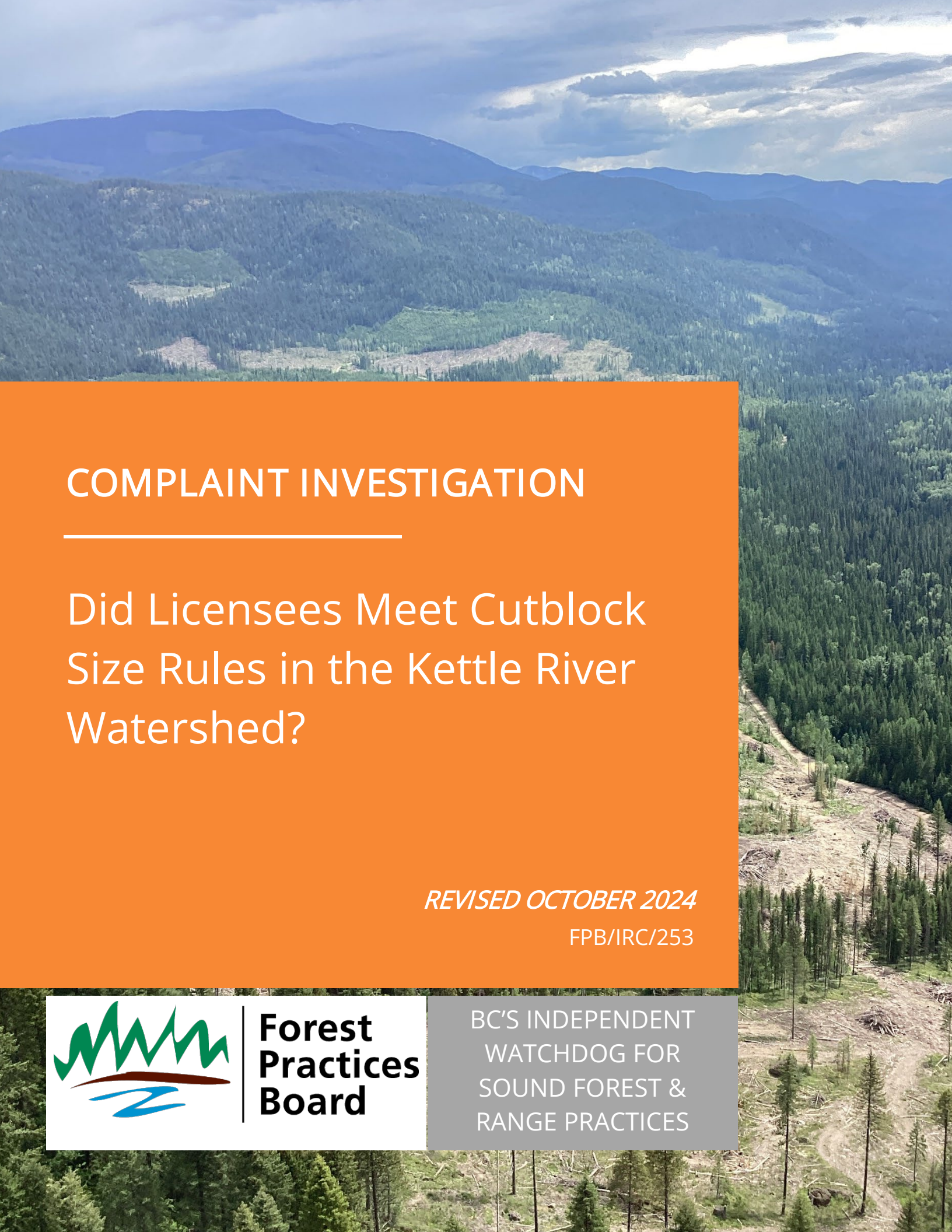


COMPLAINT INVESTIGATION

Did Licensees Meet Cutblock Size Rules in the Kettle River Watershed?

REVISED OCTOBER 2024

FPB/IRC/253

Forest Practices Board

BC'S INDEPENDENT WATCHDOG FOR SOUND FOREST & RANGE PRACTICES

Table of Contents

Board Commentary

Wildfires, forest insects and diseases, windstorms, harvesting and other human development activities have long impacted the Kettle River Watershed. These disturbances affect the timing and amount of stream flow, water quality, aquatic habitat and riparian functions. The public, First Nations and the complainant are increasingly concerned about the impacts of these disturbances on water quality, quantity and the timing of stream flow.

It is generally accepted that water flows may be impacted by forest harvesting. Forest licensees are not usually required to evaluate the impacts of their planned activities on watersheds, except in community watersheds. In this investigation, the Board found that licensees completed very few watershed assessments between 2016 and 2021. However, the Ministry of Forests' (ministry's) cumulative effects report, completed after licensees had planned harvesting activities, indicated some of those watersheds were at risk.

Recently, the ministry and professional regulators have recognized the need for a structured approach to monitoring activities and evaluating cumulative effects in watersheds.

In 2020, Forest Professionals BC and Engineers and Geoscientists BC set out professional practice guidelines that define standards of practice for managing hydrologic values and risks in watersheds. Over time, the implementation of these guidelines should result in a more systematic assessment of watersheds in higher-risk conditions.

This issue also attracted the attention of the chief forester. In a recent allowable annual cut determination for a tenure within the watershed, the chief forester set the expectation that licensees not create openings greater than 40 hectares unless a sound rationale is provided to and reviewed by the ministry before harvesting commences. The chief forester added that a watershed with greater than 30 percent equivalent clearcut area is "commonly considered as a red flag and often indicates a need for further assessment."

These initiatives, along with the 2021 ministry report on the watershed's condition, provide information and tools to address the cumulative effects of harvesting and other disturbances in the watershed. The Board encourages the ministry and licensees to use the current information and tools available to improve watershed management. Furthermore, the Board understands that the forest landscape planning process now being piloted will require assessments and monitoring of watershed conditions.

Finally, in its 2022 special report, *Forest Practices and Water*, the Board identified an opportunity to introduce legal requirements to support managing the cumulative effects of forest practices on water in all watersheds. That opportunity for improvement is still relevant today.

Executive Summary

On March 18, 2021, the Forest Practices Board received a complaint about forest practices in the Kettle River Watershed. The complainant was concerned about excessive timber harvesting, related road construction, and potential negative impacts on hydrology, biodiversity, wildlife habitat and aesthetics within the watershed.

The watershed spans over 8 150 square kilometres in southeastern British Columbia in the Selkirk and Okanagan Shuswap Natural Resource Districts, with the southern portion extending into the United States of America. It is a vital resource for communities and Indigenous peoples, with rich biodiversity. Natural and human-induced disturbances, such as bark beetle and disease infestations, wildfires, windstorms, harvesting and other human development activities have shaped the watershed's forests, impacting its water cycle.

The investigation focused on large cutblocks harvested in the watershed between 2016 and 2021 and evaluated whether licensees complied with legal requirements for forest practices.

The investigation assessed whether licensees complied with cutblock size and green-up[1] requirements when harvesting adjacent to existing cutblocks. British Columbia's forestry regulations set a 40-hectare limit on cutblock size, with exceptions allowed under specific circumstances. The regulations and land use objectives set by government, such as the Kootenay Boundary Higher Level Plan Order, establish requirements for green-up.

The Board examined 87 large cutblocks and 82 large-aggregate cutblocks.[2] The investigation found that all cutblocks complied with size and green-up requirements.

The Board considered the potential for effects on the watershed and found that most of the cutblocks were in at-risk sub-watersheds,[3] potentially impacting hydrology. Licensees' rationales for large cutblocks were consistent with the exceptions allowed under regulation, such as insect management or mimicking natural disturbance patterns.

The Board also investigated whether the ministry monitored licensees' harvesting of large cutblocks in the watershed. Ministry assessments, including a 2019 audit of large cutblocks, highlighted shortcomings in licensees' rationales. This led to improvements that were observed in this investigation. The ministry also completed a 2020 Forest and Range Evaluation Program (FREP) report and a 2021 Cumulative Effects Report that identified hydrological risks in the watershed. The ministry encouraged licensees to consider cumulative effects on hydrological conditions when planning timber harvesting.

