SITE PLAN CP 420 BLOCK 9
COOPER CREEK CEDAR LTD.

A. TENURE IDENTIFICATION

LICENCE NO.:	CP:	BLOCK:	TIMBER MARK:	UTM:	LICENSEE NAME:
FL A30171	**420**	**9**	**FE5420**	**491974 E, 5616960 N**	**Cooper Creek Cedar Ltd.**
AREA UNDER TENURE (ha):	MAPSHEET/OPENING #:		ELEVATION:	LOCATION:	
25.5	**82K075-**		**820-920**	**North Duncan**	

B. AREA SUMMARY

AREA OF NO PLANNED REFORESTATION (ha) (NPR)									
PERMANENT ACCESS	ROCK	WATER	SWAMP	OTHER NP	NC>4ha	WILDLIFE TREE RETENTION AREA (HA):	IMMATURE	OTHER (RESERVE)	TOTAL NPR AREA
3.1	**-**	**-**	**-**	**-**	**-**	**1.0**	**-**	**1.0**	**5.1**

NET AREA TO BE REFORESTED (ha)		
SU	SU AREA DESCRIPTION This block is located in Duncan.	NET AREA TO BE REFORESTED:
A	**ICHwk1-01(8)04(2)** Terrain includes areas of steep slopes and with some troughs, ridges and rock outcrops, and areas of mellower slopes. Aspect is generally northeast facing, slopes average 35-55% Surface soil textures are Silty Loam and Sandy Loam and subsoil textures are Silty Loam. Soils are moderately-well drained. Coarse fragment content is moderate (30-40%). Moisture regime is submesic-mesic and nutrient regime is poor. Humus form is a mor (0.5 -3 cm thickness) and rooting depth is 30-34cm. Soils are **non-sensitive.** Pre-harvest stand density is 872 stems/ha with a composition of Hw(85%) CW (14%) Fd and At (<1%). There is a dead potential standing and down density of 28 stems/ha of CwHwAt. Retain 40-45 stems per hectare as per section G: Silvicultural Systems TU 1: 11.2 ha Ground-based harvest TU 2: 9.2 ha Cable harvest Timing window: No road building or harvesting to occur within peak caribou calving season (May 15-July 15) Clearcut with Reserves silviculture system.	**20.4**
	TOTAL NET AREA TO BE REFORESTED:	**20.4**
	TOTAL AREA UNDER THE PLAN:	**25.5**

SOIL DISTURBANCE

SU	Max. Allowable Soil Disturbance (%)	Max. Amount TAS May Exceed MASD Prior to Rehab (%)	Max. Allowable Soil Disturbance For Roadside Work Areas (%)	Maximum Permanent Access Structures (%)
A	10.0	5.0	25%	12.2

