Supply Base Report: Pinnacle Renewable Energy Inc (Smithers Pellet Limited Partnership)

Re-assessment

www.sbp-cert.org

Completed in accordance with the Supply Base Report Template Version 1.5

For further information on the SBP Framework and to view the full set of documentation see www.sbp-cert.org

Document history

Version 1.0: published 26 March 2015

Version 1.1 published 22 February 2016

Version 1.2 published 23 June 2016

Version 1.3 published 14 January 2019; re-published 3 April 2020

Version 1.4 published 22 October 2020

Version 1.5 published 11 November 2022

Contents

1 Overview

Producer name: Pinnacle Renewable Energy Inc (Smithers Pellet Limited Partnership)

Producer address: 1723 Dahlie Road, V0J 2N0 Smithers, Canada

SBP Certificate Code: SBP-06-59

Geographic position: 54.766300, -127.155900

Primary contact: Joseph Aquino, +1 250 562 5562 ext 2220,Joseph.Aquino@drax.com

Company website: https://www.drax.com/northamerica/?source=pinnacle

Date report finalised: 03 Apr 2023

Close of last CB audit: N/A

Name of CB: Control Union Certifications BV

SBP Standard(s) used: SBP Standard 1: Feedstock Compliance Standard, SBP Standard 2: Verification of SBP-compliant Feedstock, SBP Standard 4: Chain of Custody, SBP Standard 5: Collection and Communication of Data Instruction, Instruction Document 5E: Collection and Communication of Energy and Carbon Data 1.5

Weblink to Standard(s) used: https://sbp-cert.org/documents/standards-documents/standards

SBP Endorsed Regional Risk Assessment: British Columbia, Canada

Weblink to SBR on Company website: N/A

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations					
Main (Initial) Evaluation	**First Surveillance**	**Second Surveillance**	**Third Surveillance**	**Fourth Surveillance**	**Re-assessment**
☐	☐	☐	☐	☐	☒

2 Description of the Supply Base

2.1 General description

Feedstock types: Primary, Secondary

Includes Supply Base evaluation (SBE): Yes

Includes REDII SBE: N/A

Feedstock origin (countries): Canada

2.2 Description of countries included in the Supply Base

Country: Canada

Area/Region: British Columbia

Exclusions: No

BC's land base is 95 million hectares of which 62% or (60 million hectares) is forested. It contains Canada's most ecologically diverse forests ranging from coastal and interior temperate rainforests, interior ponderosa pine and Douglas-fir dry belt, northern boreal forest types of black and white spruce, and alpine forests on the edge of tundra. Approximately 90% of BC's forests are coniferous leading including species like western red cedar, western hemlock, spruce, pine, and fir. BC is also home to mixed forests containing both coniferous and deciduous species including trembling aspen, paper birch and black cottonwood. BC has approximately 14 million hectares (14.8%) of in protected areas covering vast landscapes of rare and sensitive ecosystems in old growth, wildlife habitat, and culturally significant features.[1] There are no species in British Columbia that are currently listed in the CITES data base.

The adjacent lands to the north (Yukon, Northwest Territories, & Alaska) are dominated by alpine tundra & boreal forest types. Adjacent lands to the east (Alberta) are similar to the interior of British Columbia, being dominated by boreal & sub-boreal forest types. To the south, there are two different defining forest types, the first being the coastal forest types in Washington and the second being interior dry belt forest types in Idaho & Montana.

95% of BC's forests are a government/publicly owned resource. As such BC is a global leader in forest legislation and certification. Approximately 47 million hectares of forest in BC is covered by third-party certification (e.g., SFI, FSC, CSA) or meets specific criteria required for environmental management systems (e.g., ISO 14001). As of 2020, 1,486,115 ha of forests are certified to FSC, 2,012,386 are certified to CSA and 44,086,864 are certified to SFI.[2]

All feedstock supplied in the province of British Columbia is either primary or secondary feedstock. For a detailed breakdown of primary and secondary proportion for the Biomass Producer, please see feedstock summary tables in section 3.3.

Forest tenure, administered by the provincial government, provides authorization for companies to harvest timber from crown land. There are various forms of tenure; the two main categories of tenures are area based and volume based. Main tenure types are Replaceable Forest Licenses, Non-Replaceable Forest

Licenses, Tree Farm Licenses and Woodlot Licenses. In recent years the BC government has developed a larger percentage of area-based tenures in the form of community forest agreement and first nation woodland license. Tenures are associated with license numbers that identify the type of tenure and to whom it is issued. Under the license, the proponent can apply for cutting authority to harvest a specified area on crown land. Registered professionals who practice forestry in the Province prepare the cutting authority and submit the application to Provincial government for review. The government may approve or reject the permit application based on any number of determining factors. The cutting authority will be valid for a specified term where harvesting and silviculture are required to be completed. All cutting authorities issued in the Province are associated to a unique timbermark that tracks the timber to its origin.[3]

Management of harvesting volume is governed under the Forest Act. A timber supply review determines the allowable annual cuts (AAC) of all regions and districts across the Province. The timber supply review incorporates science and data, social values or priorities, and economic factors to determine the AAC of a given region. The AAC determinations are revisited typically every 5 years and are adjusted to reflect changes to the determining factors. The timber supply review ensures harvest levels do not exceed growth rates and ensure forests remain healthy and viable for future generations of forest managers.3

Management of harvesting practices is governed under the Forest and Range Practices Act (FRPA). Landscape level and site level forest management objectives are described in FRPA legislation. Proponent cutting authority applications are measured against FRPA objectives as written in a forest stewardship plan which is a legal document required for all cutting authorities. The Provincial government has a compliance and enforcement division that inspects forest practices to ensure proponents are meeting the intent of FRPA at both the site level and landscape level.

