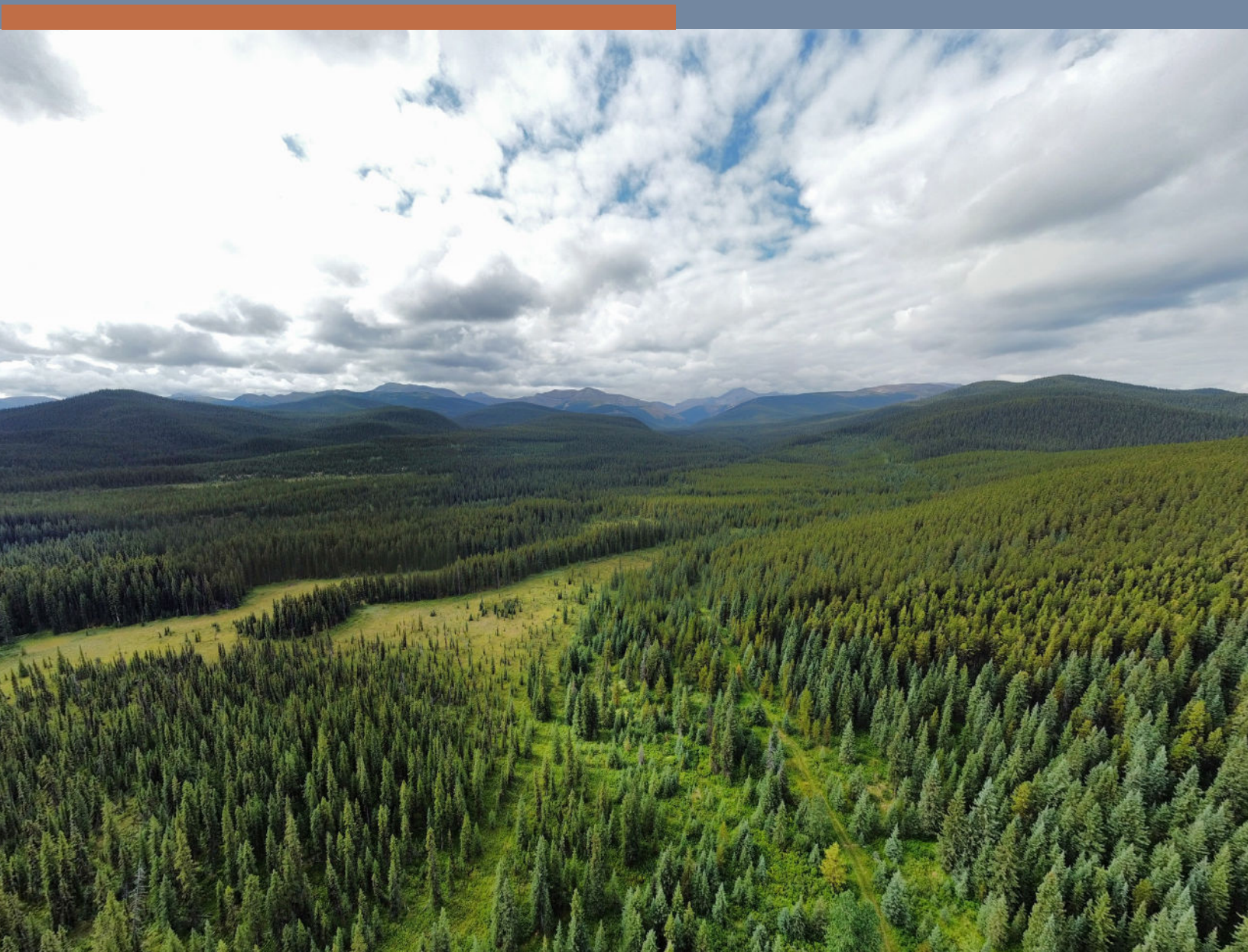


The importance of the Moon Creek area for species at risk recovery: A report on impacts of proposed logging by West Fraser Mills Ltd. (Hinton) in caribou critical habitat

September 16, 2021



Prepared by



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Context

This report was prepared in response to a [proposed spatial harvest plan by West Fraser Mills Ltd. \(Hinton\)](#) to log roughly 2,660 hectares of timber within the next two years in the area surrounding Moon Creek near Grande Cache. The proposed logging plans would extend to the boundary of the Willmore Wilderness Park.

We are concerned there will be a disproportionate impact on critical habitat for species at risk, and in turn, their recovery. The harvest plans would occur in the critical habitat of Threatened woodland caribou and Endangered Athabasca Rainbow Trout. Approximately 6% of the West Fraser (Hinton) tenure (FMU E15) overlaps with two southern mountain caribou ranges, the A La Peche and Little Smoky herds, as well as encompassing critical habitat for the Athabasca Rainbow Trout.

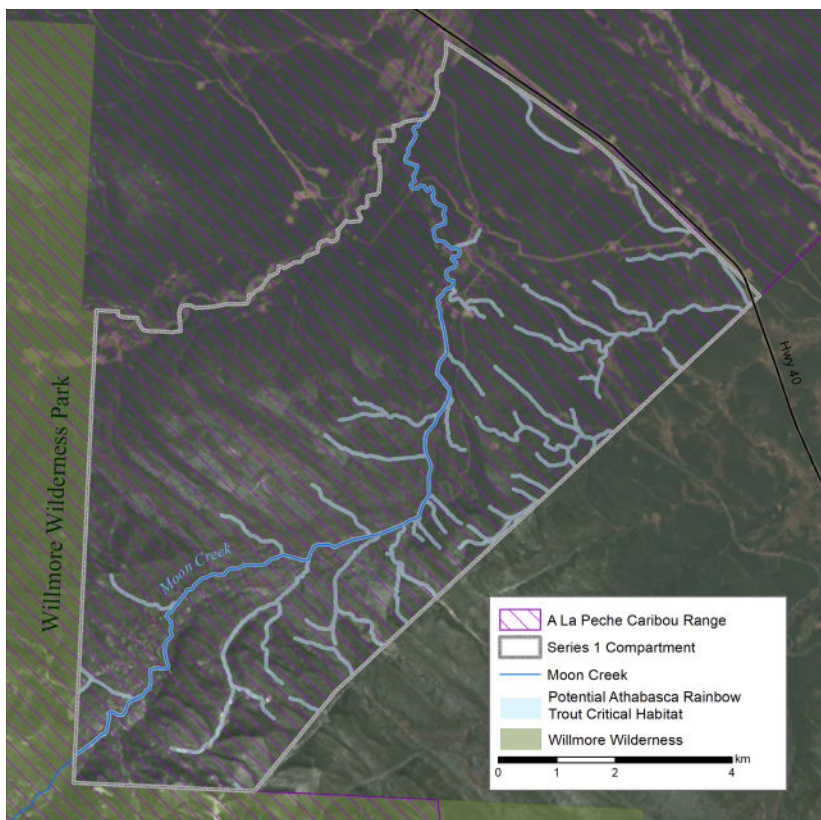


FIGURE 1: THE STUDY AREA OF INTEREST IS THE SERIES 1 COMPARTMENT WHERE THE WEST FRASER (HINTON) LOGGING IS PROPOSED, WHICH OCCURS WITHIN CARIBOU RANGE AND INCLUDES POTENTIAL ATHABASCA RAINBOW TROUT CRITICAL HABITAT.