RESULTS AND STRATEGIES

Biodiversity Objectives	
Result or Strategy Description	**3.5.3 - Old and Mature Forest**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 2 – Old & Mature Forests' **Landscape Units K21 and K22** The proposed CP 420 falls within the following Landscape Unit / BEC pairings, with targets as per KBHLPO Objective 2: K21/ESSFwm, K21 / ICHmw2, K21/ICHwk1, and K22/ICHwk1. These pairings do not have Mature + Old seral forest targets and therefore no targets in Connectivity Corridor either. Mature analysis is not applicable to this proposal. Cooper Creek Cedar's FSP (2024-2029 Forest Stewardship Plan for Cooper Creek Cedar Ltd – Forest License A30171) Section 3.5.3 states Old Forest requirements will be met through spatially, non-legal Old Growth Management Areas (OGMA's). This applies to the proposed CP 420. Analysis shows targets for Old will be met after harvesting of CP 420 spatially through non-legal OGMA's. There is no planned harvest of OGMA in CP 420. There is no planned harvest of OG TAP priority deferral polygons.
Result or Strategy Description	**3.5.3 - Green-up**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 4 – Green-up' – The proposed cutblock is consistent with FPPR Section 65(2).
Result or Strategy Description	**3.5.1 - Objectives set by Government for Wildlife and Biodiversity – Landscape Level**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 4 – Green-up'. The proposed cutblock complies with Sections 64 and 65 of the FPPR.
Cultural Heritage Resources	
Result or Strategy Description	**3.7 - Objectives set by Government for Cultural Heritage Resources**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	A referral letter dated July 4, 2023 was sent to the appropriate individual(s) and/or group(s). White pine, devil's club and western yew are to be retained where practicable. If yew is felled and of sufficient size to handle, it will be yarded/skidded to and decked at landings for community members to retrieve.
Recreation Resources	
Result or Strategy Description	**4.3 - Recreation Sites**
Applies:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives; therefore, managing for Recreation Resources is not applicable.
Riparian Management	
Result or Strategy Description	**3.4.1 Objectives set by Government for Fish, Water, Wildlife & Biodiversity in Riparian Areas**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	1) See Section E.1 for Riparian Management Strategies. 2) See Section F for management strategies related to Temporary Access Structures and Soil Disturbance that should be used during and post-harvest in order to prevent/reduce soil disturbance and sediment delivery.
Soil Objectives	
Result or Strategy Description	**3.1 - Objectives set by Government for Soils [FPPR Section 5 and 12.1(1)]**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	1) SU A does not contain sensitive soils and soil disturbance will not exceed **10%**. Specific measures for mitigating soil disturbance levels are addressed in Section F of this Site Plan. 2) Areas of the block where temporary access structures are required will be rehabilitated. Specific rehabilitation measures are addressed under Section F of this Site Plan. 3) PAS exceeds the recommended limit of **7.0%** and is estimated at **12.2%** due to engineering and terrain constraints. 4) Areas within the block assigned to roadside work areas will not exceed **25%**.
Visual Objectives	
Result or Strategy Description	**3.6 – Visual Quality**
Applies:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	CP 420 does not overlap a VLU with VQOs.

Water Management Objectives	
Result or Strategy Description	**3.4.4 - Consumptive Use Streams**
Applies:	No
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 6' – **CP420 Block 9.** There are no legal points of diversion (POD) downstream of CP 420.
Wildlife Objectives	
Result or Strategy Description	**3.3.1 - Objectives set by Government for Wildlife - Species at Risk – Section 7 of the FPPR**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	The block is not within a Wildlife Habitat Area. There were no sightings of Species at Risk during field development of this cutblock. No Wildlife Habitat Features were observed during development of this CP. An occurrence of *Nephroma occultum* – Cryptic Paw Lichen (Blue listed) was recorded in the BC Conservation Data Centre in 2002. The observation was along Hall Creek, within 1000m of Block 9. A rare lichen survey will be completed by an RPBio prior to primary forest activities.
Result or Strategy Description	**3.5.2 - Objectives set by Government for Wildlife and Biodiversity – Stand Level**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	Wildlife Tree Retention Area is planned for this block, totalling **1.0 ha**. Overall wildlife tree retention percentage for block 9 is approximately **3.9 %.** Total WTRA for CP 420 is **9.9 ha** which constitutes approximately 12.5 **%** of the gross area of the permit. Wildlife tree retention in CP 420 is consistent with FPPR section 66.
Result or Strategy Description	**3.3.2 – Ungulates**
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	CP 420 overlaps UWR #U-4-014 Mountain Caribou Central Kootenay Planning Unit #19. General Wildlife Measure B applies: 1. Any road building or timber harvesting must be completed before January 1, 2028 2. Within UWR unit 19 the total area of timber harvesting must not exceed 750 ha. 3. Where timber harvesting occurs, a. Timber harvesting will result in retention of stand and landscape elements that are important for caribou habitat recovery; and b. Silviculture practices will result in establishment of stand and lasdscape elements that are important for caribou habitat recovery. 4. Following January 1, 2028, the GWMs outline in Section A (No harvest) will apply. **CP 420 as planned will meet General Wildlife Measures for UWR.** **Timing window:** No road building or harvesting to occur within peak caribou calving season (May 15-July 15)

ADDITIONAL COMMENTS

Consistency Statement

This block is consistent with the approved **2024-2029 Forest Stewardship Plan for Cooper Creek Cedar Ltd – Forest Licence A30171**.

This Site Plan is prepared for **FL A30171 CP 420 Block 9**, in accordance with FRPA Section 10(1), (2) & (3).

