Standards Document

SBP-endorsed Regional Risk Assessment for the Province of British Columbia, Canada

Sustainable Biomass Program
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In the case of inconsistency between translations, the official English language version shall always take precedence.

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Statement of Scope

Figure 1: Supply Base Area Map – Forested Areas (Source: RRA-BC 2020) provides map of the forested land within the province of BC.

Feedstock certified at the forest level through FSC® or PEFC-endorsed schemes such as SFI® and CSA® is considered SBP-compliant which represent a significant portion of the public and private forest lands in British Columbia as presented in Section 2.8 Forest Certification. Maps of certified Crown land are provided in

Figure 12: Crown Land Area-based Tenures & Certified Hectares (Source: RRA-BC 2021) and Figure 13: Crown Land Volume-based Tenures & Certified Gradient (Source: RRA-BC 2021).

Uncertified feedstock must be evaluated using a risk-based approach if it is to count towards an SBP-compliant claim.

The RRA-BC scope is the uncertified harvestable forest land base of BC.

Abbreviations and Acronyms

AAC: Allowable Annual Cut
ABCPF: Association of BC Professional Foresters
ABSA: Atmospheric Benefit Sharing Agreements
ADM: Assistant deputy Minister
AG: Auditor General
AMP: Access Management Plan
AOA: Archaeological Overview Assessment
BCTP: BC Treaty Process
BCTS: BC Timber Sales
BEC: Biogeoclimatic Ecosystem Classification
CEB/C&E: Compliance and Enforcement Branch (FLNRORD)
CDC: British Columbia Conservation Data Centre
CFLB: Crown Forest Landbase
CFIA: Canadian Food Inspection Agency
CHR: Cultural Heritage Resource
CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora
COC: Chain of custody
CORE: Committee on Resources and the Environment
COSEWIC: Committee on the Status of Endangered Wildlife in Canada
CPD: Continuing Professional Development
CSA: Canadian Standards Association
CWD: Coarse Woody Debris
CWS: Canadian Wildlife Services
DPA: Development Permit Area
ECCC: Ministry of Environment and Climate Change Canada (National)
FA: Forest Act
FAO: Forest and Agriculture Organization
FFT: Forests for Tomorrow
FHR: Functioning at high risk
FLNRORD: Ministry of Forest, Lands, Natural Resource Operations & Rural Development
FMU: Forest Management Unit
FPPR: Forest Planning and Practices Regulation
FPB: Forest Practices Board
FPC: Forest Practices Code
FPIC: Free, Prior and Informed Consent
FREP: Forest and Range Evaluation Program
FRPA: Forest and Range Practices Act
FSP: Forest Stewardship Plan
FSC: Forest Stewardship Council
GAR: Government Actions Regulation
GeoBC: Geomatics BC
GFWI: Global Forest Watch International
GHG: Greenhouse gas
GSI: Global Slave Index
HBS: Harvest Billing System

HCA: Heritage Conservation Act
HCV: High Conservation Values
IFL: intact forest landscapes
ILO: International Labour Organization
IPM: Integrated Pest Management
IPMA: Integrated Pest Management Act
IRPA: Immigration and Refugee Protection Act
ISO: International Organization for Standardization
ITUC: International Trade Union Confederation
LRMP: Land and Resource Management Plan
MECCS: Ministry of Environment & Climate Change Strategy (Provincial)
MFC: Managed Forest Council
MPB: Mountain Pine Beetle
NAR: Net Area to be Reforested
NEPCon: Nature Economy and People Connected
NPF: Not properly functioning
NRA: National Risk Assessment of the FSC for Canada
NRCAN: Natural Resources Canada
OBSCR: Open Burning Smoke Control Regulation
OGMA: Old Growth Management Area
OHSR: Occupational Health and Safety Regulation
PEFC: Programme for the Endorsement of Forest Certification
PMFL: Private Managed Forest Land
PMFLA: Private Managed Forest Land Act
PMFLR: Private Managed Forest Land Regulation
PMP: Pest management Plan
RAPP: Report All Poachers and Polluters
RPF: Registered Professional Forester
RPFT: Registered Professional Forester in Training
RRA: Regional Risk Assessment
SAR: Species at Risk
SARA: Species at Risk Act
SBA: Supply Base Area
SBE: Supply Base Evaluation
SBP: Sustainable Biomass Program
SLRP: Strategic Land and Resource Plan
SLRMP: Strategic Land and Resource Management Plan
SOF; State of the Forest
TFL: Tree Farm License
TSA: Timber Supply Area
TSR: Timber Supply Review
UN: United Nations
UNDRIP: United Nations Declaration on the Rights of Indigenous Peoples
WAPPRIITA: Wild Animal & Plant Protection and Regulation of International and Interprovincial Trade Act
WB: Working Body
WLPPR: Woodlot License Planning and Practices Regulation
WPAC: Wood Pellet Association of Canada

WRI: World Resources Institute
WSA: Water Sustainability Act
WSBC: WorkSafe BC
WTO: World Trade Organization
WWF: World Wildlife Fund

Foreword

The Sustainable Biomass Program (SBP) endorsed Regional Risk Assessments (RRAs) are a key component of SBP's focus on identifying and mitigating risks associated with sustainably and legally sourcing feedstock for biomass pellet and wood chip production. The SBP Framework is designed to provide assurance that feedstock is sourced legally and sustainably.

The purpose of an SBP-endorsed RRA is to evaluate an entire geographic region and determine the risks associated with sourcing feedstock for biomass pellet or wood chip production from that region. The SBP Regional Risk Assessment (RRA) Procedure Version 1.1 specifies the requirements and processes that must be followed in order to develop and endorse SBP risk assessments of regions or countries. The SBP RRA procedure requires active engagement with a diverse range of stakeholders in the region.

Chain-of-Custody (CoC) certification for forest products processing companies in British Columbia is common. Third party CoC certification allows certificate holders to demonstrate the sustainable, responsible nature of their wood fibre supply. It verifies that the companies control the origin of their wood fibre basket and that the certified products they market do not contain wood from controversial sources. Feedstock certified at the forest level through FSC® or PEFC-endorsed schemes such as SFI® and CSA® is considered SBP-compliant which represent a significant portion of the public and private forest lands in British Columbia. Uncertified feedstock must be evaluated using a risk-based approach if it is to count towards an SBP-compliant claim. The RRA-BC scope is the uncertified harvestable forest land base of BC.

The Wood Pellet Association of Canada (WPAC) initiated the RRA for the province of British Columbia (BC) in 2018 to verify the legality and sustainability of uncertified feedstock. Hopkin Forest Management Consulting Ltd. and a team of independent natural resource and certification professionals formed the Working Body (WB).

The WB facilitated the risk assessment to ensure that relevant BC laws and policies and practices, as well as practical knowledge of forestry, in BC were accurately captured in the RRA. Important information included interviews with experts and the experience and knowledge of consultants, applicable legislation, reports from Provincial authorities and other stakeholders, various databases and statistical data sources. Information was obtained from Provincial authorities, such as the BC Forests, Lands, Natural Resource Operations and Rural Development, Wildlife and Parks, the BC Ministry of the Environment and federal authorities such as the Canadian Forest Service of Natural Resources Canada and Environment Canada. Many stakeholders were consulted in the process and information was obtained verbally and from written public and private sources.

1 Introduction

A Regional Risk Assessment (RRA) is a way to identify and confirm the risks associated with sourcing uncertified feedstock. The scope of this RRA is fibre sourced from uncertified forested land-bases in the province of British Columbia. The RRA-BC was completed in accordance with the following:

- SBP Standard 1: Feedstock Compliance Standard, v1.0, March 2015
- SBP Regional Risk Assessment Procedure, v1.1, May 2017

SBP Standard 1 states the globally applicable legality and sustainability Indicators that must be evaluated. The 38 Indicators cover a range of ecological, social and economic requirements that must be evaluated within the scope of the Supply Base Area (SBA). The SBA for this RRA is the province of British Columbia. The SBP RRA Procedures outline the requirements to complete a Regional Risk Assessment.

Section 2 of this report provides the scope and regional background for the SBA for RRA-BC. This section is to help set the *context* of the bio-physical, social and economic values in the province of British Columbia. The requirement documents listed above require each Indicator to be evaluated as a single indicator. Often some of these indicators are inter-related and/or complex. The Working Body has provided more detailed for this section then has been observed for other approved RRAs to (1) provide clarity of interconnection and (2) reduce repetition of evidence. This section is provided to assist with the evaluation of the individual 38 Indicators (Annex 1: Detailed findings for indicators).

The methodology for the RRA-BC as implemented by the BC Working Body is described in Section 3. The Working Body has developed a rigorous and objective process in attempt to simplify both the evaluation process and the comprehension of the conclusions for each of the 38 Indicators. Prior to reviewing the Indicators, the Working Body requests that the reader reviews the Methodology (Section 3) to understand the logic for information collection, evaluation and the rationale for the final risk designation.

As required by the SBP RRA Procedures, the draft RRA-BC was made available for Stakeholder Consultation. The Working Body approach to Stakeholder Consultation is discussed in Section 4. In addition, Annex 5: Stakeholder consultation report, as required by the RRA Procedures is provided. The Stakeholder Consultation Report provides the stakeholder comments, as well as the Working Body's response, including the applicable changes to the indicator finding and/or the risk designation.

Section 5 of the RRA-BC providrores the conclusion to the risk assessment process with Table 19: Risk Designation Summary and the details being described in Annex 1: Detailed findings for indicators.

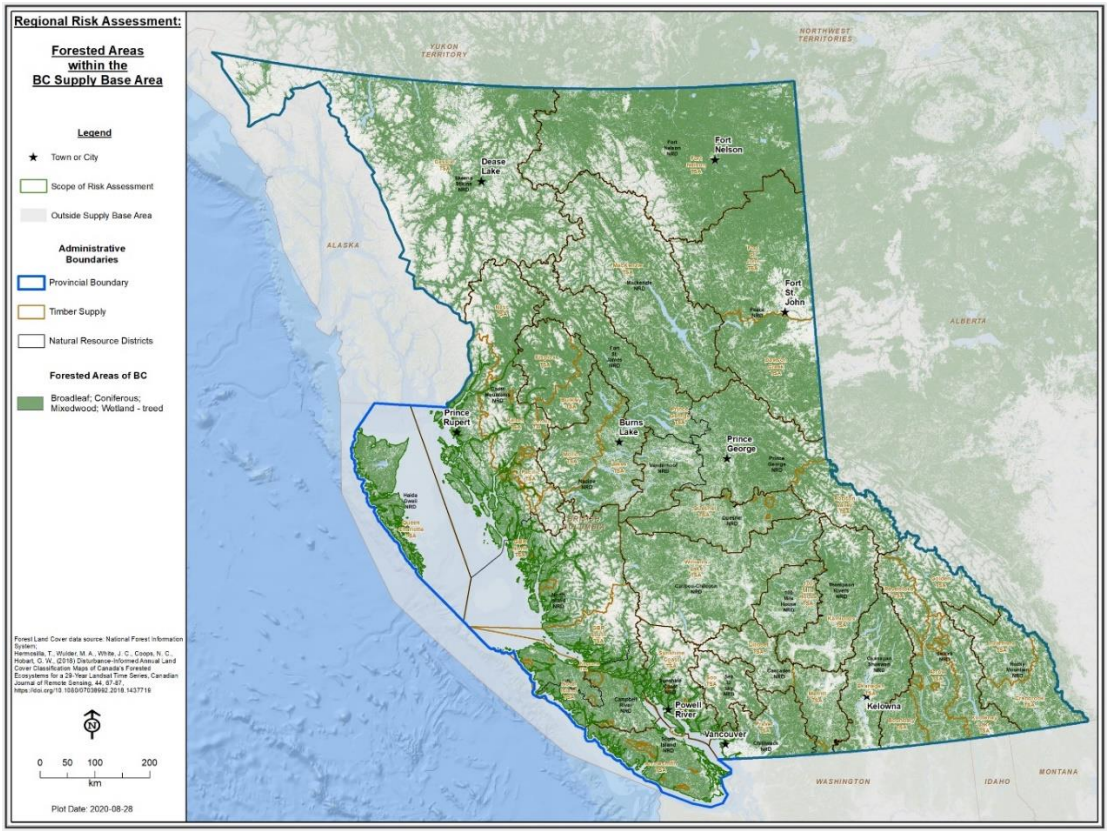
Once the RRA-BC is endorsed by SBP, each Biomass Producer (BP) must use the results of the RRA-BC to complete a Supply Base Evaluation (SBE). The SBE is to demonstrate the BP's compliance with its findings and implement mitigation measures to manage any specified risks such that the risks can be controlled. It is the role of an independent, accredited third-party Certification Body, to verify that the SBE has been correctly undertaken and that any mitigation measures are being effectively implemented. Guidance on mitigation measures is provided in Section 3.4 – Mitigation Measures.

2 Scope and Regional Background

2.1 Overview Description

British Columbia's landbase is 95 million hectares in size (almost 946,460 sq. km); it spans 11 degrees of latitude and 25 degrees of longitude. It is about 1300 km from the southern coast of Vancouver Island to the northern boundary at 60˚N and, along this latitude, the boundary with the Yukon and the Northwest Territories stretches almost 1100 km. Almost 62% of the province – about 60 million hectares is covered by forests[1]. Eighty-three percent[2] of the province's forests are composed of softwood species, consisting of the following commercial species: lodgepole pine, subalpine fir, white and Engelmann spruce, subalpine, grand and pacific silver fir, Sitka spruce, western red cedar, Douglas fir and western hemlock. Hardwoods primarily consist of aspen and birch with maple, alder and oak present in coastal areas.

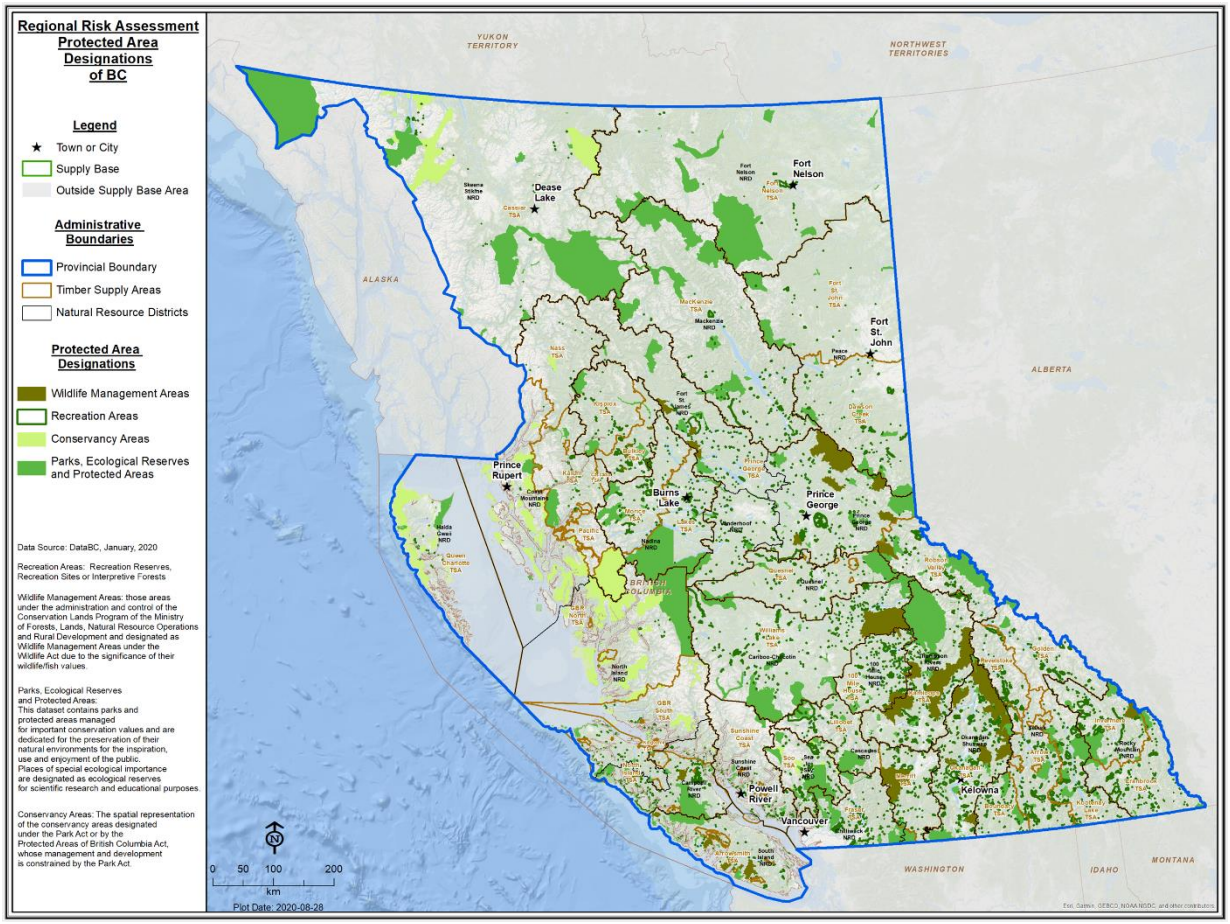
Figure 1: Supply Base Area Map – Forested Areas (Source: RRA-BC 2020)



[1] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/forest-analysis-inventory/tsr-annual-allowable-cut/tsr_backgrounder2.pdf (2017)
[2] https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/sof_2010.pdf

14.1 million ha (14.8%) of BC is protected in parks and other types of protected areas. Additional protection is provided through special management zones. 7.6 million ha or 14% of BC forests are encompassed in these protected areas.[3]

Figure 2: Protected Areas (Source: RRA-BC 2020)



Protected area designations (

Table 1) afford legal protection to many of the significant natural, recreational and cultural features in BC. The term “protected area” can indicate varying levels of protection: from complete restriction of human access to identifying allowable resource use activities that are compatible with conservation and recreation objectives.

[3] https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/sof_2010.pdf

Table 1: Types of Protected Areas Designations (Source: Crown Land: Indicator & Statistics Report (2010))

Designation	Purpose	Level of Protection
Ecological Reserves *(Ecological Reserve Act)*	Reserve Crown land for ecological purposes. May include: areas that are representative examples of BC's natural ecosystems; or rare or endangered native plants and animals that rely on natural habitats.	All extractive activities (e.g. tree cutting, hunting, fishing, mining) are prohibited. This designation offers the highest level of protection and is least subject to human influence.
Provincial Parks *(Park Act)*	Protect representative examples of BC's environment, including: rare, endangered, or sensitive species or habitats; unique or outstanding features; or, areas for scientific research and education.	Class A parks – park use permits not issued unless necessary to preserve or maintain recreational values. Class B parks – park use permits not issued for an interest in land or natural resources unless the activity is not detrimental to recreational values of the park. Class C parks – requirements for management are identical to Class A parks.
Protected Areas *(Environment and Land Use Act)*	Protect representative examples of terrestrial and marine diversity, recreational and cultural heritage.	Site-specific management direction.
Conservancies *(Park Act or Protected Areas of BC Act)*	Conservancies are set aside to: • protect and maintain biological diversity and natural environments; • preserve and maintain First Nations' social, ceremonial and cultural uses; • protect and maintain recreational values; • ensure development or use of natural resources is conducted in a sustainable manner.	Park use permits are only issued if the use or activity will not hinder, restrict, prevent or inhibit the development, improvement or use in accordance with the purposes for which it was set aside. Commercial logging, mining and hydroelectric power generation (other than local run-of-the-river projects) are prohibited.
Recreation Areas *(Park Act)*	Reserve land for public recreational use.	Greater discretion in issuing park use permits than in provincial parks designations.
Wildlife Management Areas *(Wildlife Act)*	Reserve land to conserve and manage critical habitat for the benefit of regionally, nationally and internationally significant fish and wildlife species.	Allowable activities are outlined within an applicable legal agreement (e.g. a lease), strategic plan, or other management plan. Sustainable resource development is sometimes accommodated, and for this reason, WMAs are sometimes not considered to be part of the formal "protected areas".

Source: *Environmental Trends in British Columbia, 2007*

Ministry of Environment and Climate Change Strategy (ECCS) is responsible for the effective protection, management and conservation of BC's water, land, air and living resources. It oversees the province's protected areas network, as authorized under several pieces of legislation. The *Parks Act* provides for the establishment, classification and management of parks, conservancies and recreation areas. The Park, Conservancy and Recreation Area Regulation provides regulations around the requirement for permits; public conduct and enforcement; the use of motor vehicles, vessels and aircraft; the use of firearms for hunting and fishing; waste management; camping and picnicking; fees; and the authority of park rangers.

The *Ecological Reserve Act* provides for the establishment and administration of ecological reserves. Finally, the *Protected Areas of British Columbia Act* consolidates most of the Class A parks, conservancies and ecological reserves and ensures that the boundaries of these areas cannot be modified to remove lands except by an Act of the Legislature.

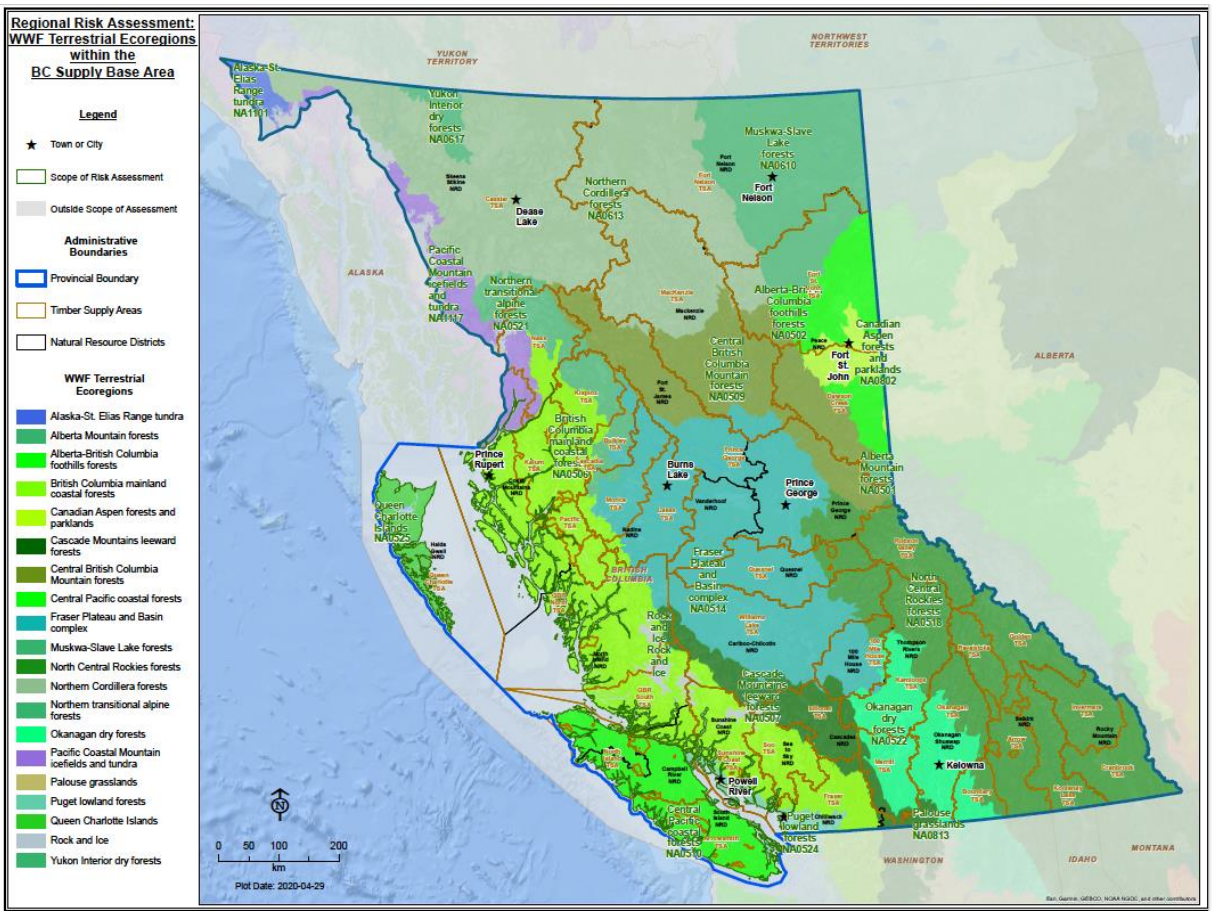
2.2 Biodiversity

British Columbia has an exceptionally wide range of geophysical and ecological conditions. As a consequence, BC has the most biodiversity rich forests in Canada. This area under evaluation includes eleven ecoregions (Figure 3) defined by the World Wildlife Fund for Nature (WWF).

More than 50,000 species (not including single-celled organisms) exist in BC, but only 3,808 of these have been assessed for their conservation status. Of the Canadian provinces and territories, BC is home to the richest diversity of vascular plants, mosses, mammals, butterflies and birds, and the largest number of endemic species of reptiles, beetles and amphibians found only in one province or territory.

BC is known to have a majority of the global range for 99 species. Of the 3,808-native species in BC for which conservation status has been assessed, 233 species (6%) are of global conservation concern and 1,640 species (43%) are of provincial conservation concern. The Provincial Government, through the BC Conservation Data Centre, identifies species of provincial concern as red-listed, which are either extirpated, endangered, or threatened and are considered to be the most at risk, or blue-listed, which are considered to be vulnerable to human activities and natural disturbance.

Figure 3: WWF Ecoregions (Source: RRA-BC 2020)

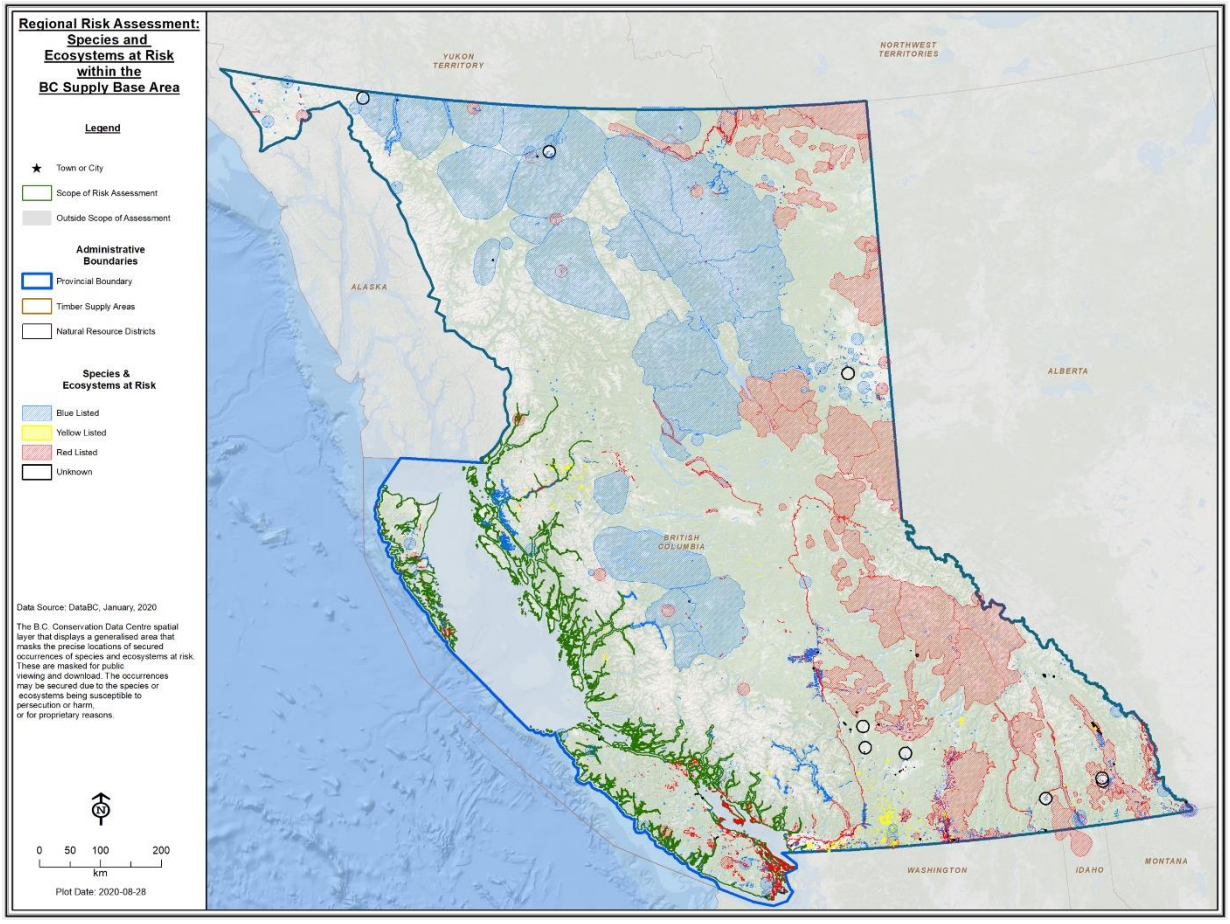


The species at risk lists identify species that need protection (Figure 4). BC is developing recovery plans for Federal and BC listed species on an ongoing basis, and the province has expanded its inventory of sensitive ecosystems, developed regional conservation strategies and provided local governments and private landowners with workshops and conservation strategies. The Federal *Species at Risk Act* only applies to federal lands within the province. British Columbia has taken steps to develop and pass its own Endangered Species law, however it has not yet been enacted.

Sustaining Biodiversity Through Forest Management

BC's rich biological diversity is important at all scales, ranging from the local to the international. The Government framework for protecting biodiversity uses both the coarse and fine filter approaches. The coarse filter is applied at the ecosystem and landscape levels and aims to manage the forest so that natural habitats and key ecological attributes are maintained at levels and distribution consistent with Natural Disturbance Regimes. The fine filter approach complements the coarse filter providing protection for critical habitat for individual species whose needs are known and not met with coarse filter practices. The fine filter is generally applied where species needs are well understood, and key ecological attributes can be identified. This is mostly applied to Federally and Provincially listed species at risk. Examples include key natal pools for Tiger salamanders, large diameter Ponderosa Pine for White-headed Woodpeckers, coastal Old Growth reserves for Marbled Murrelet, and Old Growth closed canopy for Northern Goshawk nesting.

Figure 4: Species & Ecosystems at Risk (Source: RRA-BC 2020)



For Federally listed species, Recovery Plans focus on implementation of conservation for fine filter key attributes related to critical habitat. For provincial listed species, Government uses the Identified Wildlife Strategy which identifies key habitat needs and provides policies, procedures, and mechanisms for their protection and sustenance.

This coarse and fine filter framework is implemented in forest management planning through Forest Stewardship Plans (FSPs). These are one of the key mechanisms that ensure practices as well as the organization and implementation of forest management, conserves and maintains biodiversity. The Forest Planning and Practices Regulation (FPPR) sets out eleven objectives set by government that must be included in FSPs and these include four that are directly related to biodiversity, and others that are indirectly related (e.g. fish habitat in fisheries sensitive watersheds).

Under the Forest Resources Planning Act (FRPA), the government also has the capability to issue Government Action Regulations (GARs) to protect species at risk, regionally important wildlife and ungulates. GARs are spatially defined, and there are a number of them across the province. Many of the GAR orders have been issued for mountain caribou habitat, and other winter range areas for ungulate species in general. Old growth may also be subject to provincial orders, and managers in many Crown forests are required to identify and map old growth management areas (OGMAs), which function as protected areas while some parts of the forest are subject to non-spatial OGMAs.

2.3 Indigenous People

Statistics Canada reported that the 2016 census recorded 270,585 Indigenous people[4] in BC, making up 5.9% of the population. Of the Indigenous population in British Columbia, 63.8% (172,520) were First Nations people, 33.0% (89,405) were Métis, and 0.6% (1,615) were Inuit. There are almost 200 distinct First Nations communities in BC (

Figure 5), each with their own unique traditions and history. More than 30 different First Nation languages and close to 60 dialects are spoken in the province.

British Columbia was home to numerous First Nations, both in the Interior as well as on the Coast, where the abundance of resources supported numerous communities which were very sophisticated and wealthy. Unlike most of the rest of Canada, few treaties were signed in B.C., placing most BC First Nations in a different legal situation than others in Canada, who signed historic treaties. Historic treaties in BC include the Douglas treaties, signed with First Nations on Vancouver Island, and Treaty 8 which covers

[4] Within the RRA, the terms Indigenous people and Aboriginal people may be used interchangeable depending on the source of the information: Many First Nations communities are very interested in participating in the management of forests and in the forest economy, and as one group of Indigenous peoples, they are frequently referenced in this report.

a portion of northeastern BC. One outcome of the lack of historic treaties is that many First Nations dispute the ownership of land within BC, especially Crown land, and questions related to title and ownership and the balance of rights have gone to the courts for clarification. This is a gradual process however, as courts address only the pertinent questions associated with each case and further questions are addressed only when they come up in a subsequent case.

In 1982, the Canadian government passed a revised Constitution Act, in which section 35 recognized and affirmed the aboriginal and treaty rights of Indigenous Peoples. While this overview cannot do justice to the context within which Indigenous Peoples exist in BC, there are specific instances in BC where it has been proven in court that Aboriginal Rights have not been sufficiently protected. For example, in *Haida Nation vs. British Columbia (Ministry of Forests) [2008]*, the provincial court affirmed the legal requirement that the government must consult with First Nations when there is a land claim in process and laid out the framework for the duty to consult and accommodate in such circumstances. In *Tsilhqot'in Nation v. British Columbia, [2014],* the Supreme Court of Canada found that the Tsilhqot'in Nation holds Aboriginal title to traditional territory that was used continuously, exclusively and experiences a sufficient level of occupation, giving the First Nation the right to exclusive use and occupation, as well as the right to enjoy economic benefits from the land.

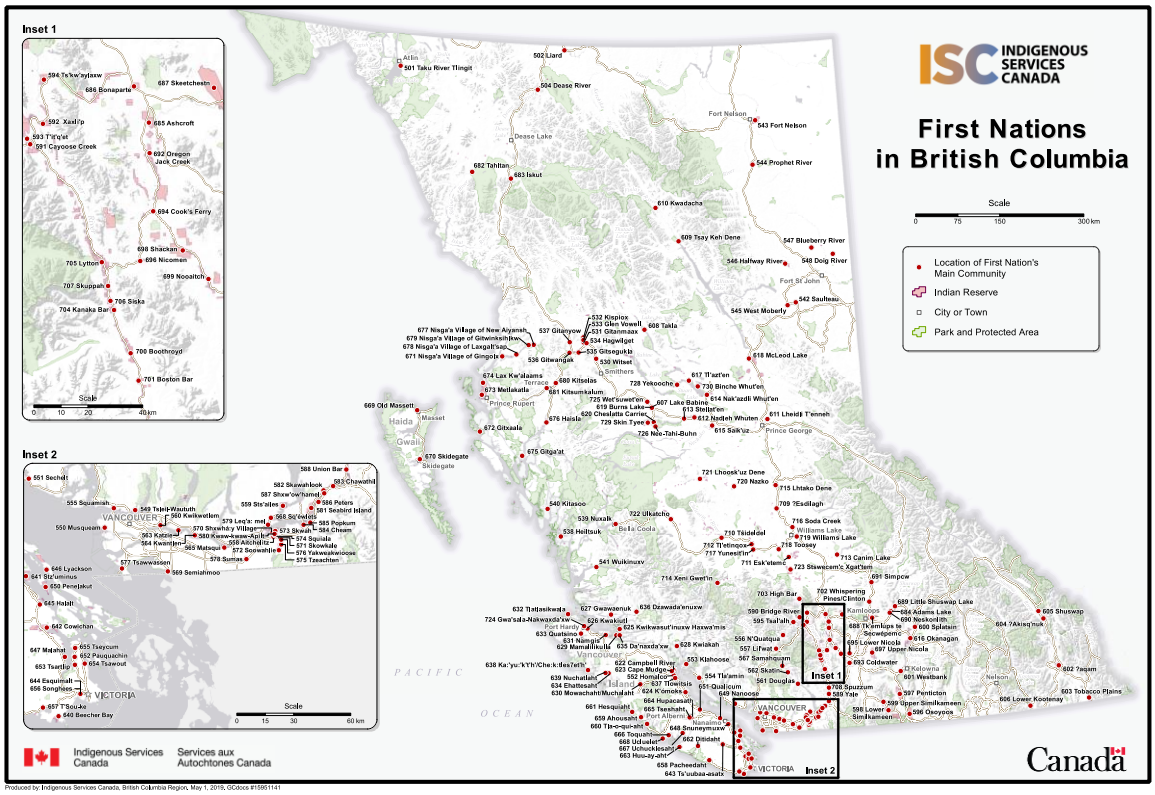
As a result of numerous court rulings over the past 30 years, changes to the Constitution, and recognition of a need to reconcile Indigenous people and their use of the land and resources with the rest of society, in 1992, the BC, Canadian and Indigenous governments agreed upon the framework for a modern treaty process. There are presently eight modern treaties in place, with the five Maa-nulth First Nations as well as the Tla'amin Nation, Tsawwassen First Nation, and the Nisga'a Nation. In addition, the courts have further affirmed rights for some First Nations, including finding that the Tsilhqot'in hold Aboriginal title to traditional territory that was used continuously, exclusively and sufficient occupation.

Forest Management and Traditional Rights

Good faith consultation, and accommodation as appropriate, with Indigenous Peoples is a necessary component of forest management on Crown Land. In addition to the overarching provincial policies, the introduction or revision of key forestry legislation requires consultation. For example, the *Forest and Range Practices Act* (FRPA) and the Forest Planning and Practices Regulation (FPPR) both provide direction regarding consultation. In 2010, the Ministry of Forest, Lands, Natural Resource Operations & Rural Development (FLNRORD) released Updated Procedures for Meeting Legal Obligations When Consulting First Nations. Requirements are changing fairly rapidly, as court cases and the drive for reconciliation take hold. Additionally, BC is the only Canadian province that has passed legislation (November 2019) committing the government to bring its laws and regulations into conformance with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). The legislation was developed in collaboration with the First Nations Leadership Council at the direction of First Nations chiefs throughout the province. The Act creates a framework for reconciliation as called for by the national Truth and Reconciliation Commission.

For many years, consideration of Indigenous peoples in forest management was limited to the conservation of cultural heritage features. These aspects continue to have a place. For example, Forest Tenure Agreements have an obligation to participate in the FRPA information sharing process with Indigenous Peoples during the development of the Forest Stewardship Plans (FSP). FSPs must identify results or strategies that address protecting cultural heritage resources.

Figure 5: First Nations in British Columbia (Source: Indigenous Services Canada)



More recently, tenure has increasingly been granted to Indigenous communities, companies, and partnerships. The *Forest Act* was amended to create a new class of tenure – the First Nations Woodland Licence. As of April 2020, 19 have been issued with a total Annual Allowable Cut of almost 800,000 m^3. In addition, other types of agreements provide First Nations with access to timber and many timber sales have been awarded to First Nations. As of 2017, 11.6% of the provincial AAC had been allocated to Indigenous entities.

Another relatively recent innovation is that the BC government has agreed to share revenue from certain carbon offset projects with First Nations. The province has entered into Atmospheric Benefit Sharing Agreements (ABSA) which enable First Nations to sell carbon credits. Specifically, these agreements clarify First Nations ownership and the right to sell tonnes of carbon in local or international carbon markets. Many of the offset projects that have been developed to support ABSA's have involved increasing the carbon balance in forests and /or reducing net emissions from forests, and the First

Nations' share of the benefits has steadily risen from approximately 50% to a level that is now close to 100%.

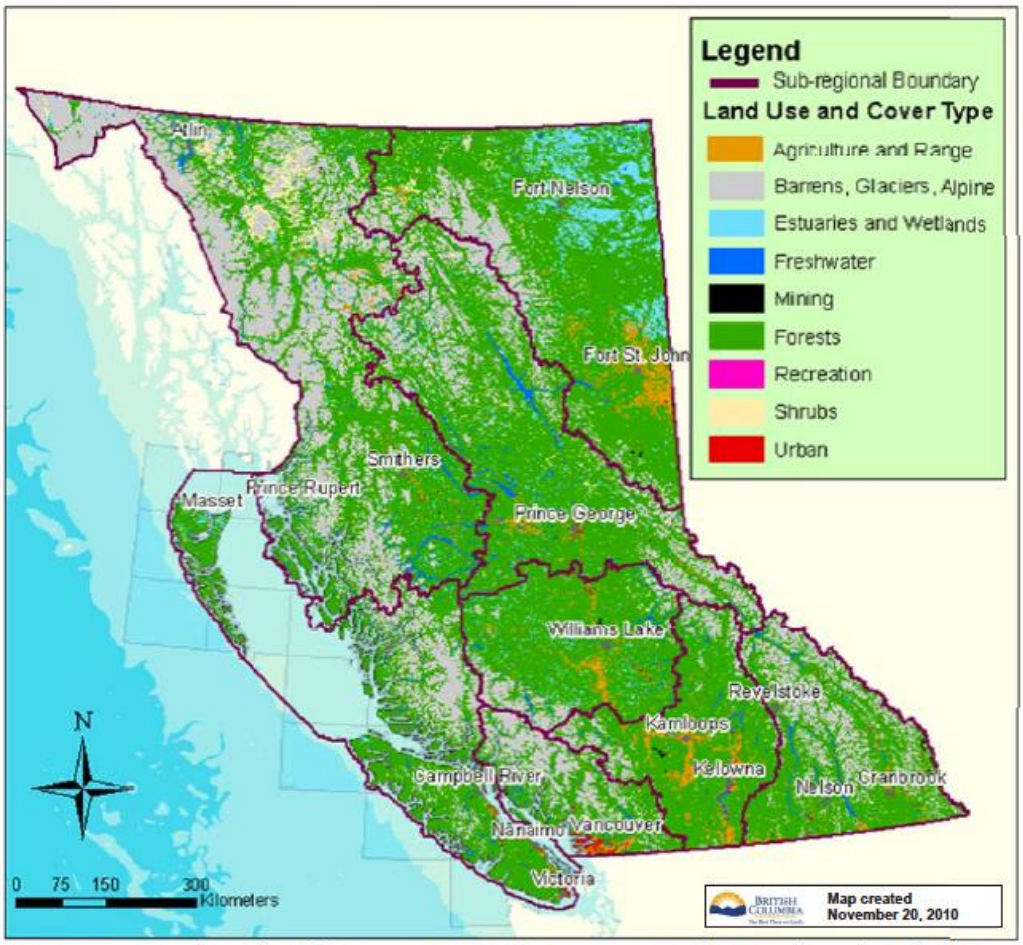
The BC government continues to advance government-to-government discussions with partner First Nations throughout the province on land use planning issues and interests. BC government is committed to modernized land use planning.

2.4 Land Use and Cover Types

Ecosystems and land cover on the BC landbase are vast and diverse: mountain tops to marine estuaries and from dense forests to grassland. Due to the varying types of ecosystems, different land use management and resource concerns need to be considered. Land use refers to the economic use, such as forestry or urban development, while land cover refers to vegetation and other features that cover the land, such as forests and water. Although the figure and numbers presented below are dated (2010), they show how the distribution of land uses and cover types varies substantially between Crown and private land.

- Forest cover makes up 67% of the Crown land base, and 22% of the private land base;
- Agriculture and range land make up 33% of private land, and less than 1% of Crown land;
- Barrens, glaciers and alpine areas primarily occur on Crown land, accounting for 25% of the Crown land base; and
- Urban areas make up 8% of the private land base, and less than 1% of the Crown land base.

Figure 6: Land Use and Cover type (Source: Crown Land: Indicator & Statistics Report (2010))



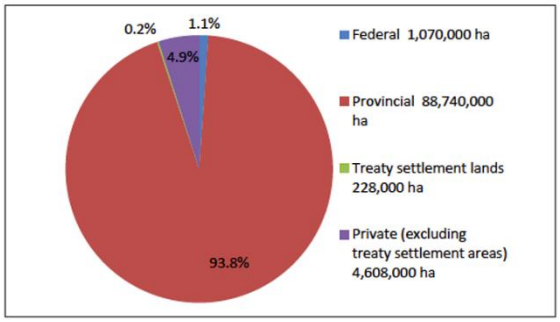
Sources: Provincial Baseline Thematic Mapping (GeoBC Geographic Warehouse); and Hectares BC

2.5 Land Ownership

There are four principal types of land ownership in BC[5]: federal Crown land (which includes Indian reserves), provincial Crown land, treaty settlement land, and private land. Land ownership patterns are generally very stable and despite the age of the data presented in Figure 7 the figures and proportions reflect the present ownership distribution. The location[6] of these broad ownership types are shown in Figure 8. A comparison of 2010 vs 2019 data is presented in Table 2.

Figure 7: Land Ownership (Source: Crown Land: Indicator & Statistics Report (2010) – Crown Land Registry)

[5] Source: Crown Land: Indicator and Statistics Report (2010)
[6] Provincial scale



Federal Lands

Federal lands are Crown lands, the administration of which has been transferred to the federal government by the provincial government. These lands are effectively owned by the federal government and, in most cases, can be sold by them. The total area of federal lands in BC is approximately 1,032,145 hectares and includes national parks, Indian reserves, and military bases.

Provincial Lands

The provincial Crown land base is 89,116,469 hectares, which constitutes approximately 94% of the BC land base. Provincial Crown land is managed by the province on behalf of, and in the best interests of, the citizens of BC. The very high level of public ownership distinguishes BC from other major timber supply regions in the world.

Treaty Settlement Lands

Treaty settlement lands are transfers of land by the provincial government to First Nations under the terms of specific treaties. As modern-day treaties are negotiated and signed, there is often a land transfer component to them. The total area of treaty settlement lands in BC is approximately 234,723 hectares.

Private Lands

Private lands are owned under fee simple title and include not only land owned by private individuals and corporations, but also lands owned by independent provincial Crown corporations and agencies, and lands owned by federal and local governments. These lands may have been granted or sold by the Province to the owners or sold by the province to the owners. The total area of private lands in BC is approximately 4,412,253 hectares (~4.7% of the provincial landbase) which includes both forested and unforested lands. There is some uncertainty concerning the exact area of private land, as well as some difficulty in mapping it. Much of this uncertainty concerns how much of the lands in some of the early Crown grants have reverted to the Crown, particularly in some of the railway grants made in the early 1900s in the Kootenays. When considered at the provincial level however, this level of uncertainty is quite small. During the course of non-aboriginal settlement, Crown land has been converted to fee simple title in approximately 100,000 primary survey divisions, which vary greatly in size.

Table 2: Ownership Types – 2010 vs 2019 Data

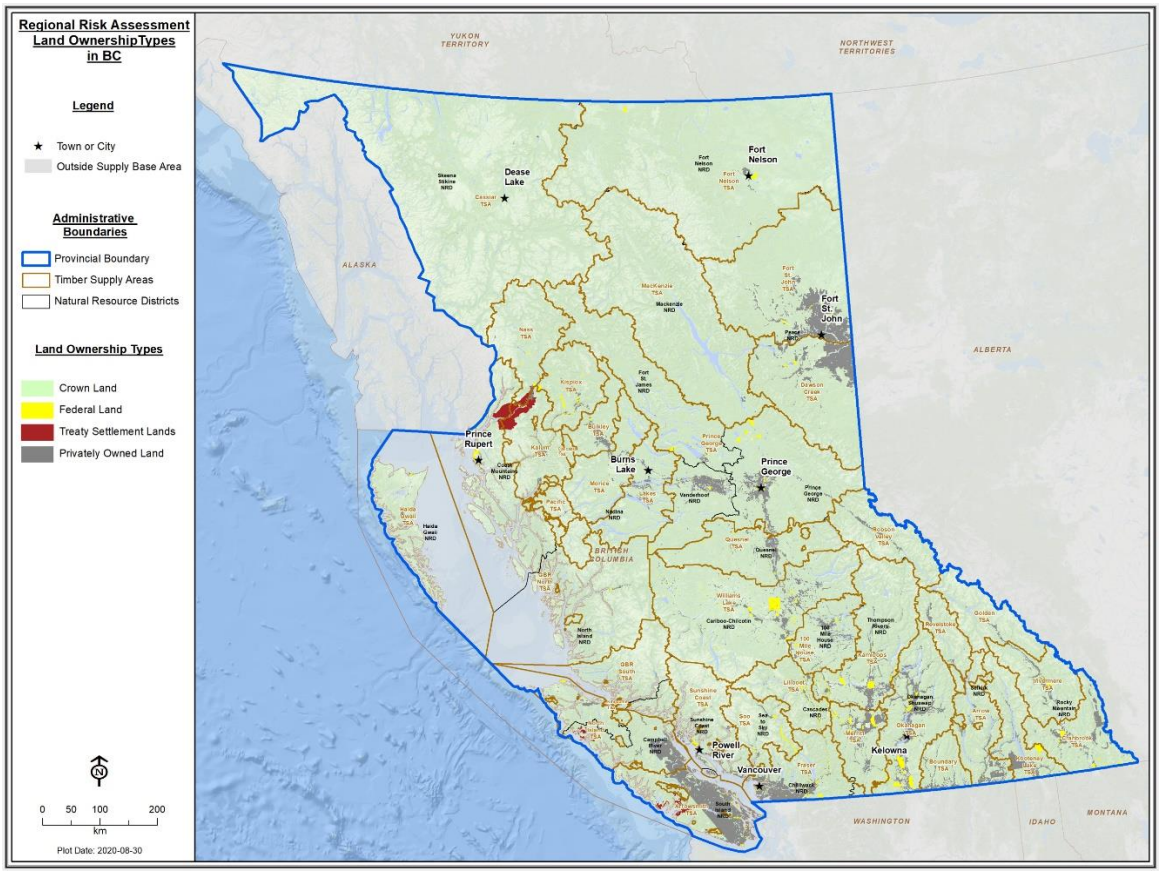
Ownership Type	2010 Data[7]	2019 Data[8]	% of 2019

[7] Crown Land: Indicators & Statistics Report, 2010. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/crown_land_indicators__statistics_report.pdf

[8] 2019 Generalized Forest Ownership data provided by DataBC

Federal Land	1,070,000 ha	1,032,145 ha	1.1%
Crown Land	88,740,000 ha	89,116,469 ha	94.0%
Treaty Settlement Land	227,000 ha	234,723 ha	0.2%
Private Land	4,608,000 ha	4,412,253 ha	4.7%

Figure 8: Ownership Types (Source: RRA-BC 2020)



2.6 Land Use Planning

Throughout BC and for decades, government has coordinated with First Nations, government agencies and stakeholders to develop and implement Strategic Land and Resource Plans (SLRPs). They are used to establish land use direction and objectives. Their aim was to provide higher level guidance on balancing social and economic benefits from land use while protecting key ecological values. The planning direction flowing from land use planning serves to inform natural resource sector decision-makers when they are making operational policy and land use decisions, including the issuing of Land Act tenures and grants.

Some of the significant outcomes of strategic land and resource planning include:

- protecting unique and important ecological and cultural values;
- increasing regional economic diversity;
- improving business investment certainty;
- resolving land-based conflicts; and,
- providing meaningful engagement to address First Nations' interests.

Strategic land and resource plans have been developed for large regions, sub-regions, or landscape unit sized areas of the province, with their scale depending on the area-specific needs. Through the planning process, the interests and needs of stakeholders are identified, land use policy direction is defined, resource management strategies and zones are developed, and legal land use objectives are established under the authority of the *Land Act*, as required.

SLRPs cover a significant portion of the province. Their focus can range from comprehensive (i.e. taking into account both the geography and resources considered in the plan area) to quite specific (e.g. focusing only on old growth retention). The variety and extent of SLRPs gives some indication of the range of policy and legal direction provided to decision-makers.

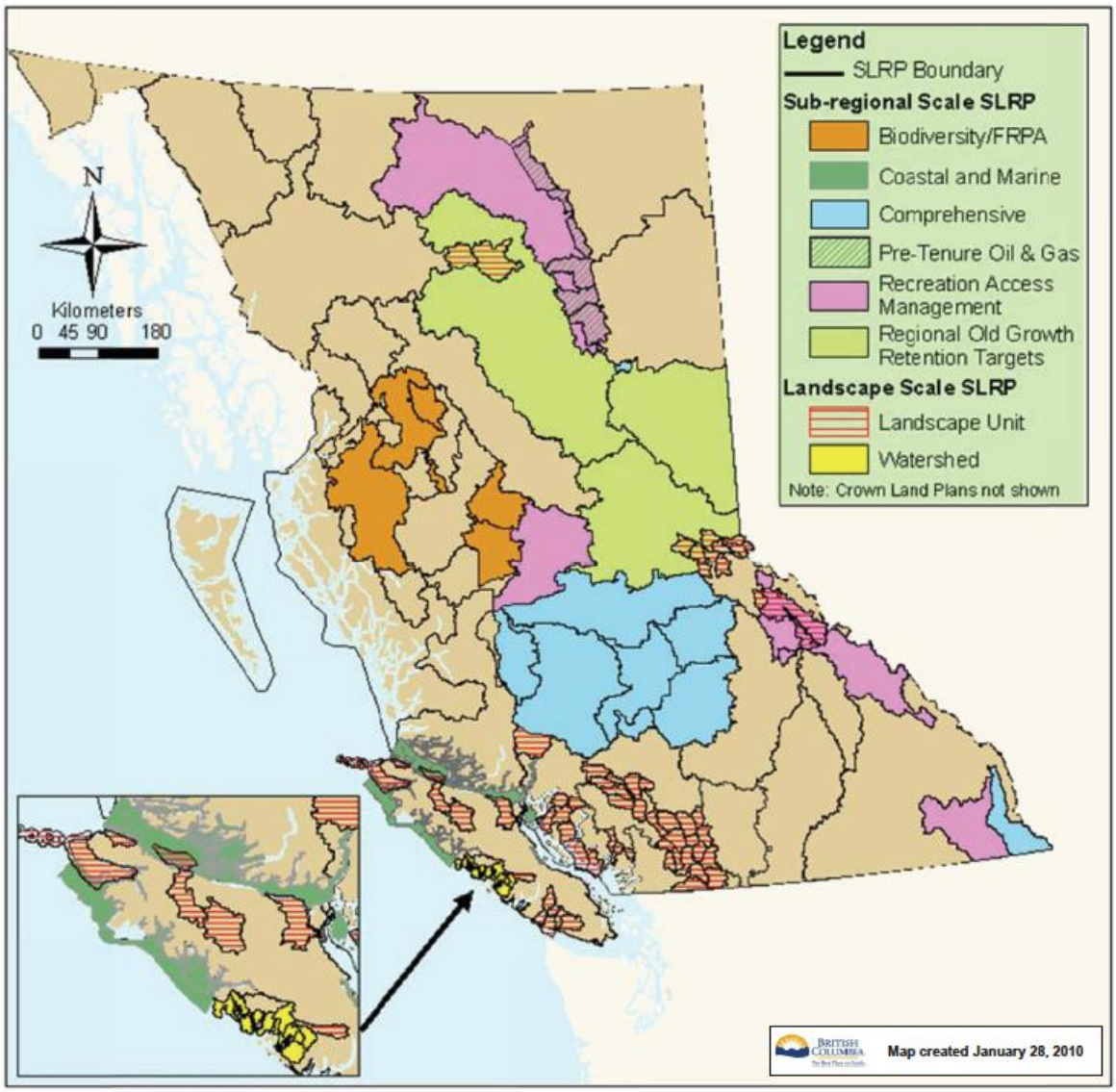
As published in the Crown Land Report (2010), there are 138 approved SLRPs in BC (Figure 9), including:

- 24 regional SLRPs that are comprehensive in scope and cover areas up to several million hectares;
- 44 sub-regional SLRPs that vary in scope and cover areas up to several thousand hectares; and,
- 70 landscape scale SLRPs that have a more focused scope and may only cover the area of a single watershed or landscape unit.

A primary outcome of strategic land and resource planning processes is land and resource-management direction that is approved as government policy but is not legally established. Frequently SLRP policy direction is in the form of zones and designations, which along with their associated goals, objectives and strategies, are used to identify priorities for the use and management of Crown land and resources. Their focus is often on areas of high ecological or economic value, or on areas with potential for conflict between users of the land and resources. For the forest sector they provided higher level guidance to forest management planners on how their local plans should fit into the strategic plans for the larger Region.

All SLRPs have some form of resource management zones or designations that identify the recommended management direction for a specific area. These resource management zones and designations can be developed for any resource value or use that is within the scope of the land use planning process.

Figure 9: Approved Sub-regional & Landscape Scale SLRPs (Source: Crown Land: Indicator & Statistics Report (2010))



Source: GeoBC Geographic Warehouse

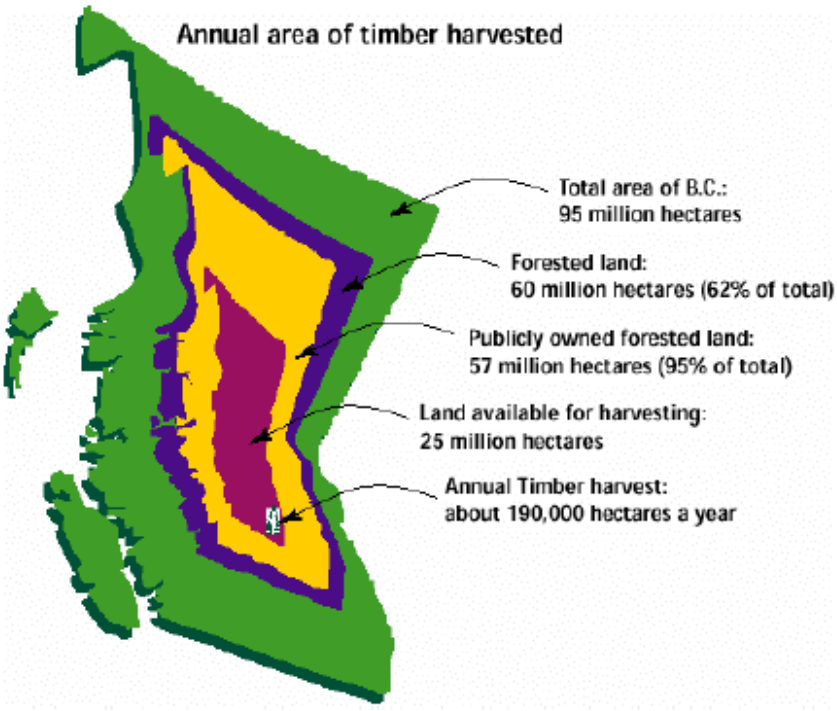
Modernize Land Use Planning

The BC government continues to advance government-to-government discussions with partner First Nations throughout the province on land use planning issues and interests. In 2018, the B.C. government committed to work collaboratively with Indigenous governments, communities, and stakeholders to modernize land use planning.

2.7 Forest Sector by Land Ownership

As cited in Section Section 2.1 – Overview Description and provided in Figure 10, forests cover about 60 million hectares (62%) of the province[9]. Of this, the province owns approximately 57 million ha of forest land, which is known as Crown land or Crown forest. Only 44% (25 million ha) of BC's Crown forest area is available for timber harvesting. Approximately 190,000 hectares (<1%) of the available Crown land forest area is harvested annually. Privately-owned forest land is roughly 3 million ha and approximately 2 million ha of that is suitable for timber harvesting[10]. Majority of timber harvesting (85%) occurs on Crown land.

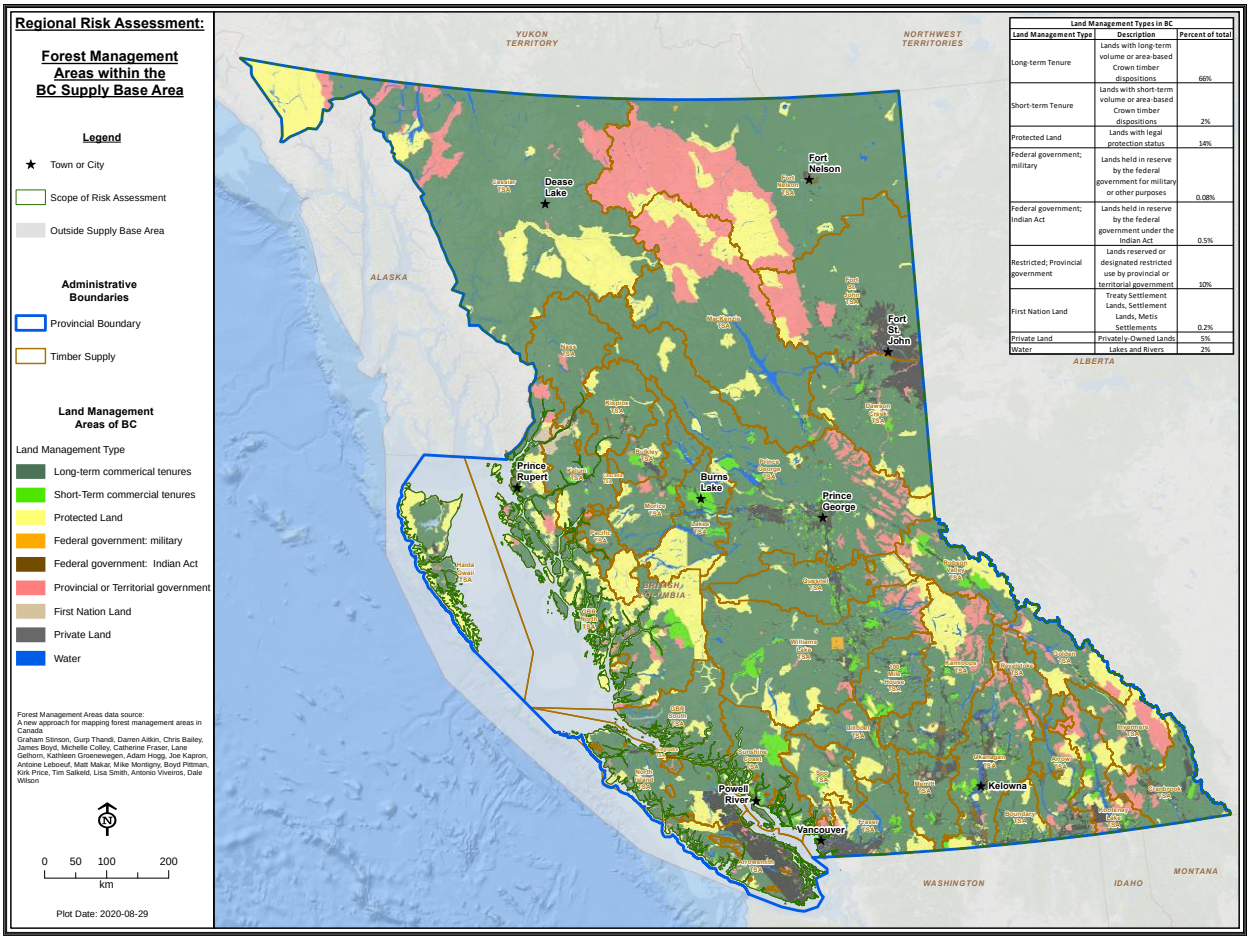
Figure 10: Provincial Forest Land Base (Source: TSR Backgrounder, Jan. 2017, FLNRORD)



Crown land forests are managed differently from privately owned forests because they have different governance, a different regulatory framework and there are different interests involved. Figure 11 shows the tenure types and distinguishes ownership to better understand where forests are being managed, by whom and for what objectives. The following sections describe the legislative framework, forest management implementation and the monitoring of conformance for each of the ownership types: Crown Land, Private Managed Forest Land and Private Land (unmanaged).

[9] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/forest-analysis-inventory/tsr-annual-allowable-cut/tsr_backgrounder2.pdf (2017)
[10] https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/sof_2010.pdf

Figure 11: Ownership & Tenure Types (Source: RRA-BC 2020)



2.7.1 Crown Land

General

As stated in Section 2.1 – Overview Description, roughly 60 million hectares (62%) British Columbia's landbase (95 million hectares) is covered by forests. Approximately 57 million ha of forested land is owned by the province and is classified as public forests on Crown Land (Figure 10).

Governance & Legislation

Public forests on Crown Land are managed by the BC Ministry of Forest, Lands, Natural Resource Operations and Rural Development (FLNRORD) and the Ministry of Environment and Climate Change Strategy (ECCS).

Through the *Forest Act* and its associated regulations, FLNRORD regulates the harvesting, transporting, and scaling of all timber harvested from Crown land through the *Forest Act* and its associated regulations. Tracking all harvested timber is essential to ensure that there is no illegal harvesting and that royalties owing to government for harvested Crown timber (stumpage) are completely and accurately invoiced. This data is tracked through the provincial government's Harvest Billing System.

Forest Tenure System

FLNRORD, under the *Forest Act*, is the authority[11] that allocates forest tenure, issues agreements, licences and permits. Tenures are used by the government to allocate specific rights for using Crown forest and resources to others. Under a tenure agreement, private forest companies, communities and individuals are granted right to harvest Crown timber as a specified cutting area, a maximum volume within an area or an allowable annual cut for a specified period. In exchange, each agreement-holder or licensee has specified obligations to meet that are spelled out in the agreement or licence.

There are over a dozen forms of forest tenure[12] that reflect forest uses on Crown Land. Tenures are grouped into two types: area-based and volume-based. Tree Farm Licences[13] (area-based) and Replaceable Forest Licences (volume-based) are the two long-term licences that are generally issued to forestry companies. There is a wide range of other licence types (both area-based and volume-based) that are issued for other types of licensees, conditions and durations. Figure 11 shows the long- and short-term tenures on Crown Land. Other maps and tables in this section, as well in Section 2.8 – Forest Certification also attempts to provide information on Crown Land tenures.

Timber Supply & Allowable Annual Cut

Timber supply is the amount of timber that is forecast to be available for harvesting over a specified time and under a particular management regime for a management unit. Management units in the province include 37 timber supply areas (TSAs), 34 tree farm licences (TFLs) and various other area-based tenures as identified in Table 3. The BC Chief Forester sets the Allowable Annual Cut (AAC) for each TSA and TFL through a timber supply review (TSR) process. A key part of the TSR is determining the timber harvesting land base (THLB), which is an estimate of the forest area where timber harvesting in the management unit is considered both acceptable and economically feasible given objectives for all relevant forest values, existing timber quality, market values, and applicable technology. The THLB is the landbase upon which the AAC is based.

Once the AAC level is set within TSA's, the Minister of FLNRORD allocates the AAC to the general types of volume-based forest licences and if necessary, creates new harvesting opportunities. AAC determinations for area-based tenures, such as TFL's are separately determined and specific to the area-based tenure type. AACs for TSAs and TFLs are typically revised by the Chief Forester through a new TSR every ten years.

Approximately 81% of Crown land AAC is from volume-based tenures within TSAs vs 19% within TFLs[14].

Table 3: Crown Land Tenures - Area & AAC

Crown Tenures [15]	Figures	Total Ha	Total AAC (m^3)
Area Based Tenures (# of licences)			
Tree Farm Licences (34)[16]	12	6,087,297	11,761,624
Community Forest (59) [17]	12	1,664,716	2,027,606

[11] https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration
[12] https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/timber-harvesting-rights
[13] https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/timber-harvesting-rights/tfl
[14] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/timber-tenures/apportionment/2020-2021/aptr033_provincial_summary_regionpdf.pdf
[15] https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/apportionment-commitment-reports-aac
[16] aptr021_tree_farm_license_summary_report.pdf
[17] issued_cfa_status_report_april-24-2020.pdf

Crown Tenures [15]		Figures	Total Ha	Total AAC (m^3)
	First Nations Woodland Licences (19) [18]	12	3,795,105	797,734
	Woodlot Licences (851) [19]	12	584,667	1,426,417
	Volume Based Tenures[20]			
	37 Timber Supply Areas (TSAs)	13	-	35,628,834[21]

Forest Planning & Practices

The *Forests and Range Practices Act* (*FRPA*) sets out operational planning and practices requirements for all stages of planning, road building, logging, and reforestation on Crown land. *FRPA* enacted in 2004, adopts a "results-based" approach, where the results of management actions were specified in forest plans and it is up to the forest managers to figure out how to achieve them. The *Forest Planning and Practices Regulation (FPPR)* identifies the objectives set by government for key resource values, specifies the content requirements of FSPs, and stipulates the practice requirements that regulate forestry activities. A *Government Action Regulation* (GAR) directs how the BC provincial government establishes land designations, resource features, or stewardship measures for forest and range values.

