

Interim Guidelines for Forest Development and Associated Activities in Tweedsmuir-Entiako Caribou Winter Range

Issue: Forest harvesting in the Chelaslie CMC in South Ootsa will impact the quality and availability of caribou winter and migration habitat and increase the risk from predation.

Background: The Tweedsmuir caribou herd is declining. The adult female mortality rate is chronically high and calf recruitment is insufficient to compensate. The population was estimated at between 200-300 animals in 2006. The most recent estimate, based on March 2016 survey, indicate a significant decline with a population between 150 to ~180 animals (this estimate is to be finalized).

Key Concerns of continued forest harvesting activities in winter range:

The Chelaslie River Wildfire in 2014 burnt a significant portion of the highest value winter range for Tweedsmuir-Entiako Caribou. The specific impact of this fire on habitat use patterns and population dynamics is currently being studied. Habitat-use patterns during both winters following the Chelaslie River fire have differed significantly from historical winter-use (Fig 1). Of note for the Chelaslie CMC:

- 1) Caribou used the northwestern and northern parts of the Caribou migration corridor (CMC) during late winter and early spring (based on telemetry locations of 8 collared caribou). Historically, caribou did not use this area during winter.
- 2) Prolonged and intensive use the Chelaslie throughout the entire winter period. Historically, caribou would move through this area to overwinter in Entiako Park, south of Tetachuk Lake.

Impacts on Caribou/ Caribou habitat from forest harvesting and associated activities:

- Increase in the amount and distribution of early seral habitat. This increases the population of early-seral ungulates within caribou range. The increase in predator populations in response to the elevated prey supply increases the risk of predation on caribou
- Creation of new linear access for predators (mainly wolves on the winter range)
- Creation of barriers to caribou migration
- Direct disturbance to caribou and displacement of caribou (e.g. noise, traffic)
- Loss of habitat supporting arboreal (tree) lichens
- Loss/ disturbance of habitats supporting terrestrial (ground) lichens

Key considerations for forest management activities in the Chelaslie area should aim to first avoid, and minimize and then mitigate the above listed impacts to caribou and caribou habitat.

Best management practices to avoid, minimize and mitigate impacts include:

1. Landscape level planning and practices:
 - a. Do not exceed seral stage targets or maximum levels of disturbance.
 - b. Do not construct new main roads.
 - c. Use existing roads and trails for new developments.
 - d. Plan road developments to avoid loop-roads and connecting areas that are previously unconnected.
 - e. Concentrate forest harvesting in space and time.
 - f. Avoid conducting activities while caribou are in the area, avoid recent high use areas.
 - g. Focus on areas of lower caribou priority (Fig 2 shows high-use polygons and connected routes in the northern CMC). Forest harvesting within these areas should be avoided).
 - h. Do not plough roads if they are not being used.
 - i. Maintain buffers around wetlands. Wetlands provide tree lichens for caribou and may have a bigger role in their winter diet in this area.
 - j. Avoid disturbing mature stands as much as possible.
2. Site scale practices:
 - a. Avoid terrestrial lichen sites (these are typically Pine – lichen dry sites). These are important for winter feeding, very sensitive to disturbance and long to recover.
 - b. Where pine-lichen sites cannot practicably be avoided, conduct forest harvesting in winter with adequate snow-packs to protect terrestrial lichens.
 - c. Concentrate harvesting activities spatially.
 - d. Avoid road building through lichen habitat.
 - e. In-block roads could be constructed to the lowest possible standard and fully deactivated within two-years of harvest completion. Full deactivation includes re-contouring, de-compacting, and restore vegetation to original state and species mix by replanting trees and restoring lichen communities. Do not use lichen bearing sites such as eskers as sources of aggregate for road building material.
 - f. Process trees at the roadside to minimize debris in cut-over areas. Functionally deactivate non-main roads so that they are unfavourable for travel by wolves (e.g. create berms, dense areas of conifer planting, and/or rough piles of coarse woody debris, rocks and stumps to prevent easy access to and along linear features).
 - g. To minimize moose and wolf populations within caribou range, avoid creating forage for other ungulates (e.g. moose).
 - i. Conduct vegetation management in areas that are caribou winter habitat where forage for other ungulates would be an issue.
 - ii. Do not fertilize in lichen sites.

- iii. Do not conduct mechanical site preparation in lichen sites.
- iv. Reclaim sites to lichen habitat rather than grass seeding. Where seeding is required for erosion or invasive plant management, seed with non-agronomic, non-mat –forming species.
- v. Tree species planted in blocks should be planted to mimic the pre-harvest stand structure and composition.
- vi. Replant harvested blocks within one year of harvest completion date to minimize the time the stand is in an early herb-shrub stage attractive to moose.
- vii. Retain healthy understory conifer trees on-site to the extent practicable to decrease the growing space available for shrubs.

3. Timing of Activities:

- a. Avoid activities when caribou are in the area (late winter).
- b. Require slower speeds for traffic when caribou are in the area (fall migration, winter, and spring migration periods).
- c. Concentrate forest harvesting activities to operate on a get-in, get-out basis. This will minimize displacement, stress and impact to caribou fitness. Do not haul logs during migration (when caribou are in the area). There may be an opportunity to stack logs (spring decking).
- d. Explore the potential for summer harvest opportunities in non-lichen bearing sites.
- e. Adhere to timing windows.

