Vanderhoof Operating Area Stuart Nechako Forest District



# FOREST STEWARDSHIP PLAN

2022 Replacement

Term: July 1, 2022, to June 30, 2027

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#### APPENDICES

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#### 1.0 INTERPRETATION

#### 1.1 Definitions

In this FSP:

"**Agreement Holder**" means the holder of an agreement in the form of a licence, a permit or an agreement referred to in section 12 of the Forest Act, or a pulpwood agreement.

"Archaeological Impact Assessment" is a process where a trained professional looks at an archaeological site and development plans to determine what impact the proposed development will have on the site.

"Artificial Range Barrier" refers to fencing, cattle guards, or windrows which serve as physical or psychological barriers or limitations to livestock movement.

"**Cultural Heritage Resource**" (or CHR) is defined as an object, site or the location of a traditional societal practice that is of historical, cultural or archaeological significance to British Columbia, a community or an aboriginal people.

"FDU" means a forest development unit under this FSP.

"FLNRO" means the Ministry of Forests, Lands and Natural Resource Operations.

"FPPR" means the Forest Planning and Practices Regulation B.C. Reg. 14/2004.

"FRPA" means the Forest and Range Practices Act, SBC 2002, c.69.

"FSP" means this Forest Stewardship Plan.

"GAR" means the Government Action Regulation B.C. Reg. 582/2004.

**"Information Sharing"** is defined as making reasonable efforts to communicate with affected First Nations or other resource users with the purpose of soliciting input from the potentially affected First Nation or stakeholder.

"Invasive Plant Regulation" means the Invasive Plant Regulation B.C. Reg. 18/2004.

**"Machine Free Zone"**, or MFZ, is defined as an area immediately adjacent to a riparian or other specified feature, in which Primary Forest Activities may occur but machines used to facilitate primary forest activities may not tread or otherwise disturb the soil.

"MARR" means the Ministry of Aboriginal Relations and Reconciliation

"MoE" means the Ministry of Environment

**"Natural Range Barrier"** refers to topographical and vegetative landscape features, such as steep mountains, rocky terrain, rivers, gullies, standing and downed timber, and/or shrubs which serve as physical or psychological barriers or limitations to livestock movement.

"Wildland Urban Interface Area" refers to any area where combustible wildland fuels (vegetation) are found adjacent to homes, farm structures or other buildings.

Words and expressions not defined in this document have the meaning given to them in the *Forest and Range Practices Act* (FRPA) and the regulations made under it, unless context indicates otherwise.

#### 2.0 TERM AND COMMENCEMENT

The Term of this Replacement FSP is five (5) years beginning on the date specified by the Minister upon approval.

#### 3.0 APPLICATION

This FSP applies to:

- 1.0 A timber sale license, road permit, or forestry licence to cut within the BCTS FDU, advertised or issued by the Timber Sales Manager following the approval of this FSP and;
- 2.0 An access road constructed by the Timber Sales Manager, within the BCTS FDU, to an area to be harvested under a timber sales license referred to in paragraph 1, following the approval of this FSP.

#### 4.0 FOREST DEVELOPMENT UNIT

Appendix 1 provides an Overview Map (1:700,000 scale) indicating BC Timber Sales Vanderhoof Timber Pricing Areas within the Stuart Nechako Forest District. Appendix 2 provides an Overview map (1:700,000 scale) of the BCTS Forest Development Unit (BCTS FDU) pertinent to this Forest Stewardship Plan. The BCTS Vanderhoof FDU is larger than our Timber Pricing Areas, but primary forest activities are generally confined to our Vanderhoof timber pricing areas. FSP content maps (1:100,000 scale) are made available digitally through Appendix 5.

#### 5.0 RESULTS & STRATEGIES

#### 5.1 Land Use Objectives

#### 5.1.1 Agricultural Development Areas and Settlement Reserve Areas

Where the Timber Sales Manager carries out or authorizes primary forest activities within an Agricultural Development Area or Settlement Reserve Area, within the BCTS FDU, as specified in the Order of the Minister of Agriculture and Lands – Establishing Land Use Objectives under section 93.4 of the Land Act for the Purposes of the Forest and Range Practices Act (November 21, 2006), the primary forest activities will comply with the Order.

#### 5.1.2 Landscape Biodiversity Objectives for the Prince George TSA

In respect of the Order - *Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area* (October 20, 2004), for areas to which this FSP applies, that are within the applicable Natural Disturbance Unit and Merged Biogeoclimatic Units within the BCTS FDU, the Timber Sales Manager will:

- 1. Participate with Prince George TSA agreement holders to collaboratively comply with the Order. Participation will include:
  - a) BC Timber Sales representation on the PG TSA Licensee Landscape Objectives Working Group (LLOWG) for the purpose of collaborating with PG TSA tenure holders to implement, monitor and maintain the objectives specified in the Order;
  - annually providing the LLOWG with a spatial update of the cutblocks harvested and roads constructed under the authorization of the Timber Sales Manager in the previous fiscal (April 1 – March 31). Cost share in the creation of an updated disturbance layer for the PG TSA and the analysis required to assess collective BCTS and agreement holder performance relative to meeting the objectives specified in the Order;
  - c) planning cutblocks and roads that maintain old forest retention and old interior forest objectives and comply with young forest patch size distribution objectives;
  - d) where analysis indicates old forest and old interior forest conditions within merged biogeoclimatic units are < 1000 hectares in surplus of targets, Timber Sale Licenses will not be issued without prior communication with applicable agreement holders (operating within the same merged biogeoclimatic units) to ensure a deficiency is not created;

- e) not issuing Timber Sale Licenses within merged biogeoclimatic units where analysis results indicate old forest or old interior forest conditions are below objective targets, until an applicable recruitment strategy has been approved;
- f) collaborating with PG TSA agreement holders to design and implement approved recruitment strategies, where old forest retention or old interior forest objectives cannot be met in the short term,
- g) collaborating with PG TSA agreement holders to provide a rationale where young forest patch size distribution objectives cannot be achieved in the short term and create and implement an approved strategy to achieve the young forest condition specified in the order in the shortest time practicable,
- h) annually submitting, to the FLNRO, updated analysis results for the previous April 1 to March 31 time period, to demonstrate compliance with *Old Forest Retention* and *Old Interior Forest Objectives* specified in the Order, and
- i) submit to the FLNRO a minimum of one analysis update of the young forest patch size distribution, once every five years, to demonstrate compliance with *Young Forest Patch Size Distribution Objectives*, as specified in the Order.

For the purposes of this result or strategy, the following definitions apply: *Natural Disturbance Unit*, *Merged Biogeoclimatic Units, Old Forest, Old Interior Forest and Young Forest* are defined as per the Implementation Policy for the Order Establishing Landscape Biodiversity Objectives for the Prince George (PG) Timber Supply Area (TSA).

### 5.2 Objectives Set by Government FRPA 149

#### 5.2.1 Soils FPPR 5

Where the Timber Sales Manager carries out or authorizes primary forest activities on areas within the BCTS FDU, the results or strategies for the objective set by government for soils in section 5 of the FPPR are the practice requirements of FPPR section 35 and section 36 as written on the date this FSP is submitted for approval and subsection 1 below.

