

Impact Assessment Agency of Canada's request for information on Caribou

Information on caribou to inform the federal analysis of effects on current use of lands and resources for traditional purposes by Indigenous Peoples

The Impact Assessment Agency of Canada (IAAC) is focusing on the key issues that are relevant for federal impact assessment decision-making, specifically adverse federal effects and public interest factors. Regarding the adverse federal effects, IAAC aims to understand where standard mitigation measures would apply and the proponent's proposed mitigation seems appropriate, where existing legislative frameworks can be leveraged, and where oversight and protections from federal and provincial laws can build confidence that effects would be managed and potentially impacted Indigenous communities would be consulted or engaged.

To support IAAC's preparation of the draft Impact Assessment Report for the Webequie Supply Road Project, please provide responses to the questions related to caribou in the table below. IAAC assigned questions to Environment and Climate Change Canada (ECCC) and to Ontario Ministry of the Environment, Conservation and Parks (MECP). The questions seek expert or specialist information and knowledge that will inform IAAC's analysis of the project-specific key issues and the preparation of the draft Impact Assessment Report.

Although focused on the Webequie Supply Road Project, when responding to these questions, please consider the Webequie Supply Road Project, Northern Road Link Project and Marten Falls Community Access Road Project. As these three proposed projects are within the same geographic region, please be as specific as possible where distinct considerations apply to these three projects when responding to the questions. IAAC will consider the responses when conducting its analysis for all three road projects to ensure efficiency of the assessment processes.

When completed, please return this form to IAAC via webequie@iaac-aeic.gc.ca.

Recipient	Question	Response
Effects to Current Use of Lands and Resources for Traditional Purposes - Changes to Caribou That Support Indigenous Hunting		
		<p>IAAC expects non-negligible adverse changes to caribou and their habitat.</p> <p>Caribou:</p> <p>IAAC understands that Indigenous communities hunt boreal caribou for consumption and subsistence, along Attawapiskat River, around McFaulds Lake, along Muketei River, and within the Asheweig River, Ekwan, Winisk and Attawapiskat watersheds.</p> <p>IAAC notes that boreal caribou are protected on private and provincial Crown land in Ontario under the <i>Endangered Species Act, 2007</i> (ESA). IAAC understands that this framework aims to achieve an overall benefit to the species through implementation of permit conditions that would allow an adverse change to caribou or its habitat. IAAC also understands from the <i>Endangered Species Act Submission Standards</i>¹ that overall benefit actions that focus on the local population or habitat adversely affected by an activity are preferred in decision-making. Further, IAAC notes that the province would consult Indigenous communities prior to making decisions under the ESA, including consultation undertaken as part of the environmental assessment.</p> <p>The Webequie Supply Road proponent indicated that the linear infrastructure would increase the presence of caribou predators. The proponent has identified the following mitigation measures to address increased predation from the presence of linear features: blocking areas no longer used until the areas are progressively restored or reclaimed; clearing vegetation along the right of way to reduce attractant habitat; minimizing width of linear features; including switchbacks and bends in temporary roads; incorporating wildlife crossing and passages in the road design; and removing roadkill promptly.</p> <p>Sensory disturbance to caribou is anticipated over the life of the project. The Webequie Supply Road proponent suggested that sensory disturbances during the construction phase may impact caribou behaviour, including that pregnant cows may stay 10 to 15 km away from the disturbance. Expected traffic on the road during the operation phase would mostly comprise light and medium personal and commercial vehicles, with industrial trucks occasionally using the road. The proponent has identified the maximum predicted sound level of operational use as 44 dBA, which IAAC assumes could trigger changes in wildlife behaviour. The proponent has identified the following mitigation measures for sensory disturbance during the construction and operation phases of the project: installing noise abatement equipment on machinery; avoiding disruptive construction activities during sensitive windows; and enforcing speed limits to reduce noise from traffic.</p>

Commented [CWS-ON1]: Note that June 2025 amendments to the ESA removed overall benefit permits and the ESA submission standards have been archived