New forestry activities in caribou ranges are typically targeted in areas with previous disturbances, a strategy to ensure there is little net loss of undisturbed habitat. However, it appears that West Fraser's proposed cut blocks instead overwhelmingly overlap with intact, undisturbed caribou habitat. According to Alberta's Draft Range Plan (2017), the A La Peche winter range is only 12% undisturbed, meaning any existing piece of undisturbed habitat is incredibly valuable.

This report summarizes analyses completed by CPAWS Northern Alberta to quantify impacts from the proposed logging which would impact undisturbed caribou habitat, important caribou areas, potential Athabasca Rainbow Trout critical habitat, and intact old-growth forests. Our analysis reveals that the Moon Creek area indeed safeguards 965 hectares of undisturbed caribou habitat, important areas for caribou, and 1,826 hectares of intact old-growth forests. All of these important conservation attributes would be negatively impacted by the proposed logging.

A loss in undisturbed caribou habitat would be a significant blow to the federal government's recovery strategy objectives and would impact Alberta's solution space to maintain sufficient undisturbed winter range habitat in the near-term for the A La Peche herd, which is important to support its population and eventual recovery to naturally self-sustaining levels.



An overview of impacts to species at risk

Current status of the study area

Our study area focuses on the “Series 1” compartment, bound within the A La Peche caribou range, where the proposed West Fraser (Hinton) logging will occur in the next two years. This compartment is 7,654 hectares in size and is nestled between the Willmore Wilderness Park and Highway 40. It encompasses a portion of Moon Creek, which feeds into the Berland River. There are approximately 128 km of legacy seismic lines and other trails.

There is a brief history of forestry harvesting within this compartment, however, many of the larger harvest cut blocks are from 1960’s (Table A in Appendix). From a caribou conservation perspective, the majority of the historical cut blocks in the compartment are now considered ‘undisturbed’ caribou habitat (see Figure 2).

Of conservation importance, the compartment currently houses:

- 965 hectares of undisturbed caribou critical habitat;
- 2,941 hectares of important caribou habitat;
- 1,826 hectares of an Intact Forest Landscape (IFL); and,
- 79 km of Athabasca rainbow trout streams that potentially contain critical habitat.

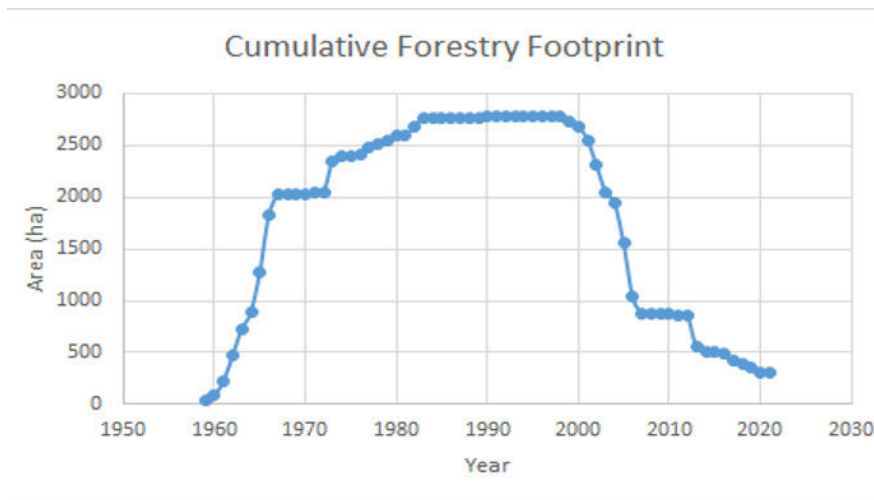


FIGURE 2: THE CUMULATIVE AREA OF DISTURBANCE FROM FORESTRY IN THE COMPARTMENT SINCE THE FIRST CUT BLOCKS IN 1959. FORESTRY CUT BLOCKS ARE CONSIDERED ‘UNDISTURBED’ CARIBOU HABITAT AFTER 40 YEARS, MEANING MUCH OF THE PREVIOUS DISTURBANCE IS NOW CONSIDERED UNDISTURBED OR SOON TO BE CATEGORIZED AS UNDISTURBED.

In this report, we calculate ‘disturbance’ from forestry harvesting as the area affected by human-caused disturbance if it appears on Landsat imagery at 1:50,000 scale, including a 500-m buffer around the disturbance, following the federal recovery strategy. Forestry harvesting generally does not appear on Landsat imagery at the 1:50,000 scale after 40 years (Lee et al. 2003) This approach is similarly used by the Alberta Environment and Parks when calculating future disturbance in caribou ranges for sub-regional planning, wherein they assume: “After a disturbance feature has been reclaimed and restored, it is not considered undisturbed caribou habitat again until 40 years have passed” and forestry harvest blocks are considered immediately reclaimed (Alberta Environment and Parks, 2021).

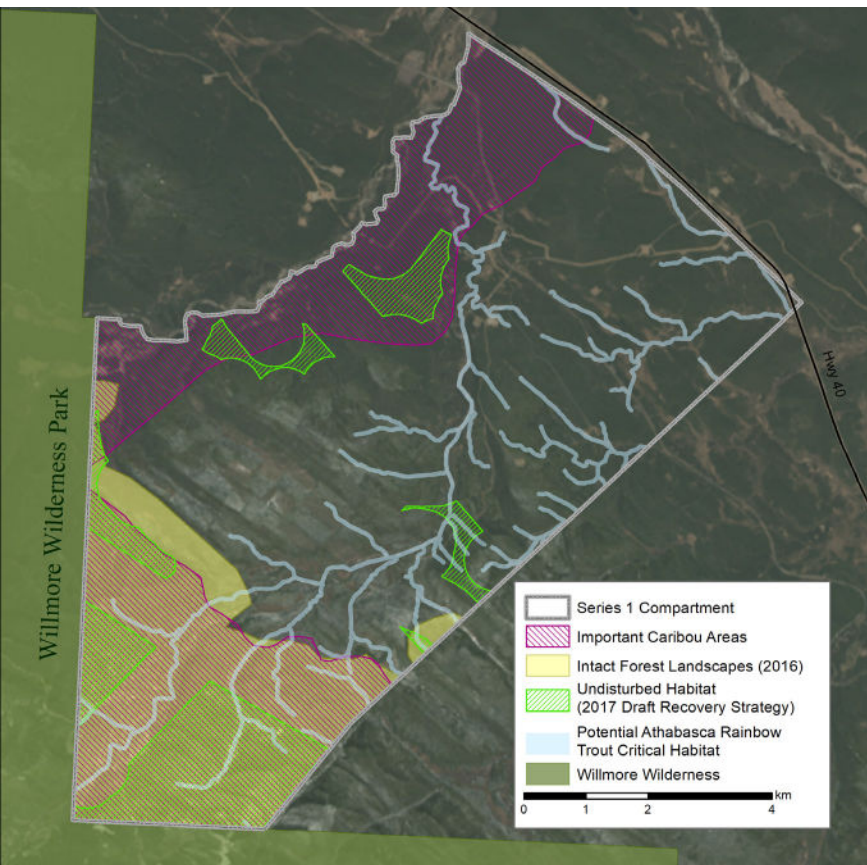


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The study area contains location data for caribou that are collared, including clusters of locations along the Western side of the compartment (Figure 4). Observed caribou locations from collared individuals can help give an idea of areas of use and movement corridors. These trends additionally reflect general avoidance by caribou of disturbance features.