- 1. In addition to FPPR section 35 (4), soil disturbance may exceed the limits specified in section 35 (3) of the FPPR if the Timber Sales Manager undertakes or authorizes one of the following activities:
  - a) harvesting and land clearing activities in a Gravel Pit Reserve to facilitate gravel extraction, or
  - b) establishing a fuel break within a Wildland Urban Interface area for the protection of values such as human safety, property and infrastructure.

#### 5.2.2 Wildlife FPPR 7

#### 5.2.2.1 Species at Risk – Northern Caribou

In respect of the Notice – Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Vanderhoof Forest District for Northern Caribou, when conducting or authorizing primary forest activities within the BCTS FDU, the Timber Sales Manager will:

- 1. Undertake subsections 2 to 6 described below within the Tweedsmuir and Itcha-Ilgachuz Northern Caribou Population Range (see Appendix 3).
- 2. Work cooperatively with other agreement holders and the appropriate agency to spatially identify areas capable of providing Species At Risk elements for Northern Caribou that:
  - a) are distributed within locations specified in the Notice,
  - b) contain the Habitat Attributes described in the Notice and
  - c) do not result in an impact to the mature timber harvesting landbase in excess of 6,100 hectares.

- Assess and confirm, at the site level, that the spatially identified areas (in subsection 2) possess the desired habitat attributes. Modify the areas selected to achieve the desired amount, distribution and habitat attributes specified in the Notice.
- 4. Report the outcomes of subsections 2 and 3 to the appropriate agency prior to proceeding with subsection 5 and 6.
- 5. Work cooperatively with other agreement holders and the appropriate agency when planning (locating and designing) cutblocks and roads, to avoid detrimental impacts to the refined areas in subsection 3.
- 6. Conduct or authorize primary forest activities to avoid detrimental impacts to Northern Caribou calving range, rutting range, connectivity matrix or mineral licks, as described by the habitat attributes identified in the Notice.

#### 5.2.3 Water, Fish, Wildlife & Biodiversity in Riparian Areas FPPR 8

Where the Timber Sales Manager carries out or authorizes primary forest activities within the BCTS FDU, the results or strategies for the objective set by government for water, fish, wildlife and biodiversity that is set out in section 8 of the FPPR are the practice requirements in sections 47, 48, 49 (1)(3)(4)(5), 50, 51, 52(2) and 53 of the FPPR, as written on the date this FSP is submitted for approval and sections 5.2.3.1, 5.2.3.2 and 5.2.3.3 below.

#### 5.2.3.1 Lake Riparian Classes FPPR 12.3(3)

1. In respect of lake riparian classes and associated riparian management areas, riparian reserve zones and riparian management zones set out in Table 1 (located below).

Lake Riparian Class <sup>1</sup>	Lake Subclass *	Riparian Management Area (meters)	Riparian Reserve Zone (meters)	Riparian Management Zone (meters)
L1-A		0	0	0
	А	250	200	50
	В	100	50	50
L1-B	С	100	30	70
	D	100	10	90
	ш	50	10	40
L3		30	0	30

Table 1: Minimum Lake RMA, RRZ and RMZ Widths

Note 1- Lake Riparian Classes are described in section 49 of the FPPR Lake Subclasses have been derived from the draft Vanderhoof Lakeshore Classification Plan (1998)

#### 5.2.3.2 Restrictions in a Riparian Reserve Zone FPPR 12.3(5)

- 1. In addition to FPPR section 51 (1), trees within a riparian reserve zone, must not be cut, modified or removed, except for the following purposes:
  - a) harvesting within a Wildland Urban Interface area, where retaining mature or immature trees poses a significant risk to public safety, or infrastructure;
- 2. For each subclass of L1-B lake classes set out in Table 1: cutting, modification, or removal of trees within the Riparian Reserve Zone:
  - a) is not permitted within the 10m portion of the reserve immediately adjacent to the lake;

- b) in addition to FPPR section 51 (1), is permitted in that portion of the riparian reserve, not referred to in subsection 2 a), only if the cutting, modification or removal is to:
  - i. enhance recreational opportunities and/or visual quality objectives, or
  - ii. enhance wildlife habitat and/or biodiversity values.
- c) is not permitted under subsection 2 b) if fisheries and/or water quality values will be negatively impacted by lakeshore soil disturbance or upslope lakeshore soil erosion associated with primary forestry activities.

#### 5.2.3.3 Minimum Basal Area Retention in the Riparian Management Zone FPPR 12(3)

Where the Timber Sales Manager carries out or authorizes primary forest activities, the results or strategies for the objective set by government for water, fish, wildlife and biodiversity that is set out in section 8 of the FPPR are:

- 1. The cutblock is designed to retain basal area in the riparian management zone in accordance with the levels specified in Table 2 for the applicable riparian class and applicable windthrow hazard;
- Cut block design will be guided by existing literature such as the Windthrow Handbook for British Columbia Forests (Stathers, Rollerson, and Mitchell, 1994). Windthrow Assessments will generally be conducted using the MoFR FS 712 Windthrow Assessment Field Cards or similar accepted methodology, and
- 3. The primary forest activities comply with the basal area retention specified in Table 2.
- 4. A minimum 5-meter Riparian buffer will be retained adjacent Non-Classified Wetlands (NCW's) and Non-Classified Lakes (NCL's).

	Minimum Basal Area Retention in Riparian Management Zone						
Riparian Classification	Windthrow Hazard (in RRZ or RMZ)						
	Low	Moderate	High / Very High				
S1-A	30%	30%	50%				
S1-B, S2, S3	0%	30%	60%				
S4	35%	50%	60%				
S5	35%	80%	100%				
S6	50%	60%	60%				
W1, W5	0%	20%	40%				
L1-B (A),	0%	0%	0%				
L1-B (B) & L1-B (C)	0%	20%	40%				
L1-B (D) & L1-B (E)	10%	30%	60%				
W3 & L3	50%	60%	60%				

Table 2: Minimum Basal Area Retention in Riparian Management Zone

#### 5.2.4 Fish Habitat in Fisheries Sensitive Watersheds FPPR 8.1

No fisheries sensitive watersheds have been designated within the Vanderhoof Forest Development Unit.

#### 5.2.5 Water in Community Watersheds FPPR 8.2

No community watersheds have been designated within the Stuart Nechako Forest District.

#### 5.2.6 Wildlife and Biodiversity at the Landscape Level FPPR 9

#### 5.2.6.1 Maximum Cutblock Size FPPR 12.4

Where the Timber Sales Manager carries out or authorizes primary timber harvesting, within the BCTS FDU, the results or strategies for the objective set by government for wildlife and biodiversity at the landscape level that is set out in section 9 of the FPPR are:

1. The cutblock harvest area will comply with the young forest patch size distribution targets specified in the Order - *Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area* (October 20, 2004), determined in accordance with result or strategy 5.1.2.

#### 5.2.6.2 Harvesting Adjacent to another Cutblock FPPR 12.4

Where the Timber Sales Manager carries out or authorizes primary timber harvesting, within the BCTS FDU, the results or strategies for the objective set by government for wildlife and biodiversity at the landscape level that is set out in section 9 of the FPPR are:

1. Harvesting will comply with the young forest patch size distribution targets specified in the Order - *Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area* (October 20, 2004), determined in accordance with result or strategy 5.1.2.