¹ <https://www.ontario.ca/page/endangered-species-act-submission-standards>

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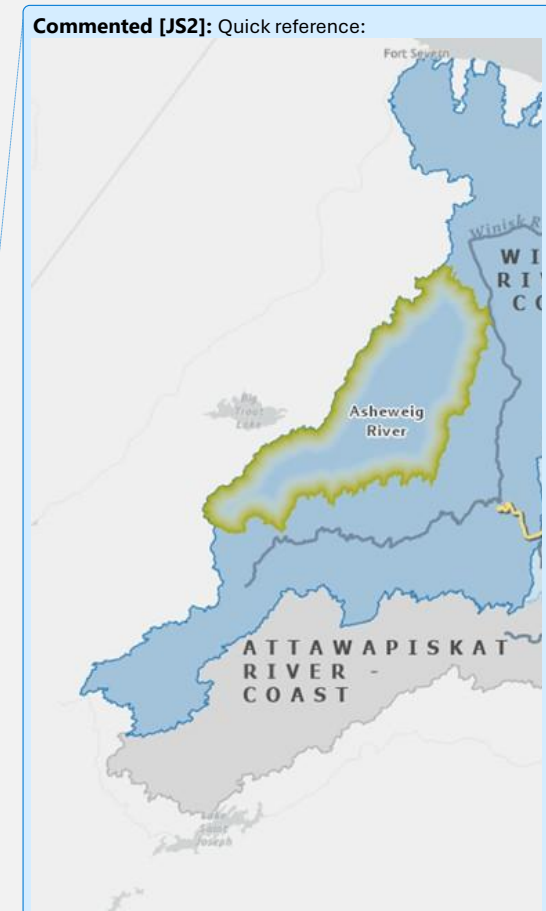
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<p>Caribou habitat:</p>		
<p>Information from the Webequie Supply Road Impact Statement identified boreal caribou movement which overlaps with the project footprint. The project footprint is the area of direct disturbance, including roadway and ancillary features. Caribou habitat extends up to the James Bay and Hudson's Bay coasts (Appendix F, Figure 11.17). The proponent has also identified areas of suitable habitat which overlap with the project footprint (Section 13, Figure 13-3 to 13-8).</p>		
<p>The Webequie Supply Road proponent indicated that project construction would result in moderate loss of boreal caribou habitat in the caribou Local Study Area and minimal loss in the Regional Study Area. The proponent defines the caribou Local Study Area as the area that is 11 km on either side of the right-of-way of the route alternatives, and the caribou Regional Study Area includes the provincial Missisa and Ozhiski ranges. The proponent has indicated that 30.6% and 0.1% of category 1 habitat would be removed from the Local Study Area and Regional Study Area, respectively, and has identified mitigation measures to further minimize effects of habitat loss. Mitigation measures include minimizing vegetation clearing; avoiding habitat important to caribou life processes; revegetating cleared areas; and implementing methods to speed up vegetation regrowth. In addition, off-site restoration opportunities would be considered to offset project effects, if on-site restoration activities are not available.</p>		
<p>Note that the responses below were prepared using the best available information as of February 24 2026</p>		
<p>Current population status</p>		
<p>1: ECCC, MECP</p>	<p>What is the baseline status of boreal caribou and eastern migratory caribou populations in the Missisa and Ozhiski ranges (i.e. without the project)?</p>	<p>Caribou, Boreal population (boreal caribou) are listed federally as Threatened under Schedule 1 of the <i>Species at Risk Act</i> (SARA), listed since 2003; last assessed by the Committee on the Status of Endangered Wildlife in Canada [COSEWIC] in November 2014). Provincially, boreal caribou are listed as Threatened in Ontario under the <i>Endangered Species Act</i> (ESA) since 2008. The local population of boreal caribou in the federal Far North range was assessed as Self-Sustaining in June 2012 (ECCC 2020).</p> <p>Caribou, Eastern Migratory population (eastern migratory caribou) were assessed by COSEWIC as Endangered in April 2017 and are under consideration for addition to Schedule 1 of SARA. The Southern Hudson Bay subpopulation of eastern migratory caribou is found in Ontario and designated as Special Concern under the ESA (August 2018) because of apparent but unquantified declines in Ontario, ongoing and increasing threats, and dramatic declines elsewhere in eastern Canada (COSSARO 2017). The most recent minimum animal count for eastern migratory caribou in the Southern Hudson Bay subpopulation occurred in 2011, with an estimate of 16,638 derived from minimum count surveys and photographic aerial surveys (COSEWIC 2017). However, this is not a total population size estimate, as parts of the range have not been surveyed (COSEWIC 2017).</p> <p>Missisa and Ozhiski are provincial boreal caribou ranges delineated approximately within the federal Far North boreal caribou range in Ontario. The Far North range is above the minimum undisturbed habitat threshold (86% undisturbed, 14% disturbed; ECCC 2024). Anthropogenic habitat disturbance increased from 1% to 2%, approximately 282,000 hectares, in the Far North range between 2015 and 2020 (based on Landsat imagery interpretation with a 500 m buffer applied to all linear and polygonal disturbances; ECCC 2024). Using federal methodology to calculate total habitat disturbance for provincial ranges, Missisa range is 6% disturbed (including 0.6% anthropogenic disturbance), and Ozhiski is 26% disturbed (including 3% anthropogenic disturbance) (as of 2020, ECCC 2024).</p> <p>The boreal caribou population size in the Far North range is considered to be >300 individuals (ECCC 2024). Recent estimates of minimum animal counts of total caribou determined from genetic analyses on fecal samples collected from fecal DNA surveys (ECCC unpubl. data) was as follows: 473 individuals in the Missisa Range (in 2021) and 352 in Ozhiski (in 2022). These estimates include both boreal caribou and eastern migratory caribou.</p> <p>The caribou collaring studies undertaken by the province in Missisa and Ozhiski ranges since 2019 provide the best available information on boreal caribou estimated population size, recruitment, survival and population trend for these ranges. The province has estimated that</p>

