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## **BCTS And LP Seymour, Blais, And Ratchford Development**

Proposed forest development in the Seymour River and in tributaries Blais and Ratchford Creek is extremely concerning for caribou, carbon storage, ecosystem integrity, and globally unique old growth forests. The province has committed to protecting old growth forests and important caribou habitat but this is yet another example of the failure to put meaningful protections in place while planning is ongoing.

Currently BCTS has proposed plans in Blais Creek and the West Seymour totalling 10 blocks and approximately 266 hectares of new predominantly old growth logging in caribou habitat. LP has plans for the upper Seymour, Blais Creek, and Ratchford Creek totalling approximately 356 hectares of new predominantly old growth logging in caribou habitat.

The development should under no circumstance proceed due to its impact on caribou, old growth, carbon storage, landscape function and connectivity. BCTS and LP should not spend any more money into these developments and should not proceed with any development in the Seymour, Ratchford or Blais Creek drainages. The province must prioritise these places for protection given their commitments to caribou and old growth.

### **Putting Caribou At Risk**

The Revelstoke-Shuswap LPU is a unique situation as the animals spend upwards of 30 to 50 percent of the year at low elevations (Serrouya and McLellan 2016). Habitat protections are in severe deficit. In 2008, biologists identified 34,000 hectares of high suitability caribou habitat in the THLB. The provincial Species at Risk Coordination Office capped the potential protections at less than 10,000 ha of incremental caribou habitat protections in planning unit 3A. Of the core foraging areas mapped during land use planning and MCRIP only 40 percent has been protected under GAR while the remaining portion is available for timber harvest (Serrouya and McLellan 2016). It's important to note that core foraging areas do not include matrix habitat. Provincially the level of protection for high suitability winter range is believed to be 95 percent, with planning unit 3A being the major outlier at roughly 40 percent of core habitat (Serrouya and McLellan 2016).

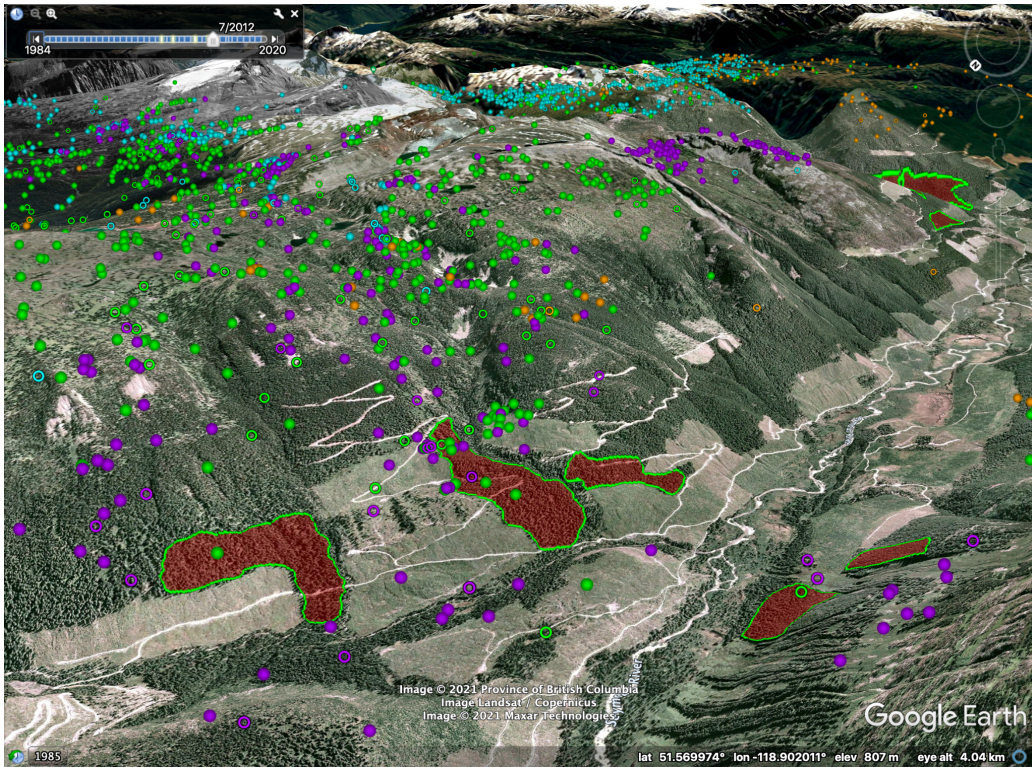
Since the caribou protections in 2009, forest harvesting has continued in valley bottoms, unprotected core habitat, and in areas not identified as late winter ungulate winter ranges under the 2009 GAR order protections. The degradation of core valley bottom and type 1 matrix habitat will continue to result in increased predation risk, increased moose density, and subsequent caribou population declines. Human habitat alteration like logging is linked to major declines in caribou calf recruitment (Johnson et al 2020).

