

# Woodland Caribou Mitigation Plan Template for Seismic Exploration Programs in the Boreal Plain (SK2) Caribou Conservation Unit

*Note: This is an optional template provided to enable proponents to demonstrate their projects are implementing the standard mitigation measures or to propose non-standard mitigation measures according to the Mitigation Measures and Guidelines for Seismic Exploration Programs in the Boreal Plain (SK2) Caribou Conservation Unit.*

<b>Project Location (check all that apply)</b>	
<b>SK2 Caribou Conservation Unit</b>	
<input type="checkbox"/> <b>Tier 1 or Tier 2</b> Caribou Habitat Management Area (CHMA) <b>(COMPLETE TABLE 1)</b>	<input type="checkbox"/> <b>Tier 3</b> Caribou Habitat Management Area (CHMA) <b>(COMPLETE TABLE 2)</b>
<b>Instructions</b>	<ul style="list-style-type: none"> <li>• Complete the table relevant to your project location, indicated above.</li> <li>• For each project activity, check all standard mitigation measures that will be implemented or indicate if not applicable.</li> <li>• For any activity where the standard mitigation measures will not be implemented or an alternative approach is proposed, the non-standard mitigation section for that activity must be completed (attach separate pages, as needed).</li> <li>• Proposed non-standard mitigation should describe reasonable and prudent measures to achieve the desired outcomes for woodland caribou and woodland caribou habitat that are proportional to the timing, scope, and scale of the proposed activities. Examples are provided for consideration.</li> <li>• Acceptance of proposed non-standard mitigation measures will be at the discretion of the Ministry of Environment.</li> </ul>

**TABLE 1. Projects in SK2 Tier 1 or 2 CHMAs**

**Operating Period**

<p><b>Standard Mitigation</b></p>	<p><input type="checkbox"/> Conduct all project activities outside the sensitive timing window for woodland caribou (April 1 to July 31).</p> <ul style="list-style-type: none"> <li>• Winter project demobilization activities initiated before April 1 may be completed in the sensitive timing window.</li> </ul>
<p><b>Non-standard Mitigation</b> (Complete all sections if standard mitigation described above will not be implemented)</p>	<p><i>Provide a rationale for not implementing the standard mitigation, above, for the operating period.</i></p>
	<p><i>Describe how the frequency and/or intensity of activities will be minimized during the sensitive timing window (April 1 to July 31). Examples may include:</i></p> <ul style="list-style-type: none"> <li>- Avoiding mechanical vegetation clearing during the sensitive timing window.</li> <li>- Minimizing activities on source and receiver lines during the sensitive timing window.</li> <li>- Consideration of the value of the habitat for woodland caribou where the higher-risk activities are planned during the sensitive timing window.</li> </ul>
	<p><i>Describe any additional proposed alternative mitigation to minimize sensory disturbance to woodland caribou associated with proposed project activities during the sensitive timing window. Examples may include:</i></p> <ul style="list-style-type: none"> <li>- Strategies to minimize sensory disturbance from operating equipment (e.g. noise attenuation devices on equipment, directional lighting).</li> <li>- Minimizing site activity and personnel to only what is required for safety and to meet permit conditions.</li> </ul>

**New Access**

<p><b>Standard Mitigation</b></p>	<p><input type="checkbox"/> Only existing ground access in combination with helicopter access, if necessary, will be used.</p> <ul style="list-style-type: none"> <li>• Existing ground access is defined as linear disturbance on the landscape from previous activities where tree/shrub growth does not exceed 2 m in height (excluding where scarification/reforestation/re-vegetation or access control via tree felling or hinging has occurred).<sup>1</sup></li> <li>• Maintenance of existing ground access is permitted if it does not widen or change the route of the access. Slash or mulch generated by maintenance activities must be redistributed along the access prior to permit expiry.</li> </ul>
<p><b>Non-Standard Mitigation</b> (Complete all sections if standard mitigation described above will not be implemented)</p>	<p><i>Provide a rationale for not implementing the standard mitigation, above, for the creation of new access:</i></p>
	<p><i>Describe how total length of new access created by the proposed project will be minimized:</i></p>

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<sup>1</sup> Adapted from the Alberta definition of “Existing Linear Disturbance” (Government of Alberta. 2020. Alberta Public Lands Glossary of Terms. Alberta Environment and Parks).