Private land represents a small portion of British Columbia's overall land base. Private land in Drax's supply area is considered outside the timber harvesting and managed forest land base, and therefore is not reflected when determining district or Provincial level AAC's. Some parcels of private land contain treed areas that when harvested are sold to various wood product manufacturing facilities including Drax. The timber and the harvesting practices on private land are governed by various pieces of Provincial and Federal legislation that ensure ownership and legality of timber is legitimate and impacts to natural systems are minimized.

The socio-economic landscape of British Columbia includes major industries such as agriculture, construction, film and television, fisheries, forestry, high technology, manufacturing, mining, and tourism.

Roundwood Calculation

The annual allowable cut for British Columbia is approximately 65 million cubic meters per year. The proportion of the AAC consumed as primary feedstock at Drax plants for the reporting period is accounted for as follows:

Drax consumes primary feedstock at Smithers Division, Burns Lake Division, Houston Pellet Limited Partnership, Meadowbank Division, Williams Lake Division and Lavington Pellet Limited Partnership

Smithers: Total primary = 59,789.17 ODT x 2.3 = 137,515.09 m3

137,515.09 m3 / total provincial AAC 65 million m3 * 100 = 0.21% of AAC

Houston: Total primary = 0 ODT x 2.3 = 0 m3

0 m3 / total provincial AAC 65 million m3 * 100 = 0.00% of AAC

Burns Lake: Total primary = 219,209.19 ODT x 2.3 = 504,181.14 m3

504,181.14 m3 / total provincial AAC 65 million m3 * 100 = 0.78% of AAC

Meadowbank: Total primary = 120,959.56 ODT x 2.3 = 278,206.99 m3

278,206.99 m3 / total provincial AAC 65 million m3 * 100 = 0.43% of AAC

Williams Lake: Total primary = 80,236.69 ODT x 2.3 = 184,544.39 m3

184,544.39 m3 / total provincial AAC 65 million m3 * 100 = 0.28% of AAC

Lavington: Total primary = 20,186.26 ODT x 2.3 = 46,428.41 m3

46,428.41 m3 / total provincial AAC 65 million m3 * 100 = 0.07% of AAC

Total = 1.77% of Provincial AAC

Supply Base Regions

The province of BC is divided into forest Regions and Districts managed by government offices that authorize access to timber resources. The Forest Regions and Districts where Drax sources fibre include[i]:

1. Cariboo Region (Williams Lake)
   a. 100 Mile House District
   b. Cariboo-Chilcotin District
   c. Quesnel District
2. Kootenay/Boundary Region (Cranbrook)
   a. Rocky Mountain District
   b. Selkirk District
3. Northeast Region (Fort St. John)
   a. Peace District
4. Skeena Region (Smithers)
   a. Kalum District
   b. Nadina District
   c. Skeena Stikine District
5. Thompson/Okanagan Region (Kamloops)
   a. Thompson Rivers District
   b. Okanagan Shuswap District
   c. Cascades District
6. Omineca Region (Prince George)
   a. Fort St. James District
   b. Mackenzie District
   c. Prince George District
   d. Vanderhoof District

Drax controls fibre deliveries to eight biomass production facilities in BC, strategically located in areas where residual fibre markets exist. The eight biomass production facilities include:

- Smithers Pellet Limited Partnership (DSM)
- Houston Pellet Limited Partnership (DHS)
- Burns Lake Division (DBL)
- Meadowbank Division (DMB)
- Williams Lake Division (DWL)
- Armstrong Division (DAR)
- Lavington Pellet Limited Partnership (DLV)
- Princeton Division (DPN)

Fibre Supply

Drax's feedstock consumption breakdown for BC operations are as follows:

Primary	500,380.885 mt	23.90%
Secondary	1,592,854.345 mt	76.10%

Primary fibre is received directly from the forest in the form of roundwood or in-forest chipping. Secondary fibre is pre-consumer residual material or biproducts, received in the form of bark, sawdust, shavings, chips, or other forms. In British Columbia during the reporting period, Drax sourced primary feedstock from 65 suppliers & secondary feedstock from 37 suppliers in the applicable period.

Smithers' fibre supply consists of 35.44% Primary & 64.56% Secondary Feedstock.

[1] https://www.for.gov.bc.ca/hfd/pubs/docs/mr/Mr112.pdf

[2] https://certificationcanada.org/wp-content/uploads/2021/04/2020-Yearend-SFM-Certification-Detailed-Report-BC.pdf

[3] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/timber-tenures/timber_tenures_brochure_2012.pdf?bcgovtm=20201118_GCPE_AM_COVID_3_NOTIFICATION_BCGOVNEWS_BCGOV_EN_BC__NOTIFICATION

[i] Ministry of Forest Lands and Natural Resource Operation. 2016. Accessed from: http://www.for.gov.bc.ca/

2.3 Actions taken to promote certification amongst feedstock supplier

Customer demand for certified wood products drives extensive forest certification in BC. Drax requires that claim certificates for PEFC certified fibre are issued from PEFC certified suppliers. Drax requires all non-certified suppliers and certified suppliers providing non-certified fibre, sign a supplier declaration verifying their compliance with the various legality, forest management and environmental requirements set out by the certification scheme. Drax promotes certification schemes with suppliers as it is a core value of Drax's business. Drax provides suppliers with the tools necessary to achieve certification compliance through shared knowledge.

2.4 Quantification of the Supply Base

Supply Base

a. **Total Supply Base area (million ha)**: 60,00
b. **Tenure by type (million ha):**57.00 (Public), 3.00 (Privately owned)
c. **Forest by type (million ha):**60.00 (Boreal)
d. **Forest by management type (million ha):**60.00 (Managed natural)
e. **Certified forest by scheme (million ha):**1.49 (FSC), 2.01 (PEFC), 44.09 (SFI)

Describe the harvesting type which best describes how your material is sourced: Mix of the above
Explanation: Forests in British Columbia can be harvested in a variety of forms. For example: clearcutting, commercial thinning, & ecosystem-based management (EBM). Typical machines used in forestry operations include feller bunchers, skidders, & processors. British Columbia's Forests & Range Practices Act specifies maximum clear-cut area regulations for the province.
Was the forest in the Supply Base managed for a purpose other than for energy markets? Yes - Majority
Explanation: Forest products such as lumber, plywood, veneer, pulp, & strand board are the main markets for British Columbia forest activities.