In the Revelstoke-Shuswap the historic forest age class distribution differs greatly due to timber harvesting. Wilson 2009 estimated that the amount of early seral forest was nearly three times greater than under historic natural disturbance in planning unit 3A. The creation of so much early seral forest has significantly altered predator-prey dynamics and biodiversity in old growth systems such as the Inland Temperate Rainforest.

Much of the logging in the Seymour, Blais, and Ratchford Creek happened in the late 80's, 90's, and early 2000's. Much of this landscape and watershed is now recovering from large clearcuts that fundamentally altered predator-prey dynamics in these valleys. As these plantations continue to grow, moose density will decline, which will reduce predation risk to caribou. Roads in the area are also growing in and becoming less conducive to moose and predator movement. This proposed development will set the landscape back enormously and will increase extirpation risk to the North Columbia caribou population.

Caribou heavily rely on the unprotected portion of the Seymour River from Ratchford Creek to the park boundary north of Kitson Creek as a critical caribou connectivity zone. Caribou move between seasonal habitats near Kirbyville Lake, McLennan peak, the Upper Seymour, Mt Grace, upper Blais, the Anstey Range, and into the high alpine plateaus and old growth forests that drain into the Adams (Bischoff lakes, Sunset, Dudgeon, and Cayenne Creek(s)). Caribou usage in these areas is well documented with more than twenty years of telemetry data and census reports.

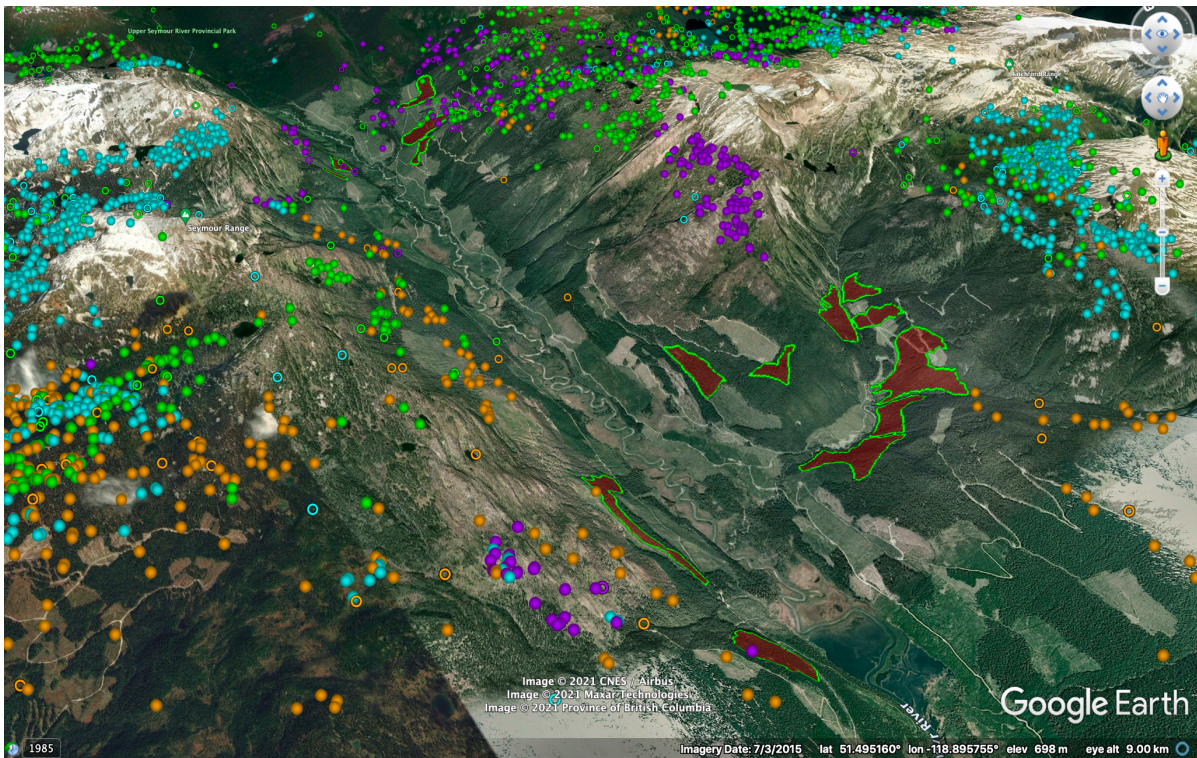
The Seymour River, Blais Creek, and Ratchford Creek are in the heart of the hub area for the Columbia North caribou. Many of these proposed cutblocks are very good early winter habitat (hemlock and cedar old forest) which these caribou are losing at an alarming rate. Last year's census highlighted just how important the Seymour River area is. 90 of the 159 Columbia North caribou counted in the Columbia North caribou census were in the Seymour/Blais/Myoff/Bischoff Lakes/Kirbyville epicentre area. The caribou significantly use the low elevation habitat in the upper Seymour in particular. There are telemetry locations within several of the proposed LP blocks. The caribou also use all three drainages for connectivity between important seasonal habitats. These cumulative logging proposals from LP and BCTS total more than 620 hectares (gross block size) of predominantly old growth-low-elevation habitat, the loss of which will severely fragment and degrade core caribou habitat and limit connectivity.