#### 5.2.7 Wildlife and Biodiversity at the Stand Level FPPR 9.1

#### 5.2.7.1 Wildlife Tree Retention FPPR 12.5

Where the Timber Sales Manager carries out or authorizes primary forest activities, within the BCTS FDU, the results or strategies for the objective set by government for wildlife and biodiversity at the stand level that is set out in section 9.1 of the FPPR are:

- At the end of any 12-month period beginning on April 1, the total area covered by wildlife tree retention areas that relate to one, or more cutblocks, completely harvested under the authority of this FSP, will be a minimum of 10% of the total area of the cutblocks.
- 2. For the purposes of subsection 1, a wildlife tree retention area may relate to more than one cutblock, if all of the cutblocks that relate to the wildlife tree retention area collectively meet the requirement of subsections 1 and 3.
- 3. At the completion of harvesting, the total amount of wildlife retention areas that relate to a timber sale license is a minimum of 7 % of the total cutblock area of the timber sale license, unless the timber sale license pertains to:
  - a) an area incompatible with the establishment of a free-growing stand (based on intended landuse designation); or
  - b) minor salvage volume consisting of individual patches less than, or equal to 2,000 m3; or
  - c) harvesting related to research trials; or
  - d) harvesting associated with Wildland Urban Interface areas, where stand level retention may pose a significant risk to public safety, or infrastructure.

#### 5.2.7.2 Wildlife Tree Retention Areas – Harvesting Restrictions FPPR 12.5

Primary forest activities are not permitted within a wildlife tree retention area unless the following conditions occur within the BCTS FDU:

- 1. The trees on the net area to be reforested of the cutblock to which the wildlife tree retention area relates, have developed attributes that are consistent with a mature seral condition; or
- 2. One, or more, wildlife tree retention replacement areas are established, that:
  - a) provide equivalent area and the structural characteristics and wildlife habitat values consistent with the original wildlife tree retention area from which the timber is being harvested.
- 3. Circumstances exist which warrant the replacement of a wildlife tree retention area, including:
  - a) the retention area is rendered ineffective due to stand mortality, or windthrow and economic salvage opportunities exist.
  - b) the retention area poses a forest health risk to adjacent timber types or plantations.
  - c) removal of trees within the retention area is necessary to address safety concerns.
  - d) harvest of the retention area (or parts thereof) is necessary to facilitate subsequent road access.

#### 5.2.8 Cultural Heritage Resources FPPR 10

Where the Timber Sales Manager carries out or authorizes primary forest activities, within the BCTS FDU, the results or strategies for the objective set by government for cultural heritage resources that is set out in section 10 of the FPPR are:

- 1. Identify the First Nation traditional territories located within the FDU by utilizing the government maintained (MARR) First Nations Consultative Areas Database (CAD).
- 2. In consideration of subsection 1, determine those First Nations potentially affected by proposed development activities associated with Primary Forest Activities.
- 3. Request First Nation input (preferably through face-to-face discussions with Chief and Council, or a designate) pertaining to cultural heritage resources of continuing importance and areas of interest, or management concern, at a landscape level.
- 4. Where planning forest management activities within the FDU, First Nation Land Use Plans, if made available, will be considered, to the extent the plans are not in direct conflict with government objectives or policy.
- 5. Strive to undertake meaningful consultation with potentially affected First Nations, identified in subsection 2, consistent with the Province of British Columbia consultation procedures, as existing and updated during the term of this FSP, and in consideration of agreements such as the *Carrier Sekani First Nations Collaboration Agreement and the Socio-Cultural Initiatives Agreement.* 
  - a) share site specific information (pertaining to proposed development activities) with potentially affected First Nations. Operational maps outlining proposed and existing cutblocks and roads and other pertinent forest management information will be accompanied by block summaries and a description of the management intent;
  - b) solicit First Nation input (by means of face-to-face meetings, or through written correspondence) regarding any aboriginal interests (Aboriginal Rights & Title) that may potentially be impacted by the proposed development activities;
  - c) document information exchange efforts. Summarize meeting minutes, input provided, concerns expressed and recommendations provided. Provide feedback to First Nations within a 30 day time frame, including proposed resolutions or BCTS management intent to issues brought forth;

- any CHR features identified during site level planning and assessment activities will be shared with the potentially affected First Nation. This includes sharing the results of the assessment and the intended management strategy to address the findings or First Nation input;
- e) re-initiate information sharing and consultation where the initial information sharing described in subsection a) has taken place more than three years prior;
- f) conduct archaeological impact assessments within proposed development areas:
  - i. identified as having a high likelihood of containing archaeological features through the application of the Vanderhoof District Archaeological Overview Assessment Model and/or confirmed by the review of a Registered Professional Archaeologist; or
  - ii. where potential CHR features are identified during site level development activities, or by a First Nation, and a Registered Professional Archaeologist recommends the need for an Archaeological Impact Assessment.
- g) BCTS field staff and contractors involved in site level planning will be trained in CHR identification by a professional archaeologist (i.e. recognition of above ground CHR features such as Culturally Modified Trees (CMT's) and cultural depressions).
- h) where site-specific information regarding CHR that is identified to be of Traditional Use and continuing importance, is identified; and the identified CHR has the potential to be affected by planned activities, each of the following will be completed:
  - i. record the location of the Cultural Heritage Resource;
  - ii. evaluate the direct impact of the planned activities on the Cultural Heritage Resource; and
  - iii. modify the planned activities, or undertake further assessment (as per subsection g)) to ensure that the Cultural Heritage Resource is conserved, or if necessary protected.
- i) communicate and seek input from potentially affected First Nations on the completion of site level planning and the outcomes of the assessments and proposed management intent under parts g) and i) of this result or strategy.
- j) notify the affected First Nation how their input has been considered and that an authorization decision is pending.
- 6. Where a First Nation has identified road access (authorized by the Timber Sales Manager) as a concern to their continued use of a Traditional Use Site, the Timber Sales Manager will work collaboratively with the First Nation to manage access (limiting or improving).
- 7. To facilitate First Nation plant gathering in plant communities associated with second growth plantations, the Timber Sales Manager will not authorize chemical herbicides to control vegetation in plantations or road right-of-way's.
- 8. Medicinal plant gathering sites identified by a First Nation as having aboriginal importance, and being rare in abundance, will be documented and managed to conserve the desired plant species. Management strategies related to harvest activities include:
  - a) protection of the site by avoidance, or inclusion within a wildlife tree retention area;
  - b) winter harvesting, to minimize site disturbance;
  - c) selective harvesting;
  - d) avoidance of post-harvest mechanical site preparation;
  - e) restricting road construction within the site, unless road access is required beyond the site and no other practical access option exists.

### 5.3 Objectives Enabled by Regulations

#### 5.3.1 Northern Caribou Ungulate Winter Range # U7-012 GAR 9(2) and 12(1)

Where the Timber Sales Manager carries out or authorizes primary forest activities, within a Northern Caribou ungulate winter range polygon as specified in the *Order – Ungulate Winter Range #U7-012* (December 30, 2005), primary forest activities will comply with the general wildlife measures specified in the Order.