For the forests in the Supply Base, is there an intention to retain, restock or encourage natural regeneration within 5 years of felling? Yes - Majority
Explanation: Management of harvesting practices is governed under the Forest and Range Practices Act (FRPA). Landscape level and site level forest management objectives are described in FRPA legislation. Proponent cutting authority applications are measured against FRPA objectives as written in a forest stewardship plan which is a legal document required for all cutting authorities. The Provincial government has a compliance and enforcement division that inspects forest practices to ensure proponents are meeting the intent of FRPA at both the site level and landscape level. This includes reforestation and a set free growing deadline for each harvested site. Sites that have been thinned may not be required to be restocked if the site has a sufficient amount of stems left in the block. These sites will be satisfactorily stocked even though some volume has been removed.

Was the feedstock used in the biomass removed from a forest as part of a pest/disease control measure or a salvage operation? Yes - Minority
Explanation: Some purchased feedstock was from salvage operations due to fire, insect, or other environmental damage. This may have came in the form of primary or secondary feedstock.

What is the estimated amount of REDII-compliant sustainable feedstock that could be harvested annually in a Supply Base (estimated): N/A N/A
Explanation:N/A

Feedstock

Reporting period from: 01 Jan 2022

Reporting period to: 31 Dec 2022

a. **Total volume of Feedstock**: 1-200,000 tonnes
b. **Volume of primary feedstoc**k: 1-200,000 tonnes
c. **List percentage of primary feedstock, by the following categories.**
    - Certified to an SBP-approved Forest Management Scheme: 60% - 79%
    - Not certified to an SBP-approved Forest Management Scheme: 20% - 39%
d. **List of all the species in primary feedstock, including scientific name:** Picea engelmannii (Engelmann Spruce); Picea glauca (White Spruce); Picea mariana (Black Spruce); Picea sitchensis (Sitka Spruce); Abies lasiocarpa (Subalpine Fir); Pseudotsuga menziesii (Douglas-fir); Abies grandis (Grand Fir); Abies amabilis (Amabilis Fir); Pinus contorta (Lodgepole Pine); Pinus ponderosa (Ponderosa Pine); Pinus flexilis (Limber Pine); Pinus monticola (Western White Pine); Thuja plicata (Western Red Cedar); Chamaecyparis nootkatensis (Yellow Cedar); Tsuga heterophylla (Western Hemlock); Tsuga mertensiana (Mountain Hemlock); Larix laricina (Tamarack); Larix lyallii (Alpine

Larch); Larix occidentalis (Western Larch); Juniperus scopulorum (Rocky Mountain Juniper); Taxus brevifolia (Western Yew); Betula papyrifera (Paper Birch); Populus trichocarpa (Black Cottonwood); Populus balsamifera (Balsam Poplar); Populus tremuloides (Trembling Aspen); Alnus rubra (Red Alder); Acer macrophyllum (Bigleaf Maple);

e. **Is any of the feedstock used likely to have come from protected or threatened species?** No
   - Name of species: N/A
   - Biomass proportion, by weight, that is likely to be composed of that species (%): N/A

f. **Hardwood (i.e. broadleaf trees): specify proportion of biomass from (%):** 0,94

g. **Softwood (i.e. coniferous trees): specify proportion of biomass from (%):** 99,06

h. **Proportion of biomass composed of or derived from saw logs (%):** 0,00

i. **Specify the local regulations or industry standards that define saw logs:** British Columbia SCALING REGULATION (https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/446_94)

j. **Roundwood from final fellings from forests with > 40 yr rotation times - Average % volume of fellings delivered to BP (%):** 100,00

k. **Volume of primary feedstock from primary forest:** 0 N/A

l. **List percentage of primary feedstock from primary forest, by the following categories. Subdivide by SBP-approved Forest Management Schemes**:
   - Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme: N/A
   - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme: N/A

m. **Volume of secondary feedstock**: 1-200,000 tonnes
   - Physical form of the feedstock: Chips, Sawdust, Offcuts, Clean chips or dust

n. **Volume of tertiary feedstock**: 0 N/A
   - Physical form of the feedstock: N/A

o. **Estimated amount of REDII-compliant sustainable feedstock that could be collected annually by the BP:** N/AN/A

Proportion of feedstock sourced per type of claim during the reporting period				
Feedstock type	**Sourced by using Supply Base Evaluation (SBE) %**	**FSC %**	**PEFC %**	**SFI %**
Primary	100,00	0,00	0,00	0,00
Secondary	37,92	0,00	62,08	0,00
Tertiary	0,00	0,00	0,00	0,00
Other	0,00	0,00	0,00	0,00

3 Requirement for a Supply Base Evaluation

Note: Annex 1 is generated by the system if the SBE is used without Region Risk Assessment(s). Annex 2 is generated if RED II SBE is in the scope.

Is Supply Base Evaluation (SBE) is completed? Yes

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 the RRA is the province of British Columbia. The SBP RRA Procedures outline the requirements to complete a Regional Risk Assessment.

Is REDII SBE completed? N/A

N/A

4 Supply Base Evaluation

4.1 Scope

Feedstock types included in SBE: Primary, Secondary

SBP-endorsed Regional Risk Assessments used: British Columbia, Canada

List of countries and regions included in the SBE:

Country: Canada

Indicator with specified risk in the risk assessment used:
2.1.2 The BP has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.

Specific risk description:
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 land base), 44-subregional 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 & Supporting Evidence:

Systems and processes used in the Province to identify and address threats to HCVs are identified below.

HCV1 and HCV3

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 Indicator2.2.4. 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 area 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.