Forest Management Practice Implementation

As described above, forest management planning is ultimately implemented through an FSP. An FSP is a map-based, landscape-level plan of potential forest development activities that are intended to take place in the plan area. Forest agreement holders must prepare, and have approved by government, an FSP before harvesting or road building activities can begin. FSPs cover sustainability of the following values: biodiversity, cultural heritage, fish and riparian, forage and associated plant communities, recreation, resource features, soils, timber, water quality, wildlife, and visual quality. FPPR also sets out the basic test that is required to assess whether the FSP strategies and/or results are consistent with the government objectives.

FRPA sets out the content of FSPs, sets the term to five years, and specifies what tests must be met for the FSP to be approved by FLNRORD. *FRPA* also requires that more detailed individual site plans be prepared for each harvest block before harvesting can commence. Requirements related to practices, forest health, and silviculture are also found in *FRPA*.

Draft FSPs must be made publicly available for review and comment.; Other tenure holders, professionals, communities, stakeholders, and the public are able to provide input to these plans. In addition, draft FSPs must be shared and discussed with affected First Nations. Once the public engagement has been completed and any revisions made, the FSP is submitted to FLNRORD for review and approval.

[18] issued_fnwl_april_24_2020.pdf
[19] issued_woodlots_april_01_2020.pdf – (documents does not provide Total AAC or Area or Number of Licences)
[20] The apportionment reports show provincial allowable annual cuts, apportionments, and commitments by forest management units in the province. The reports include information on the BC Timber Sales apportionment category but do not report on specific timber sale licences, except for a few non-replaceable forest licences. In addition the apportionment reports do not report on issued Woodlot Licences (PDF, 955KB), Community Forest Agreements (PDF, 176KB), First Nations Woodland Licences (PDF, 118KB) or forestry licence to cut.
[21] aptr033_provincial_summary_regionpdf.pdf

During the site planning stage, it may be deemed necessary by a forest professional to complete site level assessments in exercising due diligence in respect of complying with forestry legislation. Assessments may include pre-harvest site data collection including collection of data on soil characteristics, terrain stability assessments, and determination of soil hazard ratings and seasonal restrictions regarding time of harvest.

Monitoring Forest Practices

Monitoring is the act of assessing of activities and/or their outcomes. Monitoring forest practices focuses on either compliance, effectiveness, or how the realized outcomes compare with the anticipated outcomes. Licensees undertake their own inspections of operations to ensure they are compliant with requirements and regularly assess the effectiveness of renewal and tending operations. In addition, there are three principal government programs in place to provide additional oversight:

- the activities of the Compliance and Enforcement Branch (CEB),
- the Forest & Range Evaluation Program (FREP) and
- the activities of the Forest Practices Board (FPB).

Compliance & Enforcement

The provincial Compliance and Enforcement Branch of FLNRORD assesses compliance with a wide range of regulations affecting the use of Crown land, including those pertaining to timber harvesting. The C+E Branch investigates contraventions to a variety of laws and regulations, including those designed to protect the environment, prevent illegal logging and land use, and monitor road and trail use.

Forest Practices Board

The BC Forest Practices Board (FPB), an arms-length board appointed by government, serves as an independent watchdog organization for sound forest and range practices in BC. Their mandate includes evaluating the effectiveness of forest management, planning, and associated regulations, as well as forest practices, auditing forest and range practices to determine if activities are consistent with legislation and operational plans, investigating public complaints related to forest management activities occurring on Crown Land and making recommendations.

FREP

Under FRPA's results-based model, the BC Government Forest & Range Evaluation Program (FREP) evaluates the effectiveness of forest and range practices in achieving management objectives, including sustainable resource management. FREP is a nationally accredited program. FREP evaluates the effectiveness of forest and range practices in achieving the forest management objectives set out in FRPA, and more generally the overall sustainability of resource management. In other words, it is FREP that is designed to ensure that the expected results of forest management are occurring. FREP monitoring is not directly assessing whether forest and range practices are achieving the government's objectives in FRPA. Instead, FREP evaluates at the site level whether forest practices are resulting in conditions that are “sustainable”. FREP uses “impact ratings” as a measure of sustainability; if the practices are deemed sustainable, FREP assumes that the value is being conserved as intended by FRPA.

FREP objectives include;

- Assessment of the impacts of forest and range development on the 11 *FRPA* resource values to determine if on-the-ground results are sustainable,
- Identification of resource value status, trends and causal factors, and
- Identification of opportunities for continued improvement of practices, policies and legislation.

Government Reviews & Initiatives

In response to feedback received over the last decade from First Nations, the Forest Practices Board, the forest industry, the Union of British Columbia Municipalities and other resource groups, the BC government is making changes to forestry legislative framework. Initial changes are to *Forest and Range Practices Act* (*FRPA*), with substantial changes expected via regulations and policy over the next two years.

In 2019, the BC Government appointed an independent, two-person panel as part of an Old Growth Strategic Review. This review completed public engagement on old growth and provided a report to the FLNRORD (not available at the time of this report).

2.7.2 Private Land

Provincially there is 4.5 million hectares (Table 2 & Figure 8) of privately owned land, which is used for compact and dispersed residential, agricultural, rangeland, private forestry, commercial, industrial, utility, transportation and institutional purposes. Of this, 3 million hectares is forested and of this, approximately two (2) million hectares may be suitable for timber harvesting[22] (Table 4). Private land forests have been divided into two groups - those that are registered in the provincial Private Managed Forest Land (PMFL) program and those that are not.

Table 4: Private Land - Area

	Total Ha
Provincial Total	**4,500,000**
Forested	**3,000,000**
Suitable for Harvest	**2,000,000**
PMFL (MFC vs BCA data) (Sub-scope 2)	816,517 – 890,090
Other Private Land (Sub-scope 3)	1,200,000[23]

2.7.2.1 Private Managed Forest Land

General

Private landowners may choose to register their forested land in the Private Managed Forest Land (PMFL) program, which was established in 2003 under the *Private Managed Forest Land Act* (*PMFLA*). Under the program, landowners commit to manage their property for long-term forest production, including meeting legislated objectives for key public environmental values. In exchange, landowners receive favourable property tax treatment.

As of March 31, 2018, there were approximately 818,000 ha of private managed forest land in the province and is subject to forest practices regulation. Based on the numbers provided at the beginning of Section 2.7 – Forest Sector, this would equate to less than 1/3 of the forested private land being enrolled in the PMFL Program. The PMFL properties are located on southeastern Vancouver Island, and in the Kootenay region. Based on 2017/18 data, approximately 89% of the harvest was from coastal PMFL, vs

[22] https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/sof_2010.pdf

[23] estimate of hectares (1,000,000 – 1,200,000 m ha) based on estimate of provincial private land hectares less PFML hectares

11% interior. In 2018/19[24], PMFL yielded annual harvests of 5.2 million m^3, equivalent to 8% of that year's provincial harvest.

The Private Forest Landowners Association (PFLA) represents managed forest owners throughout the province of British Columbia but does not administer the legislation or enforce compliance. They provide advocacy, outreach and education, training opportunities and communication updates on key public environmental values on private forest lands.

Legislative Framework

The *Private Managed Forest Land Act* and its regulations authorize this program, establish the oversight of the Managed Forest Council, and regulate the forest management. This legislation is primarily a "results-based" regulatory model. Instead of specifying rules for how land must be managed, management objectives are set for landowners. This allows landowners to develop and use management strategies most appropriate to the scale and geographic location of their operations.

The Private Managed Forest Land Council is an independent tribunal established to administer the Managed Forest Program, including setting and monitoring forest practices standards, performing audits, and enforcing standards. The MFC has statutory authority to establish regulations in respect of forest management on PMFL. The MFC's website states that it has the authority to establish objectives for soil conservation, water quality, fish habitat, critical wildlife habitat, and reforestation. It also has a formal Inquiry Process, as well as an Investigation and Compliance Determinations Procedure Manual. In addition, the *PMFLA* provides for the protection of key environmental values on private managed forest lands.

In addition to the *PMFLA*, private landowners on managed forests are modestly constrained on how the forested land is managed via limited Federal and Provincial legislation. (See Annex 3: List of publications used for comprehensive list of applicable requirements).

Federal & Provincial

Federal legislation includes the *Fisheries Act*, *Migratory Birds Convention Act*, and *Species at Risk Act*.

Key provincial regulations that apply to all private owners of forest land include the *Water Sustainability Act*, *Drinking Water Protection Act*, *Environmental Management Act*, *Assessment Act*, *Wildlife Act*, *Wildfire Act*, and the *Heritage Conservation Act*. In addition, FLNRORD regulates the transporting of timber harvested from private land through the *Forest Act* and its associated regulations. Tracking all harvested timber is essential to ensure that there is no illegal harvesting.

Local Government

Private managed forest landowners receive a bylaw exemption in exchange for a commitment to manage their lands for long-term forest production and to use sustainable management practices that protect key public environmental values, as regulated by the *Private Managed Forest Land Act* and *PMFLA* Regulation, which includes reforestation and annual reporting requirements. Further, Local Governments retain the power to adopt bylaws that require information from PMFL owners so long as the bylaw does not restrict a forest management activity.

Forest Management Practice Implementation

The goal of the PMFL is to encourage owners to manage their forests so that the forests continue to provide ecological, social and economic benefits. While PMFL owners are not required to prepare a forest

[24] As of report date, 2020 data was not available

management plan, a management commitment is required and they must report annually on the forestry activities that they undertake, including harvesting.

The MFC provides Best Management Practice advice to members through the Private Forest Landowners Association Best Management Practices handbook, through field practice audits and inspections, periodic guideline updates, and review of management commitment amendments.

Monitoring / Compliance & Enforcement

Monitoring performance and adherence to the *PMFLA* and the associated Provincial and Federal Acts regulating Natural Resources is conducted by the Managed Forest Council which administers the regulatory standards and associated requirements of the PMFL program. These forests are also subject to investigation by the FPB.

The Managed Forest Council receives the annual reports and conducts regular audits and assessments (50/year) to ensure that the requirements of the applicable Acts and the PMFL Program are being followed. Any landowners who are suspected or have had previous non-compliance may be inspected more frequently. Inspections and audits are conducted by Qualified Professionals. The Managed Forest Council web site reported that there have been 623 inspections completed since 2007, and the compliance rate has been 99%. MFC can and has issued fines when violations are determined. All MFC bylaws, policies, procedures, reports and audits are publicly available.

Government Review

After more than a decade of implementing this Private Managed Forest Land Program and framework, FLNRORD is reviewing the program's performance. The review is one of several policy reforms announced as part of the Coast Forest Sector Revitalization Initiative. As part of the review, the ministry sought public feedback on where the program is most effective, and if improvements are needed. Results of the review have not yet been made publicly available but will be considered as required in future RRA.

2.7.2.2 Other Private Land (unmanaged)

General

Private landowners who have treed lands but do not manage them under the PMFL (discussed above) are identified in the RRA-BC as 'other private land'. As estimated above and shown in Table 4, there is approximately 1.2 million hectares of harvestable forest on private unmanaged land that is not enrolled in the PMFL program.

Legislative Framework

Management/activities related to harvesting of trees on private lands are modestly constrained via limited Federal and Provincial Legislation and Local Government Bylaws. (See Annex 3: List of publications used for comprehensive list of applicable requirements).

Federal & Provincial

Federal legislation includes the *Fisheries Act*, *Migratory Birds Convention Act*, and *Species at Risk Act*.

Key provincial regulations that apply to all private owners include the *Water Sustainability Act*, *Drinking Water Protection Act*, *Environmental Management Act*, *Assessment Act*, *Wildlife Act*, *Wildfire Act*, and the *Heritage Conservation Act*. In addition, FLNRORD regulates the transporting and scaling of all timber harvested from private land through the *Forest Act* and its associated regulations. Tracking all harvested timber is essential to ensure that there is no illegal harvesting.

Local Government

The Local Government system in BC is unique in Canada. In addition to its 162 municipalities, there are 27 regional districts. Regional districts in BC range in population from under 4,000 to over two million and range in size from 2,000 to 119,337 km2. In most cases (except Metro Vancouver), regional districts cover the rural areas of the Province.

The *Local Government Act* provides the authority for Local Governments to develop bylaws that are unique to their circumstances and provide the framework for private land. Bylaws are passed by the elected councils and regional district boards of all municipalities and regional districts in the Province. Local Government bylaws vary across province and within regions, generally speaking, the rural and remote areas have fewer bylaws as well as less capacity to enforce them.

Regional districts and municipalities have the ability to adopt bylaws that place regulations on forest management activities on private land within their jurisdictional boundaries, including aligning their bylaws with requirements equivalent to Crown forest land regulations if they choose. However, there is little legislation at the Provincial level that regulates the actions of private landowners, except in the situation of water licences.

Local Governments have the ability to implement development permit areas, which is a tool that provides a secondary level of oversight within a bylaw. Each Local Government takes an individual approach to how development permits are drafted and implemented. There is no uniform standard province wide. Local Governments may have bylaws regulating tree cutting and/or may require that development permits be obtained prior to tree removal in riparian areas, however requirements vary by jurisdiction. Development permit area policies and requirements are generally specified in official community plans that have been endorsed by the elected council or board.

Some regional district bylaws require development permits for timber harvesting or a tree cutting permit. In some cases, these can require a bio-physical assessment prepared by a qualified professional biologist that must include “inventories of the existing environmentally sensitive features and natural features including rare and threatened plant communities, endangered species and identified critical habitats”.

Local Government bylaws may exist. Differences in implementation, verification of compliance, priority and capacity of enforcement within Local Governments vary greatly across the Province. There are no uniform set of bylaws that are adopted by Local Governments in relation to forest management practices. As result Provincial verification of monitoring and enforcements is an onerous task.

As an example, there is no Provincial Legislation that addresses soil conservation on other private land in British Columbia. Local Governments, if they choose may pass bylaws requiring the application for development permits prior to development (including timber removal) on steep terrain (ex: slopes >25%), however exact requirements vary by jurisdiction. Terrain stability or other forms of geomorphological assessments may be required in obtaining a development permit.

Forest Management Practice Implementation

Generally speaking, there are no Best Management Practices (BMPs) specific to forest management activities on private land. Provincially there are many BMPs available for application. It is at the discretion of the landowner to ensure best management practices or not.

Monitoring / Compliance & Enforcement

Currently there is no formal program to measure the effectiveness of harvesting operations on private land in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives for the property.

Enforcement of applicable legislation on other private land is responsibility of designated authorities. Enforcement of Federal Government regulations on private forest land is conducted by regulatory agencies including Environment Canada and Fisheries & Oceans Canada.

Enforcement of bylaws and development permits are the responsibility of the Local Government, and the level of enforcement varies depending on the capacity, resources and priority of each Local Government. Every Local Government takes a different approach.

In most cases bylaw compliance is not monitored on a regular basis, rather enforcement is initiated by public complaints. In some cases, the Local Government has the ability to issue fines or seek legal counsel.

2.8 Forest Certification

Third party certification is supplemental to existing laws and is undertaken voluntary by a forestry company. Certification provides additional independent assurance that forest products are legally sourced from sustainably managed forests. Forest Management certification and Chain of Custody (COC) certification is extensive in British Columbia. Forest Management certification verifies the practices on the land whereas Chain of Custody that verifies the sourcing of fibre (certified and uncertified) along the supply chain.

There are three Forest Management Certification schemes subscribed in BC: Canadian Standards Association (CSA®), Sustainable Forestry Initiative (SFI®) and Forest Stewardship Council (FSC®). The CSA and SFI programs are both endorsed internationally by the Programme for the Endorsement of Forest Certification (PEFC).

Certification Canada annually reports the organizations and certified area under each of the three schemes for all provinces in Canada. Table 5 provides the hectares and percentages of each scheme within BC as reported by Certification Canada for 2018 and 2019 Year-End Status Reports. In addition, the Status Reports list the organization, their hectares and certification scheme. It is not within the scope of the RRA-BC to identify certified organizations. Annex 1: Detailed findings for indicators, specifically Indicators 1.1.1, 1.1.2 and 1.1.3 describes the tracking of fibre that enables verification of the district of origin.

The data for each reporting year is published by the following spring. 2019 data was not available during the preparation period of the draft RRA-BC (Feb. 2020) but has since been included. Table 5 confirms a negligible increase (3%) of certified area of land base from 2018 to 2019[25]. Noteworthy is the significant change of percentage per certification scheme: one large organization withdrew from the CSA system and became certified under SFI, which now represents 94% of the certified land base.

Both the 2018 and 2019 Year-End Status Reports acknowledge some reporting anomalies. One was that many companies reported the entire operation whereas some reported at the division (or management unit) level. Another, or possibly related anomaly, results if a company maintained more than one scheme, the area was double counted. Third, spatial delineation of certified management units was not captured, specifically for volume-based tenures.

Table 5: Certified Area and Certification Scheme (Source: Certification Canada 2018 & 2019)

[25] 2020 data from Certification Canada is not yet available but those responsible have indicated no significant change from 2019 data.

	CSA®		FSC®		SFI®		Total Ha – Crown & Private Land	
	HA	%	HA	%	HA	%	Inc. Double Certifications	Inc. Double Certifications
2018	20,129,619	40%	1,487,983	3%	29,022,867	57%	50,640,469	50,352,453
2019	1,611,122	3%	1,488,023	3%	49,751,696	94%	52,850,841	51,811,125
Diff	(12,518,497)	-	(40)	-	20,728,829	-	2,210,292	1,458,672

Due to the uniqueness of the tenure system in BC (as described in Section 2.7.1 – Crown Land), and the anomalies with Certification Canada's data described above, it is difficult to spatially represent and accurately account for all certified areas. As discussed in the Statement of Scope, uncertified forested land is the scope of the RRA-BC, and so it is important to understand the breadth and depth of that area. The purpose of this section of the RRA-BC is to describe the certified landbase to identify what is excluded and thus determine the extent of the uncertified remainder.

Crown Land

Area-Based Tenure

Area-based Crown land tenures can be mapped and therefore the hectares of certified area can be provided. Spatial and client data from FLNRORD with reported certified management units from Certification Canada produced

Figure 12 indicating the Crown land area-based tenures and a table of certified management units. It provides the area and percentage of certified vs uncertified for each type of area-based tenure utilizing the same datasets.

Figure 12: Crown Land Area-based Tenures & Certified Hectares (Source: RRA-BC 2021)

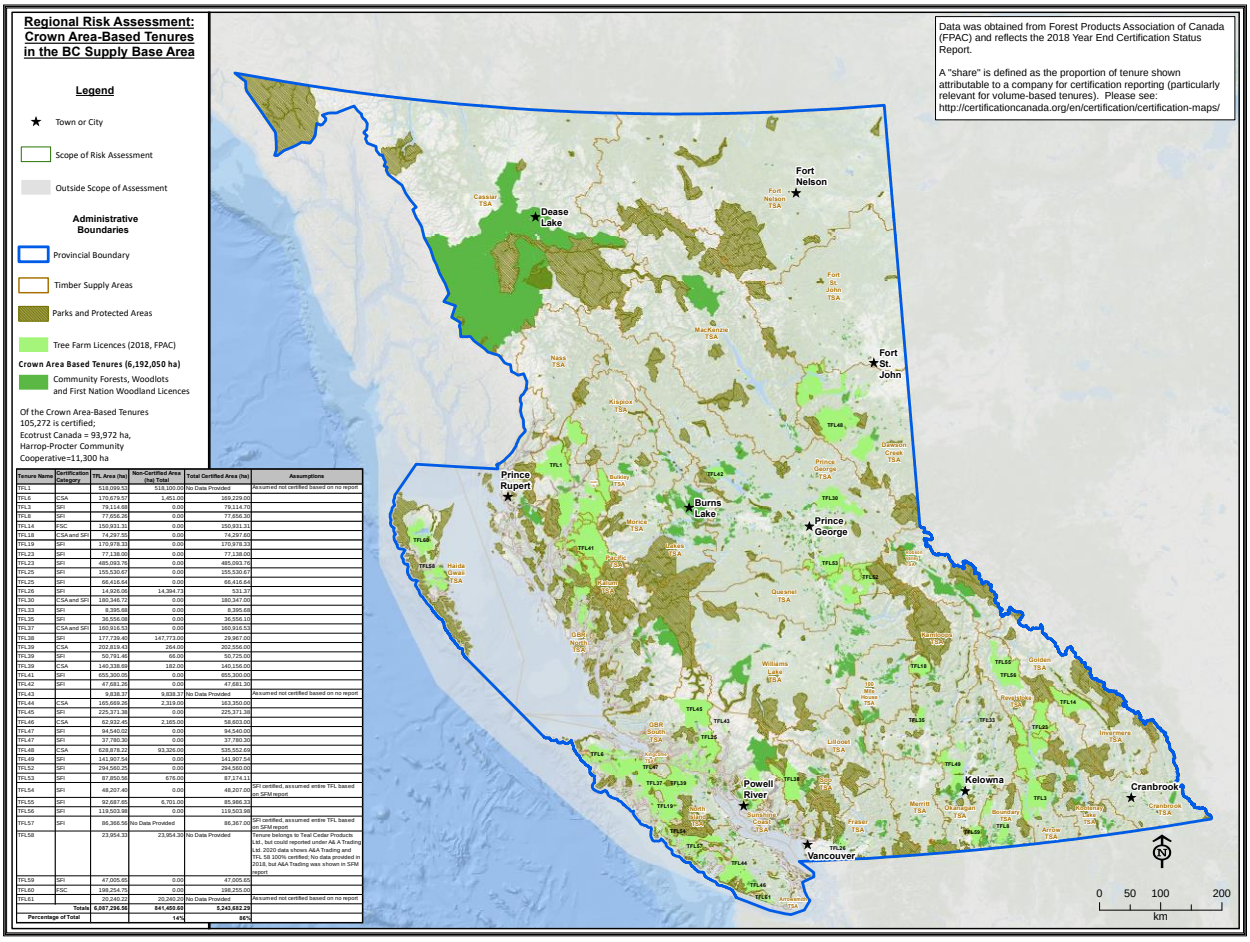


Table 6: Certified vs Uncertified Crown Land Area-based Tenure

Area Based Crown Land Tenures [26] (# of licences)	Total Ha	Total AAC (m^3)	Certified Area		Uncertified Area (sub-scope 1)	
			Ha	%	Ha	%
Tree Farm Licences (34)[27]	6,087,297	11,761,624	5,243,682	86%	**841,451**	**14%**
Community Forest (59) [28]	1,664,716	2,027,606	105,272[29]	1.7%	**1,599,444**	**98.3%**
First Nations Woodland Licences (19) [30]	3,795,105	797,734	0	0%	**3,795,105**	**100%**
Woodlot Licences (851) [31]	584,667	1,426,417	0	0%	**584,667**	**100%**
Total	**12,131,785**	**16,013,381**	**5,348,954**	**44%**	**6,820,677**	**56%**

[26] https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/apportionment-commitment-reports-aac
[27] aptr021_tree_farm_license_summary_report.pdf
[28] issued_cfa_status_report_april-24-2020.pdf
[29] Two FSC certified area-based tenures were 'unmappable' as indicated in Certification Canada reports but the hectares have been accounted for in the legend on map and in table – https://certificationcanada.org/index.php/maps-en/map/BC/3001
[30] issued_fnwl_april_24_2020.pdf
[31] issued_woodlots_april_01_2020.pdf – (documents does not provide Total AAC or Area or Number of Licences)

Volume-Based Tenure

Crown land volume-based tenures are both difficult to accurately quantify and spatially locate. A clear understanding of volume-based tenures is needed to appreciate this difficulty. Section 2.7.1 – Crown Land, provides more detail on this type of tenure. Volume-based tenures are not and cannot be spatially delineated therefore certified area cannot be accurately quantified for this tenure type.

Many forest companies report their certification by division to Certification Canada; therefore, the data may not provide for each company's 'area' of a Timber Supply Area, TSA. In addition, the 'area' of certified land is based on proportion of area equivalent to their AAC apportionment (i.e. Company X has 25% of the AAC, therefore they have 25% certified area of the total TSA hectares). Although this is the best option for a 'surrogate' under a volume-based tenure system, it is not completely accurate. When the true operating area of a TSA is less than the total area of a TSA it becomes difficult to equate volume percentages to area percentages. Nonetheless, for visual purposes, Figure 13 provides a representation of the proportion of tenure shown attributable to a company for certification reporting[32]; it shows the certified 'share' of a TSA, broken into gradients of 10; actual percentages per TSA are provided on the right-hand side. It should be noted there is substantial variance across the province on certified area within a TSA (~2% to 99%).

This figure and percent calculations exclude any Crown land area-based tenure (described above) and private land (described below). Protected areas have been mapped and are excluded from the timber harvesting land base.

Figure 13: Crown Land Volume-based Tenures & Certified Gradient (Source: RRA-BC 2021)

[32] 2018 data was used to develop the 'gradient' map. Significant work went into the amalgamation of data sets (Certification Canada & FLNRORD spatial/client data). As it was determined that the 2019 data did not result in significant differences the gradient data was not revised. This map is for demonstration purposes .

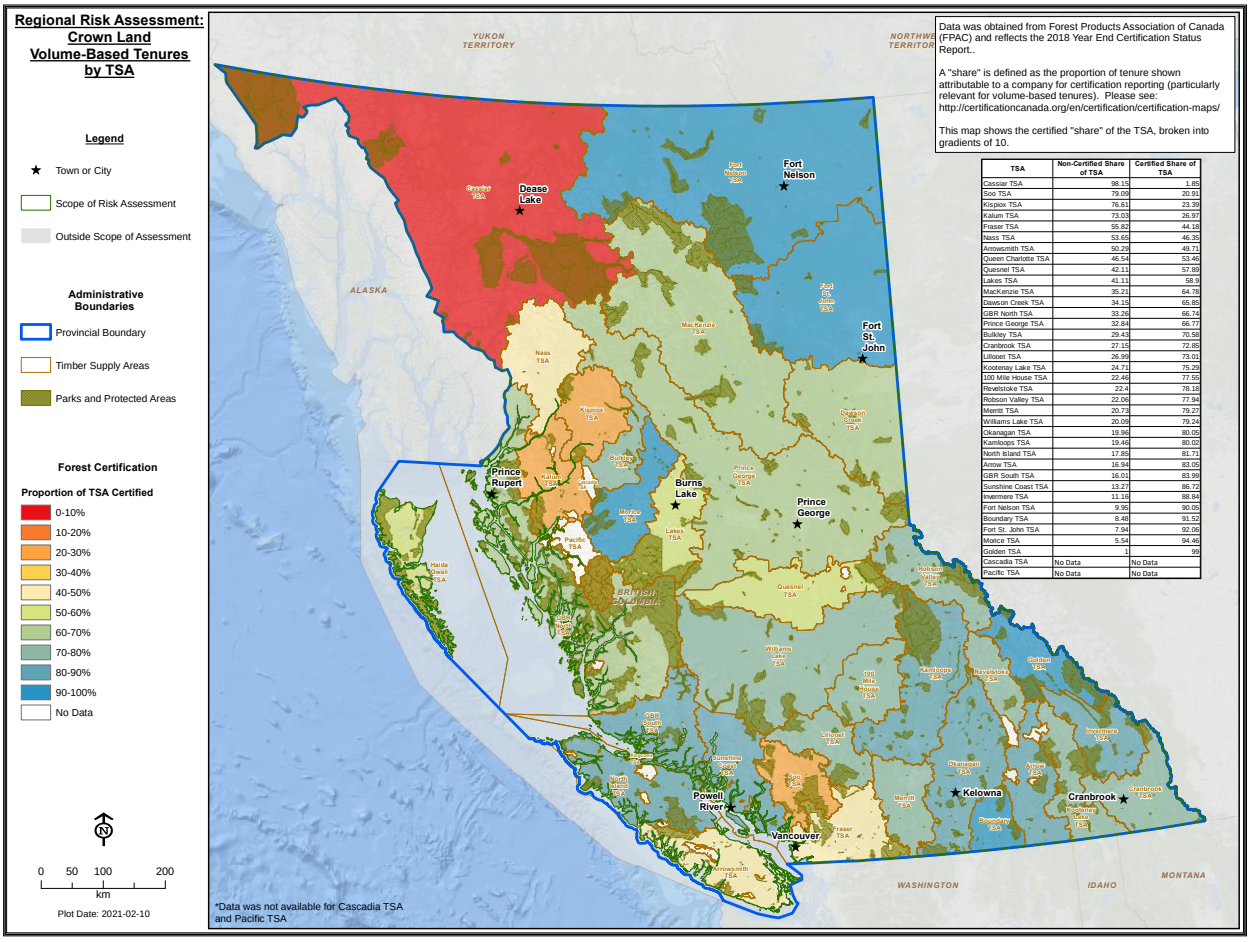


Table 7: Certified vs Uncertified Crown Land Volume-based Tenure

Volume Based Crown Land Tenures [33] [34]	Total AAC (m^3)	Certified AAC	Uncertified AAC (sub-scope 1)
		%	%
37 Timber Supply Areas (TSAs)	35,628,834[35]	**1.85% – 99%**	**1% – 98.15%**

Private Land

Private land by its nature is area-based and therefore can be spatially located and the hectares of certified land provided. As mentioned above, not all certified organizations provided spatial data to Certification

[33] https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/apportionment-commitment-reports-aac

[34] The apportionment reports show provincial allowable annual cuts, apportionments, and commitments by forest management units in the province. The reports include information on the BC Timber Sales apportionment category but do not report on specific timber sale licences, except for a few non-replaceable forest licences. In addition the apportionment reports **do not** report on issued Woodlot Licences (PDF, 955KB), Community Forest Agreements (PDF, 176KB), First Nations Woodland Licences (PDF, 118KB) or forestry licence to cut.

[35] aptr033_provincial_summary_regionpdf.pdf

Canada. RRA-BC was able to obtain land ownership data, however, due to proprietary reasons the Private Managed Forest Land (PMFL) spatial data was not made available. For this reason, private land is mapped at the provincial scale as shown in Figure 8: Ownership Types (Source: RRA-BC 2020) and does not distinguish between the two private land classifications. However, Table 8 provides the area and percentage of certified vs uncertified for each private land classification collated from FLNRORD spatial and client data with reported certified management units from Certification Canada. Annex 1: Detailed findings for indicators, specifically Indicators 1.1.1, 1.1.2 and 1.1.3 describes the tracking of fibre that enables verification of the district of origin which would allow distinction of fibre from the two private land classifications.

Table 8: Certified vs Uncertified Private Land

	Total Ha	Certified		Uncertified	
Suitable for Harvest	**2,000,000**	**HA**	**%**	**HA**	**%**
PMFL (Sub-scope 2)	816,517 – 890,090[36]	612,055[37]	69 – 75%	**206,000 – 390,000**	**25 – 31%**
Other Private Land (Sub-scope 3)	1,200,000[38]	0	0%	**1,200,000**	**100%**
Total	-	**621,055**	-	**1,406,000 – 1,590,000**	**-**

BC Certified vs Uncertified Land – Final Percentage Estimate

Applying various approaches described above to quantify the data for crown (area- and volume-based tenures), as well as private land it is estimated that 63% of the forested area available for harvest under the crown and private managed forest land ownership types is certified. Based on this calculation, approximately 37% is uncertified and within the scope of the RRA-BC. It is important to realize that the percentage of uncertified area varies across the TSAs within the province (Figure 13 & Table 7).

2.9 Biomass Sector

Conventional forest products are important to the BC economy; however, the provincial government and the industry always look for ways to diversify into new markets and products and use more of each tree that is harvested. Pellet production does both, adding economic value to wood fibre that had little or no value and providing opportunity for industry diversification.

British Columbia has developed a robust pellet manufacturing industry which exports an estimated 97% of its production. In 2017, BC accounted for 72% of Canadian pellet production and 78% of Canada's pellet exports by value (Natural Resources Canada, Undated).[39] Increases in BC pellet production capacity led to a rise in export value from C$ 311 million in 2017 to C$ 408 million in 2018, when BC exported 2.27 million tonnes of wood pellets. The UK was the primary destination by weight (66% of exported amount) followed by Japan (27%) and other countries (7%).

Table 9 shows the locations and capacities of the 14 pellet mills currently operating in BC for the Biomass Producers.[40] The Smithers mill, commissioned in 2018, is the most recent. A number of the mills are

[36] Data variance due to reporting by Managed Forest Council and Certification Canada, respectively.
[37] Certification Canada
[38] estimate of hectares based on estimate of provincial private land hectares less PMFL hectares
[39] https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/forest-fact-book/bioenergy-bioproducts/21686
[40] source of capacity data: http://biomassmagazine.com/plants/listplants/pellet/Canada/

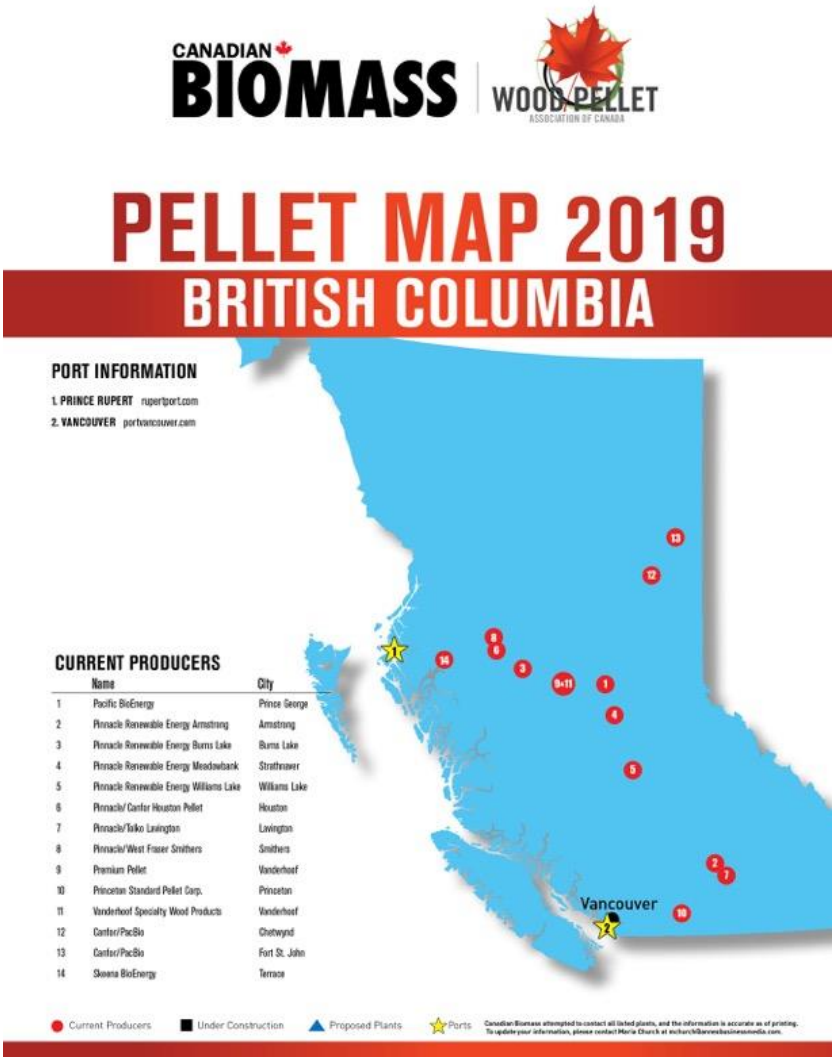
partnerships, usually between a sawmill-based company and a Biomass Producer. In the table below, only the company operating the pellet mill is listed.

Table 9: British Columbia Pellet Mills, Location and 2019 Capacity

Biomass Producer (Partner)	Location	2019 Capacity (M tonnes/yr)
Canadian Forest Products (Canfor)	Fort St. John	75
Canadian Forest Products (Canfor)	Chetwynd	100
Pacific Bioenergy Corp	Prince George	350
Pinnacle Renewable Energy Inc.	Burns Lake	380
Pinnacle Renewable Energy Inc.	Houston	220
Pinnacle Renewable Energy Inc.	Smithers	140
Pinnacle Renewable Energy Inc.	Strathnaver	230
Pinnacle Renewable Energy Inc.	Williams Lake	230
Pinnacle Renewable Energy Inc.	Armstrong	72
Pinnacle Renewable Energy Inc.	Lavington	300
Princeton Standard Pellet Corp.	Princeton	100
Premium Pellet Ltd.	Vanderhoof	185
Skeena Bioenergy Ltd	Terrace	95
Vanderhoof Specialty Wood Products	Vanderhoof	30
	TOTAL	**2507**

Figure 14 shows that all 14 pellet mills in BC are located in the Interior (Wood Pellet Association of Canada, 2019). Because pellet mills predominantly use low-quality fibre, they tend to be located close to large sawmills so that they can have a ready supply of sawmill shavings, sawdust and other low-value residuals as part or even all of their furnish. Some furnish also comes from other types of mills, such as veneer and plywood mills. The BC pellet industry is dominated by Pinnacle Renewable Energy Inc., which owns 7 pellet mills in BC (either outright or in partnership) and accounts for 63% of the pellet capacity. The second-largest producer is Pacific Bioenergy, which owns one mill and has partnerships in two other mills. British Columbia also hosts two wood pellet exporting terminals along the Coast: the Westview Terminal in the Port of Prince Rupert and the Fibreco Terminal in the Port of Vancouver.

Figure 14: Biomass Producers' Map 2019 – BC (Source: WPAC)



The 2020 capacity of the industry in BC is estimated at just more than 2.5 million oven-dry tonnes (ODT) per year, an increase of roughly 10% since 2018. The industry operates at close to 100%.

Biomass Producers (BPs) source three types of biomass as the feedstock supply for pellet production:

- Primary feedstock is fibre sourced directly from the forest, which includes chipping whole trees and grinding of piles of logging slash left alongside forest roads and at landings.
- Secondary feedstock is fibre generated as a by-product from mills manufacturing logs, most notably it consists of sawdust, bark and excess wood that cannot be converted into lumber.
- Tertiary feedstock is derived from pre- and post-consumer fibre, such as trimming of cardboard and paper from a remanufacturing facility. BC pellet mills use little if any tertiary feedstock.

BPs that are certified to SBP are required to annually prepare a SBP Audit Report (SAR) which provides information on their feedstock sources and production data. SAR reports of all BC pellet mills were reviewed for the most recent available period, which variously covered years 2018-2020 (except for the very small Vanderhoof Specialty Wood Products mill, which is not SBP certified). These data were annualized and converted to ODT (pellets have a moisture content between 4.5 and 6%). During the period, 2.01 million ODT of pellets were produced, equivalent to 4.93 million m^3 of wood fibre. In 2018,

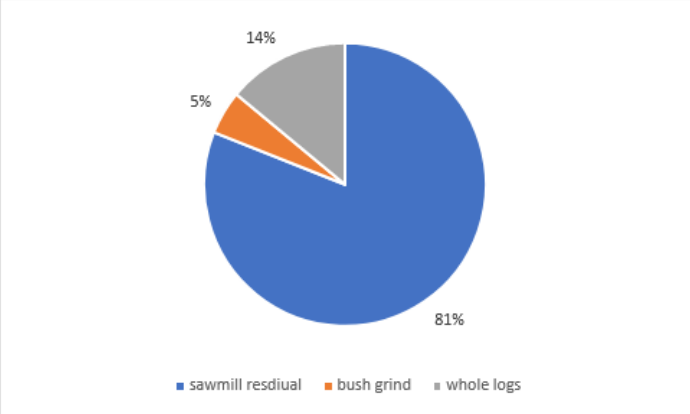
the timber harvest from all land ownerships was 67.36 million m^3, and thus pellet production consumed the equivalent of 7.3% of the total provincial harvest. However much of this was composed of sawmill residuals. The roundwood component of the furnish supply was equivalent to 0.71 million m^3, or 1% of the provincial harvest, while the bush grind component was equivalent to 0.47% of the provincial harvest (0.31 million m^3).

The pellet industry may use whole logs (roundwood), but only those below the quality level accepted by sawmills and other mills. An analysis of the scaling data, which shows the weight per grade crossing the scale, would provide the relevant figures, however these data are dispersed over many different scales and each company has its own data management system, which makes compiling the data difficult. The pellet mills' use of low-quality wood is driven by the structure of the industry – the contractors who harvest the timber are incentivized to sell their timber for the highest price. As BPs pay the lowest prices, because there is an abundance of low-quality timber relative to demand, only timber that no one else will buy is sold to the Biomass Producers. Thus, the pellet industry acts to improve and extend the utilization of harvested timber and its impact on BC's harvest level is negligible (as described in the previous paragraph).

The annual SAR reports also list the amounts of fibre used from each type of fibre source used. The compiled data showed that approximately 81% of the furnish used to make pellets in BC came from mill residuals (secondary feedstock) during this period (2018-2020). The remainder came from a mixture of (primary feedstock) ground roundwood (14%) and ground slash and logging waste left at landings (5%).

Figure 15 shows the distribution of input fibre by source.

Figure 15: Pellet input fibre by feedstock (Source: SAR 2018 – 2020)



In 2019 and 2020, BC has seen sawmill closures and the harvest in the BC Interior has trended downward as the salvage of timber killed by the Mountain Pine Beetle and a series of severe fires in 2017 and 2018 has ended. This has reduced the amount of residual material from sawmills and as a result, pellet producers are increasing their bush grind operations and making more use of low-quality roundwood.

Tenure Agreements and Allowable Annual Cuts (AAC) on Crown Land are managed by FLNRORD and discussed above in Section 2.7.1 – Crown Land. Historically and currently, harvesting of tenures supply fibre for primary processing facilities such as sawmills, pulpmills, etc. "Partner" companies listed above in Table 9 operate sawmills and have managed tenures on Crown land for many years. At the time of this report, one Biomass Producer listed in Table 9 holds forest licence agreements with FLNRORD to harvest

timber from poor-quality blocks damaged by Mountain Pine Beetle – any higher quality timber will be used by sawmills and/or pulpmills. Since the licences are on Crown land, the Biomass Producer is required to be in compliance with provincial regulations for the planning and practices associated with harvest and renewal. In addition, all current and future Biomass Producers are required to conform to the results of the RRA-BC prior to procurement of all uncertified feedstock (See Annex 1: Detailed findings for indicators).

The provincial government has been supportive of the biomass industry, encouraging business-to-business relationships between primary harvesters and secondary producers (e.g. contractors who grind roadside slash). This effort is aimed at improving the use of lower-quality timber in areas of the province where there is a demand for the residual fibre from secondary users (pulp mills, pellet plants, bioenergy facilities, and other users of low-quality logs). These relationships are intended to lead to cost-effective removal of residual fibre through integrated methods, or “one pass” harvesting. Primary harvesters and secondary users are encouraged to share information on harvesting opportunities to start the fibre recovery process. Where business to business agreements cannot be established, there are legislative tools available for the District Manager to encourage better fibre recovery, such as creating fibre recovery zones or issuing secondary recovery tenures. More information on this Program can be found at Ministry of FLNRORD Residual Fibre Recovery.

3 Methodology

Geographic Scope

The Regional Risk Assessment (RRA) for British Columbia (BC) was initiated early 2018. The 'region under assessment' (i.e. geographic scope) is the uncertified forested landbase of the province of British Columbia as discussed in Section 2.8 Forest Certification. Discussions of homogeneity are detailed below in the section on Sub-scopes.

Working Body

Brenda Hopkin, RPF of Hopkin Forest Management Consulting Ltd. was selected by the Wood Pellet Association of Canada (WPAC) and approved by SBP Secretariate as the Co-ordinator for the Working Body (WB). The Co-ordinator was supported by a team of independent natural resource and certification professionals who collectively formed the WB. This team satisfied the mandatory qualification requirements of the SBP Regional Risk Assessment Procedure (See Annex 2: List of experts consulted and contact of Working Body).

Applicable Standard

The WB methodology addressed the following requirements:

- SBP Regional Risk Assessment Procedure, v1.1, May 2017,
- SBP Framework Standard 1: Feedstock Compliance Standard, v1.0, March 2015, and
- SBP Framework Standard 2: Verification of SBP-Compliant Feedstock, v1.0, March 2015.

RRA Approach

A risk-based approach follows three distinct steps:

- Gather information
- Assess risk
- Mitigate risk

In addition to the guidance provided in SBP documents, the WB completed extensive research on risk-based assessments, including but not limited to SBP-endorsed RRAs, FSC-PRO-60-002 v3-0, FSC-PRO-60-002a v1-0, FSC-NRA-CA v2.0, and FSC-NRA-USA v1-0. This analysis was incorporated into the WB *Risk Evaluation Framework* (REF) enabling a consistent, rigorous, and objective process for evaluation leading to a comprehensive risk conclusion for each of the 38 indicators.

The RRA-BC aims to provide an effective and verifiable process that will assure end users that feedstock is legally and sustainably sourced from any uncertified forested landbase. The scope of the RRA-BC covers the first two steps: information gathering (Section 3.2) and risk assessment (Section 3.3). Although not required by the SBP RRA Procedures, the WB has provided mitigation measures guidance (Section 3.4) that follows the evaluation criteria and logic used during the steps described below.

3.1 Sub-scopes

Following the requirements in SBP Standard 2 and SBP RRA Procedures, the WB evaluated the homogeneity of the region under assessment (the Province of British Columbia) when determining the geographic scope. For many (26) Indicators, the WB assessed homogeneous risk based on the ownership types defined in Section 2.5 – Land Ownership. Ownership types in the uncertified forested landbase which were likely to provide feedstock were: Crown and Private Land. Based on the

substantially different levels of risk across the ownership types the following three sub-scopes were defined:

- Uncertified Crown Land
- Uncertified Private Managed Forest Land
- Uncertified Other Private Land (unmanaged)

The WB evaluated sub-scope risk independently. Due to the different types and levels of regulatory oversight for the three sub-scopes, scale and intensity comparisons amongst the three sub-scopes were not used in determining risk in the RRA for BC.

As described under the legislative framework in Section Other Private Land (unmanaged), Bylaws vary greatly in the province. The WB did not create further sub-scopes as this level of detail is best verified at the local level (i.e. SBE).

For 12 Indicators the ownership type did not delineate the homogenous risk for the area under assessment. In these situations, the scope of assessment was provincial. The Scale of Assessment (i.e. sub-scope) is defined at the beginning of each Indicator finding. The risk designation at the end of each Indicator finding is based on that scale of assessment (See Annex 1: Detailed findings for indicators).

The WB specifically did not delineate Ecoregions as a sub-scope. Ecoregions are large and often cross more than one jurisdictional boundary, and there are no differences in the regulatory environment that are based on ecoregions. Ecoregions are assessed but as an ecological component of the feedstock source area (i.e. tenure).

3.2 Information Gathering

The first step included collecting documented, relevant, current information from credible sources. Given the extensive amount of publicly available information on forestry in BC and to proactively address 'engagement fatigue', WB identified key organizations and/or individuals with knowledge or provided information in relation to one of many of the indicators. This included interviews with experts and the experience and knowledge of consultants, applicable legislation, reports from Provincial authorities and other stakeholders, various databases and statistical data sources. Information was obtained from Provincial authorities, such as the BC Forests, Lands, Natural Resource Operations and Rural Development, Wildlife and Parks, the BC Ministry of the Environment and federal authorities such as the Canadian Forest Service of Natural Resources Canada and Ministry of the Environment and Environment Canada. Many stakeholders were consulted in the process and information was obtained from verbally and from written public and private sources (Annex 2: List of experts consulted and contact of Working Body). The WB considered this "outreach" during the information gathering phase as a key component of consultation resulting in the drafting of many of the indicators within the RRA.

Following the WB *Risk Evaluation Framework*,

Table 10 describes the requirements of information gathered for each of the 38 indicators with respect to each of the relevant sub-scopes:

Table 10: Information Gathering Requirements

	Information Gathered – by Sub-Scope
Regulatory Requirements & Agency of Authorization	Regulatory Framework & Oversight – Acts, Regulations, policy, enforced Best Management Practices (BMPs) specific to the 'threat' to the indicator.
Mechanism & Supporting Evidence	'Mechanisms' by which the organization completing the forest management activity can demonstrate implementation and compliance with the regulatory requirement &/or BMPs that address the 'threat'.
Results: **Compliance, Enforcement and/or Monitoring Results**	Verification of a compliance/enforcement and/or monitoring framework. Quantifiable or qualifiable results of current condition, including but not limited to: - Monitoring results - Inventory &/or analysis - Compliance & enforcement results - Assessment reports - External Agency reports - Publicly available data / websites - Expert &/or Stakeholder information/results

Current information was gathered and utilized. In some cases, the most current information was older (> 5 years) and the WB provide a rationalization in those situations. Spatial data was collected and analysed for many of the landbase indicators. Credible spatial data was obtained from GeoBC (provincial) and NRCAN (federal). It should be noted that since there is overlap between FSC Controlled Wood risk assessment criteria and SBP criteria, the FSC Canada National Risk Assessment (FSC-NRA-CA V2-0) was reviewed as current and credible information. The RRA-BC gained insight from the evidence and stakeholder dialogue as it pertained to BC and/or specific SBP Indicators. All information collected and used for evaluation in the risk assessment in the next step, is cited in the "Evidence Reviewed" section of the Annex 1: Detailed findings for indicators.

3.3 Risk Assessment

The WB followed the Risk Designation requirements described in SBP Standard 2 (C.11) and SBP RRA Procedures (C.3.5). The WB evaluated relevant information for each indicator by sub-scope at the provincial/regional scale (vs individual forest level). Table 11 describes evaluation criteria and logic that was considered for all indicators/sub-scopes to designate risk when evaluating the information (i.e. 'means of verification') gathered in the previous step relative to the identified 'threat'. This evaluation logic is described in the WB *Risk Evaluation Framework* and was used consistently. Assessing the probability/likelihood was verified through the evaluation criteria described in Table 11.

Key Definitions and/or interpretations utilized in the Risk Evaluation Framework:

Threat – Anything that can exploit a vulnerability, intentionally or accidentally, and obtain, damage, or destroy an asset (in this case indicator value). A 'threat' is what needs to be protected against.

Risk – Potential for loss, damage, or destruction of an indicator value because of a threat exploiting a vulnerability.

Risk assessment – define the level of risk by considering the probability or likelihood against the consequence severity.

Table 11: Risk Evaluation Criteria

Evaluation Criteria	Crown Land	Private Managed Forest Land	Other Private Land	Province
Context	Describe the 'context' or the 'interpretation' of the indicator as it relates to the scale of assessment &/or forest management. Define what is considered 'in scope' or 'out of scope' by the Working Body. As well, this section may indicate related indicators.			
Potential Threat	Prior to risk assessment, describe the 'threat' (**potential or perceived**) to 'legality' (STD1-C1.1 – 1.6) or 'sustainability' (STD1-C2.1 – 2.10) indicator as a result of forest management activities or sourcing. ***This is key to the risk evaluation framework as subsequent evaluation of the indicator is focused on addressing the 'threat'***.			
Regulatory Requirements & Agency of Authorization	Documentation of Legal Framework (as a whole) relative to the 'threat': reviews applicable legislation, implementation, monitoring, compliance and enforcement. This could include widely accepted best management practices. Different types & levels of governance & oversight across the identified sub-scopes.			
MoV	Extensive regulatory framework & oversight	Limited & Program Specific regulatory framework & oversight	Minimal regulatory framework & oversight	Regulatory framework & oversight
Mechanism & Supporting Evidence	Describe the 'mechanisms' to support or subsequent to the regulatory requirements by which the organization completing the forest management activity can demonstrate implementation, conformance, mitigation that address the 'threat'. (i.e. legislation, Mgt Plans, BMPs, EMS, Industry Initiatives, etc.).			
MoV	Extensive Legislative & BMP mechanisms	Limited & Program Specific Legislative & BMP mechanisms	Minimal Legislative & no indication of BMP mechanisms	Regulatory framework & oversight
Compliance, Enforcement and/or Monitoring Results	Describe the current state/condition &/or results of the indicator relative to the 'threat'. This includes publicly available, current & relevant results &/or reports of monitoring, compliance & enforcement, audits, assessments, etc. This could include information generated from interviews with experts &/or stakeholders.			
MoV	FLNRORD Compliance & Enforcement, Forest Practices Board, Forest & Range Evaluation Program,	Managed Forest Council Inspections, Audits	Bylaw enforcement	Regulatory framework & oversight

Evaluation Criteria	Crown Land	Private Managed Forest Land	Other Private Land	Province
	Government &/or NGO Analysis/Assessments			
Rationale of Risk Designation	Designated risk is based on evidence gathered in each of the sections listed above and how the evidence manages/mitigates the identified 'threat'. Risk is assessed based on the evaluation of evidence (I,e, means of verification (MoV)) and calibration of likelihood and impact for each of the indicators. Where there is a high probability that an indicator has met all the evaluation criteria listed above for a sub-scope, it is assessed as "low risk". Where there is a reasonable likelihood that an indicator is not being met for any or all the evaluation criteria listed above for a sub-scope, the indicator is assessed as "specified risk". Where there is insufficient evidence (i.e. MoV) available to assess the risk for any or all of the evaluation criteria listed above for a sub-scope, then the indicator is assessed as "specified risk" under the precautionary approach.			

The Rationale for Risk Designation is summarized in Table 12. Albeit this is a simplistic representation, it does illustrate how the risk designation is derived. Best case scenarios to rationalize low risk is that all four components of the risk evaluation framework verify evidence that the threat is managed. As illustrated below, specified risk occurs when there is a 'gap' in verifiable evidence for one or any of the components. If, however, there is verifiable evidence that *only* the current condition is 'met' then low risk *may be* designated, but this was not the case for this RRA. The WB acknowledges this latter situation *could* occur, but it does not support a rigorous risk evaluation framework. This latter situation would require continuous verification, which is not appropriate for the RRA, but might be verifiable for a supply base evaluation.

Table 12: Risk Designation Logic Matrix

Threat due to forest mgt	Yes	Yes	Yes	Yes
Legislation Framework	Met	Met	Met	Gap
Mechanism of Implementation	Met	Met	Gap	Gap
C&E &/or Monitoring Framework	Met	Gap	Gap	Gap
Current Condition / Situation	Met	Gap	Gap	Gap
• Compliance/Enforcement Program & Data			• Assessments	
• Monitoring Program & Data			• Reports	
Risk Designation	Low	Specified	Specified	Specified

The WB reviewed and evaluated information from the Canadian FSC NRA process but reached an independent evaluation based on evidence specific to BC.

Although spatial data was collected and analysed, it was not used to designate risk. It was used to provide context, as well as information regarding location, scale and intensity.

The WB did not identify any new or additional risk factors beyond those identified in SBP Standard 1: Feedstock Compliance. The WB utilized the "SBP Risk Reporting Template' as provided in the RRA Procedures, however the WB provided sub-headings to match the evaluation criteria and logic.

As required by SBP Standard 2, a single risk rating is provided for each sub-scope, resulting in each indicator having more than one risk rating (see Table 19: Risk Designation Summary).

3.4 Mitigation Measures

The SBP RRA Procedures indicate that the WB '*may propose a set of indicative/possible mitigation measures.*' Given the complexity of the RRA-BC with the use of sub-scopes the WB has not provided a proposed set. This is more pertinently address through Supply Base Evaluations (SBEs) and the RRA-BC acts as a guide for the focus of SBE's. As mention above, scale and intensity comparisons amongst the three sub-scopes were not used in determining risk in the RRA. *However, it is recommended that scale and intensity is appropriate and could be used in risk designation at the Supply Base Evaluation (SBE)*. In addition, it is recommended that BPs consider different and appropriate mitigation measures for the different feedstock (fibre type). This could include but is not limited to thresholds, annual source maximums, phase out over X-time period and/or operating within sphere of influence.

The WB has provided mitigation measures guidance in Table 13 that follows the evaluation criteria and logic used during the steps leading to the risk designation (Table 12: Risk Designation Logic Matrix).

Table 13: Proposed Considerations for Mitigation Measure Development

	Crown Land	Private Managed Forest Land	Other Private Land	Province
Scale of Assessment	Identify/clarify the applicable sub-scopes for each indicator. Some sub-scopes may not exist within the BP's supply base area			
Context	Identify/clarify the context & scope of the indicator as it relates to the BP's supply base area.			
Potential Threat	Identify/validate the 'threat' to legality (STD1-C1.1 – 1.6) or sustainability (STD1-C2.1 – 2.10) applicable to BP's supply base area.			
Regulatory Requirements & Agency of Authorization	Identify/clarify regulatory framework & oversite for BP's supply base area, specifically any government initiatives/policy, etc. that address the threats.			
MoV	Ex. Local gov't policy; GAR; etc.	Ex. BMPs	Ex. Bylaws; BMPs	Ex. Laws, BMPs, Bylaws
Mechanism & Supporting Evidence	Identify/clarify 'mechanisms implemented' in the BP's supply base area, specifically any initiatives involving government, industry &/or stakeholders that address the threats. (i.e. policy, Mgt Plans, BMPs, EMS, Industry Initiatives, etc.). Consider local scale, intensity and risk by sub-scope.			
MoV	Ex. Local OGMA &/or Caribou working groups	Ex. Local SAR working groups; local cooperatives	Ex. BMPs, Local SAR working groups; local support groups	Ex. BMPs, Local SAR working groups; local support groups
Results: Compliance, Enforcement and/or Monitoring	Identify/validate current state/condition &/or results of the indicator relative to the 'threat' for BP's supply base area. Consider local scale, intensity and risk (probability X severity) for relevant sub-scopes.			
MoV	Ex. Local reports, audits, assessments	Ex. Local reports, audits, assessments	Ex. Local reports, audits, assessments	Ex. Local reports, audits, assessments

	Crown Land	Private Managed Forest Land	Other Private Land	Province
Mitigation Measure Considerations	1. Specify the 'gap' that has been identified by the risk evaluation framework criteria that resulted in a 'specified risk' within the RRA-BC. 2. Provide evidence relative to the 'threat' that supports that the 'gap' does not exist in the BPs supply base area. The BP may apply scale, intensity and risk (probability X severity) in their evaluation of each separate sub-scope. In this situation, the BP may be able to determine 'low risk' for that indicator/sub-scope and source the feedstock as SBP-compliant. 3. Provide evidence, relative to the 'gap' that indicates how the mitigation measures relative to the 'threat' implemented in the BPs supply base area has reduced the risk of non-conformance to acceptable levels. The BP may apply scale, intensity and risk (probability X severity) in their evaluation of each separate sub-scope. In this situation, the BP may source the feedstock as SBP-compliant. 4. Where the BP cannot close the 'gap' with evidence and the indicator/sub-scope remains 'specified risk', the feedstock is ineligible to be sourced as SBP-compliant and evidence to verify 'avoidance' is provided as the risk control.			

4 Stakeholder Consultation

Following the guidance of SBP RRA Procedures C.4, the WB developed an approach to Stakeholder Consultation. A key component to consultation was via the website created by the WB. The website included but was not limited to:

- A description of the SBP certification system, including direct reference to the current version of SBP Standard 1 and SBP RRA Procedure.
- A description of the purpose of the RRA, the scope of the risk assessment and the objective of stakeholder consultation, including a request for comments.
- The start and end dates of the stakeholder consultation period.
- The draft RRA report.
- Contact details of the WB Co-ordinator.

The WB developed a comprehensive stakeholder list based on the requirements in SBP RRA Procedures (Annex 1: Stakeholder groups to be consulted in the RRA process), resulting in 10 stakeholders' categories. Within these 10 main-categories, WB further organized the list into stakeholder sub-categories, typically based on organizations. The principal stakeholders (within the 10 categories) were identified as the biomass sector, the timber processing industry, provincial and federal government authorities, non-governmental organisations working in environmental and social sectors, industry associations, associations of forest owners, certification bodies working in the forestry sector, and scientific institutions/academia. The complete list of organizations that were provided opportunity to offer input is in Annex 4: List of stakeholders grouped based on the main categories, sub-categories, and organization.

A Draft RRA-BC (April 2020) was prepared and made available for stakeholder consultation via a homepage managed by the WB – BC Regional Risk Assessment. The website indicates Stakeholder Consultation took place from April 20, 2020 until May 22, 2020. The WB had a 'soft release' starting on May 18 and the WB extended the consultation to May 25, 2020. Each of the tables below provides the number of emails successfully delivered, the percentage of emails opened and the percentage of opened emails that accessed the website. A total of 433 individual emails were delivered during 3 separate 'email-campaigns': April 18, 21 and 23. In addition two reminder notifications were sent out on May 8 and again on May 22, 2020.

Table 14: Stakeholder Consultation Notification – April 18, 2020

Row Labels	Nombre de April 18 Delivered	Nombre de April 18Opened	Nombre de April 18Clicked
⊞0		0.00%	0.00%
⊞1. Economic interests	17	13.33%	22.58%
⊞10. Experts	4	2.67%	3.23%
⊞2. Social interests	9	5.33%	6.45%
⊞3. Environmental interests	21	13.33%	16.13%
⊞4. Indigenous Peoples	10	8.00%	0.00%
⊞5. Local Communities	63	38.67%	32.26%
⊞6. Certification Bodies		0.00%	0.00%
⊞6. Forestry certification schemes		0.00%	0.00%
⊞7. Nat'l & Prov Forest Agencies	3	0.00%	0.00%
⊞8. Forestry Associations	14	13.33%	19.35%
⊞9. Research institutions and universities	7	5.33%	0.00%
Grand Total	148	100.00%	100.00%

Table 15: Stakeholder Consultation Notification - April 21, 2020

Row Labels	Nombre de April21bReceived	Nombre de April21bOpened	Nombre de April21bClicked
⊞0		0.00%	0.00%
⊞1. Economic interests	19	21.62%	16.67%
⊞10. Experts		0.00%	0.00%
⊞2. Social interests		0.00%	0.00%
⊞3. Environmental interests	4	5.41%	8.33%
⊞4. Indigenous Peoples	19	27.03%	8.33%
⊞5. Local Communities	5	8.11%	8.33%
⊞6. Certification Bodies		0.00%	0.00%
⊞6. Forestry certification schemes		0.00%	0.00%
⊞7. Nat'l & Prov Forest Agencies	46	37.84%	58.33%
⊞8. Forestry Associations		0.00%	0.00%
⊞9. Research institutions and universities		0.00%	0.00%
Grand Total	93	100.00%	100.00%

Table 16: Stakeholder Consultation Notification - April 23, 2020

Row Labels	Nombre de April23Received	Nombre de April23Opened	Nombre de April23Clicked
⊞0		0.00%	0.00%
⊞1. Economic interests	1	0.00%	0.00%
⊞10. Experts	1	0.00%	11.11%
⊞2. Social interests		0.00%	0.00%
⊞3. Environmental interests		0.00%	0.00%
⊞4. Indigenous Peoples	165	88.89%	66.67%
⊞5. Local Communities	2	5.56%	0.00%
⊞6. Certification Bodies	6	0.00%	0.00%
⊞6. Forestry certification schemes	3	5.56%	0.00%
⊞7. Nat'l & Prov Forest Agencies	3	0.00%	11.11%
⊞8. Forestry Associations	1	0.00%	11.11%
⊞9. Research institutions and universities		0.00%	0.00%
Grand Total	182	100.00%	100.00%

Table 17: Stakeholder Consultation Reminder - May 8, 2020

Row Labels	Nombre de May8Received	Nombre de May8Opened	Nombre de May8Clicked
⊞0	15	5.22%	3.85%
⊞1. Economic interests	36	5.97%	7.69%
⊞10. Experts	4	0.00%	0.00%
⊞2. Social interests	9	2.24%	3.85%
⊞3. Environmental interests	24	6.72%	15.38%
⊞4. Indigenous Peoples	191	47.76%	53.85%
⊞5. Local Communities	68	13.43%	3.85%
⊞6. Certification Bodies	5	0.00%	0.00%
⊞6. Forestry certification schemes	3	0.75%	0.00%
⊞7. Nat'l & Prov Forest Agencies	50	13.43%	7.69%
⊞8. Forestry Associations	14	3.73%	3.85%
⊞9. Research institutions and universities	7	0.75%	0.00%
Grand Total	426	100.00%	100.00%

Table 18: Stakeholder Consultation Reminder - May 22, 2020

Row Labels	Nombre de May22Received	Nombre de May22Opened	Nombre de May22Clicked
⊞0	15	4.69%	6.90%
⊞1. Economic interests	37	9.38%	3.45%
⊞10. Experts	4	0.78%	3.45%
⊞2. Social interests	9	0.78%	0.00%
⊞3. Environmental interests	24	5.47%	6.90%
⊞4. Indigenous Peoples	193	48.44%	41.38%
⊞5. Local Communities	70	14.06%	13.79%
⊞6. Certification Bodies	5	0.00%	0.00%
⊞6. Forestry certification schemes	3	0.78%	0.00%
⊞7. Nat'l & Prov Forest Agencies	52	11.72%	20.69%
⊞8. Forestry Associations	14	3.91%	3.45%
⊞9. Research institutions and universities	7	0.00%	0.00%
Grand Total	433	100.00%	100.00%

Prior to the end of the consultation period, the WB completed additional efforts for 25 National and Regional ENGOs and 30 National and Provincial Indigenous Peoples organizations. This included personal emails (vs the email-campaign from the website) and unsuccessful follow-up phone messages. Specific for the Indigenous People organizations a webinar was offered, but unfortunately no acceptance received.

The WB did not receive requests or indications that recipients needed more time. In a few instances it was indicated that although important 'this was not on our radar/priority' and would not be responding.

The WB was able to confirm that 24 individuals accessed the draft RRA, as registration was required. The registration permitted access to the RRA and the "RRA-BC Feedback Form". Additional consultation with stakeholders was undertaken from May 25 through July 20, 2020 as a follow-up to concerns and comments raised by stakeholders. All stakeholder comments received were tracked unedited and documentation of how they were addressed in the RRA was provided. Further details are given in Annex 5: Stakeholder consultation report.

5 Conclusion

Based on the information available during the risk assessment process, the level of risk for each of the criteria was chosen. Below is the summary of the risk designation for each indicator identified either provincially or for each of the three ownership-type sub-scopes (see Section 3.1 Sub-scopes).