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		boreal caribou populations in both Missisa and Ozhiski ranges are stable or increasing. Ontario is best placed to provide comment on the baseline status of caribou in these ranges.
Changes to population due to the project		
2: ECCC, MECP	Indicate what type of caribou habitat might be lost (e.g. due to habitat clearing) or disturbed (e.g. due to sensory disturbance such as noise) due to the project, namely Category 1 (nursery areas, winter use areas, travel corridors), Category 2 (seasonally important areas) or Category 3 (other habitat), and indicate the location of the Category 1, 2 or 3 habitat areas anticipated to be lost or disturbed.	<p>Ontario will be best placed to comment on the amount and location of Category 1, 2, and 3 habitats within the project area.</p> <p>ECCC offers the following comments in relation to Category 1 high use habitats (lowest tolerance to alteration):</p> <ul style="list-style-type: none"> The proponent indicates that 232 ha of Category 1 nursery area caribou habitat will be lost as a result of the project. This represents about 30% of nursery area habitat in the LSA, implying that this type of important habitat is not widely available in the area. The proponent indicates that no Category 1 winter habitat will be lost, however the area is known to be highly used by caribou in the winter (see Question 3 below) and McFarlane et al (2025) predicted suitable caribou winter habitat throughout the project area. Regardless of the category status, habitat important to caribou during the winter will be lost. Category 1 travel areas have not been mapped but the project is sited on upland habitat where possible; these habitats are important to caribou as travel corridors and are already relatively rare in the project area. <p>Category 2 seasonal habitat (moderate tolerance to alteration) and Category 3 habitat remaining area in range (highest tolerance):</p> <ul style="list-style-type: none"> The proponent indicates that 98,863 ha of Category 2 habitat will be lost, nearly half (48%) of what is available within the LSA, and that the area lost from Category 1 and 2 will be “gained” as Category 3 habitat (recognizing that Category 3 is defined as the remaining areas within the range). Ontario’s General Habitat Description for Forest Dwelling Woodland Caribou, indicates that Category 3 habitat generally has a “higher tolerance to alteration when compared to other, currently occupied sub-range habitat features. However, permanent or long-term anthropogenic disturbances such as large linear corridors and other disturbances that fragment or alter forest cover composition, will diminish their future function. The future provision of seasonal ranges (with nested potential high use areas) is critical to long-term caribou persistence within a range.” <p>In terms of federal critical habitat, the proposed WSR corridor is within the federal Far North Range for boreal caribou, which is above the management threshold of 65% undisturbed habitat (86% undisturbed). In Ontario, there are 6 boreal caribou ranges provincially defined within the federal Far North range (including Missisa and Ozhiski which comprise the project RSA), none of which have a range plan that identifies how and where the minimum of 65% undisturbed habitat will be maintained. In that context, in ranges at or above the management threshold of 65% undisturbed habitat, ECCC advises that all undisturbed habitat should be considered critical habitat. Most of the habitat within the proposed corridor and surrounding area is undisturbed. In addition to the quantitative aspect of critical habitat, the biophysical attributes of critical habitat (e.g., those associated with winter, calving, travel) appear to be prevalent throughout the proposed corridor. It is important to note that removing or altering biophysical attributes and reducing connectivity within a range increase the likelihood of destroying critical habitat.</p>
3: ECCC, MECP	<p>Discuss, given the above noted habitat that would be lost or disturbed, the anticipated effects of the project on the caribou populations in the Missisa and Ozhiski ranges.</p> <p>Discuss availability of caribou in the Local Study Area and Regional Study Area through the seasons given the changes to habitat anticipated due to the project.</p>	<p>Anticipated effects of the project on the caribou populations in the Missisa and Ozhiski ranges</p> <p>ECCC’s view is that there will likely be residual adverse effects to caribou and caribou habitat in terms of change in the distribution, and potentially a decrease in the abundance, of caribou throughout the project LSA and change in movement patterns across the RSA (Missisa and Ozhiski ranges). This may result in a population level effect in terms of altering movement and migration patterns within and between ranges and seasonal habitats, as outlined below.</p> <p>The WSR proposed corridor is heavily used by caribou as evidenced by the results of surveys presented in the final IS (Appendix F Natural Environment Existing Conditions Report), provincial caribou observations and collar data, and winter aerial surveys conducted during</p>