**Table 1. Continued**

**New Access continued**

<p><b>Non-Standard Mitigation continued</b> (Complete all sections if standard mitigation described above will not be implemented)</p>	<p>Describe proposed alternative mitigation to minimize the loss and alteration of woodland caribou habitat and minimize the increase in linear feature density associated with new ground access. <u>Examples may include:</u></p> <ul style="list-style-type: none"> <li>- Consideration of the value of the habitat for woodland caribou where access is planned.</li> <li>- Winter-only ground access (describe <b>how</b> and <b>where</b> winter access will be used to minimize habitat disturbance).</li> <li>- Reclamation or restoration of new access prior to permit expiry (describe <b>how</b> and <b>when</b> new access will be reclaimed to minimize human and wildlife access and promote natural revegetation).</li> </ul>
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**Temporary Work Camps**

Not Applicable (i.e. no temporary work camp is required)

<p><b>Standard Mitigation</b></p>	<p>Standard mitigation for new temporary work camps is not provided. Clearing for temporary work camps may be considered under a non-standard mitigation plan.</p>
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<p><b>Non-Standard Mitigation</b> (Complete all sections if standard mitigation described above will not be implemented)</p>	<p>Describe proposed mitigation to avoid or minimize the loss and alteration of woodland caribou habitat associated with vegetation clearing and ground disturbance at temporary work camp sites. <u>Examples may include:</u></p> <ul style="list-style-type: none"> <li>- Locate temporary work camps in existing locations or natural openings to minimize area cleared.</li> <li>- Reclamation or restoration of new temporary work camp clearings prior to permit expiry (describe <b>how</b> and <b>when</b> treatments will occur to promote natural revegetation).</li> </ul>
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**Vegetation Clearing (excluding Line Cutting and Temporary Work Camps)**

Not Applicable (i.e. no vegetation clearing will be completed other than Line Cutting and Temporary Work Camps)

<p><b>Standard Mitigation</b></p>	<p><input type="checkbox"/> Clearing size for helicopter pads will not exceed 900 m<sup>2</sup>. Helicopter pads will be hand cut; no mechanized clearing will be conducted on helicopter pads.</p> <p><b>OR</b></p> <p><input type="checkbox"/> N/A - No clearing for heli-pads will occur.</p> <p><b>AND</b></p> <p><input type="checkbox"/> New clearing associated with staging areas will not exceed 0.5 ha. Mechanized clearing / mulching for staging areas will only be conducted on dry or frozen ground.</p> <p><b>OR</b></p> <p><input type="checkbox"/> N/A – No clearing for staging areas will occur.</p> <p><b>AND</b></p> <p><input type="checkbox"/> Reclamation for new clearings, such as helicopter pads or staging areas, will be completed prior to permit expiry.</p> <ul style="list-style-type: none"> <li>• Reclamation will consist of rolling back coarse woody debris and snow and redistributing stockpiled slash over the clearing, where material is available.</li> <li>• Reclamation is not required if clearing was conducted with a mulcher.</li> <li>• Reclamation is not required if it presents significant safety concerns.</li> </ul> <p><b>OR</b></p> <p><input type="checkbox"/> N/A – No clearing for staging areas or helipads will occur.</p>
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**Table 1. Continued**

**Vegetation Clearing (excluding Line Cutting and Temporary Work Camps) continued**

<p><b>Non-Standard Mitigation</b> (Complete all sections if standard mitigation above will not be implemented)</p>	<p>Provide a rationale for not implementing the standard mitigation measures, above, for vegetation clearing:</p>
	<p>Describe proposed alternative mitigation to avoid or minimize the loss and alteration of woodland caribou habitat associated with vegetation clearing. <u>Examples may include:</u></p> <ul style="list-style-type: none"> <li>- A description of how the total area cleared will be minimized.</li> <li>- Consideration of the value of the habitat for woodland caribou where clearing will occur.</li> <li>- Reclamation or restoration of new clearings by means other than described in the standard mitigation, prior to permit expiry (describe <b>how</b> and <b>when</b> new treatments will occur to promote natural revegetation).</li> </ul>

