

Caribou habitat and Federal pipeline oversight in Canada

Authors: Suzanne Brown and Zoe Pfeiffer (Canada Energy Regulator)

The Canada Energy Regulator (**CER**) is the lifecycle regulator for over 73,000 km of pipelines, working to keep energy moving safely across Canada and enforcing some of the strictest safety and environmental standards in the world. An expert and independent regulator, the CER maintains technical expertise on relevant topics, including environmental protection.¹ An important area of responsibility is the assessment of potential impacts of facilities, including cumulative effects, to species listed under the federal *Species at Risk Act* (**SARA**).

To construct and operate new facilities, companies are required to submit applications to the CER that enable the Commission of the CER (**Commission**) to consider whether the proposed project is in the public interest, based on factors outlined in the *Canadian Energy Regulator Act* (**CER Act**). This consideration includes an assessment of environmental effects, including any cumulative effect that the project may create. The CER Act also specifies that the Commission must consider any Indigenous knowledge that has been provided to it, as well as scientific information and data. Filing requirements, including information to conduct a project environmental assessment, are set out in the Filing Manual.²

In its consideration, the Commission must set out the conditions under which a project could be found to be in the Canadian public interest. In addition to a company's proposed mitigation, conditions of approval are attached to any recommendation or decision. Environmental protection conditions address whether sufficient baseline information is available and whether the mitigation measures will be appropriate, effective and sufficient.

The CER also has responsibilities under the SARA, which seeks to prevent wildlife species from becoming extinct and to secure actions for their recovery by providing for the legal protection of wildlife species and the conservation of their biological diversity. The SARA sets out how to decide which species are a priority and how to protect them, through cooperation among government departments (provincial and federal), consultation and on-going review. The SARA also requires the CER to identify likely adverse effects and ensure that all feasible measures will be taken to minimize the activity within critical habitat, among other obligations (sections 77 and 79 of SARA).

The CER has oversight on projects within critical habitat for three SARA-listed woodland caribou populations in Alberta and British Columbia (**BC**): boreal woodland caribou, southern mountain caribou, and northern mountain caribou. Figure 1 shows CER regulated pipelines within caribou ranges in Alberta and BC, with the majority of authorized projects intersecting boreal and southern mountain critical habitats.³ The linear disturbance created by a pipeline right-of-way acts to alter both vegetation and habitat, and improve access for predators. Additionally, as caribou avoid cleared areas by up to 500m, the habitat effectively lost is greater than the area directly disturbed. Environment and Climate Change

¹ The views, judgements, opinions, and recommendations expressed in this paper do not necessarily reflect those of the Canada Energy Regulator nor its Commission members or Board of Directors.

² Filing Manual published by the Canada Energy Regulator: <https://www.cer-rec.gc.ca/en/applications-hearings/submit-applications-documents/filing-manuals/filing-manual/>

³ All CER project reports are available on the CER website, on the CER's public repository (RegDocs). Please contact the CER Library for assistance.

Canada (ECCC) explains that further indirect habitat loss may result from the fragmentation of formerly large patches of forest into smaller patches, reducing the availability of caribou forage and safe habitat.⁴

Potential project effects on woodland caribou and their habitat have been considered in CER⁵ decisions and reports since 1977. In recent years, impacts of CER-regulated facilities to caribou habitat have become more prominent in part due to the pace of energy development in northern Alberta and BC, and due to an increase in concern about the species from the public and Indigenous peoples.