HCV2

The province of BC does not officially recognize Intact Forest Landscapes (IFLs)or an equivalent value in provincial planning and management requirements. Asa result, there are no goals or objectives related to them, mechanism for implementation or monitoring or reporting for any of the ownership types.

HCV4 and HCV5

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.

HCV5 and HCV6

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 pre1846 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:

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.

HCV1 and HCV3

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.

HCV2

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.

HCV4

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 land base. 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.

HCV5

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 archaeological 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 forHCV3 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 presence 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 archaeological 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 forHCV6, a specified risk designation is determined for both PMFL and other private land.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.1.3 The BP has implemented appropriate control systems and procedures for verifying that feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.

Specific risk description:

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 than25%, 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 toa 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 & Supporting Evidence:

Conversion to Plantations

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.

Conversion to a Non-Forest Use

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:

Conversion to Plantations

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/yd 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 of4,509 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 forestland 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.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.2.1 The BP has implemented appropriate control systems and procedures to verify that feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.

Specific risk description:
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 Landlord 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 management which include planning and monitoring are:

• Forest and Range Practices Act (FRPA)o Forest Planning and Practices Regulation (FPPR)o 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.

Private Managed Forest Land

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.

Other Private Land

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 Species 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.

All Land

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 & Supporting Evidence:

Crown Land

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 24regional (85% of BC land base), 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 the, 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.

Private Managed Forest

Land 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.

Other Private Land

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.

All Land

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:

Crown Land

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 land base for Crown Land.

Private Managed Forest Land

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.

Other Private Land

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.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.2.2 The BP has implemented appropriate control systems and procedures for verifying that feedstock is sourced from forests where management maintains or improves soil quality (CPET S5b)

Specific risk description:
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 & 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:

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 thebe 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.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.2.3 The BP has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).

Specific risk description:
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 bio geoclimatic 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 bio geoclimatic 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 Crownland, 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 tokey 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 & Supporting Evidence:

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 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 toother private land are generally enforced only when a public complaint is made.

Results:

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 bio geoclimatic 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.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.2.4 The BP has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).

Specific risk description:
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 & Supporting Evidence:

The mechanisms that are in place to conserve key ecosystems and habitat (Indicator 2.2.3) also contribute to the conservation of biodiversity, but as discussed above, biodiversity is a broader concept.

Landscape-level Approach

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.

Stand-level Approach

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:

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.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.2.6 The BP has implemented appropriate control systems and procedures to verify that negative impacts on ground water, surface water and water downstream from forest management are minimised (CPET S5b).

Specific risk description:
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 & 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:

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.

Country: Canada

Indicator with specified risk in the risk assessment used:

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.

Specific risk description:

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 Assessment:

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 & 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 FP Innovations 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:

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 m3/year to 58 million m3/year by 2025, primarily due to the mortality caused by the MPB epidemic. The harvest is not expected to recover to 70 million m3/year until approximately 2075.

Further, BC's Environmental Reporting BC website reports that 7 million m3/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 m3 and 5.2 million m3 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 m3 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.

Risk Designation Rationale:

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.

Country: Canada

Indicator with specified risk in the risk assessment used:
2.4.1 The BP has implemented appropriate control systems and procedures for verifying that the health, vitality and other services provided by forest ecosystems are maintained or improved (CPET S7a).

Specific risk description:
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 & 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 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.

Country: Canada

Indicator with specified risk in the risk assessment used:
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.

Specific risk description:
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 Requirements & 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 & 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:

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.

4.2 Justification

The size of the supply base area (SBA) ensures coverage of all current and potential harvesting areas in the Province of BC. Due to the relatively large SBA and overlap of supply areas between Drax's biomass production facilities, this was chosen to incorporate all supply areas into one assessment. The legislative requirements for fibre procurement and harvesting are consistent throughout the RRA area.

4.3 Results of risk assessment and Supplier Verification Programme

	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

There was no un-specified risk identified in the RRA, therefore no need for the supplier verification program.

4.4 Conclusion

The RRA meets a low risk designation for 23 of the indicators. The remaining 15 indicators had at least one sub-scope that had a specified risk designation.

5 Supply Base Evaluation process

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. 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.

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 riskbased assessments, including but not limited to SBP endorsed RRAs, FSC-PRO-60-002 v3-0, FSCPRO-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 and risk assessment.

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).

6 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 subcategories, 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.

Additionally to the RRA consultation, Drax had conducted a month long stakeholder consultation starting April 5th, 2022 & ending May 5th, 2022 for mitigation measures to the specified risks identified in the RRA.

6.1 Response to stakeholder comments

Description:	Stakeholder was a member of a non-profit organization focused on conservation efforts in British Columbia
Comment:	The comment was positive in nature. The stakeholder gave support for teh biomass industry's role in fire mitigation & the utilization of dry wood debris left on forest sites.
Response:	No response was delivered as the comment was general & did not address Drax's specified mitigation measures for the RRA.

7 Mitigation measures

7.1 Mitigation measures

Country:	Canada
Specified risk indicator:	2.1.2 The BP has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.
Specific risk description:	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 land base), 44-subregional 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 & Supporting Evidence:

Systems and processes used in the Province to identify and address threats to HCVs are identified below.

HCV1 and HCV3

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 Indicator2.2.4. 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 area 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.

HCV2

The province of BC does not officially recognize Intact Forest Landscapes (IFLs)or an equivalent value in provincial planning and management requirements. Asa result, there are no goals or objectives related to them, mechanism for implementation or monitoring or reporting for any of the ownership types.

HCV4 and HCV5

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.

HCV5 and HCV6

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 pre1846 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:

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.

HCV1 and HCV3

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.

HCV2

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.

HCV4

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 land base. 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.