**Line Cutting**

Not Applicable (i.e. no line cutting will be completed)

<p><b>Standard Mitigation</b></p>	<p><input type="checkbox"/> Line cutting will meet the following criteria:</p> <ul style="list-style-type: none"> <li>• Receiver lines will be meandering and use tree avoidance techniques.</li> <li>• Receiver lines will not exceed 1.75 m wide unless required to minimize total project source line access or for emergency preparedness. <ul style="list-style-type: none"> <li>▪ Widened receiver lines will not exceed 2.75 m.</li> </ul> </li> <li>• Source lines will not exceed 2.75 m wide, except for clearings required for equipment turn-around.</li> <li>• Source lines will employ tree avoidance techniques and meander to limit line of sight less than 100 m.</li> <li>• Doglegs will be employed at all intersections with linear features &gt;3.5 m wide.</li> <li>• Snow berms generated through ploughing will not exceed 1 m in height and will provide breaks at least 10 m wide located at least every 200 m along the berm.</li> <li>• Mechanized clearing/mulching will be conducted on dry or frozen ground.</li> </ul> <p><b>AND</b></p> <p><input type="checkbox"/> Reclamation and access management treatments will be completed for newly cut lines prior to permit expiry.</p> <ul style="list-style-type: none"> <li>• Treatments are required at line intersections with linear features &gt;3.5 m wide.</li> <li>• Treatments will: <ul style="list-style-type: none"> <li>▪ Include coarse woody debris rollback and slash piling, where material is available.</li> <li>▪ Include tree felling and/or tree hinging to deter wildlife and human access, where the average tree height beside the line is &gt;2 m.</li> <li>▪ Extend at least 100 m from the line intersection with the linear feature (&gt;3.5 m).</li> </ul> </li> </ul>
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**Table 1. Completed**

**Line Cutting continued**

**Non-Standard Mitigation**  
(Complete all sections if standard mitigation above will not be implemented)

Provide a rationale for not implementing the standard mitigation, above, for line cutting:

Describe proposed alternative mitigation to avoid or minimize the loss and alteration of woodland caribou habitat and the increase in linear feature density associated with line cutting. Examples may include:

- A description of how the total area cleared will be minimized.
- A description of alternative low-impact cutting techniques.
- Reclamation of newly cut lines by means other than described in the standard mitigation, prior to permit expiry (describe **how** and **when** newly cut lines will be reclaimed to promote revegetation).

**Response to Caribou Observations**

**Standard Mitigation**

- In active travel and work areas (i.e. excluding daily activity in temporary work camps and staging areas), unless worker safety will be compromised:
- Stationary or mobile motorized equipment will not start up if caribou are observed up to 500 m away; and
  - Stationary and mobile motorized equipment will idle down if caribou are observed up to 500 m away; and
  - Regular activities will proceed only when *at least one* of the following conditions is met:
    - Caribou are out of sight of the active travel or work area;
    - Caribou are more than 500 m away from the active travel or work area; or
    - At least 30 minutes have elapsed.

**AND**

- Aircraft will not land within 500 m of an observed caribou, unless required for safety reasons.  
**OR**  
 N/A (i.e. no helicopter use)

**AND**

- The Ministry of Environment Ecological Management Specialist (EMS) will be notified within 48 hours if caribou or recent (i.e. since the last rain or snowfall) caribou sign (pellets, tracks, cratering) are observed in the project area. All caribou observations will also be submitted to the Saskatchewan Conservation Data Centre Report a Woodland Caribou Sighting website application tool (<https://biodiversity.sk.ca/reportcaribou.htm>) or using the Saskatchewan Conservation Data Centre Incidental Species Observation loadform (<http://biodiversity.sk.ca/Docs/SKCDCLoadform.xlsx>).