[1] Green up refers to the required number and size of trees regrowing on the cutblock after harvest.
[2] Cutblocks that exceed 40 hectares either unto themselves or when combined with adjacent non-greened-up cutblocks.
[3] In this report, we define at-risk watershed as having an equivalent clearcut area greater than 25 percent (Winkler et al, 2017) because this may adversely affect the extent, frequency, and timing of hydrological processes in a snowmelt-driven watershed and further work should be conducted to assess hydrologic risks. It is important to note that the assessment that described watersheds as "at risk" was not published until 2021, well after the majority of the blocks subject to this investigation were planned and harvested.

The investigation found that licensees generally complied with cutblock size and green-up requirements, and rationales were generally well-supported and improved over time. However, the investigation noted significant reliance on the exception for mimicking natural disturbance patterns[4] as the rationale for large cutblocks in at-risk watersheds. This may include harvesting green trees that serve to buffer potential hydrological effects. Licensees did so while conducting few watershed assessments to determine how additional forest cover removal may affect the hydrological condition of the watershed. This raises concerns about potential hydrological impacts.

Concerning ministry oversight, the investigation found that while ministry assessments provided insights, there is a lack of systematic monitoring and clear guidance for licensees on managing cumulative effects on hydrology in the watershed.

[4] When a cutblock is designed to be consistent with the structural characteristics and the temporal and spatial distribution of an opening that would result from a natural disturbance. The cutblock is substantially completed to resemble an opening that would result from a natural disturbance and may include the harvest of both dead and green timber.

Introduction

The Complaint

On March 18, 2021, the Forest Practices Board (the Board) received a complaint from a Greenwood resident (the complainant) about forest practices in the Kettle River Watershed (the watershed).

The complainant was concerned that excessive timber harvesting has degraded the watershed over the past several years. The complainant asserts that the scale of clearcut harvesting in the watershed has exceeded an acceptable level and has increased risks to hydrology, biodiversity, wildlife habitat and aesthetics. Furthermore, the complainant asserts that harvesting has led to changes in the water flow, causing devastating potential impacts, including an increased risk of spring flooding and a decrease in summer and fall stream flows.

The complainant would like the Board to provide recommendations to reverse the alleged decline in health in the watershed.

Timber harvesting contributes to changes in a watershed's hydrological cycle. While cutblocks of any size and distribution can affect hydrology, the Board focused the investigation on large cutblocks because they provide a reasonable geographic representation of harvest activities during the investigation period and provide a basis to assess compliance with legal requirements and harvest decisions. Under the *Forest and Range Practices Act* (FRPA), the *Forest Planning and Practices Regulation* (FPPR) limits cutblock sizes on public land. However, licensees may harvest large cutblocks exceeding the limits under certain circumstances.

Background

This section describes the watershed's setting and disturbance history and discusses how those disturbances can affect hydrology. It also explains how watershed planning (including higher-level plans), ministry expectations and watershed assessments relate to this investigation. The investigation did not consider recent or historical disturbances in the US portion of the watershed where landscape-scale wildfires have impacted the watershed in recent decades.

The Kettle River Watershed Setting

The Kettle River originates in southern BC's Okanagan Highlands and the Monashee Mountains. It is a major tributary to the Columbia River. The watershed covers about 10 880 square kilometres. About three-quarters of the watershed is in BC, while the rest is in the state of Washington in the United States of America. In BC, the watershed spans the Selkirk Natural Resource District and the Okanagan Shuswap Natural Resource District (Figure 1).

The Canadian portion of this watershed falls within the territories of the Adams Lake Indian Band; the Ktunaxa Nation, which includes the ʔakisq̓nuk First Nation (Columbia Lake Indian Band), ʔaq'am (St. Mary's Indian Band) Tobacco Plains Indian Band, and the Yaqan nuʔkiy (Lower Kootenay Band); the Lower Similkameen Indian Band; the Neskonlith Indian Band; the Okanagan Indian Band; the Osoyoos Indian Band; the Penticton Indian Band; the Shuswap Band; the Skwlāx te Secwepemcúl̓ecw; the Splatsin First Nation; the Upper Nicola Band; and the Westbank First Nation. The Board recognizes the importance of their historical relationship with the land, which continues to this day.

Abundant clean water is essential to local communities and Indigenous peoples. The watershed supplies drinking water and the means to practice traditional ways of life, sustains biodiversity, including fish and wildlife, and provides recreational opportunities.

Understanding the interplay of natural and human-caused impacts on a watershed, known as cumulative effects, can help reduce risks and hazards related to extreme flood events, landslides and drought. In recent years, and after the forest management activities that are the subject of this investigation, the government published reports on the cumulative effects on the watershed condition.

Disturbance history

Bark beetle and disease infestations, wildfires, windstorms, logging, agriculture, recreation, transportation infrastructure and urban development have affected the watershed and its forests. These influences, also known as disturbance agents, have changed the characteristics of the watershed's forests, including the age, area and distribution of tree species. This applies particularly to mid-elevation and high-elevation forests where the potential impacts on hydrological cycles can be pronounced.

Licensees have been harvesting in areas affected by bark beetles for the past several decades, consistent with the ministry's past forest health strategies. Licensees targeted areas already damaged—or at risk of being damaged—by the mountain pine beetle, clearing large areas to remove dead and susceptible wood to stop the beetles from spreading further. This led to extensive cleared areas in the watershed. The main reason for conducting salvage harvesting was due to concerns that the areas affected or at risk of mountain pine beetle infestations could result in the significant loss of harvestable timber to beetle kill.

This level of disturbance is expected to continue, as the ministry's 2020 Forest Health Strategy[i] predicts significant future impacts from disturbance agents that may require logging to manage their effects.

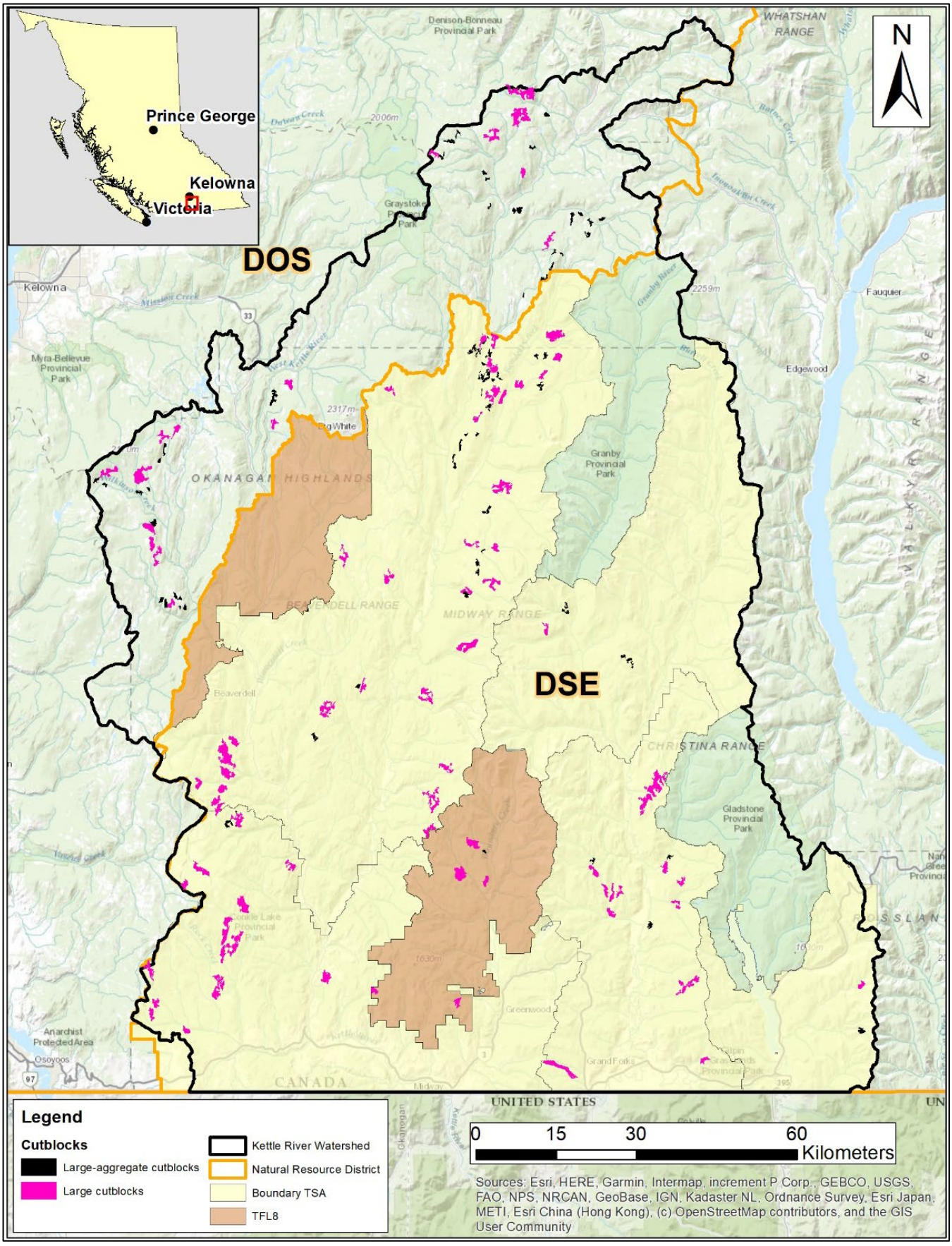


FIGURE 1. The Canadian portion of the Kettle River watershed and the distribution of large cutblocks (in pink) and large-aggregate cutblocks (in black) harvested during the investigation period.