The temporal delineation of the least risk timing windows is based on periods of the year during which caribou are most sensitive to sensory disturbance caused by resource access and development. The late winter and calving periods, occurring approximately from mid-January to mid-July, have been identified as critical for caribou. The rut and early winter periods, occurring from mid-September to mid-January are identified as cautionary timing windows.

Timing windows for caribou for the calendar year (January 1st to December 31st).

Season	Risk Category	Timing	Management Direction
<i>Late Winter and Calving</i>	Critical	Jan. 15 to July 15	<i>Development activities are not appropriate during these timeframes. Aerial activities should adhere to guidelines. In the event that working within a critical window is unavoidable, proponent should contact the Ministry of Forests, Land and Natural Resource Operations to discuss alternatives. An application to work within this window must be accompanied by a rationale, and a mitigation and monitoring plan.</i>

<i>Rut/Early winter</i>	Caution	Sept. 15 to Jan. 14	<i>Proponents should minimize development activities during these timeframes. Aerial activities should adhere to guidelines. In the event that working within a cautionary window is unavoidable, proponent should contact the Ministry of Forests, Land and Natural Resource Operations to discuss alternatives. An application to work within this window must be accompanied by a rationale, and a mitigation and monitoring plan.</i>
<i>Summer</i>	Low	July 16 to Sept. 14	<i>Restrictions would not normally apply. Where ground conditions permit, plan development activities within these timeframes. Best management practices/strategies apply.</i>

The following sources of information were reviewed for landscape and site level practices for operating in caribou winter range:

- *Guidelines for Industrial Developments in Tweedsmuir-Caribou Habitat (FLNRO, June 2016 Draft)*
- *Best Management Practices for Industrial Activities Affecting Caribou in the Vanderhoof Resource District (Cichowski and McNay, 2014)*
- *Forest Management Strategies for Canfor's Operating Area within the Range of the Tweedsmuir-Entiako Caribou Herd (Canadian Forest Products Ltd. And the Ulkatcho First Nation, 2013)*
- *Chelaslie "Caribou" Migration "Corridor" Management "Strategy"*