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	<p>Discuss, if possible, how the changes to caribou populations would change the presence of caribou along Attawapiskat River, around McFaulds Lake, along Muketei River, and within the Asheweig River, Ekwana, Winisk and Attawapiskat watersheds.</p>	<p>ECCC fecal DNA surveys. ECCC's preliminary assessment indicates that the potential risk to caribou may be high based on the severity of potential effects, the importance of the habitat, the sensitivity of caribou, and the likelihood of effects.</p> <p>Taking into account proposed mitigation, potential pathways for the project to affect the behaviour and distribution of caribou within the RSA include:</p> <ul style="list-style-type: none"> • The road will fragment habitat highly used by caribou resulting in a linear barrier to movement <ul style="list-style-type: none"> ○ Caribou are known to be highly sensitive to linear barriers such as roads and have a strong avoidance response despite implementation of common mitigation measures such as those described in the final IS. Avoidance further establishes a linear barrier to movement and loss of connectivity within ranges and within and between seasonal habitats. ○ This will likely alter both behaviour and distribution as caribou establish new movement patterns. • The road will likely change predator/prey dynamics <ul style="list-style-type: none"> ○ Linear features are known to facilitate predator access and travel, potentially increasing predation rates on caribou. ○ Despite implementation of common mitigation measures, changes to habitat are likely to favour alternate prey species such as moose, which may then support larger predator populations and increase predation rates on caribou. ○ These factors may affect caribou behaviour and distribution as they seek to avoid predators. • Even with proposed mitigation, the road will likely alter caribou habitat so that it is less suitable <ul style="list-style-type: none"> ○ Upland habitats are important to caribou as travel corridors. Loss and degradation of upland habitat, already relatively rare in the project area, may alter connectivity and movement patterns. ○ Peatland habitats provide winter and calving habitat as well as connectivity that enables caribou to travel between these important areas. Peatlands also function as areas where caribou are able to better avoid predation, notably during sensitive life stages like calving and post-calving. Loss and degradation of peatland habitat associated with the project may also alter connectivity and caribou movement patterns. ○ These factors are likely to reduce suitable habitat at a local scale which may affect local caribou abundance as well as broader caribou behaviour and distribution as they establish new movement patterns and seek different habitat to better meet their needs. <p>Availability of caribou in the Local Study Area and Regional Study Area through the seasons</p> <p>ECCC's view is that caribou distribution, and potentially abundance, is expected to be altered throughout the project LSA in all seasons for boreal caribou, and especially during winter season for both boreal and eastern migratory caribou. There may also be impacts to movement patterns across the RSA. These changes may impact availability of caribou, as outlined below.</p> <p>How the changes to caribou populations would change the presence of caribou</p> <ul style="list-style-type: none"> • Caribou collaring data from 2005-2023 in northern Ontario indicates that caribou are found throughout all seasons around the area along Attawapiskat River, around McFaulds Lake, along Muketei River, and within the Asheweig River, Ekwana, Winisk and Attawapiskat watersheds. <ul style="list-style-type: none"> ○ For example, eastern migratory caribou in the early winter period occur inland, throughout the central portions of the Ekwana and Winisk river watersheds (including the Asheweig which is a tertiary watershed within the Winisk watershed), including occurrence within the proposed WSR corridor. During calving season, eastern migratory caribou are found throughout the northern portions of the same watersheds, with calving locations found along the Hudson Bay and James Bay coast. This indicates that eastern migratory caribou may travel through the area impacted by the project, from winter to calving season. ○ Boreal caribou occur throughout the Attawapiskat watershed in all seasons, as well as within southern portions of the Ekwana watershed, and some areas of the Asheweig watershed (within Winisk) and the very southern tip of the Winisk



