

Appendix 9-7

Potential Terrestrial Species at Risk in the Local Assessment Area

Table 9.7a: Regulatory and Ecological Context For Species at Risk that Potentially Occur in the Project 4 Region

Species Common Name	Scientific Name	Rare Species Listing Status (Federal and Provincial)					Ecological Context / Habitat Description	Is Critical Habitat in RAA?	Potential Occurrence in Local Assessment Area (LAA) or Regional Assessment Area (RAA)
		SARA	COSEWIC	MBCDC	MESA	Recovery Strategy Plan			
Vegetation									
Flooded Jellyskin Lichen	<i>Leptogium rivulare</i>	Threatened, Schedule 1	Special Concern	S1	Not listed	Recovery Strategy (2013)	Flooded jellyskin grows on periodically inundated surfaces; usually found on the bark of deciduous trees (e.g., ash, red maple, silver maple, American elm), along the banks of ponds and waterways, and in swampy forests that flood annually in the spring.	No - critical habitat not present in RAA.	Low Potential: not observed during field studies in 2015 and no historical records of occurrence in the RAA, or in this part of Manitoba.
Reptiles									
Snapping turtle	<i>Chelydra serpentina serpentina</i>	Special Concern, Schedule 1	Special Concern	S3	Not listed	Proposed management plan - northern limit of range near LAA	Snapping turtles occupy a wide variety of habitats but prefer slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often found in ponds, marshes, swamps, peat bogs, shallow bays, river and lake edges, and slow-moving streams (Harding, 1997; Ernst and Lovich, 2009; Paterson et al., 2012).	No - EC does not identify specific critical habitat.	Very Low Potential: Potentially occurs in regional assessment area (RAA) but not observed during field studies (Appendix 9.1). It is on the northern range for this species. One historical observation by FN Members.
Forest Birds									
Bank swallow	<i>Riparia riparia</i>	No schedule, no status	Threatened	Not listed	Not listed	COSEWIC Status report only	Occurs most commonly across grassland, aspen parkland, and plains ecoregions. It occurs throughout other regions (e.g., Boreal forest) of these provinces, but is recorded infrequently.	No - EC does not identify specific critical habitat.	Very Low Potential: May occur in RAA but the species and habitat were not observed during field studies (Appendix 9.1) nor Breeding Bird Atlas surveys (Table 9.7).
Barn swallow	<i>Hirundo rustica</i>	No schedule, no status	Threatened	Not listed	Not listed	COSEWIC Status report only	Barn Swallows typically select nesting and foraging sites close to open habitats such as farmlands of various description, wetlands, road rights-of-way, large forest clearings, cottage areas, islands, sand dunes, and subarctic tundra.	No - EC does not identify specific critical habitat.	Low Potential: May occur in RAA but the species was not observed during field studies (Appendix 9.1) nor Breeding Bird Atlas surveys (Table 9.7); no habitat identified in the LAA.
Canada Warbler	<i>Cardellina canadensis</i>	Threatened, Schedule 1	Threatened	S4B	Threatened	Yes (2016)	Canada Warbler breeds in various habitats across its range, but is almost always associated with moist forests with a dense, deciduous shrub layer, complex understory, and available perch trees. Nests are built on or near the ground (Reitsma et al. 2010). They are placed on moss and raised hummocks, within holes of root masses, rotting tree stumps, clumps of grass, rock cavities, etc. (Reitsma et al. 2010).	No - Recovery strategy says information lacking with schedule determined in future.	Moderate Potential: Suitable habitat exists in RAA but the species were not observed during field studies (Joro 2015).
Chimney swift	<i>Chaetura pelagica</i>	Threatened, Schedule 1	Threatened	S2B	Threatened	No - status report only	Chimney Swift nesting habitat consists of vertical surfaces such as chimneys; spend most of the day foraging for insects on the wing. It is difficult to associate the species with a single type of habitat; its presence in a particular area largely depends on the availability of suitable nesting sites (DeGraaf and Rappole 1995) and the abundance of insects (Kaufman 1996).	No - EC does not identify specific critical habitat.	Very Low Potential: May occur in RAA but not observed during field studies (Appendix 9.1) nor Breeding Bird Atlas Surveys (Table 9.7) and no suitable habitat identified in LAA.