Community Watersheds

FSP Section **3.4.3**

Not applicable - The proposed block is not located within a Community Watershed.

Enhanced Resource Development Zones

FSP Section **3.2.1**

'KBHLP Objective 7 – Enhanced Resource Development Zones – Timber'

Block 9 is not within an Enhanced Resource Development Zone.

Fire Maintained Ecosystems

FSP Section **3.5.3**

'KBHLP Objective 8 – Fire maintained Ecosystems'. There are no NDT 4 ecosystems in the FDUs under this FSP, therefore the requirement to create a Result/Strategy for this objective does not apply.

Fisheries Sensitive Watersheds

FSP Section **3.4.2**

At the time the FSP was developed there were no designated "Fisheries Sensitive Watersheds" in FDUs under this FSP, therefore the requirement to create a Result/Strategy for this objective does not apply.

Invasive Plants

FSP Section **4.1** – Invasive Plants

The InvasivesBC website was checked on November 28, 2024. The following invasive species were reported in an area near to **Block 9 along the Duncan mainline:** Common Tansy, Oxeye Daisy, Yellow Hawkweed, Spotted Knapweed, St. John's Wort, Goatweed.

Measures to prevent the introduction or spread of invasive plants noted in the FSP include:

- Cleaning equipment before moving from a worksite with existing infestations to a new work site.
- Minimizing soil disturbance during primary forest activities (PFA).
- Reseed exposed mineral soil, resulting from a PFA in the first available fall or spring within 12 months following the soil disturbance. Plan planting of cutblocks as soon after harvesting as possible.
- During PFAs minimize soil disturbance by:
  - Harvest on a snowpack, when feasible
  - Random skid to designated skid trails to minimize skidder traffic on the ground
  - Utilize benches for skid trails to minimize side cuts
  - Utilize brush to construct skid trails to reduce contact with the ground where practicable
- Where grass seeding is undertaken, CCC will use certified grass seed (Canada common #1 or better grade) from reputable suppliers to ensure premium quality free of invasive plant seed, or a seed mix recommended by a MFLNRO range specialist.
- See FSP for additional strategies and practices regarding invasive plants.

Natural Range Barriers

FSP Section – **4.2**

Not applicable. There are no active range tenures located in the FDUs covered by this FSP.

Timber

FSP Section **3.2** – Timber

As per Sec 12(8) of the FPPR, results or strategies are not required for an objective set by government for timber.

Wildlife – Caribou

FSP Section – **3.3** and **3.5.3**

'KBHLP Objective 3 – Caribou' was cancelled and replaced by *GAR Order #U-4-012 – Mountain Caribou – Southwest Kootenay Planning Unit.* This block is within Caribou GAR u-4-014 Unit 19 Conditional Harvest. Analyses and best management practices have been developed to operate in Conditional Harvest:

- Caribou GAR u-4-014 Unit 19 is 1648 ha. Total timber harvesting must not exceed 750 ha. The most recent harvesting commenced in 2003. **No harvesting has occurred after December 9, 2009** (GAR Order effective date). (Total historical harvesting = 561 ha from 1968-2003).
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- CP 420 blocks 9, 10 and 11 are within Unit 19 = 54.9 ha gross. 8.7 ha reserve.
- Block 9 is 25.50 ha gross with 2.0 ha of internal reserve. An additional 40-45 stems/ha is prescribed in small groups or/& single tree retention. The block is surrounded by mature forest.
- These blocks are within and surrounded by Conditional Caribou harvest wherein no harvesting will take place after January 1, 2028. CCC has no further development plans for Unit 19 therefore this unit will be protected for caribou habitat following CP 420.
- KBHLPO Biodiversity targets are met for this Landscape unit / BEC pairing.
- 40-45 stems per ha are prescribed targeting small groups. Areas containing large vets and trees with more advanced lichen development will be targeted for retention. Retention will add structure and heterogeneity to the resultant stand to add to objectives of snow intercept/travel corridor as well as encourage lichen growth. Reserving clumps/small groups will retain elements of the pre-existing stand including advanced regen and shrubs/herbs including cedar, hemlock, falsebox, bunchberry and foamflower.
- Microsite planting and mixed species composition is prescribed in the silviculture strategy which, along with the retention strategy, will result in a heterogeneous and diverse stand. A density of 1200-1400 stems per hectare is prescribed which will, in part, discourage woody shrub growth such as willow and maple which are preferred by caribou competitors.
- Manage high diversity of planted trees as a climate change adaptation strategy. Increasing species diversity may help buffer the negative impacts of climate change, and make forests more resilient when faced with extreme weather events. This strategy is meant to reduce the forest health risks to future long term stand health and structure by providing a diversity of species should one or more become susceptible to pests or other damaging agents.
- Retain layer 3 and 4 where practicable
- Minimize road construction width to the extent practicable.
- No road building or harvesting to occur within peak caribou calving season (May 15-July15)
- restore/rehabilitate in block roads when no longer required for silviculture access
- Maintain visual buffers around open areas of the block