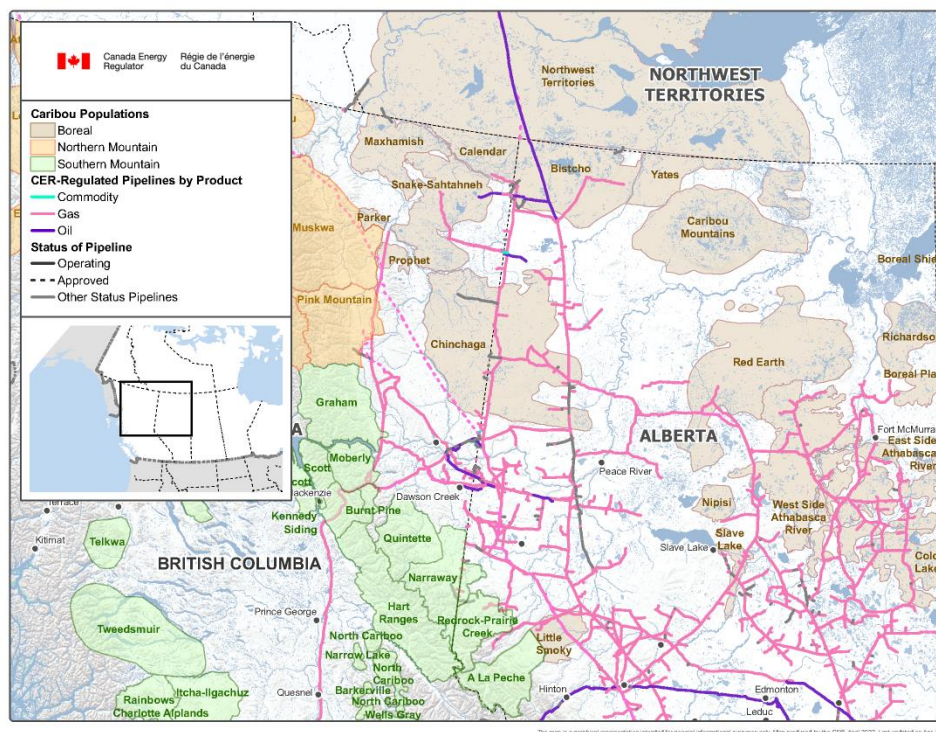


Figure 1 - CER regulated pipelines within caribou ranges in Alberta and BC

Conditions to restore and offset critical habitat

The Commission relies on input from the company, potentially impacted Indigenous peoples, appropriate expert government agencies and other parties when developing conditions to protect identified critical habitat. To address the concerns related to critical habitat destruction, landscape fragmentation and growing cumulative effects in the boreal ecosystem, variations on the following conditions can be imposed:

- Standard measures taken during and immediately following construction (presented through a project's Environmental Protection Plan);

⁴ Amended Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada, ECCC, 2020 ([link](#)); Recovery Strategy for the Woodland Caribou, Southern Mountain population. ECCC, 2014 ([link](#))

⁵ In 2019, the National Energy Board transitioned to the Canada Energy Regulator. While the projects discussed here were submitted under the NEB Act, compliance oversight continues under the CER Act. For the purposes of this paper the term CER encompasses projects submitted under both the NEB Act and CER Act.

- Measures to be taken on the pipeline right-of-way following construction to restore disturbed habitat to the greatest extent possible (Caribou Habitat Restoration Plan); and,
- Compensation measures to be taken elsewhere to offset the residual effects of the disturbance on the landscape (Offset Measures Plan).

A project-specific Caribou Habitat Restoration and Offsets Measures Monitoring Program prescribing long-term monitoring (15 years or greater) may also be conditioned to confirm effectiveness of the implemented restoration and offset measures. Through this suite of conditions, particularly through the offset conditions, companies with CER-regulated facilities are required to target “no net loss” when constructing facilities within woodland caribou critical habitat. Offset programs must be designed, at a minimum, to meet the criteria of additionality, duration and equivalence.⁶

In addition to the government and CER initiatives, project conditions are increasingly requiring collaborative input from potentially impacted Indigenous peoples, particularly when it comes to designing caribou habitat offset plans.⁷ Opportunities for the involvement Indigenous peoples in oversight is growing, building bridges between both Indigenous peoples and companies, and Indigenous peoples and the CER.

Habitat offset calculation

A company’s first step in determining the extent of offsetting measures required is to calculate the residual effects resulting from direct or indirect disturbance of critical habitat. Calculations to quantify the residual effects and required offsets account for a variety of mitigation and habitat-related variables (e.g., rollback versus plantings, in upland versus lowland). Methods used include identifying a range of multipliers (from 1.0 to 5.0) to account for key uncertainties associated with implementing different measures, including:

- a temporal risk multiplier to account for time delays in implementation;
- a spatial risk multiplier to account for the location of offsets and equivalence of habitat; and
- a delivery risk multiplier to account for the likely effectiveness of measures.

An inherent effect multiplier also accounts for differences in disturbance for when new (greenfield) rights of way are created versus project development paralleling existing disturbance. Applying multipliers for each measure and circumstance has led to overall offset ratios ranging from just over 1:1 up to 12:1, depending on unique project circumstances. Arbitrary offsetting ratios have also been applied by the federal government in certain cases.

Habitat offset implementation

Once residual effects are calculated, approaches to implementing the offset measures vary. In one example, Westcoast Energy Inc. (Westcoast) opted to combine the offset requirements for five linear development projects to create a single, large offset package. In a second example, Trans Mountain

⁶ Operational Framework for Use of Conservation Allowances, Environment Canada. 2012.