FIGURE 3: THE COMPARTMENT OF INTEREST HAS UNDISTURBED CARIBOU HABITAT, IMPORTANT CARIBOU AREAS, INTACT FOREST LANDSCAPES, AND POTENTIAL ATHABASCA RAINBOW TROUT CRITICAL HABITAT.

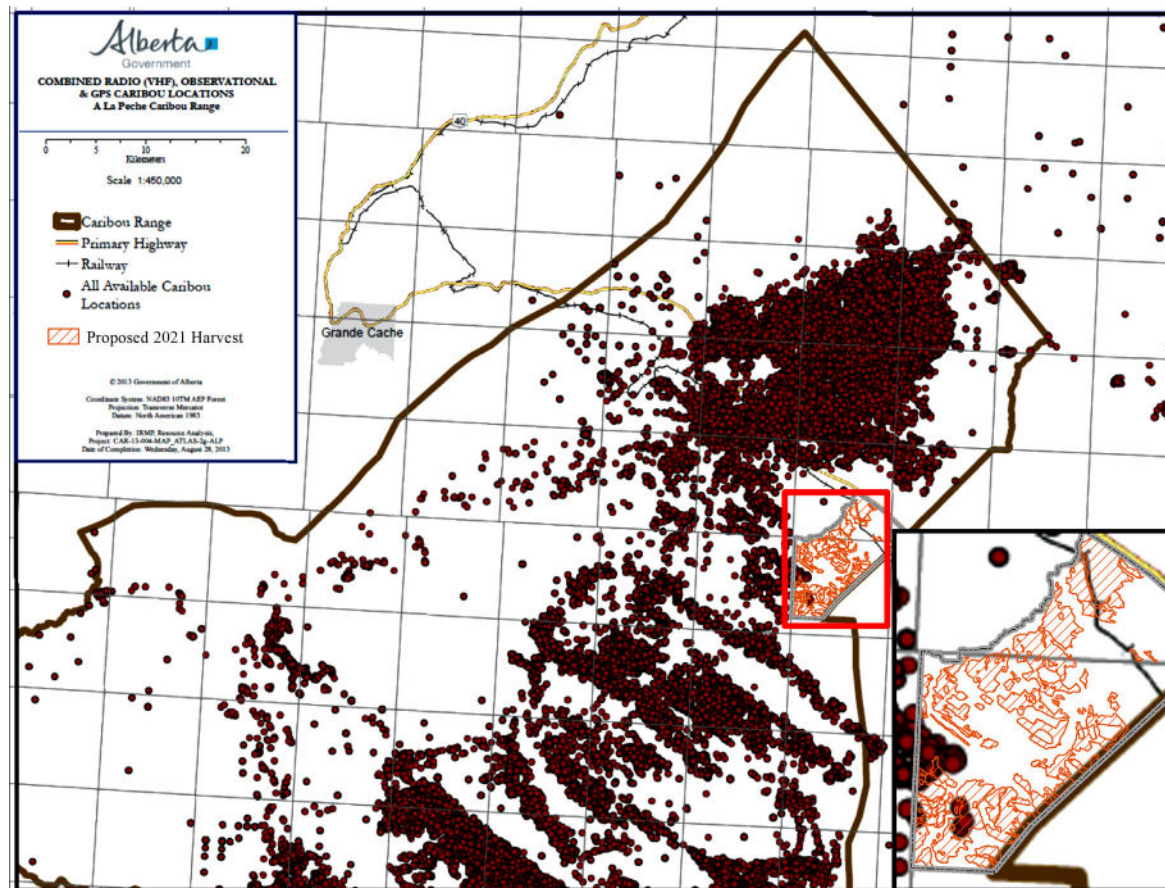


FIGURE 4: CARIBOU LOCATIONS (GPS, RADIO COLLAR, AND OBSERVATIONAL LOCATION DATA) FOR THE A LA PECHE CARIBOU HERD THROUGHOUT THEIR WINTER AND SUMMER RANGE, AS DERIVED FROM R. BONAR (2015).

Impacts to undisturbed critical habitat in caribou winter range:

There are currently 965 ha of undisturbed caribou habitat in the compartment (see Figure 5, left). West Fraser's proposed logging will result in the loss of 934 ha of undisturbed habitat—a 96.8% loss of its undisturbed caribou habitat (see Figure 6, right). According to Alberta's Draft Range Plan (2017), only 12% of the A La Peche winter range is considered 'undisturbed', meaning any existing piece of undisturbed habitat is highly valuable and strongly contributes to meeting federal recovery strategy objectives.

934_{ha}
of undisturbed caribou
habitat would be lost
from West Fraser's
propose logging

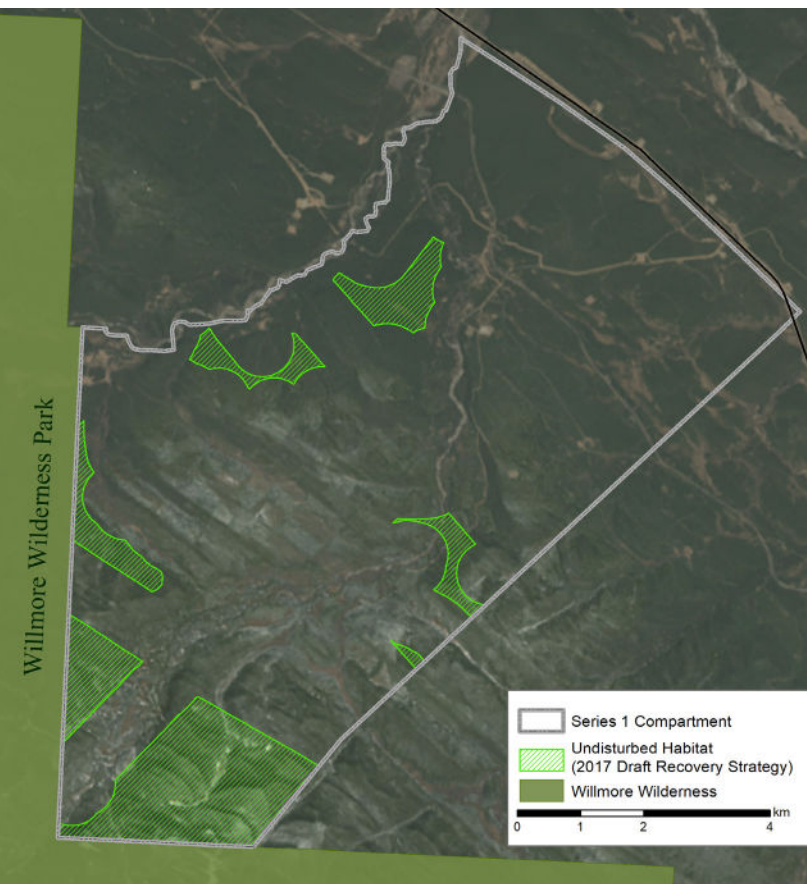


FIGURE 5: CURRENT UNDISTURBED CARIBOU HABITAT.