Effects of forest disturbances on hydrology

Natural forest disturbances and harvesting affect a watershed's hydrology. Among other factors,[5] the peak flow—the maximum flow rate that occurs within a specified period—is linked to the amount of naturally disturbed or clearcut area in a watershed. Clearcuts accumulate greater snowpack than forested areas because they lack tree canopy. In the spring, the snowpack melts more rapidly in clearcuts because of the lack of a shading canopy. Depending on the amount of clearing, the net effect can be higher peak flows occurring earlier in the season than in mature, intact forests. These higher peak flows may affect water quality and stream channel stability.

A common hydrological indicator to assess the scale of disturbance in a watershed is an equivalent clearcut area or ECA (see text box). Researchers and practitioners use the ECA concept as one of the variables to understand the risk of a change in peak flows across a watershed.

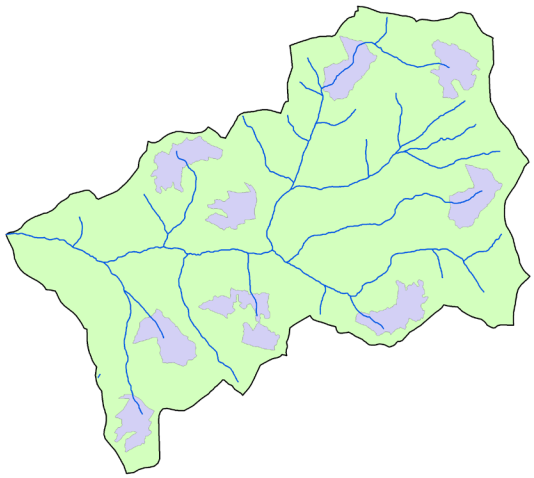
What is ECA?

Forests act like a sponge, soaking up rain and releasing it slowly. This natural process is affected when trees are cut down or killed by fire, wind or beetles.

The equivalent clearcut area (ECA) is a basic way to measure how disturbances affect watersheds and their hydrology. It looks at how much forest has been disturbed and how new trees are growing back.

ECA is expressed as a percentage of the entire watershed area. For example, if there has been recent clearcut logging covering 100 hectares in a watershed that is 1 000 hectares, the ECA for that watershed is 10 percent.

A high ECA means there has been a lot of recent disturbance and not much new growth yet in a watershed. This affects a forest's ability to absorb water like a sponge.



When cutblocks are harvested, the tree canopy that intercepts snow or rain is reduced, and the root systems of the harvested trees stop absorbing water in the soil. The hydrological condition of a cutblock changes because more water is available or stored in the soil in the harvested area. Over time, the regenerating trees grow root systems that increasingly use the available soil water and create a new forest canopy that intercepts snow. As a regenerating forest grows, the hydrological function of the area recovers, and the ECA decreases. However, hydrologists caution that the ECA is a simple indicator that does not fully account for the interdependent relationships of forest cover, topography and streams in a watershed.

It is generally accepted that significant shifts in the timing and magnitude of stream flows may occur[ii] when forest disturbances exceed ECAs specific to each watershed. In such instances, licensees should consider further assessments to assess potential risks.

[5] Appendix A of the CE report identifies that four of the five indicators are naturally occurring factors that vary by watershed, emphasizing that the ECA alone is not a triggering indicator. This may include non-forested area, BEC unit area, absence of lakes and wetlands, and drainage density ruggedness, as well as site factors such as terrain, aspect, elevation, soil types and inter-annual weather variations.

Watershed planning

Government sets legal objectives for land management using different tools. Two that are relevant to this investigation are *Government Actions Regulation* (GAR) orders and higher-level plan orders for specific areas. Licensees must include results and strategies for legal objectives in their forest stewardship plans (FSPs), thereby linking land use objectives to forest practices on the ground.

When managing hydrology in a watershed, there are several levels of planning to consider. Land use plans and government expectations provide guidance on how to manage hydrology. Watershed assessments establish baseline conditions against which licensees can evaluate the impacts of forest activities.

The next section of the report describes the legal requirements, plans and orders, expectations, resources, and processes that were in effect during the investigation period.

Legal requirements for watersheds

The FPPR broadly requires licensees to ensure that forest activities do not adversely affect water quality for human consumption or damage licensed waterworks. For certain harvest activities in a community watershed, the FPPR requires that forest licensees do not cause sediment harmful to human health to enter a stream, wetland or lake from which water is being diverted for human consumption by licensed waterworks. While not specific to a watershed's condition, the FPPR also contains provisions for terrain stability, soil disturbance, riparian management and biodiversity that may help protect watershed quality.

Land use plans

The *Kootenay-Boundary Land Use Plan* (2001) and the *Implementation Strategy* (1997) contain resource management direction for specific areas in the Selkirk Natural Resource District. They do not call for licensees to conduct large-scale watershed assessments. However, the strategy recognizes hydrological conditions as a factor affecting the watershed values and recommends watershed assessments for community and domestic watersheds and watershed analysis on regionally-significant fish streams.

The *Okanagan-Shuswap Land and Resource Management Plan* (2001) provides recommendations and guidance for forest resources, including community watersheds and fish habitat in the Okanagan Shuswap Natural Resource District. However, it does not include guidance for hydrological green-up or cutblock size.

Land use objectives

Government can establish land use objectives to create legal requirements for implementing aspects of land use plans. Government established land use objectives with the K*ootenay Boundary Higher Level Plan Order* (KBHLPO) in 2001. It was updated in 2003 and 2009, with the 2003 variance affecting the Boundary Timber Supply Area (TSA) portion of the Kettle River Watershed. Through the order, government established resource management zones and objectives, such as green-up[6]and patch size. The order allows for cutblocks larger than 40 hectares by setting objectives for natural forest structures. However, it does not require watershed assessments. Since the order has come into effect, minimal land use or landscape-level planning work has been done in the watershed.

[6] The time needed after harvesting for a stand of trees to reach a desired condition (usually a specific height)—to ensure maintenance of water quality, wildlife habitat, soil stability, or aesthetics—before harvesting is permitted in adjacent areas. 2008, Ministry of Forest, Glossary of Forestry Terms in British Columbia. [cited 2023 October 20].

In 2007, government set land use objectives by establishing an order in the area covered by the *Okanagan-Shuswap Land and Resource Management Plan* in the Okanagan Shuswap Natural Resource District. Government's land use objectives applied to various natural resources, but government did not establish any specific land use objectives for watershed hydrology.

Government expectations

Concerns over whether the effects of timber harvesting in the watershed might have contributed to historic floods led the ministry to produce a 2020 watershed condition assessment[iii] (FREP report) and a 2021 cumulative effects report[iv] (CE report). In 2019, the ministry audited large cutblocks as part of its FSP monitoring process and in response to the chief forester's timber supply review recommendations. The ministry set out expectations by providing expectation letters to licensees recommending they recognize the importance of managing cumulative effects in watersheds in the Selkirk Natural Resource District and that licensees consider new hydrological science and assessment guidance when planning timber harvesting within a watershed in the Okanagan Shuswap Natural Resource District.[7]

Watershed assessments

Licensees may elect to conduct a watershed assessment when planning forest activities, which involves identifying and analyzing hydrological and geomorphic processes in a watershed unit. The objectives of a watershed assessment vary depending on its purpose. They may include assessing baseline conditions, determining the extent of past natural and human disturbances, and evaluating the changes to hydrological conditions from proposed forest practices. Licensees use recommendations from a watershed assessment to manage hydrological risks from their forest practices.