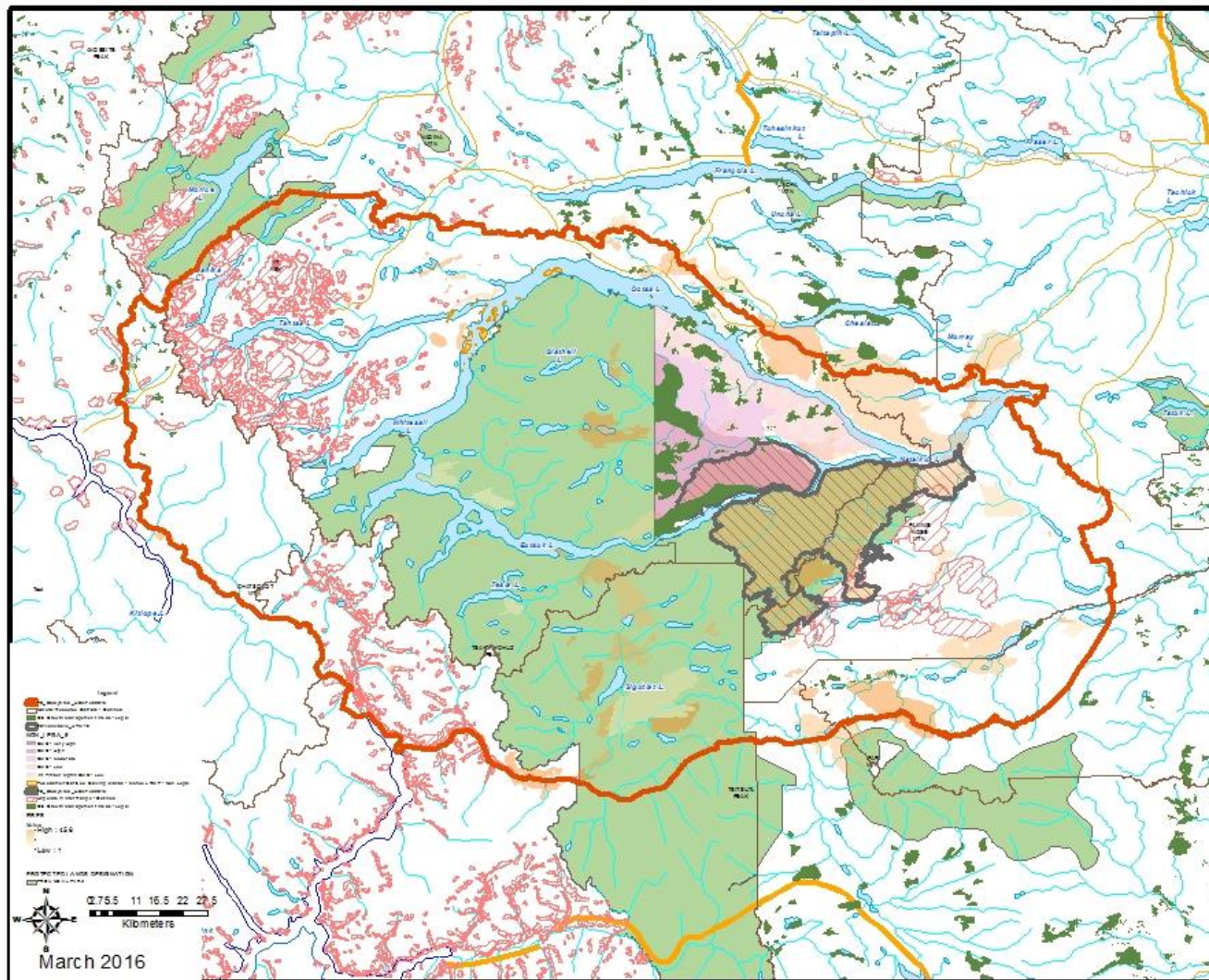


Figure 1. Tweedsmuir-Entiako caribou range.

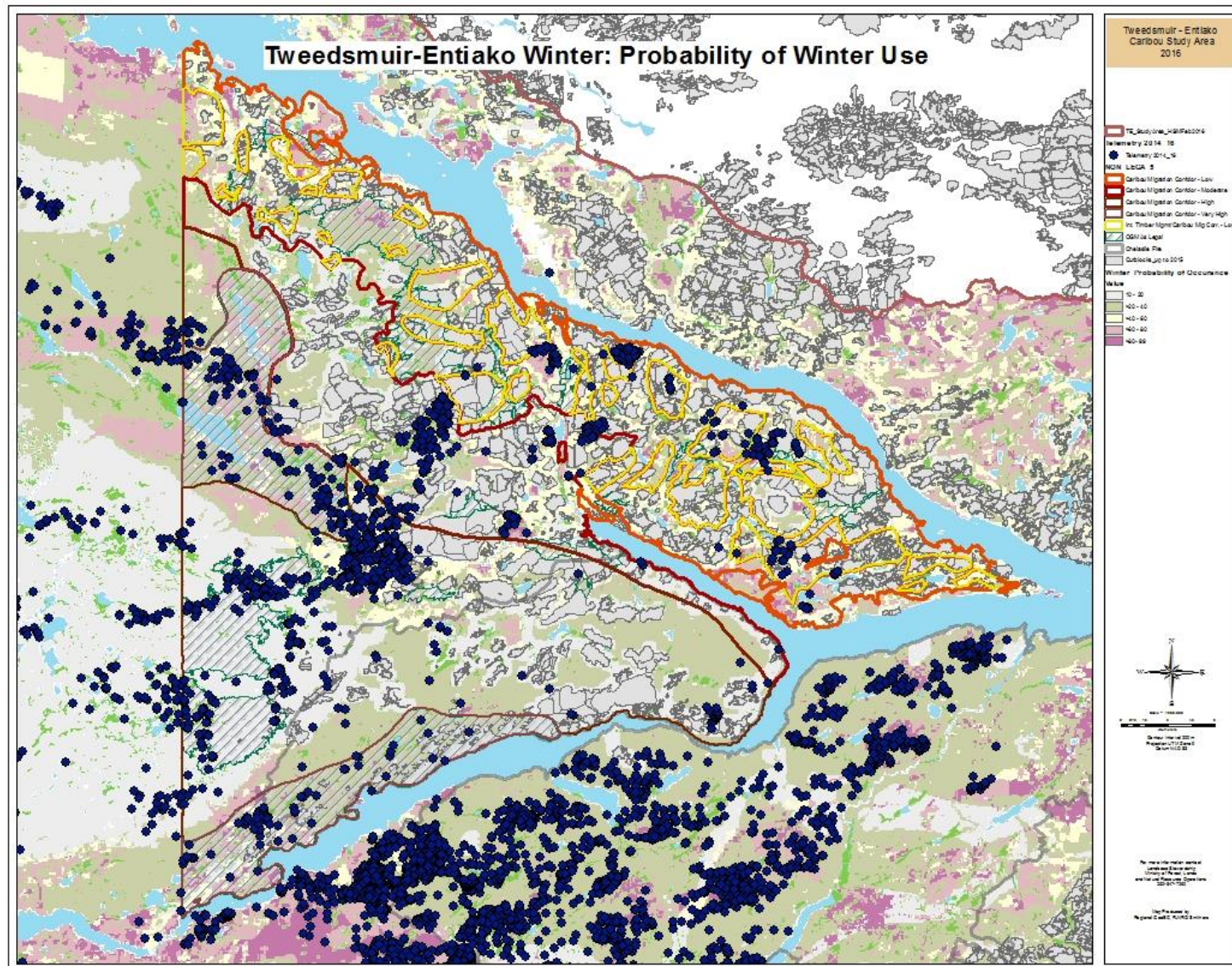


Figure 2. Post-Chelaslie fire winter telemetry locations (2015 and 2016) in the South Ootsa triangle.