Species Common Name	Scientific Name	Rare Species Listing Status (Federal and Provincial)					Ecological Context / Habitat Description	Is Critical Habitat in RAA?	Potential Occurrence in Local Assessment Area (LAA) or Regional Assessment Area (RAA)
		SARA	COSEWIC	MBCDC	MESA	Recovery Strategy Plan			
Common Nighthawk	<i>Chordeiles minor</i>	Threatened, Schedule 1	Threatened	S3B	Threatened	Yes (2016)	Common Nighthawks require open ground or clearings for nesting. The species breeds in a wide range of open habitats including sandy areas (e.g., dunes, eskers, and beaches), open forests (e.g., mixedwood and coniferous stands, burns, and clearcuts), grasslands (e.g., short-grass prairies, pastures, and grassy plains), sagebrush, wetlands (e.g., bogs, marshes, lakeshores, and riverbanks), gravelly or rocky areas (e.g., outcrops, barrens, gravel roads, gravel rooftops, railway beds, mines, quarries, and bare mountain tops and ridges), and some cultivated or landscaped areas (e.g., parks, military bases, airports, blueberry fields, orchards, cultivated fields) (Hunt 2005, Campbell et al. 2006, COSEWIC 2007).	No - Recovery strategy indicates information lacking with schedule determined in future.	High Potential: Observed during field studies (Joro 2015) in the LAA and likely to occur in low numbers in localized location throughout the RAA.
Eastern Whip-poor-will	<i>Antrastomus vociferus</i>	Threatened, Schedule 1	Threatened	S3B	Threatened	Yes (2015)	Forests (e.g., deciduous, mixedwood, coniferous, treed wetlands) and open habitats (e.g., shrublands, fallow fields, regeneration following fires or clear-cuts, rock and sand outcrops; shrubby wetlands) form a mosaic.	No - Not in LAA; some critical habitat near Ontario.	High Potential: May occur in RAA and habitat for the species exists in the LAA; the species was not observed during field studies nor Breeding Bird Atlas surveys.
Eastern Wood-pewee	<i>Contopus virens</i>	No schedule, no status	Special Concern	S4B	Not listed	COSEWIC Status report only	In Canada, the Eastern Wood-Pewee breeds mostly in mature and intermediate-age deciduous and mixed forests (less often in coniferous forest) having an open understory (Ouellet 1974; Godfrey 1986; Peck and James 1987; Gauthier and Aubry 1995; Falconer 2010; Burke et al. 2011). It is often associated with forests dominated by Sugar Maple (<i>Acer saccharum</i>), elm (<i>Ulmus</i> sp.) and oak (<i>Quercus</i> sp.; Graber et al. 1974). It is usually associated with forest clearings and edges within the vicinity of its nest (Hespenheide 1971; Peck and James 1987).	No - EC does not identify specific critical habitat; LAA/RAA on northern fringe of range -COSEWIC	Low Potential: May occur in RAA and habitat for the species exists in the LAA; however, the species was not observed during field studies (Joro 2015) nor evaluations conducted by Breeding Bird Atlas surveys (Table 9.7).
Olive-Sided Flycatcher	<i>Contopus cooperi</i>	Threatened, Schedule 1	Threatened	S3S4B	Threatened	Yes (2016)	In Canada, Olive-sided Flycatcher breeds primarily in boreal, sub-boreal, interior, and coastal forest regions of the country.	No - EC does not identify specific critical habitat.	Moderate Potential: The RAA is within the range maps for the species, and habitat occurs in the LAA. The species was not observed during field studies nor Breeding Bird Atlas surveys; expected to occur in low numbers dispersed throughout the RAA.