Wildlife – Grizzly Bear Habitat – Connectivity

FSP Section **3.3** and **3.6.3**

'KBHLP Objective 5 – Grizzly Bear Habitat & Connectivity Corridors'.

The majority of CP 420 falls within Connectivity Corridor.

See RESULTS AND STRATEGIES section 3.5.3: Old and Mature forests.

STOCKING REQUIREMENTS

SU	NAR (ha)	Standards ID #	Other Performance Standards
A	20.4	1057894	See Section H - Stocking Requirements

C. MANAGEMENT OBJECTIVES & STRATEGIES

C.1 MANAGEMENT OBJECTIVES

- Objectives for **CP 420 Block 9** include protecting, and maintaining biodiversity, riparian and wildlife values.
- Harvest this mature stand of **HwCw(FdAt)** for sawlogs, chips and value-added products and manage for a healthy, free growing stand of planted and natural **HwCwFdPw(LwSe)** for similar end products.
- **Wildlife Tree Retention Area (WTRA):** WTRA is planned for retention, totalling **1.0** in size (3.9% of the block). The reserves shelter mature stand values, wildlife values, riparian areas and portions of stand structure that are similar to the harvest area.
- **Kootenay Boundary Land Use Plan – Implementation Strategy (June 1997):** This block is located within the designated **Landscape Unit K22**– Low BEO Assignment.

C.2 CONDITIONS THAT MUST EXIST AFTER HARVEST OR TREATMENT TO ACCOMMODATE KNOWN FOREST RESOURCES

C.2a WILDLIFE

Stand Level attributes/ concerns identified:

Ungulate Winter Range: See RESULTS AND STRATEGIES section **3.3.2 - Ungulates**

Migratory Bird Habitat Assessment: Block 9 is within Migratory Bird Risk Rating 4. CCCs adopted Migratory Bird Management Strategy's matrix therefore requires:

1) The entire Site must be scheduled for harvest outside Restricted Period 2 (May 15-July 20), OR
2) One or more BMP's with DoP rank 2 (moderate) must be selected from the list of BMPs and applied to the Site.

Block is scheduled to be harvested outside restricted period.

Should harvesting occur within Restricted period, BMPs PL1, PL2 and LO2 have been implemented on site to reduce the likelihood of incidental take and to conform with CCC's adopted management strategy. PL2 refers to Patch/edge retention designed around "biodiversity anchors" where areas with more stand complexity have been reserved in WTRA and Riparian Reserve. LO2 refers to Increasing riparian retention where possible i.e. to match eco-site where riparian-centric species may nest or feed – streams have been reserved. PL1 refers to the high retention silvilculture system – See section G silvicultural systems.

BMP PL3 and SO4 have been implemented as well. PL3 refers to the appropriate training of forest planners, layout personnel, and forest workers. SO4 refers to operation specific recommended practices when chance encounters of active nests occur.

Actions Prescribed:

Total Area specified for the retention of wildlife trees: **1.0 ha** (3.9% of gross area)

Wildlife Tree Retention Patch (WTRA):

WTRA-1 (1.0 ha) Hw7Cw3 – 100 years – 20-25m- 50%cc: Area features a steep drop off and a low angle bench at the bottom. Moderate forage and CWD, Snags and large diameter stems noted.

WTRA also provides structure values for wildlife, perching and cover opportunities, and riparian values. WTRAs have been established in part, as a best management practice for the reduction of migratory bird incidental take.