**Non-Standard Mitigation** (complete all sections if standard mitigation above will not be implemented)

Provide a rationale for not implementing the standard mitigation, above, when caribou are observed:

Describe proposed alternative mitigation to avoid or minimize sensory disturbance to caribou associated with proposed project activities when caribou are observed:

Describe proposed alternative caribou observation reporting procedure:

**TABLE 2. Projects in SK2 Tier 3 CHMAs**

**New Access**

Not Applicable (i.e., no new access will be created)

<p><b>Standard Mitigation</b></p>	<p><input type="checkbox"/> New ground access will be reclaimed prior to permit expiry as follows:</p> <ul style="list-style-type: none"> <li>• Coarse woody debris and snow rollback and stockpiled slash redistribution, where material is available.</li> <li>• Reclamation is not required if new access was created with a mulcher.</li> <li>• Reclamation is not required if it would present significant safety concerns.</li> </ul> <p><b>AND</b></p> <p><input type="checkbox"/> Tree felling/hinging treatments will be applied to deter wildlife and human access prior to permit expiry.</p> <ul style="list-style-type: none"> <li>• Treatments are required where:             <ul style="list-style-type: none"> <li>▪ New access intersects with existing linear features &gt;3.5 m wide; and</li> <li>▪ Trees are sufficiently tall (average tree height beside the line is &gt;2 m).</li> </ul> </li> <li>• Treatments will extend at least 100 m along the new access from the intersection with the linear feature.</li> </ul>
<p><b>Non-Standard Mitigation</b> (Complete all sections if standard mitigation described above will not be implemented)</p>	<p><i>Provide a rationale for not implementing the standard mitigation described above for reclaiming new access.</i></p> <hr/> <p><i>Describe proposed alternative mitigation to avoid or minimize the loss and alteration of woodland caribou habitat associated with the creation of new access through reclamation. Describe <b>how</b> and <b>when</b> treatments will occur to promote revegetation and limit ongoing access and sightlines.</i></p>

**Vegetation Clearing (excluding Line Cutting)**

Not Applicable (i.e. no vegetation clearing will be completed other than Line Cutting)

<p><b>Standard Mitigation</b></p>	<p><input type="checkbox"/> Clearing size for helicopter pads will not exceed 900 m<sup>2</sup>. Helicopter pads will be hand cut; no mechanized clearing will be conducted on helicopter pads.</p> <p><b>OR</b></p> <p><input type="checkbox"/> N/A - No clearing for heli-pads will occur.</p> <p><b>AND</b></p> <p><input type="checkbox"/> Mechanized clearing / mulching for staging areas or temporary work camps will only be conducted on dry or frozen ground.</p> <p><b>OR</b></p> <p><input type="checkbox"/> N/A – No clearing for staging areas or temporary work camps will occur.</p> <p><b>AND</b></p> <p><input type="checkbox"/> Reclamation for new clearings, such as helicopter pads, temporary work camps or staging areas, will be completed prior to permit expiry.</p> <ul style="list-style-type: none"> <li>• Reclamation will consist of rolling back coarse woody debris and snow and redistributing stockpiled slash over the clearing, where material is available.</li> <li>• Reclamation is not required if clearing was conducted with a mulcher.</li> <li>• Reclamation is not required if it presents significant safety concerns.</li> </ul> <p><b>OR</b></p> <p><input type="checkbox"/> N/A – No clearing for staging areas or helipads will occur.</p>
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**Table 2. Continued**

**Vegetation Clearing (excluding Line Cutting) continued**

**Non-Standard Mitigation**  
 (Complete all sections if standard mitigation described above will not be implemented)

Provide a rationale for not implementing the standard mitigation described above for vegetation clearing:

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Describe proposed alternative mitigation to avoid or minimize the loss and alteration of woodland caribou habitat associated with vegetation clearing. Examples may include:

- A description of how the total area cleared will be minimized.
- Consideration of the value of the habitat for woodland caribou where clearing will occur.
- Reclamation or restoration of new clearings by means other than described in the standard mitigation, prior to permit expiry (describe **how** and **when** treatments will occur to promote natural revegetation).