Table 19: Risk Designation Summary

	Uncertified Land			
	Province	**Crown**	**PMFL**	**Other Private**
1.1.1	--	L	L	L
1.1.2	--	L	L	L
1.1.3	--	L	L	L
1.2.1	--	L	L	L
1.3.1	--	L	L	L
1.4.1	--	L	L	L
1.5.1	L	--		
1.6.1	--	L	L	L
2.1.1	--	L	L	S
2.1.2	--			
HCV1	--	S	S	S
HCV2	--	S	S	S
HCV3	--	L	L	S
HCV4	--	L	L	S
HCV5	--	L	L	S
HCV6	--	L	S	S
2.1.3	--	L	L	S
2.2.1	--	L	L	S
2.2.2	--	L	L	S
2.2.3	--	L	L	S
2.2.4	--	S	S	S
2.2.5	--	L	S	S

	Uncertified Land			
	Province	**Crown**	**PMFL**	**Other Private**
2.2.6	--	L	L	S
2.2.7	L	--		
2.2.8	--	L	L	L
2.2.9	L	--		
2.3.1	--	L	L	S
2.3.2		L	L	S
2.3.3	L	--		
2.4.1	--	L	L	S
2.4.2	--	L	L	L
2.4.3	--	L	L	L
2.5.1	--	L	S	S
2.5.2	--	L	L	S
2.6.1	L	--		
2.7.1	L	--		
2.7.2	L	--		
2.7.3	L	--		
2.7.4	L	--		
2.7.5	L	--		
2.8.1	L	--		
2.9.1	--	L	L	L
2.9.2	--	L	L	S
2.10.1	--	L	L	L

Annex 1: Detailed findings for indicators

		Indicator
1.1.1		The Supply Base is defined and mapped.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The BC State of the Forests report indicates that public lands and forests account for 95% of the provincial landbase, with BC owning 94%. Approximately 4% of the provincial landbase is privately owned. The province of British Columbia's forested land base is comprised of Crown land (95%), private land, municipal crown land or federal land, which includes Indian Reserves. ***The supply base is the entire province but the scope of this Regional Risk Assessment is uncertified forests.*** (For more detail, see Section 2 "Scope and regional background" above.)
	Regulatory Requirement & Agency of Authorization	The *Forest Act* provides the legal authority for the provincial government to issue licences via forest agreements. The BC government's forest management system, managed by the Ministry of Forest, Land, Natural Resource Operations and Rural Development (FLNRORD), identifies which Crown lands are available for timber harvesting and which areas are not due to various restrictions for ecological or social reasons. Crown Forest Land Base (CFLB) consists of 37 Timber Supply Areas (TSA) and 34 Tree Farm License (TFL) areas on a combination of Crown and private land. Tree Farm Licences are long-term, replaceable, area-based licences granted by the provincial government which may include a private land portion. A variety of licence types are issued by the provincial government within the Timber Supply Areas, ranging from long-term to short-term. Volume-based tenures account for 80.5% of the AAC: TFLs (19.5%. Private owners have ownership of the trees on their property and they may harvest and process or sell /trade the associated timber as they see fit, provided that appropriate regulations are met. The rights of private land ownership provide assurance of harvest of timber that is legally permitted, subject to applicable regulations. Managed Forest is a BC Assessment property classification under the *Land Act*, with management and practices regulated under the *Private Managed Forest Land Act* (PMFLA).
	Mechanism and Supporting Evidence	The Supply Base is from Crown and Private forest lands in the province of British Columbia, excluding certified lands/management. Forested Crown Land within the supply area includes 37 Timber Supply Areas and 34 Tree Farm Licenses. Private forests within the supply base include those managed as Private Managed Forest Land and un-managed termed 'other private land'. A substantial portion of the Province's Crown and Private lands are managed under one of the Forest Management Certification Systems (i.e. FSC, CSA, SFI, and PEFC). Those lands are included within the Supply Base for sourcing feedstock but excluded from the requirements of this Regional Risk Assessment

		(See Section 2.8 – Certification in the above section of the report). For this reason, the Supply Base for this risk assessment has been divided into the following three sub-scopes: 1. Uncertified Crown Land 2. Uncertified Private Managed Forest Land 3. Uncertified Other Private Land
	Results: **Compliance, Enforcement, and/or Monitoring**	All fiber that is harvested from Crown or Private land and transported within the province is required to have a Timbermark and is accounted for through the Province's Harvest Billing System (HBS); therefore, can be traced to origin and confirmed to be within the Supply Base. (See Indicator 1.1.2 for more details)
	Rationale for Risk Designation	A conclusion of Low Risk was reached for this indicator. The rationale for this conclusion is that the supply base is defined, mapped at an appropriate scale, maintained up-to-date and verifiable via supplier documentation, including contracts, transportation documentation and the Harvest Billing System (HBS).
Means of Verification		• Online registers: HBS • Transport documents
Evidence Reviewed		• Supply Base Map • BC Forest Management Unit Map • Managed Forest Council – https://www.mfcouncil.ca • Private Forest Landowners Association – https://www.pfla.bc.ca/managed-forest-land
Proposed Risk Rating		**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
1.1.2		Feedstock can be traced back to the defined Supply Base.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The pellet industry's use of fibre by source is explained and summarized in section 2.9 Biomass Sector in the main part of the RRA Report.
	Potential Threats	Tracking all harvested timber is essential to ensure that there is no illegal harvesting (See Indicator 2.4.3 for more details) and that money owing to government for Crown timber (stumpage) (See Indicator 1.4.1 for more details) is completely and accurately invoiced.
	Regulatory Requirement & Agency of Authorization	The Ministry of FLNRORD, under the *Forest Act* (Part 5 & 6), is the authority that governs the harvesting, transporting, and scaling of all timber harvested from both Crown and private land within the province of BC.

	Mechanism and Supporting Evidence	FLNRORD regulates the transport of fibre within the province, shipped for export or entering as imports. All timber harvested within the province requires timber marking and branding and must be accompanied by appropriate transport documentation. Fibre transported in the province are also subject to transport regulations which require documentation on point of origin and a description of goods. The timber mark issued by FLNRORD identifies the area of harvest, the stumpage rate, and the authorized licensee in the case of Crown timber, or the landowner in the case of private timber. The most common point of transfer for the HBS is at weigh scales, generally located at the processing facility, where the fibre is weighed to determine the amount (tonnes), and in some cases, measured as a volume (cubic meters). The HBS tracks the fibre supply with a unique timber mark which, among other things, identifies the area of harvest, the stumpage rate, and the authorized licensee in the case of Crown timber, or the landowner in the case of private timber. Before timber is removed from the harvest area, it must be physically stamped or painted with the correct and unique timber mark. All timber in transport must be accompanied by a load slip, which carries essential information describing the load, its source and its destination. The timber mark is used to identify harvested timber from cut block through to scaling and invoicing to provide a complete audit path and ensure that no harvested timber is unaccounted. All transport activities, scaling, and processing of scale data is subject to check-scaling, scale site inspections, data review, and audit. Accurate records are required to be kept by anyone who: buys or sells timber, or products manufactured from timber, or operates a timber processing facility in the province. These records must be available for inspection by the Ministry.
	Results: **Compliance, Enforcement, and/or Monitoring**	This data is tracked through the provincial government Harvest Billing System (HBS). There is no significant or systemic evidence that fibre is being sourced from outside the defined Supply Base. In addition, the existence of a valid chain of custody certificate ensures fibre tracking is effective and verified annually.
	Rationale for Risk Designation	A conclusion of Low Risk was reached for this indicator. The rationale for this conclusion is that strong provincial legislation, procedures and policies are in place with clear evidence of implementation. All fibre can be traced and confirmed to be from the defined Supply Base through the provincial government HBS. As well, the the existence of a valid chain of custody certificate ensures this is effective and verified.
Means of Verification		• Chain of Custody Certificate • Provincial Timber Tracking system – HBS – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/harvest-billing-system
Evidence Reviewed		• Supply Base Map • BC Forest Management Unit Map • Provincial Timber Tracking system – HBS – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/harvest-billing-system

Proposed Risk Rating	**Uncertified Crown Land**	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☒ **Low Risk**	☐ **Specified**

		Indicator
1.1.3		The feedstock input profile is described and categorised by the mix of inputs.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The pellet industry's use of fibre by source is explained and summarized in section 2.9 Biomass Sector in the main part of the RRA Report.
	Regulatory Requirement & Agency of Authorization	The Ministry of FLNRORD, under the *Forest Act* (Part 5 & 6), is the authority that governs the harvesting, transporting, and scaling of all timber harvested from both Crown and private land within the defined Supply Base.
	Mechanism and Supporting Evidence	Transportation documentation, in the form of Load Slips, are legally required under the *Forest Act* in order to transport fibre in British Columbia (see Indicator 1.1.2 for details). Load slips contain appropriate data to describe the feedstock input at the receiving facility. Records include volumes and species type, as well indicate fibre type: chips, sawdust, shavings, hog and/or whole logs. Feedstock input data is recorded and tracked in daily, weekly and monthly reports.
	Results: **Compliance, Enforcement, and/or Monitoring**	This data is tracked through the provincial government Harvest Billing System (HBS) and data/reports can be produced to verify input quantities, species and district of origin. In addition, the existence of a valid chain of custody certificate ensures fibre tracking is effective and verified annually.
	Rationale for Risk Designation	A conclusion of Low Risk was reached for this indicator. The rationale for this conclusion is that the feedstock input profile is described and categorized by the mix of inputs, and the existence of a valid chain of custody certificate ensures this is effective and verified.
Means of Verification		• Chain of Custody Certificate • Provincial Timber Tracking system – HBS – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/harvest-billing-system
Evidence Reviewed		• Provincial Timber Tracking system – HBS – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/harvest-billing-system
Proposed Risk Rating		**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified**

	Uncertified Other Private Land Specified	☒ **Low Risk**	☐

		Indicator
1.2.1		Legality of ownership and land use can be demonstrated for the Supply Base.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Potential Threats	One of the pillars of our society is the concept of ownership and the system in place that enables ownership to be recognized, respected and enforceable. Legality of ownership and land use is important in ensuring that the management of the forest, including the harvest of timber, can be conducted in an orderly manner. The threat, should ownership be contested or poorly established, is degradation of both the resource and the timber industry. A lack of clarity regarding permitted land use would have similar effects.
	Regulatory Requirement & Agency of Authorization	Canada's *Constitution Act of 1867* gives the provinces jurisdiction over the "development, conservation and management of ... forestry resources" and the provinces generally control and manage the non-private land in the province, with the exception of some lands under federal jurisdiction. The provincial and federal governments, as well as many First Nations in BC, are in negotiation or in court regarding Indigenous rights and title, with the focus on Crown Land. As noted above in section 2.3 "Indigenous People", the Supreme Court of Canada has ruled that the Tsilhqot'in Nation holds Aboriginal title to traditional territory. These processes are generally proceeding as guided by legal determinations. BC's *Land Title Act* provides the legal basis for private ownership of land in the province, and it also sets out dispute resolution mechanisms and processes. The provincial government led extensive land use planning exercises during the 1990's, which include the Commission on Resources and Environment (CORE) and Land and Resource Management Plan (LRMP) processes. The land use plans that were developed identified permitted land uses, including which lands were available for forestry. While these land use plans have not been kept updated, they form the basis for permitted land use in much of the province today. The *Forest Act* provides the legal authority for the provincial government to issue licences. The BC government's forest management system, managed by the Ministry of Forest, Land, Natural Resource Operations and Rural Development, identifies which Crown lands are available for timber harvesting and which areas are not due to various restrictions for ecological or social reasons.
	Mechanism and Supporting Evidence	The BC State of the Forests report states that the provincial government owns 94% of BC's lands and forests. Approximately 4% of BC's landbase is privately owned, while the remainder is federal land. Crown Forest Land Base (CFLB) consists of 37 Timber Supply Areas (TSA) and 34 Tree Farm License (TFL) areas on a combination of Crown and private land, and private land areas. Tree Farm Licences are long-term, replaceable, area-based licences granted by the provincial government. A variety of licence types can be issued by the provincial government on the Timber Supply Areas, ranging from long-term to short-term.

		Private owners have ownership of the trees on their property and they may harvest and process or sell /trade the associated timber as they see fit, provided that appropriate regulations are met. The rights of private land ownership provide assurance of harvest of timber that is legally permitted, subject to applicable regulations. Illegality associated with forestry is very uncommon in Canada, which is assessed by Transparency International as having a very high standard of legality (Canada is tied for ninth least corrupt country in 2018).
	Results: **Compliance, Enforcement, and/or Monitoring**	The Crown has enforcement mechanisms in place to ensure that the terms of licences issued by the province are upheld. Permitting requirements ensure that forestry does not occur where it is not an allowable land use. This system provides assurance of the legality of land use on provincial Crown land. The province is generally well-surveyed and ownership disputes are rare, although boundary disputes do occur. These are resolved by surveys and in the courts as required. The legal system is the most common means of enforcement of property rights.
	Rationale for Risk Designation	A conclusion of Low Risk was reached for this indicator. The rationale for this conclusion is that the legality of ownership of some areas of Crown land and on all private land is well-established and has generally not been contested, and the province has in place a robust system of property and contract law. On other areas of Crown land, there are Indigenous communities that are engaged in processes governed by the legal framework to establish Aboriginal title and rights. The legal framework is itself evolving in response to these claims and questions that they raise. While these negotiations are being undertaken, a legal framework is in place to provide order, hence a low risk conclusion has been reached for these lands. As well, there is no evidence to indicate land use permission is granted in violation of provincial legislation.
Means of Verification		• Tenure Documents • Ownership Titles – private land • Timber Mark &/or tracking via Harvest Billing System (HBS) • Forest legislation/regulations registry • Public information on Enforcement infractions • Fibre Procurement Contracts • Payment invoices • District of Origin forms
Evidence Reviewed		• Canada. *Constitution Act* of 1867. https://www.canlii.org/en/ca/laws/stat/30---31-vict-c-3/latest/30---31-vict-c-3.html • B.C. *Land Titles Act*. http://www.bclaws.ca/civix/document/id/lc/statreg/96250_00 • B.C. Ministry of Forests, Mines and Lands. 2010. The State of British Columbia's Forests, 3rd ed. Forest Practices and Investment Branch, Victoria, B.C, • Sustainable Forest Management Network. Undated. General Statistics on British Columbia's forests: https://www.sfmcanada.org/images/.../EN/BC_info_Province_and_territories_EN.pdf

	• Transparency International. 2019. Corruption Perceptions Index 2018. https://www.transparency.org/cpi2018
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
1.3.1		Feedstock is legally harvested and supplied and is in compliance with EUTR legality requirements.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The European Union's Timber Legality Regulation (EUTR), which came into effect in May 2013, prohibits the placement of timber and timber products on the EU market if they were harvested illegally under the laws of the country of origin. It requires those who first place timber on the EU market to employ a due diligence system to ensure that timber was harvested legally. The due diligence required by EUTR means that businesses along the supply chain must keep records to facilitate the traceability of the products (i.e. they must maintain chain of custody data for the feedstock used. (See the assessment of Indicator 1.1.2 & 1.1.3)).
	Potential Threats	Illegal timber harvesting threatens the integrity of sustainable forest management and on any ownership, it may lead to the damage of sites or values, deprives the timber owner of revenue, and is often associated with the activities of larger illegal networks.
	Regulatory Requirement & Agency of Authorization	In BC, the issuance of licences on Crown land is tightly regulated by government. The provincial legal framework, notably the *Forest Act*, ensures that Crown timber must be harvested under licence and the harvest must be in conformance with licence requirements and various forest stewardship plans and practice requirements. Ownership and rights to harvest Crown timber are affected by resolution of Aboriginal rights and title issues and changing social values. This is discussed in the assessment of Indicator 1.6.1. A licensee must harvest timber subject to a forest stewardship plan (FSP), associated regulations, and government approval. As long as the appropriate stumpage dues (see Indicator 1.4.1 for more details) are paid to the provincial government, the licensee may dispose of the timber by sale or trade or may process the timber. The province may issue sub-licences to permit specific harvests (non-replaceable forest licence under section 13.1 of the *Forest Act*), usually limited to a small number of species, product types or to a specified quantity. Forest operational planning and practices are governed by the *Forest and Range Practices Act* and associated regulations. On Private Managed Forest Land, the *Private Managed Forest Land Act* (*PMFLA*) established the Managed Forest Council (MFC), which is an independent tribunal that is responsible for administering the *PMFLA* and Regulations. The MFC has

		statutory authority to establish and enforce regulations in respect of forest management on PMFL. On other private land (un-managed), timber is either harvested under contract with the landowner or the timber is harvested by the landowner and sold. In either case, contractual law is in place and enforced to ensure that both parties comply with the relevant contract. There are some regulatory requirements that must be followed on private land; the court system is the mechanism for enforcement. The *Forest Act* governs aspects of the supply chain including timber marking, scaling and transportation for timber on Crown, PFML and un-managed private land. These legal requirements help to promote traceability and legality along the supply chain.
	Mechanism and Supporting Evidence	The process for issuance and renewal of many of the large licences is prescribed by regulation. The location of timber harvesting on licensed areas is also highly regulated through forest stewardship planning and related planning and approval processes. All timber on all ownerships that is harvested is marked and scaled at authorized scales. The Scaling Regulation under the *Forest Act* regulates the process of grading and scaling timber, and the Timber Scaling Manual provides more detailed requirements. Load Description Slips accompany a load of timber from where the transport began to the point of delivery, and include information such as licence, cutblock, timber mark, and other information that can be used to trace timber back to its origin. Contracts, proof of delivery and proof of payment would be available for timber originating from private land.
	Results: **Compliance, Enforcement, and/or Monitoring**	Ensuring compliance with licensing and technical requirements is undertaken by the Compliance and Enforcement Branch of FLNRORD and is also part of the purview of the BC Forest Practices Board (FPB), which states that it serves as the public watchdog to ensure that forest companies operating on Crown land comply with the *Forest and Range Practices Act* and with the *Wildfire Act*. In its 2018-19 annual report, the FPB stated that it reported on 15 audits that year, of which 4 were clean. Of the eleven that had issues, eight had at least one significant non-compliance, two had unsound practices and there were three adverse opinions issues. There were 17 areas for improvement identified. None of the issues were related to illegal harvesting or movement of wood. This result indicates a moderate level of compliance while also demonstrating that the monitoring process is credible. In terms of the legality of the licences themselves, there is no legal record of falsely or illegally issued licences. In 2014, the World Resources Institute (WRI) reported that Canada had the lowest level of suspicious log supply and corruption of any country or country group examined (although the source of this conclusion was a 2004 study). NEPCon assessed the legality of Canadian timber and scored the country 100/100, a perfect score. A low level of corruption coupled with strong tenure governance and enforcement systems was considered by NEPCon and WRI to imply a low risk of illegally obtained forest licences, and a low risk that wood is being sourced illegally. Illegality associated with forestry is very uncommon in Canada, which is assessed by Transparency International as having a very high standard of legality (Canada is tied for ninth least corrupt country in 2018).
	Rationale for Risk Designation	A conclusion of Low Risk was reached for this indicator. The provincial Compliance and Enforcement Branch and the arms-length FBP assess compliance with the regulations when harvesting takes place on Crown land. This system provides a high level of deterrence of illegal logging on Crown land. The

		Forest Act and *Private Managed Forest Land Act* also govern management and harvest of timber on private land, as well as the marking and sale of that timber. On private land, common law ensures the right of property owners to make contracts to sell or otherwise dispose of timber on their land, and these laws are rigorously enforced. The movement of fibre from all land ownerships to the processing mill is tracked by the provincial system, which provides high level of assurance that timber from private land is legally harvested and supplied (See Indicator 1.1.2 and 1.1.3 for more details on tracking of fibre).
Means of Verification		• Forest legislation/regulations registry – legality and/or EUTR • Compliance and Enforcement Branch Reports • Forest Practices Board Reports • Fibre Procurement Contracts – legality obligations • Timber Mark &/or tracking via Harvest Billing System (HBS) • Payment invoices • District of Origin forms • Chain of Custody procedure manuals
Evidence Reviewed		• *Forest Act* and Regulations http://www.bclaws.ca/civix/document/id/lc/statreg/96157_00 • *Forest and Range Practices Act* and Regulations http://www.bclaws.ca/civix/document/id/consol21/consol21/00_02069_01 • *Private Managed Forest Land Act* and Regulations http://www.bclaws.ca/civix/document/id/lc/statreg/03080_01 • B.C. Forest Practices Board. https://www.bcfpb.ca/ • B.C. Forest Practices Board. 2017. Annual Report 2016/2017. • World Resources Institute, 2014 • Transparency International. 2019. Corruption Perceptions Index 2018. https://www.transparency.org/cpi2018
Proposed Risk Rating		**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
1.4.1		Payments for harvest rights and timber, including duties, relevant royalties and taxes related to timber harvesting, are complete and up to date.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Potential Threats	One of the rights of ownership is the right to sell or exchange the owned property, which is done under contract or agreement. If payments are not made or cannot be collected for property that is sold, this undermines the principle of ownership. The social contract also recognizes the right of the government to impose and collect taxes, so long as they are fair, and failure to pay tax undermines the social

		contract and the authority of the government. Regarding timber, the specific threat, in the absence of the rule of law, is degradation of both the resource and the timber industry.
	Regulatory Requirement & Agency of Authorization	FLNRORD is authorized through the Forest Policy Framework (enabled by the BC *Land Act* and *Forest Act*) to set and collect stumpage on Crown timber (and rent on Crown land). As stated in the *Forest Act* all timber harvested from both Crown and private land must contain a timber mark (Part 5) and be scaled (Part 6), which provides the basis for stumpage charges to be determined (Payment to the Government – Part 7). Transactions involving timber harvested from private land are governed by contract law, and there will generally be a written contract between the landowner and the timber purchaser that includes a purchase price or a formula for determining the purchase price of the timber. Any disputes that may arise over private land timber sales would be addressed through the legal system. Owners of Private Managed Forest Land pay Property Taxes to the Government on the (1) bare land value and (2) on the value of timber. The value of the bare land portion is applied annually by local tax authority. The value of the timber is added to the property tax two years after the harvesting activity. Private land owners pay Property Tax.
	Mechanism and Supporting Evidence	The Government derives revenue through the tenure system in the form of stumpage and annual rent. For harvested Crown timber, the provincial Harvest Billing System (HBS) tracks timber marks (see Indicator 1.1.2) and volumes to determine the stumpage owed for each company by timber mark. The timber mark is used to identify harvested timber from cut block through to scaling and invoicing to provide a complete audit path and ensure that no harvested timber is unaccounted. All transport activities, scaling, and processing of scale data is subject to check-scaling, scale site inspections, data review, and audit. Stumpage (pre-determined price per cubic metre) must be paid for all trees cut and removed from provincial Crown land. Scale data is used to calculate the amount owed to the Government. Industry uses scale data for transactions, such as the purchase or sale of forest products and contractor payment. On Crown land, the BC government also collects annual rent from the holder of certain forms of agreement (*Forest Act*, S.111 & Annual Rent Regulation). Payments for timber harvested from private land (both managed and unmanaged) are made as prescribed in the contractual agreement.
	Results: **Compliance, Enforcement, and/or Monitoring**	FLNRORD has a number of compliance and enforcement mechanisms that minimize the probability or impact of non-compliance of stumpage for Crown timber. These include but are not limited to: ● Severe penalty for unmarked or incorrectly marked timber mark ● Penalties associated with non-compliance of Forest Act – S.105.1 & S.135 ● Government can re-determine stumpage, if submitted information inaccurate ● Inspection and audit of records by Government ● Government has extensive remedies to recover delinquent payments The conditions of sale /purchase of private timber, including the payment for the timber, are part of the timber sale contract and are readily enforceable through provincial law.

	Rationale for Risk Designation	A conclusion of Low Risk was reached for this indicator. The rationale is that the province has in place a robust system which includes appropriate control over the payments for Crown timber and harvest rights, including duties, relevant royalties and taxes related to timber harvesting. Private timber sales are conducted under contract law, which is well-established and enforced in BC. The evidence shows that the systems and procedures in effect makes it possible to verify that, in BC, payments are complete and up to date.
Means of Verification		• Stumpage records tracked through Ministry of Finance, Forest Statement of Account • Forest legislation/regulations registry specifically on stumpage and payments • Compliance and Enforcement Branch Reports • Forest Practices Board Reports • Fibre Procurement Contracts – payment obligations • Timber Mark &/or tracking via Harvest Billing System (HBS) • Payment invoices • District of Origin forms
Evidence Reviewed		• *Forest Act* (see specific sections above) – http://www.bclaws.ca/civix/document/id/complete/statreg/96157_00 • Minimum Stumpage Rate Regulation – http://www.bclaws.ca/civix/document/id/complete/statreg/354_87 • Scaling Regulation – http://www.bclaws.ca/Recon/document/ID/freeside/446_94 • Timber Marking and Transportation Regulation – http://www.bclaws.ca/Recon/document/ID/freeside/253_97 • Annual Rent Regulation – http://www.bclaws.ca/Recon/document/ID/freeside/122_2003 • Scaling Manual – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/timber-scaling/timber-scaling-manual • Coastal Appraisal Manual – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/coast-timber-pricing/coast-appraisal-manual • Interior Appraisal Manual – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/interior-timber-pricing/interior-appraisal-manual • Annual Rent & Fees – Forestry – https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/annual-rent-fees • Private Timber Mark – https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/private-timber-marks

Proposed Risk Rating	**Uncertified Crown Land**	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☒ **Low Risk**	☐ **Specified**

		Indicator
1.5.1		Feedstock is supplied in compliance with the requirements of CITES.
Finding	**Scale of Assessment**	Provincial
	Potential Threats	CITES is an important safeguard against exploitation of endangered species caused by (often illicit) demand in international markets. If not being implemented effectively, the risks of extirpation and extinction of commercially valuable species at risk would be significantly elevated.
	Regulatory Requirement & Agency of Authorization	The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) sets controls on movement of wild animal and plant species that are, or may be, threatened due to commercial exploitation. Environment and Climate Change Canada (ECCC) is the lead agency responsible for implementing and administering CITES on behalf of the federal government, which it does under the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (*WAPPRIITA*) and the *Wild Animal and Plant Trade Regulations*. Within ECCC, the Canadian Wildlife Service (CWS) administers CITES and interacts with provincial, territorial and other federal agencies. The *Wild Animal and Plant Trade Regulation* – Schedule 1 provides a listing of CITES Flora and Fauna. Within BC, the *Forest Act* governs timber marking and transport, as well as manufacture of products from timber.
	Mechanism and Supporting Evidence	Canada is the second largest exporter of primary forest products in the world, but it also imports wood and wood products. Timber imports into Canada require purchase agreements and documentation of species verified by scale reports. Most timber imports and exports are associated with cross-border trade with the United States, which is a low-risk jurisdiction for illegal harvesting and border/customs governance. In addition, the import of wood/wood products is not for the purpose of sawmills and/or feedstock for the pellet industry. *WAPPRIITA* regulates the export/import of CITES listed species, including tree species. CITES-listed species may not be imported into Canada without a CITES permit. ECCC works with a broad range of partners, including the Canada Border Services Agency, to ensure that imports comply with CITES and with relevant legislation and regulations in foreign countries for non-CITES species. To help customs agents distinguish between wood products from CITES-listed tree species and from other tree, Canada has created and distributed internationally the CITES Identification Guide – Tropical Woods and is working on means to increase the reliability of species identification on trade permits, customs forms, border declarations and associated documents.
	Results:	*WAPPRIITA* is used to enforce CITES in Canada as well as to control imports of non CITES-listed species that have been obtained illegally. All CITES permits

	Compliance, Enforcement, and/or Monitoring	must be presented to, and validated by the Canada Border Services Agency (CBSA) at the border. ECCC reports annually regarding the enforcement of *WAPPRIITA*. The three most recent annual reports were reviewed (2015-17). During these three years, annual inspections under *WAPPRIITA* averaged 1600, with an average of 284 violations of *WAPPRIITA* or its regulations in each of 2016 and 2017 (2015 violations were not reported) that resulted in tickets, seizures, prosecutions and warnings. None of the three *WAPPRIITA* annual reports mentioned violations regarding timber.
	Rationale for Risk Designation	Review of the CITES Schedule 1 confirms that there are no British Columbia tree species on the CITES list of species and therefore the risk of harvesting CITES species is designated as low.
Means of Verification		• Review of CITES legislation and Schedule 1 Species List vs Tree Species of British Columbia • Species list – scale reports &/or load slips
Evidence Reviewed		• CITES Website – www.cites.org • Canadian legislation: https://www.nrcan.gc.ca/forests/canada/laws/13303 • *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* – http://laws-lois.justice.gc.ca/eng/acts/W-8.5/ • Environment Canada – Wild Animal and Plant Trade Regulations Schedule 1 – http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-263/page-4.html#h-17 • Sustainable Forest Management in Canada – CCFM – Legal Forest Products Interview Provincial & Federal CITES experts • Sustainable Forest Management in Canada – CCFM – Legal Forest Products – https://www.sfmcanada.org/en/forest-products/legal-forest-products
Proposed Risk Rating		**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
1.6.1		Feedstock is not sourced from areas where there are violations of traditional or civil rights.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The scope of this indicator is very broad and only a part of the scope is strongly relevant to the BC forestry context. Civil rights are well addressed through the Canadian and provincial legal systems. The low number of civil and criminal cases involving forest operations demonstrates that forestry in Canada and BC rarely violates civil rights. Traditional rights of non-Indigenous Peoples do not generally have legal standing on Crown land. Traditional rights may consist of grandfathered rights (e.g. for grazing) on private land and these will be well understood by the

		owner. Therefore, this indicator report focuses exclusively on the traditional rights of Indigenous Peoples.
	Potential Threats	When civil or traditional rights are violated through forest management activities, not only may the actions be illegal but they cause negative impacts to rights holders.
	Regulatory Requirement & Agency of Authorization	Protecting Indigenous Peoples rights and title is a shared responsibility of the provincial, federal, and Indigenous Peoples governments and institutions. Section 35 of the Federal *Constitution Act, 1982* recognized Indigenous Peoples' rights and provided significant legal protection to rights defined after 1982. Laws and court cases over the years have helped delineate traditional rights of Indigenous Peoples in Canada and BC. BC and Canadian court cases continue to define Indigenous People's rights and title and influence how governments adapt their policies and laws concerning Indigenous People's rights and title. Due to the limited number of negotiated and finalized treaties in BC, court cases have provided much of the legal extent of traditional rights for Indigenous Peoples in BC. Legislation, regulation and policy are also in place to ensure identification and documentation of legal, customary and traditional rights take place (see more details in Indicator 2.5.1). On Crown land, legal statues that directly addresses forest management activities and the asserted and proven rights and title of Indigenous Peoples includes Canada's *Constitution Act*, BC's *Heritage Conservation Act*, *FRPA* and FPPR. This represents the legal framework for the protection of cultural, heritage and economic values of Indigenous People. In 2019, BC passed Bill 41 – *Declaration on the Rights of Indigenous Peoples Act* – which aims to bring current BC laws in line with the UN Declaration on the Rights of Indigenous Peoples. The *Act* includes provisions for the BC government to enter into agreements for joint decision-making and consent, however the *Act* simply establishes a framework and how forestry legislation will be revised to reflect UNDRIP is not clear. In regard to both PMFL and other private land in BC, very few legal control measures exist outside of the *Heritage Conservation Act*.
	Mechanism and Supporting Evidence	To date, BC courts have played a major role in affirming and laying out the scope of Indigenous Peoples traditional rights, if not specifically defining them. BC established a modern Treaty Process to is another available means of addressing outstanding claims; eight modern treaties have been signed and others are being negotiated. Prior to treaty finalization, agreements and measures can be defined to consider Aboriginal rights and title, to share benefits, to formalize consultation needs and obligations, to form partnerships arrangements with the private sector, etc. Within a forestry context, FPPR requires reasonable efforts to be made to meet and discuss the FSP with Indigenous Peoples that will be affected by the plan. Both the Agreement-Holders and the government have obligations to ensure that Indigenous Peoples have been adequately consulted regarding proposed forest and range decisions and, where appropriate, accommodated for potential impacts of forest and range activities on Indigenous Peoples interests have been accommodated. To comply with the government's duty to consult and accommodate when a decision may potentially have adverse effects on asserted or proven Indigenous Peoples rights or title, the "*Updated Procedures for Meeting Legal Obligations When Consulting First Nations*" and the "*A Guide to Involving Proponents when*

		Consulting First Nations" were adopted and implemented with the intent to engage with First Nations at a strategic level such as during land use planning. Other initiatives such as the "*Forest Consultation and Revenue Sharing Agreement*" (FCRSA) and the "*First Nations Woodland License*" facilitate consultation, generate economic benefits and delegates forest management responsibilities to First Nation signatories.
	Results: **Compliance, Enforcement, and/or Monitoring**	Since 1973, there have been approximately 20 landmark court cases that have helped to define BC Indigenous Peoples rights. They acknowledge the existence of Aboriginal title, provide direction on how to determine the existence of Aboriginal rights, how they can be protected, how the infringement of that right can be justified by the Crown and define the Crown's duty to consult and accommodate. In 2014, the Supreme Court of Canada decided that the Tsilhqot'in Nation had proven Aboriginal title to approximately 2,000 square kilometres of land and set out a number of key principles regarding title in Canada. The courts will continue to play an important role in defining Aboriginal rights and title and the roles and responsibilities of federal, provincial and Indigenous governments. Outside the courts, First Nations have access to the BC Treaty Process. First Nations are not required to prove their rights and title to enter the process. There are currently 8 modern treaties in the province and 14 First Nations are in the final stage of negotiations participating in or have completed treaties through the treaty negotiations process (BCTP 2019 Annual Report). All agencies that have authority to make decisions about land or resource use which may affect Indigenous Peoples rights and title have a duty to consult. The Crown evaluates if and how First Nations were consulted in accordance with administrative guidelines for plan approvals and permit issuance. Complaint mechanisms are clearly defined and accessible in case of disagreements between parties.
	Rationale for Risk Designation	BC's judicial, political and governmental authorities have made significant progress since 1973 and are committed to protect the legal traditional rights of Indigenous Peoples. BC's recent enactment of UNDRIP legislation was the first by a provincial government in Canada (the federal government has yet to pass a comparable act). Even if Indigenous Peoples may not legitimize these conflict resolution processes, there are recognized laws, regulations and processes in place to resolve conflicts of substantial magnitude pertaining to Indigenous Peoples traditional rights. Pertaining to Crown land, BC laws exist and are well understood by forest managers and the BC forest industry. Although violations of traditional rights have occurred and may occur, there is an extensive judicial, legal and policy framework that is being used to identify Aboriginal title is held and to define the traditional rights of Indigenous Peoples in BC. Based on the findings above, the risk of the violation of Indigenous Peoples traditional rights is low on Crown. On private land, the Courts have yet to provide guidance on how to consider Indigenous rights and title versus property rights aside from confirming neither common law nor civil law considers Aboriginal title or private ownership to be absolute title (Borrows 2015). It is not within the scope of this assessment to determine whether one of these rights takes precedence over the other or whether they can coexist. Given this ruling, and consideration that only 4% of the province in private ownership, both Private Managed Forest Land, and other private land are consider low risk.

Means of Verification	• Traditional and civil rights are identified and documented • Disputes concerning traditional and civil rights are identified and documented • Consultation with First Nations confirms that traditional rights are not violated • Provincial laws and regulations are upheld, and compliance and enforcement records indicate no / limited violations.
Evidence Reviewed	• Union of BC Indian Chiefs – www.ubcic.bc.ca • Map of First Nations Communities and Reserves in BC: https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-BC/STAGING/texte-text/inacmp_1100100021016_eng.pdf • *Constitution Act*, 1982, section 35: http://laws-lois.justice.gc.ca/eng/Const/page-16.html • Association of BC Forest Professionals, Forest Legislation and Policy, Reference Guide 2017 (March 2017) • Borrows, J. (2015). Aboriginal title and private property. The Supreme Court Law Review: Osgood's Annual Constitutional Cases Conferences 71. Available at: http://digitalcommons.osgoode.yorku.ca/sclr/vol71/iss1/5 • BC Treaty Commission – 2019 Annual Report – http://www.bctreaty.ca/sites/default/files/TreatyCommissionAnnualReport2019.pdf • First Nations Agreements: https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-negotiations • Updated Procedures for Meeting Legal Obligations When Consulting First Nations (2010): https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations • *Heritage Conservation Act*: http://www.bclaws.ca/civix/document/id/complete/statreg/96187_01 • Forest and Range Evaluation Program (Cultural Heritage Resources): https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program • *Forest and Range Practices Act (*FRPA): http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01 • Forest Planning and Practices Regulation (Section 10): http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/14_2004#section10 • *Forest Act* – Section 1 – Definitions and interpretations. http://www.bclaws.ca/civix/document/id/complete/statreg/96157_01#section1 • First Nations Summit: http://fns.bc.ca • United Nations FAO: http://www.fao.org/indigenous-peoples/our-pillars/fpic/en/

Proposed Risk Rating	**Uncertified Crown Land**	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☒ **Low Risk**	☐ **Specified**

		Indicator
2.1.1		Forests and other areas with high conservation values in the Supply Base are identified and mapped.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The concept of High Conservation Value (HCV) was introduced, and has become formalized, through the principles identified by the Forest Stewardship Council (FSC). The term HCV is now used in many other contexts outside of FSC certification, including the SBP standard. The categorization of HCV's used by FSC is well-accepted and widely used (See for example the definitions used by the High Conservation Values Network, reproduced below), and is a suitable proxy in the assessment of this indicator. The values that are considered to be HCVs contribute disproportionately to biodiversity and to the many of the social and economic values provided by forests. Furthermore, if mappable data for HCVs exists, such as the locations where a species at risk has been sighted, then that can contribute towards meeting the intent of this indicator. (Note that IND 2.1.2 (below) requires the forest manager to identify and address threats to HCV's from forest management, and the manager must know where the HCVs are located in order to meet that indicator.) The scope of Indicator 2.1.1 is confined to the spatial framework for identifying HCV's and is important to be included in the planning and assessment requirements of Indicator 2.2.1. The High Conservation Values Network (hcvnetwork.org) defines six categories of HCVs: ● HCV1: Biodiversity values. Concentrations of biological diversity including endemic species, and rare, threatened or endangered species and critical or potential habitat for species that are significant at global, regional or national levels. ● HCV2: Large landscape-level forests. Intact Forest Landscapes (IFL), large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance. ● HCV3: RTE Ecosystems. Forests that are in or contain Rare, Threatened, or Endangered (RTE) ecosystems, habitats or refugia.

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<tr><td></td><td></td><td>

HCV4: Critical ecosystem services. Forest areas that provide basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.
HCV5: Community basic needs. Forest areas fundamental to meeting basic needs of local communities or indigenous peoples (e.g. for livelihoods, health, nutrition, water, etc.) identified through engagement with these communities or Indigenous Peoples.
HCV6: Cultural identity. Forest areas critical to local communities traditional cultural identify. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples, identified through engagement with these local communities or Indigenous Peoples.

</td></tr>
<tr><td></td><td>Potential Threats</td><td>Forest management activities may pose a threat to HCVs due to the impacts associated with access construction, harvesting on sites where HCVs are located, and habitat fragmentation or other forms of habitat degradation. The construction of new roads creates numerous direct and indirect effects on biodiversity. HCVs can best be conserved if their location is known, hence the importance of this indicator.</td></tr>
<tr><td></td><td>Regulatory Requirement & Agency of Authorization</td><td>
Although there is no specific BC legislation with respect to HCV establishment, relevant legislation does exist for the elements that make up the above definition of HCVs (see “Context” above).

The federal government’s Species at Risk Act (SARA) requires the federal government to identify species at risk and develop recovery/conservation plans for them. If necessary, the federal government can take emergency action if a species is facing a critical situation. While BC does not have a Species at Risk Act, however the provincial government has indicate its intent to enact such legislation and released a discussion paper. At present, BC classifies species at risk according to their population status; there is generally a high degree of overlap between the federal and provincial lists of SAR.

Within BC, FLNRORD and ECCS administer various Acts and Regulations governing the management of many of the resource values described above for the 6 HCV categories. The key relevant provincial acts are the Forest and Range Practices Act, the Wildlife Act, and the Ecological Reserves Act. Crown land is the most heavily regulated, with less stringency for Private Managed Forest Land and less still for other private land. See the table below for the specific legislation for each of the sub-scopes.

Relevant legislation for the HCV elements and applicable indicators that address them:
<table>
<tr><th>HCV</th><th>Crown Land Legislation</th><th>Private Managed Forest & Other Private Land Legislation</th><th>More Details:</th></tr>
<tr><td>HCV1: Biodiversity values</td><td rowspan="2">Provincial
- Forest and Range Practices Act (FRPA)
- Ministry of Environment Act</td><td rowspan="2">PMFL
- Private Managed Forest Land Act (PMFLA)
- Wildlife Act</td><td>Indicator 2.2.4</td></tr>
<tr><td>HCV 2: Large landscape-level forests</td><td>-</td></tr>
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</td></tr>
</table>

		HCV 3: RTE Ecosystems	- *Fisheries Protection Act* - *Land Act* - *Park Act* - *Wildlife Act* - *Environment and Land Use Act* - *Ecological Reserve Act* - *Oil and Gas Activities Act* <u>Federal</u> - *Species at Risk Act* (SARA) - *Migratory Birds Convention Act*	<u>Other Private Land</u> - Regional and municipal regulations and bylaws - *Wildlife Act* <u>Federal</u> - *Species at Risk Act* (SARA) - *Migratory Birds Convention Act* - *Fisheries Act*	Indicator 2.2.3
		HCV 4: Critical ecosystem services	<u>Provincial</u> - *Forest and Range Practices Act* (FRPA) - *Forest Act* - *Wildlife Act* - *Fisheries Protection Act*	<u>PMFL</u> - *PMFLA* <u>Other Private Land</u> - Regional & municipal regulations & bylaws	Indicator 2.4.1 and 2.2.6
		HCV 5: Community basic needs	<u>Provincial</u> - *Forest and Range Practices Act* (FRPA) - *Forest Act* - *Land Act* - *Fisheries Protection Act* <u>Federal</u> - *Fisheries Act*	<u>PMFL</u> - *PMFLA* - *Water Sustainability Act* <u>Other Private Land</u> - *Water Sustainability Act* - Regional and municipal regulations and bylaws <u>Federal</u> - *Fisheries Act*	Indicator 2.5.2
		HCV 6: Cultural identity	<u>Provincial</u> - *Heritage Conservation Act* - *Forest and Range Practices Act* (FRPA) - *Forest Act* - *Oil and Gas Activities Act* - *Environment and Land Use Act*	<u>PMFL</u> - *Heritage Conservation Act* - *PMFLA* <u>Other Private Land</u> - *Heritage Conservation Act* - Regional and municipal regulations and bylaws	Indicator 1.6.1. 2.5.1, 2.5.2
	Mechanism and Supporting Evidence	<u>HCV1 and HCV3</u> There is a considerable amount of overlap between HCV1 and HCV3 and so these categories of HCV are assessed together. The federal government maintains the Species at Risk Public Registry for species that fall under SARA and is available to all ownership types. BC has a great deal of information on species at risk and rare or endangered ecosystems, available through the Conservation Data Centre (CDC). The			

		information available includes mapping products. The CDC maintains records of the species and ecosystems that occur in BC, assesses their conservation status, maps known locations and makes these data available on-line. Note that maps of some species at risk are not publicly available in order to protect their locations. CDC data is available to all ownership types. <u>HCV2</u> HCV2 are generally considered to be synonymous with Intact Forest Landscapes (IFLs). While there is no specific legal or regulatory recognition within BC of IFLs, a publicly available map of IFLs is kept up to date by Global Forest Watch that apply to all ownership types. <u>HCV4</u> HCV4 include critical resource or landscape features that provide important ecological services, such as water flow regulation and control of erosion. Terrain and hydrological maps are widely available and accurate, and these can be used to identify the location of HCV4 areas. (See Indicator 2.2.6 for more discussion on water quality and quantity) <u>HCV5</u> This class of HCV applies to areas where there are resources that are important to communities, such as water supplies or areas of high game or fish populations that are important in sustaining the communities. Because no BC communities are critically dependent on wild game or fish (they are important in many communities but not essential since there are stores where food can be purchased), the primary HCV5 in BC are community watersheds, which are designated through regulation and mapped (see more discussion on this in Indicator 2.5.2 and Indicator 2.2.6). Community watersheds information is available for all ownership types. There is extensive use of water for irrigation in some parts of British Columbia (lower Fraser, Okanagan, and Central Cariboo-Chilcotin region of British Columbia). The legislation and the operational forest practices that serve to protect water quality, generally, and water that has domestic use, also serve to protect the quality and quantity of water available for irrigation (see more discussion on this in Indicator 2.2.6). Water license information is available for all ownership types. <u>HCV6</u> Locally and regionally significant cultural resources and archaeological sites on Crown Land are identified first through an Archaeological Overview Assessment (AOA) that is conducted at a landscape scales in advance of forest operations to identify locations where there is a potential for archaeological sites to occur. These are completed throughout the province where harvesting occurs. The AOA is followed up with detailed site level Archaeological Impact Assessment (AIA) Studies on any potential sites to identify any specific sites and to develop measures to protect them. Forestry development plans and road developments are required to avoid or protect these sites or to seek permits to alter them. First Nations people participate in many of these assessments in their traditional territories (see more discussion on this in Indicator 2.5.1).
	Results: **Compliance, Enforcemen**	Although there are no Federal or Provincial legal requirements specifically for HCV identification and protection, federal and especially provincial legislation recognize many values which are HCVs and requires their protection, which implies a need for their identification and mapping. The following Indicators stipulate compliance and enforcement issues for elements of the following HCVs. **HCV** | **More Details in:**

<table>
<tr><td></td><td>t, and/or Monitoring</td><td colspan="2"><table>
<tr><td>HCV1: Biodiversity values</td><td>Indicator 2.2.4</td></tr>
<tr><td>HCV 2: Large landscape-level forests</td><td>-</td></tr>
<tr><td>HCV 3: RTE Ecosystems</td><td>Indicator 2.2.3</td></tr>
<tr><td>HCV 4: Critical ecosystem services</td><td>Indicator 2.2.6, 2.4.1</td></tr>
<tr><td>HCV 5: Community basic needs</td><td>Indicator 2.5.2</td></tr>
<tr><td>HCV 6: Cultural identity</td><td>Indicator 1.6.1. 2.5.1, 2.5.2</td></tr>
</table></td></tr>
<tr><td></td><td>Rationale for Risk Designation</td><td colspan="2">The collection of values which are designated as HCVs are of general importance to high level social goals, including the maintenance of biodiversity, attempting to conserve and recover species at risk, maintenance of areas that provide high value ecological services and community benefits, and preserve our shared cultural heritage. The importance of these values has given rise to legislative requirements to identify and conserve where possible these values through forest planning. While IFLs are not recognized in provincial or federal legislation, they are mapped by Global Forest Watch, which is a recognized and credible source of IFL data.

This indicator is about the ability to identify and map HCV. The requirements that lead to the identification of species at risk, rare ecosystems, important water sources, steep slopes, and cultural values are generally available for crown and PMFL ownerships. As a result, this indicator is assessed as low risk for these two ownerships and all classes of HCV.

As a result of the absence of legislation governing or the implementation of forest management planning or best management practices that would result in the identification and mapping for other private land in BC a specified risk is designated.</td></tr>
<tr><td colspan="2">Means of Verification</td><td colspan="2">• BC Conservation Data Centre database for wildlife and ecosystems
• GIS / Aerial maps of HCV areas
• Regional, publicly available data from a credible third party(s) including provincial and federal agencies
• Existence of a strong legal framework and policy framework for provincial and federal agencies
• Compliance and Enforcement records for infractions of relevant regulations</td></tr>
<tr><td colspan="2">Evidence Reviewed</td><td colspan="2">• HCV Resource Network –https://www.hcvnetwork.org
• Common Guidance for the Identification of High Conservation Values. HCV Resource Network. October 2013
• Global Forest Watch – https://www.globalforestwatch.org/country/CAN
• Federal – Environment and Climate Change Canada – https://www.ec.gc.ca/?lang=En
• Federal Species at Risk Act – https://www.canada.ca/en/environment-climate-change/services/environmental-enforcement/acts-regulations/about-species-at-risk-act.html
• Federal Species at Risk Public Registry – https://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=7606C7A6-1
• BC Conservation Data Centre – https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre
• BC Forest Practices Board. 2015. Forest Stewardship Plans: Are they Meeting Expectations? August 2015. FBP/SIR/44.</td></tr>
</table>

	• BC Forest Practices Board. 2018. Special Report: Conserving Fish Habitats under the *Forest and Range Practices Act*. Part 1. A Review of the BC Government Approach. July 2018. FBP/SR/56. • Red, Blue & Yellow Lists – https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/red-blue-yellow-lists • BC Ministry of Environment and Climate Change Strategy – Mandate – https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/environment-climate-change • BC Ministry of Forests, Lands, Natural Resources Operations and Rural Development – Mandate – https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/forests-lands-natural-resource-operations-and-rural-development • GeoBC Geographic Warehouse – Data Catalogue – www.catalogue.data.gov.bc.ca/dataset?sector=Natural+Resources&type=Application		
Proposed Risk Rating	**Uncertified Crown Land**	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

		Indicator
2.1.2		Potential threats to forests and other areas with high conservation values from forest management activities are identified and addressed.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	Previous Indicator 2.1.1 described the six categories of High Conservation Values (HCVs) and assessed whether the HCVs were identified and mapped. The six categories are: • HCV1: Biodiversity values • HCV2: Large landscape-level forests • HCV3: Rare, Threatened, or Endangered (RTE) ecosystems • HCV4: Critical ecosystem services • HCV5: Community basic needs • HCV6: Cultural identity This indicator (2.1.2) assesses whether, once identified, appropriate actions are being taken to identify and address potential threats to the areas with high conservation values from forest management activities.

	Potential Threats	A forest manager who is unable to identify and address threats to HCVs from forestry operations is at risk of approving and undertaking activities that damage, degrade or destroy the HCVs, in some cases irreversibly. Forestry operations ranging from access construction, harvesting, site preparation, and herbicide application may all threaten HCVs if they are undertaken in the wrong place, at the wrong time or in an inappropriate manner.
	Regulatory Requirement & Agency of Authorization	In addition to the relevant legislative listing provided in Indicator 2.1.1, the following sources also provide direction for conserving some of the values attributed to HCVs: ● Land use planning, such as Strategic Land and Resource Management Plans (SLRMPs); ● provincial and regional environmental organizations; ● Forest Practices Board assessments and reports, and ● through engagement with local communities and Indigenous Peoples. In BC, there are 24 regional scale SLRMPs (85% of BC landbase), 44-sub-regional scale plans, and 70 landscape scale plans that all seek to balance uses and impacts. The *Private Managed Forest Land Act* has the following requirements relevant to key ecosystems and habitats: ● Critical habitat, as defined through section 5 of the provincial Wildlife Act and identified through the Federal Critical habitat for Species at Risk list; and ● Riparian tree retention, defined in the PMFL Field Guide There is minimal legislation specific to forest management practices on other private land for key ecosystems and habitats. Landowners are subject to federal and provincial acts such as the *Species at Risk Act*, *Federal Fisheries Act*, *Water Sustainability Act*, and the *Wildlife Act*.
	Mechanism and Supporting Evidence	Systems and processes used in the Province to identify and address threats to HCVs are identified below. <u>HCV1 and HCV3</u> On Crown land, Forest Stewardship Plans (FSPs) are required to meet the two wildlife and biodiversity objectives that are among the mandatory objectives in the Forest Planning and Practices Regulation (FPPR). One of these is a landscape level objective that can be addressed through the Landscape Unit Plans, Land and Resource Management Plans (LRMPs), and/or SLRMPs. The requirements and content of these plans has been reviewed in the assessment of Indicator 2.2.4. The second objective is addressed at the stand-level by leaving wildlife trees. In addition, Section 7 of the FPPR sets out additional required wildlife objectives for FSPs, and Section 8 mandates conservation of biodiversity in riparian areas. The two FPPR biodiversity objectives, and the riparian objective, are reflective of a coarse-filter approach, which contributes to conserving HCV1 and HCV3. The Section 7 objectives are more specific, as they apply to species at risk, ungulates, and regionally important wildlife (e.g. caribou), subject to a condition that they do not unduly reduce the supply of timber. In contrast, a fine-filter approach is often required for species at risk and other high conservation values that are HCV1 and HCV3. Federal requirements, most

		notably the *Species at Risk Act* (*SARA*), provide protection for SAR on federal lands and minimum levels of protection for endangered and threatened species on provincial Crown land and private land. In addition, MECCS prepares recovery plans for species at risk (e.g. caribou). These recovery plans are construed as advice and recovery actions to achieve the goals and objectives in the recovery plans are contingent on the priorities and budgets of participating agencies and organizations. Under BC's *Wildlife Act*, species may be designated as endangered or threatened; to date, only four have (Vancouver Island marmot, burrowing owl American white pelican and the sea otter). Categories of species at risk can also be established under the Government Actions Regulation (GAR) of *FRPA*, which provides for protective measures to be applied within the scope of activities governed by *FRPA*. As of 2018, 85 species and sub-species have been designated as species at risk through GARs. The most significant forest-based species at risk in BC is woodland caribou, with numerous herds in various states of health, ranging from stable to extirpated. In March 2017, FLNRORD introduced a Boreal Caribou Recovery Implementation Plan, which included specific objectives and likely informed recent Ungulate Winter Range (UWR) and Wildlife Habitat Area (WHA) Orders. A draft caribou recovery plan was released by FLNRORD and MECCS in 2018 suggesting substantial change to Caribou management requirements, including an interim moratorium on new industrial developments. The recovery plan has not yet taken effect and its existence indicates that present approaches to caribou conservation are generally not working well. On Private Managed Forest Land (PMFL), the Minister has the authority to establish critical wildlife habitat zones. The Minister may also list SAR in Schedule C of the PMFL Regulation; as of 2018, 36 species are listed. Further, PMFL is managed under a results-based regulatory model that allows forest owners to develop and use management strategies most appropriate to the scale and location of their operations. The Managed Forest Council, which oversees PMFLs, monitors and enforces those requirements, which include provisions for protecting critical wildlife habitat, species at risk, water systems and riparian areas. On other private lands, the minimum protections in *SARA* are in force, however only the province can regulate activities that have the potential to harm SAR and/or their habitat, and there is little regulatory action in this regard. BC has embarked on discussions with stakeholders and Indigenous communities as part of the process for developing a provincial species at risk act, but this process is in its early stages. At this point in time there is no consistent verifiable mechanism of implementation (i.e. BMPs) in place on other private land. <u>HCV2</u> The province of BC does not officially recognize Intact Forest Landscapes (IFLs) or an equivalent value in provincial planning and management requirements. As a result, there are no goals or objectives related to them, mechanism for implementation or monitoring or reporting for any of the ownership types. <u>HCV4 and HCV5</u> On Crown land, there is a mandatory FPPR objective to maintain water quality in community watersheds, and the province has designated approximately 500

		Community Watersheds. However, the Community Watershed designation and associated management objectives only apply to Crown land. In July 2019, the province amended the regulations for Private Managed Forest Lands to strengthen the protection of drinking water. On other private lands, owners are required to comply with the provincial *Water Sustainability Act* which protects water catchments and prevents erosion of vulnerable soils and slopes, but there are no consistent verifiable mechanisms in place. <u>HCV5 and HCV6</u> Analogous to HCV4, for Crown land there are mandatory FPPR objectives to protect fish habitat in sensitive waters and cultural heritage resources specific to HCV5/HCV6. As discussed under Indicator 2.2.1, landscape plans such as the SLRMPs sought the input from First Nations, communities, other stakeholders and the public regarding their interests, needs and concerns on resource values, including many of the types classed as HCV5 and HCV6. Government's legal and policy framework requires licensees to develop strategies and deliver results that are consistent with this legal direction (see Indicator 2.2.1 below). Identification and conservation of HCV6 for Crown land is regulated through the *Forest Act* and FPPR (S.10) as well as the *Heritage Conservation Act.* These two Acts overlap somewhat; both have definitions of cultural heritage resources (CHRs). While one might expect all forest-based CHRs to be covered under the *Forest Act,* it is not the case, and the *Heritage Conservation Act* designates pre-1846 culturally modified trees as CHRs. FPPR includes a cultural heritage resources objective, which is to conserve and if necessary protect CHRs, that is to be included in FSPs. In 2019, the provincial government strengthened the protections under the *Heritage Conservation Act* to bring legislation into greater conformance with UNDRIP – the most meaningful change for forestry was to impose a duty to report the discovery of a site or object that may have cultural heritage value, but there are no consistent verifiable mechanisms in place.
	Results: **Compliance, Enforcement, and/or Monitoring**	HCVs *per se* are not recognized in Federal or Provincial regulations, hence direct compliance and enforcement are not relevant. At a high level, the provincial auditor and the Forest Practices Board apply scrutiny to the effectiveness of provincial regulations in meeting social goals and conserving values of importance to society. <u>HCV1 and HCV3</u> In reference to Crown land, in 2013, the BC Auditor General evaluated the effectiveness of the provincial government's implementation of policies and practices to conserve biodiversity and concluded that: ● significant gaps existed in government's understanding of biodiversity in BC; ● the government did not know whether its actions are resulting in the conservation of biodiversity, and ● the government was not adequately measuring and reporting on its progress in the conservation of biodiversity.

		A 2015 Forest Practices Board report on the effectiveness of Forest Stewardship Plans considered how well the objectives in FSPs were measurable and verifiable, based on the logic that objectives that could not be measured could not be verified and enforced. The FPB found a high level of measurability and enforceability associated with the wildlife and stand level biodiversity objectives, and moderate measurability of the riparian and landscape biodiversity objectives. However, these objectives do not deal specifically with species at risk and especially those which require landscape level management/recovery plans. The inspections of PMFL conducted by the Managed Forest Council have resulted in a 99% compliance rate. Council's policy is to inspect every PMFL area at least once every five years and new entrants within three years of joining the program. Since 2007, a total of 623 annual inspections have been undertaken and nine instances of contravention have been identified, including one related to riparian areas. No formal program for effectiveness monitoring of forest operations on other private land currently exists in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives for the property. <u>HCV2</u> As mentioned above, HCV2 are synonymous with IFLs which are not recognized in policy, nor is there equivalent direction. As a result, on forests that are not certified to FSC, HCV2 are not identified or protected in FSPs or other instruments for any of the three ownership types. <u>HCV4</u> A 2018 Special Report by the Forest Practices Board on Crown land examined the conservation of fish habitat and concluded that the general practice requirements in *FRPA* are sufficient to protect fish habitats across the forested landbase. Room for improvement was identified; the report cited the slow pace of government adoption of the tools available to it under *FRPA* to address high value and sensitive fish habitats, issues with sedimentation and protection of small streams, and limited effectiveness monitoring at the watershed level. As stated above, MFC inspections/audits of PMFL have resulted in a 99% compliance rate, which includes water quality and riparian management requirements. No formal or consistent program of monitoring forest operations on other private land currently exists in the province. <u>HCV5</u> A 2014 Special Investigation of Community Watersheds (HCV5) by the FPB identified issues with evaluating cumulative effects and a lack of integrated planning (which is largely government's responsibility) while also concluding that "*a culture of good riparian protection is now entrenched in forest management*." The report also stated that "*most licensees are meeting or exceeding requirements for retention in riparian areas*". The 2015 FPB report also found a low level of measurability and verifiability of the community watershed objective; a 2019 FPB report found a modest level of improvement in this regard. The FPB expects that the recently published Professional Practice Guidelines will improve FSPs ability to meet community watershed objectives. As stated above, MFC inspections/audits of PMFL have resulted in a 99% compliance rate, which includes water quality and riparian management

		requirements. No formal or consistent program of monitoring forest operations on other private land currently exists in the province. HCV6 The provincial cultural heritage objectives (HCV6), as provided in FPPR, do not have professional practice requirements associated with them. A 2015 FPB assessment of FSPs found that less than one-third of 43 FSPs sampled had measurable or verifiable CHR objectives. The 2019 FPB follow up report found little progress since 2015, noting that "*Many cultural heritage resource (CHR) results or strategies do not clearly address the identification of CHR, nor do they commit to protecting or conserving CHRs*." However, the Forest and Range Evaluation Program (FREP) is in place and its mandate includes CHR protection under FRPA. Both the *Water Sustainability Act* and *Heritage Conservation Act* are equally applicable on Crown and private land. The *HCA* protects archeological sites and the recent change to the *Act* requiring that all sites (including potential sites) be reported strengthens that application of the *Act*, however there are no consistent verifiable monitoring and/or reporting in place for either PMFL or OPL.
	Rationale for Risk Designation	While there are numerous regulations for the management and protection of HCVs in BC, they provide a variable and inconsistent level of stewardship. For example, the Federal *Species at Risk Act* only applies to Federal lands within the province. As another example, GAR orders are generally issued for local or regional areas creating gaps where the GAR orders are not applicable. Private land is less consistently regulated than Crown land and forest plans do not require wildlife related management objectives. HCV1 is assessed as specified risk on all ownerships due to the patchwork of protective measures that presently exists for a number of SAR, especially caribou. While protection orders can be issued, they are not issued systematically and there is considerable variation from District to District. The province does not yet have a provincial species at risk act that would consolidate direction. The province has also not managed to develop and implement a management approach that is generally maintaining caribou herds, and the boreal caribou recovery program is currently in draft form and has not yet been implemented, although significant changes have been indicated. HCV2 is also assessed as specified risk on all ownerships because IFLs are not provincially recognized, and there are no requirements to conserve them. HCV3 is assessed as low risk on Crown land and PMFL, and as specified risk on other private land. Rare ecosystems are generally small in size, by their nature, and identified and mapped by the CDC. As a result they are generally identified and protected in FSPs, as well as in plans on PMFL because the PMFLR requires the identification of critical wildlife habitat and the government may direct how those areas are managed. As described in the above section, monitoring/inspection results indicate verifiable evidence for crown land and PMFL ownership types and therefore low risk for HCV3. As a result of the absence of legislation, best management practices, monitoring and/or data for HCV3 on other private land, a specified risk designation is determined. Some types of HCV4 and HCV5 are recognized on Crown land (i.e. community watersheds) while private manage forest landowners are required to protect watershed and soils. Based on prescence of legislation, best management practices and verifiable monitoring/audit results crown land and PFML ownership

		types are low risk. As a result of the absence of legislation, best management practices, monitoring and/or data for HCV4 on other private land, a specified risk designation is determined. An extensive legal framework exists in BC to identify, document and respect traditional and customary rights of Indigenous People. While there is room for improvement on the ground as well as in documenting results and practices, recent FPB and FREP reports show impacts on CHRs are improving. Hence the risk for HCV6 is assessed as low on Crown land. Since there are no objectives or requirements in the *PMFLA* or PMFLR to conserve or protect CHR, and so the *Heritage Conservation Act* (HCA) is the applicable measure on private managed forest lands. The *HCA* protects archeological sites and the recent change to the *Act* requiring that all sites (including potential sites) be reported strengthens that application of the *Act*. Due to a lack of legislation, best management practices, monitoring and/or data for HCV6, a specified risk designation is determined for both PMFL and other private land.
Means of Verification		• BC Conservation Data Centre database for wildlife and ecosystems • GIS / Aerial maps of HCV areas • Regional, publicly available data from a credible third party(s) including provincial and federal agencies • Existence of a strong legal framework and policy framework for provincial and federal agencies • Compliance and Enforcement records for infractions of relevant regulations
Evidence Reviewed		• HCV Resource Network – https://www.hcvnetwork.org • Global Forest Watch – https://www.globalforestwatch.org/country/CAN • Federal – Environment and Climate Change Canada – https://www.ec.gc.ca/?lang=En • *Federal Species at Risk Act* – https://www.canada.ca/en/environment-climate-change/services/environmental-enforcement/acts-regulations/about-species-at-risk-act.html • Federal Species at Risk Public Registry – https://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=7606C7A6-1 • BC Conservation Data Centre – https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre • Red, Blue & Yellow Lists – https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/red-blue-yellow-lists • BC Forest Practices Board. 2014. Community Watersheds: From Objectives to Results on the Ground. April 2014. FBP/SIR/40. https://www.bcfpb.ca/reports-publications/reports/community-watersheds-from-objectives-to-results-on-the-ground/ • BC Forest Practices Board. 2015. Forest Stewardship Plans: Are they meeting expectations? An Investigative Report. August 2015. FPB/SIR/44

	https://www.bcfpb.ca/wp-content/uploads/2016/09/SIR44-FSP-Are-They-Meeting-Expectations.pdf • BC Forest Practices Board. 2018. Special Report: Conserving Fish Habitats under the *Forest and Range Practices Act.* Part 1. A Review of the BC Government Approach. July 2018. FBP/SR/56. https://www.bcfpb.ca/wp-content/uploads/2018/07/SR56-Fish-Habitat-Conservation.pdf • Forest Practices Board. 2019. Follow Up Report on Forest Stewardship Plans: Are they meeting expectations? Special report May 2019. FPB/SR/57. https://www.bcfpb.ca/reports-publications/reports/follow-up-report-on-forest-stewardship-plans-are-they-meeting-expectations/?hilite=%27expectations%27 • Demarchi, Dennis A. 2011. An Introduction to the Ecoregions of British Columbia. Third Edition. March 2011. Ecosystem Information Section, BC Ministry of Environment, Victoria. https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/ecosystems/broad-ecosystem/an_introduction_to_the_ecoregions_of_british_columbia.pdf • BC Ministry of Environment and Climate Change Strategy. 2018. Protecting Species at Risk: A Primer to Support a Conversation with British Columbians. March. https://engage.gov.bc.ca/app/uploads/sites/376/2018/05/Protecting-Species-at-Risk_A-Primer-Apr16_rev.pdf • Species & Ecosystems at Risk – https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk • BC Ministry of Environment and Climate Change Strategy – Mandate – https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/environment-climate-change • BC Ministry of Forests, Lands, Natural Resources Operations and Rural Development – Mandate – https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/forests-lands-natural-resource-operations-and-rural-development • Crown Land Indicators & Statistic Report, 2010 – https://www2.gov.bc.ca/gov/content/industry/natural-resource-use/land-use/crown-land/crown-land-indicators-statistics-report • Forest Stewardship Council (FSC) International. 2016. Advice Note for the Interpretation of the default clauses of Motion 65. 11 December 2016. ADVICE-20-007-018 V1-0. https://ca.fsc.org/preview.advice-note-on-the-development-of-indicators-for-the-protection-of-ifls-icls.a-1361.pdf • FRPA – Government Actions Regulation (GAR) – http://www.bclaws.ca/civix/document/id/complete/statreg/582_2004

	• GAR Ministerial Orders – https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/policy-legislation/legislation-regulation/forest-range-practices-act/government-actions-regulation • *Private Managed Forest Land Act* – http://www.bclaws.ca/civix/document/id/complete/statreg/03080_01 • Managed Forest Council – http://mfcouncil.ca
Proposed Risk Rating	

	Uncertified Crown Land	Uncertified Private Managed Forest Land	Uncertified Other Private Land
HCV1	Specified Risk	Specified Risk	Specified Risk
HCV2	Specified Risk	Specified Risk	Specified Risk
HCV3	Low Risk	Low Risk	Specified Risk
HCV4	Low Risk	Low Risk	Specified Risk
HCV5	Low Risk	Low Risk	Specified Risk
HCV6	Low Risk	Specified Risk	Specified Risk

		Indicator
2.1.3		Feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The intent of this indicator is to reduce incentives for extensive conversion of natural forest. The National Deforestation Monitoring System (NDMS) provides the following definitions that are applicable to the assessment of this indicator: • Deforestation – *The direct human-induced conversion of forested land to non-forested land use.* • Forest – *A minimum area of land of 1 ha with tree crown cover of more than 25%, and with trees having the potential to reach a minimum height of 5 m at maturity in situ. Young natural stands and all plantations that have yet to reach a crown density of 25% or tree height of 5 m are included, as are areas*

		that normally form part of the forest area which are temporarily un-stocked as a result of human intervention such as harvesting or natural causes but that are expected to revert to forest. The definition of deforestation encompasses permanent conversion of natural forest to non-forest as a result of any anthropogenic-caused change in land use. SBP concurs with NDMS and the Forest Stewardship Council that forest roads do not contribute to conversion and therefore such roads are ignored in the assessment of this indicator (see Indicator 2.2.2 – Soils which addresses permanent access structures (i.e. roads)). The SBP Standard describes production plantation forests as "*forests of exotic species ... that are subject to intensive stand management, are fast growing, and are subject to short rotations*". There has been very little conversion of forest to production plantations in BC since 2008. Treed areas that are predominantly under agricultural or urban land use are not forest. Area of forest, therefore, is not the same as area of tree cover. Consequently, area of forest is not easily mapped using satellite imagery. Because the scale and rate of conversion in a region depends on local factors, the assessment of this indicator considers the provincial rate of deforestation, the economic drivers of deforestation and the cumulative impacts of deforestation caused by activities of all sectors.
	Potential Threats	Conversion of natural forest to plantations managed for fibre production and deforestation following harvesting are both practices that reduce or eliminate the biological diversity associated with the natural forest and reduce or eliminate any social benefits from the area. Extensive deforestation continues to be an important global contributor to climate change.
	Regulatory Requirement & Agency of Authorization	The legislation that is relevant to conversion of natural forests to production plantation forest or non-forest land includes: ● *Forest and Range Practices Act (FRPA)* ● *Forest Planning and Practices Regulation (FPPR)* ● *Chief Forester's Standard for Seed Use* ● *Wildlife Act* ● *Land Act* ● *Oil and Gas Activities Act* *FRPA* (S.29) and *FPPR* (S.16 and S.44) detail the requirements for reforesting to a free-growing state those Crown lands from which timber is harvested. *FRPA*, *FPPR*, and the *Chief Forester's Standard for Seed Use* prohibit the planting of exotic or out-of-range tree species on Crown land. The *Oil and Gas Activities Act* as well as the *Land Act* and the *Wildlife Act* provide the legislative guidance on the reasonable extent of deforestation on Crown land due to Energy sector activities. Private managed forest landowners receive a bylaw exemption in exchange for a commitment to manage their lands for long-term forest production and to use sustainable management practices that protect key public environmental values, as regulated by the *Private Managed Forest Land Act* and *PMFLA* Regulation, which includes reforestation and annual reporting requirements. Further, Local

		Governments retain the power to adopt bylaws that require information from PMF landowners so long as the bylaw does not restrict a forest management activity. For other private land, regional districts and municipalities have the ability to adopt bylaws that place regulations on forest management activities on other private land within their administrative boundaries, including aligning their bylaws with requirements equivalent to Crown forest land regulations. However, there is little legislation at the provincial level that regulates the actions of private landowners, save for direction that protects waterways.
	Mechanism and Supporting Evidence	<u>Conversion to Plantations</u> On Crown land, forest rotations are generally longer than 40 years and reforested blocks are managed at intensities that are too low to meet the definition of a production plantation. On private land, there is no economic rationale to grow intensively managed timber plantations. <u>Conversion to a Non-Forest Use</u> Conversion of forest to non-forest due to forestry activities is guided by the *Forest Act* and *FRPA* and is generally confined to the construction of permanent roads and/or infrastructure required for operations (i.e. gravel pits, etc) which is not included within the calculations of deforestation (as described in context). The *FPPR* defines practice requirements for permanent access structures (see more details Indicator 2.2.2 – soils). In BC, conversion to non-forest is primarily the result of activities in sectors other than forestry (i.e. agriculture, energy, mining, transport, urban expansion, etc.). These changes in land use caused by the oil and gas, mining and hydro sectors generally occur on Crown land as a result of provincial government policies and are regulated as defined above. It should be noted that obtaining revenue from timber, including biomass procurement, is not an economic driver for any of the forest-clearing activities of other sectors. However, if the fibre from forest-clearing activities is unavailable for biomass producers to procure, it is either burned or left to decay. Either outcome results in the emission of greenhouse gases, especially since the intensity of outdoor burns of piled timber is usually relatively low. FLNRORD has initiated programs to improve the access of roadside slash on Crown land to encourage better fibre utilization and to reduce the amount of slash pile burning (see details in Indicator 2.2.5). Most conversion on other private land is related to urban development and clearing for agriculture purposes. Due to the relatively small size of the individual parcels cleared and non-commercial nature of the resulting fibre, leaving the piles to decay or burning them are the common practices.
	Results: **Compliance, Enforcement, and/or Monitoring**	<u>Conversion to Plantations</u> There have been experimental plantations of species such as native willow and larch planted in BC, however there is little commercial establishment of plantations in BC that would be considered production plantation forests. The Poplar and Willow Council of Canada identified 3,411 ha of hybrid poplar plantations in 2011 in BC, and Catalyst Paper reported 200 ha in 2007, with none reported subsequently. These plantations were established on TFL 43, which was unique in BC because the forest management objective was “to convert existing mixed or low quality deciduous and coniferous [natural] stands to productive cottonwood and hybrid poplar stands.” This objective is considered to violate this indicator.