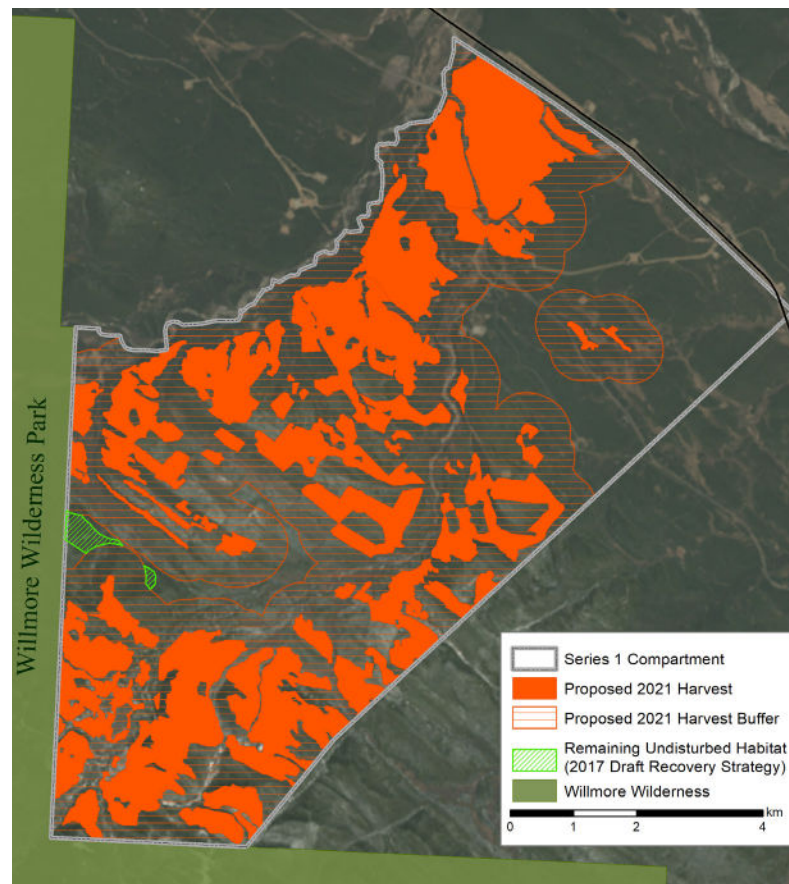


FIGURE 6: IMPACT OF PROPOSED HARVEST CUT BLOCKS, INCLUDING DISTURBANCE BUFFER, ON REDUCING UNDISTURBED CARIBOU HABITAT

Impacts to “Important areas for caribou”:

The Government of Alberta’s draft Provincial Woodland Caribou Range Plan (2017) identified ‘areas important for caribou’ for caribou ranges across the province. The important caribou areas “consider distribution of current biophysical habitat, current patterns of use and connectivity within and among ranges,” thus they represent a collection of ecologically relevant features for caribou.

The Moon Creek area is identified as an important caribou area in the draft Range Plan (2017). The proposed logging would overlap with 1,651 ha (56%) of the important caribou area, impacting biophysical habitat, potential use by the herd, and connectivity between their winter and summer ranges.



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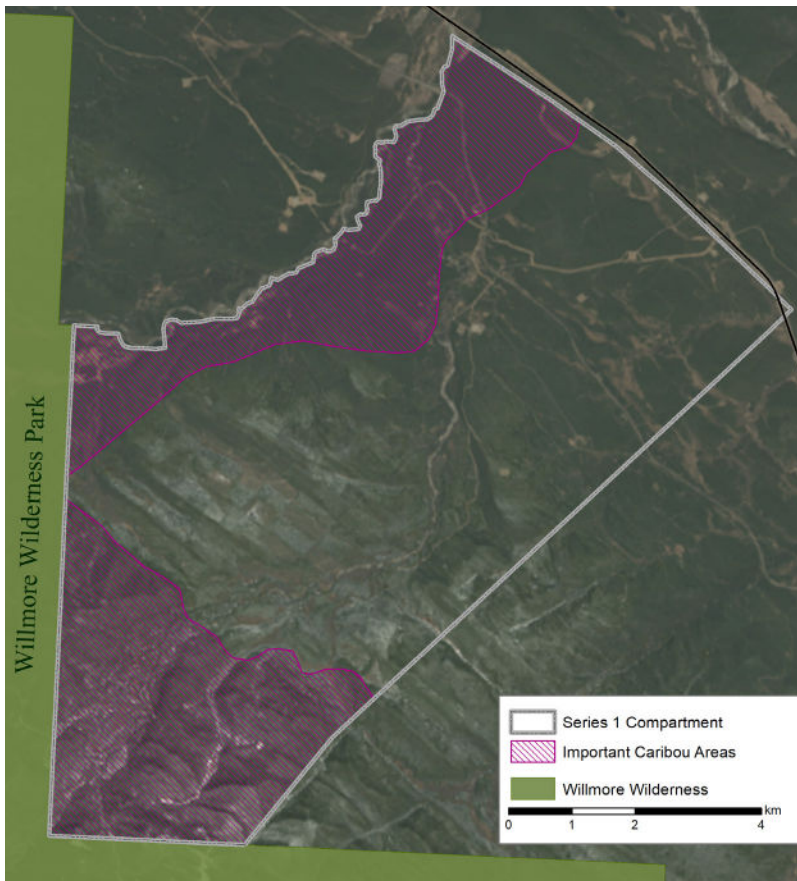


FIGURE 7: IMPORTANT CARIBOU AREAS, AS IDENTIFIED IN ALBERTA’S DRAFT PROVINCIAL WOODLAND CARIBOU RANGE PLAN (2017).

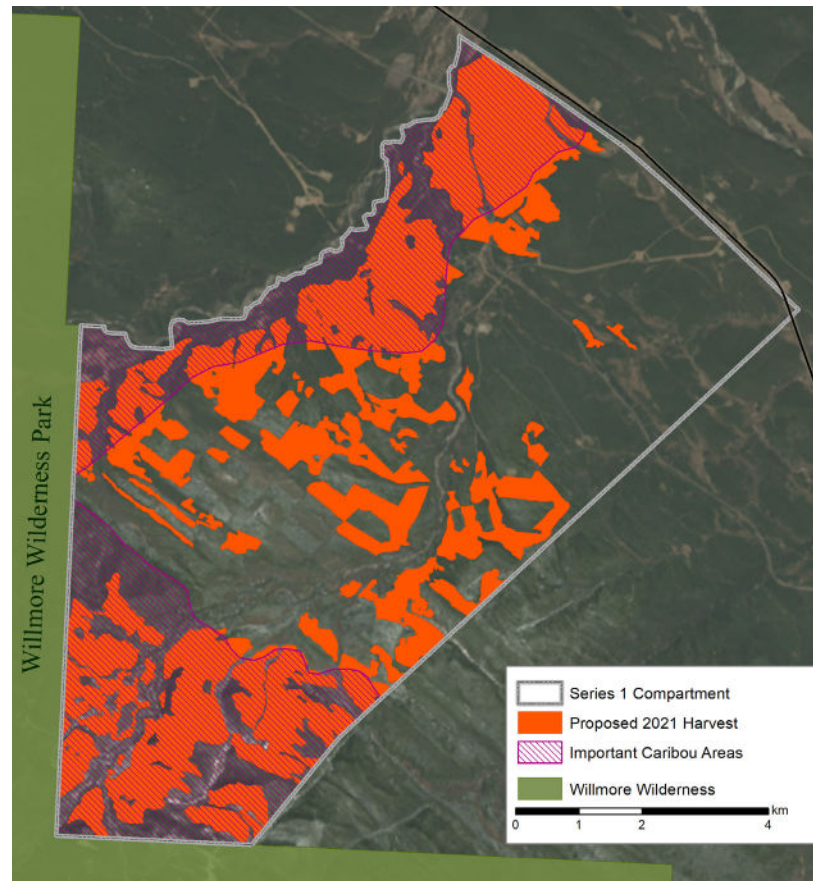


FIGURE 8: OVERLAP OF PROPOSED HARVEST CUT BLOCKS WITH THE IMPORTANT CARIBOU AREAS.

proposed logging would overlap with 1,651 ha

56% of the important caribou area.