Peregrine Falcon	<i>Falco peregrinus</i>	Special Concern - Schedule 1	Special Concern	S1B	Endangered	Management plan (2015)	Peregrine Falcons generally nest on cliff ledges or crevices. Cliffs ranging from 50 to 200 m high are preferred (Cade 1960; White and Cade 1971). The species is highly adaptable in nest site selection.	Management Plan illustrates breeding range. One known occurrence near Poplar River.	Low Potential: Expected to be an occasional transient (not breeding) through the LAA and may periodically occur in RAA. Peregrines not observed during field studies nor Breeding Bird Atlas surveys. Potential nest site north of the LAA at Thunder Hill near the Poplar River.
Rusty Blackbird	<i>Euphagus carolinus</i>	Special Concern - Schedule 1	Special Concern	Not listed	Not listed	Management plan (2015)	Rusty Blackbird has been observed in many riparian habitats including (but not limited to) wetlands associated with recent burns, peat bogs, riparian scrub, open moss- and lichen-spruce woodlands, sedge meadows, marshes, alder and willow thickets, and estuaries (COSEWIC 2006).	No - EC does not identify specific critical habitat.	Very Low Potential: May occur in RAA but habitat limited in LAA and not observed during field studies nor Breeding Bird Atlas surveys.

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		SARA	COSEWIC	MBCDC	MESA	Recovery Strategy Plan			
Short-Eared Owl	<i>Asio flammeus</i>	Special Concern - Schedule 1	Special Concern	S2S3B	Threatened	No - Management plan (2016)	Short-eared Owls occur in a variety of open native habitats: grasslands, Arctic tundra, taiga, bogs, marshes, coastal wetlands, coastal barrens, estuaries and grasslands dominated by sand-sage (<i>Artemisia filifolia</i>). There is little specific information regarding habitat preferences at the landscape scale, but a mosaic of grasslands and wetlands provides optimal breeding and foraging habitats (Wiggins, 2004).	No - EC does not identify specific critical habitat.	High Potential: Migrate through the RAA in low numbers; habitat exists in the LAA and the species was observed during field studies (Joro 2015) but not during Breeding Bird Atlas Survey (Table 9.7).
Waterbirds									
Horned Grebe	<i>Podiceps auritus</i>	No schedule, no status	Special Concern	Not listed	Not listed	COSEWIC Status Report only	In Manitoba, the Horned Grebe breeds throughout the province with the exception of certain eastern regions. It is probably more common in the Minnedosa region, but its abundance in the Prairie region fluctuates according to the water level. The species is generally less abundant in summer in the southeastern part of the province. Some individuals breed in Churchill, mainly in marshes near Akudlik and in the Goose Creek region (Holland and Taylor, 2003).	No - EC does not identify specific critical habitat.	Moderate Potential: May occur in RAA in low numbers; limited habitat for the species exists in the RAA. The species was not observed during field studies (Joro 2015) nor evaluations conducted by Breeding Bird Atlas Survey (Table 9.7).
Trumpeter Swan	<i>Cygnus buccinator</i>	No schedule, no status	Not at risk	S1B	Endangered	Not applicable	It prefers nesting in shallow wetlands with stable water levels, abundant and elevated nest sites, abundant and diverse aquatic invertebrates and/or plants and low levels of human disturbance.	N/A.	Low Potential: Very low potential for breeding but increased numbers migrating through RAA. Seen during field studies and listed in Breeding Bird Atlas.