C.2c FISHERIES

There are no fish streams within the block.

See Section E.1 for Riparian Management Strategies.

Drainage from the the cutblock area flows down slope toward the Duncan River.

C.2d WATERSHEDS

See section 3.4.4 (Consumptive Use Streams).

C.2e RECREATION

Not applicable. The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives.

C.2f BIOLOGICAL DIVERSITY

Landscape Unit – K22 (East Creek): Low BEO Assignment.

C.2g VISUAL RESOURCE MANAGEMENT

See RESULTS AND STRATEGIES section 3.6 (Visual Quality).

C.2h CULTURAL HERITAGE

See RESULTS AND STRATEGIES section 3.7 (Objectives set by Government for Cultural Heritage Resources).

See section E.5 for Archaeological information.

C.2i RANGE

Not applicable. There are no range tenures located in the FDUs covered by this FSP.

C.2j OTHER RESOURCES

Trapping / Guiding:

Trappers or guiding license holders in the area will be identified and notified through the Forest Stewardship Planning process.

Windthrow:

Windthrow hazard is **Moderate** for adjacent mature stands. Mature stands surrounding the harvest area are similar to the block with moderately well drained soils. Adjacent stands have been exposed to wind impacts by past openings.

Soils are moderate to coarse and moderately well drained with 30-34 cm rooting depth.

CONDITIONS NOT APPLICABLE TO THIS SITE PLAN

THE FOLLOWING CONDITIONS WERE CONSIDERED, AND FOUND NOT TO BE APPLICABLE TO THIS SITE PLAN:

None identified.

E. MANAGEMENT STRATEGIES

E.1 RIPARIAN MANAGEMENT STRATEGIES

RIPARIAN RESERVE ZONE (RRZ)

RIPARIAN/ LAKE ID	RIPARIAN/ LAKE CLASS	HARVESTING Y/N	SU XREF	DESCRIPTION OF THE PURPOSE AND EXTENT OF REMOVAL OR MODIFICATION OF TREES AND ANY RELATED FOREST PRACTICES IN RIPARIAN RESERVE ZONE(S)
Duncan River	S1B	N	N/A	Block 9 is located outside the RRZ of Duncan River.

RIPARIAN MANAGEMENT ZONE (RMZ)

RIPARIAN/ LAKE ID	HARVESTING Y/N	SU XREF	MANAGEMENT STRATEGIES FOR RIPARIAN OR LAKESHORE MANAGEMENT AREAS INCLUDING PROTECTING STREAM BANKS (if there is no RRZ), MAINTAINING SHADE, AND DEBRIS MANAGEMENT. IF FELLING AND/OR YARDING ACROSS STREAMS. INCLUDE EITHER THE RESIDUAL BASAL AREA OR DENSITY FOR RMZ (S) AND LMZ (S).
Duncan River S1B	N	N/A	Block 9 is located outside the RMZ of Duncan River.
S6	N	A	20m RMZ: >=50% of the basal area will be retained within riparian reserve. Portions of the RMZ that fall within the harvest area will be harvested as per SU A. Riparian Reserve has been placed on this stream at >= to the slope break. Portions of Spur 9-1 fall within the RMZ because the road is required as part of a stream crossing. Road maintenance activities must not be carried out beyond the clearing width of the road, except as necessary to maintain the stream crossing. Gravel or other fill must not be removed from the RMZ in the process of constructing, maintaining or deactivating the road, unless the gravel or fill is within the road prism, at the stream crossing, or there is no other practicable option. (FPPR 50) (See additional management strategies below)