Impacts to the intact forest landscape:

The compartment contains 1,826 ha of an Intact Forest Landscape (IFL) (following Potapov et al. 2008). An IFL is an unbroken contiguous piece of forest, with no significant human activities, that is large enough to support and maintain a wide range of species and biodiversity. IFLs are important for housing large stores of forest carbon and biodiversity, and provide ecosystem services, such as regulating and storing water.

Intact forest landscapes are important for caribou conservation, but IFLs are shrinking across the province. Between 2000 and 2013, IFLs within boreal caribou ranges decreased by 68% in Alberta (Smith and Cheng 2016). Within this compartment alone, the proposed logging, including a disturbance buffer, would reduce the IFL by 1,740 hectares—an approximate 95% reduction in IFL size. Larger IFLs will be needed to maintain viable caribou populations and a focus on caribou conservation should include conserving and growing IFLs in caribou ranges.

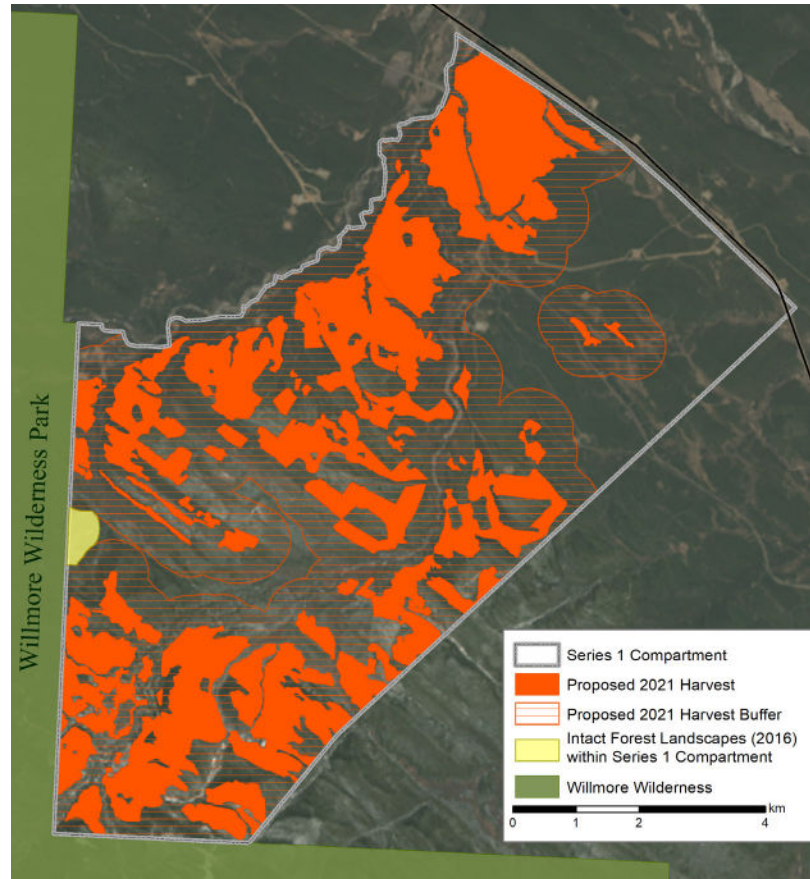
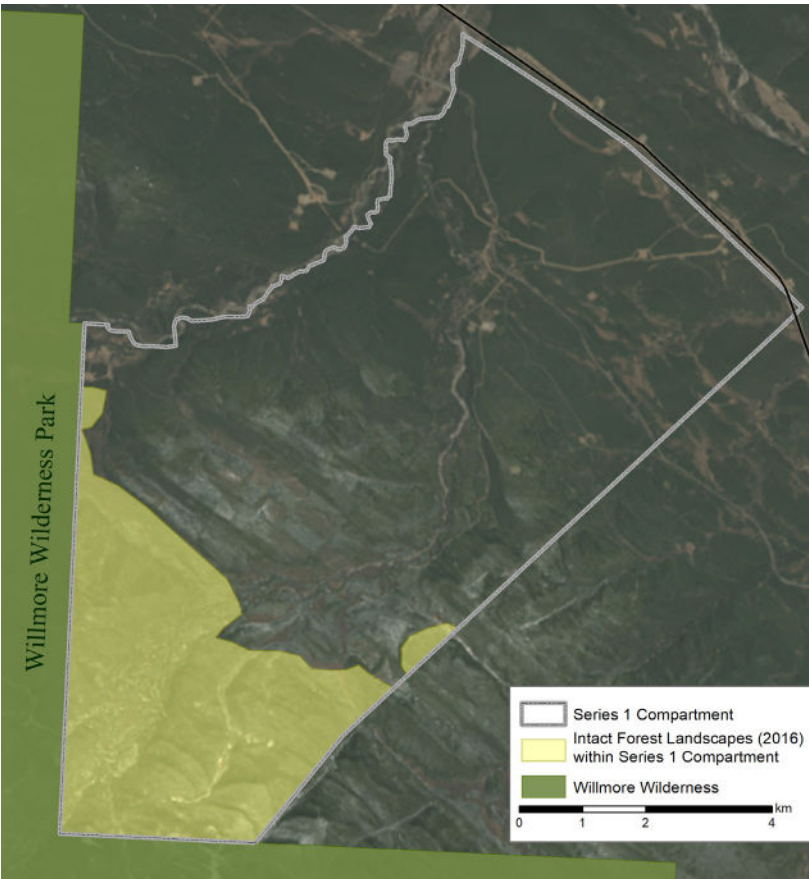


FIGURE 9: THE INTACT FOREST LANDSCAPE (IFL).

FIGURE 10: LOSS IN IFL FROM PROPOSED HARVEST CUT BLOCKS, WITH DISTURBANCE BUFFER.

95% reduction in IFL size

Impacts on old-growth forest stands important for caribou

The compartment of interest contains large tracts of old-growth stands that are over 120 years old, as reported by West Fraser (Hinton) in their Caribou Habitat Conservation Strategy report (2015). According to the Alberta Environment and Parks (2018), trees that are at least 80-years old are counted as 'biophysical' habitat for the A La Peche caribou herd. Biophysical habitat has the characteristics required by caribou to carry out life processes necessary for survival and recovery (Environment Canada, 2014). The federal recovery strategy (2014) further emphasizes the importance of these old-growth stands being contiguous. The proposed logging would impact continuous stands of old-growth forest that currently possess key characteristics of biophysical habitat for the A La Peche herd.