In summary, government has only general expectations for managing hydrological conditions of watersheds and does not legally require licensees to evaluate a watershed unless it is a community watershed and there is an FSP commitment to do so. Although BC Timber Sales (BCTS) commits, in its FSP, to conducting hydrologic assessments and following the recommendations for community watersheds and consumptive use streams, only a few of the areas investigated were in community watersheds, where evaluations were conducted. While certain aspects of the FPPR are related to a watershed's condition, they do not serve as a clear expectation to conserve hydrological values.

[7] Expectation letters issued in 2016 by the district managers of the Okanagan Shuswap and Kootenay-Boundary natural resource districts.

Investigation Findings

Approach

The investigation assessed if licensees[8], including BCTS,[9] complied with cutblock size and adjacency requirements when they harvested 169 large cutblocks in the Kettle River Watershed between January 1, 2016, and March 31, 2021. Table 6 in Appendix 1 lists the licensees, their licences and the number of cutblocks examined. The investigation considered large cutblock exception rationales,[10] and FSP and site plan consistency with legal objectives.

The investigation looked at the location and distribution of large cutblocks in relation to watershed conditions and assessed whether the rationales provided by the licensees considered watershed conditions and supported their decisions to harvest large cutblocks.

The investigation did not examine whether the large cutblock rationales achieved the objectives stated in the rationales, particularly those for mimicking natural disturbance. Determining the effectiveness of harvest patterns in relation to a watershed's condition could not accurately be determined when looking at only large cutblocks.

The investigation also:

- examined whether the ministry set clear expectations for harvest decisions, monitored harvest activities, and provided guidance to licensees;
- looked at whether the ministry monitored licensees' harvesting to determine if they met the required conditions for large cutblock harvesting in the watershed. Monitoring harvesting activities can shed light on possible impacts on the watershed; and
- reviewed licensees' compliance with requirements for planning large cutblocks, as well as planning for other resource interests, including visual quality and ungulate winter range (UWR).

The investigation presents the results on planning for visual quality and UWR because these forest resource values were most commonly associated with the large cutblocks in the investigation population. Because legal requirements for these values did not restrict cutblock size, the investigation examined whether these resource values applied to the large cutblocks and how licensees addressed the requirements in their planning documents. The investigation assessed whether there were potential adverse effects associated with the large cutblocks.

[8] For this report, the term licensee refers to holders of forest licences, tree farm licences, First Nations woodland licences, non-replaceable forest licences, community forest agreements and BC Timber Sales.
[9] BCTS Kootenay Business Area.
[10] See the "Legal Requirements" section of this report on page 11.

1. Did harvesting meet legal requirements for cutblock size and adjacency?

Legal Requirements

Maximum cutblock size

The maximum permitted cutblock size is 40 hectares. Licensees may exceed the maximum cutblock size where specified requirements are met (section 64 of the FPPR). The maximum cutblock size does not apply where the timber harvesting objective is to recover damaged timber or conduct sanitation treatments,[11] or where the timber harvesting is designed to mimic natural disturbance patterns. Table 1 describes these exceptions.

TABLE 1. Exceptions to Maximum Cutblock Size in Section 64 of the FPPR

FPPR	EXCEPTION TYPE	DETAILS
64(2)	Fire	Recovery of timber damaged by fire AND when timber harvesting is substantially completed, the cutblock resembles an opening that would result from a natural disturbance.
64(2)	Forest Insects	Recovery of timber damaged by insects AND when timber harvesting is substantially completed, the cutblock resembles an opening that would result from a natural disturbance.
64(2)	Wind	Recovery of timber damaged by wind AND when timber harvesting is substantially completed, the cutblock resembles an opening that would result from a natural disturbance.
64(2)	Sanitation Treatments	Removal of dead, damaged, or susceptible trees, to prevent the spread of pests or pathogens, AND when timber harvesting is substantially completed, the cutblock resembles an opening that would result from a natural disturbance.
64(2)	Mimicking Natural Disturbance	The cutblock is designed to be consistent with the structural characteristics and the temporal and spatial distribution of an opening that would result from a natural disturbance, AND when timber harvesting is substantially completed, the cutblock resembles an opening that would result from a natural disturbance.
64(3)	Partial Cut	The cutblock retains 40 percent or more of the basal area of the stand that was on the cutblock before timber harvesting.
64(4)	Cutblock Width	1) No point within the net area to be reforested (NAR) is more than two tree lengths from either the cutblock boundary or a group of trees reserved from harvesting that is greater than or equal to 0.25 ha in size. 2) No point within the NAR is more than one tree length from a group of trees reserved from timber harvesting that is less than 0.25 ha in size.

Harvesting adjacent to another cutblock

Licensees are permitted to harvest adjacent to an existing cutblock under certain circumstances. This includes if the new cutblock and the existing cutblock combined do not exceed the maximum cutblock size (section 65(2)(b) of the FPPR). Licensees may also harvest adjacent to an existing cutblock if the existing cutblock meets green-up requirements.

[11] The removal of dead, damaged, or susceptible trees, essentially to prevent the spread of pests or pathogens and to promote forest health.

This investigation focused on the exceptions for harvesting adjacent to another cutblock related to section 64 of the FPPR exceptions. This allowed for comparing the licensees' rationales for harvesting large and large-aggregate cutblocks during the investigation period.

Table 1 and Table 2 set out the requirements that must be met for licensees to exceed the maximum cutblock size. Appendix 2 includes the relevant sections of FRPA and the FPPR.

Planning requirements for large cutblocks

FSP holders must prepare site plans that identify how results or strategies described in the FSP apply to the site (section 10 of FRPA). When a licensee includes a result or strategy to meet the requirements of FPPR sections 64 and 65 in its FSP, the site plan must identify how cutblock size and adjacency apply to the cutblock, identify any exceptions for cutblock size and include a rationale for the exception.

TABLE 2. Exceptions to Harvesting Adjacent to Another Cutblock in Section 65 of the FPPR

FPPR	EXCEPTION TYPE	DETAILS
65(2)	Aggregate ≤ 40 ha	The combined NAR of the new cutblock and an existing cutblock adjacent to the new cutblock does not exceed the maximum cutblock size.
65(3)	Suitably Stocked	One of the following must apply: 1) At least 75 percent of the existing cutblock's NAR is stocked so that the tallest 10 percent of trees have a mean height of at least 3 metres AND a) is stocked as per applicable stocking standards; OR b) if the existing cutblock's NAR is stocked with at least 700 trees per hectare of a commercially valuable species with at least 1.3 metres in height; OR 2) At least 50 percent of the existing cutblock's NAR that is closest to the new cutblock is stocked so that the tallest 10 percent of trees have a mean height of at least 3 metres AND a) is stocked as per applicable stocking standards; OR b) if the existing cutblock's NAR is stocked with at least 700 trees per hectare of a commercially valuable species with at least 1.3 metres in height.
65(4)	Section 64	Harvesting adjacent to an existing cutblock is permitted if any of the exceptions under sections 64 (2), (3) or (4) apply to the new cutblock (see Table 1).

Population Description

The investigation examined 169 large cutblocks harvested in the watershed between January 1, 2016, and March 31, 2021. Table 3 shows the breakdown by large cutblock class and natural resource district.

TABLE 3. Distribution of Examined Cutblocks by Size and Natural Resource District

DISTRICT	# OF LARGE (>40 hectares) CUTBLOCKS	# OF LARGE-AGGREGATE (>40 hectares) CUTBLOCKS	TOTAL	PROPORTION OF TOTAL (%)
Selkirk	70	48	118	70
Okanagan Shuswap	17	34	51	30
TOTAL	**87**	**82**	**169**	**100**

Compliance with Sections 64 and 65 of FPPR and Section 10 of FRPA

The investigation assessed 87 large cutblocks for compliance with the maximum cutblock size requirements. Additionally, it examined 82 large-aggregate cutblocks for compliance with adjacency rules.

All 169 cutblocks were required to comply with the site plan requirements of section 10 of FRPA. Investigators examined how well the licensees supported the exceptions to determine whether they met the large cutblock exception requirements.

What are large cutblocks?

This investigation report defines ***large cutblocks*** as those that are larger than 40 hectares.

Large-aggregate cutblocks refer to two or more adjacent cutblocks that are not yet regrown (greened up), with a combined size of over 40 hectares, and no individual cutblock being larger than 40 hectares for reforestation.