HCV5

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 archaeological 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 forHCV3 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 presence 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 archaeological 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 forHCV6, a specified risk designation is determined for both PMFL and other private land.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP’s supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP’s pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations

have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including

“Education & Outreach” central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP’s suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID’s, or other. The final output for this mitigation measure is a “Supplier Mapping Package”, which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council’s Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)

- Indicator 2.2.6 (Water)
- Indicator 2.3.1 (Forest Productivity)
- Indicator 2.4.1 (Forest Health & Vitality)
- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified

risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier’s unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers’ sensitivities but still achieves the BP’s information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.1.3 The BP has implemented appropriate control systems and procedures for verifying that feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.

Specific risk description: 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 than25%, 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 toa 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 & Supporting Evidence:

Conversion to Plantations

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.

Conversion to a Non-Forest Use

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:

Conversion to Plantations

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/yd 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 of4,509 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 forestland 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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

- Increased capacity for more research on HCVs in the region
- Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

- Indicator 2.1.2 (HCV1 – Caribou)
  - Approved Ungulate Winter Ranges relating to Caribou species
    - https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html
- Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)
- Indicator 2.2.1 (Planning)
- Indicator 2.2.2 (Forest Soils)
- Indicator 2.2.6 (Water)
- Indicator 2.3.1 (Forest Productivity)
- Indicator 2.4.1 (Forest Health & Vitality)
- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC’s Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor’s timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators.

The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be

reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to

address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.2.1 The BP has implemented appropriate control systems and procedures to verify that feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.

Specific risk description: 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 Landlord 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 management which include planning and monitoring are:

• Forest and Range Practices Act (FRPA)o Forest Planning and Practices Regulation (FPPR)o 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.

Private Managed Forest Land

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.

Other Private Land

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 Species 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.

All Land

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 & Supporting Evidence:

Crown Land

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 24regional (85% of BC land base), 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 the, 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.

Private Managed Forest

Land 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.

Other Private Land

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.

All Land

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:

Crown Land

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 land base for Crown Land.

Private Managed Forest Land

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.

Other Private Land

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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain

the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a “supplier mapping package” showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP’s scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government’s Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC’s Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council’s Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)

- Indicator 2.2.6 (Water)

- Indicator 2.3.1 (Forest Productivity)

- Indicator 2.4.1 (Forest Health & Vitality)

- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The

supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.2.2 The BP has implemented appropriate control systems and procedures for verifying that feedstock is sourced from forests where management maintains or improves soil quality (CPET S5b)

Specific risk description: 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 & 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:

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 thebe 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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers

will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the

percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package

relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators.

The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)

- Indicator 2.2.6 (Water)

- Indicator 2.3.1 (Forest Productivity)

- Indicator 2.4.1 (Forest Health & Vitality)

- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC’s Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor’s timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the

supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be

reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to

address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.2.3 The BP has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).

Specific risk description: 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 bio geoclimatic 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 bio geoclimatic 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 Crownland, 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 tokey 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 & Supporting Evidence:

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 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 toother private land are generally enforced only when a public complaint is made.

Results:

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 bio geoclimatic 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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers &

reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified

risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)
- Indicator 2.2.1 (Planning)
- Indicator 2.2.2 (Forest Soils)
- Indicator 2.2.6 (Water)
- Indicator 2.3.1 (Forest Productivity)
- Indicator 2.4.1 (Forest Health & Vitality)
- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A

copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP

compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier’s unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.2.4 The BP has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).

Specific risk description: 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 & Supporting Evidence:

The mechanisms that are in place to conserve key ecosystems and habitat (Indicator 2.2.3) also contribute to the conservation of biodiversity, but as discussed above, biodiversity is a broader concept.

Landscape-level Approach

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.

Stand-level Approach

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:

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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification

claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the

percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package

relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators.

The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)

- Indicator 2.2.6 (Water)

- Indicator 2.3.1 (Forest Productivity)

- Indicator 2.4.1 (Forest Health & Vitality)

- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC’s Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor’s timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the

supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be

reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to

address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.2.6 The BP has implemented appropriate control systems and procedures to verify that negative impacts on ground water, surface water and water downstream from forest management are minimised (CPET S5b).

Specific risk description: 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 & 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:

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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial

data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a

professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a “supplier mapping package” showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP’s scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government’s Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC’s Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council’s Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)

- Indicator 2.2.6 (Water)

- Indicator 2.3.1 (Forest Productivity)

- Indicator 2.4.1 (Forest Health & Vitality)

- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All

monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk 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.

Specific risk description: 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 Assessment:

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 & 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 FP Innovations 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:

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 m3/year to 58 million m3/year by 2025, primarily due to the mortality caused by the MPB epidemic. The harvest is not expected to recover to 70 million m3/year until approximately 2075.

Further, BC's Environmental Reporting BC website reports that 7 million m3/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 m3 and 5.2 million m3 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 m3 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.

Risk Designation Rationale:

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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations

have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including

“Education & Outreach” central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP’s suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID’s, or other. The final output for this mitigation measure is a “Supplier Mapping Package”, which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council’s Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)
- Indicator 2.2.6 (Water)
- Indicator 2.3.1 (Forest Productivity)
- Indicator 2.4.1 (Forest Health & Vitality)
- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified

risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier’s unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers’ sensitivities but still achieves the BP’s information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk indicator: 2.4.1 The BP has implemented appropriate control systems and procedures for verifying that the health, vitality and other services provided by forest ecosystems are maintained or improved (CPET S7a).

Specific risk description: 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 & 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 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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest

managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the

specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)

- Indicator 2.2.1 (Planning)

- Indicator 2.2.2 (Forest Soils)

- Indicator 2.2.6 (Water)

- Indicator 2.3.1 (Forest Productivity)

- Indicator 2.4.1 (Forest Health & Vitality)

- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all

documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

Country: Canada

Specified risk 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.

Specific risk description: 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 Requirements & 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 & 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:

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.