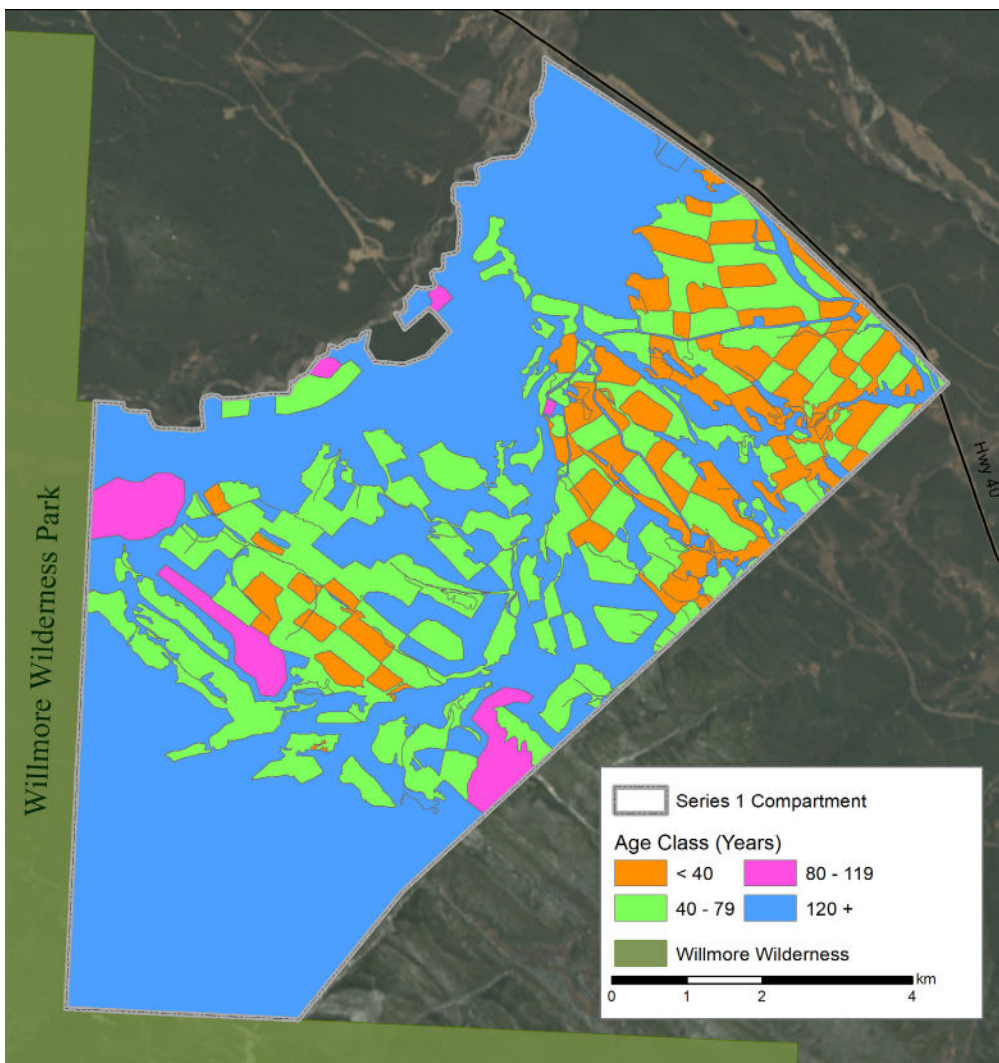


FIGURE 11: AGE CLASS OF FOREST STANDS IN THE COMPARTMENT, AS DERIVED FROM WEST FRASER'S REPORT ON CARIBOU HABITAT CONSERVATION STRATEGY (2015). AREAS IN BLUE AND PINK ARE 80-YEARS OLD OR MORE, WHICH IS A KEY CHARACTERISTIC OF BIOPHYSICAL HABITAT FOR THE A LA PECHE HERD.

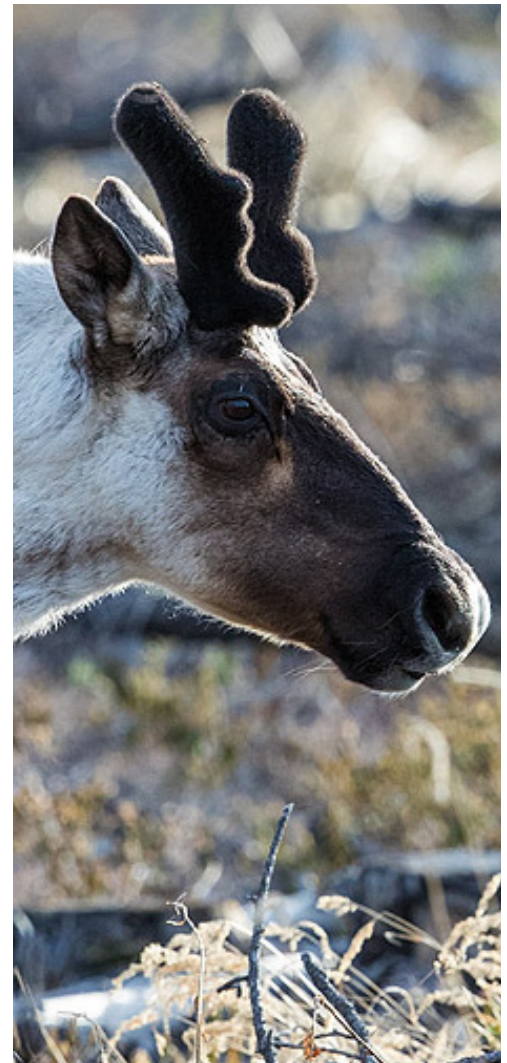


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Impacts on Athabasca Rainbow Trout:

Athabasca Rainbow Trout were federally listed as Endangered in August, 2019, and a [Recovery Strategy identifying critical habitat](#) was released in 2020. The recovery strategy identifies streams in this area as those within which critical habitat could be found. The proposed spatial harvest plan also indicates there will be roughly 15 watercourse crossings over potential Athabasca rainbow trout critical habitat, including a bridge over Moon Creek.

To our knowledge, an assessment is still required to determine what portions of Moon Creek, and other streams in the compartment, contain any of the specific characteristics outlined in Table 5 of the recovery strategy, which lists the functions, features and attributes for each life stage of the Athabasca Rainbow Trout that would qualify as critical habitat. This assessment should be triggered due to the known potential for critical habitat in streams that will be impacted by the proposed logging.