Subsequently, in January 2016, TFL 43 was sub-divided into TFL 43 and TFL 63, and later TFL 63 was surrendered to the Crown and appears to have been incorporated into the Fraser TSA. With the exception of the former TFL 43, production plantations as defined above do not exist in BC.

Conversion to Non-Forest

An overview of national deforestation rates and causes is provided before looking more specifically at rates in BC. Canada is among the nations with the lowest rate of deforestation in the world. The Food and Agriculture Organization's (FAO) most recent Global Forest Resources Assessment (2015) reported a 0% rate of change to forest cover (2010 – 2015) in Canada. (Note that this means that any deforestation was balanced by afforestation, not necessarily that there was no deforestation. However, the result is suggestive of a low rate of deforestation.)

For Canada, NRCan (2018) reported an annual rate of 0.02% deforestation from all sources and states that the rate has been declining over the last 26 years, falling from 64,000 ha/yr in 1990 to 37,000 ha/yr in 2016. Annual deforestation caused by forestry declined from 3,682 ha in 1990 to 1,368 ha in 2016. In 2016 (current available data), forestry accounted for less than 4% of deforestation. Major contributors were agriculture (33%), mining and oil and gas (33%), urbanization (18%) and hydro-electric developments (12%).

NRCan's 2018 State of Canada's Forests Report states that:

- Canada's overall deforestation rate is expected to decline further over time.
- Deforestation resulting from activity in Canada's oil and gas sector has increased since 1990, but conversion of forest to agricultural land uses will likely remain the largest cause of deforestation in Canada. These conversions are small relative to the overall size of Canada's forests.

NDMS provided BC specific data for all sources of deforestation over a five-year period from 2012-2016. An analysis of deforestation rates from all sources by ecozone in BC was conducted. The results are shown below:

Ecozone	Forest Land (ha)	Deforestation	
		Amt (ha/yr)	Rate (%/yr)
Taiga Plain	6,072,713	305	0.005
Boreal Plains	2,536,227	1302	0.051
Boreal Cordillera	9,408,796	216	0.002
Pacific Maritime	11,672,021	807	0.007
Montane Cordillera	26,050,978	1,879	0.007
TOTAL	55,740,734	4,509	0.008

The amount of deforestation created per year was calculated to be an average of 4,509 ha, representing a deforestation rate of 0.008%. Provincially in all ecozones, forestry accounted for 11% of deforestation. Major contributors were agriculture (44%), hydro-electric developments (19%) mining and oil and gas (17%), and urban development. The yearly deforestation rate in the Boreal Plains Ecozone was the highest among the five ecozones at 0.05%. Much of the

		deforestation in the Boreal Plains ecozone is due to the agricultural sector (76%), followed by mining and gas (20%), urban development (3.4%), hydro-electric (0.4%) and forestry (0%). Although FSC's National Risk Assessment assessed the Boreal Plains Ecozone as specified risk, this resulted from mandatory FSC thresholds that are not applicable in the SBP framework The data presented above indicates that the rate of deforestation in BC is low and has been declining. Forestry is a minor contributor to deforestation, with an average annual deforestation rate of 513 ha/yr between 2012 and 2016, and the amount of deforestation caused by the sector has also been declining. This is the hallmark of an industry that is largely meeting the intent of this indicator, as it is certainly not a driver of deforestation.
	Rationale for Risk Designation	This assessment found that the only location in BC where forests were being converted to intensive plantations was on former TFL 43. The deciduous plantations established by Kruger on TFL 43 clearly violate the indicator, and fibre from fast-growing deciduous plantations established on the former TFL 43 is assessed as specified risk. Data on the rate and causes of deforestation in BC revealed that forest operations were a minor contributor to deforestation. Deforestation in BC was found to be relatively low and because it is ecologically, socially and economically preferable for utilization of fibre that has been felled by land clearing operations than to have it piled and either left to rot or burned, Crown land and private managed forest land are assessed as low risk. On private land, specifically on treed lands being converted for agricultural purpose, the downed fibre is often left to decompose or burned. Both these actions result in increased GHG emission, as well as poor utilization of a resource. Conversion to non-forest lands is more likely to occur on 'other private land' due to changes in land use. The indicator requires no sourcing from converted stands. There is no legislation restricting conversion, or Best Management Practices at the local level, or data on conversion to non-forest lands nor readily available conformance data. Based on this, the designation for 'other private land' is specified risk.
Means of Verification		• Existing legislation • Level of enforcement • Verify establishment of plantations • Verify amount of deforestation • Fibre contracts & Annual Supplier correspondence • Records of BP's field inspections
Evidence Reviewed		• British Columbia Ministry of Forests and Range. 2010. Rationale for the AAC Determination. Timber Farm Licence 43. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/forest-analysis-inventory/tsr-annual-allowable-cut/tree-farm-license/43tfra10.pdf • Poplar and Willow Council of Canada http://www.poplar.ca/article/poplar-and-willow-statistics-130.asp • Poplar and Willow Cultivation and Utilization in Canada: Canadian Country Progress Report 2008-2011. Poplar Council of Canada. May 2012. http://www.poplar.ca/upload/documents/ipccan2012.pdf

	• Global Forest Registry – http://www.globalforestregistry.org/map • FAO Global Forest Resources Assessment (2015) – http://www.fao.org/3/a-i4808e.pdf • Energetic City. Clearing and debris management underway at Site C Project areas January 10, 2019, – https://www.energeticcity.ca/2019/01/clearing-and-debris-management-underway-at-site-c-project-areas/ • Natural Resources Canada (NRCan) – State of Canada's Forests 2018 – s://www.nrcan.gc.ca/our-natural-resources/forests-forestry/state-canadas-forests-report/16496 • Natural Resources Canada (NRCan) – Deforestation in Canada Website– http://www.nrcan.gc.ca/forests/fire-insects-disturbances/deforestation/13419 • Natural Resources Canada, Canadian Forest Service, National Deforestation Monitoring System, special tabulation March 14, 2019 • Deforestation in Canada—What are the facts? 2016. Natural Resources Canada, Canadian Forest Service, Ottawa. 2 pg. – http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/36710.pdf • State of British Columbia's Forests (2010) – https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/reporting/environmental-reporting-bc/previous-reports-indicators • New Approach to Mapping
Proposed Risk Rating	**Uncertified Crown Land (except TFL43)** ☒ **Low Risk** ☐ **Specified** **TFL 43 (Deciduous fibre)** ☐ **Low Risk** ☒ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.2.1		Feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The requirements, mechanisms and process for completing assessment of impacts of forest management, as well as the planning, implementation and monitoring to minimize those impacts will be described below for applicable for all the indicators within Criterion 2.2 – Ecosystem Function (see individual indicators for more details), as well as for Indicator 2.1.1 and 2.1.2 (identification, mapping and impact assessments).
	Regulatory Requirement & Agency of Authorization	Crown Land FLNRORD is the lead agency responsible for land and resource management on Crown land in BC. FLNRORD oversees policy development, operational management and implementation and administers all or part of over 60 statutes

		and associated regulations. The primary statutes relating to Crown land forest management which include planning and monitoring are:
		
		• *Forest and Range Practices Act* (FRPA)
		  ○ Forest Planning and Practices Regulation (FPPR)
		  ○ Woodlot License Planning and Practices Regulation (WLPPR)
		
		In addition, the following Federal Acts apply for Crown, PMFL and private land:
		
		• *Species at Risk Act* (SARA)
		• *Migratory Birds Convention Act*
		• *Fisheries Act*
		
		Strategic Land and Resource Plans (SLRPs), land use designations (e.g. protected areas), explicitly stated objectives of government (e.g. Land use objective orders), legislation (e.g. FRPA) and Forest Stewardship Plans (FSP) provide a legal and policy framework for land use and forest management, as well as determining areas for managing non-timber values.
		
		<u>Private Managed Forest Land</u>
		
		On Private Managed Forest Land (PMFL), legislation is results-based, obligating owners to complete forest operations in accordance with *Private Managed Forest Land Act* (PMFLA) and regulations.
		
		The *PMFLA* and associated regulations govern the program and identify what landowners must achieve in managing their properties. The regulations specify the required forest practices related to soil conservation, protection of water quality, protection of fish habitat, and reforestation. In addition to the *PMFLA* and regulations, Managed Forests are also subject to numerous provincial legislation which includes (but not limited to) the *Assessment Act*, *Drinking Water Protection Act, Environmental Management Act, Forest Act, Heritage Conservation Act, Integrated Pest Management Act, Water Sustainability Act, Wildfire Act,* and *Wildlife Act* in addition to the federal *Species at Risk Act, Migratory Birds Convention Act,* and the *Fisheries Act*.
		
		<u>Other Private Land</u>
		
		There is no provincial legislation specific to forest management practices on other private land. Landowners are subject to some sections of some Federal and provincial acts such as the Federal S*pecies at Risk Act,* Federal *Fisheries Act, Water Sustainability Act*, and the *Wildlife Act*. The Riparian Areas Regulation (RAR) (enacted under Section 12 of the *Fish Protection Act*) provides the legislated direction needed by local governments to achieve improved protection of fish and fish habitat. The regulation is limited as it applies only to riparian habitat in association with new residential, commercial, and industrial developments on land under local jurisdiction.
		
		<u>All Land</u>
		
		Regardless of ownership type, all timber harvested in BC must comply with the *Forest Act* provisions dealing with timber scaling, marking and transportation. FLNRORD staff are responsible for assessing and ensuring compliance with the *Forest Act*.

	Mechanism and Supporting Evidence	<u>Crown Land</u> Prescribing foresters are guided by the legal and policy framework described above. Assessment of impacts may be required in order to meet specific land use

		directions, legal requirements or management regimes contained in this framework. Land use planning is also used to guide provincial management decisions for land use and forest management as well as management of non-timber values. There are 138 approved Strategic Land and Resource Plans (SLRPs) involving 24 regional (85% of BC landbase), 44 sub-regional and 70 landscape level scales. Through the planning process, input on interests and needs was sought from Indigenous Peoples', communities, other stakeholders' and the public. From there, land use policy direction was defined, resource management strategies and zones were developed, and legal land use objectives, as required were established under the authority of the Land Act. A primary outcome of the land use planning processes is land and resource-management direction that is approved as government policy but is not legally established. To ensure the direction remains current, in many cases policy-based planning direction related to forestry activities is legalized as land use objectives under Section 93.4 of the Land Act. However, some land use planning has resulted in land use designations (e.g. Protected Areas, Ecological Reserves, etc). Assessment of impacts may be required in order to meet specific land use directions or management regimes contained in this framework. The Forest Planning and Practices Regulation (FPPR S.5-10) under *FRPA* identifies the management objectives set by government to ensure the protection of eleven resource values which include: biodiversity, cultural heritage, fish/ riparian, forage & associated plant communities, recreation, resource features, soils, timber, visual quality, water quality, and wildlife. FRPA and FPPR set the requirements for all stages of forest planning, road building, logging, and reforestation and specify the content requirements of forest stewardship plans (FSPs). Under *FRPA*, "Objectives enabled in regulation" via Government Action Regulations (GAR), direct how government establishes land designations or stewardship measures for forest and range values. The types of decisions supported by GAR include: decisions about categories of species (species at risk, regionally important wildlife, and ungulates); decisions relating to practice requirements for the protection of wildlife, natural resource features, wildlife habitat features, and temperature sensitive streams; and land use decisions for managing, protecting or designating wildlife habitat areas, ungulate winter ranges, community watersheds, fisheries sensitive watersheds, lakeshore management zones and scenic areas. Under FRPA (S.3 – 9), all forest agreement holders must submit a forest stewardship plan (FSP) and receive provincial government approval prior to issuance of associated permits. In the FSP, license holders must specify how they will meet government objectives for the protection of the eleven resource values identified in FRPA. This can be via results and strategies or adopted defaults, which may include a supporting assessment (i.e. terrain stability, visual quality, archaeological, etc.). In addition, targets are provided for some of the resource values (i.e. wildlife tree retention, OGMA-mature) and these would require assessments. FRPA is 'results-based', not prescriptive, and there is no 'legal' requirement for impact assessments. The FSP is meant to provide government with a set of measurable or verifiable results or strategies against which government enforces compliance and to assure the public that all resource values are being conserved and protected. Prescribing foresters are guided by this framework.

		FSPs are legally required to be made available for public review and comment. This process allows First Nations, the public and stakeholders whose activities might be affected by forest management activities to provide input. <u>Private Managed Forest Land</u> Under the *PFMLA,* the Managed Forest Council (MFC) administers the Managed Forest Program to protect key public environmental values on Private Managed Forest land. This includes the setting and monitoring of forest practices standards, monitor effectiveness of forest practice standards, and performing audits and enforcing standards. In addition, the MFC has prepared a field practices guide which provides best management practices for soil conservation, protection of water quality, protection of fish habitat, and reforestation. Managed Forest is a BC Assessment property classification that encourages private landowners to manage their lands for long-term forest production. Forest managers are required to prepare management commitments and objectives, as well as provide strategies to meet the objectives. There is no statutory requirement for owners to submit plans to MFC. Owners may prepare plans for their own use. Owners Plans are not subject to public review and comment. <u>Other Private Land</u> Local municipalities and regional districts may have bylaws regulating tree cutting and/or may require that development permits be obtained prior to tree removal in riparian areas, however requirements vary by jurisdiction. Development permit area policies and requirements are generally specified in official community plans with approvals subject to review by local governments. No formal program for effectiveness monitoring of forest operations on other private land currently exists in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives for the property. <u>All Land</u> Enforcement of federal government regulations on Crown and private forest land is conducted by other regulatory agencies, including Environment Canada and Fisheries & Oceans Canada.
	Results: **Compliance, Enforcement, and/or Monitoring**	<u>Crown Land</u> In addition to the objectives set by government and practices, *FRPA* is further supported through compliance and enforcement to ensure legislation and operational plans are being followed; and effectiveness monitoring to assess the effectiveness of forest management actions in meeting the intent of FRPA objectives. Monitoring of compliance with natural resource legislation and further enforcement is the responsibility of the FLNRORD Compliance and Enforcement Branch (C&E). Natural Resource Officers have the responsibility to conduct inspections and compliance verifications on forest operations to ensure compliance with applicable legislation. C&E Branch releases annual statistics regarding compliance activities and enforcement actions. Under FRPA's results-based model, the Forest & Range Evaluation Program (FREP) evaluates the effectiveness of forest and range practices in achieving management objectives, including sustainable resource management. FREP is a nationally accredited program.

		The BC Forest Practices Board serves as an independent watchdog organization for sound forest and range practices in BC. Their mandate includes auditing forest and range practices to determine if activities are consistent with legislation and operational plans; investigating public complaints related to forest management activities occurring on Crown Land and making recommendations. Effectiveness monitoring by FREP and independent audits and investigations by the Forest Practices Board provide insight into how forest management activities as well as natural factors are impacting values on the timber harvesting landbase for Crown Land. <u>Private Managed Forest Land</u> Under the *PFMLA,* the Managed Forest Council (MFC) the monitors effectiveness of forest practice standards, performs audits and enforcing standards. Results from the Annual Report provides a summary of statutory requirements and a summary of the various activities throughout the year. <u>Other Private Land</u> Enforcement of development permit area requirements and other bylaws are responsibility of municipal/ regional district bylaw officers. Enforcement of applicable legislation on other private land is responsibility of designated authorities.
	Rationale for Risk Designation	There is an extensive legal framework governing forest management on Crown Land. Legislation, regulations, standards, and guidelines require assessment, planning, implementation and monitoring to exist minimizing the potential impact of forest management activities. Based on the evidence reviewed it is recommended that feedstock coming from Crown Land be designated as low risk. There is a legal framework governing forest management on Private Managed Forest land. Legislation, regulations, standards, and guidelines require assessment, planning, implementation and monitoring to exist minimizing the potential impact of forest management activities. Based on the evidence reviewed it is recommended that feedstock coming from PMFL be designated low risk. As a result of the absence of legislation governing forest management planning, best management practices and monitoring on other private land, and the range of variance in local bylaws surrounding development in riparian areas, a specified risk is designated.
Means of Verification		• Existing legislation • Level of Compliance and enforcement • Licensees Forest Stewardship Plans • Assessment of potential impacts at operational level • BMP compliance check records
Evidence Reviewed		• Forest Governance in the Province of British Columbia – https://www.sfmcanada.org/images/Publications/EN/BC_info_Province_and_territories_EN.pdf • Ministry of Forests, Lands, Natural Resource Operations and Rural Development – 2018/2020/21 Service Plan, February 2018 – https://www.bcbudget.gov.bc.ca/2018/sp/pdf/ministry/flnr.pdf

	• Forest and Range Practices Act - Change to: Forest and Range Practices Act, S.149 – Objectives Set by Government – http://www.bclaws.ca/civix/document/id/consol21/consol21/00_02069_01 • Forest and Range Practices Act - Forest Planning and Practices Regulation –http://www.bclaws.ca/Recon/document/ID/freeside/14_2004 • The Forest and Range Evaluation Program (FREP) – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program • FLNRORD – Forest Stewardship Plan Website – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-stewardship-plans • FLNRORD – Integrated Resource Monitoring – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring • Crown Land Indicators & Statistic Report, 2010 – https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/crown_land_indicators__statistics_report.pdf • Land Use Planning Polices & Guides – https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-useplanning/policy-guidance • Land Use Planning Data – https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/spatial-data • Provincial Timber Management Goals, Objectives & Targets – 7/10/2017 – https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/silviculture/timbergoalsobjectives2017apr05_revised.pdf • Private Managed Forest Land Act – http://www.bclaws.ca/civix/document/id/complete/statreg/03080_01 • Private Managed Forest Land Act; Administrative Tribunals Act, Private Managed Forest Land Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/12_371_2004 • Managed Forest Council – http://mfcouncil.ca • Managed Forest Council Annual Report 2016/2017 – http://mfcouncil.ca/2016-17-annual-report/ • Private Managed Forest Land Council: managed Forest Program: Effectiveness of the Council Regulation in achieving the Forest Management Objectives of the Private Managed Forest Land Act (Oct 2013) – http://mfcouncil.ca/wp-content/uploads/2014/09/pmflc_audit_report_2013_final_web.pdf

Proposed Risk Rating	**Uncertified Crown Land**	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

		Indicator
2.2.2		Feedstock is sourced from forests where management maintains or improves soil quality
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	In the context of this indicator, soil quality is equivalent to soil productivity which is defined as the ability for a forest soil to allow forests to grow, produce crops and function with minimal human intervention. This indicator evaluates soil quality on an individual site level; cumulative impacts to soil quality on the landscape from harvesting and road construction is beyond the scope of this indicator. Soil quality as it affects water quality via sedimentation is further discussed within indicators 2.2.6 and 2.5.2. Discussion regarding forest residue and coarse woody debris retention is discussed in indicator 2.2.5 and 2.2.4, respectively.
	Potential Threats	Potential threats from forest management activities (i.e., harvesting, and roadbuilding) can include on and off-site negative impacts to soil productivity, hydrology, watersheds and ecological values. Disturbances such as landslides, erosion and sedimentation can result in public safety and/or infrastructure damage.
	Regulatory Requirement & Agency of Authorization	On Crown land, FLNRORD is the agency responsible for ensuring the protection, maintenance and where necessary, the improvement of soils. This includes proper management and avoidance of terrain stability threats. Soil is one of the eleven resource values that the BC government requires to be managed and protected under *FRPA*. Under *FPPR (*Section: 5*),* the government objective for soil states a mandate: 'to conserve the productivity and the hydrologic function of soils.' On Crown land, the following applies: • *FRPA* • Forest Planning and Practices Regulation (FPPR) • Woodlot License Planning and Practices Regulation (WLPPR) On Private Managed Forest Land, the *Private Managed Forest Land Act* (*PMFLA*) (S.12) sets the objective for soil conservation, stating: '*with respect to soil conservation for areas where harvesting has been carried out is to protect soil productivity on those areas by minimizing the amount of area occupied by permanent roads, landings and excavated or bladed trails*.' The PMFL Council Regulation sets limits regarding soil conservation (S.13 limits on areas that may be occupied by roads; S.14 limits on areas that may be occupied by logging trails). The regulation also requires development of measures to address areas exposed by road construction and/or deactivation (S.19).

		Minimal legislation or control measures exist that provide control measures on other private land.
	Mechanism and Supporting Evidence	On Crown land, FSPs must address the government objective for soils (Section 5 *FPPR*). In addition to FSPs, licensees must prepare site plans that identify the soil disturbance limits to be applied to a site. Through *FRPA*, soil conservation is regulated by minimization of permanent access and soil disturbance, identification and management of sensitive soils, as well as the rehabilitation of temporary access, as well as disturbed soils. FPPR S.36 (WLPPR S.25) provides specific control measures regarding soil disturbance caused by road building. FPPR S.35 (WLPPR S.24) provides regulation around soil disturbance within a cutblock, including the regulatory requirements for managing sensitive soils. If soil disturbance limits are exceeded, forest licensees must rehabilitate soils below this disturbance limit. FPPR (S.37 – 54) include standards for terrain stability, including: not causing landslides or gully processes (FPPR S.37 and 38; WLPPR S.27), maintaining natural surface drainage patterns (FPPR S.39; WLPPR S.28), ensuring adequate revegetation of soil exposed during road construction/deactivation (FPPR S.40; WLPPR S.29), and not destabilizing alluvial and colluvial fans on the Coast (FPPR S.54). Lastly, the FPPR and WLPPR addresses damage to the environment. Damage to the environment includes, but is not limited to, excessive soil disturbance and changes to soil (S.3 of FPPR and WLPPR). The Managed Forest Council Field Practices Guide is provided to Private Managed Forest Landowners as an aid to field decisions and practices to meet regulation requirements. Soil conservation guidance is provided for the following practices: road construction, road maintenance and deactivation, timber harvesting, and reforestation Currently there is no provincial legislation that addresses soil conservation on other private land in British Columbia. Local governments may pass bylaws requiring the application for development permits prior to development (including timber removal) on steep terrain (ex: slopes >25%), however exact requirements vary by jurisdiction. Terrain stability or other forms of geomorphological assessments may be required in obtaining a development permit. No formal program for effectiveness monitoring of forest operations on other private land currently exists in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives for the property.
	Results: **Compliance, Enforcement, and/or Monitoring**	In 2012, FREP used aerial imagery to distinguish between temporary and permanent access. Approximately one third of the blocks examined contained unrehabilitated access which appeared to be temporary. This has resulted in unnecessary loss of productive ground within the net-area-to-be-reforested (NAR) of these cutblocks. In 2014, FREP released an extension note clarifying legislation and practice expectations surrounding temporary access. The 2016/2017 ADM Resource Stewardship Report provides data relating to soils for six of the eight forest regions in BC. The regional percentage of sites evaluated as having 'high' impacts on soils ranged from 6% to 58%. When prorated against the total sample size of 145 sites at a provincial level, 26.6% of sites fell within the 'high' category. Causal factors leading to a 'high' impact on soils included: • Excessive soil disturbance in roadside work areas, • Measures to maintain natural drainage patterns not being taken, • Practices leading to increased soil erosion and soil movement, • Lack of rehabilitation and/or abandonment of temporary access structures,

		• Lack of CWD retained on some sites, and • Lack of retained mature forest to assist with the recolonization of sites by soil organisms. Over the last number of years Forest Practices Board (FPB) Audits and Special Investigations have evaluated soil conservation planning and practices. Soil disturbance has arisen as an area for improvement, but overall the forest agreement holders had effectively developed and implemented operational plans that ensured impacts from harvesting activities were limited. In 2013, the Managed Forest Council (MFC) released a report, "*Managed Forest Program: Effectiveness of the Council Regulation in Achieving the Forest Management Objectives of the Private Managed Forest Land Act*". The audit carried out by a multidisciplinary team including foresters, a geoscientist, and a biologist, sampled approximately 1/3 Managed Forests in the program. Through audits of selected sites, the Council found that harvesting activities resulted in minimal levels of soil disturbance and site loss. Auditors also found that road construction had been carried out without causing levels of soil disturbance beyond acceptable levels. Construction practices related to stream crossings and drainage control were effective in minimizing sediment transfer into streams. Annual inspection reports published by the MF Council from 2015-2019 presented findings similar to those in the 2013 report mentioned above. No formal objectives, legislation or control measures for soil conservation currently exist for other private land in BC. As such, little can be said on how forestry activities on other private land may be impacting soils.
	Rationale for Risk Designation	There is an extensive legal framework governing soil conservation on Crown Land. The FPPR and WLPPR set default measurable practice requirements regarding soil disturbance limits, amount of permanent access structures, deactivation and rehabilitation requirements for roads, and maintenance of natural drainage patterns. These act as minimum standards that forest agreement holders must comply with. Additionally, there are government programs and independent auditing boards to monitor forest management practices and provide recommendations for improvement. Findings of both FREP and the FPB suggest that in general, forest agreements holders are complying with practice requirements related to soils at the site level, however room for improvement does exist. Some issues identified by FREP and the FPB include insufficient rehabilitation of temporary access structures, possibility for excessive soil disturbance in larger standard units while still legally complying with soil disturbance limits, and improper management of natural drainage patterns. These issues are sporadic and geographically discrete, no systemic issues were noted. Given the level of overall compliance, improvements to soil quality would likely need to come from changes in legislative requirements and clear measurable targets. Based on the evidence reviewed fibre coming from Crown Land be designated as low risk. The *PMFL Act* and associated Regulation are less robust regarding soil conservation practice requirements when compared to *FRPA* and *FPPR*. Nevertheless, audits completed by the Managed Forest Council over the last several years have found that landowners are complying with legal requirements surrounding soil disturbance and road construction and maintenance. Based on the evidence reviewed fibre coming from PMFL be designated as low risk.

	As a result of the lack of regulation, best management practices, monitoring and/or data on other private land, a specified risk is designated.
Means of Verification	• Existing legislation • Compliance and enforcement • Best Management Practice • Monitoring records and Reports • Interviews with staff and stakeholders
Evidence Reviewed	• FPRA, S.149 – Objectives Set by Government – http://www.bclaws.ca/civix/document/id/lc/statreg/02069_01#section149 • FPPR, Part 4 – Practices Requirements – Division 1 Soils – http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004#division_d2e7917 • FLNRORD – Integrated Resource Monitoring – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring • Integrated Monitoring Reports – Assistant Deputy Minister's Resource Stewardship Report – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/integrated-monitoring-reports?keyword=Assistant&keyword=Deputy&keyword=Minister&keyword=Resources&keyword=Stewardship&keyword=Overview • Assistant Deputy Ministers Resource Stewardship Reports (2016/2017, 2013/2014, 2012/2013 – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program/frep-reports-extension-notes • FREP Extension Note #28: Temporary Access Structures: Considerations for Site Plans and Post-Harvest Assessments. 2014. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/frep/frep-docs/frep-extension-note-28.pdf?fileName=frep-extension-note-28.pdf • BC Ministry of Forests. 2011b. Evaluating soil conservation using high resolution air photos and expert elicitation. Resource Practices Branch, Victoria, B.C. FREP Extension Note No. 23. https://www.for.gov.bc.ca/ftp/HFP/external/!publish/FREP/extension/FREP_Extension_Note_23.pdf • A Summary of Complaints to the BC Forest Practices Board (1995-2013)- https://www.bcfpb.ca/wp-content/uploads/2016/04/SR47-Summary-of-Complaints.pdf • FPB Annual Reports (2017/2018, 2016/2017, 2014/2015)- https://www.bcfpb.ca/reports-publications/annual-reports/

	• Forest Practices Board: Soil Conservation Planning and Practices in the Quesnel and Vanderhoof Forest Districts. Special Investigation. FPB/SIR/2. August 2010. https://www.bcfpb.ca/wp-content/uploads/2010/08/SIR29-Soil-Conservation-Planning-and-Practices.pdf • *Private Managed Forest Land Act*, S.12 – Soil Conservation – http://www.bclaws.ca/civix/document/id/complete/statreg/03080_01#section12 • PMFL Council Regulation S.9, 13, 14, 19 http://www.bclaws.ca/civix/document/id/complete/statreg/182_2007 • Managed Forest Council – http://mfcouncil.ca • Private Managed Forest Land Council: Effectiveness of the Council Regulation in Achieving the Forest Management Objectives of the Private Managed Forest Land Act (Oct 2013)- http://mfcouncil.ca/wp-content/uploads/2014/09/pmflc_audit_report_2013_final_web.pdf • MF Council Annual Inspection Reports – http://mfcouncil.ca/wp-content/uploads/2014/09/pmflc_audit_report_2013_final_web.pdf
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.2.3		Key ecosystems and habitats are conserved or set aside in their natural state.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The primary question in assessing this indicator is how to identify which ecosystems and habitats are "key". Important ecosystems and habitats occur at both the landscape level and the stand level – the indicator wording provides no spatial context. The language of the indicator speaks to the conservation or preservation of these "key" lands, which suggests that rare or threatened ecosystems can be considered "key". The interpretation notes provided in the SBP standard states that key ecosystems and habitats include areas with statutory designations or high conservation values, and that the conserved or set aside areas must be of sufficient size or connected with other areas to ensure their long-term viability. According to British Columbia Conservation Data Centre (CDC) and the Standards for Mapping Ecosystems at Risk in BC, key ecosystems include: • Ecosystems at risk, including ecological communities listed as special concern, threatened, or endangered by the British Columbia Conservation Data Centre (CDC) • Sensitive ecosystems, including those that are at-risk or are ecologically fragile in the provincial landscape

		Ecosystems designated as HCV3 are assessed under Indicator 2.1.1 and 2.1.2. Riparian areas are typically considered to be important ecosystems and habitats, and these are assessed under Indicator 2.2.6.
	Potential Threats	Forest operations activities, as well as the activities by other sectors, may pose a threat to key ecosystems and habitats through fragmentation, the direct and indirect effects associated with access, and loss or degradation of key ecological attributes for ecosystems and habitats sensitive to logging disturbance.
	Regulatory Requirement & Agency of Authorization	The 2010 BC State of the Forest Report (the most recent) reports that 14% of BC's forest area is protected by national and provincial governments and that older forests are well represented in protected areas. (Current data on the provincial government web site states that 15.4% of the area of BC is protected.) In 2008, at least 7% of the forests in every biogeoclimatic zone were protected, with as much as 20% protected in five zones. The lowest level of protection (7%) was been given to the Ponderosa Pine and the Interior Douglas-fir biogeoclimatic zones. In addition to the national parks, the federal government also has a role in conserving key ecosystems and habitats under specific circumstances: • Fisheries, through the Department of Fisheries and Oceans and the Federal *Fisheries Act*, section 35(1); • Species at Risk through the *Species at Risk Act*; and • Migratory Birds through the *Migratory Birds Convention Act*, 1994 With regards relevant legislation and regulations for forestry operations on Crown land, conservation of key ecosystems and habitats is largely the responsibility of the provincial FLNRORD through the *Forest and Range Practices Act* (*FRPA*) and its Forest Planning and Practices Regulation (FPPR). Conservation measures are legislated as follows: • Soils (*FRPA* section 5) • Water (*FRPA* section 8) • Riparian (FPPR section 52(2)) • Environment (*FRPA* section 46) • Biodiversity (*FRPA* section 9) Provincially, the *Wildlife Act* also provides protection of wildlife habitat, specifically the establishment of critical wildlife habitat (Section 5) and the designation of wildlife management areas (Section 4). The *Private Managed Forest Land Act* has the following requirements relevant to key ecosystems and habitats: • Critical habitat, as defined through section 5 of the provincial *Wildlife Act* and identified through the Federal Critical habitat for *Species at Risk* list; and • Riparian tree retention, defined in the PMFL Field Guide There is minimal legislation specific to forest management practices on other private land for key ecosystems and habitats. Landowners are subject to federal and provincial acts such as the *Species at Risk Act*, Federal *Fisheries Act*, *Water Sustainability Act*, and the *Wildlife Act*.
	Mechanism and	As mentioned above the lead forest management legislation addressing key ecosystem conservation on Crown land is *FRPA*. The FPPR under *FRPA* identifies the management objectives set by government to ensure the protection of eleven

	Supporting Evidence	resource values which includes key ecosystem and habitat conservation. *FRPA* and FPPR set the requirements for all stages of forest planning, road building, logging, and reforestation and specify the content requirements of forest stewardship plans (FSPs). According to Environmental Reporting BC, conservation of key ecosystems and habitats is also achieved through various types of land designation; • Resource Exclusion Areas, covering 12.4% of BC including all designations that fully exclude one or two resource activities for the purpose of conservation. Some examples include designations such as no-harvest Wildlife Habitat Areas (WHAs) designated under the *Forest and Range Practices Act*, Grizzly Bear Habitat (Class 1) designated under the *Land Act*, and 45 wildland areas amended into the Sea to Sky Land and Resource Management Plan and • Spatially Managed Areas, currently covering 24.5% of BC including all spatial designations managing or limiting development or a resource activity for the purpose of conservation, or a spatial management regime in place to preserve specified elements of biodiversity but where activity is still allowed to occur. The designations within this category vary significantly in purpose and scope of management. Some examples include designations such as conditional-harvest Wildlife Habitat Areas, conditional-harvest Ungulate Winter Range, and Visual Quality Objectives—all designated under the *Forest and Range Practices Act*— and Important Fisheries Watersheds and other legal objectives established for the Great Bear Rainforest under the *Great Bear Rainforest (Forest Management) Act*. PMFL is managed under a results-based regulatory model that allows forest owners to develop and use management strategies most appropriate to the scale and location of their operations. The Managed Forest Council, which oversees PMFLs, monitors and enforces those requirements, which include provisions for protecting critical wildlife habitat, species at risk, water systems and riparian areas. On other private land, there are few mechanisms for ensuring that key habitat and ecosystems are conserved. The federal and provincial requirements that apply to other private land are generally enforced only when a public complaint is made.
	Results: **Compliance, Enforcement, and/or Monitoring**	Provincial protected area data were provided above – logging is not permitted in the areas protected by statute described above. On Crown land, through a combination of routine resource stewardship monitoring and intensive effectiveness evaluations, the ministry evaluates key ecosystem conservation at both stand-level and landscape-level. In addition, the FPB completes investigations and audits with regards to protection and conservation of biodiversity which includes key ecosystems and habitats. A 2015 assessment of the effectiveness of FSP's by the Forest Practices Board (FPB) found that "*most of the FSP results and strategies for riparian areas were clearly consistent with the government's objective*". In contrast, a moderate proportion (50-79%) of FSPs had results and strategies that were consistent with the government's objectives for wildlife, stand-level diversity and landscape-level diversity, as well as the implementation of GARs.

		C&E Branch evaluates violations of key habitat protection orders. Violations are infrequent and the majority of these violations resulted from insufficient training and pre-harvest planning (e.g. inadvertent harvest of an occupied marbled Murrelet nest tree or damaging a Blue heron or Bald eagle nest tree during harvest). Under *FRPA* the Forest & Range Evaluation Program (FREP) evaluates the effectiveness of biodiversity protection regulations including key ecosystem conservation and their implementation on Crown land. FREP is not yet reporting on landscape level biodiversity however its most recently available ADM report found that stand level biodiversity objectives were generally being met. The inspections of PMFL conducted by the Managed Forest Council have resulted in a 99% compliance rate. Council's policy is to inspect every PMFL area at least once every five years and new entrants within three years of joining the program. Since 2007, a total of 623 annual inspections have been undertaken and nine instances of contravention have been identified, including one related to riparian areas. No formal program for effectiveness monitoring of forest operations on other private land currently exists in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives for the property.
	Rationale for Risk Designation	An extensive legal and policy framework exists on Crown land for key ecosystems and habitats to be conserved or set aside in their natural state. There is a high proportion of forest land set aside compared with other provinces and countries, and all biogeoclimatic zones have reasonable representation (with the two lowest having 7% representation). In addition, there are other regulatory measures in place that contribute towards the conservation of key habitat and ecosystems. Evidence from the Forest Practices Board indicates that between 50-79% of FSPs have biodiversity and wildlife habitat goals that are consistent with the relevant government objectives. In summary, key ecosystems and habitats are adequately conserved / set aside on Crown land in their natural state and the risk designation is low. The PMFL regulatory requirements require that critical wildlife habitat be conserved, and riparian zones are to be protected. Compliance with regulations as assessed by the Managed Forest Council is high and therefore the risk is designated as low for Private Managed Forest Land. Other private land is the least regulated form of ownership considered within this risk assessment. There are currently few required forest management practices on other private land; for example, there is no formal requirement for wildlife or habitat protection. There is minimal direction surrounding working within riparian areas other than what may be present in applicable official community plans and bylaws. As a result of the absence of legislation, best management practices, monitoring and/or data a specified risk designation is assigned to other private land in BC.
Means of Verification		• Guidance provided by BPs to suppliers regarding threats to the identified forests and areas of high conservation values, and verification of conformance through field inspections • Best Management Practice manuals implemented by BPs • Standard Operating Procedures implemented by BPs • Records of BP's field inspections • Monitoring records by BP and by BC Compliance and Enforcement • Interviews with staff, stakeholders

Evidence Reviewed	• BC Environmental Reporting. Government land designations that contribute to conservation. Accessed Feb 6, 2020. http://www.env.gov.bc.ca/soe/indicators/land/land-designations.html • BC Ministry of Forests, Mines, and Lands. 2010. The State of British Columbia's Forests. Third edition. https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/reporting/environmental-reporting-bc/previous-reports-indicators • *Forest and Range Practices Act* – Change to: Forest and Range Practices Act, S.149 – Objectives Set by Government – http://www.bclaws.ca/civix/document/id/consol21/consol21/00_02069_01#section149 • Forest Practices Board. 2015. Forest Stewardship Plans: Are they meeting expectations? An Investigative Report. August 2015. FPB/SIR/44 https://www.bcfpb.ca/wp-content/uploads/2016/09/SIR44-FSP-Are-They-Meeting-Expectations.pdf • Managed Forest Council. 2020. https://www.mfcouncil.ca/inspection-program/ • Forest and Range Evaluation Program. Undated. Assistant Deputy Minister Resource Stewardship Report: Regional Results of the Forest and Range Evaluation Program. 2016-17. FREP Report #41. https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program • Standards for mapping ecosystems at risk in BC: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/standards-guidelines/risc/standards_for_mapping_ear_version1.pdf • Environmental Reporting BC: http://www.env.gov.bc.ca/soe/indicators/land/land-designations.html • Biogeoclimatic Ecosystem Classification System: https://www.for.gov.bc.ca/hre/becweb/system/how/index.html • Meidinger, D and Pojar J. Ecosystems of BC, 1991. https://www.for.gov.bc.ca/hfd/pubs/docs/srs/srs06.pdf • Critical Habitat for Species at Risk in BC: http://donnees.ec.gc.ca/data/species/developplans/critical-habitat-for-species-at-risk-british-columbia/ • Wildlife Act – https://www.bclaws.ca/civix/document/id/complete/statreg/00_96488_01#section5
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.2.4		Biodiversity is protected.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The BC Auditor-General defined biodiversity as including "*the variety of ecosystems, genes and species on earth, as well as the natural processes that maintain them*". Management and conservation of biodiversity is recognized by governments and practitioners alike as very complex. How land management is planned and implemented is key to adequately conserving, managing, and protecting biodiversity. In BC, biodiversity is managed and protected at: • Landscape Level: retaining habitat patterns and seral stages that are similar to those of natural landscapes; and • Stand Level: retaining wildlife tree, coarse woody debris and wildlife habitat features. This indicator is closely related to indicator 2.2.3, which assessed the conservation of key habitats and ecosystems, as well as indicator 2.1.2, which assessed the extent to which areas with high conservation values were protected. This indicator is broader than 2.1.2 and 2.2.3 because biodiversity is broader.
	Potential Threats	Resource based activities can potentially "*have a negative impact on several components of biodiversity such as functioning ecosystems, species and genetic diversity and habitat protection*". Forest operations, as well as activities by other sectors (i.e. energy, agriculture), can potentially pose a threat to the sustenance of biodiversity. Harvesting disturbance, the direct and indirect effects (e.g. fragmentation) associated with access, and the loss or degradation of key ecological attributes can influence the abundance and distribution of biological richness.
	Regulatory Requirement & Agency of Authorization	FLNRORD and the ECCS are the two provincial ministries responsible for conserving biodiversity in BC. In 2010, the Wildlife and Fisheries Program and most of the Ecosystems Program was transferred to what is now FLNRORD, with ECCS retaining a policy, science and coordination role in these programs. The following BC legislation and associated regulations contain provisions for the conservation of key biodiversity components: • *Forest and Range Practices Act (FRPA)* • *Ministry of Environment Act* • *Fisheries Protection Act – Land Act* • *Park Act* • *Wildlife Act* • *Environment and Land Use Act* • *Ecological Reserve Act* • *Oil and Gas Activities Act* In addition, the following federal laws apply:

		• *Species at Risk Act (SARA)* • *Migratory Birds Convention Act* • *Fisheries Act* Biodiversity conservation typically involves a combination of protection measures, ranging from the creation of parks and conservation reserves to requirements for landscape-level planning and operational level conditions. Three categories of land designations that contribute to conservation – Protected Lands, Resource Exclusion Areas and Spatially Managed Areas – were discussed under Indicator 2.2.3. FLNRORD is responsible for ensuring the management and protection of biodiversity during any resource-based activities conducted on Crown land in BC. The Government Actions Regulation (GAR) under *FRPA* is a primary tool that allows government to conserve species habitat at the local level. Some GAR designations relating to biodiversity include wildlife habitat areas (WHA), ungulate winter range (UWR), fisheries sensitive watersheds, temperatures sensitive streams, and wildlife habitat features. The Forest Planning and Practices Regulation (FPPR) under *FRPA* provides the standards and requirements to ensure protection for resource values. Biodiversity is one of 11 resource values identified as requiring protection under *FRPA*. The FPPR sets out general objectives for both landscape-level and stand-level biodiversity (Sections 9 & Section 9.1). FPPR does specify that the achievement of the objectives should not unduly reduce the supply of timber, and the BC Auditor-General reported that this means in practice that the amount of area that can be designated as wildlife habitat is limited to 1% of the province. The *Private Managed Forest Land Act* has the following requirements relevant to protecting biodiversity: • Critical habitat, as defined through section 5 of the provincial *Wildlife Act* and identified through the Federal Critical habitat for *Species at Risk* list; and • Riparian tree retention, defined in the PMFL Field Guide There is minimal legislation specific to forest management practices on other private land. Landowners are subject to federal laws such as the *Species at Risk Act* and *Fisheries Act*, as well as other provincial acts including the *Water Sustainability Act*, and the *Wildlife Act*.
	Mechanism and Supporting Evidence	The mechanisms that are in place to conserve key ecosystems and habitats (Indicator 2.2.3) also contribute to the conservation of biodiversity, but as discussed above, biodiversity is a broader concept. <u>Landscape-level Approach</u> The provincial government's approach to maintaining landscape-level biodiversity, as set out in the FPPR, is to arrange harvest blocks in a way that emulates natural disturbance patterns to the extent practicable. Landscape level planning for biodiversity conservation relies on higher level plans to guide landscape management and provide direction on biodiversity, old growth forest retention, wildlife habitat maintenance, etc. Land use, landscape and watershed level plans have been completed at a regional or sub-regional scale for most areas of the province, although they are of varying vintages and have usually not been updated since they were developed. These plans include: • Landscape Unit Plans

		• Land and Resource Management Plans (LRMPs) • Strategic Land & Resource Management Plans (SLRMPs) It is intended that FSPs incorporate land use and other relevant direction from these higher-level plans to manage operations from a landscape perspective. FSPs are also required to reflect the direction in GARs for areas such as ungulate winter range. The province is also developing a caribou recovery strategy that will impact forest management however it has not yet been released (see Indicator 2.1.2 – HCV1 for more discussion). Old growth is an important component of biodiversity – it is mature forests that are harvested and many of the province's species at risk favour or exclusively inhabit exclusively old forests. The province requires Old Growth Management Areas (OGMAs) to be spatially identified in FSPs where old growth orders are in effect. However, where there is not an old growth order in force, plan authors have the option of including "non-legal" OGMAs in their FSPs. Some do this and protect the OGMAs, despite having no legal obligation to do so, while others do not. Licensees are also permitted to move OGMAs around over the landscape. More significantly, most of the province's old forest consists of small trees in areas with low productivity, such as alpine areas. A recent report (April 2020) indicated that only 3% of BC's old forest supports large trees, most of which is on the BC Coast. In summary, the level of protection provided by OGMAs does not recognize different types of old forest, and is applied on a variable and inconsistent basis across the landscape. <u>Stand-level Approach</u> At the stand level, retaining wildlife trees, coarse woody debris and wildlife habitat features such as stick nests and bear dens is the biodiversity objective. The maintenance of riparian reserves is also a requirement. Wildlife tree patches and riparian reserves are designated in operational plans; wildlife trees and coarse woody debris is retained by the operators who are trained to be able to leave appropriate types and amounts of each. Achievement of the *FRPA* objectives set by government is monitored and enforced as required by the FLNRORD Compliance and Enforcement Section (CES) and by the Forest Practices Board (FPB). The FREP also undertakes effectiveness monitoring to assess whether management actions are meeting the intent of *FRPA* objectives. Professional reliance is also part of the approach used to achieve compliance. The federal *Fisheries Act* and the provincial *Water Sustainability Act* are applicable on all private land. In addition, on Private Managed Forest Land, the Private Managed Forest Land Regulation (PMFLR) establishes requirements that the landowner must meet if critical wildlife habitat is determined to be present. Owners enrolled in PMFL Program are not required to prepare management plans or obtain approvals for operations and there are no other biodiversity requirements that must be followed. On other private land, there are no additional requirements to protect biodiversity. There may be requirements in Regional District planning guidelines, Official Community Plans, or municipal bylaws. No formal program for effectiveness monitoring of forest operations on other private land currently exists in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives.

	Results: **Compliance, Enforcement, and/or Monitoring**	A 2013 audit of biodiversity in BC conducted by BC Auditor-General (AG) reported that BC was the most biologically diverse province in Canada and that its biodiversity was in decline. The report concluded that: • Significant gaps exist in the government's understanding of biodiversity; • Government does not know whether its actions are resulting in the conservation of biodiversity; and • Government is not adequately measuring and reporting on its progress in the conservation of biodiversity. The first conclusion was based on the fact that parts of the province had never been inventoried for species distribution and the data from other parts of the province is outdated. The AG also found that there was little information regarding the status of invertebrates and non-vascular plants, and that despite the large number of species at risk in the province, very few are protected under provincial legislation. Lastly, the AG found that the government's tool for prioritizing biodiversity conservation actions was unreliable and there was little monitoring of designated protection areas. The FREP program evaluates whether practices implemented under *FRPA* are meeting the intent of the *Act's* objectives, and whether forest and range practices and the legislation itself is meeting the BC government's goal of maintaining biodiversity. A key part of these broader effectiveness assessments is determining whether ungulate winter range, wildlife habitat areas, and fisheries sensitive watersheds are sufficient in amount, quality and distribution. FREP also conducts stand-level biodiversity monitoring to determine whether the policy of retaining wildlife tree patches and riparian reserves is achieving the desired levels and types of structures to maintain species diversity. The key indicators used to assign a resource development impact rating include the density of large diameter trees and big snags, tree species diversity, coarse woody debris (CWD) volume and quality. Results indicated that '*an improving stewardship trend is evident*' within the Province. The FPB completes investigations and audits with regard to protection and conservation of biodiversity on Crown land. A 2015 assessment of the effectiveness of FSPs found that a moderate number (between 50-79%) of FSPs sampled contained measurable (and therefore enforceable) landscape-level biodiversity objectives and riparian objectives. A high percentage (80% and more) of FSPs had measurable stand-level biodiversity objectives. An FPB evaluation done in 2017 of whether FREP was meeting its intended purposes found that monitoring is limited by the FRPA objective statements' lack of measurability and by the constraint that timber supply cannot be unduly influenced. The FPB also found that: • FREP's approach to using sustainability as a measure of effectiveness is not clear or well understood. • Substantial gaps remain in monitoring some values, especially at the landscape-level. The FPB has also evaluated the effectiveness of regulations for protecting biodiversity. Wildlife and biodiversity issues have comprised 15-22% of all compliance issues since 2004. "*A common and ongoing theme in complaints to the Board relates to the ability of government objectives and policy to adequately manage non-timber values*." Complaints often focus on biodiversity issues such as wildlife habitat protection, old-growth forests etc. "*An important question often arises*

		– are government's current objectives, regulations and guidance adequate to ensure effective management of non-timber values? The Board finds that more work is often needed by all involved." Lastly, a 2012 FPB report on old growth management found that 70% of the 55,000 OGMAs created in the province were not identified in FSPs and therefore had no legal status. The Board also concluded that the government lacked the capability to assess whether sufficient OGMAs were being designated or if the rules governing the movement and substitution of OGMAs were being followed. A recent report (April 2020) found that the amount of old forest was highly variable by biogeoclimatic zone, with several of the most productive zones having less than 1% old forest. There are clear indications that there is a high level of public concern with the way that old growth is being managed in BC, most notably the provincial government's appointment of a two-person panel to lead an Old Growth Strategic Review (results and recommendation unavailable at the time of RRA-BC public consultation). In 2012, the Managed Forest Council undertook an effectiveness audit to assess whether the forest management objectives established under the PMFL Act were being achieved. This is the first audit that evaluated the effectiveness of the Private Managed Forest Land Council regulation. The audit found that forest management objectives were being met and, in many cases, the regulatory standards were exceeded. However, no critical wildlife habitat had yet been identified on private managed forest land. No formal program for effectiveness monitoring of forest operations on other private land currently exists in the province. Monitoring is at the discretion of individual landowners and subject to their individual goals and objectives for the property.
	Rationale for Risk Designation	Protected areas are a part of the approach to conserving biodiversity however with protected areas representing approximately 15% of the landbase, it is clear that measures must be taken on the unprotected lands in order to conserve biological diversity. There is a considerable body of legislation, regulations, standards, and guidelines intended to protect / conserve biodiversity values. *FRPA* contains required indicators that must be implemented to conserve landscape-level and stand-level biodiversity; however, these define biodiversity very narrowly. The Auditor-General and the Forest Practices Board have identified numerous problems that are limiting the province's efforts to conserve biodiversity, to track the implementation of the associated measures, and to assess their effectiveness. The FREP program has been found to be limited in its ability to assess the effectiveness of mandated practices in achieving the province's biodiversity goals. The management of old growth in BC, which is a substantial component of biodiversity, also suffers from a number of weaknesses which limit its effectiveness, including the province's lack of ability to track implementation and compliance. The conservation of biological diversity at the stand level is in general better implemented and appears more likely to be effective than the measures in place to conserve biodiversity at the landscape level. Based on the evidence reviewed and the pending changes to planning and management of Old Growth in BC, it is recommended that feedstock coming from uncertified Crown Land be assessed as specified risk. There are few requirements in place to implement biodiversity conservation measures on PMFL. The PMFLA requires registered landowners to meet objectives regarding soil conservation, water quality, fish habitat and critical wildlife habitat; these objectives support biodiversity but are too narrow to protect existing levels. In addition, while the legal means exists to designate all or part of a PMFL area as

		critical wildlife habitat, however this is not done. Other than these requirements, and compliance with the federal *Fisheries Act* and the BC *Water Sustainability Act*, PMFL owners face little in the way of requirements to conserve biological diversity. There are no requirements related to old forest, patch or wildlife tree retention, or maintenance of other structural and compositional elements that support biodiversity. Based on the evidence reviewed, biodiversity protection related to Old Growth on private managed forest land has been rated as specified risk. Other private landowners are subject to even fewer legislated requirements to conserve biodiversity than those registered in the PMFL program; the *Fisheries Act* and *Water Sustainability Act* are the two principle applicable acts. As a result of the absence of legislation governing forest management planning, best management practices, monitoring and/or data on other private land a specified risk is designated.
Means of Verification		• Existing legislation • Compliance and enforcement • Best Management Practice manuals • Monitoring records • Interviews with staff and stakeholders • Internal policies and procedures, fiber contracts and field audits • Publicly available information on the protection of the identified values
Evidence Reviewed		• *Forest and Range Practices Act* – Change to: *Forest and Range Practices Act*, S.149 – Objectives Set by Government – http://www.bclaws.ca/civix/document/id/consol21/consol21/00_02069_01 • FPRA – Forest Planning and Practices Regulation – http://www.bclaws.ca/Recon/document/ID/freeside/14_2004 • The Forest and Range Evaluation Program (FREP) – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program • FREP 2016-17ADM Resource Stewardship Overview, December 2016 – https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/integrated-monitoring/adm-stewardship-overview_2016-2017.pdf • FLNRORD – Forest Stewardship Plan Website – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-stewardship-plans • FLNRORD – Integrated Resource Monitoring – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring • Forest & Range Evaluation Program Biodiversity Monitoring – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program/frep-monitoring-protocols/biodiversity • Special Report on the Forest and Range Evaluation Program – https://www.bcfpb.ca/wp-content/uploads/2017/11/SR54-Forest-Range-Evaluation-Program.pdf

	• FREP Assistant Deputy Minister's Resource Stewardship Overview Report (2016-2017) –https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/integrated-monitoring-reports • Integrated Monitoring Reports – Assistant Deputy Minister's Resource Stewardship Report – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/integrated-monitoring-reports?keyword=Assistant&keyword=Deputy&keyword=Minister&keyword=Resources&keyword=Stewardship&keyword=Overview • Forest Practices Board: A Summary of Complaints to the BC Forest Practices Board (1995-2013) – Special Report FPB/SR/47, May 2014. – https://www.bcfpb.ca/wp-content/uploads/2016/04/SR47-Summary-of-Complaints.pdf • Office of the Auditor General of British Columbia, An Audit of Biodiversity in BC: Assessing the Effectiveness of Key Tools, Report 10: February 2013 – https://www.bcauditor.com/sites/default/files/publications/2013/report_10/report/OAGBC-Audit%20of%20Biodiversity%20in%20B.C%20assessing%20the%20effectiveness%20of%20key%20tools.pdf • Forest Practices Board: Special Report on the Forest and Range Evaluation Program (Nov 2017). FPB/SR/54. –https://www.bcfpb.ca/wp-content/uploads/2017/11/SR54-Forest-Range-Evaluation-Program.pdf • Forest Practices Board. Conserving Old Growth Forests in BC. Implementation of Old Growth Retention Objectives under FRPA. Special Investigation FPB/SIR/36. June 2012. https://www.bcfpb.ca/wp-content/uploads/2016/05/SIR36-OGMAs.pdf • Forest Practices Board. Forest Stewardship Plans: Are they Meeting Expectations? Special Investigation. FPB/SIR/44. August 2015. https://www.bcfpb.ca/wp-content/uploads/2016/04/SIR44-FSP-Are-They-Meeting-Expectations.pdf • Forest Practices Board Annual Reports –2017/2018, 2016/2017, 2015/2016, 2014/2015 –https://www.bcfpb.ca/reports-publications/annual-reports/ • *Private Managed Forest Land Act*, Part 3, Section 15 – Critical wildlife habitat – http://www.bclaws.ca/civix/document/id/complete/statreg/03080_01#section12 • *Private Managed Forest Land Act; Administrative Tribunals Act,* Private Managed Forest Land Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/12_371_2004 • Managed Forest Council – http://mfcouncil.ca

	• Private Managed Forest Land Inspection Summary Reports 2017, 2016 – http://mfcouncil.ca/compliance/field-practice-assessments/inspections/ • Private Managed Forest Land Council: managed Forest Program: Effectiveness of the Council Regulation in achieving the Forest Management Objectives of the *Private Managed Forest Land Act* (Oct 2013) – http://mfcouncil.ca/wp-content/uploads/2014/09/pmflc_audit_report_2013_final_web.pdf • B.C.'S OLD-GROWTH FOREST: A LAST STAND FOR BIODIVERSITY An independent report by Dr. Karen Price, Dr. Rachel Holt and Dave Dust , April 2020
Proposed Risk Rating	**Uncertified Crown Land** ☐ **Low Risk** ☒ **Specified** **Uncertified Private Managed Forest Land** ☐ **Low Risk** ☒ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.2.5		The process of residue removal minimises harm to ecosystems.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	In BC, harvested timber is manufactured into the following wood products: lumber; veneer, plywood and engineered and other wood products; and pulp and paper, and more recently wood pellets. For the most part, primary harvesting results in the removal of timber in the form of sawlogs, with some pulpwood logs; waste and residue is left onsite usually at roadside. BC's Provincial Logging Residue and Waste Measurement Procedures Manual defines 'waste' as *timber, except timber reserved from cutting, whether standing or felled, which meets or exceeds BC's timber merchantability specifications* and 'residue' as fibre left onsite that does not meet merchantability specifications. The SBP Standard states that 'residue' includes treetops and branches. The normal practice in BC is for tops, branches, and cull material to be left at the roadside where the trees are processed, while other types of biomass, such as standing dead trees and unmerchantable species, as well as downed woody debris, are left within the cutblock. Stumps are not removed but left in situ. Fibre left 'in-block' to address ecological values is assessed under Indicator 2.2.4 – Biodiversity and Indicator 2.2.2 – Soil Quality (see those indicators for more for details). As required by legislation all industrial activities (regardless of ownership type) must assess and abate fire hazard, resulting in removal of waste and residue typically through pile burning (for more details see Indicator 2.2.7 – air quality and Indicator 2.4.2 – managing for natural processes, such as wildfire). For the purposes of the assessment of this indicator, post-harvest post-processing '*waste*' and '*residue*' produced as a result of primary harvesting, and left at roadside, is considered to be 'residue available for removal' in the context of this

		indicator. See above Section 2.9 – Biomass Sector for more discussion on the type of fibre utilized by the Biomass Producers.
	Potential Threats	As discussed in the 'context' section above, this indicator describes the 'removal of residue' from roadside and there do not appear to be any threats.
	Regulatory Requirement & Agency of Authorization	Existing (Div.8.2) and recent regulatory (Div.8.2 and Div.8.3) and licencing tools authorized under the *Forest Act* enable residue removal by secondary users under either a Fibre Supply Licence To Cut or a Fibre Forestry Licence To Cut. FLNRORD is the agency of authorization for the *Act,* applicable regulations, and licences. Under the *Forest Act*, the Waste Assessment Policy, and the Provincial Logging Residue and Waste Measurement Procedures Manual, FLNRORD ensures the Crown receives full revenue for timber rights allocated under the various tenures as well as addressing fibre utilization requirements for primary harvesting, both in-block and roadside and landing piles (see Indicator 1.4.1 for more details on payment to Crown). Private forest land (both managed and unmanaged) in BC does not have regulatory control systems specific to utilization requirements. Utilization is largely driven by economic considerations and generally only wood that has positive value is removed, this would include the price attainable for the residue vs the cost of obligations for the residue to remain on-site. Under the authority of FLNRORD, BC's *Wildfire Act* and Wildfire Regulation, timber licensees and other private landowners are required to assess wildfire hazard and follow through with necessary fuel hazard abatement when levels of waste/residue from primary harvesting become threatening (see Indicator 2.4.2 for more details on natural processes, such as wildfire; see Indicator 2.2.7 for more details on air quality).
	Mechanism and Supporting Evidence	The 'Residual Fibre Recovery' is a FLNRORD initiative to increase the use of post-harvest/post-processing residue and the use of lower-quality timber in areas of BC where there is demand for the residual fibre from secondary users. Reduced carbon emissions through less need for slash-burning of post-harvest waste is anticipated through this initiative. In addition to the establishment of 'fibre recovery tenures' under the *Forest Act*, the province has completed estimates of recoverable fibre (residue) that could be available at roadside at various cost thresholds. The analysis excludes merchantable roundwood that would be removed during conventional harvesting and assumes all cutblocks are clear cut harvested with stems processed at roadside. Inventories estimates of 'residue' is available for eleven (2 coastal, 9 interior) Timber Supply Areas (TSA) (see Indicator 2.3.3 – Contributions to Local Economy for more details). As well, best practices for maximizing efficiencies and minimizing costs for roadside handling are provided. Discussions with biomass producers suggest it is not economical to 're-enter' cutblocks to remove residue and residue removal will be focused on roadside opportunities. There is no BMP's available for residue harvesting on either of the private land sub-scopes.
	Results: **Compliance, Enforcement, and/or Monitoring**	Waste and residue assessments are required post-harvest on all Crown land in BC. According to the 2010 FPB report '*Measuring Wood Waste in British Columbia*', waste volumes appear to be accurately graded and reported throughout BC. In addition, FLNRORD field verifies approximately 5% of all cutblocks to ensure compliance with waste and residue control measures.

		There is no monitoring/reporting data with regards to residue harvesting on either of the private land sub-scopes.
	Rationale for Risk Designation	On Crown land, the 'Residual Fibre Recovery' initiative is designed to utilize rather than leave or burn residual fibre produced as a result of primary harvesting. Legislation regulates rights to fibre, economic limitations dissuade on-block removal (second pass) but currently provide opportunities for fibre utilization of residue at roadside. It is not standard practice to re-enter the harvest blocks for additional residue. Under this current practice, the overall risk to ecosystems directly posed from utilization of roadside and landing residual fibre is low for Crown land. As a result of the absence of legislation, best management practices, monitoring and/or data a specified risk designation is assigned to PMFL and other private land in BC.
Means of Verification		• Review of publicly available websites & reports (listed below) • Forest legislation/regulations registry • Compliance and Enforcement Branch Reports • Forest Practices Board Reports • Fibre Procurement Contracts • Timber Mark &/or tracking via Harvest Billing System (HBS) • Waste & Residue surveys • Best Management Practice manuals
Evidence Reviewed		• *Forest and Range Practices Act* – http://www.bclaws.ca/civix/document/id/complete/statreg/02069_01 • Forest Planning and Practices Regulation – http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004 • *Forest Act* – Forestry Licences to Cut (47.6) – http://www.bclaws.ca/civix/document/id/complete/statreg/96157_03#section47.6 • *Forest Act* – Fibre Supply Licences to Cut (47.71) – http://www.bclaws.ca/civix/document/id/complete/statreg/96157_03#section47.71 • *Forest Act* – Division 8.3 – Disposition of Timber Acquired under *Forestry Revitalization Act* or Subject to Waste Assessment http://www.bclaws.ca/civix/document/id/complete/statreg/96157_03#division_d2e12616 • Forest Residue & Waste Website – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/forest-residue-waste • Provincial Logging Residue & Waste Measurement Procedure Manual – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/forest-residue-waste/provincial-logging-residue-and-waste-measurements-procedure-manual • Chief Forester Guidance CWD Management (2010) – https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-

	ecosystems/conservation-habitat-management/wildlife-conservation/wildlife-tree-committee/chief_forester_short_cwd.pdf • FLNRORD – Residual Fibre Recovery – https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/residual-fibre-recovery • Managed Forest Council – Field Practices Guide – http://mfcouncil.ca/wp-content/uploads/2015/01/FPG_2015_web.pdf • Private Forest Landowners Association – Best Management Practices – http://www.pfla.bc.ca/bmps/ • British Columbia Forest Industry and the B.C. Economy 2016 – https://www.cofi.org/wp-content/uploads/BC-Forest-Report-FINAL-Sept-2017.pdf • Developing Forest Biomass Removal Guidelines to Ensure Environmental Sustainability, NRCan, 2020 – https://www.treefrogcreative.ca/wp-content/uploads/2020/01/Biomass-Article-January-2020-English-Final.pdf?x87374&x87374
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☐ **Low Risk** ☒ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.2.6		Negative impacts on ground water, surface water, and water downstream from forest management are minimised.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	Water quality and quantity conservation related to forest management activities (i.e. harvesting and road construction/maintenance, etc) is the focus of this indicator. Subsistence-based drinking water is addressed in Indicator 2.5.2.
	Potential Threats	Forest management activities may negatively affect water quality and/or quantity through increased sedimentation, loss of riparian habitat and function, loss/degradation of fish habitat, loss of water quality for domestic use and alteration of peak flows that may result in increased flooding.
	Regulatory Requirement & Agency of Authorization	Water is one of the eleven resource values that the BC government requires to be managed and protected under *FRPA*. On Crown land, FLNRORD is the agency responsible for ensuring the protection and conservation of water quality. This is achieved through objectives set by government (FPPR S.5, S.8 S.81, S.8; WLPPR S.9) for: • soils (see Indicator 2.2.2); • water, fish, wildlife, and biodiversity with riparian areas; and • water in community watersheds.