Mitigation measure:

The BP will categorize all suppliers according to certification status and the level of certification claims received during the annual reporting period as follows:

- Residuals Suppliers that provide 100% certification claims
- Residuals Suppliers that provide <100% certification claims
- Primary Feedstock Suppliers

Residual suppliers that provide 100% certification claims on raw materials will be exempt from mitigation measures. Residual suppliers that typically provide 100% certification claims will need to provide <100% certification claims for a period extending beyond 3 consecutive months within the reporting period before mitigation measures will be applied against their feedstock sources. Residual suppliers that provide <100% certification claims will be subject to mitigation measures. Primary feedstock suppliers will be assessed at the timbermark level to distinguish certified sources from uncertified sources.

Records of all suppliers, their certification status, and records of their certification claims will be kept and reviewed periodically to determine how mitigation measures are applied during each reporting period of the BP.

All new suppliers added to the BP's supplier registry between reporting periods will undergo the same categorization to ensure the appropriate mitigation measures are applied. Chain of custody credits are collected at the forest level for primary feedstock; hence the supplier of those feedstocks is not relevant if they are transported directly from certified forests to the BP's pellet manufacturing facilities. The focus of mitigation measures will be directed at the forest manager to ensure the mitigations have the highest potential for influencing behaviour on the ground with those directly responsible for managing the forests.

1. Promotion of Forest Certification

The intent of this mitigation measure is to promote forest level certification and chain of custody certification amongst the BP's feedstock suppliers. There are several feedstock suppliers (current and potential) that are unaware of forest certification or have never been asked to provide certification claims. The BP's understanding and expertise with forest certification can help increase the total amount of certified claims. If suppliers can obtain certification, their feedstock will no longer have associated risks. This not only helps the BP's proportion of certified feedstock but directly impacts on the ground activities affiliated with forest managers and feedstock suppliers. The mitigation can be applied to all sub-scopes of the RRA. The BP will target:

· Suppliers that hold valid certification but provide proportional certification, and,

· Uncertified suppliers that change from providing uncertified, or proportionally certified feedstock to providing 100% certified feedstock will be moved into the category of suppliers that do not require mitigation measures.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review suppliers according to certification status on the FSC, PEFC, and SFI certificate registrars. Higher proportion of certified suppliers will result in effective mitigation. The BP will annually review the percentage of PEFC (SFI and CSA) certified claims received. Higher percentages of certified claims will result in effective mitigation.

2. Conservation Initiatives

The intent of this mitigation is to participate in conservation and research initiatives affiliated with the specified risk indicators. The mitigation measure is part of the FSC's mitigation guidance including "Conservation Initiatives" central theme. In this case the BP will focus conservation efforts on the specific specified risk HCVs identified in the RRA:

· Old Growth Management – stand characteristics, distribution, landscape level representation, climate change migration

· landscape level ecosystem health (IFL's) – connectivity benefits to wildlife, ecosystem health, carbon stores

· Caribou or other large ungulate species - habitat preference, habitat maintenance, habitat restoration, climate change migration patterns.

Examples of intended contributions for this mitigation measure include but are not limited to:

· Participating/contributing to existing local research projects

· Commissioning new studies affiliated with specified risk indicators directly or indirectly

· Providing resources to help with conservation & biodiversity efforts.

Mitigation Measure Effectiveness Monitoring:

The BP will annually review all conservation initiatives. The BP will maintain a registrar of all conservation projects that were contributed to / participated in. Mitigation measure effectiveness would be demonstrable if the BP can show how the projects or participation has contributed to sustainable management in several potential ways including, but not limited to:

· Helping enhance the industry or public understanding & awareness of HCVs

· Developing guidance for how any specified risk indicators are managed on forested land

· Increased capacity for more research on HCVs in the region

· Showing progress in HCV restoration or enhancement

3. Education & Outreach

The intent of this mitigation option is to implement education and outreach-related actions that will result in changes to on-the-ground forest management activities that improve maintenance or enhancement of the HCV, and thereby mitigate the risk of sourcing materials from sites where the HCV in the specified risk area is threatened by forest management activities. The mitigation measure is part of the FSC's guidance including "Education & Outreach" central theme. All feedstock types (primary, secondary, & tertiary) have potential to include sub-scopes 1, 2, and 3.

All feedstock data in BC is publicly available and can be easily transferred to regional level maps showing where the BP's suppliers sources interact with the specified risk indicators (if applicable in the region). Where spatial data does not exist, secondary delineations of data will be used including districts, municipality, private land parcels ID's, or other. The final output for this mitigation measure is a "Supplier Mapping Package", which contains detailed information on the interaction between supplier harvesting and sourcing activity and the specified risk indicators. The supplier mapping package forms the basis of the education and outreach material that will be communicated to the supplier on an annual basis.

Note: Overlap with a specified risk polygon does not indicate feedstock must remain as specified risk. Suppliers, and subsequently the BP, can mitigate specified risk overlap by demonstrating how harvesting practices effectively manage for specified risks.

For Feedstock Relating to Sub-Scope 1:

Data to be used for the specified risk indicators on sub-scope 1 lands are as follows:

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. If any timbermark registered at the BP's scale is found to overlap with one or more of the specified risk polygons and is not on certified forests, the biomass producer will obtain the site plan document for each cutting authority. The site plan is a professional document that details how site level objectives related to the specified risk indicators are managed. It also references the forest stewardship plan to which the site plans are linked which can provide further information about how these indicators are managed. If there is no reference to the applicable specified risk indicator in the site plan, the BP will provide the supplier with a "supplier mapping package" showing the forest activities that overlap with the specified risk polygon. If any timbermark registered at the BP's scale does not overlap with any of the specified risk polygons, no further action is taken as specified risk indicators areas have not been affected.

