location and species. If required, the appropriate Ministry will be notified and the carcass will be removed safely by a cleanup crew.
- Hotspot Mapping - High frequency wildlife encountered areas will be mapped on wall maps for review by all drivers.

Environmental monitors will compile observations as part of annual reporting in order to identify higher risk locations, species, or seasons to inform adaptive management (see Section D.4 for thresholds and corrective actions).

The monitoring methods will be reassessed annually, based on the data collected, to adjust survey frequency and duration as appropriate.

## D.4 Thresholds and Corrective Actions

Data on the species, numbers and locations of wildlife mortalities will be tracked through each monitoring year to identify areas of wildlife-vehicle conflict that require further mitigation.

Corrective actions will be implemented at locations that meet one or more of the following criteria:

- Repeat (i.e., two or more) mortalities at the same location of large mammals, reptiles, a species at risk or a species of conservation concern either within or across monitoring years
- Observations of multiple (i.e. three or more) amphibian, bird, or small- to medium-sized mammal (e.g., beaver, marten) mortalities at the same location on two separate surveys within the same monitoring year
- Documented higher use by wildlife (i.e., multiple observations individuals of the same species or the same location) or multiple observations of observations of individuals of different species at the same location).

Corrective actions will be determined by a qualified professional (and in consultation with relevant agencies and Indigenous communities) in response to which animal groups are affected, where conflicts are occurring, and any identified risk factors. Corrective actions may include:

- Installing wildlife awareness and/or crossing signs, or using a temporary electronic/flashing sign board
- Implementing location-specific reduced speed limits, and/or traffic calming measures
- Adjusting the road surface to make it less attractive to wildlife (e.g. paving to discourage turtle nesting or bird roosting)
- Implementing additional management and maintenance of roadside vegetation (e.g. increased mowing/cutting)
- Adjusting drainage along roadsides so that pooling water that may attract amphibians is not established
- Implementing additional education and awareness for drivers of Project-vehicles

If additional mortalities are recorded at the same location after corrective actions have been implemented, additional corrective actions may be required. Depending on the species group affected, numbers affected, and the location, these additional actions may include:

- Permanent Fencing. If fencing is installed, an appropriate wildlife crossing structure (e.g., overpass, tunnel or culvert) may be required to allow continued wildlife movement through the Project site and into the surrounding area.
- In the case of a large amphibian dispersal event, deployment of project staff to assist in the movement of amphibians across the roadway and a temporary stop of traffic passage.

## D.5 Reporting and Notifications

If visible risk factors are identified during the surveys, they will be reported as soon as possible to the Environment Superintendent for corrective action (i.e., clean up of garbage or removal of carcasses, vegetation cutting).

If injured wildlife is found, MNRF will be contacted as soon as possible. Any mortality of a SAR will be reported to MECP within 2 business days of the observation.

Wildlife-vehicle collisions, near misses, roadside observations of wildlife, and wildlife road mortalities as well as information on any corrective action measures will be included in the annual Biodiversity Assessment Report for each year of mine operation. The results of the wildlife-vehicle monitoring program will be reviewed annually by the Environmental Superintendent, qualified professionals, relevant agencies and Indigenous communities and used to revise the monitoring and corrective action plan, as required.

## D.6 References

Ontario Road Ecology Group, Toronto Zoo (2010) A Guide to Road Ecology in Ontario, prepared for the Environment Canada Habitat Stewardship Program for Species at Risk. 72 pp.

Tanner AL, Leroux SJ (2015) Effect of Roadside Vegetation Cutting on Moose Browsing. PLoS ONE 10(8): e0133155. doi:10.1371/journal.pone.0133155.

# ATTACHMENT D1 TURTLE HANDLING GUIDELINES

*The Ontario Turtle Conservation Centre works to protect and conserve Ontario's native turtles and the habitat in which they live*

## Turtle Handling 101

### Do:

- Use both hands, positioned firmly at the sides of the turtle
  - For snapping turtles, position hands at **rear** of shell. For larger snapping turtles, position one hand at the rear of the shell and the other underneath the turtle
- Expect the turtle to hiss and/or scratch your hands
- Always be aware of the turtle's head

### Do not:

- Tap on the shell, or knock it
- Pick up a turtle that you are not comfortable holding
- **Never** pick a turtle up by its tail

### Examples:

#### Most Ontario Turtles:



#### Snapping Turtles:



### How to help a turtle cross the road:

- Be aware of cars, do not attempt to help a turtle if it is not safe to do so
- Always move the turtle in the direction it was going/is facing
- Use a floor mat or shovel if you are uncomfortable or unable to lift the turtle
- Demonstration: [https://www.youtube.com/watch?v=Lgd\\_B6iKPxU](https://www.youtube.com/watch?v=Lgd_B6iKPxU)



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