Distribution of examined cutblocks by exception type

The distribution pattern of the large cutblocks and the large-aggregate cutblocks examined showed a similar trend in exception types. Most exceptions fell under the forest insects and mimicking natural disturbance categories (see Table 4).

The licensees harvested most cutblocks to recover timber or to sanitize areas affected or at risk from forest insects.[v] About one-third of the examined cutblocks were designed and harvested to mimic natural disturbance. For the remaining cutblocks, licensees' rationales included partial cutting, timber recovery or sanitation due to fire or wind damage.

For cutblocks harvested with an exception rationale related to mimic natural disturbance (section 64(2)(a) of the FPPR), the licensee needs to ensure "…to the extent practicable, that the structural characteristics of the cutblock after timber harvesting has been substantially completed resemble an opening that would result from a natural disturbance."

TABLE 4. Distribution of Examined Cutblocks by Exception Type

FPPR EXCEPTION TYPE	# OF LARGE CUTBLOCKS	# OF LARGE-AGGREGATE CUTBLOCKS	TOTAL	PROPORTION OF TOTAL (%)
Forest Insects	51	48	99	58
Mimicking Natural Disturbance	26	29	55	32
Wind	5	1	6	4
Fire	2	4	6	4
Partial Cut	3	0	3	2
TOTAL	**87**	**82**	**169**	**100**

How well did licensees' rationales support the exceptions?

There are no legal requirements in FRPA for how licensees should support their rationales for cutblock size exceptions. However, forest professionals are accountable for providing rationales for exceptions. Rationales need to demonstrate how an exception applies to a site and provide supporting information to justify the exception. The investigation evaluated how well licensees' rationales supported an exception to exceed the maximum cutblock size for large and large-aggregate cutblocks.

For this evaluation, investigators reviewed the rationales in licensees' site plans and the information they provided during the investigation. For example, a well-supported rationale to recover timber damaged by insects would state the proportion of lodgepole pine and the proportion of lodgepole pine attacked by the mountain pine beetle.

The licensees provided detailed information for 151 out of 169 cutblocks to support the exception rationale. However, for 18 of 169 cutblocks, they provided only limited information in support of their rationales. Investigators found that regardless of the level of detail provided, the licensees' rationales supported the exceptions.

In addition to providing a sound rationale to support a cutblock size exception, licensees are required to identify whether a cutblock exceeds 40 hectares in size and specify an exception for cutblock size.

The investigation found that 34 site plans did not recognize that large and large-aggregate cutblocks were created or did not include an exception rationale. Those site plans did not comply with section 10 of FRPA.

However, the licensees provided supplementary information for these cutblocks that recognized a large or large-aggregate cutblock was created and supported the applicable exception rationales. Considering the supplementary information, the non-compliance with section 10 of FRPA is not significant.

Finding

The licensees met the requirements for cutblock size and adjacency in all significant respects and supported their exception rationale.

2. Did the ministry monitor licensees' large cutblock harvesting in the watershed?

In the previous section, the investigation found that licensees' large cutblocks in the watershed complied with the requirements for exceeding maximum cutblock size and adjacency. Next, the investigation examined whether the ministry monitored licensees' large cutblock harvesting.

During the investigation period, the ministry conducted assessments that provided insights into licensees' activities in the watershed. However, the ministry neither systematically monitored activities nor provided clear guidance on managing cumulative effects aimed at protecting the watershed's health. Although there is a lack of regulations, established land use objectives and FSP content requirements regarding cumulative effects, the 2021 CE and 2020 FREP reports provide information for licensees to consider when addressing cumulative effects in the future.

2019 Audit, 2020 FREP and 2021 CE Reports

In 2019, the ministry audited cutblocks larger than 40 hectares harvested in the Boundary TSA—which comprises most of the Kettle River Watershed—from 2014 to 2019. The audit identified shortcomings in the licensees' cutblock size exception rationales, prompting the ministry to provide guidance in 2020. The investigation found similar shortcomings for cutblocks pre-dating the 2019 audit findings but not for cutblocks after 2019. This shows that licensees improved site plan rationales for large cutblocks after the ministry's audit.

The 2020 FREP report assessed the functioning condition of smaller watersheds within the watershed. Two watersheds, the Boundary and part of the Rock Creek drainage system, were not in properly functioning condition due to the high amount of human-caused riparian disturbance. The report highlighted that the reduced buffering capacity and resilience resulting from impaired riparian areas have left these systems in a sensitive state. They may be easily affected by, and slow to recover from, additional disturbances. The FREP report did not attribute cutblock size or ECA as factors in the watersheds' functioning condition.

The 2021 CE report highlights the elevated potential hazard of generating high peak stream flows due to forest cover removal in several sub-basins. The Kettle River Central sub-basin had an ECA greater than 30 percent. The CE report also addresses sedimentation hazards related to high ECAs, indicating a low sedimentation risk on a large scale, advising licensees to use caution in managing sedimentation hazards when harvesting (large or small blocks) in smaller sub-basins. In the report, the ministry committed to modifying hydrological hazard assessment procedures over time, expanding the analysis to cover the entire Kootenay Boundary Region and using the results to manage watershed changes affecting key values. The report provides a reasonable basis for assessing cumulative effects, serving as a general indicator of watershed condition. However, forest inventories used in its analyses were not verified, and updated inventories could improve its utility. Nonetheless, the CE report serves to guide licensees in watershed management.

It should also be noted that the CE report's data is from 2019, but the report was only published in January 2021. This means it provides a snapshot of the watershed condition in the latter part of the investigation period. It includes statistics that reflect the harvesting of all areas, including many of the blocks subject to this investigation that were harvested through 2019. However, the report was not yet available for consideration during the planning or implementation of the harvesting subject to this investigation.

In addition to the 2019 audit and the FREP and CE reports, the ministry also provides periodic advice to licensees when planning forestry activities. This may include general requests, cutting permit, timber supply and FSP reviews and advice or information provided for committees such as the Kettle River Watershed Advisory Committee.

FSP, Cutting Permit and Timber Supply Reviews

The ministry must approve FSPs before licensees can harvest timber. It issues expectation letters to licensees, which provide guidance on forest health priorities and forest cover requirements. However, the ministry has not issued specific expectations on cutblock size for hydrological integrity.

Since the 2019 audit, the ministry has required licensees to indicate large cutblocks in their cutting permit applications. This allows ministry staff to review large cutblock exception rationales and monitor whether they have improved.

The Boundary TSA annual allowable cut, last determined in 2014, is undergoing a timber supply review. The ministry's timber supply review process states it will consider cumulative effects on forest values, including grizzly bear habitat, forest biodiversity and aquatic ecosystems as they relate to ECAs. The timber supply review information will be made available to the public.

Finding

The ministry neither systematically monitored licensee activities nor provided clear guidance on managing cumulative effects aimed at protecting the watershed's health.

3. Did licensees conduct watershed assessments when planning their harvesting?

Watershed assessments in at-risk areas serve critical purposes. They help identify vulnerabilities, assess risks and cumulative effects, inform management decisions, engage stakeholders, monitor progress and support regulatory compliance where required. Watershed assessments play a vital role in understanding and managing the interactions between land use, hydrology and water quality for the conservation and sustainable use of freshwater resources.

This investigation reviewed licensees' planning processes, considering FRPA regulations and government guidance. Licensees use various tools when planning activities to determine the values and objectives that apply to the forest development units they operate in (described in Appendix 3). This may include conducting watershed assessments where watershed conditions are in question. While there are no legal requirements for licensees to consider watershed conditions when planning their harvesting, ministry guidance and expectations recommend they do.

When considering watershed conditions, licensees may work with one another to address cumulative effects, include strategies for resource objectives in their FSPs and site plans, and use comprehensive forest management systems to monitor whether resource objectives are met. Because there are no legally established objectives for the Kettle River Watershed, licensees were not required to include relevant strategies in their FSPs, conduct watershed assessments, or formally consider cumulative effects for the cutblocks in the investigation population.

The ministry's CE report evaluated watershed effects across sub-watersheds, referring to them as assessment watersheds.[vi] The CE report's data is from 2019, thus providing a snapshot of the watershed condition in the latter part of the investigation period.