NON-CLASSIFIED (NC) RIPARIAN AREAS

RIPARIAN/ LAKE ID	SU XREF	MANAGEMENT STRATEGIES
-	-	-

Section E.1 continued

1) **Fall and skid timber away from riparian features** (streams, NCD's, wetland) where practicable. Any debris entering a riparian feature as a result of harvesting will be removed upon completion of harvesting activities unless it does not obstruct water flow or its removal would cause further damage to the riparian feature. **Minimize crossings** on **watercourse channels** to the extent possible.
2) Where **watercourses** are crossed more than once, it is recommended to place a temporary skid bridge (e.g.: logs placed in draw) in order to prevent a potential diversion of flow.
3) All **machine trails** and **crossings** (NCD) should be fully rehabilitated upon the completion of harvesting or prior to the next freshet. Excess material that could cause redirection of natural drainage patterns should not be left at crossing locations.
4) **All surface drainage patterns** should be maintained and any that are disrupted as a result of harvesting operations should be restored immediately.
5) **A post-harvest inspection** should be completed to assess the amount of logging debris/excess soil within the wetted perimeter of all subtle drainage features. All natural drainage patterns should be maintained and left free of excess debris (slash or soil) that could result in a redirection of seasonal surface runoff/drainage diversion.
6) **Basal area retention** levels for the in-block RMZ (within the NAR) are based on windthrow, windfirmness, wildlife habitat, water quality, and operational constraints.

E.2 FOREST HEALTH MANAGEMENT STRATEGIES

SU	Code	Nelson Region DRA Risk Factors	Points	Relative Risk	Comments
A	DRA	Site factors	**8**	H	• Armillaria is present within the stand. • The Nomographic Zones in Section 3.0 of the "Armillaria Root Disease Management Guidelines for the Nelson Forest Region" (June 1998) indicate that Alternative or Intensive deferred treatments for root disease management are appropriate for this site, should Armillaria become a problem. • Alternative treatments will include planting a species mixture that includes species tolerant and /or moderately susceptible to Armillaria (e.g.: Cw, Lw, Pw). Fd (highly susceptible) may be included but should be limited to a maximum of 50% of the mix. Microsite selection should reflect buffer zones around infected stumps, if they can be identified. • Hand-pulling (preferred) or pop-up spacing (alternative) should be considered in the future should Armillaria become a limiting factor in meeting regeneration or free growing requirements (see section H). • Stumping or pushover harvesting treatments may be suitable where slopes are gentle. However the benefits of stumping or pushover harvesting need to be weighed against the risks associated with moderate soil compaction, erosion and displacement hazards.
		Host factors	**6**	M	
		Inoculum potential	**0**	L	
		Disease factors	**13**	M	
		Total	**27**	**M**	

Other Forest Health Factors

SU	Code	%	Comments	Current risk to inventory
A	IBD	<5	Fd forms a portion of the stand volume. Little IBD was observed in the stand; retention strategies should carefully consider pest resiliency.	Low
A	DSB	0	Pw is absent or present in minor amounts in the current stand. Plant only rust resistant stock. Expect high incidence of white pine blister rust on any naturally regenerated Pw.	nil

E.3 VEGETATION MANAGEMENT STRATEGIES

LIVESTOCK TO BE USED FOR VEGETATION MANAGEMENT: YES: ☐ NO: ☒

See Section H5: BRUSHING / STAND TENDING

E.4 COARSE WOODY DEBRIS (CWD) MANAGEMENT STRATEGIES

CWD levels are low (<10% ground cover). CWD is predominantly composed of 10-20cm diameter stems of Hw and Cw in varying stages of decay.

Manage for **minimum** CWD levels post-harvest in accordance with wildfire mitigation strategies. Post-harvest CWD will consist of non-merchantable existing levels and snags, along with residue and breakage.

(FPPR Section 68): **Manage for the minimum of 4 logs per hectare,** each being at least **2 metres** in length and at least **7.5cm** in diameter at one end.

See the SITE PREP section (H3) for additional CWD management strategies.

E.5 ARCHAEOLOGICAL IMPACT ASSESSMENT

Block 9 does not overlap a polygons assessed with high potential for the presence of archaeological sites

F. SOIL CONSERVATION

F.1 SITE DISTURBANCE

	HAZARD RATINGS			SOIL CHARACTERISTICS		
SU	SOIL COMPACTION	SOIL DISPLACEMENT	SURFACE SOIL EROSION	DEPTH TO UNFAVOURABLE SUBSOIL (cm)		TYPE OF UNFAVOURABLE SUBSOIL
				MIN(cm)	MAX(cm)	
A	High	Mod-High	High	60	60	None to 60cm

F.2 SOIL DISTURBANCE LIMITS

SU A: ARE THERE SENSITIVE SOILS? ☐ YES ☒NO

MAX. PROPORTION OF TOTAL AREA UNDER THE PRESCRIPTION ALLOWED FOR PERMANENT ACCESS STRUCTURES (PAS): **12.2%**

Roadside harvesting or temporary landings will be used.