***Above: LP Upper Seymour River blocks (looking SE) in red with caribou telemetry locations by season. Purple = spring, green = summer, orange = early winter, blue = late winter. These blocks contain ancient ICH forest that is critically important low elevation caribou habitat.***

The Seymour, Ratchford, and Blais development will result in major losses in low elevation old growth caribou habitat, increased fragmentation risk, increased moose density as a result of hundreds of hectares of new young seral forest and increased predation risk for the North Columbia caribou herd resulting in subsequent population declines.

All blocks and roads overlap federally mapped critical high-low elevation caribou habitat. Much of the development is also within the latest provincial core habitat mapping which has yet to be released publicly.



*Above: Cumulative Blocks North of Blais Creek (looking Northeast) in red with caribou telemetry locations by season. Blais Creek along with the Upper Seymour River is a very important connectivity corridor.*

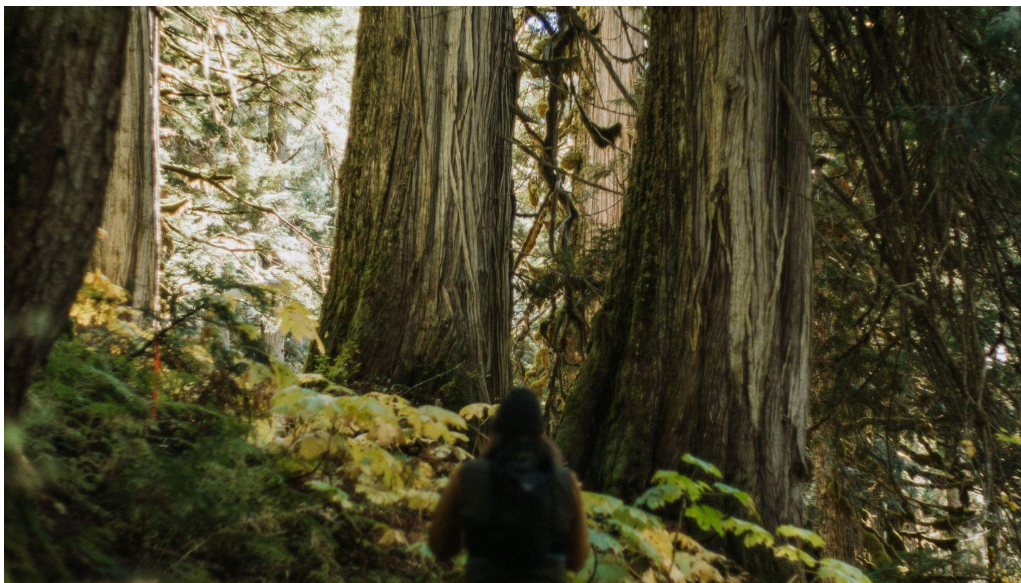
## **Major Losses In Globally Unique Old Growth Forests**