		Under *FRPA* Sections: 150 and 150.1, 150.2, and 150.5 the government may establish land designations or stewardship measures for community watersheds, watersheds with significant downstream fisheries values, lakeshore management zones, as well as streams/wetlands/lakes through Government Actions Regulations (GAR). Other pieces of water-related legislation that affect resource management in BC include, but not limited to: ● *Water Sustainability Act (WSA)* ● *Water Protection Act* ● Federal *Fisheries Act* ● Federal *Species at Risk Act* BC's 2016 *Water Sustainability Act (WSA)* was designed to protect water and ensure its future availability and quality. The *Water Protection Act* protects BC's water resources by confirming the ownership of surface and groundwater in BC. The *PMFL Act* (Sections: 13 and 14) and PMFL Council Regulation (Sections 14.1, 15, 20, 24, 25) contains a number of provisions intended to protect water quality used for human drinking water in streams that have a licensed waterworks intake installed downstream. In addition to the *PMFLA* and regulations, Managed Forests are also subject to other provincial legislation such as the *Water Sustainability Act*, *Wildlife Act*, and federal acts such as the *Species at Risk Act* and *Fisheries Act.* The *Riparian Areas Protection Act* and Regulation provides the legislated direction needed by local governments to achieve improved protection of fish and fish habitat. This regulation applies to municipal and other private land in more populated jurisdictions within BC. The regulation is limited as it applies only to riparian habitat in association with new residential, commercial, and industrial developments on land under local jurisdiction. Other private land is subject to minimal legislation outside of the *WSA* and for those designated local governments, the *Riparian Areas Protection Act and Regulation.* On other private land, local governments may pass bylaws regulating tree cutting and/or may require that development permits be obtained prior to tree removal in riparian areas, however requirements vary by jurisdiction. Development permit area policies and requirements are generally specified in official community plans with approvals subject to review by local governments. Outside of official community plans, other private land is only subject to the Federal *Fisheries Act*.
	Mechanism and Supporting Evidence	In terms of forest management practices and planning, FSPs must address *FRPA* and FPPR's objective for the protection of community watersheds and water licences on Crown land. To do this, licensees write commitments in their FSPs, referred to as results or strategies, in order to specifically address long-term planning within community watersheds and for water licences. The FPPR and WLPPR provide default mandatory practice requirements that set legal minimum thresholds or outcomes that must be met by forest licensee and agreement holders (FPPR S.47 – S.63). Practice requirements relating to water quality and riparian areas include a range of considerations from engineering roads and bridges to retaining stream buffers to minimizing sedimentation and protecting domestic water sources, as well, the restriction of use of fertilization. Further, practice requirements are prescribed to address the hydrologic function of soils. Other provisions of FPPR related to water deal with fish and fish habitat, fisheries

		sensitive watersheds and temperature sensitive streams (see Indicator 2.2.3 – Key Ecosystems and Habitats for more detail). Water licences and approvals are issued for many water uses. The geographic location, type of licence and owner information is updated and made available publicly on FLNRORD's online 'Water Licence Search Tool'. This tool and other public websites allow forest professionals and timber licensees the ability to locate, consult with water licence holders and protect their drinking water. Managed Forest Council have released a field practices guide to aid Private Managed Forest Landowners in their field decisions and meeting their practice obligations. Water quality guidance is provided for the following practices: road construction, road maintenance and deactivation, timber harvesting, reforestation, stream classification, and riparian tree retention. Under the *Riparian Areas Protection Act and Regulation*, local government bodies develop and implement the following that may be applicable to other private land: ● Development Permit Areas (DPAs) ● Zoning Bylaw provisions ● Watercourse or Environmental Protection bylaws ● Municipal policies In 2017 a multi-association guidebook for professional practice for implementing the *Riparian Areas Protection Act and Regulation* was published. An online report submission system called the 'Riparian Areas Regulation Notification System' is the online portal to where assessment reports are submitted and where notifications to appropriate levels of government are made. Outside of development permits, very little information was found which related to mechanisms for this indicator on other private land.
	Results: **Compliance, Enforcement, and/or Monitoring**	Communities have expressed concern that water quality and quantity is a primary concern they have with regard to impact from forest management. Water is a common source of concern within FPB audits and complaints investigations. Of the 11 compliant investigations in 2019, 6 involved concerns on roads or harvesting causing landslides or sedimentation and impacting water resources or fish. Of 8 completed complaint investigations included in the 2017-2018 annual report, three were related to water and hydrologic functioning. For 2016-2017, the board found 1 licensee requiring improvement to riparian practices. Of 13 complaints received that year, two were related to water quality and sedimentation. FREP monitors impacts on riparian function and generation of fine sediment. Of the 2,287 stream reaches assessed from 2005-2014 for riparian function: ● 68% of streams found to be in properly functioning condition (PFC) or functioning with limited impacts. These outcomes are considered to be most consistent with the riparian management objectives stated in *FRPA.* ● 32% found to be in lower functioning classes; 20% of streams sampled considered "borderline (FHR)" in regard to sustainability. ● 12% not properly functioning (NPF) and considered "unsustainable" in regard to forest practices.

		From the above FREP report, analysis as to causes of impacts on sampled streams revealed that logging was the primary source of impact on a majority of all streams sampled. In a separate study of small streams (<3m wide) by FREP found that of streams sampled (2006-2015 data): ● S-6 streams had the highest percentage of sites rated as functioning at high risk (FHR) and not-properly functioning (NPF) followed by fish-bearing S-4 streams (no reserve required for either class under FPPR). ● Fish-bearing S-3 streams found to be in better condition in all regions likely as result of mandatory 20m reserves and stringent crossing requirements. ● In-block streams displayed a higher percentage of FHR and NPF sites than streams outside but bordering cutblocks. ● S-6 streams was the stream classification most impacted by logging. Streamside retention was shown to be an important factor dictating riparian function. FREP assessments have found that all six classes of streams assessed for post-harvest condition have received levels of riparian retention substantially more than that required in regulation. Streams adjacent to cutblocks generally have received higher levels of retention than those in cutblock boundaries. A FREP report (2013) on Provincial water quality Effectiveness Evaluation Results (2008 – 2012) sampled over 4000 sites. 5% were shown to have high or very high potential for fine sediment generation. 398 sites were sampled above drinking water intake, resulting in 4% high or very high ranking. The primary cause was due to road management and proximity to streams. All Managed Forest Council Inspection Reports from 2015-2019 were reviewed. The 2017 Annual Report (45 PMFL properties inspected) found that all stream retention requirements were met except one which was under review. Requirements were often exceeded by property owners. Roads built adjacent to streams and active stream crossings were located, built and used in a manner that protects the stream channel and banks. Road maintenance and deactivation was also found to be adequate in protecting water quality and fish habitat. Similar findings were reported in the 2015 through 2019 annual inspection report. The *Riparian Areas Protection Act* and Regulation uses a 'professional reliance' model to meet its objectives. A 2014 Office of the Ombudsperson report found that FLNRORD did not have the ability to ensure local governments were implementing the *Riparian Areas Protection Act* and Regulation. Many of the recommendations made in the 2014 report were considered and integrated into the 2019 amendment to the *Riparian Areas Protection Act,* however, no other results of compliance and enforcement of this *Act* could be found. Other private land is the least regulated form of ownership considered within this risk assessment. Enforcement of development permit area requirements and other bylaws are the responsibility of municipal/ regional district bylaw officers and often complaints-driven. Outside of specific municipal bylaw monitoring, no formal program for effectiveness monitoring of forest operations on other private land currently exists in the province.
	Rationale for Risk Designation	There is an extensive legal framework governing forest management on Crown Land. Protection of water quality and riparian habitat is required by law with many requirements placed on forest agreement holders. FREP data indicates that current forest management practices are effective in maintaining riparian function

		and water quality on the majority of streams. However, issues and room for improvement do exist particularly related to road construction and stream crossings. These issues are sporadic and geographically discrete, no systemic issues were noted. Based on the evidence reviewed fibre coming from Crown Land be designated as low risk. Over four years of audits (2015-2019) the Managed Forest Council found no cases of forest practices not complying with the requirements of the *PMFLA* or associated regulations. Other than one operation under review, the council found that landowners were meeting and often exceeding requirements. Based on the legislation, best management practices and audit results, PMFL will be designated low risk. As a result of the limited regulation and lack of best management practices, monitoring and/or data on other private land, a specified risk is designated.
Means of Verification		• Existing legislation • Compliance and enforcement Data • FREP Monitoring Data and ADM Resource Stewardship Reports • Best Management Practice manuals • Interviews with staff and stakeholders • Internal policies and procedures, fibre contracts and field audits
Evidence Reviewed		• FPRA, S.149 – Objectives Set by Government – http://www.bclaws.ca/civix/document/id/lc/statreg/02069_01#section149 • FPPR, S.8 - Objectives– http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004#section8 • FPPR – Part 4 – Practices Requirements http://www.bclaws.ca/Recon/document/ID/freeside/14_2004#part4 • FLNRORD – Integrated Resource Monitoring – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring • Integrated Monitoring Reports – Assistant Deputy Minister's Resource Stewardship Overview 2016-2017 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/integrated-monitoring/adm-stewardship-overview_2016-2017.pdf • The Forest and Range Evaluation Program (FREP) – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program • The Condition of Small Streams After Harvesting: A Summary of FREP Data From 2006-2015: FREP Extension Note #40 - https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/frep/extension-notes/frep_extension_note_40.pdf • FREP Report #35 (2013): Provincial Water Quality Effectiveness Evaluation Results (2008-2012). https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/frep/frep-docs/frep_report_35.pdf?fileName=frep_report_35.pdf

	• Forest Practices Board: Special Report on the Forest and Range Evaluation Program (Nov 2017) https://www.bcfpb.ca/wp-content/uploads/2017/11/SR54-Forest-Range-Evaluation-Program.pdf • Forest Practices Board: Summary of 2013 & 2014 Audit Reports- https://www.bcfpb.ca/wp-content/uploads/2016/04/SR50-Summary-2013-2014-Audit-Reports.pdf • Forest Practices Board: A summary of complaints to the BC Forest Practices Board (1995-2013)- https://www.bcfpb.ca/wp-content/uploads/2016/04/SR47-Summary-of-Complaints.pdf • Forest Practices Board Annual Reports: 2017/2018, 2016/2017, 2015/2016 – https://www.bcfpb.ca/reports-publications/annual-reports/ • *Private Managed Forest Land Act*, S.13 – Water Quality – http://www.bclaws.ca/civix/document/id/complete/statreg/03080_01#section13 • Private Managed Forest Land Council Regulation – S.15 – 30 – http://www.bclaws.ca/civix/document/id/complete/statreg/182_2007 • Managed Forest Council – http://mfcouncil.ca • Results of a Survey of Managed Forest Operations Protecting Drinking Water Quality- December 2016- http://mfcouncil.ca/wp-content/uploads/2017/07/MFC-Water-License-Survey-web.pdf • Private Managed Forest Land Inspection Summary Reports (2016, 2017 – http://mfcouncil.ca/compliance/field-practice-assessments/inspections/ • MFLNRO, MOE, DFO, 2012. Fish Stream Crossing Guidebook Revised Edition.https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/resource-roads/fish-stream_crossing_web.pdf • BC Forest Service, BC Environment, 1998. Fish Stream Identification Guidebook 2nd Edition. https://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/FISH/FishStream.pdf • Anon. 1996. Community Watershed Guidebook. https://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/watrshed/watertoc.htm • BC Forest Service, 1995. Riparian Management Area Guidebook. https://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/riparian/rip-toc.htm • Anonymous 1995. Interior Watershed Assessment Procedure Guidebook (Level 1 Analysis), BC Ministry of Forests and BC Environment, September 1995, 82 pp. https://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/wap/wapgdbk-web.pdf • Ministry of Water, Land, and Air Protection Ecosystem Standards and Planning Biodiversity Branch, 2004. Standards and Best Practices for Instream Works. https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/iswstdsbpsmarch2004.pdf

	• Wetland Stewardship Partnership, 2009. Wetland Ways: Interim Guidelines for Wetland Protection and Conservation in British Columbia. https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/wetland_ways_ch_1_introduction.pdf • Association of BC Forest Professionals, 2014. Guidelines for Professional Services in the Forest Sector: Crossings. • ABCFP Legislation and Policy Reference Guide (2017).
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.2.7		Air quality is not adversely affected by forest management activities.
Finding	**Scale of Assessment**	Provincial
	Context	The scope of this indicator is specific to open burning and management of smoke due to forest management activities. It does not include emissions from industrial sources such as facilities (i.e. sawmills, including log sort yards) (provincial permits) and/or transportation and machinery sources (Federal and Provincial statutes).
	Potential Threats	Burning of wood and vegetation is an option for abating fire hazard, however smoke created can negatively impacts air quality at varying scales (communities, valleys, airsheds). Threats/impacts can include; • Emittance of increased levels of air pollutants such as particulate matter, Carbon monoxide, Nitrogen Oxides and volatile organic compounds into the environment. • Reduced air quality and possible related health impacts • Public complaints related to reduced air quality
	Regulatory Requirement & Agency of Authorization	FLNRORD is the agency authorized to manage the *Wildfire Act* and Wildfire Regulation. Under the *Wildfire Act* (S.7), a person carrying out an industrial activity or prescribed activity is required to assess and abate the fire hazards as necessary. Wildfire Regulation (2.3) defines prescribed circumstances respecting the lighting, fueling or use of open fire on private managed forest land. In addition, Local governments may create bylaws to regulate the nuisance, fire hazard or air quality impacts of burning. Authorization and management of industrial burning to address air quality is overseen by the Ministry of Environment and Climate Change Strategy, specifically the Air, Land & Water Branch, via the *Environmental Management Act* and the Open Burning Smoke Control Regulation (OBSCR). OBSCR governs the

		burning of vegetative material associated with a range of activities, such as land clearing, forestry operations and agriculture. It sets out the conditions under which open burning of vegetative debris can be authorized. The regulation does not generally prohibit burning but rather aims to ensure that open burning is conducted with minimal risk to air quality (shorter burn periods to minimize accumulation of smoke; increased mandatory setbacks from neighbors, schools, and hospitals; provisions to facilitate burning required for community wildfire risk reduction; provisions to facilitate burning diseased debris; provisions to use air curtain burners; provisions for relaxed setbacks and increased burn windows when applicable). In accordance with OBSCR, hazardous wastes are prohibited materials to be included in open burn as a method of waste disposal due to its impact on air quality (See Indicator 2.2.9 on waste disposal for details). These laws and regulations are required for all ownership types (sub-scopes) within BC. In addition, the *Environmental Management Act* provides the Minister responsible with the authority to develop objectives to manage air quality in B. Air quality objectives are non-statutory limits (i.e. not legally binding).
	Mechanism and Supporting Evidence	Legislatively the forest industry is required to dispose of post-harvest slash to abate fire hazard and this has typically been completed by through broadcast burning or pile burning. The forest industry and/or government can utilize prescribed (controlled) forest burning as a management tool to reduce fire hazard and/or enhance wildlife habitat. Broadcast burns are not widely implemented in BC but are covered under the *Wildfire Act* and Wildfire Regulation. Pile burning is the primary method to abate hazard. OBSCR authorizes and provides requirements for pile burning which include what can be burned in piles, where piles can be located, length of burn and atmospheric venting conditions. As specified in OBSCR, open burning is only permitted when the forecast Ventilation Index is sufficient to disperse smoke. Ventilation Index is available from Environment Canada or Provincial site. Ventilation Index are contained within daily Smoke Control Forecast and available for 25 locations in BC, via the Provincial interactive Venting Index Map and/or Venting Index Report. A number of Best Management Practices are implemented for reducing smoke during burning including: burning dry/seasoned debris; pile construction; rapid ignition; re-staking piles; and consideration of wind direction. As climate change and increased urban/wildland interface it will be expected that preventing wildfire risks to communities and infrastructure will increase. Consideration of fire hazard abatement through better fibre utilization through the Residual Fibre Recovery (see Indicator 2.2.5 for more detail on residual fibre; Indicator 2.4.1/2.4.2 for detail on ecosystem vitality and natural processes maintained).
	Results: **Compliance, Enforcement, and/or Monitoring**	Open burning of woody biomass is the largest source of particulate matter emissions in BC, contributing 29% of provincial emissions (Province of BC, 2018). In 2004, an audit of OBSCR was completed and identified a number of issues around enforcement and effectiveness of the regulation to protect the environment and human health. A provincial policy for managing smoke due to biomass burning and to minimize exposure to smoke and reduce health risk was developed in 2011: "A Smoke Management Framework for BC". Subsequently, following extensive consultation and a second Intentions Paper, a new OBSCR was enacted (2019).

		The Provincial Environmental Reporting BC website monitors and reports annual and 24-hour air quality readings for approximately 116 stations in 7 Air Zones. The Status of Fine Particulate Matter ($PM_{2.5}$) in BC (2015-2017), as compared to the Canadian Ambient Air Quality Standards established by the Canadian Council of Ministers of the Environment is reported. The annual standard was met at 48 of the 52 stations (92%) for which valid data was obtained, while the 24-hour standard was met at 35 of the 52 stations (67%) with sufficient data for analysis. $PM_{2.5}$ levels met both of the Canadian Ambient Air Quality Standards in two of BC's seven air zones. The Central Interior and Southern Interior air zones exceeded it the $PM_{2.5}$ annual standard, and this was due to the influence of the smoke from wildfires during the summer of 2017. BC Conservation Officers are authorized to enforce the OBSCR.
	Rationale for Risk Designation	BC has a comprehensive regulatory framework, including reporting systems and compliance and enforcement to address air quality impacts due to many contributing factors. In addition, the changes to OBSCR to control smoke and minimize risk to air quality as a result of open burning, of which forest management activities is prominent contributor for fire hazard abatement. The most current reports available for $PM_{2.5}$ were met (excluding 2017 wildfire influence). As such this indicator is assessed as low risk for the province.
Means of Verification		• Existing legislation and regulations • Level of enforcement (reporting and database acquisition) • Publicly available information on of air quality • Inquiries/interviews to environment authorities • Interviews with staff, stakeholders • Best Management Practices • List of Companies ISO 14001 Certified • Delivered Fiber and Logging & Hauling Agreements, Master Logger Training records, BMP compliance checks • Internal policies and procedures, procurement contracts and field audits
Evidence Reviewed		• Ministry of Environment and Climate Change Strategy – Pollution Sources – Smoke & Burning – Industrial Burning – https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-pollution/smoke-burning/industrial • Wildfire Service – Prescribed Burning – https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/prescribed-burning • Open Burning Smoke Control Regulation – https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-pollution/smoke-burning/regulations/openburningregulation • Ventilation Index – https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-pollution/smoke-burning/ventilation-index • Interactive Venting Index Map – https://governmentofbc.maps.arcgis.com/apps/webappviewer/index.html?id=6d288bc667b24528a5c1e3b4c0373d07

	• Venting Index Report – http://www.env.gov.bc.ca/epd/epdpa/venting/ • A Smoke Management Framework for British Columbia, June 2011 – https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/smoke-management-framework-20110722.pdf • Status of Fine Particulate Matter in BC (2015 – 2017) – http://www.env.gov.bc.ca/soe/indicators/air/fine-pm.html • BC Ambient Air Quality Objectives, May. 9, 2018 – https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/aqotable.pdf
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.2.8		There is controlled and appropriate use of chemicals, and that Integrated pest management (IPM) is implemented wherever possible in forest management activities.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Potential Threats	The primary threat from the use of chemical pesticides and herbicides in forest management is that the chemicals will cause adverse effects on human health as well as the health of wildlife and fisheries. Chemicals have also been shown to lead to loss of insect and plant biodiversity. The toxicity of some chemicals can lead to contamination of water and soils. Most of these adverse effects including misidentification of pests and improper use of treatments result from inadequate supervision and/or improper training.
	Regulatory Requirement & Agency of Authorization	Pesticides are regulated at federal, provincial and municipal levels and the regulations are applicable on Crown land, Private Managed Forest Land and Other Private Land. Federally Health Canada's Pest Management Regulatory Agency reviews all pesticides and must issue a Pest Control Products Registration Number prior to a product being allowed to be sold and used in Canada (*Pest Control Products Act*). No pesticide may be used for any purpose or in any ways other than those described on the label. Provincial legislation includes; • *Integrated Pest Management Act (IMPA)* and Regulations • *Weed Control Act* and Regulations • *Forest and Range Practices Act (FRPA)* and Regulations • *FRPA* – Invasive Plants Regulation In BC, pesticide use is authorized and managed by the Ministry of Environment & Climate Change Strategy (MECCS), specifically the Environmental Protection & Sustainability Division. The *IPMA* and Regulations govern the sale and use of pesticides in BC. A key requirement under the *Act* is that a person "*must not use*

		a pesticide that causes or is likely to cause, or use, handle, release, transport, store, dispose of, or sell a pesticide in a manner that causes or is likely to cause an unreasonable adverse effect". Further, the *IPMA* regulations specify standards for the protection of human health and the environment when using pesticides. Other standards include timing restrictions for application, set-backs from riparian areas, waterbodies, and intakes; and weather-related restrictions for application. Strict storage and transportation requirements also apply. In addition to *IPMA*, there is other legislation that compels forest managers to manage pests (problem vegetation) and consider the use of pesticides on their landbase. The *Weed Control Act* and Regulations require land occupiers to control provincially listed "noxious weeds" on both Crown and private land. *FRPA* and accompanying Regulations (Forest Planning and Practices Regulation, Invasive Plants Regulation) require forest and range tenure holders to incorporate measures in their forest stewardship plans (FSP) to prevent the introduction or spread of listed "invasive plant" species.
	Mechanism and Supporting Evidence	The *IPMA* and IPM Regulation requirements are applicable to forestry and industrial vegetation management on public land, as well as on private land used for forestry, transportation, public utilities and pipelines. A key requirement of the *IPMA* is that Integrated Pest Management (IPM) be implemented as part of an active pest management program. The goal of IPM is to reduce strict reliance on pesticides possibly leading to a reduction in their use. In IPM, alternative control measures such as biological or mechanical control are to be considered where feasible. The *IPMA* and Regulations implement several regulatory tools and processes, which includes the preparation of a detailed Pest Management Plan (PMP) and submission and confirmation of receipt of a pesticide use notice may be required. PMP's and public use notices must include specific information as specified by legislation and public consultation with impacted stakeholders and First Nations carried out in accordance with provisions under the *IPMA* and regulations. There are strict reporting and record keeping requirements respecting pesticide sale, use and application. A Monitoring Program is a requirement of a PMP under the IPMR which includes a description of the monitoring program that will be employed to assess pest populations, environmental conditions and damage caused by pests. MECCS conducts inspections to monitor compliance, either chosen at random or based on selected criteria. In regard to Forest Health and the management of insects on Crown Land, FLNRORD has taken lead responsibility in establishing an IPM Program. In regard to pesticides, FLNRORD does not currently use inorganic chemicals for control of problem insects. Aerial pesticide application by FLNRORD is limited to biological methods, mainly BTK, a form of bacteria used to control caterpillars of target species (Personal conversation 2018). Chemical application for control of bark beetles is not effective with management focused on alternative techniques such pheromone baiting and trapping, falling and burning of individual infested trees, and salvage logging of infested as well as dead and dying stands. Forest tenure holders incorporate measures in their forest stewardship plans (FSP) to prevent the introduction or spread of listed "invasive plant" species. Such control may be through targeted use of herbicides. In addition, on Crown Land, forest licensees are required under *FRPA* and the FPPR to establish free-growing stands that meet stocking requirements of approved stocking standards. To achieve this, herbicides may be used as a stand tending mechanism for control of competitive brush and non-target species. Currently approximately 12000-16000

		ha of Crown Land is treated with herbicide annually, most being in the Northern Interior. The primary herbicide used is Glyphosate, a broad-spectrum post-emergent translocated herbicide with reportedly low soil residual and low toxicity to mammals and fish. Under an established IPM program, other methods of brush control such as manual brushing or mechanical site preparation should be considered where feasible.
	Results: **Compliance, Enforcement, and/or Monitoring**	Beginning in 2017, the MECCS released its first IPM Compliance Inspection Report. This report summarizes findings of inspections for compliance with the *IPMA* and regulations carried out through the year (in this case 2016). Compliance inspections can cover compliance with several facets of the *IPMA* and regulations. If even one parameter in the inspection is found to be non-compliant, the entire inspection is marked as a non-compliance regardless of severity. In 2016, 169 IPM inspections took place with 69% complying and 29% resulting in an advisory. Of these inspections, 1% were targeted at the forestry sector. In 2017 IPM officers conducted 249 compliance inspections under the *IMPA* and regulations spread across several sectors. Of the 249 compliance inspections conducted, 3.4% were targeted at the forestry sector (7 inspections, approx.). Of these, 3% were found to comply and 0.4% to be found non-compliant. While there have been very few inspections directed specifically at the forestry sector, when considering all sectors, it appears that the majority of non-compliances are either administrative in nature or of little to no consequence to the environment. A review of the list of 1A (Extremely Hazardous) and 1B (Highly Hazardous) pesticides produced by the World Health Organization shows that the majority of these classes of pesticides are insecticides and rodenticides, none of which are used in forest management in BC.
	Rationale for Risk Designation	The sale, use, and application of pesticides is heavily regulated in BC with an extensive legal framework in place through the *IPMA* and regulations for all ownership types. This legislation requires the implementation of IPM in planning for pest management and prior to the use of any pesticides. Part of IPM is consideration of alternative control methods other than pesticides. PMP's contain selection criteria for implementation of various treatment methods to ensure pesticide use is justified and mitigation measures to address environmental concerns. Training and certification requirements are in place for applicators (regardless of ownership type) to ensure a minimum level of competency prior to them using and applying pesticides. The *IPMA* and regulations apply to use of pesticides both on Crown and private lands. Compliance inspections over a two-year period have shown that the majority of non-compliances tend to be administrative in nature and/or of low consequence to the environment. Based on the evidence available, this indicator has been designated as low risk for Crown, PFML and Other Private Land.
Means of Verification		• Existing legislation • Compliance and enforcement • Best Management Practice manuals • Monitoring records • Interviews with institutions responsible for overseeing the use of pesticides • Interviews with staff and stakeholders • Internal policies and procedures, fibre contracts and field audits

Evidence Reviewed	• *Integrated Pest Management Act* – http://www.bclaws.ca/civix/document/id/complete/statreg/03058_01 • Integrated Pest Management Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/604_2004 • Environmental Protection & Sustainability – Pesticides & Pest Management – https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management • IPM Compliance Inspection Reports: *Integrated Pest Management Act* (2016, 2017) – https://www2.gov.bc.ca/assets/gov/environment/pesticides-and-pest-management/pesticide-use/reports/2017_ipm_compliance_report.pdf • https://www2.gov.bc.ca/assets/gov/environment/pesticides-and-pest-management/pesticide-use/reports/2016_ipm_compliance_report.pdf • *Weed Control Act* – http://www.bclaws.ca/civix/document/id/lc/statreg/96487_01 • *Forest and Range Practices Act*, S.47 – http://www.bclaws.ca/civix/document/id/lc/statreg/02069_01#section47 • Invasive Plants Regulation – http://www.bclaws.ca/civix/document/id/loo70/loo70/18_18_2004 • FLNRORD. Integrated Pest Management Act and Regulation Summary. February 2016. • Sector-Specific Tools & Guides for Pesticide Use – Forest Pest Management Sector Review Paper, October 2006 https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management/business-industry/sector-specific-tools-guides • Explanatory Notes - Forestry, Noxious Weed and Industrial Vegetation Management – Phase One: Explanatory Notes for Forestry, Noxious Weed and Industrial Vegetation Managers, March 2012 - https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management/publications-guides/explanatory-notes • Noxious Weeds & Vegetation Management – https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management/business-industry/sector-specific-tools-guides/noxious-weeds-vegetation-management?keyword=herbicide • Invasive Alien Pest Management Plan for Provincial Crown Lands in Central and Northern British Columbia – FLNR PMP 402=0664-15/20. June 24, 2015. • Handbook for Pesticide Applicators and Dispensers (MOE): 5th Edition 2005

	• The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2009 – https://www.who.int/ipcs/publications/pesticides_hazard_2009.pdf • Interview FLNRORD Entomologist (March 2019).
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.2.9		Methods of waste disposal minimise negative impacts on forest ecosystems.
Finding	**Scale of Assessment**	Provincial
	Context	'Waste' for the purpose of this indicator is '*any substance or object that the holder discards or intends to discard or is required to discard*'. The retention of wood waste and post-harvest residue from forest management activities is separately covered under the Indicator 2.2.5. According to the European Union Commission's Guidance on the Classification of Waste, the following types of hazardous environmental waste apply within the context of BC forest management activities: ● Oil wastes and wastes of liquid fuels, ● Waste organic solvents, refrigerants and propellants, and ● Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified. ● Waste such old tires, pads and other machine parts, as well as culvert pipes is also included under this indicator.
	Potential Threats	Leaving waste and garbage in the forest causes pollution which enters the ecosystem in various ways, depending on the nature of the waste and the site. Waste fluids may enter waterways and/or pose a direct hazard to wildlife. Waste is also unsightly and gives forestry a bad name with people who come across it.
	Regulatory Requirement & Agency of Authorization	The Provincial Ministry of Environment and Climate Change Strategy (ECCS) under the *Environmental Management Act* regulates industrial and municipal waste discharge, pollution, hazardous waste and contaminated site remediation. The *Act* includes enforcement options such as administrative penalties, orders and fines. The Hazardous Waste Regulation describes the requirements for the handling, storage, transportation, and disposal of hazardous waste. The Spill Reporting Regulation outlines the quantities of reportable spills for each substance, and initial report requirements. The Spill Preparedness, Response and Recovery Regulation covers the regulations and definitions of spill preparedness and the content of a spill recovery plan, including record keeping requirements. Finally,

		the Spill Contingency Planning Regulation covers all the contents of a spill contingency plan. In accordance with Open Burning Smoke Control Regulation (OBSCR), hazardous wastes are prohibited materials to be included in open burn as a method of waste disposal due to its impact on air quality (See Indicator 2.2.7 on air quality for details). These laws and regulations cover all land jurisdictions within BC.
	Mechanism and Supporting Evidence	To address the above regulations, many forest land managers (Crown and private land) and their contractors operating in BC (as a standard management practice) maintain management systems that include procedures for managing waste and spills (i.e. ISO 14001). Forest land managers will include requirements, either in contracts or pre-work documents that specify appropriate waste management practices. These contracts typically include routine documented inspections with contractual obligations for remediation and/or penalty clauses when non-compliance occurs. Forest land managers will also have a company response plan for spills that directly addresses and meets the regulatory requirements. These plans frequently contain Best Management Practices and Procedures, as well as company-specific forms for recording spill response. In order to keep employees and contractors educated and trained in meeting these regulations, forest land managers typically require mandatory annual training which includes waste management and spill response training. Quality control procedures involve onsite inspections and can occur during and after forest management operations in order to verify conformance with pre-work requirements, including waste management.
	Results: **Compliance, Enforcement, and/or Monitoring**	Conservation Officers inspect forest managers in their compliance with BC Government regulations under the *Environmental Management Act*. The BC Government has a searchable web application, containing compliance and enforcement actions issued by natural resource agencies called the Natural Resource Compliance and Enforcement Database. After conducting a 2015-2017 search of BC's large forest managers; the report produced 123 records. Of these 123 total records, none of the recorded incidents required administrative penalties, ticketed fines or government orders under the *Environmental Management Act*. Separately, the BC government reports very significant spills to the public through a 'Spill Incidents' website. This website reports that out of 60 spills between the dates of October 2016 and today (April 2019), only one reported spill was directly connected to forest management activities. In addition, potential violations of polluters can be reported by the public through the 'Report All Poachers and Polluters' (RAPP) online system. This site does not provide results but would potentially result in an investigation by an NRO.
	Rationale for Risk Designation	BC has a comprehensive regulatory framework, including reporting systems and compliance and enforcement to address the handling and disposal of waste to minimize negative impacts. Publicly available reports and information demonstrate that the forest industry has practices in place to minimize spills and the leaving of garbage after operations, as well as self-report and remediation procedures. While spills do happen, they are generally contained, remediated and reported promptly – the controls and procedures in place warrant a low risk designation for the provincial.
Means of Verification		• Existing legislation and regulations • Level of enforcement (reporting and database acquisition) • Publicly available information on spills

	• Inquiries/interviews to environment authorities • Interviews with staff, stakeholders • Best Management Practice manuals • List of Companies ISO 14001 Certified • Delivered Fibre and Logging & Hauling Agreements, Master Logger Training records, BMP compliance checks • Internal policies and procedures, procurement contracts and field audits
Evidence Reviewed	• *Environmental Management Act* – http://www.bclaws.ca/civix/document/id/lc/statreg/03053_00 • EMA: Hazardous Waste Regulation – http://www.bclaws.ca/civix/document/id/complete/statreg/63_88_00 • EMA: Spill Reporting Regulation - http://www.bclaws.ca/civix/document/id/complete/statreg/187_2017 • EMA: Spill Preparedness, Response and Recovery Regulation – http://www.bclaws.ca/civix/document/id/complete/statreg/185_2017 • EMA:: Spill Contingency Planning Regulation – http://www.bclaws.ca/civix/document/id/complete/statreg/186_2017 • Hazardous Waste –https://www2.gov.bc.ca/gov/content/environment/waste-management/hazardous-waste • Spills & Environmental Emergencies – https://www2.gov.bc.ca/gov/content/environment/air-land-water/spills-environmental-emergencies • European Union's Commission Guidance on the Classification of Waste – https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32014D0955 • Natural Resource Compliance and Enforcement Database - https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/reporting/environmental-enforcement-reporting • BC Spill Incidents Website - https://www2.gov.bc.ca/gov/content/environment/air-land-water/spills-environmental-emergencies/spill-incidents
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

	Indicator
2.3.1	Analysis shows that feedstock harvesting does not exceed the long-term production capacity of the forest, avoids significant negative impacts on forest productivity and ensures long-term economic viability. Harvest levels are justified by inventory and growth data.

Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	Biomass producers in British Columbia source the majority of their fibre from mill residues and grinding roadside logging slash. Salvage of timber killed by the mountain pine beetle (MPB) and large fires is a source of fibre depending on a number of logistics, enabling these stands to be reforested and contribute to productivity. Forest productivity can be reduced if harvesting causes levels of site disturbance that reduce future growth capacity or if excessive amounts of biomass are removed from the site. Indicator 2.2.2 covers the impacts of forest management activities on soils and Indicator 2.2.5 discusses residue removal. The assessment of this indicator will confine itself to the impact of feedstock harvesting on the long-term timber production capacity of the forest.
	Potential Threats	Feedstock harvesting that leads to overharvesting of the forest, damages the soil or removes excessive amounts of biomass from the harvest block will erode the sustainability of the forest and the timber supply it produces.
	Regulatory Requirement & Agency of Authorization	The *Forest Act* requires FLNRORD's Chief Forester to make a regular determination of the annual allowable cut (AAC) for each of the provinces 37 Timber Supply Areas and 34 Tree Farm Licences, which is done through the Timber Supply Review (TSR) process. AACs represent the maximum sustainable level of harvest from a specified area, and in determining them, the Chief Forester follows direction provided in the Allowable Annual Cut Administration Regulation and the Allowable Annual Cut Partition Regulation. According to S.8 of the Forest Act, the Chief Forester must determine an AAC every 10 years for TSAs and TFLs. Allowable harvest levels for community forest agreement areas, first nation woodland licence areas and woodlot licence areas are determined by the Minister, who may delegate the responsibility to the Regional Executive Director or the District Manager. Actual harvest levels on the forest management units are tracked against the AAC through the Cut Control requirements of the *Forest Act* (Division 3.1) and its Cut Control Regulation. Lands designated under the *Private Managed Forest Land Act* are not regulated or analysed for their long-term production or for harvest limits. The Private Managed Forest Land regulation stipulates that harvested areas are to be regenerated promptly with a healthy, commercially valuable stand of trees. The Managed Forest Council (MFC) provides oversight of PMFL in the province; PMFL owners are required to report on operations undertaken each year. Other private land is unregulated with respect to harvest sustainability.
	Mechanism and Supporting Evidence	Determining AACs for TSAs and TFLs is one of the Chief Forester's most important responsibilities since the level of harvest affects local and provincial economies, community stability and the environment—now and into the future. The *Forest Act* describes the information the Chief Forester must consider in the AAC determination in order to ensure long-term environmental sustainability and economic viability. Forest inventory data, which is provided for the entire province by FLNRORD's Forest Inventory Program, is a critical component of the information used by the Chief Forester to set AACs. The MPB outbreak that began in the Interior in the mid-1990's killed extensive areas of lodgepole pine and AAC's were increased in most interior TSAs and TFLs to support the salvage of MPB-killed timber. These uplifts to the AAC were always expected to be temporary and beginning in 2011, the AAC's began to

		decline in various forest units as the MPB-killed timber was salvaged and the remainder became unusable due to decay and deterioration. Now that most of the salvage opportunities have been exhausted, AAC's are being reduced to levels that are reflective of the timber supply that can be provided from the parts of the forest that were not affected by the MPB. Over time, as the area depleted by the MPB regenerates, the AAC will rise again to reflect the impacts of these large areas of regenerating forest. In this way, the AAC is being regularly reviewed and adjusted to reflect the condition of the forest. Of the *Forest Act* regulations that control the measurement and tracking of harvest volumes, the most relevant is the Cut Control Regulation. It ensures that the harvest levels of each timber licence holder are tracked, ensuring that harvest levels are maintained at or below the AAC. All harvested timber is marked, transported, tracked and accounted for in the cut control system. Penalties may be applied, and an overharvest is charged against the next cut control period. Undercut is not allowed to be carried forward into the next period. Fibre obtained from salvage harvesting is considered as contributing to the AAC; however, fibre from sawmill residues and roadside slash are not part of the AAC calculation. This under-utilized fibre can contribute significantly to other manufactured forest products through FLNRORD's Residual Fibre Recovery Program. FLNRORD has been working with FPInnovations to inventory the economically available residual fibre (i.e. logging slash) within the province. The analysis excludes merchantable roundwood that would be removed during conventional harvesting and assumes all cutblocks are clearcut with stems processed at roadside. The intent of this initiative is to encourage greater use of roadside slash by the biomass industry (i.e. increased fibre utilization) which is further discussed under Indicator 2.2.5. The *Private Managed Forest Land Act* contains five management objectives that include the reforestation of areas where timber is harvested or destroyed, conservation of soil, and minimization of disturbed area. Owners are required to report annually to the Managed Forest Council (MFC) on their forest management activities, including harvesting and reforestation. The MFC has reported a compliance rate of 99% since its spot audit program commenced in 2007, suggesting that renewal is effective on PMFL. As other private land is often either agricultural or intended for development, there is little information available regarding the timber land base and/or forest management on other private land.
	Results: **Compliance, Enforcement, and/or Monitoring**	Detailed timber supply forecasts and their related assumptions are publicly available for all management units on the government website. As stated on BC's Environmental Reporting website, the provincial timber supply forecast is projected to decrease from the recent provincial average of 70 million m^3/year to 58 million m^3/year by 2025, primarily due to the mortality caused by the MPB epidemic. The harvest is not expected to recover to 70 million m^3/year until approximately 2075. Further, BC's Environmental Reporting BC website reports that 7 million m^3/year is harvested from lands with no government-set AAC (approximately 10% of the provincial annual harvest). The 2017/18 and 2018/19 Managed Forest Council (MFC) Annual Reports document that 4.7 million m^3 and 5.2 million m^3 was harvested from PMFL in those two years, respectively. This represented 7% of the provincial total in 2017/18 and 8% in 2018/19. Based on the figures above, for the last two years approximately 2.3 – 1.8 million m^3 of timber originates from other private land. Some of this volume may result in

		land use conversion, which is assessed under Indicator 2.1.3. There is little enforcement of how forestry is undertaken on other private land.
	Rationale for Risk Designation	On Crown land, the *Forest Act* and its regulations support the maintenance of the sustainable long-term production capacity of BC's timber supply. Allowable harvest levels are determined by the Chief Forester through a rigorous process of data collection and analysis, re-analysis, consultation and higher-level considerations. In addition to analytical planning, BC has strict guidelines for the transport, measurement and tracking of harvest volumes during the operational phases of forest management. It is worth noting that the devastating and recent MPB epidemic has resulted in a significant loss in future timber supply. However, the *Forest Act* and its regulations have functioned appropriately as the epidemic's effects on long-term production have been incorporated into the most recent projections of AAC, thus avoiding any significant negative impacts on forest productivity and its economic viability. As such, the risk of non-compliance with this Indicator on Crown land is low. The regulations and the associated reporting and monitoring system that is in place on PMFL appears to be effective, and the compliance rate for re-planting is reported as being high. Therefore, this indicator assessed as low risk on PMFL. Forest management is not regulated on other private land and there is no allowable harvest calculated. As a consequence, there is nothing that requires a private landowner to maintain the productivity of his or her lands, and activities are not monitored or reported on. Therefore, this indicator is assessed as specified risk for the other private land sub-scope.
Means of Verification		• Review of publicly available websites & reports (listed below) • Forest legislation/regulations registry • Compliance and Enforcement Branch Reports • Forest Practices Board Reports • Fibre Procurement Contracts – legality obligations • Timber Mark &/or tracking via Harvest Billing System (HBS) • Payment invoices • District of Origin forms • Best Management Practice manuals • Supplier Verification Program • AAC determinations for applicable licenses (in TSAs or TFLs), • Cut Control verification for Licenses
Evidence Reviewed		• Timber Supply – Backgrounder paper January 2017 – https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/forest-analysis-inventory/tsr-annual-allowable-cut/tsr_backgrounder2.pdf • Environmental Reporting BC Website – Land & Forests (May 2018) – http://www.env.gov.bc.ca/soe/indicators/land/timber-harvest.html • Timber Supply Review & Allowable Annual Cut – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/timber-supply-review-and-allowable-annual-cut

	• Harvest Billing System (HBS) – https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/harvest-billing-system • Allowable Annual Cut – Timber Supply Areas – https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/forest-analysis-inventory/tsr-annual-allowable-cut/tsr_backgrounder2.pdf • Allowable Annual Cut – Tree Farm Licences – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/timber-supply-review-and-allowable-annual-cut/allowable-annual-cut-tree-farm-licences • The State for British Columbia's Forests – Third Edition – 2010 – Chapter 12 & 13 – https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/sof_2010.pdf
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.3.2		Adequate training is provided for all personnel, including employees and contractors.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	In a sector such as forestry, where the occupational injury rate is well above the average for all occupations, operator training goes hand-on-hand with health and safety, since as much of the training involves learning safe practices as learning how to operate a piece of equipment or carry out a certain task. There is a wide range of training that takes place in a modern workplace, covering everything from Occupational Health and Safety, WHIMIS, and employee behaviour to training required to use equipment, work with Company information, and understand legislative requirements. Training is a requirement under the *Workers Compensation Act*. Indicator 2.8.1 reviewed the health and safety framework in the BC forestry sector. The assessment of that indicator covered health and safety training – this assessment of Indicator 2.3.2 covers the BC infrastructure for forest planning and operations training. For this indicator forest activities on Crown and PMFL are considered within 'industry standards' and likely receive a more comprehensive training system then for smaller 'non-industry-operations' occuring other private land.

	Potential Threats	Forest managers and others whose work involves management of aspects of the forest ecosystem need to be well-trained in order to use their judgment to make the most appropriate decisions and to apply or implement the prescribed measures. Inadequate training not only puts employees at risk of being involved in accidents that may cause injury or worse, it also may lead to spills and other environmental damage, as well as non-compliance with operational plans /regulations.
	Regulatory Requirement & Agency of Authorization	The following BC legislation includes provisions for forest management companies to train its employees and contractors: ● *BC Human Rights Code* ● *BC Motor Vehicle Act* ● *BC Commercial Transport Act* ● *Transport of Dangerous Goods Act* ● *Employment Standards Act* ● *Workers Compensation Act/Occupational Health & Safety Regulation* ● *Personal Information and Protection Act* ● *FRPA* ● *Foresters Act*
	Mechanism and Supporting Evidence	Forest managers and others whose work involves management of aspects of the forest ecosystem need to be well-trained in order to use their judgment to make the most appropriate decisions and to apply or implement the prescribed measures. <u>Professional Training</u> The practice of professional forestry is regulated by the Association for British Columbia Forest Professionals (ABCFP), which is given its mandate through the *Foresters Act*. The *Act* grants exclusive rights of title and practice to members and allows the ABCFP to set requirements as to who may practice forestry. Prospective Registered Professional Foresters (RPFs) and Registered Professional Forest Technicians (RPFTs) are required to undergo an articling process normally lasting two years before they are granted professional standing. RPFs and RPFTs are required by ABCFP to maintain their competence, and to that end there are Continuing Professional Development (CPD) tools available that members must make use of. In this way, the professional association ensures that some level of training is taken each year by ABCFP members. The ABCFP, in setting out its CPD standards, defines in essence what training is adequate to maintain competency. Since RPF's are required to sign off on forest plans and silviculture prescriptions, training requirements for this part of forestry are ensured by the ABCFP. These plans are reviewed by other professionals in government and revised as required to meet regulations and standards before they are approved. Other disciplines that participate in forestry are similarly regulated in BC, including Agrologists, Biologists, Engineers and Geoscientists. Professionals in each of these disciplines are similarly required to meet and maintain competency standards, which entails training. <u>General Industry Training Standards</u> Most large forest companies in BC have a corporate policy requiring employees to have a training plan relevant to their career objectives and their current job

		functions. These training plans are generally reviewed annually. In addition to forest companies, other forest organizations regularly hold training sessions as the need arises, as for example, BC Timber Sales staff training for Species at Risk. In this way, people in the sector maintain currency with issues and practices. <u>Operator Training</u> The ABCFP Guidebook states that the *Forest and Range Practices Act* requires that those conducting forest practices must meet the requirements of approved operational plans and relevant regulations. The ability of the people on the ground to carry out the activities prescribed in a forest plan depends on their qualifications, and there are both formal and informal training programs and options in place. Operators of almost all equipment, whether in the bush or in the mill, are required by their employers to have extensive training and, in many cases, obtain certificates indicating that they have a high level of qualification. Qualifications are generally verified by asking the operator to produce the certificate or, in operations with a developed administrative structure, the qualifications and training needs of staff and often contractors are maintained in a database. Fallers and silviculture workers are also highly trained, as described under Indicator 2.8.1 – Occupational Health and Safety. Training courses are offered by the BC Forest Safety Council and through industry organizations. An examination of the Safety Council's web-site indicates training courses for chainsaw operation, light truck driving on resource roads, and training for supervisors. SAFE and COR certified companies must submit annual audits to maintain their status and the auditors are required to take training provided by the Forest Safety Council. The large companies and licence-holders take compliance very seriously and hold an annual one or two-day meeting with employees and contractors, usually in spring during break up, to review a range of regulations, especially new or revised ones, review areas where there were issues or shortcomings last year and discuss potential improvements. These sessions are often mandatory. Species at risk is also a key topic at many of these sessions, and people working in the bush must be aware of what SAR may be present where they are working, be able to identify them and know what measures to take if they or evidence of their presence is seen. During the year, most forest operations have weekly operational meetings, and these include training type discussions regarding problems and/or deficiencies that the supervisors have observed. Most forest companies also have formally designated compliance inspectors. The people in all of these roles are trained and often certified.
	Results: **Compliance, Enforcement, and/or Monitoring**	A review of publicly available information and discussions did not provide evidence/results of systemic compliance issues with regards to this indicator.
	Rationale for Risk Designation	This assessment has identified that RPFs and RPFTs are required to meet competency standards and maintain their standing through continuing education. Professional agrologists, biologists, and engineers and geoscientists also play roles in forest management and are similarly overseen by a professional organization with competency standards that are maintained by training.

		On the ground, operators of almost all equipment are required by their employers to be well-trained, and certified where such designation is available. Company supervisory processes, which include a compliance inspection component, ensure that operations are done according to plan and to regulation. Training is a big part of company compliance programs, and the larger companies typically have comprehensive training programs in place for contractors as well as employees. These extend from general start up meetings to start-up meetings for individual blocks and tailgate sessions. Based on these considerations, a comprehensive training system is considered to exist throughout the industry and this indicator is assessed as low risk for crown and PMFL sub-scopes. However it is unlikely that a comprehensive training system exist for smaller 'non-industry-operations' such as those on other private land resulting in specified risk.
Means of Verification		• Existing legislation • Professional continuing education requirements • Internal policies and procedures • Staff and contractor qualifications /certifications • Training requirements matrices and training records • Terms of supply contracts • Records of BP's field inspections and audits of equipment operators • Interviews with staff
Evidence Reviewed		• Assn. of BC Forest Professionals (https://abcfp.ca/web/ABCFP/About_Us/What-is-a-forest-professional.aspx) • Species at Risk Training presentation for BC Timber Sales (https:// www.for.gov.bc.ca/ftp/tsg/external/!publish/EMS2/Supplements/Species-At-Risk/1-Annual-Training-Documents/2010-SAR-Training-Information/BCTS-SAR-Training-December-2010.pdf)
Proposed Risk Rating		**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.3.3		Analysis shows that feedstock harvesting and biomass production positively contribute to the local economy including employment.
Finding	**Scale of Assessment**	Provincial
	Context	In BC, biomass feedstock is procured from mill by-products such as chips, bark and sawdust, as well as from post-harvest, post-processing residual material that is left at roadside. The roadside material (known as slash) largely consists of tops, branches, cull, and other unmerchantable timber. The slash is ground at roadside and brought to the biomass facilities; if it were not used as biomass it would either be burned or left.

		Timber harvesting in BC is undertaken to produce sawlogs and pulpwood, and biomass production does not drive harvesting (see Section 2.9). Harvesters are required to leave coarse woody debris, wildlife trees and other material on site, and these requirements must be met whether or not biomass is produced from the harvest block (see Indicator 2.2.4 – Biodiversity for more details). BC biomass procurement does not involve going back into the cut block and removing residual timber left in the block (see Indicator 2.2.5 – Residue Removal for more details).
	Potential Threats	The primary threat from inadequate contributions to the local economy is poorly paid workers or a low wage structure and low employment. This leads to inadequate benefits for employees or contractors and as a consequence, low purchasing power which in turn reduces the strength of local businesses. Reduced contributions can result from non-local purchasing and hiring and from avoidance of taxes.
	Regulatory Requirement & Agency of Authorization	There are no requirements in BC that slash must be used for biomass or that those who are hired to process slash live locally. In 2012, under the *Forest Act* (*FA*), two forms of fibre recovery tenure were created that authorize processing on site and removal of Crown timber left as slash by a primary harvester along roadsides and landings (*FA*, S.47.9). The fibre recovery tenures can only be issued once the primary harvester has provided formal notice that it does not wish to use the roadside fibre. The Fibre Supply Licence to Cut (*FA*, S.47.72) is an area-based tenure that grants a first-right –of-refusal for waste material that becomes available over a large area such as a TSA. The second form of tenure, the Fibre Forestry Licence to Cut (*FA*, S.47.6), is a smaller scale licence for specific areas where waste material is available. FLNRORD has developed a number of procedures and protocols to facilitate the use of residual fibre, and to improve communication between the primary and secondary wood users.
	Mechanism and Supporting Evidence	The efforts on the part of the provincial government to support the development of a viable biomass industry have been successful, with 13 pellet plants in operation in BC (in Terrace, Smithers, Houston, Burns Lake, Vanderhoof, Chetwynd, Fort St. John, Prince George, Meadowbank, Willams Lake, Lavington, Armstrong, and Princeton). The fibre procurement needs of these mills has given rise to new employment for truckers to transport mill by-products to the pellet facilities, and for processors and truckers to process slash and transport it to the pellet facility. The assessors were unable to locate employment information for the people who provide fibre to the pellet mills, but in small rural communities, even a handful of new jobs can provide an important boost to them. There is also obviously direct employment at the pellet mills themselves, and a substantial amount of indirect and induced employment. Because the use of biomass within pellet mills has not drawn away fibre that would be used by other mills, the employment created by the mills is all positive. A second benefit is that the new markets created by pellet mills for by-products from other mills provides another revenue stream for these mills, which is a benefit to the mills and the communities in which they are located. The development of the pellet industry has also enabled a greater level of salvage of timber killed by the mountain pine beetle. By providing a market for the unusable portion of the salvaged timber, the demand for biomass enabled salvage to continue beyond the point where the sawtimber yield was too low to support the salvage. Similarly, a market for biomass enables the harvest of marginalized stands for which the yield of sawlogs and pulpwood alone would not support a harvest.

		Thirdly, the payment of stumpage, fees and taxes on the residual fibre provides an economic benefit to the province as a whole. When roadside slash is burned, the smoke frequently travels into nearby communities, which is bad for people's health. The use of residual fibre for biomass eliminates the need to burn it, which is a fourth benefit to communities. The owners of Private Managed Forest Land and other private land participate in biomass production on an opportunistic basis as business proposals arise. Their contributions to local economies are as with operations on Crown land.
	Results: **Compliance, Enforcement, and/or Monitoring**	The 2019 PricewaterhouseCoopers report, '*British Columbia's Forest Industry and the Regional Economies*' highlights that BC's forest supply chain is highly interdependent between the province's regions, produces a diverse range of products that are shipped to 100 different countries, and has a positive economic contribution to every region of the province. Further, the PWC report states that BC's forest industry currently makes a significant economic contribution to the province by supporting 140,000 jobs (direct, indirect and induced) with a total labour income of C$8.56 billion. The amount of employment generated by biomass procurement is not available, however the result is certainly positive. This has been beneficial for individuals and communities alike. The Forest Practices Board monitors compliance with licences and also that proper practices are being implemented – a search of the FPB website found no audits of biomass procurement operations or fibre recovery licences.
	Rationale for Risk Designation	BC has made the support of biomass energy producers a policy priority, and there are now 13 pellet mills operating in BC. The fibre procurement requirements of these mills provides direct employment, supports other mills by providing an addition revenue stream, reduces the amount of slash pile burning and has assisted with the salvage operations following the MPB outbreak. A review of forest sector descriptions and statistics found no evidence that indicated that the use of low-grade wood for fibre is displacing other wood product manufacturing, such as pulp and paper production in BC. In fact, there was no evidence that there are any appreciable negative economic impacts from biomass feedstock harvesting and the Residual Fibre Recovery Process is focused on making positive economic contributions specifically to local community economies suffering from mill closures due to reduced sawlog and pulp log availability. The measures taken, and instruments that have been developed, are in use and effective in meeting the broader economic and forestry policy goals of the province. In BC, the biomass related activity is additive in terms of fibre utilization, local employment, and local capital investment and therefore the risk is designated as low for Crown land, Private Managed Forest Land and Other Private Land.
Means of Verification		• Analysis of contribution of biomass to the local economy • Sectoral analysis reports and economic studies • Employment data • Hiring policies and practices, including local opportunities • Local purchasing policies and practices

Evidence Reviewed	• BC FLNRORD – Residual Fibre Recovery – https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/residual-fibre-recovery • BC Biomass Action Strategy https://www2.gov.bc.ca/assets/gov/farming-natural.../bc_bioenergy_strategy.pdf • British Columbia's Forest Industry and the Regional Economies. PWC. March, 2019 – https://www.cofi.org/wp-content/uploads/FINAL-COFI-Regional-Economic-Impact-Study_Final_March2019-2.pdf • Clean Energy BC website – Biomass page – https://www.cleanenergybc.org/about/clean-energy-sectors/biomass • Fibre Action Plan – https://www.for.gov.bc.ca/hth/timber-tenures/forest-fibre-action-plan.htm • Economic Backbone Map – FPAC http://www.fpac.ca/canadian-forestry-industry/economy/ • Forest Innovation Investment – https://www.bcfii.ca/bc-forests-and-markets/bc-forest-sector-overview
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.4.1		The health, vitality and other services provided by forest ecosystems are maintained or improved.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The SBP standard states that health and vitality relate to a forest ecosystem's ability to withstand change. Suggested indicators include the level of disturbance, changes in biodiversity, and /or the presence or absence of key indicator species. The standard also identified several relevant functions: • Forest regeneration and succession, • Genetic, community and species diversity; and • Natural cycles affecting the productivity of the ecosystem. This indicator covers a considerable number of forest characteristics and processes, many of which have been considered more specifically in other indicators, including: • Biological diversity (Indicator 2.2.4, as well as 2.2.3), • Productivity (Indicators 2.2.5 and 2.3.1), • Maintenance of Soils (Indicator 2.2.2), • Maintenance of Aquatic Systems (Indicator 2.2.6), and • Capacity to sequester carbon (Indicator 2.9.2).

		The monitoring and management of natural disturbances is addressed in Indicator 2.4.2. The assessment of this indicator will focus on the sustainability of forest management and how resilience is supported. The overall thrust of forest regulation in BC is to manage the forests to maintain their biodiversity and productivity while supporting a substantial timber harvest. During the past decades, the regulatory shifts have extended and tightened protections for a wide range of values and benefits and reduced the amount of area available for commercial harvesting. This trend remains in place. At the same time, there is strong resistance to the idea of planting fast-growing exotic tree species or intensively managing native species to the extent that the plantations provide little ecological value. There are regulations in place to use seed of native species sourced from appropriate locations for growing tree seedlings, and there are considerable areas where renewal is natural. Even where trees are planted, there are usually numerous conifer and deciduous natural seedlings that also germinate, providing both diversity as well as a more diverse structure to the forest as it develops and contributing to resilience.
	Potential Threats	Management that reduces the resilience of forests or impedes, alters or disrupts ecological functions makes forests more susceptible to degradation and irreversible losses or damage.
	Regulatory Requirement & Agency of Authorization	Many of the regulatory requirements have been discussed in the various indicators listed above under Criterion 2.2 and 2.3 for each of crown land, PMFL and other private land. On crown land the key pieces of legislation are the *Forest Act* and the *Forest and Range Practices Act (FRPA)* and their regulations. The *Forest Planning and Practices Regulation* of *FRPA* sets ten forest management objectives that managers must meet on Crown land, and many of these objectives support resilience.
	Mechanism and Supporting Evidence	On Crown land, a hierarchical approach to planning and ensuring the use of appropriate operations are the two primary approaches used in BC to maintain the resilience of forests in BC. Allowable harvest levels are set at the Timber Supply Area or forest management unit (area-based tenure) level and they are revised on a ten-year cycle. These allowable harvest levels are allocated amongst licensees (or apply to the sole licensee where that is the case), who are then required to prepare Forest Stewardship Plans (FSP) that must include results or strategies to address the provincial objectives set in the FPPR. Provincial government approval of these is required before they can be acted on, and the plans are renewed every five years. Approved annual operational plans are also required. The province also has many levers that can be used to protect key ecosystem elements, such as ungulate habitat. On Private Managed Forest Land, landowners are required to meet provincial objectives set out in the *Private Managed Forest Land Act*. While not as extensive as the objectives set for Crown land, they are geared towards sustainability and owners are required to report annually on the activities they undertake. The Managed Forest Council provides oversight. Other private land have fewer regulatory requirements – most of these apply to the maintenance of water quality.
	Results:	The 2010 provincial State of the Forest (SOF) (most current report available) contains a number of discussions regarding the character of the forest and

	Compliance, Enforcement, and/or Monitoring	whether it has been maintained. The report examines whether BC's forests have changed over the past half century and concludes that they are likely older on average now than they were previously, with 72% of the province's forest older than 80 years. This is largely attributed to more effective fire suppression. Changes in inventory procedures in the last half century were such that it was not possible to assess whether the area of forest in the province had increased or decreased over that period. The SOF report also examined whether there were changes in the tree species on an area before and after harvesting. The analysis found that on areas cut after 1987, the area dominated by a single tree species increased from a pre-harvest level of 25% to a post harvest level of 34%. This suggests that there has been a decline in forest diversity at the block level, however the impact of this depends on the harvest profile and the types of sites and stands harvested at the landscape level. It is noted that the SOF is over 10 years old. There is no readily available data specific to forest resilience directly applicable to PFML or other private lands other than the information presented in the specific indicators listed above (2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6, 2.3.1 and 2.9.2).
	Rationale for Risk Designation	There are legal requirements that require forest managers to maintain the elements of forest ecosystems that support forest resilience. As mentioned, recent regulatory changes have generally increased the importance of maintaining the values and processes that underpin resilience, and support forest health and vitality. While there is room for improvement, the system that is in place on Crown land is comprehensive, generally subject to sufficient oversight, and has supported forest resilience. On Private Managed Forest Land, the system is less robust but this in part reflects the (usually) smaller size of forest management units and a reticence to impose too many requirements on private landowners – the approach can be described as "results-based" on PMFL, as well as on Crown land. For these reasons, the risk is assessed as low on both of these ownerships. On other private land, there are few regulatory requirements, and these are specific in nature, hence there is no overall direction or requirement that other private forest land should be managed to create a resilient forest. This ownership sub-scope is assessed as specified risk for this indicator.
Means of Verification		• Review of publicly available websites & reports (listed below) • Forest legislation/regulations registry • Existence of a strong legal framework • Compliance and Enforcement Branch Reports • Best Management Practice manuals • Overall evaluation of potential impacts of operations on forest ecosystem health and vitality based on data from overseeing institutions • Assessment of potential impacts at operational level and of measures to minimise impacts • Review of scientific reports and data • Regional, publicly available data from a credible third parties including provincial and federal agencies
Evidence Reviewed		• FLNRORD Forest Health Website – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health

	• FLNRORD Forestry Website – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources • Gov't Website – Natural Resources Climate Change Adaptation – https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resources-climate-change/natural-resources-climate-change-adaptation • Forest and Range Practices Act (Sections 16 and 169): http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01 • Forest Planning and Practices Regulation (Section 26): http://www.bclaws.ca/civix/document/id/loo83/loo83/12_14_2004 • Private Managed Forest Land Act: http://www.bclaws.ca/civix/document/id/lc/statreg/03080_01 • Private Managed Forest Land Regulation: http://www.bclaws.ca/Recon/document/ID/freeside/12_371_2004 • The State of British Columbia's Forests (Third Edition). 2010 – https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/sof_2010.pdf • BCs Unprecedented Reforestation Challenge, 2011. Western Silviculture Contractors Association: https://wfca.ca/wp-content/uploads/2015/02/Feb-3-A-Backgrounder-on-NSR-Anthony-Britneff.pdf
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.4.2		Natural processes, such as fires, pests and diseases are managed appropriately.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	The three processes mentioned in the indicator – wildfire, insects and disease – are the most significant natural disturbances affecting BC forests. For example, the Association of BC Forest Professionals (ABCFP) cited estimates that in an average year, 30 million m^3 of timber lost to pests and disease in BC. Since the mountain pine beetle outbreak, annual losses have exceeded 700 million m^3. Drought, flooding, and windthrow are less pervasive and generally have localized impacts; they are not considered further here although a number of the practices associated fire, insects and disease are also applied when these lesser disturbances occur. The most appropriate management approach for these processes will depend upon the forest type, management objectives and local best practice and

		guidance. Where wildfire is an important part of the ecosystems, wildfire may be allowed to burn in certain, manageable situations whereas where it poses a threat to communities, infrastructure, and forest, it will be actively suppressed. Fuel management is also becoming a greater component of forest management as climate change increases the likelihood of hot dry periods occurring. Managing natural processes demands a broad landscape-level perspective because they occur over a large geographic area, span a significant timescale and have complex impacts. This indicator is interpreted as covering the monitoring for, detection of, and control of the three principle natural disturbances listed above.
	Potential Threats	Forest management that is not conducted in a manner that reflects the influence of natural processes on key ecological attributes could cause harm to the vitality and health of forest ecosystems and landscapes. Monitoring and suppression of natural processes in appropriate situations is a part of ensuring that ecosystems maintain their vitality and failure to do this effectively may lead to extensive losses of forest with attendant negative socio-economic impacts.
	Regulatory Requirement & Agency of Authorization	**Pests and Diseases** Division 3 of Part 3 of the *Forest & Range Practices Act* (*FRPA*) provides the Minister with special authority when forest health is threatened. The Minister may require the holder of a forest stewardship plan, woodlot licence plan or other operational plan to submit proposals and be responsible for forest health issues. It enables the Lieutenant Governor in Council to designate areas a forest health emergency management area and allows the Minster to undertake actions in these areas, such as ordering the holder of an agreement to take specified actions to prevent, contain, or limit the spread of forest health factors. FRPA also requires practices to accommodate known forest health risks including free to grow stands (FRPA section 29); using appropriate stocking standards (FRPA Section 6(2)); and using pest resistant seed where it is available (FRPA section 72). Where a licensee or private landowner is not reacting quickly enough or simply not managing an important infestation then FRPA sections 26 and 27 may be used to permit the District Manager to direct the licensee to harvest or treat specific infestations. Salvage licenses can be awarded to licensees or other operators on private and Crown land to treat identified infestations (FRPA section 26). The *FPPR* addresses forest health in several ways, including: • Expediting harvest plan approvals where they are required to kill bark beetle brood before the next flight (FRPA section 4, 17 and 25); • Requiring prompt disposal of slash (Best Practices); • Promptly treating baited trees or trap trees (FRPA section 41); and • Delaying green up for up to 20 years to account for forest health concerns in particular root disease (FRPA section 44). On both PMFL and other private lands, FRPA Division 3 Section 26 gives a BC government Minister the ability to require a private landowner to control or dispose of timber or timber products that are infested with insects, disease or other abiotic factors. **Wildfire** In BC, wildfire planning occurs at the provincial, landscape and community levels. On Crown land fire is managed at the provincial level as follows:

		The *Wildfire Act*, which applies to all activities on Crown land, sets out government's responsibilities for Forest and Range protection requirements (Part 1), Government Authority (Part 2), Administrative remedies and Cost Recovery (Part 3) Offenses and Court Orders (Part 4). The *Wildfire Regulation* sets out requirements for Fire Prevention (Part 2), Fire Control (Part 3), Permissible open fires (Part 4) and Cost recovery and Remedies (Part 6). The *Wildfire Act* and *Wildfire Regulation* along with fuel hazard assessment and abatement requirements apply to PMFL and other private lands.
	Mechanism and Supporting Evidence	**Pests and Diseases** In terms of forest health; the BC government's primary strategies are outlined in the 2013 'Provincial Forest Health Strategy, 2013-2016'. The strategy's main priorities are threefold: • Pest impacts are monitored and assessed; • Practices are adapted to accommodate known forest health risks; and • Forest resources are protected from pest damage through appropriately applied direct management actions Forest health outbreaks are inventoried and monitored by the BC government using aerial surveys. Direct management actions are employed when the size and severity of an outbreak or major infestation warrants a response. In relatively recent history, the BC government has had to contend with an unprecedented mountain pine beetle (MPB) epidemic that started in a large municipal park and was not controlled. There are very few mitigation or suppression measures for an epidemic of this proportion. The BC government and timber licensees were left with one primary option: manage the salvage logging of the standing dead timber. In order to assist this management, BC's Land Based Investment Program strategically targeted efforts to reduce the MPB's impacts to BC's mid-term timber supply. More generally, forest health is maintained primarily by altering forestry practices to prevent or minimize the impacts of pests that, through a risk analysis, are deemed to be significant enough to warrant management. Some of these methods have been legislated or accommodated for in legislation by providing on-site flexibility of planning and treatment. However, most forest health activities are non-obligatory (non-legal) and are carried out through mutual agreement by industry and government through the recommendations of professionals. **Wildfire** FLNRORD manages wildland fire to mitigate negative impacts on communities, critical infrastructure and natural resources on Crown and private land. Fire detection is undertaken by fire wardens (approx 400 hired during fire season), aerial reconnaissance, and the use of infrared technology and computer modelling to assess fire risk and expected fire locations. The provincial fire unit responds

		when fires are detected. In addition, forest operations on Crown land are required to have fire suppression equipment on site and are shut down during periods of high fire risk. Within the past fifteen years, the BC government has taken a more proactive role in wildfire management and planning. The Chief Forester developed a province-wide report titled 'Fire Management Stocking Standard Guidance' to assist in guiding the development of FSP stocking standards when harvesting occurs near communities. In addition, the Chief Forester provided guidance in site-level forest harvesting in recently burned forest stands with 'Post-Natural Disturbance Forest Retention Guidance'. In addition to considerable resources for fire suppression through the BC Wildfire Services Branch, increasing funds are deployed through various provincial agencies (UBCM Strategic Wildfire Prevention Initiative, Forest Enhancement Society of BC) for identifying, mapping, and reducing wildfire threats adjacent to communities in the Wildland Urban Interface. Collaboration is increasing between agencies responsible for community and resource protection including FLNRORD, Wildfire Services and local government. On PMFL the PMFL Regulations require that landowners practice soil conservation and encourage prompt regeneration. They also evaluate fire, pests and disease risks in their site plans. A subsample of ownerships is audited annually but there is no comprehensive assessment of these risks at a landscape level. Annual reports that summarize the results of audits are produced – a review of recent reports found that the inspections had not identified issues related to pest and fire management. Other private land is also subject to Regional District and Municipality regulations relevant to land clearing and development. These regulations vary by District but in general their focus is more on land clearing and development than on risks to forest health from disease, insects or fire.
	Results: **Compliance, Enforcement, and/or Monitoring**	For day-to-day management of forest health, forest professionals are relied upon on a case-by-case basis, using the best science available. FLNRORD inventories and monitors forest health annually. In spite of the best efforts of managers, some insect outbreaks and forest wildfires are unstoppable once they begin. A case in point is the largest mountain pine beetle (MPB) outbreak in recorded history, which peaked provincially in volume killed in 2005 and since then has steadily declined. In 2020, the outbreak is virtually over and losses to this insect have returned to damage levels observed before 1999. Interior Douglas-fir and interior spruce are now being threatened by large outbreaks of Douglas-fir and spruce beetles, respectively. This outbreak does not represent a failure of the provincial system, since it started in a municipal park and the municipality in question opted not to treat the initial outbreak.