#### 5.3.2 Scenic Area Designations & Visual Quality Objectives GAR 7(1) & 7(2)

Where the Timber Sales Manager carries out or authorizes timber harvesting, or road construction, within the BCTS FDU, within a scenic area pertaining to the Order - *Establishment of Scenic Areas and Visual Quality Objectives within the Vanderhoof Forest District* (September 22, 2008), the results or strategies for the objectives for visual quality are:

- 1. The cutblock or road is designed to be consistent with the applicable established Visual Quality Objectives for the known Scenic Area in which they are located; and
- 2. The visually altered forest landscape is consistent with the applicable established Visual Quality Objectives.

#### 5.3.3 Moose Ungulate Winter Range #U-7-018 and U-7-020 GAR 9(2) & 12(1) & 12(2)

The Timber Sales Manager will comply with the General Wildlife Measures in the Order – Moose Ungulate Winter Range U-7-018 and U-7-020 in the Stuart Nechako Forest District (Ministry of Forests, Lands and Natural Resource Operations and Rural Development, March 30, 2022).

#### 5.3.3.1 Objective – Promote stand heterogeneity by using a diversity of tree species identified in an approved stocking standard.

The Objective under the Order applies to the conditional harvest area UWR units identified in the table below.

UWR TAG	UNIT No.
U-7-018	2, 4, 6, 9, 11, 13, 15, 17, 18
U-7-020	4, 10, 12, 14, 16, 18, 19, 20, 21

Where the Timber Sales Manager carries out or authorizes primary forest activities within a conditional harvest area of Moose *UWR U-7-018 and U-7-020* in the BCTS FDU, the results and strategies for the objective to promote stand heterogeneity by using a diversity of tree species identified in an approved stocking standard are:

- 1. A mixture of preferred and acceptable tree species identified in the approved stocking standards in Appendix 5 will be planted within the Net Area to Reforest (NAR) of each applicable cutblock, except as noted in subsection 3.
- 2. No more than 60% of any single tree species will be planted within the NAR of each applicable cutblock, except as noted in subsection 3.
- 3. In those site-specific instances where forest health pathogens present on the site (as supported by survey information) restrict the ecologically suitable species that can be planted within the NAR:
  - a) a written rationale will document the limiting forest health criteria and steps taken to promote species diversity and maintain or enhance moose habitat.
- 4. The minimum stocking standard limitations for preferred well-spaced stems per ha in Appendix 5 (MSSp) will not apply to harvest areas within Moose conditional harvest areas in order to enhance species diversity.

5. Where healthy contiguous and mappable deciduous types more than two (2) hectares in size are identified (through silviculture surveys) in the NAR and found to be out-competing target coniferous stems, their area and location will be delineated. An exemption from the requirement to achieve a Free-Growing stand will be sought for the area comprising these deciduous types. If approved the area will be removed from the NAR for the purpose of enhancing moose habitat.

#### 5.4 Grand parented Designations and Objectives FRPA 180-181

#### 5.4.1 Mule Deer Designations and Objectives FRPA 180-181

Where the Timber Sales Manager carries out or authorizes primary forest activities, within a mule deer ungulate winter range polygon as specified in the *Order – Ungulate Winter Range #U7-011* (Ministry of Water Land and Air Protection, October 6, 2003), the results or strategies for the objective for mule deer that is set out in the Order under FRPA section 181 are:

- 1. Cutblocks and roads are designed to achieve the management objectives specified in the Order; and
- 2. Primary forest activities will comply with the objectives specified in the Order.

#### 6.0 MEASURES

#### 6.1 Measures for Preventing the Introduction or Spread of Invasive Plants FPPR 17

Where the Timber Sales Manager carries out or authorizes primary forest activities within the BCTS FDU, the measures for the purposes of FRPA section 47 are:

- 1. Identify known locations of invasive plant species within the FDU, as indicated in provincial inventories (the Invasive Alien Plant Program IAPP).
- 2. On an annual basis, identify priority invasive plant species (through discussion with regional invasive plant committee(s) and FLNRO invasive plant specialists).
- 3. Priority invasive plant species identification training will be provided to field staff and contractors at minimum every two years.
- 4. New invasive plant sites identified will be reported to the local FLNRO invasive plant specialist, or reported through the provincial IAPP map display and reporting tool.
- 5. For the purpose of subsection 6, 7 and 8, Table 3: Invasive Plant Site Risk described below defines the risk rating of areas where the spread of invasive plants pose an extremely high, high or moderate risk.

Risk Rating	Site Conditions
Extremely High	Areas of Disturbed Soils 0.25 hectares or greater, which are located within 5 km of highly susceptible areas, such as seed or other high-value agricultural crops (including private land).
High	Areas of Disturbed Soils 0.5 hectares or greater, which are located within 5 km of a site identified as containing extremely, or very invasive plants, as described by the Northwest Invasive Plant Committee
Moderate	Areas of Disturbed Soils 0.5 hectares or greater, which are located within 5 km of a site identified as containing invasive, or aggressive invasive plants, as described by the Northwest Invasive Plant Committee

#### Table 3: Invasive Plant Risk

#### Table 4: Invasiveness Classifications

Invasiveness Classifications					
Extremely Invasive	Invade even undisturbed habitats and dominate them. Domination implies the invasive plant becomes the most abundant species across the entire site or area of the plant community being invaded. The invasion can progress slowly or rapidly.				
Very Invasive	Invade even undisturbed habitats. They become very prevalent and may form dense patches but usually do not dominate the entire site or area of the plant community.				
Invasive	Can invade undisturbed habitats but they usually require some disturbance to gain entry. Once in a habitat they usually do not dominate the site unless there are management problems.				
Aggressive	Can invade even undisturbed habitats but they do so at a slow pace and rarely dominate the site. These plants may go through large population fluctuations.				

Note: - Invasiveness Classifications are sourced from the NWIPC 2015 Strategic Plan. Extremely Invasive being the most aggressive and invasive.

- 6. In areas where the spread of invasive plants pose an extremely high risk, the TSM will seed areas of disturbed soils with grass and legumes (using Common #1 Forage Mixture or better) within 6 months of completing primary forest activities.
- 7. In areas where the spread of invasive plants pose a high risk, the TSM will seed areas of disturbed soils with grass and legumes (using Common #1 Forage Mixture or better) within 1 year of completing primary forest activities.
- In areas where the spread of invasive plants pose a moderate risk, the TSM will seed areas of disturbed soils with grass and legumes (using Common #1 Forage Mixture or better) within 2 years of completing primary forest activities.
- 9. Subsection 6, 7 and 8 above pertain to areas of disturbed soils:
  - a) resulting from forest practices carried out, or authorized by the TSM;
  - b) not reforested; and
  - c) within the road clearing width that will support vegetation.
- 10. For the purpose of subsection 9 c), the TSM will undertake seeding associated with the road clearing width on areas of disturbed soils that will support vegetation. This includes road cuts, ditchlines, fill slopes, inactive borrow pits, disposal sites for debris and disposal sites for excavation spoil. It excludes the running surface of active roads, exposed rock or other areas where seed will not successfully germinate.
- 11. Sites referred to in subsection 6 and 7 of this commitment will be monitored over the year following seeding to ensure they are adequately vegetated (to prevent the introduction or spread of invasive plants). Sites not adequately vegetated, or disturbed by other harvesting activities carried out, or authorized by the TSM, will be re-seeded (using Common #1 Forage Mixture or better) within one year of site inspection and further monitored as required to ensure establishment of grass seed.
- 12. Soil or surfacing material (used during road construction) will not be transported from a known invasive plant site (as identified through the Invasive Alien Plant Program IAPP).