The inland temperate rainforest is amongst the highest biological value areas of any forested ecosystem in BC. Of particular importance are the wet and super wet Interior Cedar-Hemlock (ICH) stands at low to mid elevations which include the stands in the Seymour, Blais and the Ratchford. This ecosystem is one of the world's most imperilled temperate rainforests, with researchers suggesting that if logging continues at business as usual, the Inland Temperate Rainforest will suffer ecosystem collapse within 9 to 16 years. The scientists found that only about 60,000 hectares of the most productive core intact old growth rainforest (ICH-VK, ICH-WK) remains (Dellasala et al 2021).

The Seymour River watershed contains some of the oldest and largest trees in the Southern Interior with ancient cedar trees aged between 600 –1,000 years (BC Parks). The unprotected portion of the River from Ratchford Creek to the park boundary north of Kitson Creek contains spectacular but somewhat fragmented patches of these low elevation ancient forests. These remaining old growth patches are targeted for harvest by BCTS and LP. These blocks contain spectacular old growth forests with many trees in BCTS Blais blocks approaching over 2 metres in diameter and the occasional tree likely approaching 3 metres in diameter (primarily upper Seymour LP Blocks). LP has been notified that there are potentially cedars in the upper Seymour blocks that may qualify under the Special Tree Protection Act. The special tree protection act does not meaningfully protect biodiversity values nor caribou habitat values.

These forests are irreplaceable and there are very few of these ancient low elevation forests left in the region. The adjacency to the Upper Seymour provincial park, the Seymour floodplain, and caribou habitat make these forests high conservation priorities.

Recently the province announced its intention to defer logging in 2.6 million hectares of old growth pending government to government discussion with Indigenous Nations. While portions of some blocks in Seymour, Blais, and the Ratchford appear to overlap with the Technical Advisory Panels recommended deferrals, any additional logging in the upper Seymour watershed will result in major losses in rare inland temperate rainforest stands and will put the North Columbia caribou population at greater risk of extirpation.



*Ancient ICH  
forest in LP  
block  
MO56-06.*

## **Impacts To Rare Inland Temperate Rainforest Dependent Lichens**

In late June of 2022, we undertook a short inventory of lichen diversity in three proposed cutblocks in the Seymour. The survey was conducted on two field days and led by Dr. Toby Spribille who is a renowned lichenologist from the University of Alberta and the Canada Research Chair in Symbiosis. Dr Spribille found several rare and COSEWIC listed species.

Our survey focussed on three areas which overlap with proposed LP cutblocks (18-MO-56-06 and 15-MO-56-04) and BCTS block (K6H6) in Blais Creek. In a summation report Dr Spribille refers to 18-MO-56-06 as Site 1, 15-MO-56-04 as Site 2, and K6H6 as Site 3.

In a short summation report Dr Toby Spribille wrote:

“All three surveyed sites supported populations of two lichen species listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Threatened,

namely the Smoker's Lung Lichen (*Lobaria retigera*; COSEWIC 2018) and the Cryptic Paw Lichen (*Nephroma occultum*; COSEWIC 2019). “

“An additional, extremely rare macrolichen in inland rainforests, the Methuselah's beard lichen (*Usnea longissima*), was observed at the lower edge of Site 1 around the intersection of an unnamed creek and the main stem of the river. Although assessed as secure overall in British Columbia as a whole, Methuselah's beard has been previously recorded only three times in interior British Columbia (Strother et al. 2022; pers. obs.), including once in the Seymour River drainage in 1995 (specimen voucher: Goward 95-891, UBC). The discovery of Methuselah's beard during this survey constitutes the rediscovery and confirmation of a continuing extant population of this charismatic macrolichen in the Seymour River drainage. I also observed a few thalli of this species around km 49 of the Seymour River Road outside of the three specified survey sites, suggesting that the Seymour population occurs discontinuously over at least four kilometres of the valley bottom.