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		<p>watershed. Particularly during the winter season, collaring data shows that boreal caribou are found throughout the proposed WSR corridor (and other proposed road corridors).</p> <ul style="list-style-type: none"> ○ Additionally, McFarlane et al (2025) found that predicted suitable caribou winter habitat in northeastern Ontario is aggregated (e.g., not uniformly distributed in the area) with a high concentration around the McFauld's Lake area in the Missisa range in the middle of the Attawapiskat watershed and covering the southwestern end of the Ekwan River watershed. Within the Winisk watershed, predicted suitable winter habitat is mostly found within and around the Ashewieg portion of the watershed. ● ECCC's view is that the project will likely change caribou behaviour and distribution through the introduction of a linear barrier that fragments highly used habitat, increased predation and predator avoidance, and habitat loss (both physical and functional) and degradation during the construction and operation of the proposed road. In terms of behaviour, many studies have highlighted the general pattern of caribou avoidance of roads and anthropogenic features, often quantified spatially as a Zone of Influence (ZOI). Caribou habitat within the ZOI is functionally lost to caribou because resources or conditions suitable for their survival are compromised by their proximity to disturbance (Johnson et al. 2015). <ul style="list-style-type: none"> ○ A recent paper by Boulanger et al. (2024) found that the effects of roads on movement pathways by migratory caribou were spatial and temporal in nature, with spatial avoidance via deflection behaviour and a ZOI between 16-17 km. They note that "the spatial impact of roads on migration may extend beyond the perception distance of the road due to non-independence of individuals, responsive movement after encounter with the road, as well as indirect factors such as hunter and predator access near the road." ○ Vors et al. 2007 found a strong relationship between woodland caribou extirpation and distance to all anthropogenic landscape disturbances in Ontario, and found a critical distance threshold of 30 km for primary, secondary and tertiary roads. ○ There can also be increased stress levels around development; for example, recent hormone analysis data from caribou in northern Ontario showed that elevated cortisol concentrations, indicating increased stress, were found in individuals sampled closer to winter roads (ECCC in prep), similar to results found by Wasser et al. (2011). ● Given the expected behavioural avoidance response, and the loss of connectivity due to the linear disturbance, the presence of caribou in the above areas may be negatively impacted. <p>Lastly, ECCC is of the view that offsetting measures for caribou, covering both habitat and non-habitat measures, should be considered to help offset impacts to Current Use of Lands and Resources for Traditional Purposes by Indigenous Peoples. At a minimum the development and implementation of a Caribou Mitigation and Monitoring Plan, that includes details on offsets, should be included as a condition. This Plan should be developed prior to construction and in consultation with Indigenous groups, ECCC, and relevant provincial authorities.</p>
4: ECCC, MECP	Given the linear corridor that would be created by the proposed road, are there any further changes in caribou distribution or displacement anticipated due to changes in predator-prey dynamics along the corridor?	<p>ECCC concurs with the proponent's conclusion that the net (residual) effect associated with changes to predator prey dynamics cannot be completely eliminated and is likely to have a significant impact on caribou.</p> <p>As discussed in Question 3, above, the road will likely change predator/prey dynamics</p> <ul style="list-style-type: none"> ○ Linear features are known to facilitate predator access and travel, potentially increasing predation rates on caribou. ○ Despite implementation of common mitigation measures, changes to habitat are likely to favour alternate prey species such as moose, which may then support larger predator populations and increase predation rates on caribou. ○ These factors may affect caribou behaviour and distribution as they seek to avoid predators. <p>The link between linear features and increased caribou predation rates is well established. Increased predation is considered one of the primary factors in the designation of boreal caribou as threatened under SARA and it is considered a threat with a high level of concern in</p>