Yellow Rail	<i>Coturnicops noveboracensis</i>	Special Concern - Schedule 1	Special Concern	S3B	Not listed	No - Management plan	Yellow Rails inhabit shallow wetlands and other wet areas with grass-like vegetation. Breed in wetlands such as damp hay fields or meadows, floodplains, bogs, upper levels of estuaries, salt marshes (Bookhout 1995, Alvo and Robert 1999, COSEWIC 2009), shallow prairie wetlands, and wet montane meadows (Peabody 1922, Sherrington 1994, Popper and Stern 2000). Preferred wetlands are generally dominated by short, fine-stemmed herbaceous vegetation, especially sedges, as well as other graminoid vegetation of the families Cyperaceae, Poaceae, and Juncaceae. Vegetation structure (e.g. short, grass-like, and dense) is likely more important than its taxon (Robert et al. 2000). Breeding habitats may have up to 50 cm of standing water, but typically nesting sites are less than 15 cm deep (Bookhout 1995, Robert et al. 2000, Wilson 2005). The species' narrow tolerance for shallow water levels likely explains why its abundance at any given site varies dramatically annual (Robert and Laporte 1999, Kehoe et al. 2000, Lindgren 2001).	No - EC does not identify specific critical habitat.	Very Low Potential: May breed in the low numbers in RAA; not observed during field studies nor Breeding Bird Atlas surveys.

Species Common Name	Scientific Name	Rare Species Listing Status (Federal and Provincial)					Ecological Context / Habitat Description	Is Critical Habitat in RAA?	Potential Occurrence in Local Assessment Area (LAA) or Regional Assessment Area (RAA)
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Mammals									
Boreal Woodland caribou	<i>Rangifer tarandus caribou</i>	Threatened, Schedule 1	Threatened	S2S3	Threatened	Yes (2012)	Boreal caribou require large range areas comprised of continuous tracts of undisturbed habitat. In general, boreal caribou prefer habitat consisting of mature to old-growth coniferous forest (e.g. jack pine (<i>Pinus banksiana</i>), black spruce (<i>Picea mariana</i>)) with abundant lichens, or muskegs and peat lands intermixed with upland or hilly areas (Stuart-Smith et al., 1997; Rettie and Messier, 2000; Courtois, 2003; Brown et al., 2007; Boreal Caribou ATK Reports, 2010-2011).	Yes - Atikaki-Berens Range (MB12) and Manitoba East Range (MB11) in P4 RAA.	High Potential: 116-338 caribou were observed within the RAA during field studies conducted 2011-2013 (Joro 2015, Table 7).
Little Brown Myotis (Bat)	<i>Myotis lucifugus</i>	Endangered, Schedule 1	Endangered	S2N,S5B	Endangered	Yes - combined for little brown, northern myotis and tricolored bat (2015)	Typically, hibernacula for these species are subterranean features, such as caves, abandoned mines, hand-dug wells, cellars, or tunnels where light and noise levels are low; typically contain sections that have relatively stable temperatures (2-10 °C) and stable, high humidity levels (>80 %). Hibernacula generally identified in MB, but none identified in the LAA.	No critical habitat in LAA/RAA (Recovery Strategy); closest is Karst formations in Interlake.	Low Potential: Very low potential for hibernacula in RAA. Some potential in LAA to be used during the summer as roosting sites within the forested areas; habitat exists but there were no sightings of the species or hibernacula.
Wolverine	<i>Gulo gulo</i>	Endangered, Schedule 1	Non-active	Not listed	Not listed	N/A	A wide variety of forested and tundra vegetation associations are used by Wolverines. Habitats must have an adequate year-round supply of food, mainly consisting of smaller prey such as rodents and Snowshoe Hares, and the carcasses of large ungulates, like Moose, Caribou, and Muskox. Females den under snow-covered rocks, logs or within snow tunnels. Wolverines reproduce in areas where snow cover persists at least into April.	No - EC does not identify specific critical habitat.	High Potential: May occur in very low numbers dispersed in LAA. One wolverine was trapped along the RTLs in the RAA between 200 and 2011 (Appendix 9.1, Table 1E). Eight tracks were observed in the LAA during field studies in 2011 (Joro 2015, Table 39).