Several rare or uncommon lichen species (assessed either overall in British Columbia or based on personal experience and data relative to their occurrence in inland regions) were also observed at each of the surveyed sites. At Site 1, I found the third inland rainforest location for the Enchanter's Matchstick Lichen (*Pilophorus clavatus*) on rocks along the unnamed creek (first report: Spribille, 2002). Two thalli tentatively assigned to the provincially red-listed Greater Green Moon Lichen (*Dendriscosticta gelida*) (S1, currently listed as *D. wrightii* in B.C. Species and Ecosystems Explorer, but see Simon et al. 2021) were found here, in the cyanobacteria-containing dendriscocauloid form; we will carry out DNA testing to rule out the morphologically similar, and rarer, *D. oroborealis*, which is mainly found in northwestern British Columbia.

Site 2 contained some of the largest trees, most of which were western redcedar. However, it was also the most difficult to survey for lichens because of the limited accessibility to lichen colonised trunks and branches. An interesting lichen found here was the Angel's Hair Lichen (*Ramalina thrausta*) on old cedars; this species was not found at either of the other sites surveyed. Because this is an unusual habitat for the species, and the morphology of the thalli was somewhat unusual, a specimen was taken for further study. This species was also collected in the area in 1995 (Goward 95-798, UBC). At Site 3, I found both the dendriscocauloid and green foliose morphs of the Greater Green Moon Lichen (*Dendriscosticta gelida*) (Red, S1) and one thallus of the Pebbled Paw Lichen (*Nephroma isidiosum*) (Blue, S3). Additional significant species may be identified when the collected material has been analyzed.”

“Aside from formally (COSEWIC) listed species, the most significant rare species is the Methuselah's beard, which is a charismatic species extremely rare in inland rainforests. This species is known from a few trees in Frisby (found by A. Simon and T. Spribille in 2018, see also <https://www.vws.org/wp-content/uploads/2019/11/Frisby-Field-Rpt-FINAL-Ir.pdf>) and one fallen thallus in Pool Creek, a tributary to the Incomappleux (found by T. Spribille in 2012). Together, the upper Seymour sites, Frisby Creek and the upper Incomappleux are the only known inland rainforest sites to support Methuselah's Beard Lichen (a report from

Idaho mentioned by Strother et al. 2022 requires confirmation). These three drainages are also the only sites south and east of Tum Tum Lake/Upper Adams Valley where Smoker's Lung Lichen has been found (COSEWIC 2018); and among only a handful of sites in the southern inland rainforest where Cryptic Paw Lichen has been found (COSEWIC 2019).

Dr Spribille went on to conclude that:

“The old growth forests of the upper Seymour River support a high diversity of rare lichen species characteristic of old growth inland forests, and more significant species will likely come to light as specimen material is processed. A large percentage of the obligate old growth forest habitat for these species has been lost in the last 50 years in the inland rainforest region. As a consequence, population trends for all of these species — COSEWIC-listed and non-listed species alike — are in a downward trend, and the remaining populations are increasingly fragmented in a drying and warming landscape. **The remaining unlogged forests of the upper Seymour River drainage are critical if COSEWIC-listed and other rare inland rainforest lichen species are to maintain any chance of maintaining viable populations at a regional and national level.**”

## **The Carbon Importance of Old Growth ICH Forests**

In 2013, a group of scientists released the first baseline carbon stocks (total forest carbon) estimates for managed and unmanaged stands of old-growth cedar and hemlock of the Inland Temperate Rainforest. Their research estimated that in natural old growth ICH forests total forest carbon is very similar to Coastal rainforests, which are considered to be amongst the most carbon rich forests in the world. The study also found that once clearcut these old growth forests lose 70 percent of their carbon. Their average total forest carbon estimate for uncut Inland Cedar Hemlock is  $455 \pm 156$  Mg C per ha. This carbon estimate is similar to and validated by extensive field plots and recent research from Dellasalla et al 2021.

Using these estimates we looked at how much carbon could potentially be at risk of being lost if logging goes forward in the Seymour watershed. **Using these estimates the total forest carbon in 622 hectares of old growth ICH would be approximately 282,100 tonnes. If the full cumulative logging proposal (BCTS + LP) goes forward upwards of 198,403 tonnes of carbon could be lost through clearcut logging of irreplaceable old and ancient forests.**

This forest development should under no circumstance proceed due to its impact on caribou, old growth, carbon storage, landscape function, and connectivity. BCTS and LP should not spend any more money into these developments and should not proceed with any development in the Seymour, Ratchford or Blais Creek drainages. The province must prioritise these places for protection given their commitments to caribou and old growth.

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