		Facilitated by climate change, the infestation exploded to kill millions of hectares of lodgepole pine in the interior of BC. Similarly, the province has endured two bad fire years in the recent past, again abetted by climate change. A 2019 FPB report on compliance and enforcement of FRPA and the *Wildfire Act* states that of all of the legislative priorities, fire investigations are the highest priority where public safety is at risk or cost recovery and damages are involved. This FPB report states that the Compliance and Enforcement Branch has a framework for enforcement and that it is meeting its business priorities. A 2012 FPB report states that FLNRORD districts have all developed updated fire management plans within BC.
	Rationale for Risk Designation	On Crown land, a robust legal and policy framework exists to assess, respond to and manage natural disturbances such as pests, disease and wildfire. There is also a framework for prevention and planning of natural processes that is in place and being followed. Provincial monitoring programs are active for pests and wildfire and the province undertook a number of responses to reduce the damage caused by the MPB infestation. For these reasons, on Crown land the risk is designated low. There is an existing legal and regulatory framework on PMFL that protects forest ecosystem elements along with an auditing system to ensure appropriate management, and the *Wildfire Act* and its regulations apply to all private land. FRPA also contains measures allow a Minister to compel a private landowner to undertake actions to reduce the risk of forest pest outbreak. For these reasons, both the PMFL and other private forest land sub-scopes are assessed as low risk.
Means of Verification		• Review of BC government strategic planning documents • Overall evaluation of potential impacts of operations on natural disturbance management in BC, • Assessment of potential impacts at operational level and of measures to minimise impacts or prevent disturbance (especially fire) • Regional Best Management Practice manuals • Expert interviews within and outside the BC government • Monitoring results from annual BC government reports
Evidence Reviewed		• Provincial Forest Health Strategy: http://www.for.gov.bc.ca/hfp/health/Strategy/Forest%20Health%20Strategy.pdf • MFLNRO Forest Health: https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health • https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/aerial-overview-surveys • Post-Natural Disturbance Forest Retention Guidance – https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/2017_fire_report_revised.pdf • Provincial Fire Detection – https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-response/fire-characteristics/detection

	• Wildfire Act: http://www.bclaws.ca/Recon/document/ID/freeside/00_04031_01 • Wildfire Regulation: http://www.bclaws.ca/Recon/document/ID/freeside/11_38_2005 • Forest and Range Practices Act: http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01 • Private Managed Forest Land Act: http://www.bclaws.ca/civix/document/id/lc/statreg/03080_01
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.4.3		There is adequate protection of the forest from unauthorized activities, such as illegal logging, mining and encroachment.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Potential Threats	Unauthorized activities have the potential to cause damage to sites, values and forests where they occur, and encroachments may do likewise. Extensive unauthorized activities have the potential to undermine the sustainability of forest management and may deprive landowners of potential revenue from timber and other resources or values.
	Regulatory Requirement & Agency of Authorization	Resource use activities such as mining and activities such as road-building and building cabins and other structures are regulated both on Crown and private land. Any encroachment that involves forest clearing is regulated under the *Forest Act* and/or the *Land Act*, and would need to be permitted, and encroachment by people looking for places to live is not an issue in Canada. The *Forest Act* S.163; *FRPA* S.87, *FRPA* S.67, *Administrative Orders and Remedies Regulation* define offences and penalties, particularly related to illegal harvesting. The Private Managed Forest Land Council is an independent provincial agency established under the *Private Managed Forest Land Act* to administer the Managed Forest Program, including setting and monitoring forest practices standards, performing audits and enforcing standards. On other private lands, the landowners may call the police if there is unauthorized use, encroachment or timber theft, and the provincial law enforcement agencies and courts will address the situation. Many private landowners do not have sub-surface rights, and mining exploration is allowed on private property. However, since Landowner Notification legislation came into effect on June 2, 2008, explorers must serve notice to the landowner

		conducting any exploration or mining activity on private land. Sections 11 and 19 of the *Mineral Tenure Act* explain restrictions and details on how notice is served and how disputes may be resolved regarding Right of Entry on private land. Mineral exploration is permitted on Crown land, subject to restrictions in the *Mineral Tenure Act*, by only by free miners or their agents. Road building on Crown land associated with a claim requires a permit under the *FRPA*. Enforcement of federal regulations on Crown and private forest land is conducted by other regulatory agencies, including Environment and Climate Change Canada and Fisheries & Oceans Canada.
	Mechanism and Supporting Evidence	The criteria and indicators under Principle 1 of this standard concerns different aspects of legality, and in a sense, most of the indicators in this standard are related in some way to legality, since there are laws and regulations surrounding most if not all of them. Under Principle 1, the indicators most relevant to this one are 1.2.1 and 1.3.1 and both were assessed as low risk. The associated assessments support a low risk designation for illegal logging, mining and encroachment under this indicator. The remainder of the assessment of this indicator will consider unauthorised activities. The illegal cutting of timber does occur in British Columbia, as recently documented in the Atlantic magazine (2019). However, most of the timber cut illegally consists of individual trees that are usually cut into firewood and sold; the article notes that few mills purchase illegal wood. The forest tenure holders (licensees) are not required to control unauthorized activities, however, procedures for protection/mitigation, detection and appropriate action, which includes contacting NROs, is a best management practice.
	Results: **Compliance, Enforcement, and/or Monitoring**	On BC Crown land, unauthorized activities and unauthorized use are enforced by Natural Resource Officers (NROs) from the Compliance and Enforcement Branch (CEB) of FLNRORD. NROs are authorized under the *Natural Resource Compliance Act*. To ensure statutory obligations pertaining to natural resources are enforced, the NROs are authorized to inspect, investigate and take enforcement action (*FRPA* – Part 6 – Compliance and Enforcement). The scope of CEB includes but is not limited to: unauthorized timber harvesting (including damaging or destroying trees); trespass issues; damage to the environment; water stewardship; fish habitat (Provincial only); abandoned tenures and unauthorized structures, forest operations, range practices; forest recreation use; off road vehicles and access management; environmental protection; wildfire use; wildlife habitat protection; and road construction, maintenance, deactivation and use (industrial). CEB produces an Annual Report that contains information on inspections, compliance actions and enforcement actions related to legislation governing forest, lands, range, water and natural resource activities. Also, CEB provides statistics on the time that NRO spend enforcing the various Acts, presence in the field or interacting with industry or the public, and the number of enforcement and patrol statistics, all demonstrating a strong compliance and enforcement program. In addition, the Forest Practices Board (independent authority – Part 8 of the *Forest and Range Practices Act*) conducts independent audits as well as to investigates alleged contraventions. In the past three years, unauthorized harvesting of Crown timber (including issues related to private land adjacency to Crown land) is one of the top five issues alleged or successfully prosecuted. The Atlantic (2009) notes that timber theft has

		increased in recent years as timber prices have increased; Vancouver Island is cited as a region with a relatively high incidence of illegal cutting. Private landowners would address any unauthorized activities and uses on their land base by notifying police or other authorities. Ownership title is registered at a public registry office; these provide proof of ownership. Cases where laws or regulations are violated are efficiently followed up by the relevant authorities. The non-profit organization NEPCon (2017) assessed the legality of Canada's timber, and examined the extent to which harvesting, forest use, and activities that affect forests are controlled. NEPCon's conclusion was that Canada merited a perfect score and was assigned a low risk finding. Numerous other reports and initiatives that reached the same conclusion are cited by NEPCon.
	Rationale for Risk Designation	While illegal timber harvesting does occur, it is generally limited to individual trees, few of which are sold to timber mills. There is a strong regulatory framework on all land ownerships, and enforcement of laws and regulations, which limits the scale of illegal harvesting. As a result, this indicator is assessed as low risk.
Means of Verification		• Forest legislation/regulations registry – unauthorized activities • Compliance and Enforcement Branch Reports • Forest Practices Board Reports • Timber Mark &/or tracking via Harvest Billing System (HBS) • Fibre Procurement Contracts – avoidance of illegal activity obligations • Load Slips &/or Bill of Lading • Best Management Practices • Interviews with staff & stakeholders – unauthorized activities
Evidence Reviewed		• FRPA – Part 5 – Protection of Resources – http://www.bclaws.ca/civix/document/id/lc/statreg/02069_01#part5 • FRPA – Part 6 – Compliance and Enforcement – http://www.bclaws.ca/civix/document/id/lc/statreg/02069_01#part6 • *Natural Resource Compliance Act* – http://www.bclaws.ca/civix/document/id/complete/statreg/11021_01 • Natural Resource Officers – https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-law-enforcement/natural-resource-officers • Natural Resource Compliance Reports and Statistics – https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-law-enforcement/natural-resource-officers/compliance-reports • Forest Practices Board –https://www.bcfpb.ca/board/what-we-do/ • NEPCon. 2017. Timber Legality Risk Assessment: Canada. Version 1.1. August 2017. https://www.nepcon.org/sites/default/files/library/2018-12/NEPCon-TIMBER-Canada-Risk-Assessment-EN-V1.1.pdf • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

	• Sustainable Forest Management in Canada – CCFM – Legal Forest Products – https://www.sfmcanada.org/en/forest-products/legal-forest-products • https://www.theatlantic.com/science/archive/2019/06/stolen-timber-funding-british-columbias-opioid-fix/590476/ • Atlantic Monthly. 2019. The opioid crisis is killing trees too. June 4, 2019. https://www.theatlantic.com/science/archive/2019/06/stolen-timber-funding-british-columbias-opioid-fix/590476/
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.5.1		The legal, customary and traditional tenure and use rights of indigenous peoples and local communities related to the forest, are identified, documented and respected.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	Definitions and context for legal, customary and traditional tenure and use rights of Indigenous Peoples are discussed in detail under Indicator 1.6.1, as well as in the write-ups for Indicators 2.1.1/2.1.2 – HCV6.
	Potential Threats	The primary threat occurs when insufficient identification and/or documentation of the legal, customary and traditional tenure and use rights of Indigenous People cannot ensure these rights are respected.
	Regulatory Requirement & Agency of Authorization	In BC, the identification and documentation of Indigenous Peoples customary and traditional rights related to forest management generally occurs through court cases and treaty negotiations (see section 2.3 and Indicator 1.6.1). There are a number of claims that are in negotiation and some are before the courts. In addition, a number of First Nations are negotiating with the provincial and federal governments in the modern treaty process. Thus, while there is disagreement and contention over some of the places where Aboriginal title applies, and what rights Indigenous people have, the disputes are being addressed through Canada's legal system in an orderly manner according to common law principles. From a forestry context on Crown land, the following legislation apply: ● *Heritage Conservation Act*; ● *Forest Range and Practices Act* (FRPA) – S.77.1 Power of intervention: First Nations; ● Forest Practices and Planning Regulations (FPPR) ○ S.10 Objectives set by government for cultural heritage resources; ○ S. 21 & 22 Review and comments provisions ● *Forest Act*

		○ S.1 Definition of Cultural Heritage Resources ○ Division 7.11 First Nations Woodland Licences ○ Division 9 Free Use Permits for First Nations and Others. Over the years, the legal framework in the province evolved in consideration of court rulings and established principles in respect to Aboriginal rights and title. The duty of the government to consult whenever it has or should have knowledge of the potential existence of Aboriginal rights or title that may be affected by a project, is addressed in multiple ways. Procedures on how to consult with First Nations to meet the government's legal obligations have been adopted. FRPA and FPPR (S.21) require the protection of cultural values identified through a Forest Stewardship 'review and comment' process stating: '… *must make reasonable efforts to meet with First Nations groups affected by the plan to discuss the plan*'. Cultural values are integrated in the FPPR as Cultural heritage resources which are defined as "… *an object, a site, or location of a traditional societal practice that is of historical, cultural, or archaeological significance to British Columbia, a community or an aboriginal people*". Section 77.1 of the *FRPA* foresees the ability of the Minister to vary or suspend the proposed activity at any stage of its development. Notably, the BC government passed the *Declaration on the Rights of Indigenous Peoples Act* in 2019; the *Act* aims to bring current BC laws in line with UNDRIP.
	Mechanism and Supporting Evidence	As described in Indicator 1.6.1, many First Nations are in modern treaty negotiations with the provincial government. Agreements can be reached at different stages of the negotiation process which can include details about First Nations interests on specific areas. All agencies that have authority to make decisions about land or resource use which may affect Indigenous Peoples rights and title have a duty to consult. Aside from on-going relationships such as negotiations or land and resource planning, the responsibility for consultation in forest management lies with the FLNRORD. The first phase of consultation related to forest management in BC occurs during the Forest Stewardship Plan (FSP) development. The development stage includes information gathering, plan preparation and review and comment. FLNRORD is called upon to support the forestry company, review the process and approve the content of the FSP. First Nations are called upon to participate directly in the process as well as through on-going relationships with the proponent and FLNRORD. FSPs are approved by FLNRORD in compliance with the Administrative Guide for Forest Stewardship Plans (see Volume I – Preparation and Approval of an FSP). The second phase of consultation occurs during the operational or implementation phase, when the forest licensees engages with Indigenous Peoples with an interest in the areas of proposed operations. The parties review planned areas of operations and the potential for Indigenous values to be affected by those operations, and modifications may be made as required. This consultation is referred to as the 'information sharing' phase and occurs relatively close to the period when the proposed forest management activity will occur; generally, within six months of proposed harvesting. Procedures for information sharing are generally similar across BC and reflect the best management practices and recommended guidelines published by FLNRORD. Once these discussions are complete, a forestry company will formally apply for a cutting permit. FLNRORD reviews the forest company's proof of information sharing correspondence and classify whether the application falls into three

		categories: 'full permission from the First Nation(s)', 'Potential Issues Identified by the First Nation(s)' or 'Extensive Issues Identified by the First Nation(s)'. The assigned classification will determine whether FLNRORD engages in further consultation. FLNRORD will only issue a timber harvesting permit once it has determined that there is no risk of violation to traditional rights of Indigenous peoples.
	Results: **Compliance, Enforcement, and/or Monitoring**	The Forest Practices Board (FPB) conducts audits and investigations on how well industry and government are meeting the intent of BC forest practices legislation. It also responds to complaints through their investigation process. In recent years, one or two complaints related to First Nations issues are recorded annually. In 2015, the Forest Practices Board Special Investigation report on the FSPs highlighted challenges of consistency and lack of measurable evidence mostly for complex objectives without practice requirements. Indeed, less than two thirds of the results, strategies concerning cultural heritage values were measurable or verifiable. Interviews with stakeholders raised concerns about the effectiveness of consultations across BC with the lack of consistency of control and procedures implemented by proponents. The report also underlined that it was common that FSPs did not provide a strategy to conserve or protect cultural heritage resources not directly affected by operational forest management (i.e., logging and road building). The report questioned whether the strategies were effective. FPB's follow-up report in 2019 found little improvement. On the other hand, FREP reporting found that the impacts of operations on CHR was being reduced through better engagement and planning.
	Rationale for Risk Designation	As outlined in Indicator 1.6.1, BC remains in a state of evolution as it relates to defining Indigenous Peoples traditional and customary rights and where they apply. A treaty process is in place and being used by a number of First Nations. As the legal framework and negotiations continue to evolve, the conclusion rests on the appropriateness and implementation of Acts, regulations and guides cited above. An extensive legal framework exists in BC to identify, document and respect traditional and customary rights of Indigenous Peoples. While the FPB found room for improvement, its findings showed licencees are making reasonable efforts to consult First Nations. In general, recent FPB and FREP reports show that operations are doing better at conserving CHR. For these reasons, the risk for this indicator is assessed as low on Crown land. There are no objectives or requirements in the *PMFLA* or *PMFLR* to conserve or protect CHR, leaving the *Heritage Conservation Act* as the applicable measure. The recent amendment to the *Heritage Conservation Act* requiring that potential CHR must be reported meaningfully strengthens the *Act*. However insufficient identification and/or documentation of the legal, customary and traditional tenure and use rights of Indigenous People cannot ensure these rights are respected; therefore a specified risk designation is assessed for both PMFL and other private land.
Means of Verification		• Customary and traditional tenure and use rights are identified and documented • Disputed regarding customary and traditional tenure and use rights are identified and documented

	• Interviews with indigenous peoples and local communities and other stakeholders, indicate that their customary and traditional tenure and use rights are respected • Appropriate mechanisms to resolve disputes exist • Agreements exist between biomass suppliers and indigenous peoples and local communities regarding customary and traditional tenure and use rights
Evidence Reviewed	• *BC Land Act*: http://www.bclaws.ca/Recon/document/ID/freeside/00_96245_01 • Forest Planning and Practices Regulation: http://www.bclaws.ca/Recon/document/ID/freeside/14_2004 • Building Relationships with First Nations: Respecting Rights and Doing Good Business – www.gov.bc.ca/arr/consultation/index.html • Forest Practices Board (2015). Forest Stewardship Plans: Are they Meeting Expectations? Special Investigation. • BC FREP (2016). FREP Protocol for Cultural Heritage Resource Stewardship Monitoring • BC FREP (2019). FREP Report #42 - Assistant Deputy Minister Resource Stewardship Report: Regional Results of the Forest and Range Evaluation Program • Role of Natural Resource Officers: https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-law-enforcement/natural-resource-officers • *Heritage Conservation Act*, R.S.B.C. 1996, c. 187. • 'Advancing An Indigenous Framework for Consultation and Accommodation in BC': http://fns.bc.ca/our-resources/advancing-an-indigenous-framework-for-consultation-and-accommodation-in-bc-report-on-key-findings-of-the-bc-first-nations-consultation-and-accommodation-working-group
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☐ **Low Risk** ☒ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.5.2		Production of feedstock does not endanger food, water supply or subsistence means of communities, where the use of this specific feedstock or water is essential for the fulfilment of basic needs.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	*'Communities'* are understood to mean both indigenous and non-indigenous communities in BC. '*Subsistence'* is defined by the Oxford dictionary as '*The*

		action or fact of maintaining or supporting oneself, especially at a minimal level … denoting or relating to production at a level sufficient only for one's own use or consumption, without any surplus for trade.' Subsistence-based food production from forests typically falls into two categories: hunting/fishing (ungulates, freshwater and anadromous fish) and foraging (mushroom, berry and herbaceous plant collection). Based on the definition of subsistence, virtually no communities in BC rely on subsistence-based food production. Therefore, this indicator will not further consider food production. In BC, there are rural communities and households that rely on locally-sourced water (surface and ground) that is not supplied by the local municipality.
	Potential Threats	Resource based activities can potentially have a negative impact the maintenance of the quality of the local water supply.
	Regulatory Requirement & Agency of Authorization	In terms of forest management activities, drinking water is protected under *FRPA* (Section 150) and FPPR (Sections 8.2, 59, 60). The *Private Managed Forest Land Act and Regulation,* and PMFL Council Regulation, as well as the *Water Sustainability Act* govern forest management on Private Managed Forest lands. The *PMFL Act* (Section 13) and PMFL Council Regulation (Sections 14.1, 15, 20, 24, 25) contain a number of provisions intended to protect water quality used for human drinking water in streams that have a licensed waterworks intake installed downstream. Other private land is subject to minimal legislation or regulations outside of the *Water Sustainability Ac*t. More details on forest management of water impacts is found in Indicator 2.2.6 for each of the ownership types.
	Mechanism and Supporting Evidence	FSPs must address *FRPA* and FPPR's objective for the protection of community watersheds and water licences. To do this, licensees must specifically address long-term planning within community watersheds and water licences in their FSPs. Under the *PMFL* and Regulation, landowners directly communicate with licensed waterworks intake holders that may be affected by forest management activities. Overall, there are limited reports or available supporting evidence related to other private land.
	Results: **Compliance, Enforcement, and/or Monitoring**	The FPB and FREP verify compliance and assess the effectiveness of practices and strategies in meeting the intent of legislation. In 2011, the FPB published a report on forestry and water users, finding that forest practices have generally complied with legislation. There was little evidence of water quality impacts associated with forestry activities. In 2014, the FPB conducted a special report on community watersheds in response to the consultations on the upcoming *WSA*. The Board of investigators found compliance with practice requirements that apply to operations in community watersheds. However, weaknesses were found in the content of FSPs related to community watersheds. A 2013 PMFL audit found that PMFL owners were aware of the presence of water intake locations for both licensed waterworks intakes and water licences on, or downstream of, their properties. Owners were also generally aware of locations where neighbours rely on wells for domestic water supply. In 2019, the obligations of PMFL owners to protect domestic water users was broadened. A review of PMFL Inspection Program Reports for 2017 and 2018 indicate that no infractions or issues were reported related to drinking water or water licenses.

		No private land compliance information was found and therefore no results are reported here.
	Rationale for Risk Designation	An extensive legal framework exists in BC to ensure that subsistence-based water is protected. In addition, evidence does not indicate that forest management activities have harmed subsistence water resources. Therefore, the risk is low for this indicator on Crown and PMFL. However, specified risk is designated for other private land as a result of the limited regulations and lack of best management practices, monitoring and/or data.
Means of Verification		• Food, water supply or subsistence means of communities are identified and documented • Interviews with local communities and other stakeholders, indicate that the food, water supply or subsistence means of communities are not endangered by feedstock production • Appropriate mechanisms to resolve disputes exist • Agreements exist regarding food, water supply or subsistence means of communities • Compliance and Enforcement records show no/negligible violations of habitat and water regulations
Evidence Reviewed		• Canada's Constitution Act (Section 35): https://laws-lois.justice.gc.ca/eng/const/page-15.html#docCont • Land Act • Government Action Regulations • Forest Practices and Planning Regulations (FPPR) setting objectives for cultural heritage resources • Heritage Conservation Act • Forest Range and Practices Act (FRPA) article 77.1 Power of intervention: First Nations • Forest Act (Division 7.11 – First Nations Woodland Licences and Division 9 – Free Use Permits for First Nations) • 'A Guide to Aboriginal Harvesting Rights': https://pubsdb.lss.bc.ca/pdfs/pubs/A-Guide-to-Aboriginal-Harvesting-Rights-eng.pdf • Water Sustainability Act: http://www.bclaws.ca/civix/document/id/complete/statreg/14015 • Water Sustainability Regulation: http://www.bclaws.ca/civix/document/id/complete/statreg/36_2016 • Drinking Water Protection Act: http://www.bclaws.ca/civix/document/id/complete/statreg/01009_01 • Water Users' Communities Act: http://www.bclaws.ca/civix/document/id/complete/statreg/96483_01 • FPPR Division 3 (Riparian Areas): https://www.bclaws.ca/civix/document/id/complete/statreg/12_14_2004#division_d2e9829

	• FPPR Division 4 (Watersheds): https://www.bclaws.ca/civix/document/id/complete/statreg/12_14_2004#division_d2e11654 • PMFL Act: https://www.bclaws.ca/civix/document/id/complete/statreg/03080_01 • PMFL Regulation: https://www.bclaws.ca/civix/document/id/complete/statreg/371_2004 • Definition of Subsistence: https://www.lexico.com/definition/subsistence • Water Allocation in BC: https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-licences-approvals/water-rights-databases/surface-water-allocation
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.6.1		Appropriate mechanisms are in place for resolving grievances and disputes, including those relating to tenure and use rights, to forest management practices and to work conditions.
Finding	**Scale of Assessment**	Provincial
	Context	There are three classes of grievances and disputes considered under this indicator, each of which are governed by different legislation and measures, and each is discussed in separate sub-sections below; • Tenure and Use Rights • Forest Management Practices and • Work Conditions In labour law, a grievance is a violation of the employee's rights on the job – whether under a collective agreement or under legislation. Individual grievances may concern discipline, demotion, renumeration, denied benefits, and harassment. Some issues that may lead to grievances have been assessed under Indicators 2.7.4 (no discrimination) and 2.7.5 (fair pay).
	Potential Threats	The government as steward of public lands, landowners, timber owners, forest users and workers are at risk of being treated unfairly, since without a fair and functional dispute resolution system, those who feel unfairly treated have no or inadequate recourse.
	Regulatory Requirement & Agency of Authorization	The processes for resolution of many of the types of disputes covered under this indicator are supported by provincial legislation. Grievances tend to be associated with disputes between labour and their employers, and federal and provincial legislation provides labour with options for recourse. The relevant provincial legislation governing dispute resolution and grievances includes;

		● *Employment Standards Act (ESA)* ● *Forest Act* In British Columbia, the main act covering workplace conditions is the *Employment Standards Act*. Among other things, the *Act* and associated regulations set minimum standards for wages and working conditions in most workplaces. Section 37.7 of the Regulations applies to loggers in the interior of the province and Section 37.9 applies to silviculture workers. The *Act* includes a complaint process. The Employment Standards Branch helps employers and employees to resolve disputes under the *Employment Standards Act* and Regulation through a variety of means such as education, mediation, investigation and adjudication. The Employment Standards Tribunal can hear appeals on decisions made with regards to the *Employment Standards Act.* The BC Labour Relations Board mediates and adjudicates employment and labour relations matters related to unionized workplaces. The *Forest Act* authorizes the issuance of licences and it also prescribes how various disputes regarding the terms of licences are to be resolved.
	Mechanism and Supporting Evidence	<u>Tenure and Use Rights</u> The harvesters and users of Crown timber have legal authority granted by the BC government to harvest and use timber, subject to conditions imposed by the provincial government. Indicator 1.2.1 concerned control systems that are in place to assure the legality of ownership and land use. The province grants tenure which establishes the legality referred to in 1.2.1. However, disputes may occur regarding various aspects of tenure, including the terms of the tenure agreement, the area covered by the agreement, and how special situations are dealt with (e.g. withdrawal of area from area granted in a forest licence). Where tenure is granted to provincial Crown land, the government has put in place mechanisms for dispute resolution. The forest licences provide mechanisms for the resolution of certain specified types of disputes. Some licences issued in BC (e.g. Tree Farm Licences) include the following: "The laws of British Columbia [...] govern the interpretation of [...]Licences and the performance of the Parties under [the] Licences." and it applies to all tenure granted under provincial legislation (in this case, the *Forest Act*). As a further example, a 2018 TFL included a provision for the Regional Director to resolve disputes between the licensee and the FLNRORD District Manager or Timber Sales Manager regarding areas selected for operations. Should a dispute arise regarding an issue covered under the *Forest Act* but not specifically addressed in the licence, civil law is available to resolve the dispute if discussion /negotiation with FLNRORD staff do not achieve a satisfactory resolution. Regulations under the *Forest Act* also include dispute resolution mechanisms. For example, the Timber Harvesting Contracting & Subcontracting Regulation provides that certain harvesting contracts contain dispute resolution procedures and also sets out practices to be followed when a tenure holder is affected by a reduction due to the *Forestry Revitalization Act*. This part of the indicator is also applicable to private land that is included in tenure granted under instruments that permit the inclusion of private land, such as Tree Farm Licences.

		On private lands, tenure is usually synonymous with ownership. The owner may also enter into an agreement with another party to use the timber or land, and this agreement is enforceable through contract law within the provincial legal system. <u>Forest Management Practices</u> Disputes regarding forest management practices may be related to planned practices and around the outcomes of the application of approved practices. With respect to planned practices, disputes are generally resolved during the development of the Forest Stewardship Plan and operational plans, since plan approval is required before the plan can be put into place. Also, consultation opportunities provide stakeholders and Indigenous representatives to identify potential conflicts that could be resolved during the plan development process. The Forest Practices Board (FPB) may also adjudicate disputes regarding management practices, since its involvement may be triggered by complaints or requests for and audit or assessment. The FPB's website states that the FPB serves "the public interest as the independent watchdog for sound forest and range practices in British Columbia." The FPB responds to complaints and may play a role in providing evidence that can be used to resolve a disagreement. A second appeal body is the Forest Appeals Commission (FAC), which is an independent tribunal authorized under the *Forest and Range Practices Act* (Part 8.1). The Commission hears appeals of certain decisions made by government officials related to forests and the environment. <u>Work Conditions</u> The term "work conditions" is interpreted as being concerned with workplace characteristics, employee rights and the balance of power between employers and employees. The term "work conditions" also covers the characteristics of the workplace as experienced by contractors. The most important aspects of workplace conditions are addressed in other indicators, specifically: ● Indicator 2.7.1: Freedom of Association and the right to collective bargaining are respected; ● Indicator 2.7.2: Absence of compulsory labour; ● Indicator 2.7.3: Absence of child labour; ● Indicator 2.7.4: Absence of discrimination; ● Indicator 2.7.5: Fair wages are paid; and ● Indicator 2.8.1: Forest worker health and safety are protected.
	Results: **Compliance, Enforcement, and/or Monitoring**	<u>Tenure and Use Rights</u> The provincial *Forest Act* provides direction for resolving disputes that may arise involving timber harvesting contractors and /or sub-contractors (under Part 4 of the Timber Harvesting Contract and Sub-contract Regulation). The parties in the dispute are required to use the mediator or arbitrator appointed by FLNRORD to resolve disputes. The regulation also sets out dispute resolution rules and outlines other aspects of the dispute resolution system. Disputes regarding non-timber use of the forest may be taken to provincial court for a resolution or be resolved through mediation. The nature of the dispute and the parties to it will generally influence the most appropriate mechanism and forum for resolution. <u>Forest Management Practices</u> With respect to planned practices, disputes are generally resolved during the development of the Forest Stewardship Plan and operational plans, since plan

		approval is required before the plan can be put into place. Consultation also provide stakeholders and Indigenous representatives opportunities to identify potential conflicts that could be resolved during the plan development process. Work Conditions The Director of Employment Standards may compile and publish information about contraventions of the *Act* and Regulation and make this information public. The SBP standard does not specify whose workplace is covered, however since all indicators are in reference to the "Sourcing of Feedstock", the indicator will be interpreted with respect to suppliers' workplaces. Therefore, the BP is expected to consider the available record of Employment Standards Tribunal decisions and avoid procurement from suppliers who have a workplace with unacceptable characteristics as evidenced by decisions and information available from other sources, such as newspaper reports.
	Rationale for Risk Designation	While the provincial and federal legal systems can be used to resolve most disputes, there are a number of other mechanisms that have been created to address a range of tenure, management, contract, and workplace disputes. The *Forest Act* and licences issued under the *Act* contain dispute resolution mechanisms that are relevant to tenure and timber. Use rights should generally be legally recognized to be eligible for consideration under this indicator; however, disputes regarding undocumented use rights may also be adjudicated under the mechanisms discussed above. Disputes regarding forest management practices may be addressed through forest planning processes, the compliance inspection /review processes in place, and the activities of the Forest Practices Board and /or the Forest Appeals Commission. Disputes regarding workplace conditions are generally handled through the mechanisms within and intended to support the BC *Employment Standards Act*. A number of specific aspects of workplaces are addressed in the indicators under Criteria 2.7 and 2.8. In summary, for Crown and private land there are mechanisms in place to address the full range of disputes identified in the indicator and the indicator is assessed as low risk.
Means of Verification		• Existing legislation • Existing licences • Level of enforcement • Interviews with staff and stakeholders • Company employment policies • Fibre contracts & Annual Supplier correspondence
Evidence Reviewed		• Canadian Labour Congress. https://canadianlabour.ca/uncategorized/section-4-grievances/# • FLNRORD – Timber Harvesting Contract & Subcontract Mediation and Arbitration – https://www2.gov.bc.ca/gov/content/industry/forestry/forest-tenures/forest-tenure-administration/timber-harvesting-contract-subcontract-mediation-arbitration • FRPA, Part 8.1 – Forest Appeals Commission – http://www.bclaws.ca/civix/document/id/complete/statreg/02069_01#part8.1

	• BC Ministry of Labour – https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/labour • *Employment Standards Act* – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01 • *Employment Standards Act* Regulations – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95 • *Employment Standards Act* – Interpretation Guidelines Manual – https://www2.gov.bc.ca/gov/content/employment-business/employment-standards-advice/employment-standards/igm/toc • *Employment Standards Act* Complaint Process – https://www2.gov.bc.ca/gov/content/employment-business/employment-standards-advice/employment-standards/complaint-process • Employment Standards Tribunal – http://www.bcest.bc.ca
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.7.1		Freedom of Association and the effective recognition of the right to collective bargaining are respected.
Finding	**Scale of Assessment**	Provincial
	Context	Freedom of Association refers to the right to join others for a legal common cause without interference. It is an individual's right to join with other individuals and collectively express, promote, pursue, and defend common interests. The International Labor Organization (ILO) places Freedom of Association "*at the core of the organization ILO's values*" and considers it to be a fundamental human right. The ILO continues by saying that "*The right of workers and employers to form and join organizations of their own choosing is an integral part of a free and open society. Independent employers' and workers' organizations provide clear partners for collective bargaining and social dialogue and in many cases, they have played a significant role in their countries' democratic transformation*."
	Potential Threats	Freedom of association is an important liberty in a just society and where it is restricted or absent, the potential exists for employers to force workers to work in unfair or unsafe situations. Freedom of association provides an opportunity for employees to achieve a more even balance of power with their employers.
	Regulatory Requirement & Agency of Authorization	Canada is signatory to the two ILO conventions that concern Freedom of Association and collective bargaining. Convention C087 – Freedom of Association and Protection of the Right to Organize Convention (1948, ratified 1972) is ratified and in force. Convention C098 – Right to Organize and Collective Bargaining

		Convention (1949), has been ratified and came into force in Canada on June 14, 2018. The *Canadian Charter of Rights and Freedoms* explicitly states that everyone has the freedom of association, as well as the freedom of peaceful gathering. The charter applies in all provinces and overrides any provincial legislation that might be inconsistent with it. The key provincial legislation governing labour rights and practices is the Labour Relations Code, which governs Rights, Duties and Unfair Labour Practices, Collective Bargaining, and Strikes, Lockouts and Picketing. The *Act*, which among other things provides for Freedom of Association as well as the Right to Communicate, is overseen by the Labour Relations Board, which has power to certify trade unions, ensure that unions of employees as well as employers follow applicable legislation. The Board also encourages collective bargaining.
	Mechanism and Supporting Evidence	The International Trade Union Confederation (IUTC) Global Rights Index ranks 139 countries against 97 internationally recognised indicators to assess where workers' rights are best protected, in law and in practice. The Survey ranks countries on a scale of 1 to 5 (where 1 is best), based on a consideration of violations of the rights to freedom of association, collective bargaining and strike as defined by ILO Conventions, in particular ILO Convention Nos. 87 and 98 as well as jurisprudence developed by the ILO supervisory mechanisms. The IUTC Global Rights Index 2017 assigns Canada a rating of 2, where a score of 1 is exemplary and a score of 5 indicates poor conditions for labour. This assessment of "2" is given to countries where "Collective labour rights are generally guaranteed. Workers can freely associate and defend their rights collectively with the government and/or companies and can improve their working conditions through collective bargaining. Violations against workers are not absent but do not occur on a regular basis." This is a generally high rating – 12 countries were rated at "1" and 21 rated a "2", Canada stands in a group with high standards. The ILO has a procedure that allows a complaint to be filed against a member state for not complying with a ratified convention. Complaints are investigated with the action dependent upon the particulars of the case. As of March 18, 2020, the ILO country profile web page reports that there are two active Freedom of Association cases in Canada, one involving postal workers and the second involving the United Steelworkers. There are three Canadian cases where the ILO has requested to be kept informed of the follow-up actions; these cases pertain to Ontario and Quebec and do not involve the forest sector. There are no active cases or cases in follow up status pertaining to BC. British Columbia is well-known as a province with relatively strong unions and the forest sector in particular is heavily unionized providing a reliable mechanism to collective bargaining.
	Results: **Compliance, Enforcement, and/or Monitoring**	The Canadian Foundation for Labour Rights reports that since 1982 federal and provincial governments have passed 230 pieces of legislation that have restricted, suspended or denied collective bargaining rights for Canadian workers. Of this legislation, 94 instances were "back to work" legislation, and another 54 pieces of legislation suspended the collective bargaining rights of public sector employees. The Foundation's web site indicates that 16 of the pieces of "Restrictive Labour" legislation were passed in BC since 2000; the bills generally pertained to the education system, public transit, the public service, and health care. One piece of legislation applied to the forest sector – a 1984 bill called the *Pulp and Paper Collective Bargaining Assistance Act*, which ended a strike in the sector and appointed a mediator.

	Rationale for Risk Designation	Canada has ratified the two key ILO Conventions regarding Freedom of Association and right to collective bargaining, and both are now in force (one came into force June 14, 2018). International searches of labour practices indicate that Canada is one of a fairly small group of countries that respects labour rights to a high degree. In BC, there is strong legislation to ensure that Freedom of Association and collective bargaining are supported. The Labour Practices Code addresses these points and the Labour Practices Board ensures that the Code is enforced. There is no evidence of recent efforts to curtail either freedom of association or collective bargaining in the forest sector in BC. For the above reasons, this indicator is assessed as low risk.
Means of Verification		• Review of publicly available websites & reports (listed below) • Level of enforcement • Publicly available information (news and media) • Fibre Procurement contracts • Company employment policies • Interviews with producer staff and stakeholders, and with local union representatives
Evidence Reviewed		• International Labour Organization. Freedom of association. https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/freedom-of-association/lang--en/index.htm • International Labour Organization. Collective bargaining https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/collective-bargaining/lang--en/index.htm • Ministry of Labour – Works Appeal Tribunal https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/labour • *Employment Standards Act* – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01 • Employment Standards Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95 • Canadian Foundation for Labour Rights – https://labourrights.ca/restrictive-labour-laws • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01
Proposed Risk Rating		**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.7.2		Feedstock is not supplied using any form of compulsory labour.
Finding	**Scale of Assessment**	Provincial
	Context	Compulsory labour, also referred to as forced labour, was defined by the International Labour Organization (ILO) in the 1930 Forced Labour Convention as "*all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily*". It refers to situations in which persons are coerced to work through the use of violence or intimidation or by more subtle means such as manipulated debt, retention of identity papers or threats of denunciation to immigration authorities.
	Potential Threats	The ability of an individual to choose where he or she is willing to work and to decline unsafe work is an important right in a just society and is also important for the well-being of the individual.
	Regulatory Requirement & Agency of Authorization	Canada ratified Bill C029 in 2011. The same definition was explicitly re-affirmed in P029 – Protocol of 2014 to the Forced Labour Convention, 1930, which Canada has not ratified. However, Canada has ratified Bill C105 – Abolition of Forced Labour Convention (1957, ratified 1959). The Federal *Labor Act* does not have any language in it that specifically refers to forced or compulsory labour, reflecting the absence of such practices. The *Act* contains extensive requirements regarding Hours of Work and Overtime, observance of Statutory Holidays, Leaves and Vacations. The *Act* also species that minimum wage must be paid and there cannot be false representations made to a prospective employee. Most compulsory labour that occurs in Canada is human trafficking usually for the purposes of sexual exploitation. Section 279.01 of the Criminal Code prohibits trafficking in persons, as does section 118 of the Immigration and Refugee Protection Act (IRPA). Through Provincial labour laws, the British Columbia Ministry of Labour, Employment Standards Branch regulates employment in British Columbia, including employment in the forest industry. The *Employment Standards Act* and *Employment Standards Regulation* set minimum standards for wages and working conditions in most workplaces. The *Act* applies to all non-union employees who fall under provincial jurisdiction, including temporary foreign workers.
	Mechanism and Supporting Evidence	Although forced labour is a global problem, it is very uncommon in Canada. The World of Work report (2014) reported that Canada shows a lower rate of excessive work hours compared to most countries. Canada is mentioned as one of the countries where labour provisions are proliferating. No complaints were found to have been made against Canada under C029 or C105. According to the Global Slavery Index (GSI) Canada in 2016 ranks 138 out of 167 evaluated countries in the World (1 being the worst offender) with an estimated 0.018% population in modern slavery. Canada is one of the countries with the lowest estimated prevalence of modern slavery by the proportion of their population. These countries generally have more economic wealth, score higher on government response, have low levels of conflict, and are politically stable with a willingness to combat modern slavery.

		Within British Columbia, the *Employments Standards Act* does not mention compulsory labour however it contains other provisions intended to ensure that employees are not over-worked. The *Act* also speaks to requirements regarding minimum wages.
	Results: **Compliance, Enforcement, and/or Monitoring**	The federal Government has taken measures to suppress forced labour, including setting up a special team within the RCMP to combat trafficking and sexual exploitation. As of November 2018, the national Human Trafficking National Coordination Centre has identified 531 cases since 2005 where specific charges related to human trafficking were laid and none were related to forestry. National level assessments consistently indicate that there are very low levels of compulsory labour in Canada.
	Rationale for Risk Designation	Canada has ratified the relevant ILO Declarations. There is strong legislation and policies in place in BC, with evidence of implementation; the legislation is well-enforced and there are compliant processes in place to investigate potential violations. There is no significant or systemic evidence of the use of compulsory and/or forced labour in the forestry sector within BC and therefore the risk is designated as low.
Means of Verification		• Review of publicly available websites & reports (listed below) • ILO Conventions Ratifications • ILO reports and assessment tools • Other international compulsory labour monitoring programs • Fibre Procurement contracts • Company employment policies • Interviews with producer staff and stakeholders, and with local union representatives
Evidence Reviewed		• ILO – Definition of Forced Labour – http://www.ilo.org/global/topics/forced-labour/definition/lang--en/index.htm • ILO – Ratifications for Canada – http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200COUNTRYID:102582 • BC Ministry of Labour – Fair Wages, OHS, WSBC, Works Appeal Tribunal https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/labour • *Employment Standards Act* – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01 • Employment Standards Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95 • Canadian Foundation for Labour Rights – https://labourrights.ca/restrictive-labour-laws • Human Trafficking National Coordination Centre - http://www.rcmp-grc.gc.ca/ht-tp/index-eng.htm • Global Slavery Index 2016 – https://www.globalslaveryindex.org/findings/World of Work report. (2014)

	http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_243961.pdf • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.7.3		Feedstock is not supplied using child labour.
Finding	**Scale of Assessment**	Provincial
	Context	The ILO does not provide a standardized definition of child labour but notes that the term "child labour" is often defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development. It refers to work that: ● is mentally, physically, socially or morally dangerous and harmful to children; and ● interferes with their schooling by; ○ depriving them of the opportunity to attend school, ○ obliging them to leave school prematurely; ○ or requiring them to attempt to combine school attendance with excessively long and heavy work. According to ILO Convention C138, employment at the age of 15 (or the age of completing compulsory schooling) is allowed as long as it does not jeopardise the health, safety or morals of young persons.
	Potential Threats	Absence of child labour is an important right in a just society and where it is restricted or absent, the potential exists for employers to force children to miss school and work in unfair or unsafe situations.
	Regulatory Requirement & Agency of Authorization	Canada is signatory to the two relevant ILO Conventions: C138 – Minimum Age Convention (1973, ratified 2016) and C182 – Worst Forms of Child Labour Convention (1999, ratified 2000). Canada also ratified the Convention on the Rights of the Child in 1991. Through Provincial labour laws, the British Columbia Ministry of Labour, Employment Standards Branch regulates employment in British Columbia, including employment in the forest industry. The *Employments Standards* Act is consistent with the international definitions of child labour in that permissions are required in order to employ children under the age of 15 and the *Act* and its *Employment Standards Regulation* set minimum standards for wages and working conditions in most workplaces. The *Act* applies to all non-union employees who fall under provincial jurisdiction, including temporary foreign workers. Section 9 of the *Employment Standards Act* is concerned with setting minimum ages for employment, and 15 is a key threshold age. In this regard, the provincial

		legislation is consistent with international standards. Under the *Act*, children younger than 15 years of age cannot be employed unless the employer has obtained the written consent of the child's parent or guardian. The Director of Employment Standards must approve the employment of a person younger than 12 years of age, and s/he may set mandatory conditions of employment for the child. Part 7 of the *Employment Standards Regulation* sets out the Conditions of Employment for Children. There are a number of specific regulations that apply to young people under the age of 15 and their employers in British Columbia.
	Mechanism and Supporting Evidence	Typically, within the BC forestry sector, Company hiring policies require an education requirement of Grade 12, which would require people meeting that standard to be older than the minimum 15 years of age. A search of the employment postings of major forest companies operating in BC (Tolko, Canfor) indicated that a minimum education of grade 12 was required for all entry level positions.
	Results: **Compliance, Enforcement, and/or Monitoring**	There are numerous international organizations that have country-level monitoring programs that consider employment conditions, treatment of employees, and other labour related conditions. A current review of dedicated global websites (ILO Child Labour, Child Labour Index (Maplecroft), Global March Against Child Labour) found that child labour is uncommon in Canada. The only specific critique of Canada in the 2010 report Accelerating Action Against Child Labour was that Canada had not ratified Convention 138, which it has since done. There is considerable overlap between child labour and compulsory labour (Indicator 2.7.2), since many occurrences of human trafficking involve children. The national level legislation and programs discussed in Indicator 2.7.2 also cover child labour. The BC Employment Standards Tribunal lists decisions (not complaints) in a searchable database. A search for decisions related to child labour primarily showed that the decisions occurred in the agricultural sector. A search of "child labour" and "forestry" yielded no relevant decisions in the past ten years.
	Rationale for Risk Designation	National level assessments consistently indicate that there are very low levels of child labour in Canada. Canada has ratified all of the relevant ILO Declarations and the Convention on the Rights of the Child. Relevant provincial legislation is well-enforced and there are compliant processes in place to investigate potential violations. Within the forestry sector, large companies do not hire people unless they have completed Grade 12, which means that they will be well over 15 years of age. There are almost no purely manual jobs left in the forest sector (i.e. all require the use of complex equipment and a driver's licence) which effectively rules out the employment of children. Therefore, the risk that child labour is used in British Columbia's forest sector is designated as low.
Means of Verification		• Review of publicly available websites & reports (listed below) • ILO Conventions Ratifications • ILO reports and assessment tools • Other international child labour monitoring programs • Fibre Procurement contracts • Company employment policies – hiring
Evidence Reviewed		• ILO – Definitions http://www.ilo.org/ipec/facts/lang--en/index.htm • ILO Ratifications for Canada – http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102582

	• ILO. 2010. Accelerating Action Against Child Labour. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_127688.pdf • BC Ministry of Labour – Fair Wages, OHS, WSBC, Works Appeal Tribunal https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/labour • *Employment Standards Act* – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01 • Employment Standards Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95 • Employment of Young People – https://www2.gov.bc.ca/gov/content/employment-business/employment-standards-advice/employment-standards/specific-industries/employment-of-young-people • Employment Standards Regulation - Part 7.1– Conditions of Employment of Children – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95#part7.1 • Child Labour Index 2014 – https://maplecroft.com/portfolio/new-analysis/2013/10/15/child-labour-risks-increase-china-and-russia-most-progress-shown-south-america-maplecroft-index/ • ILO Child Labour Country Dashboard – http://www.ilo.org/ipec/ChildlabourstatisticsSIMPOC/lang--en/index.htm and http://www.ilo.org/ipec/Regionsandcountries/lang--en/index.htm • Global March Against Child Labour – http://www.globalmarch.org • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.7.4		Feedstock is not supplied using labour which is discriminated against in respect of employment and occupation.
Finding	**Scale of Assessment**	Provincial
	Context	ILO Convention 111 describes discrimination as: • (a) any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the

		effect of nullifying or impairing equality of opportunity or treatment in employment or occupation; • (b) such other distinction, exclusion or preference which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation as may be determined by the Member concerned after consultation with representative employers' and workers' organisations, where such exist, and with other appropriate bodies. The Convention continues by noting that any distinction, exclusion or preference in respect of a particular job based on the inherent requirements thereof shall not be deemed to be discrimination.
	Potential Threats	Absence of discrimination in the labour force is an important right in a just society and where it is restricted or absent, the potential exists for employers to limit workers with certain characteristics or ethnicities from fully accessing employment and related opportunities, and/or receiving an unfair level of remuneration for their work.
	Regulatory Requirement & Agency of Authorization	Canada is signatory to the two ILO Conventions relevant to this indicator: • C100 – Equal Remuneration Convention (1951, ratified 1972) • C111 – Discrimination in Respect of Employment and Occupation Convention (1958, ratified 1964) Federal law prohibits discrimination in society, including in the workplace. *The Canadian Human Rights Act* broadly prohibits discrimination on the basis of gender, race, ethnicity and many other grounds. In addition, Canada's *Employment Equity Act* and the Federal Contractors Program require employers to take active measures to improve the employment opportunities for specific groups of people in Canada. British Columbia's law to protect and promote human rights is the Human Rights Code or the Code. The Code has numerous sections in it that protect people from discrimination and harassment in the workplace and in their broader lives. The Code, which is overseen by the provincial Attorney General, has provisions in it prohibiting discrimination regarding wages, employment, and by unions. The rights of foreign workers in Canada are also protected under federal or provincial/territorial labour laws.
	Mechanism and Supporting Evidence	Canada is considered to have strong laws and agencies to protect against discrimination at work. The ILO Help Desk, for example, does not identify any violations of employment rights in Canada. While many international surveys and benchmarking studies place Canada in the upper tier of nations with regard to labour rights protection, some studies have found systemic discrimination against women in the labour market, especially Aboriginal women. However, in the 2011 National Household Survey, Aboriginal women with higher levels of education had slightly higher employment rates than non-Aboriginal women; specifically, 81.8% of Aboriginal women with a certificate, diploma or degree at the bachelor level or above were employed, compared with 79.5% of their non-Aboriginal counterparts. The same pattern held true for all three Aboriginal identity groups: First Nations, Métis and Inuit women. Evidence also indicates that the percentage of Aboriginal workers in the forest sector is higher than in other sectors and some new policies in the forestry sector are favourable for Aboriginal women in the labour market.

		The independent BC Human Rights Tribunal is responsible for dealing with complaints under the Human Rights Code. Information about the tribunal, including decisions by the Tribunal, is available online.
	Results: **Compliance, Enforcement, and/or Monitoring**	There does remain some level of discrimination in Canadian society, and undoubtedly some of this occurs in the forest sector. The recent enactment of strengthened pay equity legislation indicates the persistence of the issue. In its 2018 budget, the Government of Canada announced that it will introduce proactive pay equity for workers in federally regulated sectors in 2018. It is estimated that through this legislation alone, the gender wage gap can be moved from 91.4 cents to 94.1 cents for females to the dollar for males for the core public administration. Forestry is not a federally regulated sector and so this measure is not expected to impact the BC forest sector. A scan of decisions by the BC Human Rights Tribunal revealed that two of 279 decisions rendered in 2017 involved forestry companies, and in 2018 (decisions were only available to the end of April 2018 at the time of investigation), none of the 93 decisions involved a forestry company (or at least one that could be identified by the company name). Both 2017 decisions concerned whether to accept a complaint filed by a former employee after the six-month time limit had expired (one complaint was accepted, the other rejected; no information could be found that describes how the case where the complaint was accepted was concluded). The number of times the Tribunal was asked to rule on a complaint from the forest sector is very rather low, suggesting that there is a relatively low level of discrimination encountered in the forest sector (the results could also reflect a low level of awareness of the Tribunal by forest workers). This conclusion is consistent with the notion that forestry companies are finding it difficult to hire and retain employees, and in such circumstances, discrimination is less likely than it would be if there was an abundance of people interested in working in the sector. The sector also generally needs to maintain wages and benefits in line with other resource-based industries, otherwise forestry's retention rate would suffer. The low number of decisions involving forestry companies could also reflect a low level of awareness of the Tribunal by forest workers, however the other anecdotal evidence offered suggests this factor is of low explanatory value. The Hay Group reports that British Columbia has not enacted pay equity laws but has instead developed policy frameworks for negotiating pay equity with public sector employees.
	Rationale for Risk Designation	While there is discrimination present in society, the national and provincial governments are strongly committed to reducing it, if not eliminating it. Active measures continue to be taken in this regard, as evidenced by the intentions expressed by the federal government. In Canada and BC there is both a strong legal foundation as well as mechanisms that appear to be effective in enforcing the legal requirements. Compared to other jurisdictions, Canada has a very high ranking in terms of the low level of discrimination. There was no evidence that the forest sector is any different from other parts of Canadian society in this regard. The evidence presented above leads to a conclusion of low risk for this indicator.
Means of Verification		• Review of publicly available websites & reports (listed below) • ILO Conventions Ratifications • ILO reports and assessment tools • Other international discrimination monitoring programs • Fibre Procurement contracts

	• Company employment policies • Interviews with producer staff and stakeholders, and with local union representatives
Evidence Reviewed	• ILO – Ratifications for Canada – http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200COUNTRYID:102582 • ILO Labour Help Desk http://www.ilo.org/empent/areas/business-helpdesk/lang--en/index.htm • Canada https://www.canada.ca/en/canadian-heritage/services/rights-workplace.html • Ministry of Labour – Fair Wages, OHS, WSBC, Works Appeal Tribunal https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/labour • BC Human Rights Code – http://www.bclaws.ca/Recon/document/ID/freeside/00_96210_01 • Decisions from the BC Human Rights Tribunal – http://www.bchrt.bc.ca/law-library/decisions/index.htm • Ministry of Labour – Human Rights Protection https://www2.gov.bc.ca/gov/content/justice/human-rights/human-rights-protection • *Workers Compensation Act,* Part 3, Division 6 – Prohibition Against Discriminatory Action – https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/workers-compensation-act/workers-compensation-act#SectionNumber:Part3Division6 • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.7.5		Feedstock is supplied using labour where the pay and employment conditions are fair and meet, or exceed, minimum requirements.
Finding	**Scale of Assessment**	Provincial
	Context	Some aspects of pay and employment conditions have been addressed in the following Indicators: • 2.7.1 Freedom of Association and Right to Bargain Collectively • 2.7.2 Absence of Compulsory Labour • 2.7.3 Absence of Child Labour

		• 2.7.4 Absence of Discrimination The assessment of this indicator will focus on the presence and suitability of minimum wage and employment conditions in BC
	Potential Threats	Absence of discrimination in the labour force is an important right in a just society and where it is restricted or absent, the potential exists for employers to only provide workers with an unfair level of remuneration for their work.
	Regulatory Requirement & Agency of Authorization	The International Labour Organization (ILO) has been concerned with the provision of fair and living wages since its founding in 1919. In 1928, the ILO adopted the Minimum Wage Fixing Machinery Convention (No. 26). In line with the prevailing philosophy of the time, this Convention encouraged member States to implement minimum wages "for workers employed in certain of the trades or parts of trades (and in particular in-home working trades) in which no arrangements exist for the effective regulation of wages by collective agreement or otherwise and wages are exceptionally low". Convention 26 was ratified by Canada in 1935. However, its complementary Convention (No. 30), which calls for the participation of women in wage-fixing bodies, has not been ratified by Canada. Likewise, Canada has not ratified Convention 131, which encourages the development of a system of minimum wages. Macmillan reports that in the area of employment law, the federal government only has jurisdiction in areas within exclusive federal constitutional jurisdiction. The forest sector is not one of these areas, hence it is the provincial legislation and standards that govern employment and wages in the BC forest sector. The British Columbia Ministry of Labour, Employment Standards Branch regulates employment in British Columbia, including employment in the forest industry. The *Employment Standards Act* and *Employment Standards Regulation* set out standards for minimum wage levels, hours of work, vacation and holiday pay, leaves of absence, notice periods for termination and severance pay.
	Mechanism and Supporting Evidence	Unions play a key role in protecting workers rights. The BC forest sector is a heavily unionized industry, providing a reliable mechanism to collective bargaining. This keeps wages competitive with other industrial sectors and consistent with the non-unionized forest sector. The forestry sector struggles to find people willing to work in the sector, as reported by CBC in 2017, for example, and it generally competes for employees against other resource-based industries, notably mining and energy. As a result, forestry is forced to pay a competitive wage otherwise it cannot retain staff or attract competent ones. For the same reason, the industry is required to offer good working conditions. Employment Standards Regulation 37.7 provides specific requirements regarding working conditions for loggers in interior British Columbia.
	Results: **Compliance, Enforcement, and/or Monitoring**	The *Employment Standards Act* includes a requirement that the minimum wage be paid. British Columbia has embarked on a measured series of increases to the minimum wage, with the first increase which will rise from C$11.35/hour to C$12.65/hour on June 1, 2018. Future and increases will occur again each June 1 until the wage level reaches C$15.20/hour on June 1, 2021. The June 1, 2018 increase means that BC's minimum wage is the fifth highest in Canada (behind Ontario, Alberta, Northwest Territories and Nunavut).
	Rationale for Risk Designation	British Columbia is among the provinces that are raising minimum wages by significant amounts, and BC's minimum wage is modestly above average in Canada and rising. British Columbia has robust employment standards legislation and regulations as well as the agencies to enforce them.

	Not only is there a legal basis for the sector to provide fair wages and good conditions, but there are competitive reasons as well. Skilled workers who can work in the forest sector often have options to work in mining, hydro, and oil and gas sectors, and the forest sector must offer competitive employment benefits in order to retain workers, especially those that are highly skilled. Based on the evidence provided above, this indicator is assessed as low risk.
Means of Verification	• Review of publicly available websites & reports (listed below) • ILO Conventions Ratifications • ILO reports and assessment tools • Other international minimum wage monitoring programs • Fibre Procurement contracts • Company employment policies • Interviews with producer staff and stakeholders, and with local union representatives
Evidence Reviewed	• CBC Forest sector losing jobs – but desperately needs more skilled workers. Posted May 8, 2017. http://www.cbc.ca/news/canada/british-columbia/forest-sector-losing-jobs-but-desperately-needs-more-skilled-workers-1.4103694 • Retail Council of Canada https://www.retailcouncil.org/quickfacts/minimum-wage-by-province • Macmillan LLP. Undated. Employment law in Canada: provincially regulated employers. Available at: https://mcmillan.ca/files/Employment%20Law%20in%20Canada%20-%20provincially%20regulated%20employers.pdf • BC Ministry of Labour – Fair Wages https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/labour • Fair Wages Commission – https://engage.gov.bc.ca/fairwagescommission/ • *Employment Standards Act,* Part 3 – Wages, Special Clothing and Records – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01#part3 • *Employment Standards Act,* Part 11 – Enforcement – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01#part3 • Employment Standards Regulation – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95 • Employment Standards Regulation - Part 7 – Variances And Exclusions, ESR Section 37.7 – Loggers working in interior – http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95#section37.7 • Employment Standards Regulation - Part 7 - Variances And Exclusions, ESR Section 37.9 – Silviculture Workers –

	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95 - section37.9 • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.8.1		Appropriate safeguards are put in place to protect the health and safety of forest workers.
Finding	**Scale of Assessment**	Provincial
	Context	Note that Indicator 2.6.1 considered grievance and dispute resolution mechanisms regarding issues about the workplace, which can include health and safety. However, there is only minor overlap between 2.6.1 and 2.8.1 since 2.8.1 focusses on health and safety whereas workplace disputes were one of several aspects considered in 2.6.1. (See Indicator 2.6.1 for specific information).
	Potential Threats	Health and safety is obviously important for the well-being of workers, and this is its primary benefit. A robust and effective health and safety program also reduces costs and liabilities that firms would incur associated with accidents and the results of following unsafe practices.
	Regulatory Requirement & Agency of Authorization	Canada is a signatory to International Labor organization (ILO) Convention C187 – Promotional Framework for Occupational Safety and Health Convention (2006, ratified 2011). Canada has not ratified Convention C148: Working Environment (Air Pollution, Noise, Vibration) from 1977 nor has Convention C155 been ratified: Occupational Health and Safety Convention from 1981. Canada has federal laws governing health and safety for workers covered under federal legislation, as well as at the provincial level. Federal health and safety law, commonly referred to as the Canada Labour Code Part II and regulations, covers employees of companies or sectors that operate across provincial or international borders. This generally excludes forest sector workers, although it does cover highway transport workers who might from time to time ship wood fibre. Under the authority of the Ministry of Labour, the *Workers Compensation Act* and the *Occupational Health & Safety Regulation* (OHSR) under that *Act* are the primary pieces of provincial legislation that set out industrial health and safety requirements. All BC employers must comply with them. Compliance must include not only their own workers but also other workers (i.e. contractors and subcontractors) present at the worksite. There are also other OHS Policies and standards that need to be followed by employers. The following BC legislation includes provisions for forest health and safety for employees and contractors:

		• *Employment Standards Act* • *Occupational Health and Safety Regulation (OHSR)* • *Workers Compensation Act/WorkSafe BC* • *Forest Range and Practices Act* (FPPR) The OHSR outlines the safety responsibilities of all parties on the work site, safe workplace conditions, specific hazards, and industry (Section 20-34) and activity related requirements. The forest industry has specific and applicable OHSR provisions (S. 26) which include but are not limited to: legally required personal protection equipment for persons involved in harvesting activities, implementation of safe felling and transport practices, establishment of protection zones around harvesting sites, safety requirements for machinery used, and legally required safety requirements in relation to chemical usage. OHSR states that *"(1) Every worker in a forestry operation must receive the training necessary to safely perform the worker's duties.*" Moreover, training records must be maintained. Training is required annually for every worker who might be required to fight a forest fire, for tree fallers, and for those staff who may be required to assess whether a tree is dangerous or not. The training requirements for fallers are specifically spelled out in the Regulation, and the training program must meet Board standards.
	Mechanism and Supporting Evidence	There are two primary organizations that assist companies with their health and safety programs. WorkSafeBC (WSBC) is a Crown agency, under the umbrella of the Ministry of Labour, that oversees the *Employment Standards Act*, the OHSR and associated policies and standards. WorkSafeBC promotes workplace safety, provides health and safety information to employers, workers and the public, establishes standards and guidelines for occupational health and safety and conducts workplace inspections to help employers meet health and safety requirements. WSBC also assists injured or disabled workers, assesses employers and collect funds used to operate WSBC. Every employer in BC needs to be registered with WorkSafeBC. The requirement applies to all BC businesses, regardless of size, who hire full-time, part-time, casual or contract workers. WorkSafeBC has prioritized reducing the incidence of serious injury in occupations that have high injury rates, one of which is forestry. WorkSafeBC's High-Risk Strategy employs focussed and impactful inspections in the areas of timber harvesting that represent exceptional risk, namely manual falling, log transportation, cable yarding, mechanized harvesting and silviculture. Improved emergency response planning has also been identified as an objective of the High-Risk Strategy. WSBC inspections may lead to prevention orders, which are issued when an inspector finds that something is not compliant with either the *Worker's Compensation Act* or the OHSR. The order provides an opportunity for the employer to become compliant. Penalties are assessed when serious violations are encountered (I.e. high risk of a serious injury) or when an employer does not comply with the prevention order. The second organization is the BC Forest Safety Council (BCFSC), which was established by industry in 2004 to improve the industry's safety record. The BCFSC is the health and safety association (HSA) for forest harvesting, sawmills and pellet manufacturing in British Columbia. It works with forest sector employers, workers, unions, contractors and provincial government agencies to support industry in implementing changes necessary to eliminate fatalities and serious injuries.

		Through the BCFSC, the BC forest sector has developed the SAFE (Safety Accord Forestry Enterprise) Companies standard as a safety standard that companies must attain before they can bid on forestry work in BC. The SAFE Companies standard ensure a minimum standard of safety in all forestry work places and qualified companies are required to maintain safety programs that are audited annually to verify compliance. As of December 2017, 2,974 companies in BC were SAFE certified. The website maintains a weekly listing of all SAFE Companies, as well as submitted audits.
	Results: **Compliance, Enforcement, and/or Monitoring**	<u>Canada</u> A review of the federal government's health and safety system by Ergon concluded that it is comprehensive, including inspection, enforcement, reporting notification, stakeholder consultation, and education and training for both employers and employees. No concerns were identified, other than that the federal legislation used the terminology "employees" as opposed to the broader terminology of "workers". The latter includes self-employed people and contractors, of which there are many such workers in forestry in Canada as well as in BC. <u>British Columbia</u> Statistics available on-line from WorkSafeBC show that forestry is a more hazardous occupation than average in BC. Between 2013-2017, the injury rate, including the serious injury rate, was approximately twice the provincial average. However, during the five-year period reviewed, the rates of all injury and serious injury in both the province and forestry showed a declining trend, and the rates since then have continued to show a declining trend. Data on numbers of inspections, corrective orders issued, and warning letters and penalties are available online at the Industry Safety Information centre web-page on WorkSafeBC's web-site. There is a feature that allows filtering by industry. During 2018, WorkSafeBC conducted 2,134 unannounced inspections of forestry operations, of which almost 2,000 were of operations with high-risk components present. A total of 1,041 prevention orders were issued and 16 penalties were imposed. The level of activity and infractions found in 2018 is consistent with the results from years 2014-17.
	Rationale for Risk Designation	Forestry is an occupation that is more hazardous than many others, as borne out by the injury statistics, and as a result there have been extensive and continuing efforts to increase worker safety. The costs of injury are high to the employee as well as the employer, and the costs of neglecting safety are very high. Forest companies in BC have emphasized health and safety for many years and almost all are registered under WorkSafe BC. Companies registered with WorkSafe BC are required to provide OHS training programs. WorkSafeBC also ensures that the *Employment Standards Act* and the OHSR are implemented through a program of unannounced site visits. The BC Forest Safety Council also delivers operational health and safety programs in the sector. The BCFSC has developed health and safety standards that a company must meet to be SAFE certified, which has become a requirement for companies working in the sector. The BCFSC oversees compliance with its standards by requiring companies to be assessed each year against the full standard and audited in each of the two years in between assessments.