Table 9.7b: Project 4 Environmental Effects Analysis for Species at Risk

Biophysical Environmental Component	Potential Environmental Effects	Proposed General Mitigation	Species Specific Mitigation	Effects After Mitigation						Residual Effects
				Context	Extent		Frequency	Reversibility	Likelihood	
				Ecological	Magnitude/Geographic	Duration				
Vegetation										
Flooded jellyskin lichen	Potential disturbance or loss to unknown locations resulting from construction activities.	<ul style="list-style-type: none"> Pre-construction surveys. Prohibit equipment and vehicle use outside of the designated cleared area. Limit clearing to designated areas within the RoW and other areas. 		Environmental effect involve locally, regionally or nationally important species, communities or resources	Effect minor, restricted to project footprint	Long-term	Occurs once during construction	Reversible after decommissioning road (long period)	Unlikely to occur	Minimal risk to flooded jellyskin lichen
				Level III	Level I	Level II	Level I	Level II	Level I	
Reptiles										
Snapping turtle	<ul style="list-style-type: none"> Loss or alteration of habitat due to clearing and construction near waterbody or bog and fen areas having suitable habitat for the species. Mortality related primarily to operational use of the road - particularly during breeding or migratory movements between overwintering and nesting sites. 	<ul style="list-style-type: none"> Traditional knowledge, including specific consideration of species at risk, was utilised as part of route selection. Baseline studies have supported traditional knowledge data for route selection. Road routing avoids waterbodies except at crossing locations. Disturbance minimization, e.g., equipment to remain on ROW or within marshalling areas. Identify areas of non-disturbance around high quality high quality habitat . Existing water flow patterns, levels and hydrologic regimes will be maintained reclaim disturbed areas and facilitate natural re-vegetation by native plants and seeds. Inspectors and Contract Administrators will receive training and handbooks to identify all potential species at risk that could be encountered - the Environmental Inspector will be advised when encounters occur and management strategies applied if required. <p><i>Additional mitigation measures outlined in:</i></p> <ul style="list-style-type: none"> GR130.6 General GR130.8 Designated Areas and Access GR130.9 Materials Handling Storage and Disposal GR130.10 Spills and Remediation and Emergency Response GR130.11 Dust and Noise Particulate Control GR 130.12 Noise and Noise Limitations GR130.14 Staff Training and Awareness GR130.15 Working Within or Near Water GR130.17 Clearing and Grubbing GR 130.19 Wildlife GR130.21 Cement Batch Plan and Concrete Wash-Out Area 	<ul style="list-style-type: none"> Habitat identification and protection – avoid/minimize effects on high quality habitat. Wildlife warning signs will be installed in high use areas and at known crossing locations. The installation of culverts along the all-season road will provide alternate routes for passage under the roadway. 	Effects involves regionally important species	Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III	Level I	Level 1	Level 1	Level 1	Level I	

Biophysical Environmental Component	Potential Environmental Effects	Proposed General Mitigation	Species Specific Mitigation	Effects After Mitigation						Residual Effects
				Context	Extent		Frequency	Reversibility	Likelihood	
				Ecological	Magnitude/Geographic	Duration				
Forest Birds										
Bank Swallow	<ul style="list-style-type: none"> Loss or alteration (e.g., fragmentation) of bird habitat and nests due to clearing and construction Disturbance of birds due to construction activities in the local assessment area – may cause displacement 	<ul style="list-style-type: none"> Pre-construction survey to identify stick nests and nesting colonies. Right-of-way selected to avoid sensitive sites such as raptor nests, multi-generational stick nests, and nesting colonies . Clearing activities will occur between September 1 and March 31 (outside breeding season); if any clearing is required during the breeding bird season, pre-clearing nest surveys will occur within 7 days of the clearing; buffers will be established around each nest, clearing activities restricted near active bird nests or nest cavities. 	<ul style="list-style-type: none"> Identify and avoid vertical and near vertical faces for road routing where possible. Consider high quality habitat as part of quarry site selection criteria. Prior to reinstating a quarry or borrow site for maintenance, surveys of the rock face will be conducted. If bank swallow nests are identified they will not be disturbed during the breeding season. 	Effects involves regionally important species	Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III	Level I	Level 1	Level 1	Level 1	Level I	