The CE report defines five ECA groups (Table 5) and applies them to sub-watersheds, assigning each group a level of hydrological risk (Figure 2). The CE report states that measurable changes in a watershed's stream flow occur when the ECA exceeds 20 percent. An ECA greater than 25 percent may adversely affect the extent, frequency and timing of hydrological processes in snowmelt-driven watersheds. And the watershed could be hydrologically at risk. Therefore, cutblocks harvested in the 30 to 40 percent and greater than 40 percent groups were in at-risk sub-watersheds.

This investigation used the CE report's five ECA groups to show the proportion of large cutblocks[vii] by ECA group across these smaller sub-watersheds. The investigation found that 58 percent of large and large-aggregate cutblocks harvested were located in at-risk sub-watersheds.

The Board recognizes that large and large-aggregate cutblocks are not the sole contributors to hydrological impacts. However, this investigation examined the distribution of these cutblocks in relation to the watershed condition (Figure 2). This investigation found that licensees harvested the most cutblocks in sub-watersheds with ECAs greater than 30 percent throughout the investigation period (Table 5), where additional harvest may adversely impact watershed conditions.

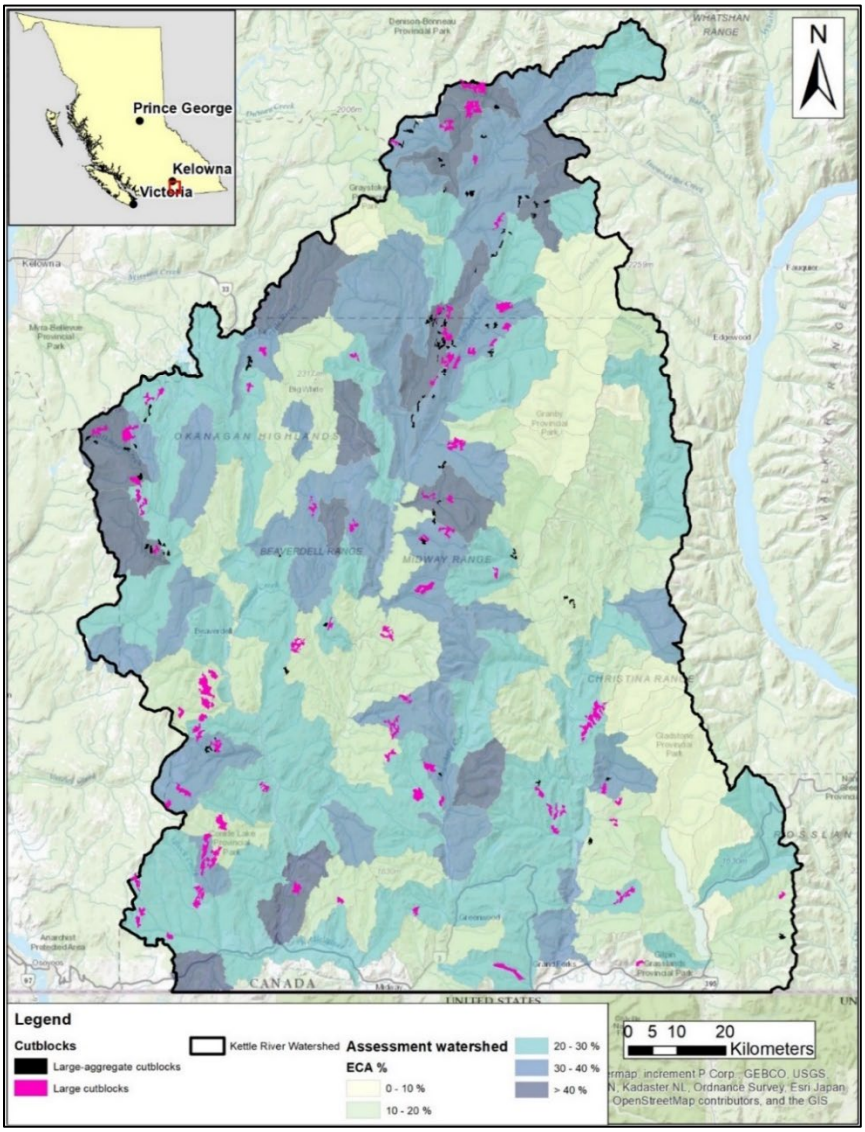


Figure 2. The Canadian portion of the Kettle River Watershed with assessment watersheds and their ECA values, and the distribution of large cutblocks (in pink) and large-aggregate cutblocks (in black) harvested during the investigation period.

TABLE 5. Distribution of Examined Cutblocks Across Sub-watersheds

	PROPORTION (%)		
ECA SUB-WATERSHED GROUP (%)	LARGE CUTBLOCKS	LARGE-AGGREGATE CUTBLOCKS	TOTAL
0-10	0	0	0
10-20	17	9	13
20-30	38	16	28
30-40	29	38	34
>40	16	37	26
TOTAL	**100%**	**100%**	**100%**

When the ECA surpasses 30 percent in a watershed, its hydrologic condition may be at risk. Harvest planning may require a higher degree of scrutiny. This may include conducting watershed

assessments and considering how additional removal of forest cover in at-risk watersheds may affect hydrologic conditions.

This investigation reviewed the licensees' rationales for harvesting large cutblocks in those at-risk watersheds. Fifty-eight percent of harvesting was due to wildfire salvage or insect management, and thirty-two percent to mimic natural disturbance (Table 4). The latter is of particular concern because it may include harvesting a higher proportion of green timber that could buffer hydrological effects and, without careful planning, may exacerbate the hydrological condition in potentially compromised watersheds.

The investigation found that five out of seven licensees did not complete ECA calculations or watershed assessments before harvesting large cutblocks in at-risk watersheds. When combined with the 'mimicking natural disturbance' exception rationale for a large cutblock, this raises concerns about the associated potential hydrological impacts.

The ministry's CE report was not released until the end of the investigation period. The report was not available to licensees when they planned the cutblocks examined in this investigation. In the future, the CE report's findings may aid licensees in assessing potential cumulative adverse hydrological impacts in the watershed. Licensees may want to consider supplementing the CE report's findings with verified forest cover information and watershed assessments to evaluate potential hydrological impacts from harvesting. If appropriate, licensees may want to consider adjusting their plans accordingly.

Finding

Five out of seven licensees did not conduct watershed assessments when planning their harvesting in the watershed.

4. Did licensees comply with requirements for visual quality objectives and ungulate winter range measures, and were there any potential adverse effects?

The investigation reviewed licensees' compliance in planning large cutblocks together with visual quality and UWR. These forest resource values were most commonly associated with the large cutblocks in the investigation population.

Because legal requirements for these values did not restrict cutblock size, the investigation focused on how they applied to the cutblocks and how licensees addressed the requirements in their planning documents. The investigation assessed whether there are potential adverse effects associated with the large cutblocks.

Visual Quality

When harvesting in scenic or visually sensitive areas, a licensee must meet established visual quality objectives (VQOs) for an area, except where those may be limited by considerations for forest health, safety, fire mitigation, fuel loading and the wildland-urban interface. The applicable provisions of the FPPR are in Appendix 2.

The investigation population included 12 large and large-aggregate cutblocks within scenic areas. The licensees were diligent in demonstrating how they met VQOs or considered if additional measures were needed for the 12 cutblocks. They identified the objectives in their site plans and were diligent in preparing visual impact assessments to design cutblocks that met the objectives or provided a rationale, such as beetle salvage, to support exemptions from meeting objectives. The investigation did not examine the implementation of the cutblock designs.

Cutblock size did not prevent licensees from meeting the VQOs for these cutblocks. For one cutblock, the licensee identified the visual objectives associated with the cutblock in an ecological restoration prescription. However, the licensee was not required to demonstrate whether activities met VQOs because harvesting was for forest health, fire mitigation and fuel loading reasons, which were consistent with its FSP.

Finding

The licensees complied with planning requirements in scenic areas.

Ungulate Winter Range

The investigation found that licensees harvested 39 large and large-aggregate cutblocks in the UWR during the investigation period. The UWR is subject to the general wildlife measures detailed in the GAR orders.[viii] A person who carries out primary forest activities, unless exempt, must comply with general wildlife measures (GWMs).

None of the GWMs in the GAR orders specifically pertain to cutblock size. However, licensees must meet forest cover retention requirements specified in the wildlife measures. Exceptions apply if harvesting is for wildfire salvage, there are serious forest health issues, or the harvest is in an open forest or open range.