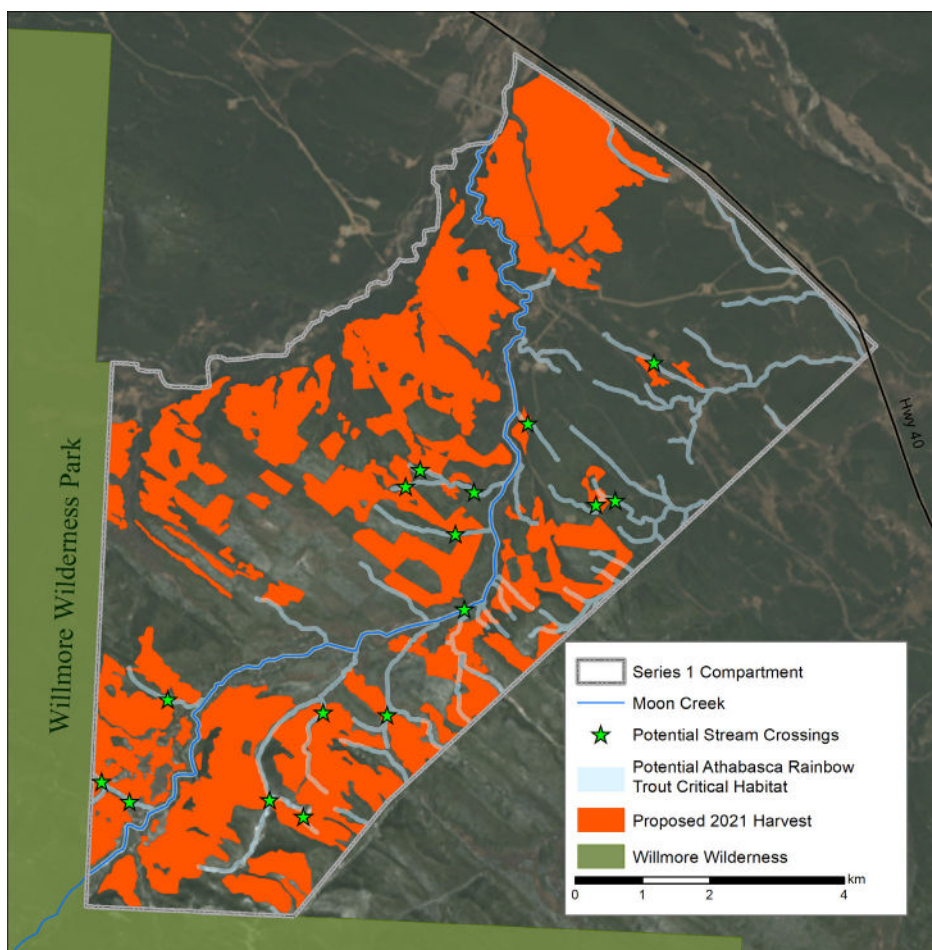


FIGURE 12: PROXIMITY OF PROPOSED HARVEST CUT BLOCKS WITH STREAMS WITH POTENTIAL ATHABASCA RAINBOW TROUT CRITICAL HABITAT, INCLUDING POTENTIAL WATERCOURSE CROSSINGS (GREEN STARS).

Further, we note that forestry harvesting is identified in the federal recovery strategy as an activity that may cause habitat loss and degradation by altering natural flow regimes, altering peak flow intensities, altering stream temperature, and fragmenting habitat. It also notes that watercourse crossings, such as bridges, can directly or indirectly affect Athabasca rainbow trout. It will be critical to address these impacts from the proposed forestry harvesting on these streams.



Key implications:

Species At Risk Act and recovery planning implications:

The federal Recovery Strategy for Woodland Caribou, Southern Mountain population (2014), sets a habitat objective of reaching 65% undisturbed habitat in low elevation winter ranges. Habitat disturbance within the winter range must be managed to support self-sustaining populations. The federal recovery strategy for southern mountain caribou particularly notes the importance of existing intact and contiguous tracts of undisturbed habitat, so that caribou can move throughout their winter range and access summer range habitat as needed.

The loss of undisturbed caribou habitat that would result from the proposed logging would significantly reduce Alberta's ability to meet habitat objectives set out in the federal recovery strategy. The A La Peche winter range is highly disturbed overall, but the Moon Creek area is much less disturbed, with particularly low impacts from oil and gas, making this area disproportionately important for reaching habitat targets. The proposed logging would lower the total amount of undisturbed habitat across the A La Peche winter range and reduce solution space for the Government of Alberta to maintain and increase undisturbed habitat in the near-term.



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We additionally note that predator management has been ongoing in the A La Peche range since the winter of 2005/06, and has contributed to the Government of Alberta considering the herd 'stable' (Alberta Environment and Parks, 2017). Predator management is an emergency measure to prevent extirpation, but it cannot occur in the absence of habitat-based conservation measures. If predator management is deemed necessary in a caribou range to prevent further population declines, new destruction of large tracts of undisturbed habitat, as is the case in this scenario, is inappropriate.

Implications for sub-regional planning:

Given the impacts on species at risk, particularly southern mountain caribou, a review of the long-term harvesting plans in A La Peche and Little Smoky caribou herds must be addressed through the current sub-regional planning process—as evidenced by the poor reflection of the value of the critical habitat in this compartment.

West Fraser (Hinton) Forest Management Plan was approved in 2017. Since then, several circumstances have changed. [The province created sub-regional task forces in August 2019](#). Shortly thereafter, [the Canada-Alberta Section 11 Conservation Agreement was finalized in October 2020](#), with commitments to establish the A La Peche Task Force in 2021 and to finalize the sub-regional plan in 2023. The release of the [Athabasca Rainbow Trout recovery strategy](#) in 2020 is also an important development that has not been accounted for in the harvest plans. Moreover, the long-term harvesting plan for the A La Peche and Little Smoky ranges, [as provided in a direction letter from the Government of Alberta in 2018](#), appears to strongly underestimate the value of the undisturbed habitat in this compartment.

Thus, it is clear the long-term harvesting plans from 2018 should undergo review through the sub-regional planning process, and at minimum, the undisturbed habitat in the compartment should remain intact until a sub-regional plan considers how it will reasonably maintain and increase undisturbed habitat in the caribou range.

Implications for Canada-Alberta Section 11 Conservation Agreement:

In 2018, Canada completed an imminent threat assessment for southern mountain caribou, and the Minister of Environment and Climate Change formed the opinion that southern mountain caribou are facing imminent threats to their recovery. The Minister recommended making an emergency order to protect southern mountain caribou. [The Government of Canada declined making the emergency order, largely based on the existence of a Section 11 Agreement between Canada and Alberta](#). However, the decision notes that the Minister will closely monitor the implementation of measures and in appropriate circumstances, could make a new recommendation for an emergency protection order. If the commitments under the Agreement are not effectively protecting habitat, such as in this case, then the imminent threats to the recovery of the species still exist and the case for an emergency protection order should be revisited.

Quick wins with seismic line restoration:

In addition to our concerns regarding loss of currently, or soon to be, undisturbed habitat, the area slated for harvest also holds the potential for large gains in undisturbed habitat via targeted restoration of seismic lines. Restoration of seismic lines in caribou ranges in Alberta are sometimes confounded by their proximity to existing disturbances, which means it is important to identify areas where the net gains in ‘undisturbed habitat’ are large, without being cancelled out by other disturbance features.



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This compartment has a few major seismic lines that, if treated for restoration, would significantly reduce disturbance levels in the range due to minimal overlap with other disturbance types in the area. Our analysis shows the restoration of a few critical seismic lines (13km) (see Figure 14) would result in a 61% gain in contiguous undisturbed habitat in the compartment. These gains would be in addition to avoiding the loss of undisturbed habitat shown in the map below.