#### 6.2 Measures to Mitigate the Loss of Natural Range Barriers FPPR 18

Where the Timber Sales Manager carries out or authorizes primary forest activities within the BCTS FDU, the measures for the purposes of FRPA section 48 are:

- 1. Each year identify areas within the FDU that are subject to, or adjacent to agreements under the *Range Act* in respect of grazing of livestock, using information gathered from FLNRO spatial data layers, district range staff, or regional experts.
- 2. After completion of subsection 1, identify the range tenure areas in which the proposed development activities are located.
- 3. Share information regarding the proposed primary forest activities (sufficient to enable input in subsection 4) with any potentially affected range tenure holder.
- 4. Solicit input from the range tenure holder as to whether any natural range barriers may be rendered ineffective by the proposed development activities.
- 5. Where a range tenure holder demonstrates that planned primary forest activities will render a natural range barrier ineffective, the Timber Sales Manager will implement procedures to mitigate the effects of proposed activities by:
  - a) discussing potential impacts and mitigation options with the range tenure holder(s) and agree upon a mitigation plan (including timelines for implementation and follow-up evaluations), or
  - b) modifying the planned primary forest activities.
  - c) implementing the mitigation plan (as per subsection a)), which may include the installation of an artificial range barrier to replace the natural range barrier rendered ineffective by the proposed primary forest activities.

#### 7.0 STOCKING STANDARDS

- 1. Section 44 (1) of the FPPR applies in all situations or circumstances under this FSP where a free growing stand is required to be established under FRPA section 29.
- 2. Appendix 5 specifies the regeneration date, free growing height and stocking standards for the situations, or circumstances where FPPR section 44 (1) (a) and (b) apply. The dominant site series will be used to establish the stocking standards for those standard units with a complex site series.
- 3. Section 44(4) does not apply to this FSP, as the Timber Sales Manager will not carry out or authorize:
  - a) commercial thinning, removal of individual trees, or similar type of intermediate cutting; and
  - b) harvesting of special forest products.
- 4. The maximum coniferous density limit for a free-growing Lodgepole Pine leading stand is established at 20,000 countable conifer stems per hectare where pine is greater than or equal to 80% of the inventory.
- 5. Douglas fir Management Strategy Where Douglas fir (Fdi) grows on a site or is ecologically suitable for a site it will be an acceptable species. Douglas-fir may not be listed in a specific stocking standard in the Chief Forester's Stocking Standards, however if it is present in the stand before harvesting, or has the potential to grow with acceptable health and vigor, then it will be considered an acceptable species on that site. The addition of Fdi to these sites allows for increased species diversity which will help mitigate the effects of climate change, increase biodiversity and aid in plantation health. The definition of a suitable site for Fdi within this FSP will be if the site rates as having a high or very high Douglas Fir site potential as defined by the table on page 10 of the Douglas-fir management Guidelines for the Prince George Forest Region December 1999.

- 6. The minimum inter-tree distance (MITD) to define well-spaced trees is 2.0 meters, except in the following circumstance:
  - a) On subhygric, hygric and/or subhydric site series standards units, the MITD will be 1.6 meters.
- 7. For the purpose of preferred microsite selection during artificial regeneration and crop tree selection during silviculture surveys, where the MITD is normally 2.0 meters for a pair of well-spaced crop trees, it may be reduced to 1.6 meters if the next acceptable, well-spaced crop tree is a minimum of 2.5 meters from either crop tree in the pair.
- 8. To be free growing, trees must be at least 125% of the height of brush in ESSF and 150% of the height of brush in all other zones.
- 9. In Riparian Management Areas and Wildland Interface Areas adjacent to private land: aspen, cottonwood, birch, willow and alder within 20 meters of the riparian feature or private land boundary will not be considered vegetative competition when conducting a free growing assessment.
- 10. In respect of Agricultural Development Areas (as defined in section 5.1.1) and Gravel Pit Reserves, the land-use intent is incompatible with the establishment of a free-growing stand, thus no stocking standards will be assigned.
- 11. Within net area to reforest, non-brushed buffers up to 20 meters in width may be left adjacent to block boundaries in effort to retain important moose browse species (e.g., aspen, birch, willow, cottonwood, red-osier dogwood, highbush cranberry, beaked hazelnut, saskatoon berry, etc.) not in conflict with Caribou management. The brush and deciduous species within these buffers will not be considered competition when conducting a free growing assessment.
- 12. Stocking Standard Variances:
  - a) Standards Id's 1052584 (SBS dk site series 03), 1052589 (SBS dw2 site series 07), 1052592 (SBS dw3 site series 03) and 1052593 (SBS dw3 site series 05 & 07). Fdi will only be considered a preferred species in those circumstances where the presence of healthy, immature Fdi stems, mature Fdi stems or Fdi-related mycorrhizae exists on the preharvest site, or it is ecologically suited (as defined in subsection section 7 (5)) to the site.
  - b) Standards Id **1052586** (SBS dk site series 09) only in those circumstances where healthy, immature Sw or mature Sw stems exist on the pre-harvest site, will Sx be considered a preferred species.
  - c) Standards Id's 1052589 (SBS dw2 site series 08 & 09), 1052593 (SBS dw3 site series 04 & 05), 1052597 (SBS mc2 site series 07) & 1052601 (SBS mc3 site series 03, 05 & 06) In those circumstances where the presence of healthy, immature or mature BI stems exists on the pre-harvest site, BI will be considered an acceptable species.
  - d) Standards Id's 1052589 (SBS dw2 site series 07), 1052593 (SBS dw3 site series 05 & 06), 1052597 (SBS mc2 site series 03 & 07) & 1052601 (SBS mc3 site series 01 & 03) In those circumstances where the presence of healthy, immature or mature Black Spruce (Sb) stems exists on the pre-harvest site, Sb will be considered an acceptable species.
  - e) The above stocking standard variances are deemed consistent with:
    - i. Land Management Handbook No. 24; A Field Guide for Site Identification and Interpretation for the Southwest Portion of the Prince George Forest Region (January 1993).
    - ii. Updates to the Reference Guide for FDP Stocking Standards (2014): Climate Change Related Stocking Standards, FLNRO, February 3, 2014.
  - f) Standard Id 1052577 (ESSF mv1, site series 01), 1052580 (SBPS mc, site series 01) & 1052601 (SBS mc3, site series 01) In consideration of climate change related to stocking standards, Fdi will be considered an acceptable species on non-frost prone mesic sites.