The investigation examined 39 large and large-aggregate cutblocks located within UWRs. UWR forest cover requirements did not apply to six of those cutblocks because they were in open forests and open ranges, harvesting was to salvage damaged timber, or the overlap was insignificant.

For 1 of the remaining 33 cutblocks, BCTS failed to identify that the cutblock fell within the UWR and did not describe how the harvesting of the cutblock would meet the GWMs.

For the remaining 32 cutblocks, the licensees conducted forest cover analyses for harvest activities planned in UWRs and stated in their site plans or supporting documentation whether forest cover requirements had been met.

Finding

Licensees described how planned cutblocks met the GWMs in UWRs, except for one cutblock. For this cutblock, BCTS missed that it overlapped with the UWR.

Conclusion

This investigation examined a complaint asserting, in part, that timber harvesting degraded the condition of the Kettle River Watershed and led to changes in the water flow, causing an increased risk of spring flooding and a decrease in stream flows in summer and fall.

The investigation examined whether licensees complied with FRPA cutblock size and adjacency requirements and found that licensees met the requirements for cutblock size and other resource interests.

The investigation found that licensees' rationales for large cutblocks were well supported, either in the site plans or in the supplementary information that licensees provided during the investigation. FSPs contained results or strategies for cutblock size and adjacency requirements and were consistent with higher-level plan orders.

Licensee compliance with legal requirements was good, and large cutblock rationales were sound. However, investigators discovered that licensees harvested the majority of cutblocks in at-risk watersheds, including a large proportion of which focused on mimicking natural disturbance patterns. This included harvesting green timber that, if left standing, could have buffered potential hydrological impacts in already compromised watersheds. The licensees conducted few watershed assessments to determine how additional forest cover removal may affect the hydrological condition of the watershed.

The investigation assessed if the ministry monitored licensees' harvesting activities to determine if they met its expectations for harvesting large cutblocks. The investigation found that government paid attention to licensees' activities and conducted assessments of licensees' activities in the watershed. However, it neither systematically monitored their activities nor provided clear guidance on managing cumulative effects aimed at protecting the watershed's health. The investigation found a lack of regulations, established objectives and FSP content requirements related to cumulative effects. Despite this, the 2020 FREP and 2021 CE reports can support licensees in addressing cumulative effects.

The investigation did not determine whether harvesting large and large-aggregate cutblocks negatively impacted hydrology. However, it found that licensees were harvesting large cutblocks in at-risk watersheds, which may elevate the risk of hydrological impacts.

Finally, the investigation found that licensees complied with planning requirements in scenic areas but did not ensure the planning requirements would be met for 1 out of 39 cutblocks in the UWR.

Appendix 1 – Cutblocks Examined, By Licensee

TABLE 6. Licensees' Licences and Number of Cutblocks Examined

LICENSEE	LICENCE	# OF LARGE CUTBLOCKS	# OF LARGE-AGGREGATE CUTBLOCKS
BC Timber Sales – Kootenay Business Area	Various TSLs	28	9
Interfor Corporation	A18969	24	38
Interfor Corporation	TFL8	5	1
NK'MIP Forestry LLP	A91829	4	0
Osoyoos Indian Band	A93051	1	0
Tolko Industries Ltd.	A18667	2	4
Tolko Industries Ltd.	A18672	1	5
Tolko Industries Ltd.	A74912	3	12
Tolko Industries Ltd.	A96465	1	2
West Boundary Community Forest Inc	K4E	2	0
Weyerhaeuser Company Limited	A18674	10	11
Weyerhaeuser Company Limited	A18970	6	0
7	**12**	**87**	**82**

Appendix 2 – Relevant Legal Requirements

Legislation

Forest and Range Practices Act

Division 2 — Site Plans

Site plans for cutblocks and roads

10(1) Except in prescribed circumstances, the holder of a forest stewardship plan must prepare a site plan in accordance with prescribed requirements for any

(a) cutblock before the start of timber harvesting on the cutblock, and

(b) road before the start of timber harvesting related to the road's construction.

(2) A site plan must

(a) identify the approximate locations of cutblocks and roads,

(b) be consistent with the forest stewardship plan, this Act and the regulations, and

(c) identify how the intended results or strategies described in the forest stewardship plan apply to the site.

(3) A site plan may apply to one or more cutblocks and roads whether within the area of one or more forest stewardship plans.

Forest Planning and Practices Regulation

Division 5 — Biodiversity

Maximum cutblock size

64(1) If an agreement holder other than a holder of a minor tenure harvests timber in a cutblock, the holder must ensure that the size of the net area to be reforested for the cutblock does not exceed

(a) 40 hectares for areas located in the Kootenay Boundary Forest Region, South Coast Forest Region, Thompson Okanagan Forest Region or West Coast Forest Region, as established by the Administrative Boundaries Regulation, and

(b) 60 hectares for areas located in the Cariboo Forest Region, Northeast Forest Region, Omineca Forest Region or Skeena Forest Region, as established by the Administrative Boundaries Regulation.

(2) Subsection (1) does not apply to an agreement holder where

(a) timber harvesting

(i) is being carried out on the cutblock

(A) to recover timber damaged by fire, insect infestation, wind or other similar events, or

(B) for sanitation treatments, or

(ii) is designed to be consistent with the structural characteristics and the temporal and spatial distribution of an opening that would result from a natural disturbance, and

(b) the holder ensures, to the extent practicable, that the structural characteristics of the cutblock after timber harvesting has been substantially completed resemble an opening that would result from a natural disturbance.

(3) Subsection (1) does not apply if the timber harvesting that is being carried out on the cutblock retains 40% or more of basal area of the stand that was on the cutblock before timber harvesting.

(4) Subsection (1) does not apply if no point within the net area to be reforested is

(a) more than two tree lengths from either

(i) the cutblock boundary, or

(ii) a group of trees reserved from harvesting that is greater than or equal to 0.25 ha in size, or

(b) more than one tree length from a group of trees reserved from timber harvesting that is less than 0.25 ha in size.

Harvesting adjacent to another cutblock

65(1) In this section:

"adjacent" means an area that is sufficiently close to a cutblock that, due to its location, could directly impact on, or be impacted by, a forest practice carried out within the cutblock;

"existing cutblock" means a cutblock that was previously harvested under an agreement other than a minor tenure;

"new cutblock" means a cutblock on which harvesting has not yet started and that is adjacent to an existing cutblock;

"non-conforming portion" means an area within an existing cutblock on which the stocking and height requirements of subsection (3) have not been met.

(2) An agreement holder other than a holder of a minor tenure must not harvest timber on a new cutblock, unless

(a) all existing cutblocks that are adjacent to the new cutblock meet the requirements set out in subsection (3), or

(b) the combined area of the new cutblock and any non-conforming portions that are immediately adjacent to the new cutblock does not exceed the requirements relating to cutblock size set out in section 64 (1) *[maximum cutblock size]*.

(3) For the purpose of subsection (2) (a), an existing cutblock must meet the criteria set out in one of the following paragraphs:

(a) at least 75% of the net area to be reforested of the existing cutblock is stocked such that the average height of the tallest 10% of the trees on the area is a minimum of 3 m and

(i) is stocked in accordance with the applicable stocking standards, as described under section 16 *[stocking standards]*,
(ii) if the area is on the Coast, other than the Nass timber supply area, is stocked with at least 500 trees/ha of a commercially valuable species that are at least 1.3 m in height, or
(iii) if the area is in the Interior or in the Nass timber supply area, is stocked with at least 700 trees/ha of a commercially valuable species that are at least 1.3 m in height;

(b) the part of the net area to be reforested of the existing cutblock that is closest to the new cutblock
(i) must be at least half of the net area to be reforested,
(ii) is stocked such that the average height of the tallest 10% of the trees on the area is a minimum of 3 m, and
(iii) is stocked
(A) in accordance with the applicable stocking standards for that cutblock, as described under section 16,
(B) if the area is on the Coast, other than the Nass timber supply area, with at least 500 trees/ha of a commercially valuable species that are at least 1.3 m in height, or
(C) if the area is in the Interior or in the Nass timber supply area, with at least 700 trees/ha of a commercially valuable species that are at least 1.3 m in height.

(4) Subsection (2) does not apply if section 64 (2), (3) or (4) apply to the new cutblock.