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		<p>the amended Recovery Strategy for boreal caribou. The amended Recovery Strategy for boreal caribou states: “Across most of the distribution of boreal caribou, human-induced habitat alterations have caused an imbalance in predator-prey relationships resulting in unnaturally high predation rates. This is the major factor affecting the viability of most boreal caribou local populations...Based on the weight of evidence coming from science and Indigenous Knowledge, increased wolf and/or bear predation is the main proximate cause of boreal caribou decline across Canada”. [Amended Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal Population, in Canada, PDF p30]</p> <p>Research has shown that habitat restoration could substantially benefit caribou populations by reducing predator access and efficiency, but only if all linear features are restored [Predicting the effects of restoring linear features on woodland caribou populations]. This would not be the case for the WSR.</p> <p>ECCC recommends that the proposed Wildlife Management and Monitoring Plan include monitoring of wolf populations and their movements, to inform adaptive management during project construction and operation. This should be done in consultation with the province and Indigenous communities. A robust follow-up program is also needed to monitor and manage the risk to caribou within the RSA as a result of wolf predation. The monitoring plan should outline the methods to be used, the indicators to measure, and thresholds to guide adaptive management.</p>
5: MECP	<p>In general, discuss mitigation measures that would be useful to ensure that the effects of the project on the caribou populations in the Missisa and Ozhiski ranges would be avoided or lessened. In your response, consider:</p> <ul style="list-style-type: none"> - the federal recovery strategy and action plan; - the mitigation measures proposed by the proponent; - measures that might be employed to minimize changes to predator-prey dynamics along the corridor; - if applicable, cumulative effects. 	
6: ECCC	<p>For effects on federal lands (Webequie First Nation reserve), pursuant to subsection 73(3) of SARA, is there a permit that ECCC would need to issue?</p>	<p>Boreal Caribou individuals are automatically protected under SARA on federal lands and a SARA permit would be required if project activities, including early works, affect individuals. Based on available information, ECCC expects that a SARA permit for boreal caribou potentially may be required during the construction phase.</p> <p>Impacts to boreal caribou critical habitat should be avoided and/or minimized to the extent possible as this habitat is required for their survival and recovery, but there are currently no critical habitat prohibitions in place under SARA within the project area, either on federal or non-federal land (see Question 2 for further information about critical habitat).</p> <p>In previous correspondence to IAAC (Enclosure 2 - Updating the Federal Permitting Plan for the Webequie Supply Road project), ECCC outlined project specific information the proponent would need to determine the need for a SARA permit as well as information that would need to be provided in a SARA permit application. That information is summarized here.</p> <p>Information the proponent should reply on to determine the need for a SARA permit for boreal caribou includes:</p> <ul style="list-style-type: none"> • The length and location of the final selected route on federal land, as well as the size and location of any other components of the project on federal land including early works.