Barn Swallow	<ul style="list-style-type: none"> Mortality of birds due to interactions with vehicles, increased predation, or herbicide applications 	<ul style="list-style-type: none"> Reclaim disturbed areas or encourage natural re-vegetation augmented by native plants and seeds if required; block abandoned access roads and encourage natural re-vegetation; rehabilitation of trails and winter roads to offset habitat loss. Use existing disturbed or cleared areas for road right-of-way where practical. 	<ul style="list-style-type: none"> Identify and avoid vertical and near vertical faces, ledges or overhangs for road routing where possible. Consider high quality habitat as part of quarry site selection criteria. Prior to reinstating a quarry or borrow site for maintenance, surveys of the rock face will be conducted. If bank swallow nests are identified they will not be disturbed during the breeding season (May-September). 	Effects involves regionally important species	Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III	Level I	Level 1	Level 1	Level 1	Level I	
Canada Warbler		<ul style="list-style-type: none"> Leave vegetated buffers between road and disturbed areas such as quarries and borrow pits. Inspectors and Contract Administrators will receive training and handbooks to identify all potential species at risk that could be encountered - the Environmental Inspector will be advised when encounters occur and management strategies applied if required. 	<ul style="list-style-type: none"> Road routing avoids waterbodies except at crossing locations. Apply herbicides in accordance with manufacturer’s instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. 	Effects involves regionally important species	Effect minor to moderate; individual level; LAA	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III	Level 2	Level 1	Level 1	Level 1	Level I	
Chimney swift		<p><i>Additional mitigation measures outlined in:</i></p> <ul style="list-style-type: none"> GR130.6 General GR130.8 Designated Areas and Access GR130.9 Materials Handling Storage and Disposal 	<ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer’s instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required 	Effects involves regionally important species	Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III	Level I	Level 1	Level 1	Level 1	Level I	
Common Nighthawk		<ul style="list-style-type: none"> GR130.10 Spills and Remediation and Emergency Response GR130.11 Dust and Noise Particulate Control GR 130.12 Noise and Noise Limitations GR130.14 Staff Training and Awareness GR130.15 Working Within or Near Water GR130.17 Clearing and Grubbing GR 130.19 Wildlife GR130.21 Cement Batch Plan and Concrete Wash-Out Area 	<ul style="list-style-type: none"> Prior to reinstating a quarry or borrow site for maintenance, surveys of the rock face will be conducted. If common nighthawk nests are identified they will not be disturbed during the breeding season (May to September) Consider high quality habitat as part of quarry site selection criteria Apply herbicides in accordance with manufacturer’s instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required 	Effects involves regionally important species	Effect minor to moderate; individual level; LAA	Effect not likely to occur but possible	Effect not likely to occur; infrequent	Effect not likely to occur	Unlikely to occur	No effect
				Level III	Level 2	Level 2	Level 1	Level 1	Level I	

Biophysical Environmental Component	Potential Environmental Effects	Proposed General Mitigation	Species Specific Mitigation	Effects After Mitigation						Residual Effects	
				Context		Extent		Frequency	Reversibility		Likelihood
				Ecological		Magnitude/Geographic	Duration				
Eastern Whip-poor-will			<ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer's instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. 	Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Eastern Wood-pewee			<ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer's instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. 	Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Olive-Sided Flycatcher			<ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer's instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. 	Effects involves regionally important species		Effect minor to moderate; individual level; LAA	Effect not likely to occur but possible	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level 2	Level 2	Level 1	Level 1	Level I	