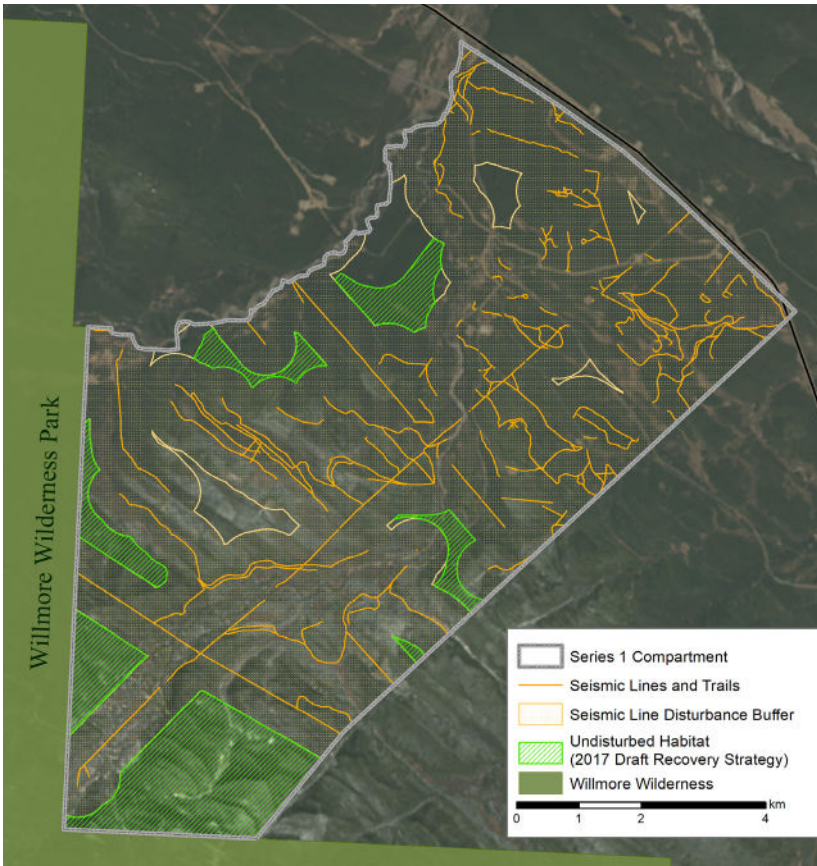


FIGURE 13: CURRENT DISTURBANCE FROM SEISMIC LINES AND TRAILS AND UNDISTURBED CARIBOU HABITAT.

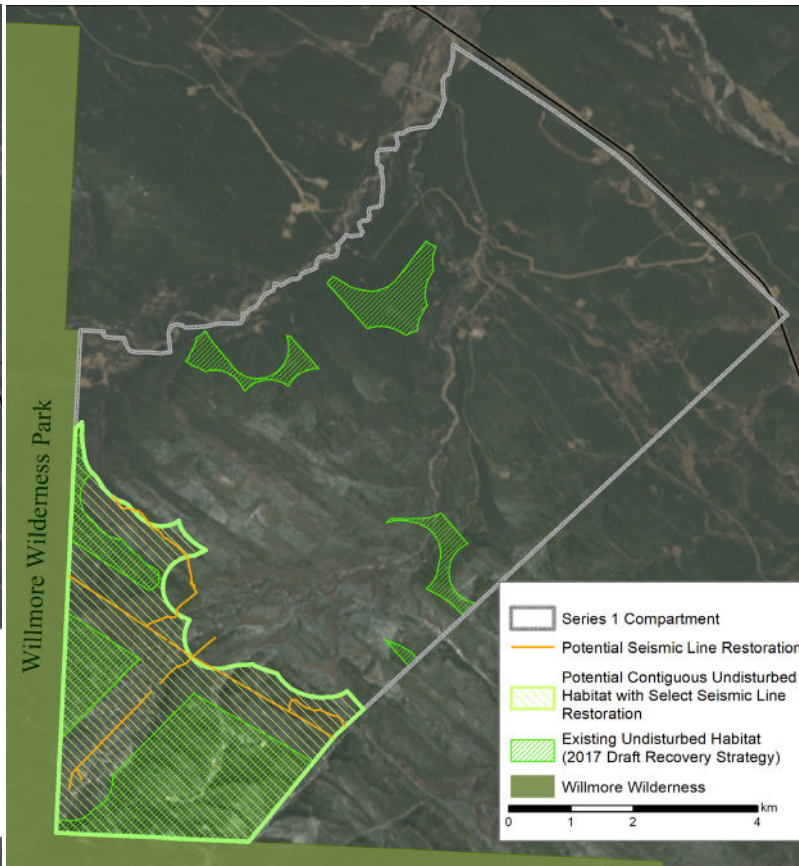


FIGURE 14: POTENTIAL GAINS IN CONTIGUOUS UNDISTURBED HABITAT IF SPECIES SEISMIC LINES (ORANGE) ARE TREATED FOR RESTORATION.



A SMALL AMOUNT OF RESTORATION OF LEGACY SEISMIC LINES IN THE COMPARTMENT WOULD YIELD SIGNIFICANT INCREASES IN UNDISTURBED HABITAT.



CPAWS Recommendations



We recommend that this area is not suitable for forestry harvesting at this volume and intensity, based on the best available data on species at risk. There should be critical re-considerations and re-assessments of the spatial harvest and harvest volumes in the A La Peche and Little Smoky range, which achieves the maintenance of currently intact habitat and ensures undisturbed habitat increases in the near-term.

We recommend the Government of Alberta seek suitable tools to defer immediate plans for logging and re-assess suitability of logging in this compartment. One tool we suggest considering is a 'compartment assessment' under the Forestry Act to re-evaluate spatial harvest sequence and volumes within West Fraser's compartments in caribou range, as implications for species at risk recovery planning have arisen.

We recommend the Government of Alberta assess the potential for restoration of seismic lines in the Moon Creek area, through the sub-regional planning process, given the quick and significant gains in undisturbed habitat.

And finally, we recommend an independent assessment of the streams in the compartment to determine which streams contain attributes under Table 5 of the Endangered Athabasca Rainbow trout recovery strategy and should be identified as critical habitat. We additionally recommend Moon Creek is treated as a Class A stream until a federal Action Plan is finalized, or until critical habitat is identified within streams.



PHOTO: JOHN E. MARRIOTT WILDERNESSPRINTS.COM



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Appendix

TABLE 1: A SUMMARY OF THE FORESTRY HARVEST CUT BLOCKS IN THE STUDY AREA, INCLUDING THE YEAR EACH CUT BLOCK WOULD BE CONSIDERED UNDISTURBED CARIBOU HABITAT (40 YEARS) AND BIOPHYSICAL CARIBOU HABITAT (80 YEARS). TIME FRAME FOR BIOPHYSICAL HABITAT IS DERIVED FROM THE METHODS FOR REFINING FEDERAL CLASSIFICATION OF WOODLAND CARIBOU BIOPHYSICAL CRITICAL HABITAT FOR ALBERTA (2018).

Year of Harvest	Area (ha)	Year Considered Un-disturbed	Year Considered Bio-physical
1959	38	1999	2039
1960	55	2000	2040
1961	138	2001	2041
1962	240	2002	2042
1963	260	2003	2043
1964	156	2004	2044
1965	386	2005	2045
1966	552	2006	2046
1967	196	2007	2047
1970	5	2010	2050
1971	16	2011	2051
1973	300	2013	2053
1974	53	2014	2054
1976	21	2016	2056
1977	60	2017	2057
1978	45	2018	2058
1979	18	2019	2059
1980	54	2020	2060
1982	84	2022	2062
1983	86	2023	2063
1990	13	2030	2070
2001	7	2041	2081
2004	48	2044	2084
2006	29	2046	2086
2007	43	2047	2087