FPPR Part 1 — Interpretation

Categories of visually altered forest landscape

1.1 For the purposes of paragraph (c) of the definition of "altered forest landscape" in section 1, the following categories are prescribed, each according to the extent of alteration resulting from the size, shape and location of cutblocks and roads:

(a) *preservation*: consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is
(i) very small in scale, and
(ii) not easily distinguishable from the pre-harvest landscape;

(b) *retention*: consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is
(i) difficult to see,
(ii) small in scale, and
(iii) natural in appearance;

(c) *partial retention*: consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is
(i) easy to see,
(ii) small to medium in scale, and
(iii) natural and not rectilinear or geometric in shape;

(d) *modification*: consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint,

(i) is very easy to see, and

(ii) is

(A) large in scale and natural in its appearance, or

(B) small to medium in scale but with some angular characteristics;

(e) *maximum modification*: consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint,

(i) is very easy to see, and

(ii) is

(A) very large in scale,

(B) rectilinear and geometric in shape, or

(C) both.

FPPR Part 2 — Forest Stewardship Plans

Division 1 — Content (Objectives)

Objectives set by government for visual quality (Okanagan Shuswap District only)

9.2 (1)In this section:

"scenic area" means an area of land established as a scenic area under the *Forest Practices Code of British Columbia Act* on or before October 24, 2002 and continued as a scenic area under section 180 (c) of the Act;

"visual sensitivity class" means a visual sensitivity class established on or before October 24, 2002, particulars of which are publicly available in the Land and Resource Data Warehouse maintained by the minister responsible for the *Land Act*.

(2) The objective set by government in relation to visual quality for a scenic area, that

(a) was established on or before October 24, 2002, and

(b) for which there is no visual quality objective

is to ensure that the altered forest landscape for the scenic area

(c) in visual sensitivity class 1 is in either the preservation or retention category,

(d) in visual sensitivity class 2 is in either the retention or partial retention category,

(e) in visual sensitivity class 3 is in either the partial retention or modification category,

(f) in visual sensitivity class 4 is in either the partial retention or modification category, and

(g) in visual sensitivity class 5 is in either the modification or maximum modification category.

Government Actions Regulation Orders

Order for the Establishment of Visual Quality Objectives and Scenic Area for the Arrow Boundary Forest District (2005)

Order – Ungulate Winter Range #U-8-008

FSP Commitments

Example of an FSP Result or Strategy

When constructing a road or when exercising timber harvesting rights under this FSP within areas having established Visual Quality Objectives (VQO), the agreement holder will meet the VQO at the completion of harvesting or road building by implementing the following strategies:

1. Prior to authorization of primary forest activities, ensure a QP [qualified professional] carries out a Visual Impact Assessment (VIA), and designs cutblocks and roads such that the visual alteration on the ground is consistent with the applicable category that corresponds to the VQO described in FPPR sec 1.1 Categories of Visually Altered Forest Landscapes, by Page 48 of 182
   a) assessing the proposed visual alteration from one or more significant public viewpoints, located on water or land, that provides a viewing opportunity and has relevance to the landscape being assessed; and
   b) utilizing the guidance for predicting VQOs in:
      i. FRPA Visual Impact Assessment Handbook, May 2022 including Table 2 and 6; and/or
      ii. the Protocol for Visual Quality Effectiveness Evaluation Procedures and Standards, FREP, 2008; and estimating the likely resulting VQO using the descriptive categories of visually altered forest landscape as defined in FPPR Section 1.1.
2. Where road construction and/or timber harvesting is planned and may not fully meet the established VQO given the specific circumstances or conditions of a particular area, prior to entering into an agreement that authorizes the timber harvesting or road construction, the agreement holder will submit an amendment for visual results and strategies for these specific situations as appropriate, not withstanding the following section that applies to 2021 wildfires.
3. Within scenic areas where cutblock and road construction is proposed to recover timber that has been damaged, or threatened, significantly reduced in value, lost or destroyed due to the effects of the 2021 White Rock Lake Fire (K61884), Thomas Creek Fire (K51794), Two-Mile Creek Fire (K42078), or other future large-scale fires, the FSP holder will:

   a) Follow section 1 to the extent practicable by ensuring a QP carries out a Visual Impact Assessment of the altered forest landscape that will result from the cutblock harvesting or road construction, while considering the circumstances or conditions brought on by the wildfire that have impacted or damaged or threatened the timber in the scenic area; and

   b) Where a QP determines that it is not practicable to be consistent with scale and acuity attributes of the established VQOs when recovering the damaged timber, the QP is to ensure to the extent practicable, within each VLI [Visual Landscape Inventory] polygon, that the altered forest landscape that results from the cutblock harvesting or road construction:

      i. Is natural in appearance, and not rectilinear or geometric in shape, and

ii. Does not exceed the levels of scale and acuity that are specified in Table 4.13.1.
iii. Additional FDUs [Forest Development Units], wildfires and VLI polygons may be added to table 4.13.1 as a minor amendment for approved FDUs located within the Okanagan Shuswap District (not available for the Selkirk District);
iv. Additions to Table 4.13.1 are restricted in respect to scale and acuity allowable extents of a one level increase to FPPR 1.1 categories of visually altered forest landscape as a minor amendment.

Appendix 3 – Licensees' Processes and Procedures to Meet Government Expectations

Licensees employ other processes and procedures to help ensure activities are consistent with government expectations. Examples of processes and procedures are:

1. Include objectives set by government in FSPs and establish results or strategies, including cutblock size, visual, water, and wildlife resources prescribing practices in site plans intended to achieve the objectives.
2. Adopt the KBHLPO green-up criteria and patch size and distribution requirements in site plans and FSPs.
3. Use procedures to ensure expectations have been identified and addressed, including EMS [Environmental Monitoring System] checklists and other certification systems, internal and peer audits, contractor briefings, site inspections, management reviews, green-up decision matrices, and GIS and other tracking systems to identify and track obligations.
4. Keep up to date with evolving requirements through training, meetings, referrals, and consultation with stakeholders, local government, and other licensees, participating in the Higher-Level Plan Order Suite,[ix] and checking government database updates.
5. Track expectations by including them in planning documents and checklists, conducting certification audits, completing, reviewing, and revising planning route cards, and using a forest management system to view and track site-level obligations.
6. Use qualified professionals to complete resource assessments to an expected standard.
7. Coordinate planning and activities with other stakeholders by participating in the Higher-Level Plan Order Suite, establishing multi-licensee partnerships, and sharing information annually with other licensees to address cumulative effects.
8. Gauge success in meeting objectives by conducting certification audits, comparing performance with FREP results, monitoring and evaluating past harvesting, and obtaining feedback from stakeholders, communities, and First Nations.
9. Follow up on commitments through meetings with stakeholders, organizations, and individuals who have expressed concerns.

Endnotes

[i] The 2020 Forest Health Strategy's area of interest was the Boundary Timber Supply Area (TSA). [cited 2023 October 20].
[ii] Winkler, R.; S. Boon. 2017. Equivalent clearcut area as an indicator of hydrologic change in snow-dominated watersheds of southern British Columbia. B.C. Ministry of Forests, Lands and Natural Resource Operations; Extension Note 118. [cited 2023 October 20].
[iii] FREP Report #41. Watershed Assessments in the Kootenay-Boundary Region. Ministry of Forests, Lands, Natural Resource Operations and Rural Development [cited 2023 October 20].
[iv] Van Rensen, C.; N.N. Neumann; V. Young. 2021. 2019 Analysis of the Kettle River Watershed: Streamflow and Sedimentation Hazards. Ministry of Forests, Lands, Natural Resource Operations and Rural Development [cited 2023 October 20].
[v] The investigation considered separating recovery for insect infestation from sanitation treatments since section 64(2) of the FPPR distinguishes between the two. However, licensees often combined both in a manner that was difficult to separate.
[vi] Freshwater Atlas Assessment Watersheds. BC Data Catalogue [cited 2023 October 20].
[vii] While most cutblocks fall within a single sub-watershed, some cutblocks span two of them.
[viii] The relevant Government Actions Regulation orders are U-8-006, U-8-007, U-8-008.
[ix] The Kootenay-Boundary Higher Level Plan Order Reporting Suite; [cited 2023 October 20].

PO Box 9905 Stn Prov Govt
Victoria, BC V8X 9R1 Canada
Tel. 250.213.4700 | Fax 250.213.4725 | Toll Free 1.800.994.5899
EGBC Permit to Practice #1001000

For more information on the Board, please visit our website at: https://www.bcfpb.ca