Peregrine Falcon				Effects involve regionally important species. Not present in LAA unless transient.		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Rusty Blackbird			<ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer's instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. 	Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Short-Eared Owl				Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Waterbirds											
Horned Grebe	<ul style="list-style-type: none"> Loss of bird habitat and nests due to clearing Impairment of aquatic bird habitat in LAA due to accidental releases of fuels and other hazardous substances during pre-construction, construction and operation and maintenance or to increased suspended Disturbance of birds due to construction activities in the local 	<ul style="list-style-type: none"> Road routing avoids waterbodies except at crossing locations. Clearing activities will occur between September 1 and March 31 (outside breeding season); if any clearing is required during the breeding bird season, pre-clearing nest surveys will occur within 7 days of the clearing; buffers will be established around each nest, clearing activities restricted near active bird nests. Existing water flow patterns, water levels and wetland hydrologic regimes will be maintained. Inspectors and Contract Administrators will receive training and handbooks to identify all potential species at risk that could be encountered - the Environmental Inspector will be advised when encounters occur and 	<ul style="list-style-type: none"> Reclaim disturbed areas and encourage natural re-vegetation and slope excavations to promote retention of water for creation of ponds. 	Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Trumpeter Swan			<ul style="list-style-type: none"> Reclaim disturbed areas and encourage natural re-vegetation and slope excavations to promote retention of water for creation of ponds. 	Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	
Yellow Rail			<ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer's instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. 	Effects involves regionally important species		Effect minor; individual level; project footprint	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Unlikely to occur	No effect
				Level III		Level I	Level 1	Level 1	Level 1	Level I	

Biophysical Environmental Component	Potential Environmental Effects	Proposed General Mitigation	Species Specific Mitigation	Effects After Mitigation						Residual Effects
				Context	Extent		Frequency	Reversibility	Likelihood	
				Ecological	Magnitude/Geographic	Duration				
	<p>assessment area – may cause displacement.</p> <ul style="list-style-type: none"> Mortality of birds due to interactions with vehicles or increased predation. 	<p>management strategies applied if required</p> <ul style="list-style-type: none"> Apply herbicides in accordance with manufacturer’s instructions; prohibit herbicide application within 30 m of any waterbody, near identified environmentally sensitive sites or beyond road ROW as required. <p><i>Additional mitigation measures outlined in:</i></p> <ul style="list-style-type: none"> GR130.6 General GR130.8 Designated Areas and Access GR130.9 Materials Handling Storage and Disposal GR130.10 Spills and Remediation and Emergency Response GR130.11 Dust and Noise Particulate Control GR 130.12 Noise and Noise Limitations GR130.14 Staff Training and Awareness GR130.15 Working Within or Near Water GR130.17 Clearing and Grubbing GR 130.19 Wildlife GR130.21 Cement Batch Plan and Concrete Wash-Out Area 								
Mammals										
Boreal woodland caribou	<ul style="list-style-type: none"> Loss and fragmentation of habitat Movement impairment Disturbance during calving Displacement of caribou in the local assessment area during operation and maintenance due to vehicle traffic and maintenance equipment use Mortality of caribou due to increased hunting access, collisions with vehicles, increased predation, and brainworm (P. tenuis) 	<ul style="list-style-type: none"> Route selection avoids known caribou core areas and calving sites to extent possible. Clearing during fall and winter to the extent feasible to avoid parturition times for boreal woodland caribou. Seasonally and geographically restrict quarry and borrow site development and/or operation near know or potentially sensitive areas (e.g., core use areas and calving sites) where feasible. Identify areas of non-disturbance around known high quality caribou habitat as part of construction contract documents and drawings. Restrict vehicle speed limits near known sensitive caribou sites. Using existing access routes, trails, or cut lines to the extent feasible and access routes and trails will be kept as short and narrow as feasible. Access management includes restricting public access to construction sites. Prohibit firearms from being carried by construction workers while on the job site or in construction areas. Manage vegetation along road shoulders to maintain sightlines. 		Effects involves nationally important species	Effect minor; individual level; project footprint	Long-term	Effect expected to occur intermittently	Effect is reversible upon decommissioning road	Could reasonably expected to occur	Minor habitat and disturbance effect