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		<ul style="list-style-type: none"> The timing of caribou observations on federal land and consideration of whether project construction timing windows would avoid impacts to boreal caribou individuals The type, function, location, and amount of boreal caribou habitat on federal land impacted by the project. Boreal caribou individuals may be affected by impacts to habitat. <p>In order for incidental effects to caribou individuals to be authorized, a SARA permit would be required. The decision to apply for a SARA permit rests with the proponent.</p> <p>Should a SARA permit be needed for boreal caribou, the following information would be needed to support the permit application:</p> <ul style="list-style-type: none"> The SARA permit application is expected to describe any changes that the activity may cause to boreal caribou, the possible effects of those changes and the significance of those effects. This information must also inform how the project activities meet the three pre-conditions under subsection 73(3) of SARA: <ul style="list-style-type: none"> all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted; all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; and if the activity will not jeopardize the survival or recovery of the species. A description of the reasonable alternative means of constructing the road considered that would reduce the impact on boreal caribou for the portions of the project on federal land. <ul style="list-style-type: none"> To clarify, reasonable alternatives could include construction methods, routes, alignments, etc., that may influence the degree to which the project impacts the species at risk that are the subject(s) of the permit. An explanation of why the identified alternative is the best solution with the conservation of boreal caribou in mind. A description of all mitigation measures being considered to minimize the impact of the activity on boreal caribou (and its supporting habitat). Evidence to substantiate why the activity (on federal land) would not compromise the survival or recovery of boreal caribou.
7: MECP	<p>Given the response to question 5 above and the possibly that road construction permits will be secured by Ontario Ministry of Transportation (MTO), are there any conditions of approval – or commitments under the <i>Species Conservation Act</i> – that are expected with respect to effects not on reserve lands?</p> <p>Is it MECP's expectation that MTO would consult with Indigenous communities as part of its process?</p>	
Cumulative effects		
9: ECCC, MECP	<p>Given the project, Marten Falls Community Access Road Project, Northern Road Link Project and other reasonably foreseeable projects such as mining and infrastructure development within the Local Study Area and Regional Study Area, provide information on how the availability of caribou</p>	<p>ECCC disagrees with the proponent on whether several key effects to caribou would be reversible, considering that the road is proposed to operate in perpetuity within a permanently cleared ROW and there is not a decommissioning phase:</p> <ul style="list-style-type: none"> Habitat alteration or degradation from habitat structural change (construction and operations): the final IS states "The effects are reversible if the cleared vegetation is restored" [Section 13 PDF p349] Habitat alteration or degradation from sensory disturbance (construction and operations): the final IS states "Sensory disturbances are reversible when noise, movement and light cease to be generated in the Project footprint and vegetation is restored" [Section 13, PDF p352]

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	<p>may be affected in the Missisa and Ozhiski ranges from a cumulative effects perspective.</p>	<ul style="list-style-type: none"> • Alteration in caribou movement from sensory disturbance (construction and operations): the final IS states “Sensory disturbances are reversible when noise, movement, scent and light cease to be generated in the Project Footprint” [Section 13, PDF p 354] • Alteration in caribou movement from loss of connectivity (construction): the final IS states “Effects to Caribou movement due to loss of connectivity is reversible if vegetation is restored in the ROW” [Section 13, PDF p356] • Alteration in caribou movement from loss of connectivity (operations): the final IS states “The effect is reversible once vehicles stop using the road” [Section 13 PDF p357] • Injury or death from collisions with vehicles (operations): the final IS states “Collisions will cease once road operation concludes” [Section 13, PDF p358] • Injury or death from increased energy expenditure (operations): the final IS states “Increased energy expenditure is reversible once operations cease and vegetation has re-established in the linear features” [Section 13, PDF p363] <p>Considering that these effects are not likely to be reversible due to the ongoing operation of the road, they are more likely to contribute to cumulative adverse effects to caribou.</p> <p>The final IS also says: “With the implementation of the Project’s mitigation measures (see Section 13.4) and the assumption that other, future potential projects or activities will be required to have the same or similar standards, it is anticipated that the cumulative effects will not impact caribou and caribou habitat in the RSA.” [Section 21, PDF p158]. The basis for making this statement is unclear to ECCC.</p> <p>ECCC disagrees with the proponent that “the cumulative effects will not impact caribou and caribou habitat in the RSA”, as by the proponent’s own analyses there are several significant net (residual) cumulative effects that will remain after the implementation of mitigation measures.</p> <p>Since the road projects present a permanent disturbance, the cumulative effects from reasonably foreseeable development (the three road projects, expected mining projects, and other induced developments) have the potential to permanently alter caribou distribution and movement patterns within the Missisa and Ozhiski caribou ranges, as discussed in Question 3 above.</p> <p>As a worst-case scenario, caribou may no longer occur in or move through the WSR LSA, as well as the LSAs for the Marten Falls Community Access Road and Northern Road Link projects. This would likely reduce landscape and genetic connectivity of caribou populations with potential for consequential effects on likelihood of individual survival and reproduction and leading to potential impacts to population level genetic structure.</p>