- g) Standards Id 1052577 (ESSF mv1, site series 01), 1052580 (SBPS mc site series 01), 1052584 (SBS dk, site series 01, 05 & 06), 1052589 (SBS dw2, site series 01, 05, 06), 1052593 (SBS dw3, site series 01, 04, 05, 06), 1052597 (SBS mc2, site series 01, 03, 05, 06), 1052601 (SBS mc3 site series 01, 04, 05). In consideration of climate change related to stocking standards, Lw will be considered an acceptable species within the LW 1 Seed Planning Zone and the number of Lw seedlings planted will be limited to a maximum of 10% of the combined total number of seedlings planted by the Timber Sales Manager, during each fiscal year, within the Stuart-Nechako Natural Resource District. The minimum free growing height of Lw is equal to the minimum free growing height of lodgepole pine (Pli) plus an additional 0.20 meters for any given BEC zone.
- h) The Regen Delay associated with a site series standards unit has been established in the Appendix 5 stocking standard tables, except in the following circumstance:
  - a) For those standards IDs which combine site series with both 4 and 7 year Regen Delays, the more restrictive 4 year Regen Delay has been chosen. In those sites series where the Chief Foresters standards indicate a 7 year Regen Delay, the Regen Delay may be increased from 4 years (where applicable in the tables) to 7 years.
- i) The above stocking standard variances related to climate change are consistent with:
  - i. Updates to the Reference Guide for FDP Stocking Standards (2014): Climate Change Related Stocking Standards, FLNRO, February 3, 2014.
  - ii. Landscape-level Ecological Tree Species Benchmarks Pilot Project: First Approximation Benchmarks in Five British Columbia Timber Supply Areas (Shirley Mah & Kevin Astridge, 2014).
  - iii. Chief Forester Guidance for the incorporation of western larch into Forest Stewardship Plan and Woodlot Licence Plan stocking standards in areas of assisted range and population expansion (Jim Snetsinger, Dec 2010).
  - iv. Amendments to the spatial data for western larch seed planning zones Lw1, Lw2 & Lw3, May 2014.

#### 8.0 POST-FSP APPROVAL:STAKEHOLDER INFORMATION SHARING

The Timber Sales Manager will share proposed BCTS development activities (specifically proposed cutblocks and roads) with stakeholders identified as having an interest in the area of the proposed activity. This information sharing opportunity will be provided on an annual basis, or as new development is proposed.

#### 9.0 SIGNATURES

#### 9.1 Person Involved in the Preparation of the Plan

Bruce Middleton, RPF Planning Officer, Stuart-Nechako Business Area

#### 9.2 Signature of Person Required to Prepare the Plan

#### Cameron Simpson, RPF

Timber Sales Manager Stuart-Nechako Business Area BC Timber Sales

Original Signed by Cameron Simpson Signature

April 12, 2022

"I certify that I have reviewed this document and, although I did not personally supervise the work; I have determined that it has been done to the standards expected of a member of the Association of British Columbia Forest Professionals."

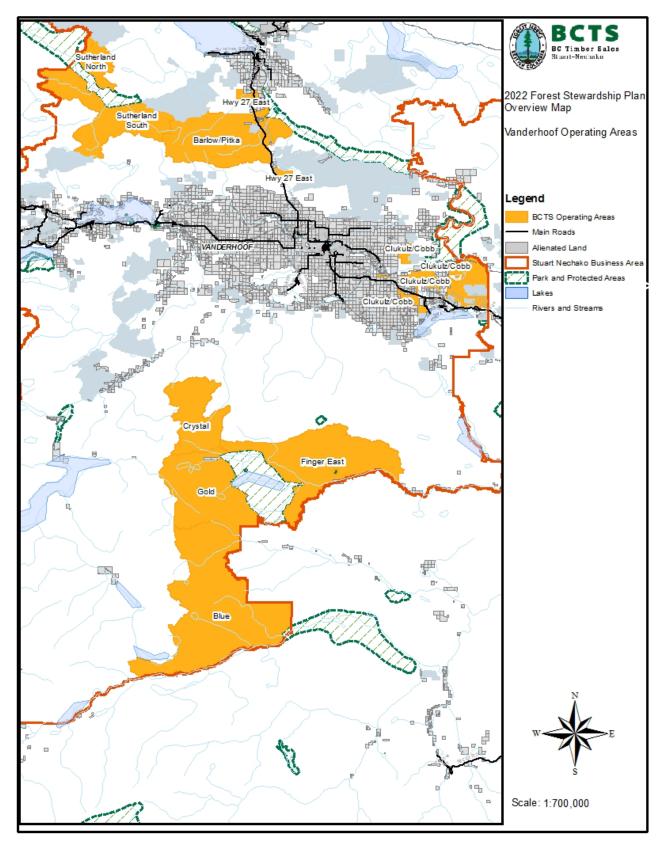
Vanderhoof Operating Area Stuart Nechako Forest District



### 2022 Replacement Forest Stewardship Plan

## **APPENDIX 1**

## Overview Map of the BCTS Vanderhoof Timber Pricing Areas



### Appendix 1: Overview Map - BCTS Vanderhoof Timber Pricing Areas

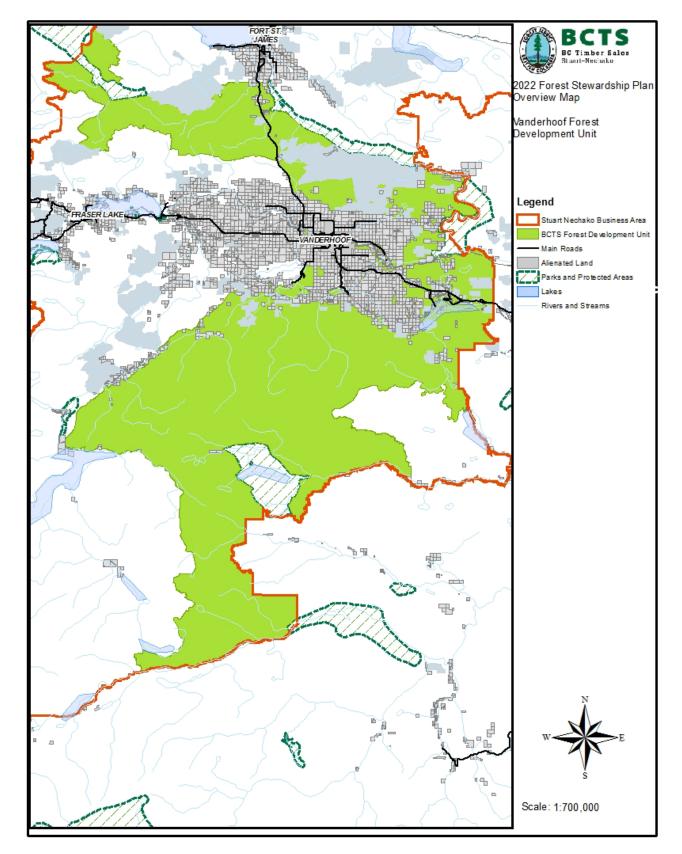
Vanderhoof Operating Area Stuart Nechako Forest District