**Line Cutting**

Not Applicable (i.e. no line cutting will be completed)

**Standard Mitigation**

- Line cutting will meet the following criteria:
- Receiver lines will be meandering and use tree avoidance techniques.
  - Receiver lines will not exceed 1.75 m wide unless required to minimize total project source line access or for emergency preparedness.
    - Widened receiver lines will not exceed 2.75 m.
  - Source lines will not exceed 2.75 m wide, except for clearings required for equipment turn-around.
  - Source lines will employ tree avoidance techniques and meander to limit line of sight less than 100 m.
  - Doglegs will be employed at all intersections with linear features >3.5 m wide.
  - Snow berms generated through ploughing will not exceed 1 m in height and will provide breaks at least 10 m wide located at least every 200 m along the berm.
  - Mechanized clearing/mulching will be conducted on dry or frozen ground.
- AND**
- Reclamation and access management treatments will be completed for newly cut lines prior to permit expiry.
- Treatments are required at line intersections with linear features >3.5 m wide.
  - Treatments will:
    - Include coarse woody debris rollback and slash piling, where material is available.
    - Include tree felling and/or tree hinging to deter wildlife and human access, where the average tree height beside the line is >2 m.
    - Extend at least 100 m from the line intersection with the linear feature (>3.5 m).

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<b>Table 2. Completed</b>	
<b>Line Cutting continued</b>	
<b>Non-Standard Mitigation</b> (Complete all sections if standard mitigation above will not be implemented)	<i>Provide a rationale for not implementing the standard mitigation described above for line cutting:</i>
	<i>Describe proposed alternative mitigation to avoid or minimize the loss and alteration of woodland caribou habitat and the increase in linear feature density associated with line cutting. Examples may include:</i>
	<ul style="list-style-type: none"> <li>- A description of how the total area cleared will be minimized.</li> <li>- Reclamation or restoration of newly cut lines by means other than described in the standard mitigation, prior to permit expiry (describe <b>how</b> and <b>when</b> treatments will occur to promote natural revegetation).</li> </ul>
<b>Response to Caribou Observations</b>	
<b>Standard Mitigation</b>	<input type="checkbox"/> In active travel and work areas (i.e. excluding daily activity in temporary work camps and staging areas), unless worker safety will be compromised: <ul style="list-style-type: none"> <li>• Stationary or mobile motorized equipment will not start up if caribou are observed up to 500 m away; and</li> <li>• Stationary and mobile motorized equipment will idle down if caribou are observed up to 500 m away; and</li> <li>• Regular activities will proceed only when <i>at least one</i> of the following conditions is met: <ul style="list-style-type: none"> <li>▪ Caribou are out of sight of the active travel or work area;</li> <li>▪ Caribou are more than 500 m away from the active travel or work area; or</li> <li>▪ At least 30 minutes has elapsed.</li> </ul> </li> </ul>
	<b>AND</b> <input type="checkbox"/> Aircraft will not land within 500 m of an observed caribou, unless required for safety reasons. <b>OR</b> <input type="checkbox"/> N/A (i.e. no helicopter use)
	<b>AND</b> <input type="checkbox"/> The Ministry of Environment Ecological Management Specialist (EMS) will be notified within 48 hours if caribou or recent (i.e. since the last rain or snowfall) caribou sign (pellets, tracks, cratering) are observed in the project area. All caribou observations will also be submitted to the Saskatchewan Conservation Data Centre Report a Woodland Caribou Sighting website application tool ( <a href="https://biodiversity.sk.ca/reportcaribou.htm">https://biodiversity.sk.ca/reportcaribou.htm</a> ) or using the Saskatchewan Conservation Data Centre Incidental Species Observation loadform ( <a href="http://biodiversity.sk.ca/Docs/SKCDCLoadform.xlsx">http://biodiversity.sk.ca/Docs/SKCDCLoadform.xlsx</a> ).
<b>Non-Standard Mitigation</b> (complete all sections if standard mitigation above will not be implemented)	<i>Provide a rationale for not implementing the standard mitigation described above when caribou are observed:</i>
	<i>Describe proposed alternative mitigation to avoid or minimize sensory disturbance to caribou associated with proposed project activities when caribou are observed:</i>
	<i>Describe proposed alternative caribou observation reporting procedure:</i>