Secondary & Tertiary Feedstock

The provincial government maintains records of all cutting authorities permitted to occur on Sub-Scope 1 lands a continual basis throughout a reporting period. The BP will prepare maps using publicly available information indicating where overlaps exist between specified risk polygons and authorized harvest areas. Maps will highlight the location of all cut blocks reported into the government's Reporting Silviculture Updates and Land Status Tracking System (RESULTS) in the applicable year. If overlap is identified between any of the specified risk layers & reported cut blocks for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For feedstock Relating to Sub-Scope 2

Data to be used for the specified risk indicators on sub-scope 2 lands are as follows:

· Private Managed Forest Lands

- PMFL GIS layer as provided by BC's Integrated Cadastral Information Society

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any private managed forest lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 2 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

Secondary & Tertiary Feedstock

Maps will highlight the location of land parcels with the status of Private Managed Forest Lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers & reported private managed forest lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

For Feedstock Relating to Sub-Scope 3

Data to be used for the specified risk indicators on sub-scope 3 lands are as follows:

· Private Lands

- Private Land GIS layer as provided by ParcelMap BC

· Indicator 2.1.2 (HCV1 – Caribou)

- Approved Ungulate Winter Ranges relating to Caribou species

§ https://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html

· Indicator 2.1.2 (HCV2 – Intact Forest Landscapes)

- Intact Forest Landscapes of British Columbia as defined by the Forest Stewardship Council's Controlled Wood National Risk Assessment for Canada (Specified Risk Designation 3.2)

§ https://ca.fsc.org/en-ca/standards/national-risk-assessment-01

· Indicator 2.2.4 (Old Growth Management Areas)

- Current legal Old Growth Management Areas (OGMAs) as defined by the Government of British Columbia

§ https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legalcurrent

· Indicator 2.1.2 (HCV3 – Rare, Threatened, & Endangered Ecosystems) & Indicator 2.2.3 (Rare Ecosystems & Habitat)

- Red & Blue Listed Species

- COSEWIC Threatened & Endangered Species

- Both layers found in the B.C. Conservation Data Centre's Species at Risk Range Data Layer

In addition to the map package for spatially available specified risk data, the biomass producer will assess the below indicators using a supplier questionnaire that will obtain management practices related to the

specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained. The following specified risk indicators for Sub-Scope 3 that will be assessed using a supplier questionnaire are as follows:

- Indicator 2.1.3 (Land Conversion into Non-Forest)
- Indicator 2.2.1 (Planning)
- Indicator 2.2.2 (Forest Soils)
- Indicator 2.2.6 (Water)
- Indicator 2.3.1 (Forest Productivity)
- Indicator 2.4.1 (Forest Health & Vitality)
- Indicator 2.9.2 (Forest Carbon)

Although the scale and intensity of Sub-Scope 3 material used by secondary & tertiary suppliers is low across BC's Forest Industry, the BP is committed to mitigating risk where applicable & contributing to positive / sustainable forestry outcomes in all regions with active operations.

Primary Feedstock

The BP monitor's timbermarks received monthly using a combination of contracts, installed scaling systems, government reporting software, GIS software, and other best available data. Since individual plots of non-crown lands are subjected to privacy laws in the province of British Columbia, publicly available data may not be accessible for private managed forest land timber marks. The biomass producer will request the parcel identification number (PID) associated with the timbermark. This will be used to map individual private managed forest lands status blocks. If there are no overlaps with any Sub-Scope 3 lands & specified risk layers for the applicable year, no further action is taken as specified risk indicators areas have not been affected. Primary feedstock relating to Sub-Scope 3 that cannot be verified through GIS analysis will be assessed using a questionnaire that will obtain management practices related to the specified risk indicators. The questionnaire will be reviewed with the supplier annually to ensure there is no impact to specified risk indicators. The questionnaire will probe management practices related to specified risk indicators. Records will be documented and maintained.

In addition to the questionnaire, the BP will provide the Sub-Scope 3 supplier with an EMS document that highlights best practices for management against each of the specified risk indicators on the private

lands that they operate on. The intent of this document is to provide additional Education & Outreach to our suppliers and ensure that fibre received by Drax on private lands is from sustainably managed sources. A copy of the EMS document can be found in **PREI-SUS-005-02a** appendix to this document.

Secondary & Tertiary Feedstock

Maps will highlight the location of Sub-Scope 3 lands that interact with the applicable specified risk indicators. If overlap is identified between any of the specified risk layers and Sub-Scope 3 lands for the applicable year, the BP will provide suppliers that do not provide 100% certified claims with a supplier mapping package relating to each applicable specified risk. The supplier mapping package will be reviewed with each supplier and documented accordingly.

Mitigation Measure Effectiveness Monitoring:

The biomass producer will annually prepare supplier mapping packages for education and outreach activities. The BP will maintain a registrar of all documented conversations with suppliers and follow the below process to measure how the mitigation measure performs over time.

The biomass producer will select a sample of suppliers annually who received a supplier mapping package and review the data contained within the map package.

· The biomass producer will use a mitigation effectiveness review questionnaire for the interview which focuses on how the mapping package was used by the supplier.

· The desired outcome of these communications is engaging with the supplier, educating suppliers about the importance of the communication package to the BP's procurement systems, investigating how the supplier used the supplier mapping package, and whether it encourages on the ground changes in the supplier's management approach.

· Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia.

· Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

4. Monitoring Primary Feedstock

The BP will implement a monitoring program for all primary feedstock Sub-Scopes procured directly at the pellet mill sites. Monitoring is a method to ensure on the ground activities align with measures that mitigate specified risks within the supply base area. Monitoring exercise will be carried out on a sample of fields sites throughout the reporting period.

The focus of field site monitoring will be to ensure information received by the supplier in relation to management of specified risk indicators can be observed or corroborated on the ground. Where possible, photos will be taken to ensure monitoring activity records can be visually documented. All monitoring activities will be documented and recorded for future reference by the BP and for internal and external auditing purposes.