### 2022 Replacement Forest Stewardship Plan

## **APPENDIX 2**

## Overview Map of the BCTS Vanderhoof Forest Development Unit (FDU)



### Appendix 2: Overview Map – BCTS Vanderhoof Forest Development Unit (FDU)

Vanderhoof Operating Area Stuart Nechako Forest District

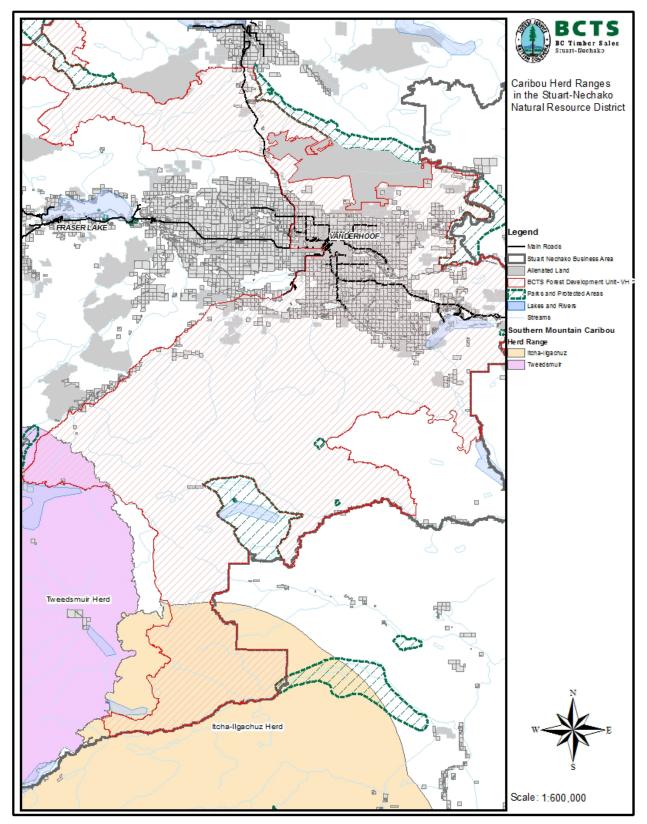


### 2022 Replacement Forest Stewardship Plan

## **APPENDIX 3**

## Overview Map of the Caribou Herd Ranges in the BCTS Vanderhoof Forest Development Unit of the Stuart Nechako Forest District

### Appendix 3: Caribou Herd Ranges in the BCTS Vanderhoof Forest Development Unit of the Stuart Nechako Forest District



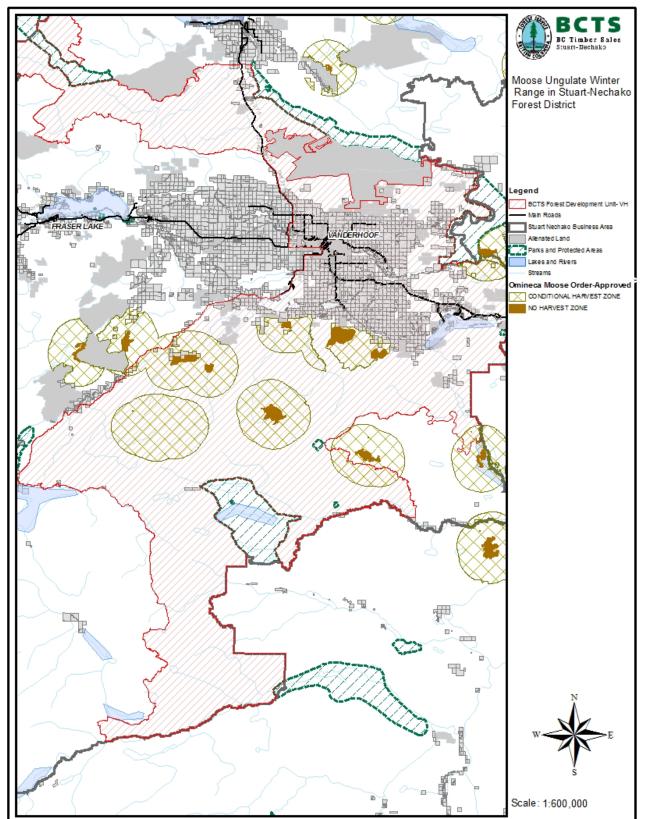
Vanderhoof Operating Area Stuart Nechako Forest District



### 2022 Replacement Forest Stewardship Plan

## **APPENDIX 4**

## Overview Map of Moose UWR in the BCTS Vanderhoof Forest Development Unit of the Stuart Nechako Forest District



### Appendix 4: Moose UWR in the BCTS Vanderhoof Forest Development Unit of the Stuart Nechako Forest District

Vanderhoof Operating Area Stuart Nechako Forest District



2022 Replacement Forest Stewardship Plan

# APPENDIX 5 BCTS FSP Content Maps 1:100,000 scale

PDF Copies of the FSP Maps Are Available Through The Link Below

www.for.gov.bc.ca - /ftp/TSN/external/!publish/

Vanderhoof Operating Area Stuart Nechako Forest District



2022 Replacement Forest Stewardship Plan

# **APPENDIX 6:**

## BCTS – Vanderhoof Forest Stewardship Plan Stocking Standards in the Stuart Nechako Natural Resource District

Term: July 1, 2022, to June 30, 2027

#### Even-Aged Stand Stocking Standards

Standards		Biogeoclimat	ic	Spe	ecies		Stocking		Regen	Free G	rowing
ID	Zone/	Soil	Site	Preferred	Acceptable	TSS	MSS pa	MSS p	Delay (yrs)	Min. H	leight
	Subzone	Moisture <sup>a</sup>	Series	(p)	(a)	(wsph)	(wsph)	(wsph)	(10)	species	height (m)
1052576		xeric/ subxeric	02	PI	BI	1000	500	400	7	PI BI	1.2 0.6
1052577	ESSF mv1	submesic/ hygric	01 03 <sup>10h</sup> 04 <sup>10h</sup>	Sx BI PI	Fd <sup>10f</sup> Lw <sup>10g</sup>	1200	700	600	4	PI Others	1.6 0.8
1052578		hygric/ subhydric	05	Sx <sup>1,2</sup> Bl <sup>1,2</sup>	Pl <sup>1</sup>	1000	500	400	4	PI Others	1.2 0.6
1052579		xeric/ subxeric	02 <sup>b</sup>	PI	Sx Sb	1000	500	400	7	PI Others	1.2 0.6
1052580	SBPS	submesic/ mesic	01 03	PI	Fd <sup>10f</sup> Sx Sb Lw <sup>10g</sup>	1200	700	600	7	PI Others	1.6 0.8
1052581	mc	subhygric – subhydric	04 05 06	Pl <sup>1</sup> Sx <sup>1,2</sup>	Sb	1000	500	400	4	PI Others	1.2 0.6
1052582		subhydric	07 <sup>b</sup>	$Pl^1Sx^{1,2}Sb^1$		400	200	200	4	PI Others	1.2 0.6
1052583		xeric	02 <sup>b</sup>	PI Sx		1000	500	400	7	PI Sx	1.4 0.8
1052584	SBS dk	subxeric – subhygric	01 <sup>10h</sup> 03 <sup>10h b</sup> 04 <sup>10h</sup> 05 <sup>10h</sup> 06	Pl Fd <sup>10a</sup> Sx	Lw <sup>10g</sup>	1200	700	600	4	PI Fd Sx	2.0 1.4 1.0
1052585	ак	subygric/ hygric	07 08	Sx <sup>1,2</sup> Pl <sup>1</sup>		1000	500	400	4	PI Sx	2.0 1.0
1052586		hygric/ subhydric	09 <sup>b</sup> 10 <sup>b</sup>	Sx <sup>10b</sup> Sb <sup>1</sup> Pl <sup>1</sup>	-	400	200	200	4	PI Others	1.4 0.8
1052587		xeric	02 <sup>b</sup>	Fd Pl	-	1000	500	400	7	PI Fd	1.4 1.0
1052588		subxeric	03 04	Fd Pl	-	1200	700	600	7	PI Fd	2.0 1.4
1052589	SBS dw2	submesic – hygric	01 <sup>10h</sup> 05 <sup>10h</sup> 06 <sup>10h</sup> 07 <sup>10h</sup> 08 09	PI Sx Fd <sup>10a</sup>	BI <sup>10c</sup> Sb <sup>10d</sup> Lw <sup>10g</sup>	1200	700	600	4	Pl Fd Others	2.0 1.4 1.0
1052590		hygric	10	Sx <sup>1,2</sup> Pl <sup>1</sup>	Bl <sup>3</sup>	1000	500	400	4	PI Others	1.4 0.8
1052591		subhydric	11 <sup>b</sup>	Sx <sup>1,2</sup> Pl <sup>1</sup>	Sb <sup>1</sup>	400	200	200	4	PI Others	1.4 0.8