	Due to the closely regulated, controlled and enforced OHS laws and regulations across BC, the strong OHS culture amongst companies and workers, and the intensive oversight and enforcement of requirements and standards, it is concluded that appropriate health and safety safeguards are in place and the risk designated for this indicator is low.
Means of Verification	• Existing legislation • Compliance/Enforcement Reports • Regional Best Management Practices • Training Records • Worksafe BC Records/Statistics • Interview with Worksafe BC
Evidence Reviewed	• ILO – Ratifications for Canada – http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102582 • Ergon, 2018. Independent Report: Human rights in Canada, Mexico and the USA in the context of a potential FIFA 2026 World Cup competition. March 7, 2018. • BC Forest Industry Claims Statistics; 2012-2016. https://www.worksafebc.com/en/health-safety/industries/forestry/statistics • *Workers Compensation Act*, Part 3, Division 1 – 17, Occupational Health and Safety – https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/workers-compensation-act/workers-compensation-act • *Workers Compensation Act,* Part 3, Division 12 – Enforcement – https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/workers-compensation-act/workers-compensation-act#SectionNumber:Part3Division12 • OHS Regulation, Part 26, Forestry Operations and Similar Activities – https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-26-forestry-operations • OHS Guidelines, Part 26, Forestry Operations and Similar Activities https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-26 • WCB Standards – https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/wcb-standards/wcb-standards • Worksafe BC Forestry High Risk Strategy – https://www.worksafebc.com/en/about-us/what-we-do/high-risk-strategies/forestry • Worksafe BC Statistics: Forestry – https://www.worksafebc.com/en/health-safety/industries/forestry/statistics

	• Worksafe BC Industry Safety Information Centre: 7030 Forestry – https://online.worksafebc.com/anonymous/wcb.ISR.web/IndustryStatsPortal.aspx?c=0 • BC Forest Safety Council – http://www.bcforestsafe.org • Forest Safety News, Issue 6/Vol. 4, December 2017 – http://www.bcforestsafe.org/files/ForestSafetyNewsletter_2017December.pdf • *Workers Compensation Act,* R.S.B.C. 1996, c. 492. Occupational Health and Safety Regulation, B.C. Reg. 296/97. – Reports of Injuries Regulations • B.C. Reg. 713/74. Commercial Transport Act, R.S.B.C. 1996, c. 58. – Commercial Transport Regulations, B.C. Reg. 30/78. • *Forest and Range Practices Act*, S.B.C. 2002, c.69 – Forest Service Road Use Regulations, B.C. Reg. 70/2004.
Proposed Risk Rating	**Province** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.9.1		Feedstock is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	This indicator is intended to reduce incentives to convert natural forest and other ecosystem types with high levels of stored carbon into plantations. The SBP standard gives two examples of types of areas that can have high carbon stocks: wetlands and peatlands. These types of areas may gradually accumulate large amounts of carbon which is released into the atmosphere upon conversion. These types of ecosystems have been prime targets for conversion, usually into agricultural land. While some old growth stands store high amounts of carbon, because this indicator is related to conversion and the permanent loss of high carbon stocks, this indicator is not relevant to the harvesting of old growth stands. The management of old growth is considered in the assessment of Indicator 2.2.4.
	Potential Threats	Sourcing biomass from areas that have been converted from high carbon stock ecosystems may support continued conversion, which threatens to create a large amount of greenhouse gas emissions.
	Regulatory Requirement & Agency of Authorization	In BC there is no legislation specific to the identification and protection of high carbon stands on lands under any ownership class. Wetlands and peatlands are protected on Crown land through comprehensive legislation, *FRPA* and associated regulation (Forest Planning and Practices Regulation (S.8, Div.3), and the Woodlot License Planning and Practices

		Regulation (S.9)). The federal *Fisheries Act* and the provincial *Fish Protection Act* and *Riparian Areas Regulations* provide protection to fish-bearing wetlands and the BC *Water Sustainability Act* applies on all ownerships. On Crown land, FRPA (S.29) and FPPR (S.16 and S.44) detail the requirements for prompt reforestation, including stocking standards, on un-stocked disturbed forests. The Chief Forester's Standard for Seed Use establishes the rules governing the registration, storage, selection & transfer of tree seed used to reforest Crown Land. These requirements maintain the identity, adaptability, diversity and productivity of the Province's tree gene resources.
	Mechanism and Supporting Evidence	Conversion to plantations with non-native species is not allowed on Crown land, because, with one exception, the legally binding "Chief Foresters Standard for Seed Use" does not allow non-native (alien) species to be planted on Crown land in BC. The only exception is Noble fir. It is approved for planting in coastal maritime areas, usually for Christmas trees, but has been very rarely used. The BC's Chief Forester's original 2005 Standards for Seed Use required seeds for regeneration to be acquired from the same seed planting zone that they will be planted, with an exemption for hybrid poplar. Revisions in 2018 allow for transfers from outside the planting zone, limited to areas that currently have the climate expected to occur within ¼ of a rotation in the planting zone. This measure still restricts the use of fast-growing species for reforestation on Crown land. On Crown land, most sites are planted with two or more native species and natural in-filling of other native species occurs readily. Approved FSPs detail the requirement to establish a free growing stand on harvested areas in accordance with provincial stocking standards. While there are few restrictions on conversion to fast-growing plantations on private land, the economics do not support this practice. On small areas of private lands on Vancouver Island, some companies experimented with planting hardwood (poplar) species following harvesting of coniferous species. These areas were very small, and these experiments have largely been discontinued.
	Results: **Compliance, Enforcement, and/or Monitoring**	Conversion of wetlands and peatlands is not permitted on Crown land or Private Managed Forest Land. There is not conversion of high carbon land types to plantations on other private lands.
	Rationale for Risk Designation	There are very few if any commercial forests growing on peatlands or wetlands in British Columbia and they cannot legally be drained and/or harvested to be converted to plantations on Crown land. There is no conversion of wetlands and peatlands for timber production purposes in BC. The Chief Forester's Standard for Seed Use effectively restricts renewal on Crown land to native species and there is no practical interest in converting peatlands, wetlands or native forest to plantations on any land ownership in the province. A combination of economic infeasibility and legal prohibitions have combined to prevent the establishment of plantations of fast-growing species grown for biomass production on Crown land. The general unprofitability of converting land to fast-growing plantations has achieved the same outcome on private land. As a result, this indicator is assessed as low risk on all ownerships.

Means of Verification	• Forest Inventory • Harvest history since 2008, volume harvested by stand • Future harvest planning
Evidence Reviewed	• B.C. Ministry of Energy, Mines and Petroleum Resources. 1988. Peatland Inventory of British Columbia. D.E. Maynard. Mineral Resources Division, Geological Survey Branch. • FLNRORD. 2013. Climate mitigation potential of British Columbian forests: Growing carbon sinks. November 2013. https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/mitigation/climatemitigationpotentialofbritishcolumbianforests.pdf • B.C. Forest Carbon Strategy 2016-2020: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/mitigation/bc_forest_carbon_strategy_09092016_sept_21.pdf • The B.C. Climate Leadership Plan (August 2016): https://climate.gov.bc.ca • B.C. MLNRO Climate Strategy: • https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/climate_change_strat_2015-20.pdf • *Forest and Range Practices Act:* http://www.bclaws.ca/civix/document/id/consol21/consol21/00_02069_01 • Forest Planning and Practices Regulation: http://www.bclaws.ca/Recon/document/ID/freeside/14_2004 • *Private Managed Forest Land Act:* http://www.bclaws.ca/Recon/document/ID/freeside/00_03080_01 • FLNRORD. 2018. Chief Forester's Standards for Seed Use. https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/legislation-standards/chief-forester-s-standards-for-seed-use • FLNRORD. 2019. What is Climate-Based Seed Transfer? Information Bulletin 1. July 2019. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/tree-seed/climate-based-seed-transfer/cbst-bulletins/cbst_bulletin_1_cbst_what_is_climate_based_seed_transfer_oct2019__final.pdf • Black, T. Andrew, Rachhpal Jassal, and Arthur L. Fredeen. 2008. Carbon Sequestration in British Columbia's Forests and Management Options. Pacific Institute for Climate Solutions. November 2008.
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

		Indicator
2.9.2		Analysis demonstrates that feedstock harvesting does not diminish the capability of the forest to act as an effective sink or store of carbon over the long term.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	This indicator references the capability of the forest to store carbon, and while forest carbon budget models are available for assessing carbon budgets over time, the level of the annual allowable cut (AAC) also serves as a reasonable surrogate for forest carbon balance. (The long-term sustainability of the harvest is assessed in Indicator 2.3.1.). If the AAC is stable or increasing over time, that suggests that this indicator is being met for the entire forest estate. It is notable that 81% biomass feedstock in BC is derived from residue from sawmills (e.g. sawdust, bark, etc) and the grinding of logging slash (5%) left at landings after processing (see section 2.9 Biomass Sector). Low-quality timber that otherwise is unmerchantable is also used as pellet furnish. The utilization of this fibre is not considered to count against the AAC.
	Potential Threats	The threat implicit in this indicator is that overharvesting or conducting harvest and related operations in such a manner that the productivity of the site is damaged, or renewal is delayed has the potential to reduce the productivity of the forest and its capacity to sequester carbon.
	Regulatory Requirement & Agency of Authorization	In BC there is no legislation specific to forest carbon on any ownership. Related legislation is focused on maintaining a sustainable long-term harvest and sustaining forest productivity within the range of natural variability. The Provincial Government has, and is continuing to, integrate climate change considerations into its policies and programs; FLNRORD released a Climate Change Strategy in 2015 and a Forest Carbon Strategy in 2016. The carbon strategy outlines six broad approaches, including increasing the carbon density at stand level and at the landscape level. BC's Climate Leadership Plan includes a Forest Carbon Initiative that will enhance the potential of BC's forests to store carbon and increase the amount of tree planting, however these initiatives have not led to any requirements.
	Mechanism and Supporting Evidence	The province's forest estate may be a sink or a source, depending on the state of the forest and the extent of disturbances that lead to greenhouse gas (GHG) emissions from the forest. BC forests, including net emissions from harvested wood products, were a net sink between 1990 and 2002. Subsequently, they became a source (St-Laurent et al 2017) due to mortality caused by the Mountain Pine Beetle (MPB) and an increase in forest wildfires. Whether BC forests are a sink or a source over a period of time is not reflective of the capability of the forest to act as a source or sink. The carbon stored in the provincial forest is presently near or at a cyclical low point. However, the capacity of the forest has not been diminished, since forest operations maintain soil productivity and forest renewal is occurring. Now that the MPB outbreak has largely run its course in BC, wildfire remains the primary natural disturbance factor leading to GHG emissions; BC can return to being a net sink again in low wildfire years.

		At the provincial level, biomass harvesting by pellet producers has negligible impact on the overall carbon balance associated with BC forests, primarily because pellet production does not drive the harvest. As reported in section 2.9, the whole log component of the fibre procured by pellet producers was equivalent to 1% of the provincial harvest, and in the absence of pellet production, this wood would have been unmerchantable. Harvest Sustainability As described in the assessment of Indicator 2.3.1, the provincial Chief Forester, who is part of FLNRORD, determines the allowable harvest level on each Timber Supply Area (TSA) and Tree Farm Licence (TFL) area every ten years. The province regularly reviews and revises the allowable harvest levels of the TSAs and TFLs to ensure that harvesting is limited to a level that will provide a reasonably steady long-term harvest level. The mortality caused by the MPB infestation and the large fires in recent years is causing a reduction in the provincial AAC in the near to midterm. This is evident from some of the most recently completed timber supply reviews. In response, FLNRORD established the Land Base Investment Program; its funding priority is to reduce MPB impacts on mid-term timber supply. Funding is directed to Forests for Tomorrow (FFT) to increase the future timber supply through targeted silviculture treatments in response to impacts of catastrophic disturbance. In addition, the Forest Enhancement Society (FES) mandate is to address the salvage of dead and damaged timber with a focus on rehabilitating areas that are not a priority for the FFT. The Province's Environmental Reporting BC – Land & Forests (May 2018) Provincial Timber Supply Forecast reported that "…*Until relatively recently, BC was forecast to have a stable mid and long-term timber supply of about 70 million cubic metres per year. Recent analysis projects a decrease in timber supply to about 58 million cubic metres per year by 2025—due to mortality caused by the mountain pine beetle epidemic.*" The forecasted timber supply returns to approximately 65–70 million cubic metres per year by 2075. Private Managed Forest Lands are required to follow sustainable principles and are encouraged to manage their lands for long-term forest production. The *Private Managed Forest Land Act* contains five management objectives that include the reforestation of areas where timber is harvested or destroyed, conservation of soil, and minimization of disturbed area. Owners are required to report annually to the Managed Forest Council (MFC) on their forest management activities, including harvesting and reforestation. Private landowners have no legal requirements to maintain the productivity of their land or the level of growing stock on their property. Long Term Carbon Storage Capacity Maintenance The ability of the forest to act as an effective sink or store of carbon over the long term depends on the maintenance of the productive capacity of the site. Other indicators in the standard embody requirements to maintain forest productivity (see Indicator 2.3.1) and ecosystem functions (see for example Indicator 2.2.2 – the maintenance or enhancement of soil quality and Indicator 2.2.4 – protection of biodiversity). At the forest level, productive capacity is maintained through the implementation of forest stewardship plans and through operational plans at the site or block level. Forest companies and larger contractors emphasize the avoidance of site damage, as was described under Indicator 2.2.1.

	Results: **Compliance, Enforcement, and/or Monitoring**	BC has strong safeguards against overharvesting, and the *Forest Act* provides the legal Cut Control requirements: over a five-year period, the actual harvest may not exceed the AAC by more than 10% and over a full plan period, the actual harvest may not exceed the AAC. The Cut Control Regulation specifies the penalties that apply should the harvest exceed the AAC. The 2018/19 Annual Report of the LBIS showed that 53% of funding (i.e. C$39.4 million of C$74.8 million) went to FFT for current reforestation and another 12% (C$9.3 million) went to FFT for timber supply mitigation; much of the focus was reforesting areas burned in the extensive 2017 and 2018 wildfires. In 2018, the BC government provided C$134 million to the FES, which was spent on wildfire hazard reduction, reforestation, rehabilitation, and wildlife habitat restoration. Through these two programs, and other means, the provincial government is supporting the capacity of the forest to act as a carbon sink. Site level productivity – Forest Stewardship Plans (FSPs) are based on a planned harvest that meets regulations and does not exceed the AAC. There are penalties in place if overcutting occurs. Overcutting is extremely rare – no recent occurrences of it were identified. The FSPs also include measures to prevent soil damage and maintain productivity. On PFML, forest owners are required to provide annual reports to the Managed Forest Council, which conducts random audits, as well as audits triggered by complaints. These mechanisms serve as the means of ensuring that the soil conservation and reforestation objectives are achieved – the owner compliance rate has been 99% since audits were initiated in 2007. On other private land, the lack of provincial regulation regarding maintenance of productivity/capacity to store carbon means there is little to enforce and monitor.
	Rationale for Risk Designation	There is an extensive forest management and regulatory system in place in BC that has as a goal the maintenance of the productive capacity of forests, and this system is maintained and enforced. The harvest on Crown land in BC is regulated and the allowable harvest is reviewed regularly to ensure that it is maintained at a level that is sustainable over the long term. Currently wood pellet producers themselves conduct very little harvesting, preferring to purchase fibre. In addition, the provincial government is providing a considerable amount of funding for reforestation following fire and insect outbreak, as well as reducing fuel loads and forest rehabilitation through the Land-Based Investment Strategy and the Forest Enhancement Society. Therefore, Indicator 2.9.2, which at the forest level is highly correlated with the sustainability of harvest levels, and at the site level is strongly concerned with productivity, is assessed as low risk. The management of Private Managed Forest land in BC is regulated by the *PMFL Act* and a regulation and is overseen by the Managed Forest Council. Objectives are in place to maintain productivity and the reporting and monitoring system that is in place appears to be effective, and the compliance rate is reported as being very high. Therefore Indicator 2.9.2 is also assessed as low risk on PMFL. Forest management is very lightly regulated on other private land and there is no allowable harvest. As a consequence, there is nothing that requires a private landowner to maintain the productivity of his or her lands, and activities are not monitored or reported on. Therefore, this indicator is assessed as specified risk for the other private land sub-scope.
Means of Verification		• Harvest level versus AAC at the provincial level • Harvest level versus AAC at the TSA and TFL level, or at a regional level • Provincial source /sink calculations

	• Measures in Forest Stewardship Plans to maintain site productivity, prevent soil damage or degradation, and retain sufficient organic matter on site • Compliance with measures in Forest Stewardship Plans
Evidence Reviewed	• B.C. Forest Carbon Strategy 2016-2020: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/mitigation/bc_forest_carbon_strategy_09092016_sept_21.pdf • B.C. Forest Carbon Initiative https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resources-climate-change/natural-resources-climate-change-mitigation/forest-carbon-initiative • BC Forest Practices Review Board. 2012. Conserving Old Growth Forests in BC: Implementation of old-growth retention targets under FRPA. Special Investigation FPB/SIR/36 June 2012. • The BC Climate Leadership Plan (August 2016): https://climate.gov.bc.ca • BC MFLNRO Climate Strategy: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/climate_change_strat_2015-20.pdf • BC MFLNRO. 2013. Climate mitigation potential in BC Forests: growing carbon sinks (November 2013): https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/mitigation/climatemitigationpotentialofbritishcolumbianforests.pdf • Forest Enhancement Society of BC. 2019. Accomplishments Report. January 2019. https://fesbc.ca/ • High Carbon Stock Approach Toolkit (May 2017): http://highcarbonstock.org/wp-content/uploads/2017/05/HCSA-Toolkit-v2.0-Module-1-Introduction-190917-web.pdf • Land-based Investment Strategy (LBIS). 2019. Annual Report for 2018/19. BC Resource Planning and Assessment Branch, FLNRORD. https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/land-based-investment • State of Forest Carbon in BC Forests (February 2017): https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nrs-climate-change/adaptation/state_of_forest_carbon_feb_8_2017.pdf • Luyssaert, S et al (2008). Old Growth Forests as Global Carbon Sinks. Nature. September 2008: https://www.nature.com/articles/nature07276?foxtrotcallback=true • St- Laurent, Guillaume Peterson, G. Hoberg, W. Kurz, T. C. Lemprière, C. Smythe and Zhen Xu. 2017. Evaluating options for managing British

	Columbia's forest sector to mitigate climate change. Pacific Institute for Climate Solutions. • Xu, Yuanyuan. Forest Management and Carbon Storage in BC. UBC. 2014: https://open.library.ubc.ca/media/download/pdf/52966/1.0075581/1/791
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

		Indicator
2.10.1		Genetically modified tress are not used.
Finding	**Scale of Assessment**	Uncertified: Crown Land, Private Managed Forest Land, Other Private Land
	Context	Diaz and Fridovich-Keil (2020) define a genetically modified organism (GMO) as an organism whose genome has been engineered in the laboratory in order to favour the expression of desired physiological traits or the generation of desired biological products. In conventional livestock production, crop farming, and even pet breeding, it has long been the practice to breed select individuals of a species in order to produce offspring that have desirable traits. In genetic modification, however, recombinant genetic technologies are employed to produce organisms whose genomes have been precisely altered at the molecular level, usually by the inclusion of genes from unrelated species of organisms that code for traits that would not be obtained easily through conventional selective breeding.
	Potential Threats	Mix with the native gene pool leading to the creation and establishment of trees in forests and other natural landscapes that include modified genes in their genotypes.
	Regulatory Requirement & Agency of Authorization	The Canadian Food Inspection Agency (CFIA) is responsible for regulating the environmental release of a plant with a novel trait (PNT). This mandate is provided by the *Plant Protection Act* and associated regulations and the *Seeds Act* and associated regulations. Forest Improvement and Research Management Branch (FLNRORD) is the government agency responsible to understand, protect and conserve the genetic foundations of BC's public forests. The Branch's tree-breeding programs do not involve any genetic engineering, gene insertion, gene splicing or biotechnology that results in genetically modified organisms. The use of tree seed for reforestation on Crown lands is regulated under the *Forest Range Practices Act* (*FRPA*), which provides the applicable regulations and standards. Section 169 permits the Chief Forester to establish standards regarding tree gene resources; in accordance with the *FRPA* and its regulations, BC's chief forester established the Chief Forester's Standards for Seed Use. The Chief Forester's Standards require that all tree seed and vegetative material that is to be used to regenerate areas harvested under a provincial licence be registered. Section 5.1.8(e) prohibits the registration of seeds or vegetative material that has been subjected to genetic modification through mutagenesis, a recombinant DNA technique or other related methods. Since only registered seed

		can be used to reforest Crown lands or private lands included under various licence types, these standards ensure that no genetically modified seed is used in operational planting on all Crown land, and on almost all forested land in BC. Planting programs on private land are oriented towards conifer species which do not have genetically modified types available; private land owners are required to follow national regulations regarding genetically modified types.
	Mechanism and Supporting Evidence	While there is no ban against GMO's in Canada, there is strict scientific protocol that needs to be conducted before a permit for commercialization. This protocol requires confined field trials to demonstrate safety. BC's seed production program includes most of the commercial tree species in the province. Seed orchards, which are key elements in the tree improvement program are advanced generation plantations of genetically superior trees, intensively managed to produce frequent, abundant, and easily harvested seed crops. As of Feb 2019, BC's Tree Improvement Branch manages 40 seed orchards and supplies seed for 25 Seed Planning Zones. This ensures that seedlings are genetically suitable for the climate and ecological conditions of the area in which they are planted. At this time, GM tree research trials are being conducted in Alberta, New Brunswick, Ontario and Quebec (NRA 2019). These are typically small in size (i.e. approximately 2 ha). Spruce (Picea sp.) is the only one that has been identified as a candidate for genetic modification (Genome Canada).
	Results: **Compliance, Enforcement, and/or Monitoring**	Tree Improvement Branch has ensured that no genetically modified tree seed has been registered or used in operational forest planting on Crown land in British Columbia. There are two seed tracking registries in the province. SPAR system tracks information related to origin of materials, inventories and functions as an order entry system for seedling requests. RESULTS tracks which seedlot was used to reforest a specific block. The seedlot number used is the same in both systems and is also used to track seed from cone collection, processing, testing, pre-treatment, seedling production in the nursery and into the field. Thus, all seedlings planted in British Columbia can be traced back to the nursery of origin and seed origin via registered unique identification numbers. The FPPR (S.43) and WLPPR (S.32) require maintenance of records of seed used, including a map showing the locations of where the seed was planted. There is no evidence of unauthorized seed or plant material use, including genetically modified or engineered, in forestry in BC for any of the 19 different native tree species used in reforestation.
	Rationale for Risk Designation	There is no commercial use of GM tree species within the Province. Currently harvested fibre is obtained from trees that are too old to have been genetically modified, and there are no GMO trees being planted to reforest areas harvested to provide fibre to the forest industry including the BP. Therefore, the risk of genetically modified trees being used is designated as low.
Means of Verification		• Review of publicly available websites & reports • Compare GMO List vs feedstock input list
Evidence Reviewed		• Canadian Food Inspection Agency – FIA - Division 28 (Novel Foods) section of the Food and Drug Regulations C.R.C., c. 870.

	• Genome Canada. https://www.genomecanada.ca/en/fast-tests-rating-and-amelioration-conifers-fasttrac • Natural Resources Canada – Research Projects – Research on the potential environmental impact of genetically modified trees • Plants With Novel Traits: Information for the general public • BC Forest Improvement and Research Management Branch. 2019. 2018 Year in Review. MFLNRORD https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed • B.C. Chief Forester's Standards for Seed Use: https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/legislation-standards/chief-forester-s-standards-for-seed-use • Forest Genetics – https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/forest-genetics • Seed Production in BC: https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/seed-production • FSC-NRA-CA V2-0 (2019) – https://ca.fsc.org/en-ca/standards/national-risk-assessment-01
Proposed Risk Rating	**Uncertified Crown Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☒ **Low Risk** ☐ **Specified**

Annex 2: List of experts consulted and contacts of Working Body

Expert	Qualification	Role
Lise Jubinville	Head, CITES Permit Policy and Operations Unit / CITES Canada - Management Authority, Environment Canada	CITES (1.5.1)
David Carson	First Nation Consultant, Land Forest People Consulting Ltd	Indigenous People (1.6.1., 2.5.1, 2.5.2)
Sonya Campbell	Senior Advisor, FLRNRORD - First Nations Relations	Indigenous People (1.6.1., 2.5.1, 2.5.2)
Christine Galliazo	FLNRORD Cultural Heritage Stewardship Officer	Indigenous People (1.6.1., 2.5.1, 2.5.2)
Jonathan Murkin	Land & Resource Coordinator, FLNRORD	Indigenous People (1.6.1., 2.5.1, 2.5.2)
Andrea Lyall	UBC Doctoral Student/Researcher	Indigenous People (1.6.1., 2.5.1, 2.5.2)
Tom Sullivan	Forest Scientist, Applied Mammal Research Institute	Residue removal – ecosystem harm & CWD (2.2.5, 2.2.4)
Tim Philpot	Soil Scientist, FLNRORD	Residue removal – ecosystem harm Soils (2.2.5, 2.2.2)
Dave Clark	Staff member, Forest Practices Board	Various forest practices (C2.2)
Lisa Nordin	Aquatic Resource Stewardship Eval officer, FLNRORD	Water (2.2.6)
Lorraine MacLauchlan	Forest Entomologist, FLRNRORD	Forest Health & Resiliency (2.2.8, 2.4.1, 2.4.2)
Atmo Prasado	Forest Analysis and Data Manager, FLNRORD	Forest Sustainability (2.3.1)
Robert Prins	Forest Analysis, Consultant	Forest Sustainability (2.3.1) & Old Growth/Carbon Stands (2.9.1, 2.9.2)
Antti Makitalo	Senior Resource Analyst, FESL	Forest Sustainability (2.3.1)
Nick Reynolds	Consultant, Sangan Environmental Services	Forest Sustainability (2.3.1)
Rob Schuetz	Consultant, Industrial Forestry Service Ltd.	Forest Sustainability (2.3.1)
Etienne Belanger	Forestry Director, Forest Products Ass. of Canada	Forest Economy (2.3.3)
Joe Aquino	Sustainability Manager, Pinnacle Renewable Energy Group	Forest Economy (2.3.3)
Nathan Bond	Operations Manager, Skeena Bioenergy	Forest Economy (2.3.3)
Babita Bains	Provincial Forest Entomologist, FLRNROD	Forest Health & Resiliency (2.2.8, 2.4.1, 2.4.2) resiliency
Dave Conly	Operations Manager, FESBC	Forest Health & Resiliency (2.4.1, 2.4.2)

Expert	Qualification	Role
Terry Chow	Safety Advisor, BC Forest Safety Council	Operational Health & Safety (2.8.1)
Darcy Moshenko	WorkSafeBC - forest industry	Operational Health & Safety (2.8.1)
Werner Kurz	Pacific Forestry Centre	High Carbon Stands (2.9.1)
Stephen Kull	CFS	High Carbon Stands (2.9.1)
Caren Dymond	Senior Research Scientist, FLRNRORD - Climate Change & Integrated Planning Branch (CCIPB)	Carbon Sinks (2.9.2)
Dave Kolotelo	Cone & Seed Improvement Officer, FLNRORD - Cone & Seed Services	GMO (2.10.1)
Phil O'Connor	Executive Director, Managed Forest Council	Private Managed Forest Land Program, Criterion 2.1 & 2.2
Megan Hanacek	CEO, Private Forest Landowners Association	Private Managed Forest Land Program, Criterion 2.1 & 2.2, Old Growth, Species at Risk, HCV

RRA Working Body Biographies

Brenda Hopkin (B.Sc. (For)), RPF

Brenda Hopkin is an independent consultant specializing in forestry certification. Her extensive experience with sustainable forest management initiatives, auditing, monitoring programs and public consultation has contributed to the development of her broad perspective and comprehensive skill set. Clients include provincial and national level governments, industry and not-for-profit organizations.

Brenda has been a Certified Lead Auditor since 2000, specializing in auditing environmental national and international standards, focusing on sustainability and legality requirements, as well as greenhouse gas (GHG). She has extensive technical and operational knowledge of requirements for forest management, chain of custody and risk-based systems along the supply chain (FSC, CSA, SFI, PEFC, and the Sustainable Biomass Program (SBP)). Brenda has completed or participated in over 140 internal/external audits in British Columbia and Alberta, which include the development of the audit plan, developing/implementing audit protocol, and writing articulate findings. In a consulting role, Brenda has supported the roll-out of sustainable forest management legislation, policy, certification and operational procedures.

Brenda is the RRA-BC Working Body Coordinator. In addition, she sits on a 6-person international Technical Committee for SBP, is a registered member in the Economic Chamber of FSC International and is a member of a 12-person Standards Development Group for FSC Canada. Brenda is a Registered Professional Forest in British Columbia.

Nicolas Blanchette, (MBA, M.Sc.(for)) Ing.F.

Mr. Blanchette is specialized in forest certification chain of custody and forest management. Nicolas is involved in forest certification since his undergraduate studies. He completed studies in Honduras and Nicaragua, Central America and in the Michoacán Monarch Butterfly Model Forest in Mexico. He acquired an in-depth knowledge of the FSC certification program in Quebec, New Brunswick and in Mexico. He coordinated and collaborated on multiple FSC standard development processes in Canada currently sitting on the FSC Standard Development Group.

He is the Working Body Coordinator for the Sustainable Biomass Program (SBP) Quebec Regional Risk Assessment (RRA) and a member of the Working Body undertaking RRA's in different parts of Canada. Nicolas is a certified lead auditor for the FSC and ISO 14000 programs and a certified SBP auditor. He participated in certification audits in British Columbia, Alberta, Ontario, Quebec, New Brunswick and Nova Scotia. He supports companies throughout the forest value chain to move towards or to maintain forest management and chain of custody main certification programs. He develops and implements practical tools to efficiently comply with certification requirements and regulations in the field and in the processing facilities.

Jeremy Williams (B.Sc. (For), Ph.D. (For. Econ.)), RPF

Dr. Williams has extensive forest economics experience which includes reviews of timber markets, timber pricing including stumpage rates, and timber production costs. In 2017 Jeremey was a core member of the Nova Scotia premiers Forest Sector Review team. In the Review, Jeremy was the lead assessor of the state of timber markets, particularly in southwest Nova Scotia, and he undertook a thorough analysis of harvest rates and costs, silvicultural costs and reimbursement rates.

Dr. Williams has extensive experience as a forest auditor and he has worked with written standards regarding forest management (certification and compliance), forest carbon offsets, aggregate pits and quarries, and biomass. Jeremy has undertaken numerous projects in BC including socio-economic assessments for timber supply scenarios for Timber Supply areas, and assessment of risks and opportunities for sustainable development. Jeremy has also completed numerous business cases, economic evaluations and review. He is also very knowledgeable and experienced with respect to forest

carbon pricing and accounting and has extensive experience working with and advising Indigenous People.

Glen Dunsworth (B.Sc. (For), M.SC. (For. Genetics)), R.P. Bio. (retired)

Glen is an Ecological Consultant providing services in forest ecology, wildlife resource management, conservation biology, and strategic planning. He has over 35 years' experience in the BC coastal forest industry with Macmillan Bloedel and Weyerhaeuser where he directed regeneration and biodiversity research and developed effective new strategic approaches to ecosystem-based management. He has facilitation, organizational and project management experience in landscape and strategic planning.

Glen specializes in biodiversity, genetics, landscape ecology and ecosystem-based management. He has strong technical writing skills with over 45 journal publications including editing and co-authoring a recently published UBC Press textbook. As a consultant Glen has provided conservation and ecological strategic planning advice to a number of BC forest companies and conservation organizations. In the later 10 years of his career he was a forest ecology consultant, worked with Rain Forest Alliance as a wildlife and forest ecology auditor on 25 FSC audits in BC, Alberta and Ontario. He also served as SelectSeed Company President and Board Chair for 13 years. His most recent experience in large project management was in developing and implementing an adaptive management and monitoring program in support of Weyerhaeuser's Coast Forest Strategy (1999-2004), a major shift in forest management from clear-cut to a variable retention approach. This experience was published as a case study book for UBC Press in 2009.

Marie-Ange Fournier, (B.A. Geography and Environmental Sci., Adv. Dip. GIS)

Marie is a GIS Analyst currently working with biologists, forestry professionals and land managers on research, forest, and land management projects. She has worked in BC, Canada and the US and is conversant with Provincial, National and International datasets. Recently she has worked on fuel management planning and fire risk reduction projects in southeastern BC. Marie's project management and GIS experience were invaluable to the completion of the BC RRA over the last three years.

Prior to becoming a GIS consultant, Marie worked for 10 years with BC Regional and Municipal government as a GIS Analyst and Planning Assistant. She has worked closely with the public, developers and their consultants, elected officials, and Indigenous First Nations. Marie has routinely liaised with and has familiarity with various Government agencies and staff including; BC Design Review Panels, Heritage Commissions, the Agricultural land Commission and with all operating areas of Municipal and Regional Districts in BC.

Nick Soverel (B.Sc., M.Sc.) RPF

Nick is a professional forester and has worked in the forest sector in BC since 2007. He has international professional land management experience since 2004. Nick began professional consulting in 2013. Nick's strengths and professional expertise is in applied research in disturbance management, fuel management planning and prevention, fire behavior prediction, timber inventory, and project management. For the BC RRA Nick contributed on Indicator findings, research and technical writing. His Indicator topics included Indigenous Peoples' rights and title, forest ecology and disturbance.

Alexa Matthes (B.Sc., A.Ag.)

Alexa is an Environmental Scientist and Articling Agrologist, currently working as a Project Scientist for the Trail Area Health and Environment Program. She has worked in various environmental roles since 2014. Her experience includes soil remediation, industrial sampling methods and invasive plant removal. Alexa has been involved in research and data collection for a variety forestry/certification related projects. Her contribution to the BC RRA included updating documents and obtaining relevant stakeholder information.

Annex 3: List of publications used

1.1 Evidence Reviewed

Publications
A Guide to Aboriginal Harvesting Rights
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BC Forest Practices Board. Conserving Old Growth Forests in BC. Implementation of Old Growth Retention Objectives under FRPA. Special Investigation FPB/SIR/36. June 2012.
BC Forest Safety Council
BC Forest Service, 1995. Riparian Management Area Guidebook.
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BC FPB Annual Reports (2017/2018, 2016/2017, 2014/2015)
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BC Human Rights Code
BC MFLNRO Climate Strategy
BC MFLNRO. 2013. Climate mitigation potential in BC Forests: growing carbon sinks (November 2013)
BC Ministry of Energy, Mines and Petroleum Resources. 1988. Peatland Inventory of British Columbia. D.E. Maynard. Mineral Resources Division, Geological Survey Branch.
BC Ministry of Environment and Climate Change Strategy – Mandate
BC Ministry of Environment and Climate Change Strategy. 2018. Protecting Species at Risk: A Primer to Support a Conversation with British Columbians. March.

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Provincial Fire Detection
Provincial Forest Health Strategy
Provincial Logging Residue & Waste Measurement Procedure Manual
Provincial Timber Tracking system – Harvest Billing System (HBS)
Results of a Survey of Managed Forest Operations Protecting Drinking Water Quality- December 2016
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Sector-Specific Tools & Guides for Pesticide Use – Forest Pest Management Sector Review Paper, October 2006
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Updated Procedures for Meeting Legal Obligations When Consulting First Nations (2010)
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2.2 Natural Resource Legislation – National, Provincial, Local

Provincial Acts

The Provincial Acts (found at: www.bclaws.ca) listed below establish key aspects of the government policy framework that impact forestry management in British Columbia. In any given situation, one or more of these Acts may apply to a forestry activity.

Natural Resources Sector

Acts specific to the natural resource sector and specifically apply to forestry activities, including:

- *Assessment Act*
  - http://www.bclaws.ca/civix/document/id/lc/statreg/96020_01
- Forest Act

    - http://www.bclaws.ca/civix/document/id/complete/statreg/96157_00
- *Forest and Range Practices Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/02069_01
- *Forest Practices Code of British Columbia Act* (largely repealed)
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96159_01
- *Forest Stand Management Fund Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96161_01
- *Foresters Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96162rep_01
- *Forestry Service Providers Protection Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/10016_01
- *Great Bear Rainforest (Forest Management Act)*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/16016
- *Health Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96179_01
- *Heritage Conservation Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96187_01
- *Ministry of Forests and Range Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96300_01
- *Oil and Gas Activities Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/08036_01
- *Park Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96344_01
- *Private Managed Forest Land Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/03080_01
- *Protected Areas of British Columbia Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/00017_00
- *Range Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/04071_01

General Applicability – Activities on Land Base

The following Acts are of general applicability and apply to all activities on the land base, including, but not restricted to forestry activities:

- *Drinking Water Protection Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/01009_01
- *Environmental Management Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/03053_00
- *Integrated Pest Management Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/03058_01
- *Land Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96245_01
- *Water Protection Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96484_01
- *Water Sustainability Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/14015
- *Weed Control Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96487_01
- *Wildfire Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/04031_01
- *Wildlife Act*
    - http://www.bclaws.ca/civix/document/id/lc/statreg/96488_01

Federal Acts

Additionally, there are Federal Acts that impact forest policy in British Columbia; www.laws.justice.gc.ca/eng/

- Canadian Centre for Occupational Health and Safety Act
  - https://laws-lois.justice.gc.ca/eng/acts/c-13/
- Canadian Charter of Rights and Freedoms
  - https://laws-lois.justice.gc.ca/eng/const/page-15.html
- *Canadian Environmental Assessment Act*
  - http://www.laws.justice.gc.ca/eng/acts/C-15.21/index.html
- Canadian Environmental Protection Act
  - https://laws-lois.justice.gc.ca/eng/acts/c-15.31/
- Canada Labour Code
  - https://laws.justice.gc.ca/eng/acts/l-2/index.html
- Canada National Parks Act
  - https://laws-lois.justice.gc.ca/eng/acts/n-14.01/
- The Canadian Navigable Waters Act
  - https://laws-lois.justice.gc.ca/eng/acts/n-22/FullText.html
- Canada Water Act
  - https://laws-lois.justice.gc.ca/eng/acts/c-11/index.html
- Canada Wildlife Act
  - https://laws-lois.justice.gc.ca/eng/acts/w-9/
- Constitution Act
  - https://laws-lois.justice.gc.ca/eng/const/page-1.html
- Customs Act
  - https://laws-lois.justice.gc.ca/eng/acts/c-52.6/
- Fertilizers Act
  - https://laws-lois.justice.gc.ca/eng/acts/F-10/
- First Nations Land Management Act
  - https://laws-lois.justice.gc.ca/eng/acts/F-11.8/
- *Fisheries Act*
  - https://laws-lois.justice.gc.ca/eng/acts/f-14/
- Forestry Act
  - https://laws-lois.justice.gc.ca/eng/acts/f-30
- Hazardous Products Act
  - https://laws-lois.justice.gc.ca/eng/acts/h-3/
- Indian Act
  - https://laws-lois.justice.gc.ca/eng/acts/i-5/
- Indian Lands Agreement
  - https://laws-lois.justice.gc.ca/eng/acts/I-6.7/index.html
- Income Tax Act
  - https://laws-lois.justice.gc.ca/eng/acts/I-3.3/
- Migratory Birds Convention Act
  - https://laws-lois.justice.gc.ca/eng/acts/m-7.01/
- Motor Vehicle Transport Act
  - https://laws-lois.justice.gc.ca/eng/acts/M-12.01/index.html
- *Navigable Waters Protection Act*
  - https://laws-lois.justice.gc.ca/eng/acts/N-22/
- *Pest Control Products Act*
  - https://laws-lois.justice.gc.ca/eng/acts/p-9.01/
- Plant Protection Act
  - https://laws-lois.justice.gc.ca/eng/acts/p-14.8/
- *Species At Risk Act*
  - https://laws-lois.justice.gc.ca/eng/acts/s-15.3/
- Transportation of Dangerous Goods Act

    - https://laws-lois.justice.gc.ca/eng/acts/t-19.01/
- Wage Earner Protection Program Act
    - https://laws.justice.gc.ca/eng/acts/W-0.8/index.html
- Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act
    - https://lois-laws.justice.gc.ca/eng/acts/W-8.5/index.html
- Yukon Environmental and Socio-economic Assessment Act
    - https://laws-lois.justice.gc.ca/eng/acts/y-2.2/index.html

Provincial Regulations

Forest Act Regulations

- Administrative Boundaries Regulation
    - http://www.bclaws.ca/civix/document/id/loo98/loo98/137_2014
- Advertising Deposits, Disposition and Extensions Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/55_2006
- Allowable Annual Cut Administration Regulation
    - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/69_2009
- Allowable Annual Cut Partition Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/32_2011/search/CIVIX_DOCUMENT_ROOT_STEM:(TREE%20FARM%20LICENCE%20MANAGEMENT%20PLAN%20REGULATION)%20AND%20CIVIX_DOCUMENT_ANCESTORS:statreg?24
- Annual Rent Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/122_2003
- BC Timber Sales Business Areas Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/243_2003
- BC Timber Sales Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/14_381_2008
- BC Timber Sales Account Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/9_2014/search/CIVIX_DOCUMENT_ROOT_STEM:(TREE%20FARM%20LICENCE%20MANAGEMENT%20PLAN%20REGULATION)%20AND%20CIVIX_DOCUMENT_ANCESTORS:statreg?531
- Christmas Tree Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/15_166_2000
- Commercial Transport Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/96058_01
- Commercial Transport Regulations
    - http://www.bclaws.ca/civix/document/id/complete/statreg/30_78
- Community Tenures Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/16_352_2004
- Cut Control Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/17_578_2004
- Cutting Permit Postponement Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/284_2007
- Designated Areas Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/10_294_69
- Effective Director Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/243_94
- Employment Standards Act
    - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01
- Employment Standards Regulation
    - http://www.bclaws.ca/civix/document/id/loo97/loo97/396_95
- Environment and Land Use Act

    - http://www.bclaws.ca/civix/document/id/complete/statreg/96117_01
- Environmental Management Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/03053_04
- First Nation Tenures Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/104_2011
- Fish Protection Act
    - http://www.bclaws.ca/civix/document/id/lc/statreg/97021_01a
- Forest Accounts Receivable Interest Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/406_98
- Forest Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/96157_01
- Foresters Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/03019_01
- Forest and Range Practices Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/02069_01
- Forest Licence Regulation
    - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/203_2012
- Forest Practices Code of British Columbia Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/96159_01
- Forest Revenue Audit Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/319_2006
- Free Use Permit Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/335_99
- Heritage Conservation Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/96187_01
- Income Tax Act BC
    - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96215_01
- Innovative Forestry Practices Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/197_97
- Integrated Pest Management Act
    - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_03058_01
- Interest Rate Under Various Statutes Regulation
    - http://www.bclaws.ca/civix/document/id/lc/statreg/386_92
- Land Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/96245_01
- Land Use Objectives Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/357_2005
- Licence to Cut Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/221_2006
- Log Salvage Regulation for the Vancouver Log Salvage District
    - http://www.bclaws.ca/civix/document/id/complete/statreg/220_81
- Manufactured Forest Products Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/240_2003
- Minimum Stumpage Rate Regulation
    - http://www.bclaws.ca/civix/document/id/complete/statreg/354_87
- Occupational Health and Safety Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/296_97_00
- Park Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/96344_01
- Performance Based Harvesting Regulation
    - http://www.bclaws.ca/Recon/document/ID/freeside/175_95
- Private Managed Forest Land Act
    - http://www.bclaws.ca/civix/document/id/complete/statreg/03080_01
- Protected Areas Forest Compensation Act
    - http://www.bclaws.ca/Recon/document/ID/freeside/00_02051_01

- Reports of Injuries Regulations
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/15_713_74
- Riparian Areas Regulation
  - http://www.bclaws.ca/civix/document/id/complete/statreg/376_2004
- Scaling Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/446_94
- Special Forest Products Regulation
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/241_2003
- Surrender Regulation
  - http://www.bclaws.ca/civix/document/id/lc/statreg/181_2016
- Timber Definition Regulation
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/401_87
- Timber Harvesting Contract and Subcontract Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/22_96
- Timber Marking and Transportation Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/253_97
- Transfer Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/351_2004
- Tree Farm Licence Area-Based Allowable Annual Cut Trial Program Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/482_2004
- Tree Farm Licence Management Plan Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/280_2009
- Weed Control Act
  - http://www.bclaws.ca/civix/document/id/complete/statreg/96487_01
- Wildfire Regulation
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_38_2005
- Wildlife Act
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96488_01
- Woodlot Licence Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/68_2006
- Workers Compensation Act
  - http://www.bclaws.ca/civix/document/id/complete/statreg/96492_01

Forest and Range Practices Act Regulations

- Administrative Orders and Remedies Regulation
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_101_2005
- Administrative Review and Appeal Regulation
  - http://www.bclaws.ca/civix/document/id/lc/statreg/12_2004
- Forest Planning and Practices Regulation (“FPPR”)
  - http://www.bclaws.ca/Recon/document/ID/freeside/14_2004
- Forest Practices Board Regulation
  - http://www.bclaws.ca/civix/document/id/lc/statreg/15_2004
- Forest Recreation Regulation
  - http://www.bclaws.ca/civix/document/id/lc/statreg/16_2004
- Forest Service Road Use Regulation
  - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/70_2004
- Fort St. John Pilot Project Regulation
  - http://www.bclaws.ca/civix/document/id/lc/statreg/278_2001
- Government Actions Regulation (“GAR”)
  - http://www.bclaws.ca/civix/document/id/complete/statreg/582_2004
- Invasive Plants Regulation
  - http://www.bclaws.ca/civix/document/id/lc/statreg/18_2004
- Range Planning and Practices Regulation

- http://www.bclaws.ca/civix/document/id/lc/statreg/19_2004
- Security for Forest and Range Practices Liabilities Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/20_2004
- Woodlot Licence Planning and Practices Regulation
  - http://www.bclaws.ca/civix/document/id/complete/statreg/21_2004

Private Managed Forest Land Act Regulations

- Private Managed Forest Land Council Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/11_182_2007
- Private Managed Forest Land Regulation
  - http://www.bclaws.ca/Recon/document/ID/freeside/12_371_2004
- Private Managed Forest Land Council Matters Regulation
  - http://www.bclaws.ca/civix/document/id/complete/statreg/372_2004

Summary of Relationships Among Major Instruments

The following table summarizes the main statues and major instruments in legislation that govern forestry activities.

Table 1: Summary of Key Enhancements that Govern Forestry Activities on Crown Land in BC

Forest Act and Regulations	Forest and Range Practices Act Regulations and Standards	Wildfire Act and Regulation	Forest Practices Code of British Columbia Act[1] Regulations and Guidebooks
Major topics Addressed:			
• allowable annual cut • forest classification • forest tenures • timber marking • timber scaling • stumpage • export controls • designated areas	• operational planning • forest practices • forest resource protection	Defines responsibilities of all users of forest and range lands respecting wildfire management, including: • fire use • fire prevention • fire control operations • rehabilitation of areas on which fire control occurs	• Provincial forest and wilderness area • Forest Appeals Commission ——
Major instruments in legislation:			
Forest Tenures • Forest License (replaceable and non-replaceable, including subcategories of non-replaceable: Restricted; Supplemental) • Tree Farm License • Timber Sale License • Timber License • Pulpwood Agreement[2]	**Operational Plans** • Forest Stewardship Plan • Site Plan • Woodlot License Plan • Range Use Plan • Range Stewardship Plan		**Operational Plans** • Forest Development Plan • Site Plan • Logging Plan[3] • Silviculture Prescription[3] • Range Use Plan **Other Plans** • Road Layout and Design • Site Plan **Permits** • Special Use Permit

[1] Most of the Forest Practices Code has been repealed and replaced by the Forest and Range Practices Act (FRPA). However, during a transition period, under Part 11 of FRPA, the Code can still apply to operational planning and forest practices.

• Community Forest Agreement • Woodlot License • Free Use Permit • License to Cut (four forms: Occupant; Forestry; Master; Fibre Supply) • Christmas Tree Permit • Road Permit • First Nations Woodlands License — [2] Pulpwood agreements are no longer being issued but those in effect still apply.			— [3] Use of these documents repealed before Code repealed but those in effect still apply.

The following table summarizes the main statutes that influence or others that may affect activities in BC.

Table 2: Summary of Statutes that Influence the Management of Natural Resources in BC

Resource Use and Practices	Land Use and Practices	Self-Governing Professionals	Human Health and Safety	First Nations Treaties
• Coal Act • Creston Valley Wildlife Act • Environmental Management Act • Fish Protection Act • Forest Act • Forest and Range Practices Act • Forest Practices Code of BC Act (largely repealed) • Foresters Act • Forestry Service Providers Protection Act • Fisheries Act (federal and provincial) • Great Bear Rainforest (Forest Management) Act	• Boundary Act • Ecological Reserves Act • Environment and Land Use Act • Haida Gwaii Reconciliation Act • Land Act • Land Survey Act • Land Surveyors Act • Land Title Act • Land Title and Survey Authority Act • Motor Vehicle (All Terrain) Act • Muskwa-Kechika Management Area Act • Off-Road Vehicle Act • Park Act • Prohibited Areas of British Columbia Act	• Agrologists Act • College of Applied Biology Act • Engineers and Geoscientists Act • Foresters Act • Land Surveyors Act	• Drinking Water Protection Act • Health Act • Occupiers Liability Act • Water Sustainability Act • Water Protection Act • Workers Compensation Act	• Haida Gwaii Reconciliation Act • Maa-nulth First Nations Final Agreement Act • Nisga'a Final Agreement Act • Treaty 8 (federal) and Treaty 8 First Nations Agreements • Tsawwassen First Nation Final Agreement Act • Yale First Nation Final Agreement Act • First Nations Commercial and Industrial Development Act • Tla'amin Final Agreement Act

Resource Use and Practices	Land Use and Practices	Self-Governing Professionals	Human Health and Safety	First Nations Treaties
• Greenhouse Gas Reduction Targets Act • Haida Gwaii Reconciliation Act • Heritage Conservation Act • Industrial Roads Act • Integrated Pest Management Act • Mineral Tenure Act • Natural Resource Compliance Act • Oil and Gas Activities Act • Petroleum and Natural Gas Act • Plan Protection Act • Private Managed Forest Land Act • Range Act • Resort Timber Administration Act • Species at Risk Act (federal) • Weed Control Act • Wildfire Act • Wildlife Act				

The following table summarizes the main statutes that influence or others that may affect activities in on Private Managed Forest Lands in BC.

Table 3: Summary of Acts and regulations that govern management activities on private forest land in BC

Legislation	Link	Application	Lead Agency
Assessment Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96020_01	Value, Assessment and Taxation of Private Land	Ministry of Small Business and Revenue

Legislation	Link	Application	Lead Agency
Commercial Transport Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96058_01	Load restrictions, access	Ministry of Transportation
Environmental Management Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03053_00	Detrimental environmental impacts and emergencies	Ministry of Environment
Fisheries Act	https://laws-lois.justice.gc.ca/eng/acts/F-14/	Fish Habitat	Fisheries and Oceans Canada
Forest Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96157_00	Timber Scaling, Marking and Transportation	Ministry of Forests, Lands and Natural Resource Operations
Forest and Range Practices Act	https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/legislation-regulation/forest-range-practices-act	Uses and restrictions of Reserve land	Ministry of Forests, Lands and Natural Resource Operations
Forest Practices Code of BC Act	http://www.bclaws.ca/Recon/document/ID/freeside/00_96159_01	Regulations for Forest Fire Prevention and Suppression; Control of destructive agents; Private Land	Ministry of Forests, Lands and Natural Resource Operations
Hazardous Products Act	https://laws-lois.justice.gc.ca/eng/acts/H-3/	Sale or importation of prohibited and restricted products	Ministry of Health (Federal)
Heritage Conservation Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96187_01	Archaeological assets	Tourism, Sports and the Arts
Integrated Pest Management Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_03058_01	Pesticide Use	Ministry of Environment
Navigation Protection Act	https://laws-lois.justice.gc.ca/eng/acts/N-22/	Construction or placement of “works” on, over, under, through or across any navigable water	Transport Canada (Federal)
Occupiers Liability Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96337_01	Care towards persons entering premises	Ministry of Attorney General
Regional District Zoning	https://www2.gov.bc.ca/gov/content/governments/local-governments/planning-	Land Use	Regional Districts

Legislation	Link	Application	Lead Agency
Standards	land-use/land-use-regulation/zoning-bylaws		
Transport of Dangerous Goods Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96458_01	Handling and transportation of dangerous goods	Ministry of Transportation
Trespass Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96462_01	Posted and Enclosed Land	Ministry of Attorney General
Environmental Management Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03053_00	Spill prevention and reporting	Ministry of Environment
Water Sustainability Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96483_01	Regulations for changes in and about streams, stream channel stability.	Ministry of Environment
Wildfire Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_04031_01	Regulations for forest fire prevention and suppression; control of destructive agent	Ministry of Forests, Lands and Natural Resource Operations
Workers Compensation Act	http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96492_00	Industrial Health & Safety Regulations	Labour and Citizens' Services

List of Conventions Ratified by Canada

Multilateral Environmental Agreements and Conventions

Environmental Agreement or Convention	Date of Ratification	Status (Canada)	Convention on laws and regulations
Convention on Biological Diversity (CBD)	June 5, 1992. Entered into force on December 29, 1993. Ratified by Canada – December 2011	In force	Convention was signed by Canada November 6, 1992. In force in Canada December 29, 1993. https://www.cbd.int/ https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/biological-diversity-convention.html
Convention on International	July 1, 1975	In force	Entered into force in Canada July 9, 1975.

Environmental Agreement or Convention	Date of Ratification	Status (Canada)	Convention on laws and regulations
Trade in Endangered Species of Wild Fauna and Flora (CITES)	Ratified (Canada) - April 2010		https://www.cites.org/eng https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/convention-trade-endangered-species-summary.html
Migratory Birds Convention Act	1994	In force	Last amended December 12, 2017. http://laws-lois.justice.gc.ca/eng/acts/m-7.01/page-1.html
UNESCO's World Heritage Convention	1972 Ratified by Canada - 1976	In force (Accepted)	Canada accepted the convention on July 23, 1976 https://whc.unesco.org/en/convention/ http://whc.unesco.org/en/statesparties/CA
Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (RAMSAR)	May, 1981 Ratified by Canada - January 1981	In force	Canada currently has 37 sites designated as Wetlands of International importance. https://www.ramsar.org/wetland/canada
Venice Charter for the Conservation and Restoration of Monuments and Sites	1964		https://www.icomos.org/charters/venice_e.pdf
International Charter for Archaeological Heritage Management Charter for the Protection and Management of the Archaeological Heritage	1990		https://www.icomos.org/en/practical-information/179-articles-en-francais/ressources/charters-and-standards/160-charter-for-the-protection-and-management-of-the-archaeological-heritage
World Charter for Nature	October, 1982		Publication October 28, 1982 https://www.refworld.org/docid/3b00f22a10.html https://www.un.org/documents/ga/res/37/a37r007.htm
UNESCO's Biosphere	Launched Biosphere	In force (Current)	There are currently 18 biosphere reserves in Canada. http://www.biospherecanada.ca/

Environmental Agreement or Convention	Date of Ratification	Status (Canada)	Convention on laws and regulations
Reserves Program	Program in 1970		
International Council for Monuments and Sites (ICOMOS)	1972, Canada 1975	Current	Canada has a leadership role influencing international theory and practice. http://canada.icomos.org/
International Centre for the Study of the Preservation and Restoration of Cultural Properties (ICCROM)	Est. 1959	Current	Canada joined ICCROM on November 7, 1978 https://www.iccrom.org/
International Union for the Conservation of Nature (IUCN)	Founded 1948	Current	There are currently 24 national members listed on the IUCN website. https://cc-iucn.ca
United Nations Framework Convention on Climate Change	Est. 1992 Ratified by Canada- December 1992	In force	Canada joined in 1992, along with other nations. https://unfccc.int/
Conference of the Parties			Ratified in Canada December 4, 1992. https://www.cbd.int/cop/

•2002. Conference of the Parties–Report of the Conference of the Parties on its seventh session, 29 October to 10 November 2001. United Nations Office, Geneva, Switzerland

Conventions on the Fundamental Principles and Rights at Work of the International Labor Organization

ILO Agreement	Date of Ratification	Status	Convention on laws and regulations
ILO 29: Forced Labor Convention, 1930	June 2011	In force	According to the WTO, forced labor is against the law in Canada and there are no known cases. http://www.ilo.org/public/english/standards/relm/gb/docs/gb277/pdf/d2-elim.pdf
ILO 87: Freedom of Association and	March 1972	In force	Section 2 of the Canadian Charter of Rights and Freedoms is the section of the Constitution of Canada that enumerates what the Charter calls "fundamental freedoms". These freedoms can be taken against actions of all levels of

ILO Agreement	Date of Ratification	Status	Convention on laws and regulations
Protection of the Rights to Organize Convention, 1948			government and are enforceable by the courts. The fundamental freedoms are freedom of expression, freedom of religion, freedom of thought, freedom of belief, freedom of peaceful assembly and freedom of association.
ILO 98: Right to Organize and Collective Bargaining Convention, 1949	June 2017	In force Partially covered in Canada by the Canadian Charter of Rights and Freedoms	Section 2 of the Canadian Charter of Rights and Freedoms is the section of the Constitution of Canada that enumerates what the Charter calls "fundamental freedoms". These freedoms can be taken against actions of all levels of government and are enforceable by the courts. The fundamental freedoms are freedom of expression, freedom of religion, freedom of thought, freedom of belief, freedom of peaceful assembly and freedom of association. The application of section 2 of the Canadian Charter of Rights and Freedoms can be illustrated in 2015, when the Supreme Court of Canada ruled that the right to strike was fundamental and protected by the Constitution. (Https://www.theglobeandmail.com/news/national/top-court-upholds-canadian-workers-right-to-strike/article22717100/)
ILO 100: Equal Remuneration Convention, 1951	November 1972	In force	For federally regulated employers, equal pay is guaranteed under the Canadian Human Rights Act. (www.chrc-ccdp.ca) In Ontario, equal pay is required under Ontario's Employment Standards Act. (www.labour.gov.on.ca/french/es/) Every Canadian jurisdiction has similar legislation, although the name of the law varies.
ILO 105: Abolition of Forced Labor Convention, 1957	June 1959	In force	According to the WTO, forced labor is against the law in Canada and there are no known cases. http://www.ilo.org/public/english/standards/relm/gb/docs/gb277/pdf/d2-elim.pdf
ILO 111: Discrimination (Employment and Occupation) Convention, 1958	November 1964	In force	See the Guide to Employment Discrimination Laws in Canada. http://www.naalc.org/migrant/english/pdf/mgcanemd_en.pdf
ILO 138: Minimum Age	June 2016	In force	Each province and territory has a minimum age prescribed by law, depending on the type of work. Applicable legislation by province / territory can be found here: http://www.bestlibrary.org/ss9/files/minagee.pdf

ILO Agreement	Date of Ratification	Status	Convention on laws and regulations
Convention, 1973			
ILO 182: Worst Forms of Child Labor Convention, 1999	June 2000	In force	According to the WTO, forced labor is against the law in Canada and there are no known cases. http://www.ilo.org/public/english/standards/relm/gb/docs/gb277/pdf/d2-elim.pdf

Annex 4: List of stakeholders

The following stakeholders have been consulted in connection with the development of the Risk Assessment. All the listed stakeholders received notifications in connection with the public stakeholder consultations.

1. Economic Interests
Biomass Producers
BC Sustainable Energy Association
Canadian Bioenergy Assn
Pacific BioEnergy
Pinnacle Renewable Energy Group
Premium Pellet Ltd.
Princeton Standard Pellet Corp./ Eagle Valley Fuel Pellets
Skeena Bioenergy
Wood Pellet Association of Canada
Major Tenures
A+A Trading
Atco wood products
BC Timber Sales
C+C wood products Ltd.
Canadian forest products ltd.
Conifex Timber Inc.
Dunkley Lumber Ltd.
Gorman Group
Husby Forest products Ltd.
Interfor Corp.
Islands Timberlands
JH Huscroft
Norbord Inc.
Revelstoke Community Forest Corp.
Stuwix Resources Joint venture
West Fraser Mills Ltd.
Western Forest Products Ltd.
Other Tenures Holders
BC Cattlemen's Association - Local Chapters
BC Cattlemen's Association - Provincial

Private Managed Forest Land
Private Forest Landowners Association
Private Managed Forest Council
Woodlots/Community Forests Tenures
BC Community Forest Association
Federation of BC Woodlot Associations
Harrop-Procter Community Co-operative
2. Social interests
Recreation interests
British Columbia Chapter of Backcountry Hunters & Anglers
British Columbia Snowmobile Federation
Federation of Mountain Clubs of BC
Freshwater Fisheries Society of BC
Guide Outfitters Assn of BC
Outdoor Recreation Council of British Columbia
Sport Fishing Institute of British Columba
Trails Society of BC
Wilderness Tourism Assn of BC
3. Environmental interests
National Level ENGOs
Canada Parks and Wilderness Society (CPAWS)
Canadian Environmental Law Assn (CELA)
David Suzuki Foundation
Ducks Unlimited - British Columbia
Ecojustice
Environmental Defence Canada
Greenpeace Canada
International Boreal Conservation Campaign
Nature Canada
Pembina Institute
Raincoast Conservation Foundation
Stand Earth
World Wildlife Fund Canada
Provincial Level ENGOs
BC Environmental Network
BC Wildlife Federation
Canada Parks and Wilderness Society (CPAWS)
Sierra Club of BC

Splitrock Environmental
The Land Conservancy of BC
The Nature Trust of BC
Provincial/Regional Level ENGOs
Ecoforestry Institute Society
West Coast Environmental Law
Regional Level ENGOs
BC Coalition for Forestry Reform
Columbia Basin Trust
Nature Conservancy of Canada
4. Indigenous Peoples
Nation Level IP
?Aq'am (St. Mary's)
Ahousaht First Nation
Akisqnuk First Nation
Alexis Creek First Nation
Ashcroft Indian Band
Binche Whut’en First Nation
Blueberry River First Nations
Bonaparte Indian Band
Boothroyd Indian Band
Boston Bar First Nation
Bridge River Indian Band
Canim Lake Indian Band
Carrier Chilcotin Tribal Council (Lhtako Dene Nation (Red Bluff))
Carrier Sekani Tribal Chief
Cayoose Creek Band (Sekw'el'was)
Chawathil Band
Cheam First Nation
Cheslatta Carrier Nation
Cook's Ferry Indian Band
Da’naxda’xw Nation (Awaetlala/ Tanakteuk Indian Band)
Dehcho First Nations
Ditidaht Nation
Doig River First Nation
Dzawada’enuxw First Nation (Tsawataineuk Indian Band)
Ehattesaht First Nation
Forester Ktunaxa Nation

Fort Nelson First Nation
Gingolx Village Government (Kincolith)
Gitanmaax Band Council
Gitga'at First Nation (Hartley Bay)
Gitlaxt'aamix Village Government
gitsegukla indian band
Gitwangak Band
Gitwinksihlkw Village Government
Gitxaala Nation (Kitkatla)
glen vowell indian band (Sik-e-Dakh)
Gwa’sala-’Nakwaxda’xw Nations
Haisla Nation (Kitamaat Village)
Halalt First Nation
Halfway River First Nation
Heiltsuk Nation
Hesquiaht First Nation
High Bar First Nation
Homalco First Nation
Hupacasath First Nation
Huu-ay-at First Nations
Iskut First Nation
K’ómoks (Comox) First Nation
Ka:'yu:'k't'h'/Che:k:tles7et'h' First Nation (Kyoquot)
Kamloops Indian Band (Tk'emlúps te Secwepemc)
Kanaka Bar Indian Band
Kaska Dena Council
Katzie First Nation
Kispiox Band Council
Kitasoo/Xai'xais Band Council (Klemtu)
Kitselas First Nation
Kitsumkalum First Nation
Klahoose First Nation
Ktunaxa Nation Council
Kwadacha Nation
Kwakuitl
Kwantlen First Nation
Kwaw-kwaw-a-pilt First Nation
Kwiakah First Nations

Kwikwasut’inuxw Haxwa’mis First Nation
Kwikwetlem First Nation
Lake Babine Nation
Lake Cowichan First Nation (`Ts'uubaa-asatx)
Laxgalts'ap Village Government
Laxkw'alaams Indian Band
Leq'a:mel First Nation (Lakahahmen)
Lheidli-T'enneh First Nation
Lhoosk'uz Dene Nation
Lil'wat First Nation
Lillooet Tribal Council
Little Shuswap Lake Indian Band
Lower Kootenay Indian Band (Yaqan nu?kiy)
Lower Nicola Indian Band
Lower Similkameen Indian Band
Lower Stl'atl'imx Tribal Council
Lyackson First Nation
Lytton First Nation
Malahat First Nation
Mamalilikulla First Nation
Matsqui First Nation
McLeod Lake Indian Band
Metlakatla First Nation
Mowachaht/Muchalaht First Nation
Musqmagw Dzawada'enuxw
N'Quatqua Band (Anderson Lake)
Nadleh Whut'en Band (Fraser Lake)
Nak'azdli Band
Namgis
Namgis First Nation
Nanoose First Nation (Snaw-Naw-As)
Nanwakolas Council
Nazko First Nation
Nicomen Indian Band
Nisga'a Nation
Nlaka'pamux Tribal Council (Oregon Jack Creek Band)
Nooaitch Indian Band
Northern Shuswap Tribal Council

Nuchatlaht First Nation
nuu-chah-nulth
Okanagan Indian Band
Okanagan Nation Alliance (ONA)
Old Masset Village Council
Osoyoos Indian Band
Pacheedaht First Nation
Pauquachin First Nation
Penelakut Indian Band
Penticton Indian Band
Peters Band
Prophet River Band (Denetsaa Tse K'Nai)
Qayqayt (New Westminster Indian Band)
Qualicum First Nation
Quatsino First Nation
Saik'uz First Nation
Samahquam First Nation
Saulteau First Nation
Scia’new First Nation (Becher Bay)
Seabird Island Indian Band
Sechelt First Nation (shíshálh Nation)
Semiahmoo First Nation
Shackan First Nation
Shuswap Band
Shuswap Tribal Council (Splatsin, Spallumcheen)
Shxw'ow'hamel First Nation
Simpcw (North Thompson River Indian Band)
Siska Indian Band
Skatin First Nations
Skeetchestn Indian Band (Deadman's Creek)
Skidegate Band Council
Skowkale First Nation
Skuppah Indian Band
Skwah First Nation
Skway First Nation (Shxwhá:y)
Snuneymuxw Nation
Soda Creek Indian Band (Xat'sull)
Songhees First Nation

Soowahlie Indian Band
Spuzzum First Nation
Sq'ewá:lxw (Skawahlook First Nation)
Squamish Nations Chief
Squiala First Nation
Stellat'en First Nation
Sts’ailes Nation (Chehalis Indian Band)
Stswecem'c Xgat'tem First Nation (Canoe Creek Indian Band)
Stz'uminus First Nation (Chemainus)
Sumas First Nation
T'it'q'et First Nation
T'Sou-ke Nation (Sooke)
Tahltan Band Council
Takla Nation
Taku River Tlingit First Nation (Atlin First Nation)
Tl'azt'en Nation
Tl'etinqox Government Office (Anaham)
Tla-o-qui-aht First Nation (Clayoquot)
Tla'amin (Sliammon First Nation)
Tlatlasikwala First Nation
Tlowitsis Nation
Toquaht First Nation
Treaty 8 Tribal Association
Ts'kw'aylaxw First Nation
Ts’elxwéyeqw Tribe Society (Ch-ihl-kway-uhk First Nations)
Tsal'alh (Seton Lake Band)
Tsartlip First Nation
Tsawout First Nation
Tsawwassen First Nation
Tsay Keh Dene
Tseycum First Nation
Tŝilhqot'in National Government
Tsleil-waututh Nation Chief
Tzeachten First Nation
Uchucklesaht Tribe
Ucluelet First Nation
Ulkatcho First Nation
Upper Nicola Band

Upper Similkameen Indian Band
We Wai Kai Nation
Wei Wai Kum First Nation
West Moberly First Nation
Westbank First Nation
Wet'suwet'en (Hagwilget, Skin Tyee)
Whispering Pines / Clinton Indian Band
Williams Lake Indian Band
Witset First Nation (formerly known as Moricetown)
Wuikinuxv (Oweekeno Nation)
XA'XTSA
Xaxli'p First Nation (Fountain)
Xeni Gwet'in First Nation (Nemaiah Band)
Xwísten (Bridge River Indian Band
Yale First Nation
Yekooche First Nation
Yunesit'in Nation (Stone Indian Band)
National Level IP
Assembly of First Nations
British Columbia Aboriginal Lands Managers Association
Canadian Council for Aboriginal Business
Canadian Métis Council
Centre for Indigenous Environmental Resources (CIER)
Congress of Aboriginal Peoples
Council for the Advancement of Native Development Officers
First Nations Alliance 4 Land Management
First Nations Technology Council
Indigenous and Northern Affairs Canada
Metis National Council
National Aboriginal Forestry Association
National Aboriginal Lands Managers Association
National Centre for Truth and Reconciliation
Native Women's Association of Canada
Reconciliation Canada
The Centre for First Nations Governance
Provincial Level IP
BC Assembly of First Nations
BC First Nations Forestry Council

First Nations Summit of BC
Metis Nation BC
Union of BC Indian Chiefs
5. Local Communities
City of Armstrong
Armstrong Spallumcheen Chamber of Commerce
City of Fort St John
Fort St John Chamber of Commerce
City of Prince George
Prince George Chamber of Commerce
City of Terrace
Terrace Chamber of Commerce
City of Williams Lake
Williams Lake and District Chamber of Commerce
District of Houston
Houston Chamber
Lavington
Greater Vernon Chamber of Commerce
Meadowbank
Quesnel and District Chamber of Commerce
MLA's
Boundary Similkameen
Cariboo North
Cariboo-Chilcotin
Nechako Lakes
Peace River North
Peace River South
Prince George Mackenzie
Prince George Valemount
Shuswap
Skeena
Stikine
Vernon-Monashee
MP's
Cariboo Prince George
Central Okanagan-Similkameen
North Okanagan
Prince George-Peace River Northern Rockies

Skeena-Buckley Valley
Municipalities
City of Armstrong
City of Fort St John
City of Prince George
City of Terrace
City of Williams Lake
District of Houston
District of Vanderhoof
Town of Princeton
Town of Smithers
Village of Burns Lake
Village of Chetwynd
Other
UBCM
RD EA Directors
Cariboo RD
RD North Okanagan
Regional Districts
Cariboo RD
Peace River RD
RD Buckley-Nechako
RD Fraser Fort George
RD Kitimat-Stikine
RD North Okanagan
RD Okanagan-Similkameen
Town of Smithers
Smithers District Chambers of Commerce
Vanderhoof
Vanderhoof Chamber of Commerce
Village of Burns Lake
Burns Lake and District Chamber of Commerce
Village of Chetwynd
Chetwynd Chamber of Commerce
6. Certification Bodies
CU
KPMG
NEPCon

PWC
SAI
SCS
6. Forestry certification schemes
CSA SFM User Group
FSC Canada
SFI
7. National & Provincial Forest Agencies
National Level
Canadian Council of Forest Ministers
Canadian Forestry Service (CFS)
CITES Canada/ Environment Canada
NRCAN
Parks Canada
Provincial Level
BC Forest Practices Board
Clean Energy BC Rep
FLNRORD - Silviculture Prince George
FLNRORD - CCIPB
FLNRORD - Compliance & Enforcement
FLNRORD - Cone & Seed Services
FLNRORD - Fish Habitat
FLNRORD - Resource Planning and Assessment Branch
FLNRORD - Resource Practices Branch
FLNRORD - Scaling and Cursing Section
FLNRORD - Water Management Branch
FLRNRORD - Climate Change & Integrated Planning
FLRNRORD - Cumulative Effects & Integrated Monitoring
FLRNRORD - First Nations Relations
FLRNRORD - Forest Sciences
FLRNRORD - Kamloops Forest Sciences
FLRNRORD - Kootenay Boundary
FLRNRORD - Resource Stewardship - Fish Habitat Section
FLRNRORD - Resource Stewardship - Habitat Section
FLRNRORD - Resource Stewardship - Wildlife Management
MECC - Conservation Policy - Species at Risk
MECC - Conservation Science Section
MECC - Env Standards Branch - Clean Air

WorkSafeBC
8. Associations
Forest Association
ABCFP
BC Forest Safety Council
BC Labour Relations Board
Canadian Institute of Forestry
Canadian Woodlands Forum
Council of Forest Industries
FESBC
Forest Products Association of Canada
Worker Associations
Public and Private Workers of Canada
United Steel Workers – Canadian National Office
United Steel Workers - BC
Western Forest Contractors Association
9. Research institutions and universities
Dean
Dept Head
Pacific Forestry Centre
Past Head
UBC
UBC Faculty of Forestry
10. Experts
Other Environmental Interests
BC Conservation Data Center
Land Forest People Consulting Ltd.
Sangan Environmental Services

Annex 5: Stakeholder consultation report

The report contains an overview of stakeholder consultation process and a summary of outcomes of stakeholder consultation process for Sustainable Biomass Program (SBP) risk assessment for British Columbia, Canada.