<https://www.canada.ca/en/environment-climate-change/services/sustainable-development/publications/operational-framework-use-conservation-allowances.html> (accessed May 2022)

⁷ For example, Condition 35 of Certificate GC-129, authorizing the NGTL 2021 System Expansion Project ([C09098](#))

Pipeline ULC (Trans Mountain) took a small footprint replacement project and partnered with a local initiative.

In this first example, Westcoast combined its offset requirements for five nearby federally regulated projects to increase efficiencies in planning, implementation, monitoring, engagement, and regulatory review. Using the calculation approach explained above, the five projects were individually assessed and the individual project offset ratios ranged from approximately 2.3:1 to 12:1. Westcoast then consulted with Indigenous peoples and provincial authorities to find a suitable location for a single, large area to protect approximately 642 hectares and where on-the-ground measures could be the most beneficial.

Westcoast initially focused on finding an area close to the existing disturbance and to benefit from the recent (February 2020) partnership agreement between the governments of BC, Canada, the West Moberly First Nations and Saulneau First Nations to expand the new Twin Sisters (Klinse-za) Park for caribou habitat protection. However, working with Indigenous peoples and provincial authorities, Westcoast found a 'like-for-like' or better area within a neighboring local population unit to the one where the project disturbances were incurred, as no suitable offset location within the disturbed local population unit could be found. As approved by the Commission, the offset location in the Bearhole Lake Protected Area was found to meet the equivalency, additionality, and permanence requirements of the imposed conditions on each of the five projects. Implementing the offset measures together in a single location effectively decreased the fragmentation in an area larger than just the 642 hectares required.

At the approved location, Westcoast implemented measures to restore two legacy access roads, where no commitments, obligations, requirements, or pre-existing plans to restore them existed. Westcoast restored the roads through road-ripping, rough-and-loose surface preparation, tree planting, and implementing of barrier segments comprised of tree-bending, tree-hinging or tree-felling. Westcoast also over-stocked the planted areas to account for seedling mortality and vegetation competition, and to account for limited access to the restored areas following completion of the restoration activities.

Aiming for a similar type of measure, Trans Mountain ULC (Trans Mountain) implemented the required offsets for a small pipeline replacement project through financial contributions to Simpcw First Nation supporting their North Thompson Caribou Access project, and the restoration of hectareage 1.5 times the project disturbance. The Access Project is currently decommissioning forestry roads within Ungulate Winter Range designated for mountain caribou within the Wells Gray-Thompson local population unit. Once these roads are decommissioned, the predation risk associated with these linear disturbances will be alleviated overtime. Trans Mountain submitted to the CER that support of the Access Project was the preferred offset approach since the work is: already underway therefore will have an immediate effect (i.e., advantage of initiating the offset as early as possible); addresses threats associated with access and predation; located within the same local population unit; and supported by the province and Indigenous communities in the area.

Conclusion

There are several variables influencing how the CER and its Commission address project impacts on caribou habitat: the extent to which a project passes through designated critical habitat; existence of federal or provincial objectives or thresholds; and, impact of a project on the size and contiguity of habitat patches. The Commission must weigh these variables to determine an appropriate level of

mitigation, which continues to evolve due to different and often unique project circumstances. Experience to date has demonstrated the value of:

- **Incentivizing restoration and prevention**: requiring offsets provides incentive for minimizing new footprints and for maximizing footprint restoration;
- **Achieving no net loss**: a rigorous offsets program offers a useful option towards addressing either potentially significant impacts, or project contributions to already existing significant cumulative effects; and,
- **Supporting partnership opportunities**: the regulatory requirement to implement habitat restoration creates opportunities for partnerships with Indigenous peoples to advance on-the-ground stewardship and habitat protection.

The CER's requirements for the suite of habitat protection conditions have grown within the context of an evolving regulatory framework. Increasingly, as projects with these imposed conditions are built and more habitat offsets are implemented, companies are looking for new and creative ways to ensure that the offset criteria of additionality, durability and equivalency can be met, and are increasingly engaging and partnering with Indigenous peoples to achieve success. The development and imposition of these requirements has come from the CER's culture of technical excellence, inspired by the SARA requirement to ensure that all feasible measures are taken. Continuing on this journey builds and maintains the CER's regulatory competence, sustains a culture of learning and collaboration, and supports the continual improvement of our tools to manage energy infrastructure in the Canadian public interest.