Forest Stewardship Plan – Appendix 6

#### Vanderhoof Operating Area

BC Timber Sales Stuart-Nechako Business Area

Standards		Biogeoclimat	ic	Spe	Species		Stocking		Regen	Free G	Free Growing	
ID	Zone/ Subzone	Soil Moistureª	Site Series	Preferred (p)	Acceptable (a)	TSS (wsph)	MSS pa (wsph)	MSS p (wsph)	Delay (yrs)	Min. H		
	Oubzone			(9)	(α)	(WSpii)	(wspii)	(WSpii)		species	height (m)	
1052592		xeric/ subxeric	02 03	PI Fd <sup>10a</sup>	Sx	1000	500	400	7	Pl Fd Sx	2.0 1.4 1.0	
1052593	SBS dw3	submesic – subhygric	01 <sup>10h</sup> 04 <sup>10h</sup> 05 <sup>10h</sup> 06 07 08	Pl Fd¹⁰ª Sx	Bl <sup>10c</sup> Sb <sup>10d</sup> Lw <sup>10g</sup>	1200	700	600	4	Pl Fd Others	2.0 1.4 1.0	
1052594		hygric	09	Pl <sup>1</sup> Sx <sup>1,2</sup>	Bl <sup>1,3</sup>	1000	500	400	4	PI Others	1.4 0.8	
1052595		subhydric	10 <sup>b</sup>	Lt <sup>1</sup> Pl <sup>1</sup> Sb <sup>1</sup> Sx <sup>1,2</sup>		400	200	200	4	PI Others	1.4 0.8	
1052596		xeric/ subxeric	02 <sup>b</sup>	PI	Sx Bl <sup>3</sup>	1000	500	400	7	PI Others	1.2 0.6	
1052597	SBS mc2	submesic – hydric	01 <sup>10h</sup> 03 <sup>10h</sup> 04 05 06 07 08 09	PI Sx	Bl <sup>10c</sup> Sb <sup>10d</sup> Lw <sup>10g</sup>	1200	700	600	4	Pl Others	1.6 0.8	
1052598	mc2	hygric – subhydric	10 11	Sx <sup>1,2</sup> Pl <sup>1</sup>	Bl <sup>1,2,3</sup>	1000	500	400	4	PI Others	1.2 0.6	
1052599		subhydric	12 <sup>b</sup>	Sx <sup>1,2</sup> Pl <sup>1</sup> Sb <sup>1</sup>	-	400	200	200	4	PI Others	1.2 0.6	
1052600		xeric	02	PI	Sx	1200	700	600	7	PI Sx	1.6 0.8	
1052601	SBS mc3	subxeric – subhygric	01 <sup>10h</sup> 03 <sup>10h</sup> 04 <sup>10h</sup> 05 <sup>10h</sup> 06 <sup>10h</sup> 07	PI Sx <sup>2</sup>	Bl <sup>10c</sup> Sb <sup>10d</sup> <b>Fd<sup>10f</sup> Lw<sup>10g</sup></b>	1200	700	600	4	Pl Others	1.6 0.8	
1052602		hygric	08	Sx <sup>1,2</sup> Pl <sup>1</sup>	Bl <sup>1,2,3</sup>	1000	500	400	4	PI Others	1.2 0.6	
1052603		subhydric	09 <sup>b</sup>	Pl <sup>1</sup> Sx <sup>1,2</sup> Sb <sup>1</sup>		400	200	200	4	PI Others	1.2 0.6	

Approved Stocking Standard Variances are bolded and referenced in section 7.0, subsection 10.

#### Vanderhoof Operating Area

#### Conifer Tree Species

Other definitions

BC Timber Sales Stuart-Nechako Business Area

"Biogeoclimatic" means the classification of zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests and Range for the identification and interpretation of ecosystems, as applicable to a harvested area. "TSS" means the target stocking standard in terms of well-spaced stems per hectare. "MSS" means the minimum stocking standard in terms of well-spaced stems per hectare.

"Min." means minimum.

- Species Footnotes
  - 1 elevated microsites are preferred
  - 2 may be limited by growing season frosts

"Sx" means hybrid spruce or interior spruce

3 risk of browsing by moose

"PI" means lodgepole pine

"Sb" means black spruce

"Lw" means western larch

<sup>a</sup> the soil moisture is provided for information and guidance only and does not constitute an integral part of the stocking standards <sup>b</sup> consideration should be given to including these sites in a retention area (field guide suggests 'avoid logging')

#### "BI" means subalpine fir "Fd" means Douglas fir "Lt" means tamarack

### **Uneven-aged Stocking Standards\* – Single-tree Selection only**

Target Density – from even-aged standards	Layer**	Stocking standards*** (well-spaced/ha)			
(stems/ha)		TSS pa	MSS pa	MSS p	
	1	600	300	250	
1200	2	800	400	300	
1200	3	1000	500	400	
	4	1200	700	600	
	1	400	200	200	
1000	2	500	300	250	
1000	3	700	400	300	
	4	1000	500	400	
	1	200	100	100	
100	2	300	125	125	
400	3	300	150	150	
	4	400	200	200	

\*Maximum regeneration delay is seven years. Regeneration delay can be met immediately following harvest if the residual stand has no significant damage or pest problems and meets minimum stocking standards.

** <b>Layer 1</b> Mature trees ≥ 12.5cm dbh	Layer 3 Sapling trees	Layer 3 Sapling trees ≥ 1.3m height to 7.4cm dbh		
Layer 2 Pole trees 7.5cm to 12.4cm dbh	Layer 4 Regeneration			
*** <b>TSS</b> – target stocking standards	MSS – minimum stocking standards	<b>pa</b> – preferred and acceptable	<b>p</b> – preferred	

Maximum coniferous density (only applicable to conifers in layer 3), post-spacing densities, MITD (for layers 2, 3 and 4), minimum free growing height and preferred/acceptable species are as specified in the Even-aged Stand Stocking Standards.