Table 1. Stakeholders involved in SBP risk assessment stakeholder consultation process

Stakeholder Type	Stakeholders Notified # of individuals (# of institutions represented)	Stakeholders consulted directly or provided input (#)
Biomass Producers	10 (7)	1
Major Tenures Holder	19 (17)	
Other Tenure Holders – Ranchers	2 (2)	
Private Managed Forest Land	3 (2)	1
Woodlots/Community Forest Tenures	3 (3)	
Experts	4 (4)	
Recreation Interests	9 (9)	
National Level NGOs	12 (12)	
Provincial Level NGOs	7 (7)	
Provincial/Regional Level NGOs	5 (5)	
Indigenous People – Nation Level	165 (165)	1
Indigenous People – National Level Organizations	21 (17)	
Indigenous People – Provincial Level Organizations	7 (5)	
Local Communities	53	February Survey
MLA's	12 (12)	February Survey
MPs	5 (5)	February Survey
Certification Bodies	6 (6)	
Forestry Certification Schemes	3 (3)	
National Level Forest Agency	6 (5)	
Provincial Level Forest Agency	46 (5)	2
Associations	14 (12)	1
Research Institutions & University	7 (3)	
Unknown Category (received notification via WPAC newsletter)	15 (15)	

Stakeholder Consultation Process

The following organisations (stakeholders and experts) were consulted in connection with the above-mentioned consultation processes:

Organisations	Verbal comments provided to WB	Written Comments submitted to WB
Gov't Staff	-	Yes – captured in comment details
Forest Association	-	Yes – captured in comment details
Private Forest Landowners Association	Yes – captured in comment details	-
Gov't Staff	Yes – captured in comment details	Yes – captured in comment details
Indian Band	-	UNDRIP
Biomass Producer	Yes – captured in comment details	Yes – captured in comment details
Local Community Elected Official Survey – February (68 individuals received the survey – 18 responses)	-	Yes – previously captured in draft RRA-BC

Summary of Stakeholder Comments and WB's Response and Evaluation

An overview of the stakeholder comments and WB's evaluation and response is provided below. The table provides an overview of issues of general and clarification character while the sections below the table gives more in depth description of stakeholder comments and WB's evaluation and response for the criteria with significant stakeholder comments and diverting evaluations of risk levels.

General stakeholder comments	WB's response
There are 24 Forest Districts and 36 Timber Supply areas in the province.	Originally the Supply Base Area did not include the coastal forest TSA or TFLs, hence the supply base was smaller. The RRA geographic scope was expanded to the province of BC. After receiving this comment, the WB reviewed the FLNRORD website listing. WB corrected this and all applicable indicators with 34 TFLs and 37 TSA as indicated on the website.
Obtaining biomass from the forest is a high cost option for BC manufacturing facilities. There is a breakeven threshold associated with most solid wood biomass operations which precludes extensive utilization of biomass without funding assistance. The ability of the Forest Industry to utilize biomass is mostly restricted to some areas of primary timber harvest where concurrent enhanced utilization can occur or to some areas	Stakeholder received acknowledgement of receipt of the comment. Many of the comments provide are relevant to the current tenure and harvesting logistics in BC. Some of the comments were used in to provide context in appropriate Indicators. However, the WB did not feel the comments are directly related to any indicator and therefore is outside the scope.

General stakeholder comments	WB's response
post harvest where forest residuals that would otherwise be piled up and burnt, can be utilized. The ability to pay is very limited. The economic reach for hog fuel is variable but can only feasibly reach out between 0 and 2 hour cycle time for hauling it before it's uneconomic. The opportunity to increase utilization concurrent with harvesting requires following the BC Ministry authorizations and stumpage policies. Concurrent Harvest Residual Fibre stumpage is potentially a good tool to use but currently the ratios are out and cost primary licensees disproportionately as compared to normal waste and residue policy. There is a very limited amount of residual fibre that can be made available economically across the Province any given year. Any fibre that is utilized provides incremental employment, potentially creates increases in fibre availability and thereby supports a portion of the manufacturing needs. This enables Industry to continue and support local communities, pay taxes etc. Keep in mind forest residuals is the upper end of what can be purchased and still viably run a secondary manufacturing business. Primary fibre sources are the sawmills. If you wish to map out the extent to which biomass can be recovered from the forest, use generally accepted cycle time distances from facilities to determine you map "economic reach" - This will tell you approximately where the biomass will come from. Much of the biomass left behind after primary harvest is not usable by secondary users - this is reflected by what can be safely hauled and by the limitation of where trucks can access the fibre. Very little fibre from dispersed cut block settings will ultimately make it to roadside to potentially be recovered, therefore there is limited risk to soil long term productivity. If the primary harvest plan and implementation meets the certification metrics, it is very easy to conclude that any residual fibre utilized would as well.	No changes were made to RRA-BC as a result of this stakeholder comment.
Suggested that WB should have broken out Class 9 land (Agricultural) since a lot of it is forested and there is considerable conversion of the forest to ag land on it.	The WB discussed with the stakeholder, but it was decided that this land class too small to identify as a sub-scope when completing a provincial level RRA. This is more appropriate for an SBE.
Had many questions regarding how the SBP assessment process works and who ensures that mitigation measures are appropriate and are applied appropriately. Had a question about how someone could meet the SBP standard if they were not FSC certified and what standards would	The WB explained the process to the stakeholder. Many of the comments provide are concerning process of the RRA and implementation. However, the WB did not feel the comments are directly related to any indicator and therefore is

General stakeholder comments	WB's response
be applied to the identification of HCVs under SBP.	outside the scope. No changes were made to RRA-BC as a result of this stakeholder comment.
In a follow up phone call with WB, the stakeholder made some suggestions regarding maps shading and more importantly, expressed concern at how some of the maps might be interpreted by biomass producers and assessors, and used in BP protocols. For example, there are more intact forest landscapes (under 50,000 ha) on Vancouver Island and these are not shown in global forest watch's maps, and most of Vancouver island is shown as having marbled murrelet habitat whereas only portions of the area shown on the map are actually habitat areas.	Map products will be revised, and text edited /added to place them in context. NOTE: maps did not drive the risk designation, they were produced to provide visual interpretation.
This appears to be a comprehensive review of the legislation, regulation and policy existing in BC that pertain to sourcing fibre for biomass pellets.	Acknowledgement and receipt of the comment.
Suggest that a review of the BC Biodiversity Guidebook be included, as it sets out the guidelines for retention of old growth forest, which serves as a proxy for biodiversity retention in BC. There is also a sizable gap in BC legislation as there is little legal protection for non-forested ecosystems across BC, despite their contribution to biodiversity, and the important habitat values they provide for wildlife that use both forested and non-forested habitat values.	The WB had a follow-up conversation with Stakeholder and additional information was discussed and provided to the WB. Comments appreciated and helpful. Evidence provided to provide more clarity in the findings. The WB reviewed the recommendations provided by the stakeholder and updated the Indicator 2.2.4 on biodiversity including information on Old Growth. These changes are reflected in the current version.
	Indicators 1.6.1 & 2.5.1 address Indigenous Rights and Title, as well as Use. UNDRIP has been enacted in BC Legislation, implementation is still a 'work-in-progress'.
As a Governing body trying to deal with the daily information and constantly changing situation in regards to the COVID-19 pandemic I find it frustrating that the 30 day consultation period occurred during this world wide health emergency. Our minds are on protecting our people and should not have to worry about whether or not we will miss a consultation deadline due to addressing emergency situations. This is not adequate consultation.	Acknowledgement and receipt of the comment.
There is no indicator for Indigenous Rights and Title discussion. There should be evaluation on the risk around what Indigenous Rights and uses there are in areas that fibre is sourced for wood pellets. An assessment of how the applicant is addressing the UNDRIP in their operations should be required. As this is supposed to be globally applicable this must be addressed. The intent of	Indicator 1.6.1 was written to acknowledge Indigenous Rights and Title. Indicator 2.5.1 addresses Indigenous Rights and Uses. Indicator 1.6.1 acknowledges UNDRIP and the *Declaration on the Rights of Indigenous Peoples Act* passed by the Provincial Government. At this time, the WB acknowledges that the *Act* establishes a

General stakeholder comments	WB's response
these certification systems is to offer customers assurance that the wood has been ethically sourced and is a result of sustainable forest management practices. This must be globally addressed to be effective."	framework and it is not clear how forestry legislation will be revised to reflect UNDRIP.

Significant stakeholder comments and diverting evaluations of risk levels

General Comments	
Stakeholder Comment	**Working Body Response**
• British Columbia's Biomass Producers (BP) operate, for the majority, as secondary fibre users utilizing residual material from primary harvesting/ manufacturing operations, carried out by major licence holders. Sources consist of utilization of post-harvest logging slash and residue. The current capacity of BC's 14 BPs is 2,568,800 metric tonnes/year, with an estimated feedstock volume of 6,760,000 m³/year at 380kg/m3 (Source: hyperlink provided) • BPs use roughly 10% of the provincial harvest volume, as wood waste from conventional harvesting. Forest Act tenures such as Fibre Supply Licence to Cut (FSLTC) and Fibre Forestry Licence to Cut (FFLTC) are directed at wood residue and debris, suitable for use by pulp and paper mills that use chips for pulp production, oriented strand-board mills, pellet plants and others. • BPs, as secondary producers, have a limited ability to impact initial planning and harvest operations on the harvest area, and therefore, are unable to provide any meaningful direction or protection of High Conservation values (HCV), biodiversity, or other indicators, identified as 'specified risk'.	While it is acknowledged that most fibre used by BPs is either mill residual, bush grind, or low value pulpwood, and that BP's rarely if ever drive the harvest, under the SBP Certification requirements, BPs are required to know where and under what conditions they are sourcing fibre, and have the appropriate controls in place. SBP STD2 requires Origin (stump) to be known and the risk evaluated. The RRA completes this evaluation at the provincial scale. The WB followed up with the stakeholder to confirm the quantification and proportion of '10% provincial harvest volume' as primary, secondary feedstock (fibre) to Biomass Producers. The stakeholder did not have access to the 'actual' figures during the conversation, but it was confirmed that the first two comments were to provide 'context' to the third comment that Biomass Producers have limited ability to impact planning and harvest operations. See the WB Indicator-specific responses below.
• Private land holdings not registered with the Private Managed Forest Land (PMFL) Program are minimal to insignificant in relation to the contribution of feedstock to Biomass Producers. Private forest land (both PMFL and private land outside the PMFL) is noted as being approximately 4% of the landbase. However, only 22% of this land is forested and potentially contributing to a BP feed stock; with 33% being agriculture, and the remaining in other industrial and private dwellings.	Following SBP Standards and RRA Procedures (Clause 3.2.4), the WB divided the supply base area into three sub-scopes (ownership-type) to address homogenous areas of risk. These sub-scopes allow for differing and applicable jurisdictional requirements to be evaluated, as well as to remove the comparison of scale between the differing sub-scope. 'Other

	General Comments	
	Source: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/crown_land_indicators__statistics_report.pdf (2010)	Private Land' sub-scope is evaluated on its own merit and legislative framework. NOTE: scale, intensity and risk can be further evaluated at the local scale under the Due Diligence System and locally available documented evidence. It has been confirmed that in certain regions of the province, feedstock to Biomass Producers from 'other private land' could be substantial for a short or long term. Indicator 2.3.1 state that approximately 2.3 – 1.8 million m3 of timber originates from other private land (2017/18 and 2018/19, respectively).
	• As noted in the RRA all private landowners, regardless of property class are subject to the Water Sustainability Act, Drinking Water Protection Act, Environmental Management Act, Wildlife Act, Assessment Act, Wildfire Act and federal acts such as the Fisheries Act, Migratory Birds Convention Act and Species At Risk Act.	The WB thanks the stakeholder for providing this listing of Provincial and Federal legislation. The WB will confirm the appropriate legislation is referenced within the appropriate Indicator (i.e. Indicator 2.2.6 – Water Quality → Water Sustainability Act, Drinking Water Protection Act). If Legislation is missing, the WB will update the applicable Indicator. (See Indicator 2.2.2 and 2.2.6)
	• Regardless of any potential gaps in land use or planning requirements, based on their limited forested land holdings, private land outside of the PMFL is insignificant in relation to the management of landscape level and biodiversity values at a provincial level (scale of the RRA). Creating additional requirements for the minimal fibre produced from these areas only serves to create administrative burden for Biomass Producers, with negligible impact or value to the "specified risk" elements.	The WB acknowledges that it may be valid that 'other private land' sub-scope is small/insignificant in comparison to Crown land and PMFL sub-scopes, and that due to this size it may not impact landscape level and/or biodiversity values at a provincial scale. However, as discussed above (2 rows above), the WB has evaluated 'other private land' as a separate sub-scope. This discussion is provided in more detail as it applies to specific Indicators below, vs with the 'general comment'.
	• Although legal planning requirements/ assessment of impacts maybe lacking on private forest land these holdings represent a significant personal asset/ investment. These forest assets are managed by the owner to maintain or increase the value of the land holding. As private forest lands the productivity of the forest land is the inherent value and impacts that diminish this value/ limit financial return will be avoided. Applicable to indicator soil quality (2.2.2), long-term productivity (2.3.1), forest resilience (2.4.1) and carbon sink capacity (2.9.2)	The WB agrees with this logic as it applies to Private Managed Forest Land (PMFL) as the trees on this landbase are an asset and management is a requirement of being in the PMFL Program. While other private landowners (not in the PMFL Program) may manage their trees/forest so as to maintain or increase the value of the asset, many do not because they have other plans for the land, want to make money from the sale of the trees, do not know how to manage properly or do not

General Comments	
	wish to spend any money on the management of their trees. Further, there are cases where treed land (vs forested i.e. merchantable timber) may have more value without trees. This discussion is provided in more detail as it applies to specific Indicators below. The WB response in relation to Local Government Bylaws is further discussed in Indicator 2.1.2 – HCV3 and Indicator 2.2.1 – Planning.
WB Conclusion and Resulting Changes to RRA-BC	
WB conclusions and changes to RRA are discussed below in the applicable Indicators, however the WB will ensure that the RRA Introduction, Methodology and Forestry context sections provide clarity relative to the response provide above.	

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments General – HCV	
Preliminary Risk Rating		
	See specific HCV Categories below.	
	Stakeholder Comment	**Working Body Response**
	• Disagree with RRA risk rating of Specified. Based on information below, the rating for this indication is recommend to be Low Risk.	-
	• Blanket adoption of FSC HCV Indicators 1-6 is not recommended. While it may seem easy to follow FSC's established process, the framework is very complicated, in some cases arbitrary and politicized. Many of the HCV elements are already captured by other indicators (e.g., 2.2.4 – Biodiversity is protected; 2.2.6 – water protection; 2.4.1 – ecosystem services).	The term 'HCV' has not been introduced by the WB following the FSC National Forest Stewardship Standard (NFSS) or the Controlled Wood National Risk Assessment (NRA). Although HCV is a term that was coined by FSC, it is now used more widely and is usually interpreted to have the six categories in the HCV definition. The SBP Standard 1 requires HCV identification and mapping (Indicator 2.1.1), as well as the assessment of threats due to forest management, and measures to protect high conservation values (Indicator 2.1.2). The WB agrees with the stakeholder comments that some HCV elements maybe captured in other indicators. The WB attempted to distinguish between 'similar'
	• Globally, the FSC HCV process has bogged their entire scheme down amid the confusion related to HCV requirements and FSC Controlled Wood. FSC has been working since approximately 2011 to standardize their process related to HCVs and have alienated their Certificate Holders, especially those in North America.	

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments General – HCV	
	• Locally, the Canadian National Risk Assessment related to HCVs has been highly politicized, and to date has not been widely adopted, due to the significant uncertainty related to HCVs, especially Intact Forest Landscapes, Caribou management, and forest conversion.	values as provide in the 'context' section of each indicator. The attempt by the WB was to avoid redundance and avoid 'double counting'. The WB determination of risk followed the same consistent logic for HCV1-6: legislation in place, mechanism for consistent implementation, and evidentiary information to show conformance (thereby mitigating the threat). The FSC Canada NRA process dictated the 'control measures' for specified risk, whereas the SBP RRA process allows the BP to identify the appropriate mitigation measure.
	• In a very real sense, it would seem the FSC HCV indicators are set up such that forest areas will always be classified as Significant Risk for one indicator, or another.	
	• All of the above has the very real potential to collapse the FSC scheme within Canada, with the potential to in turn affect Certificate Holders in the US, due to the linkages in supply chains. WPAC would be well advised to avoid blindly following the FSC methodology related to HCV. • Instead, regionally focussed indicators should be adopted and implemented, to provide an independent approach from FSC and provide a more meaningful outcome. Different indicators to consider using: • Presence of Provincially Red-Listed Species, Plants or Ecosystems and associated critical habitat. Review against initiatives in place to manage the listing; are they adequate? • Adequate management of Old-Growth (OG) Forest, as required under Provincial legislation (OG Management Areas established/ respected; OG area targets met (for a-spatial scenarios)). Areas identified/ mapped and requirements met? • Are Community Interface Forests mapped and managed? Interface Forest management has been identified as being critical to control wildfire damage and with increased drought and heat spells during	The WB followed the SBP RRA guidance (https://hcvnetwork.org) for definitions as it was not seen as credible or consistent internationally for the WB to develop HCV categories. The indicators suggested by the Stakeholder are already included within the RRA (2.1.2-HCV1, 2.1.2-HCV3, 2.2.3, 2.2.4, 2.4.1, 2.2.2) and the WB feel are sufficiently addressed. The questions posed by the stakeholder comments are about sufficiency and related similar to the logic (described above) as to how the WB determined risk.

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments General – HCV	
	summers, this issue will become more critical. • Presence of Terrain Class IV or V. Mapping and proper management of these Terrain Classes will assist with erosion control, visual impacts, soil productivity, water quality, fish habitat, and riparian function.	
WB Conclusion and Resulting Changes to RRA-BC		
	See specific HCV Categories below.	
Final Risk Rating		
	See specific HCV Categories below.	

	Indicator		
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.		
	Comments – HCV1: Biodiversity Values		
Preliminary Risk Rating			
	Uncertified Crown Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Private Managed Forest Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
Threat Due to Forest Management			
	Habitat Loss & Fragmentation		
Rationale for Specified Risk			
	Caribou Recovery Plans to address the threats identified above have not been developed &/or implemented provincially and therefore the implementation and/or monitoring/conformance data was not readily available.		
	Stakeholder Comment		**Working Body Response**
	• Disagree with the finding of 'Specified Risk' designation for Biomass Producers (BP) across all scales.		-
	• Although we agree that there are potential gaps in biodiversity management in BC, significant steps are being made by both government and industry to improve management.		The WB agrees that the BC government and industry are working to address gaps in forest management, including biodiversity, as evident by changes to FRPA

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV1: Biodiversity Values	
		legislation and other significant Provincial initiatives. The RRA assesses based on current management not on 'work-in-progress'. Requirement for changes in legislation and/or a process is indicative of a need for improvement and as required by the RRA Procedure precautionary approach was applied. Information provided by stakeholder comment is not 'specific' to Caribou and/or threats due to forest management. (Also discussed in IND 2.1.2-HCV3 & IND 2.2.4).
	• We are of the opinion that BP have a limited role in implementing significant/ meaningful change at the regional level (provincially).	The WB acknowledges that Biomass Producers (BP) in BC typically are not forest managers and that they procure fibre either from sawmills or from suppliers who are the licence holders are responsible for forest management and in this case, threats due to forest management specific to Caribou. This is a 'sourcing' risk assessment and requires the BP to implement a due diligence system. The BP is required to know the where and under what conditions their fibre is being sourced so they can implement mitigation measures to provide assurance that they meet the SBP standard. BP has choice to source/not source based on DDS. (Similar discussion IND 2.1.2 – HCV3 – RTE).
	• The RRA misses the acknowledgement of the Federal power authorized under SARA. Noting that for any part of critical	The WB acknowledges the Federal power under SARA

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV1: Biodiversity Values	
	habitat located on non-federal lands, if the competent minister forms the opinion that any portion of critical habitat is not protected by provisions in or measures under SARA or other Acts of Parliament, or the laws of the province or territory, SARA (s.61(4)) requires that the Minister recommend that the Governor in Council make an Order to prohibit destruction of critical habitat. The discretion to protect critical habitat on non-federal lands that is not otherwise protected rests with the Governor in Council. Orders covering species in BC includes Northeast Pacific Northern and Southern Resident Populations of The Killer Whale (Orcinus Orca), the Nooksack Dace (Rhinichthys cataractae ssp.) and various populations of White Sturgeon (Acipenser transmontanus). Therefore, for all remaining species Provincial law applies and are sufficient to protect critical habitat for all Federally list species at this time. It should be noted that numerous Federal Recovery strategies reference and use as base information material and expert opinion generated by BC Species at Risk Recovery Teams (example: federal recovery strategy for the Oregon Spotted Frog in Canada).	as provided by the stakeholder comment was not included in the Indicator Finding. Further interviews with a Caribou expert advised that the Provincial and Federal Government are currently working on an approach so as to ensure the Federal Government does not need to invoke an Order for Caribou (Section 11 & Recovery Plans). This work is a 'work-in-progress' that will result in changes to current legislation and/or policy, and ultimately forest management planning and practices. The RRA assesses based on current management not on 'work-in-progress'. Following SBP Standards and RRA Procedures, the WB has defaulted to 'precautionary approach' for this HCV1 category for Indicator 2.1.2.
	• Global Forest Watch Biodiversity layers (referenced as verifiable/ credible source for Intact Forest Landscapes): − Global Biodiversity Intactness (impacts of forest change on local biodiversity intactness) – BC Ranks from moderate to high − Global Biodiversity Significance (relative importance of the aggregate contribution to the distribution of forest-dependent species of mammals, birds, amphibians, and conifers) - BC Ranks low − Alliance for Zero Extinction Sites (critical sites for conservation that contain endangered species with limited ranges and populations found nowhere else on the planet) – a single site is noted on Vancouver Island and is represents habitat of the Vancouver Island Marmot − Biodiversity Hotspots (Conservation International's biodiversity hotspots—defined regions around the world where	Global Forest Watch (GFW) mapping at a national level was used for Indicator 2.1.2 – HCV2. The other GFW information was not utilized in the RRA as the RRA was completed at the provincial level vs the national level. Provincial level data and reports provide more accurate information at the appropriate scale. The WB clarifies that the 'specified risk' for this indicator is with regards to the management of threat (i.e. habitat loss and fragmentation) to Caribou

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV1: Biodiversity Values	
	biodiversity conservation is most urgent because of high levels of endemism and human threat) – none are noted in BC − Given the above rating for Biodiversity management in BC Global Forest Watch, Biodiversity the risk can be inferred as low.	and Caribou habitat. Although the GFW information is considered credible, it is not considered relevant for this indicator. No evidentiary information has been provided in relationship to Indicator 2.1.2 – HCV1 – Caribou.
	• No mention of the BC's Identified Wildlife Management Strategy (IWMS) that is an effective set of Best Management Strategies employed throughout BC. Although legally applicable to established UWRs or WHAs they are used and referenced by resource professionals throughout the province. The IWMS provides direction, policy, procedures and guidelines for managing Identified Wildlife. The goals of the Strategy are to minimize the effects of forest and range practices on Identified Wildlife situated on Crown land and to maintain their limiting habitats throughout their current ranges and, where appropriate, their historic ranges. (BMPs for all licensee).	The WB acknowledges that IWMS was not described within Indicator 2.1.1 – HCV Identification and Mapping, or cross referenced in this Indicator 2.1.2 – HCV1 – Caribou. The WB will update the Indicator finding to describe the IWMS and other measures in place. The Identified Wildlife Management Strategy dates from 2004 and provides guidelines and BMPs for managing identified wildlife, as well as giving the Ministry of the Environment the capability of identifying wildlife habitat areas. As such, this contributes to the patchwork of conservation measures for wildlife and biodiversity. The RRA notes in the assessment of IND 2.1.2 that a 2013 BC Auditor General report identified significant issues with BC's management of biodiversity, as did the Forest Practices Board (FPB). Thus, the IWMS is part of the existing framework that was assessed as being insufficient to adequate conserve Indicator 2.1.2 – HCV1.
	• Forest Management in BC Is carried out by members of the Association of BC Forest Professionals (ABCFP). With more than 5,300 members, including Registered Professional	The WB acknowledges the stakeholder comment that BC has a strong professional

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV1: Biodiversity Values	
	Foresters (RPF) and Registered Forest Technologists (RFT) the ABCFP we represent the largest group of forestry professionals in Canada. The Association of BC Forest Professionals is responsible for registering and regulating British Columbia's professional foresters and forest technologists and holds exclusive rights to title and practice. Registered members through the Code of Ethics are responsible to advocate and practice good stewardship of forest land based on sound ecological principles to sustain its ability to provide those value that have been assigned by society. This includes the management of Biodiversity values.	association. The WB also acknowledges the profession is currently undergoing a change in governance. Specific to this Indicator, the WB determined the risk designation for HCV1 (Caribou) is based in large part on the existence of gaps in BCs regulatory framework as it concerns SAR. Professional reliance requires that legislation be followed, it does not address the central deficiency that led to the specified risk assessment. Information provided by stakeholder comment is not 'specific' to Caribou and/or threats due to forest management.
	• To date the Forest and Range Practices Act (FRPA) nor the government or court rulings have defined "unduly" so in considering the dictionary definitions of "unduly", such as "excessive", "disproportionate", and "unwarranted", assessing the test under section 2(1)(b) of the GAR order and the current 1% impact on timber supply to date has not significantly limited species at risk protection.	The WB interprets the stakeholder comment to be saying that '*there has been no legal finding that the provision that conservation measures not unduly restrict timber supply has limited the province's ability to manage and conserve wildlife*". This "restriction" was not a factor in the WB assessment of the risk and so the comment does not impact or change the assessment or risk designation. During a follow-up discussion with the stakeholder it was stated that *'the existence of test does not impact species and therefore low risk.'* Further the stakeholder could not confirm the provincial impact. It was suggested that the 1% impact was probably applicable for the TSA that

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV1: Biodiversity Values	
		the test was applied too, and this number would vary by TSA. This level of information is not readily available, and this exercise would be beyond the scope of the WB.
	• In addition to the above, the Province recognizes that there are gaps in provincial protection of species at risk on private land. Protection of species at risk is a shared responsibility and requires a stewardship approach to their management. Recent initiatives and an example of shared stewardship is the Species and Ecosystems at Risk (SEAR) Local Government Working Group which works to enhance species at risk protection on local government and private lands. Significant effort across numerous municipalities has focused on education and management if Species at Risk management of private lands. Link: https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/local-government-working-group	The WB appreciates the stakeholder comment and the addition of information on the SEAR Working Group. The WB reviewed the website but it could not be verified that this initiative is provincially implemented and/or enforced. The WB determined it is a good initiative that could prove helpful for local level mitigation of habitat loss. The RRA assesses based on current practices not on 'work-in-progress' initiatives. The RRA Procedure precautionary approach was applied. (Similar discussion in IND 2.1.2-HCV3 & IND 2.2.4).
WB Conclusion and Resulting Changes to RRA-BC		
	Many of the comments provided were not specific to "Caribou" which is the specified risk for this Indicator. The stakeholder comments provided relevant/additional information on legislation and mechanism for implementation. No documented evidence of implementation conformance, specific to addressing habitat loss and/or fragmentation for Caribou, that could be applied provincially was made available. Current initiatives, specific to Caribou and Caribou habitat, are underway and deployed in some areas of the province, but this is still 'work-in-progress' and the implementation could not be applied to provincially. The WB will update the Indicator findings: - Add Federal Power & role - Add IWMS - Add SEAR Working Group The WB has determined there is no change to the rationale for the risk designations for all three sub-scopes.	

	Indicator		
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.		
	Comments – HCV1: Biodiversity Values		
Final Risk Rating			
	Uncertified Crown Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Private Managed Forest Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

	Indicator		
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.		
	Comments – HCV2: Large landscape-level forests		
Preliminary Risk Rating			
	Uncertified Crown Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Private Managed Forest Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
Threat Due to Forest Management			
	Habitat Loss & Fragmentation		
Rationale for Specified Risk			
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.		

Stakeholder Comment	**Working Body Response**
• Disagree with the finding of 'Specified Risk' designation for Biomass Producers (BP) across all scales. Based on information below, the rating for this indication is recommend to be Low Risk.	-
• Intact Forest Landscapes (IFLs) is a Non-Governmental Organization (NGO) construct, is not endorsed by Federal or Provincial governments and is in conflict with crown land tenure obligations (where IFLs overlap forest tenures). In many instances IFLs are in conflict with tenure holder obligations, putting Biomass Producers in an unsolvable situation. • IFLs are a clear example of where FSC is trying to act as a regulator, rather than a 3rd party voluntary certification scheme. The concept of IFLs essentially designates IFL polygons as no-go zones, or parks, which is a land-owner (i.e., Crown) decision, not a certification scheme decision.	Third Party Certification requirements are 'defined by the customer' &/or the Certification Scheme organization. Many certification schemes have requirements over and above current legislation. SBP Standard 1 requires the identification, mapping and management of IFLs following the guidance of the HCV categories (As discussed above Section – General Comments – HCV).

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV2: Large landscape-level forests	
		RRA-BC does not identify IFLs as "no-go zones" but as 'specified risk' due to the identified threats (i.e. loss of habitat & fragmentation) that need to be managed. The BPs DDS would need to verify appropriate sourcing. The WB did not provide 'thresholds' as the WB does not set mitigation measures.
	• Recent research is questioning the value of relying solely on management of IFLs as mapped by NGOs. "Management options incorporating local knowledge of conservation needs and the specifics of ecosystem function and composition are more likely to be effective in conservation than rigid IFL requirements. A standardized approach is useful for global tracking of IFLs but it is not the best approach to meet more regional forest conservation goals. Intact forest landscapes have exceptional value but should be managed in the context of integrated land use planning that includes protected areas, sustainable forest management, species at risk management, and ecosystem restoration." Source: A Review of the Intact Forest Landscape Concept in the Canadian boreal forest: Its History, Value and Measurement: https://tspace.library.utoronto.ca/bitstream/1807/90772/1/er-2018-0041.pdf • In light of the above comment designating all ownerships as a specified risk because IFLs are not provincially recognized/ legislated does not inherently mean the biological and social value (existence value etc.) associated with IFL's are not being managed for via other initiatives and programs.	SBP Requirements to the HCV categories, include HCV2 – Large Landscape. The value of IFLs is intactness of a large area and there are no other policies that provide for this. Currently protected areas, including those to maintain specific values (i.e. OGMA, MAMUs, WHA, etc.) may be small and/or fragmented across the landscape. Utilizing the concept of IFLs is one approach to protecting intact forest ecosystems and their associate dynamics. The WB agrees that incorporating local knowledge of conservation needs, as well as consideration of ecosystem functions is important and required to properly identify IFLs of exceptional value at a local level. An exercise of this complexity is beyond the scope of this risk assessment. Further the WB acknowledges that the scale and approach to IFL mapping provided by Global Forest Watch (GFW) may have limitations, especially at the local scale, and possibly at the provincial scale. An IFL mapping exercise is beyond the scope of the RRA, therefore the WB defaulted to currently available information for the definition, defining and mapping

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV2: Large landscape-level forests	
		of IFLs. Local information to support more accurate mapping and/or conservation needs to address local biological and social requirements maybe completed within a supply base evaluation or as a consortium by industry. Currently there are a number of forest managers that have/or are in the process of evaluating their forest management and the impact to locally applicable IFLs.
	• Within the mapped IFLs by Global Forest Watch there are insignificant private land holdings. As such, for these land classes it should be acknowledge as 'low risk'.	As discussed directly above, the WB acknowledges the limitations due to scale of the GFW IFLs maps. Based on the issue of scale of both IFL mapping and provincial data for other private land, the WB did not distinguish other private land that was in or out of IFLs. As provided in the WB response of other Indicators, as well as the "General Comments" (beginning of this document), a separate sub-scope for 'other private land' is based on jurisdiction/ownership/legislation and therefore size relative to the provincial scale is not relevant. The WB acknowledges that IFLs mapped at a Provincial or regional scale and that considers ecological integrity and anthropologic impacts would be more appropriate. This mapping is outside the scope of the RRA.
WB Conclusion and Resulting Changes to RRA-BC		
	The primary reasons that this indicator is a specified risk for all sub-scopes is - due to insufficient legislation and/or Best Management Practices to address habitat loss and fragmentation	

	Indicator		
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.		
	Comments – HCV2: Large landscape-level forests		
	- as well as implementation and/or monitoring/conformance data not being readily available. No documented evidence of IFL impact assessment, planning or implementation conformance, specific to addressing habitat loss and/or fragmentation for IFLs, that could be applied provincially was made available. The WB will update the Indicator findings: - Provide clarity on scale of mapping IFLs from GFW The WB has determined there is no change to the rationale for the risk designations for all three sub-scopes.		
	Final Risk Rating		
	Uncertified Crown Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Private Managed Forest Land	☐ **Low Risk**	☒ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

	Indicator		
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.		
	Comments – HCV3: Rare, threatened or endangered ecosystems		
	Preliminary Risk Rating		
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
	Threat Due to Forest Management		
	Habitat Loss		
	Rationale for Specified Risk		
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.		
	Stakeholder Comment	**Working Body Response**	
	• Agree with rating for low risk on Crown land and PMFL. • Disagree with rating of Specified Risk on Private Lands. Based on information below, the rating for this indication is recommend to be Low Risk.	-	
	• Although we agree that there are potential gaps in RTE management in BC, significant steps are being made by	The WB agrees that the BC government and industry are working to address gaps in	

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV3: Rare, threatened or endangered ecosystems	
	both government at the federal and provincial level and industry to improve management.	forest management, including RTE, as evident by changes to FRPA legislation and other Federal, Provincial and Local Government initiatives. The RRA assesses based on current management not on 'work-in-progress'. Requirement for changes in legislation and/or a process is indicative of a need for improvement and as required by the RRA Procedure precautionary approach was applied. Information provided by stakeholder comment is not 'specific' to RTE and/or threats due to forest management. In addition, 'specified' risk for this indicator is only applicable to 'other private land' and no applicable evidentiary information was provided. (Also discussed in IND 2.1.2-HCV3 & IND 2.2.4).
	• We are of the opinion that BP have limited role in implementing significant change regarding RTE at the regional level.	The WB acknowledges that Biomass Producers (BP) in BC typically are not forest managers but that they procure fibre either from sawmills or from suppliers who are the licence holders are responsible for forest management and in this case, threats due to forest management specific to RTE on Other Private Land. This is a 'sourcing' risk assessment and requires the BP to implement a due diligence system. The BP is required to know the where and under what conditions their fibre is being sourced so they can implement mitigation measures to provide assurance that they meet the SBP standard. BP has choice to source/not source based on DDS. (Similar

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV3: Rare, threatened or endangered ecosystems	
		discussion IND 2.1.2 – HCV1 – Caribou).
	• Rare and Endangered ecosystem management is generally based on retaining the mature seral/ climax stage variant of the ecosystem. Private land holdings are small in size and have limited impact on affecting the status of RTE at the regional level. Additionally, private land holdings have limited old growth attributes required to protect RTE's. As such, private land holdings have limited impact to RTE ecosystems one way or the other.	The WB acknowledges that RTE ecosystems may be classified based on the 'mature seral/climax' variant of the ecosystem. Regardless, RTE ecosystems can be defined and mapped at the site, stand and landscape level, where applicable. When RTE are at the site or stand level, 'other private land' does have the ability to impact RTE, regardless of size. The WB response to 'small size' and separate sub-scope of other private land is discussed in the "General Comments" at the beginning of this document. Old Growth stands are not the focus of this Indicator, please refer to Indicator 2.2.4 for a response to Old Growth.
	• The Province recognizes that there are gaps in provincial protection of species at risk on private land. Protection of species at risk is a shared responsibility and requires a stewardship approach to their management. An example of shared stewardship is the Species and Ecosystems at Risk (SEAR) Local Government Working Group which works to enhance species at risk protection on local government and private lands. Significant effort across numerous municipalities has focused on education and management if Species at Risk management of private lands. Link: https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/local-government-working-group	The WB appreciates the stakeholder comment and the addition of information on SEAR Working Group. The WB reviewed and it could not be verified that this initiative is provincially implemented and/or enforced. The WB determined it is a good initiative that could prove helpful for local level mitigation of habitat loss. The RRA assesses based on current practices not on 'work-in-progress' initiatives. The RRA Procedure precautionary approach was applied. (Similar discussion in IND 2.1.2-HCV1 & IND 2.2.4).
	• Although bylaws are mentioned as providing partial protection for RTE numerous Regional District level bylaws require development permits or timber harvesting or a tree cutting permit and can require a bio-physical assessment prepared by a qualified professional biologist that must include "inventories of the existing environmentally	As discussed below in Indicator 2.2.1, the WB further investigated Local Government Bylaws (Regional Districts and Municipalities), considering Bylaw presence,

	Indicator	
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.	
	Comments – HCV3: Rare, threatened or endangered ecosystems	
	sensitive features and natural features including rare and threatened plant communities, endangered species and identified critical habitats". Source: Rural Comox Valley Official Community Plan 2014 Bylaw No. 337 – Schedule 'A' Section 80 & Abbotsford Tree Protection Bylaw 2010 (hyperlink provide in original submission)	implementation, monitoring and any data verifying conformance relative to the identified threat for this indicator. The Local Government Act provides the authority for the local government to develop Bylaws. Based on discussions with an expert, it was determined that Bylaws are varied in existence, application and monitoring between local governments and across the province. Enforcement and corrective actions are often 'complaints' driven. In the examples provided by the Stakeholder, Municipal tree cutting by-laws could contribute to mitigation of risk level in some cases but there is not easily accessible, consistent information available across province to confirm implementation and/or monitoring / conformance. As a result, at the Regional Risk Assessment level, low risk could not be verified across all applicable municipalities and/or Regional Districts.
WB Conclusion and Resulting Changes to RRA-BC		
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address habitat loss, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially. The WB will update the Indicator findings: - Update the SEAR initiative - Update the Rationale for Risk Designation as it is not clear as to why this sub-scope is specified risk	

	Indicator		
2.1.2	Identify and address potential threats to forests and other areas with high conservation values from forest management.		
	Comments – HCV3: Rare, threatened or endangered ecosystems		
	The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.		
Final Risk Rating			
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

	Indicator	
2.2.1	Feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.	
Preliminary Risk Rating		
	Uncertified Crown Land ☒ **Low Risk** ☐ **Specified**	
	Uncertified Private Managed Forest Land ☒ **Low Risk** ☐ **Specified**	
	Uncertified Other Private Land ☐ **Low Risk** ☒ **Specified**	
Threat Due to Forest Management		
	Negative outcomes as a result of lack of impact assessment, planning &/or monitoring	
Rationale for Specified Risk		
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.	
	Stakeholder Comment	**Working Body Response**
	• Agree with rating for low risk on Crown land and PMFL. • Disagree with rating of Specified Risk on Private Lands. Based on information below, the rating for this indication is recommend to be Low Risk.	-
	• Consider indicator low-risk, as privately owned land is still subject to planning and regulatory oversight, at the federal, provincial, and municipal/ regional level. Applicable legislation includes the Water Sustainability Act, Drinking Water Protection Act, Environmental Management Act, Wildlife Act, Wildfire Act, and federal Fisheries Act, Migratory	As previously stated in the "General Comments" at the beginning of this document and under Indicator 2.2.6, the WB thanks the stakeholder for providing this listing. The WB will confirm the appropriate legislation is referenced within the appropriate Indicator (i.e. Indicator 2.2.6 – Water Quality → Water Sustainability Act, Drinking Water Protection Act). If Legislation is missing, the WB will update the applicable Indicator.

	Indicator	
2.2.1	Feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.	
	Birds Convention Act, and Species at Risk Act.	
	• Numerous Regional District level bylaws require development permits for timber harvesting or a tree cutting permit and can require a bio-physical assessment prepared by a qualified professional biologist that must include "inventories of the existing environment ally sensitive features and natural features including rare and threatened plant communities, endangered species and identified critical habitats". Source: Rural Comox Valley Official Community Plan 2014 Bylaw No. 337 – Schedule 'A' Section 80 & Abbotsford Tree Protection Bylaw 2010 (hyperlink provide in original submission)	As discussed above under Indicator 2.1.2-HCV3, the WB further investigated Local Government Bylaws (Regional Districts and Municipalities), considering Bylaw presence, implementation, monitoring and any data verifying conformance relative to the identified threat for this indicator. The Local Government Act provides the authority for the local government to develop Bylaws. Based on discussions with an expert, it was determined that Bylaws are varied in existence, application and monitoring between local governments and across the province. Enforcement and corrective actions are often 'complaints' driven. In the examples provided by the Stakeholder, Municipal tree cutting by-laws could contribute to mitigation of risk level in some cases but there is not easily accessible, consistent information available across province to confirm implementation and/or monitoring/conformance. As a result, at the Regional Risk Assessment level low risk could not be verified across all applicable municipalities and/or Regional Districts.
WB Conclusion and Resulting Changes to RRA-BC		
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially. The WB will update the Indicator findings: - Confirm and update appropriate Legislation - Update information on Bylaws The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.	
Final Risk Rating		
	Uncertified Crown Land	☒ **Low Risk** ☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk** ☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk** ☒ **Specified**

	Indicator		
2.2.2	Feedstock is sourced from forests where management maintains or improves soil quality.		
	Preliminary Risk Rating		
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
	Threat Due to Forest Management		
	Erosion, sedimentation, compaction, landslides, downstream impacts (if impacts water)		
	Rationale for Specified Risk		
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.		
	Stakeholder Comment	**Working Body Response**	
	• Agree with rating for low risk on Crown land and PMFL. • Disagree with rating of Specified Risk on Private Lands. Based on information below, the rating for this indication is recommend to be Low Risk.	-	
	• If indicator 2.1.3 (Conversion to plantations or non-forest land) is deemed as low risk (across all scales), it can be inferred that soil productivity on private land holding is maintained and capable of regenerating a productive forest stand.	Low risk for conversion does not necessarily mean that soil productivity is being maintained. Threats associated with conversion (i.e. deforestation, GHG, reduced biodiversity) are substantially different then the threats associated with soil (i.e. Erosion, sedimentation, compaction, landslides, downstream impacts). Conversion of a stand does not mean risks of threats to soils are avoided. Primary concerns from Local Government was downstream impact to water as a result of impacts to soils. ***NOTE: Indicator 2.1.3 – Conversion for Other Private Land. See revision to the finding and the risk designation.***	
	WB Conclusion and Resulting Changes to RRA-BC		
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially.		

	Indicator		
2.2.2	Feedstock is sourced from forests where management maintains or improves soil quality.		
	The WB will update the Indicator findings: - Update information on Bylaws The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.		
Final Risk Rating			
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

	Indicator		
2.2.3	Key ecosystems and habitats are conserved or set aside in their natural state.		
Preliminary Risk Rating			
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
Threat Due to Forest Management			
	Fragmentation, loss or degradation of key ecological attributes for ecosystems &/or habitats		
Rationale for Specified Risk			
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.		
	Stakeholder Comment	**Working Body Response**	
	• Agree with rating for low risk on Crown land and PMFL. • Disagree with significant risk for private land. Based on information below, the rating for this indication is recommend to be Low Risk.	-	
	• Private land holdings are small in size, and have limited impact on affecting the status of key ecosystems and habitats at the regional level of the RRA. Consider the private land areas below a de minimus threshold.	The WB response to 'small size' and separate sub-scope of other private land is discussed in the "General Comments" at the beginning of this document. As discussed above in Indicator 2.1.2 – HCV3, many key ecosystems and habitats are stand or locally specific and 'other private land' does have the ability to impact these, regardless of size of the private land.	

	Indicator
2.2.3	Key ecosystems and habitats are conserved or set aside in their natural state.
WB Conclusion and Resulting Changes to RRA-BC	
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially. The WB will update the Indicator findings: - Update information on Bylaws The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.
Final Risk Rating	
	Uncertified Crown Land ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

	Indicator
2.2.4	Biodiversity is protected.
Preliminary Risk Rating	
	Uncertified Crown Land ☐ **Low Risk** ☒ **Specified** **Uncertified Private Managed Forest Land** ☐ **Low Risk** ☒ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**
Threat Due to Forest Management	
	Habitat loss & fragmentation
Rationale for Specified Risk	
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.
Stakeholder Comments / Working Body Response	
	Stakeholder Comment / **Working Body Response**
	• Disagree with the finding of 'Specified Risk' designation for Biomass Producers (BP) across all scales. Based on information below, the rating / -

	Indicator	
2.2.4	Biodiversity is protected.	
	for this indication is recommend to be Low Risk.	
	• Biodiversity is protected at both the federal and provincial levels. As noted in the current PEFC Chain of Custody (CoC) Standard (2002:2020), Canada is considered a low-risk related to managing ecologically important forest areas. Source: PEFC CoC Standard, pg. 27, Table 2, indicator d) Environmental Performance Index (EPI).	The EPI gauges how a country is doing at the national scale: "…*these indicators provide a gauge at the national scale of how close countries are to established environmental policy targets*.' The PEFC Chain of Custody Risk Assessment is a different approach and less detailed then SBP RRA. The RRA is assess at the provincial scale that evaluates appropriate legislation, implementation as well as conformance supported by evidentiary information. This indicator evaluates provincial Landscape Level and Stand level biodiversity. Details provided in the finding have rationalized that Old Growth is 'specified risk' due to the gaps and shortcomings of maintenance/conservation. *NOTE: PEFC Controlled Source fibre is equivalent to SBP Controlled. A BP is required to meet the requirements in the RRA in order to have SBP-Compliant material.*
	• As part of national evaluations, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has assessed 278 species at risk of extinction within BC (extirpated, endangered, threatened, or special concern); 214 of these are legally listed under the federal Species At Risk Act (SARA, 2002). In 2017, the Province of BC published 14 new Recovery Plans. There are now management, recovery or action plans for over 220 B.C. Species at Risk.	The stakeholder comments provide quantifiable information on SAR; however, this Indicator is specific to biodiversity being protected, not individual species and species habitats. SAR information would support Indicator 2.1.2 – HCV1, but it should be noted that only Caribou was identified as a specified risk under SARA. No evidence is provided to discuss Old Growth which is the 'specified risk'.
	• As noted in several other portions of the RRA (See 2.2.3) key ecosystems and habitats are conserved via an extensive network of Protected Areas with at least 7% of the forests in every biogeoclimatic zone, with as much as 20% protected in five zones. Given that 2.2.3 (Key ecosystems and habitats) can be deemed as low risk based on this criteria, it follows that Biodiversity Protection should be low risk.	The RRA identified key ecosystem and habitats in two indicators: 2.2.3 and 2.1.2-HCV3. The WB agrees that key ecosystems and habitats could be conserved within protected areas but that publicly available reports indicate that Protected Areas may not be sufficient to conserve biodiversity provincially. This was further supported by the BC Auditor General report cited and described in the Indicator Finding. No evidence is provided to discuss Old Growth which is the 'specified risk'.
	• The RRA notes that OGMAs are variable and inconsistent across the landscape. Although OGMA requirements are applied variably within BC (i.e. some OGMAs are Draft	The RRA has stated that for Old Growth legislation is in place and various mechanisms of implementation are applied provincially. Further, the requirements are

	Indicator	
2.2.4	Biodiversity is protected.	
	and others are not spatially fixed) the OGMA targets/ requirements, including the Non-spatial Old-Growth Order are mandatory requirements for Crown land licence holders.	mandatory for Crown Land licence holders, but not for PMFL or other private land sub-scopes. Upon receipt of the stakeholder comments and a follow-up discussion with the stakeholder, the WB completed further research in attempt to find locally specific documented evidence to support this Indicator. The WB completed a subsequent, but limited, review of TSA-level Integrated Silviculture Strategy (FLNRORD initiative). As an example, one ISS stated that "*old growth targets in XX TSA is a constraint… OG targets impacts are locally significant, although over the TSA the XX OGO has small impact*". ISS reports may provide documented evidence at the TSA-level, however, a provincial review cannot be completed at this time because there is a limited number of ISS completed. For this reason, the WB determined it was not efficient to complete that review as it would not complete the provincial review; this information would be beneficial at a local/TSA-level. As stated in the RRA, recent reports specific to Old Growth on Crown land have been produced by various agencies and authors (i.e. BC Auditor General, FPB, ENGO). These reports quantify and qualify the effectiveness and sufficiency of legislation and implementation; concluding variability across the province. All can agree this is a very complex topic. Discussion include but are not limited to use of 'age' for classification; consideration of old growth structure and complexity; lack of Old Growth in productive classes; lack of old growth structure in OGMA; etc. This level of research/analysis is beyond the scope of the RRA. The WB had follow-up discussions with FLNRORD staff that are involved with Old Growth Strategic Review. Further context was provided but the person agreed with the finding as documented in the RRA. As provided by the WB responses for other Indicator (IND 2.1.2-HCV1 & IND 2.1.2-HCV3), the BC government and industry are working to address gaps in forest management. Specific to this Indicator changes to Old Growth Management, as evident by changes to FRPA legislation and the Provincial Old Growth Strategic Review. The RRA assesses based on current management not on 'work-in-progress'. Requirement for changes in legislation and/or a strategic review process is indicative of a need for revision and as required by the RRA Procedure precautionary approach was applied.

	Indicator
2.2.4	Biodiversity is protected.
WB Conclusion and Resulting Changes to RRA-BC	
	Some of the comments provided by the stakeholder comments were not specific to "Old Growth" which is the specified risk for this Indicator. No documented evidence of implementation conformance, specific to addressing habitat loss and/or fragmentation for Old Growth, that could be applied provincially was made available, beyond those already captured in the RRA. The recommendations from the Old Growth Strategic Review is anticipated in early winter 2020. Following that, it is anticipated the Provincial Government will provide the next steps to address the recommendations. Based on this summation, the WB stands by the primary reasons that this indicator is a specified risk for all three sub-scope: - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. The WB will review the current finding and possible update for clarity. The WB has determined there is no change to the rationale for the risk designations for all three sub-scopes.
Final Risk Rating	
	Uncertified Crown Land ☐ **Low Risk** ☒ **Specified** **Uncertified Private Managed Forest Land** ☐ **Low Risk** ☒ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

	Indicator
2.2.6	Negative impacts on ground water, surface water, and water downstream from forest management are minimised.
Preliminary Risk Rating	
	Uncertified Crown Land ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**
Threat Due to Forest Management	
	Degraded quality, Loss riparian function&/or habitat, downstream impacts
Rationale for Specified Risk	
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.

	Stakeholder Comment	**Working Body Response**
	• Agree with rating for low risk on Crown land and PMFL. • Disagree with significant risk for private land. Based on information below, the	-

	Indicator	
2.2.6	Negative impacts on ground water, surface water, and water downstream from forest management are minimised.	
	rating for this indication is recommend to be Low Risk.	
	• No mention of the authority of the federal department of fisheries and oceans (DFO) and the requirements to prevent the introduction of deleterious substances (includes silt) into fish bearing waters in the section regarding rationale for risk designation. Although it maybe limited in nature, DFO also carries out monitoring on private land holdings and legislation is in place.	The WB acknowledges the addition of information from the stakeholder on DFO authority and responsibility for enforcement. Following up this information, the WB completed a quick review but did not result in readily available monitoring/enforcement evidentiary data. Interview will local government expert suggested that the Regional District would bring DFO onsite if an event was reported. Indications are that inspections are complaints driven, vs a risked based monitoring system.
	• Private land holdings are small in size, and have limited impact on affecting peak flows and are found to be low risk for Subsistence-based drinking water.	The WB response to 'small size' and rationale for a separate sub-scope for 'other private land' is discussed in the "General Comments" at the beginning of this document. The WB agrees that harvesting on small parcels of land may have little to no effect on peak flow in relatively flat terrain, but it may still impact downstream water quality. In addition, on steeper terrain or areas above consumptive water systems, harvesting regardless of size, may have a negative impact. Further, interviewed Local Government official's primary concerns were downstream affects to water quality and quantity as a result of impacts of harvesting.
	• Consider indicator low-risk, as privately owned land is still subject to planning and regulatory oversight, at the federal, provincial, and municipal/ regional level. Applicable legislation includes the Water Sustainability Act, Drinking Water Protection Act, Environmental Management Act, and federal Fisheries Act.	As previously stated in the "General Comments" at the beginning of this document and under Indicator 2.2.1, the WB thanks the stakeholder for providing this listing. The WB will confirm the appropriate legislation is referenced within the appropriate Indicator (i.e. Indicator 2.2.6 – Water Quality → Water Sustainability Act, Drinking Water Protection Act). If Legislation is missing, the WB will update the applicable Indicator.
WB Conclusion and Resulting Changes to RRA-BC		
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially.	

	Indicator
2.2.6	Negative impacts on ground water, surface water, and water downstream from forest management are minimised.
	The WB will update the Indicator findings: - Update information on DFO authority and role in monitoring - Confirm/update applicable legislation - Update information on Bylaws The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.
Final Risk Rating	
	Uncertified Crown Land ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**

	Indicator
2.3.1	Analysis shows that feedstock harvesting does not exceed the long-term production capacity of the forest, avoids significant negative impacts on forest productivity and ensures long-term economic viability. Harvest levels are justified by inventory and growth data.
Preliminary Risk Rating	
	Uncertified Crown Land ☒ **Low Risk** ☐ **Specified** **Uncertified Private Managed Forest Land** ☒ **Low Risk** ☐ **Specified** **Uncertified Other Private Land** ☐ **Low Risk** ☒ **Specified**
Threat Due to Forest Management	
	Forest sustainability, soil productivity, GHG
Rationale for Specified Risk	
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.

Stakeholder Comment	**Working Body Response**
• Agree with rating for low risk on Crown land and PMFL. • Disagree with significant risk for private land. Based on information below, the rating for this indication is recommend to be Low Risk.	-
• If indicator 2.1.3 (Conversion to plantations or non-forest land) is deemed as low risk it can be inferred that long term productivity on private land holding is maintained and capable of regenerating a productive forest stand.	Threats associated with conversion (i.e. deforestation, GHG, reduced biodiversity) are substantially different then the threats associated with long-term productivity (i.e. forest productivity, soil productivity, GHG). Conversion does not occur at the geographical or timelines

	Indicator		
2.3.1	Analysis shows that feedstock harvesting does not exceed the long-term production capacity of the forest, avoids significant negative impacts on forest productivity and ensures long-term economic viability. Harvest levels are justified by inventory and growth data.		
		scales as long-term productivity. Low risk for conversion does not mean that long-term productivity is being maintained. The WB acknowledges that other private lands most likely are not managing their lands for long-term economic viability or maintaining a sustainable forest. NOTE: scale, intensity and risk can be further evaluated at the local scale under the Due Diligence System and locally available documented evidence. ***NOTE: Indicator 2.1.3 – Conversion for Other Private Land. See revision to the finding and the risk designation.***	
WB Conclusion and Resulting Changes to RRA-BC			
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially. The WB will update the Indicator findings: - Update information on Bylaws - Identify that local/supply base evaluation for scale, intensity, risk would be applicable The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.		
Final Risk Rating			
	Uncertified Crown Land	**☒ Low Risk**	**☐ Specified**
	Uncertified Private Managed Forest Land	**☒ Low Risk**	**☐ Specified**
	Uncertified Other Private Land	**☐ Low Risk**	**☒ Specified**

	Indicator		
2.4.1	The health, vitality and other services provided by forest ecosystems are maintained or improved.		
Preliminary Risk Rating			
	Uncertified Crown Land	**☒ Low Risk**	**☐ Specified**

	Indicator		
2.4.1	The health, vitality and other services provided by forest ecosystems are maintained or improved.		
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
Threat Due to Forest Management			
	Impedes, alters or disrupts ecological functions leading to degradation &/or irreversible loss/damage		
Rationale for Specified Risk			
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.		

	Stakeholder Comment	**Working Body Response**
	• Agree with rating for low risk on Crown land and PMFL. • Disagree with significant risk for uncertified private land. Based on information below, the rating for this indication is recommend to be Low Risk.	-
	• See general comments above. → • Although legal planning requirements/ assessment of impacts maybe lacking on private forest land these holdings represent a significant personal asset/ investment. These forest assets are managed by the owner to maintain or increase the value of the land holding. As private forest lands the productivity of the forest land is the inherent value and impacts that diminish this value/ limit financial return will be avoided. Applicable to indicator soil quality (2.2.2), long-term productivity (2.3.1), forest resilience (2.4.1) and carbon sink capacity (2.9.2) • Follow-up call June 25 – clarification provided by stakeholder • This seems appropriate as the RRA identified the threat as "Management that reduces the resilience of forests or impedes, alters or disrupts ecological functions makes forests more susceptible to degradation and irreversible losses or damage." • It is based on the Economic Theory of the individual and is a simple argument but is reasonable given the scale of the land base of the ownership. A private landholder is unlikely to truly affect a "forest ecosystem's	As stated above in the General Comments, the WB agrees with this logic as it applies to Private Managed Forest Land (PMFL) as the trees on the landbase are an asset and management is a requirement, as well as the purpose, of being in the PMFL Program. This point was further discussed with the stakeholder in a follow-up discussion. While some owners in the 'other private land' sub-scope manage their trees/forest so as to maintain or increase the value of the land, many do not because they have other plans for the land, want to make money from the sale of the trees, do not know how to manage properly or do not wish to spend any money on the management of their trees. Further, there are cases where treed (vs forested i.e. merchantable timber) land may have more value without trees. Specific to Indicator 2.4.1 – Health & Vitality, the WB agrees that many landowners may want to maintain the value of their land. There is no evidence to validate 'intent' by 'other private land' sub-scope to maintain or improve the health and/or vitality of forest ecosystems. When evaluated, this Indicator considered other 'related' indicators (see IND2.4.1 – content section) that could be surrogate of 'health & vitality', many of those that require 'long-term

	Indicator		
2.4.1	The health, vitality and other services provided by forest ecosystems are maintained or improved.		
	ability to withstand change. Suggested indicators include the level of disturbance, changes in biodiversity, and /or the presence or absence of key indicator species." Think of the size related to disturbance ecology and grizzle bear ranges….. • It should be noted that Private Managed Forest Land is low risk when the Act and all related regulations are silent in regard to Ecosystems and/or Resilience. There is a single section related to Regeneration within the Private Forest Management Council Regulation.	management' of the forests. Again, no evidence was provided or is available to demonstrate wide-scale management of forest ecosystems by 'other private land'. Follow-up discussions with the stakeholder suggested that "*other private land is too small to impact the degradation of landscape level ecosystem*." Forest health infestations and/or fuel loading can start and/or spread from site or stand level, where size is not the main factor. Confirming healthy and vital stands is beyond the scope of the WB mapping/analysis and not appropriate to a provincial level assessment. The WB response in relation to Local Government Bylaws is further discussed in Indicator 2.1.2 – HCV3 and Indicator 2.2.1 – Planning.
	WB Conclusion and Resulting Changes to RRA-BC		
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially. The WB will update the Indicator findings: - Update information on Bylaws - Identify that local/supply base evaluation for scale, intensity, risk would be applicable The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.		
	Final Risk Rating		
	Uncertified Crown Land	**☒ Low Risk**	**☐ Specified**
	Uncertified Private Managed Forest Land	**☒ Low Risk**	**☐ Specified**
	Uncertified Other Private Land	**☐ Low Risk**	**☒ Specified**

	Indicator		
2.9.2	Analysis demonstrates that feedstock harvesting does not diminish the capability of the forest to act as an effective sink or store of carbon over the long term.		
	Preliminary Risk Rating		
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**
	Threat Due to Forest Management		
	Forest sustainability, soil productivity, GHG		
	Rationale for Specified Risk		
	Insufficient legislation and/or Best Management Practices, as well as implementation and/or monitoring/conformance data not being readily available.		

Stakeholder Comment	**Working Body Response**
• Agree with rating for low risk on Crown land and PMFL. • Disagree with significant risk for private land. Based on information below, the rating for this indication is recommend to be Low Risk.	-
• If indicator 2.1.3 (Conversion to plantations or non-forest land) is deemed as low risk it can be inferred that Carbon sink capacity on private land holding is maintained and capable of regenerating a productive forest stand.	Threats associated with conversion (i.e. deforestation, GHG, reduced biodiversity) are substantially different then the threats associated with carbon sink capacity (i.e. forest productivity, soil productivity, GHG). The WB used long-term productivity (Indicator 2.9.2) as a surrogate for carbon sink capacity. Conversion does not occur at the geographical or timelines scales as long-term productivity. Low risk for conversion does not mean that long-term productivity is being maintained. The WB acknowledges that other private lands most likely are not managing their lands for long-term sustainably managed forest. NOTE: scale, intensity and risk can be further evaluated at the local scale under the Due Diligence System and locally available documented evidence. ***NOTE: Indicator 2.1.3 – Conversion for Other Private Land. See revision to the finding and the risk designation.***
• Given the size of forested private land holding and consistent with the rationale in the RRA, biomass harvesting by pellet producers has little impact on the overall	The WB response to 'small size' and rationale for a separate sub-scope for 'other private land' is discussed in the "General Comments" at the beginning of this document.

	Indicator		
2.9.2	Analysis demonstrates that feedstock harvesting does not diminish the capability of the forest to act as an effective sink or store of carbon over the long term.		
	carbon balance associated with BC forests.		
WB Conclusion and Resulting Changes to RRA-BC			
	The primary reasons that this indicator is a specified risk for 'other private land' sub-scope is - due to insufficient legislation and/or Best Management Practices to address identified threats, - as well as implementation and/or monitoring/conformance data not being readily available. Local Government Bylaws are the regulatory framework for 'other private land'. Provincially, Bylaws vary in existence, application and monitoring/conformance and therefore not readily verifiable provincially. The WB will update the Indicator findings: - Update information on Bylaws - Identify that local/supply base evaluation for scale, intensity, risk would be applicable The WB has determined there is no change to the rationale for the risk designation for 'other private land' sub-scope.		
Final Risk Rating			
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

	Indicator		
2.1.3	Feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.		
Preliminary Risk Rating			
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☒ **Low Risk**	☐ **Specified**
Threat Due to Forest Management			
	Deforestation, GHG, reduction of biodiversity		
Rationale for Specified Risk			
	n/a		
	Stakeholder Comment	**Working Body Response**	
	n/a	-	

	Indicator		
2.1.3	Feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.		
WB Conclusion and Resulting Changes to RRA-BC			
	The Stakeholder provided comments that rationalized the change of risk from 'specified' to 'low' for Indicators 2.2.2, 2.3.1, & 2.9.2 (Soil Quality, Long-term Productivity, Carbon Sink, respectively) because Indicator 2.1.3 (Conversion) was 'low' risk. Stakeholder comments indicated all four indicators were interconnected. (See WB response in applicable Indicators.) During the evaluation of the Stakeholder's inter-connected rationale, the WB has determined the original WB logic for Indicator 2.1.3 – Conversion was faulty. In BC, low value/quality fibre is often left onsite and/or roadside and often burned in slash piles (due to Legislative requirements). On private land, specifically on treed lands being converted for agricultural purpose, the downed fibre is often left to decompose or burned. Both these actions result in increased GHG emission, as well as poor utilization of a resource. The WB's original logic for this Indicator was it is better to utilize the fibre vs burning or left to decompose, hence rationalized a 'low risk' designation. While considering the stakeholders comments, the WB determined that conversion to non-forest lands is more likely to occur on 'other private land' (for reason described in the revised finding). There is no legislation restricting conversion, or Best Management Practices at the local level, or data on conversion to non-forest lands nor readily available conformance data. Based on this, the risk designation for 'other private land' is revised to 'specified'. The finding in the RRA will be modified to reflect this change risk designation and the rationale will be detailed.		
Final Risk Rating			
	Uncertified Crown Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Private Managed Forest Land	☒ **Low Risk**	☐ **Specified**
	Uncertified Other Private Land	☐ **Low Risk**	☒ **Specified**

Threat due to forest mgt	Yes	Yes	Yes	Yes
Legislation Framework	Met	Met	Met	Gap
Mechanism of Implementation	Met	Met	Gap	Gap
Current Condition / Situation	Met	Gap	Gap	Gap
• FREP Program • C&E Program • FPB Program	• Monitoring Data • Analysis • Reports			
Risk Designation	Low	Specified	Specified	Specified
Crown Land			2.1.2 - HCV1 - Caribou 2.2.4 - Old Growth	2.1.2 - HCV2 - IFL
PMFL			2.1.2 - HCV1 - Caribou	2.1.2 - HCV2 - IFL 2.2.4 - Old Growth
OPL			2.1.2 - HCV1 - Caribou 2.1.2 - HCV3 - RTE 2.2.3 - Rare Eco/Habitat 2.2.6 - Water 2.4.1 - Health, Vitality	2.1.2 - HCV2 - IFL 2.1.3 - Conversion 2.2.1 - Planning 2.2.2 - Soil 2.2.4 - Old Growth 2.3.1 - Productivity 2.9.2 - Carbon