**TABLE 3. Additional Best Practice Recommendations (for information only)**

<b>Operating Period</b>
<ul style="list-style-type: none"><li>Minimize all project activities, including helicopter and other aircraft activity, during the sensitive timing window to the greatest extent possible.</li></ul>
<b>Aircraft</b>
<ul style="list-style-type: none"><li>Where safe and practical, fixed wing and helicopter flights should maintain an altitude of at least 300 m above ground level when flying above caribou.</li></ul>
<b>Ground Access</b>
<ul style="list-style-type: none"><li>Minimize total length of new access in Tier 3 CHMAs by using existing access first, then creating new access only if necessary.</li><li>Where possible, coordinate new access with other land users.</li><li>Where possible, construct new access to minimize lines of sight.</li><li>Where possible, construct and use winter-only access during frozen, snow covered (<math>\geq 30</math> cm snowpack) ground conditions instead of all season access to minimize ground disturbance.</li><li>Planting appropriate tree species during reclamation of new access should be considered where feasible and appropriate for the ecological conditions to accelerate the return of vegetation cover to a pre-disturbance state.</li></ul>
<b>Temporary Work Camps</b>
<ul style="list-style-type: none"><li>Locate new temporary work camps in existing locations or natural openings, where possible, to minimize the area cleared.</li><li>Minimize new clearing fire breaks around staging areas and temporary work camps to that required for safety.</li><li>Follow best practices to minimize wildlife attractants at staging areas and temporary work camps and comply with Section 18.44 of <i>The Wildlife Regulations</i>.</li></ul>
<b>Vegetation Clearing</b>
<ul style="list-style-type: none"><li>Locate staging areas and helipads in existing locations or natural openings, where possible, to minimize area cleared.</li><li>Locate staging areas and helipads outside of high potential woodland caribou habitat, where possible.</li><li>Reclamation of helipads by redistributing stockpiled slash is encouraged to the extent possible, except where there are safety concerns.</li><li>Minimize impacts to terrestrial lichen within moderate and high potential woodland caribou habitat by conducting activities on top of an adequate snowpack (e.g. <math>&gt;30</math> cm thick), where possible.</li><li>Elevate mulcher drums as high as practical (at a minimum of above the tops of hummocks) to preserve seedlings and conditions suitable for tree development.</li><li>Ensure mulch thickness does not impede the natural regeneration of tree species on cleared areas.</li></ul>
<b>Line Cutting</b>
<ul style="list-style-type: none"><li>Use existing seismic lines and natural openings whenever feasible to avoid new line cutting or minimize the area cleared.</li><li>Minimize impacts to terrestrial lichen within moderate and high potential woodland caribou habitat by conducting activities on top of an adequate snowpack (e.g. <math>&gt;30</math> cm thick), where possible.</li><li>Elevate mulcher drums as high as practical (at a minimum of above the tops of hummocks) to preserve seedlings and conditions suitable for tree development.</li><li>Ensure mulch thickness does not impede the natural regeneration of tree species on cleared areas.</li></ul>
<b>Reclamation</b>
<ul style="list-style-type: none"><li>Reclamation of linear features is intended to minimize ongoing human access and wildlife movement to promote habitat regeneration and reduce predator efficiency. Careful attention to reclamation at the intersections of seismic lines and access routes is important to achieving this outcome.</li><li>Rollback, slash piling, snow replacement, tree felling and/or tree hinging treatments are also encouraged at source line and receiver line intersections to further deter human access and predator movement along linear corridors.</li></ul>