				Level III	Level I	Level III	Level I	Level II	Level II	

Biophysical Environmental Component	Potential Environmental Effects	Proposed General Mitigation	Species Specific Mitigation	Effects After Mitigation						Residual Effects
				Context	Extent		Frequency	Reversibility	Likelihood	
				Ecological	Magnitude/ Geographic	Duration				
		<ul style="list-style-type: none"> Salt will not be used to control ice on road. Maintain vegetated buffers between road and disturbed areas such as quarries and borrow pits. Reclaim disturbed areas or encourage natural re-vegetation augmented by native plants and seeds if required; block abandoned access roads and encourage natural re-vegetation; rehabilitation of trails and winter roads to offset habitat loss. Reclaim disturbed areas and encourage natural re-vegetation augmented by native plants and seeds. Using existing access routes, trails, or cut lines to the extent feasible and access routes and trails will be kept as short and narrow as feasible. Identifying mineral licks and including them in EPPs as Environmentally Sensitive Sites. Inspectors and Contract Administrators will receive training and handbooks to identify all potential species at risk that could be encountered - the Environmental Inspector will be advised when encounters occur and management strategies applied if required. <p><i>Additional mitigation measures outlined in:</i></p> <ul style="list-style-type: none"> GR130.6 General GR130.8 Designated Areas and Access GR130.9 Materials Handling Storage and Disposal GR130.10 Spills and Remediation and Emergency Response GR130.11 Dust and Noise Particulate Control GR 130.12 Noise and Noise Limitations GR130.14 Staff Training and Awareness GR130.15 Working Within or Near Water GR130.17 Clearing and Grubbing GR 130.19 WildlifeGR130.21 Cement Batch Plan and Concrete Wash-Out Area 								
Little Brown Myotis (Bat)	<ul style="list-style-type: none"> Loss or alteration of habitat. Mortality related primarily to operational use of the road. 	<ul style="list-style-type: none"> Incorporate traditional knowledge to locate and avoid potential bat hibernacula (if present). Consider any identified or high quality hibernacula habitat as part of quarry site selection criteria. Clearing activities will occur between September 1 and March 31, and will minimize disturbance to summer roosting sites. Contractors will receive training and handbooks to identify all potential species at risk that could be encountered - the 		Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	No effect
				Level 1	Level 1	Level 1	Level 1	Level 1	Level 1	

Biophysical Environmental Component	Potential Environmental Effects	Proposed General Mitigation	Species Specific Mitigation	Effects After Mitigation						Residual Effects	
				Context	Extent		Frequency	Reversibility	Likelihood		
				Ecological	Magnitude/ Geographic	Duration					
		<p>Environmental Inspector will be advised when such encounters occur and adaptive management can be applied if required.</p> <p><i>Additional mitigation measures outlined in:</i></p> <ul style="list-style-type: none"> GR130.6 General GR130.8 Designated Areas and Access GR130.9 Materials Handling Storage and Disposal GR130.10 Spills and Remediation and Emergency Response GR130.11 Dust and Noise Particulate Control GR 130.12 Noise and Noise Limitations GR130.14 Staff Training and Awareness GR130.17 Clearing and Grubbing GR 130.19 WildlifeGR130.21 Cement Batch Plan and Concrete Wash-Out Area 									
Wolverine	<ul style="list-style-type: none"> Loss or alteration of habitat Mortality related primarily to operational use of the road 	<p>Inspectors and Contract Administrators will receive training and handbooks to identify all potential species at risk that could be encountered - the Environmental Inspector will be advised when encounters occur and management strategies applied if required.</p> <p><i>Additional mitigation measures outlined in:</i></p> <ul style="list-style-type: none"> GR130.6 General GR130.8 Designated Areas and Access GR130.9 Materials Handling Storage and Disposal GR130.10 Spills and Remediation and Emergency Response GR130.11 Dust and Noise Particulate Control GR 130.12 Noise and Noise Limitations GR130.14 Staff Training and Awareness GR130.17 Clearing and Grubbing GR 130.19 WildlifeGR130.21 Cement Batch Plan and Concrete Wash-Out Area 		Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	Effect not likely to occur	No effect	
				Level 1	Level 1	Level 1	Level 1	Level 1	Level 1		