For Feedstock Relating to Sub-Scope 1:

As per the above section (feedstocks related to Sub-Scope 1) the BP will obtain a site plan of sources that overlap with specified risk indicators. The site plan will form the basis of the items to be verified. The government of BC carries out monitoring on all Sub-Scope 1 lands, however, where the RRA indicated a gap in the monitoring, the BP will fill that gap. A post-harvest monitoring form will be filled out covering the applicable specified risk indicators for Sub-Scope 1. All monitoring activities will be recorded and documented.

For Feedstock Relating to Sub-Scope 2 & 3:

Upon contract signing, the BP will provide the landowner or supplier with a questionnaire probing various questions about the specified risk indicators affiliated with their harvesting operation. This will count as a pre-delivery risk assessment on the private land parcel. The questionnaire will be reviewed by the biomass producer and SBP compliance will be determined based on the answers provided.

· If the BP deems that the specified risks outlined in the RRA are being satisfactorily addressed, the feedstock will be considered SBP compliant.

· If the BP deems that the specified risks outlined in the RRA are not being satisfactorily addressed, the feedstock will be considered SBP

controlled. The following year, the BP will then conduct an onsite inspection of a sample of timbermarks that were categorized as SBP compliant according to the questionnaire to verify answers provided in the questionnaire.

· If the inspection results corroborate the questionnaire, the BP will consider the specified risks mitigated for that feedstock source.

· If the inspection results do not corroborate the questionnaire, the supplier will be subject to the procurement policy mitigation (mitigation measure #5)

Mitigation Measure Effectiveness Monitoring:

· The biomass producer will maintain records of questionnaires, field site inspection forms, and correspondence with the supplier for each applicable private land timbermark.

· All non-conformities will be documented by the BP in the onsite risk assessment form and communicated with the supplier

· Records of non-conformities will be recorded and documented

· If a supplier is found to have non-conformities two years in a row, they will be subject to mitigation measure #5 (procurement policy)

· Effectiveness will be met by monitoring how suppliers change over time and whether identification of non-conformities lead to changes on the ground.

5. Procurement Policy

The BP will implement a procurement policy mitigation measure for all sub-scopes. The BP expects that all suppliers contribute to the attainment of information required to carry out mitigation measures.

The procurement policy is in place to address suppliers who do not provide the necessary information for the BP to carry out effective mitigation or to address consecutive identifications of non-conformities. Any feedstock from a supplier who does not provide enough information to the BP will be considered SBP controlled feedstock until the proper information can be collected. SBP Compliant or SBP Controlled determinations are made monthly therefore either status will apply for a minimum of one month or until the required information is collected. In cases where information cannot be obtained, or the supplier has demonstrated multiple nonconformities that are unreasonable the BP will:

1. Determine the root cause of the supplier's unwillingness to cooperate

2. Determine if there is a way to obtain information that protects the suppliers' sensitivities but still achieves the BP's information requirements

3. If the supplier and the BP cannot come to a mutual agreement on required information the BP may:

- Withhold the supplier's deliveries to the BP's facilities
- Non-renewal of purchase agreements upon expiry
- Termination of the purchase agreement
- Removal from consideration on future purchases

The information provided by the secondary suppliers are reviewed annually and verified by third party auditors to ensure they are complete and correct. The annual information collection and verification exercise reviews the mitigations effectiveness. Any deficiencies are uncovered, and new methodologies are developed to close any uncovered gaps.

7.2 Monitoring and outcomes

Effectiveness Monitoring of All Mitigation Measures:

The biomass producer will use the mitigation measures process for all applicable fibre supplies originating in British Columbia. To measure the effectiveness of the mitigation measures, the biomass producer will conduct the following monitoring process to ensure the mitigation measures are effective at reducing specified risk designations to low risk.

· The biomass producer will select a sample of suppliers annually who received a mitigation measure mapping package and review the data contained within the map package. The sample of suppliers to interview will be calculated by the following:

Interview Sample Size = $\sqrt{(x)}*0.8$

Where X is equal to the number of suppliers that received the map package. To eliminate sample bias, the BP will use a random value generator for selecting which suppliers are to be interviewed.

· For the interview, the biomass producer will develop & use a Mitigation Effectiveness Review document/questionnaire which focuses on how the mapping package was used by the supplier. The usage of the review document will be tracked in the BP's supplier contact spreadsheets.

The desired outcome of these communications is engaging the supplier in conservation of the HCV within the specified risk area and their sourcing area. Effectiveness of this process will be reviewed annually and adjusted to ensure the process remains effective for all feedstock supplies originating in British Columbia. Once the effectiveness monitoring process has been implemented, the biomass producer can begin to formulate a reasonable assessment as to whether the mitigation measures are effective and if any modifications are required.

This system is robust, replicable, and reviewed annually and revised if necessary. It requires concerted effort by both Pinnacle and its suppliers and will strengthen over time. In conclusion, the mitigation measure is effective at identifying where all feedstock is sourced back to the concession of harvest. It is also effective at identifying which suppliers are at risk of non-compliance with an HCV area management strategy. The mitigation process identifies which forest management practices are effective at addressing the HCV concern and is communicated to the suppliers. The information provided by the supplier is verified for correctness and completeness during annual review audits.

8 Detailed findings for indicators

Detailed findings for each Indicator are given in Annex 1 in case the Regional Risk Assessment (RRA) is not used.

Is RRA used? Yes

9 Review of report

9.1 Peer review

n/a

9.2 Public or additional reviews

n/a

10 Approval of report

Approval of Supply Base Report by senior management			
Report Prepared by:	Gage Wasylyshen	Sustainability Certification Lead	03 Apr 2023
	Name	Title	Date
The undersigned persons confirm that I/we are members of the organisation's senior management and do hereby affirm that the contents of this evaluation report were duly acknowledged by senior management as being accurate prior to approval and finalisation of the report.			
Report approved by:	Joseph Aquino	Director of Sustainability	03 Apr 2023
	Name	Title	Date

Annex 1: Detailed findings for Supply Base Evaluation indicators

N/A

Annex 2: Detailed findings for REDII Supply Base Evaluation indicators (Level B)

N/A