DEACTIVATION OF PERMANENT ACCESS STRUCTURES: Any landings will be deactivated – debris will be piled & burned, water control will be installed around all landings.

Karst:

Karst features were identified in block 9, a karst assessment was completed by a QRP and is summarized in the Terrain Assessment Report for block 9. Through the karst assessment and vulnerability assessment it was determined karst features in block 9 are low vulnerability. CCC has committed to reserving from harvest the karst area delineated from the karst assessment. CCC still requires roads constructed through the karst area to access other areas of the block. CCC will follow best management practices for road construction, maintenance and deactivation as outlined in road construction, maintenance and deactivation plans for low vulnerability karst features as per the karst management handbook.

SU	MAXIMUM ALLOWABLE SOIL DISTURBANCE WITHIN THE NET AREA TO REFOREST (%)	MAXIMUM EXTENT SOIL DISTURBANCE LIMITS MAY BE TEMPORARILY EXCEEDED TO CONSTRUCT TEMPORARY ACCESS STRUCTURES OR EXCAVATED OR BLADED TRAILS (%)
A	**10%**	**5%**

MASD for Roadside Work Areas: 25%

Maximum soil disturbance levels may be exceeded for short periods of time; however any temporary access structures or excavated or bladed trails will be rehabilitated to the extent necessary to bring the SU net area back into compliance with the specified soil disturbance limits.

See **Section F.4** below for description of temporary access structures or excavated or bladed trails, if any.

Avoid harvesting during spring freshet/breakup conditions when soils are moist to reduce soil displacement and compaction.

Steep slopes >35% are present within SU A, see **Harvest Plan Map.** Cable and ground based harvest methods will be used.

F.3 REHABILITATION TIME FOR TEMPORARY ACCESS STRUCTURES

MAXIMUM ALLOWABLE TIME TO COMPLETE REHAB (MEASURED FROM COMPLETION OF HARVEST): **1 YEAR**

F.4 MANAGEMENT STRATEGIES FOR TEMPORARY ACCESS STRUCTURES

SU	GENERAL LOCATION:	MAX ALLOWABLE HEIGHT OF CUTBANKS (m)	AVERAGE HEIGHT OF CUTBANKS (m)	EQUIPMENT TO BE USED (IF OTHER THAN EXCAVATOR)
A	Blading or excavating is expected to occur in parts of the unit with moderate to steep slopes.	0.8	0.3	Skidder, cat.

Proposed Landings (temporary):

SU A: 6 landings @ 0.2ha = 1.2 ha Total

SU A:

- **TU1:** Logging Method: Ground based (adverse and favourable skidding to roadside and landings)
- **TU2:** Cable methods. Uphill and downhill yarding to roadside and landings.

See Section E.1 for stream management strategies.

The following will apply for any excavated/bladed trails that are required:

- Maximum trail width is 4m.
- Actual dimensions of bladed trails may vary depending on topography.
- The amount of bladed trail constructed will be kept to a minimum.

Short sections that become bladed trails where a non-bladed trail crosses a hump or ridge will be exempt from rehabilitation requirements provided that the soil disturbance limits in this SP are not exceeded.

Rehabilitation for bladed or excavated trails:

Any bladed or excavated trails will be rehabilitated as follows:

- De-compact the trail, including removing woody debris that is conducting subsurface moisture
- Place fill material that was sidecast on the excavated portion of the trail
- Re-contour the slope
- Re-establish natural surface drainage
- Place some woody debris over exposed mineral soil

G. SILVICULTURAL SYSTEMS

SILVICULTURAL SYSTEMS	
SU	SYSTEM / VARIANT / PHASE
A	Clearcut with reserves silviculture system.
SU	STAND STRUCTURE AND SITE CONDITION - COMMENTS
A	Post-harvest stand structure will be even-aged with one age class. Planted trees and natural regeneration will include **CwHwFdPw(LwSe)** **1 Wildlife Tree Group Reserve Area (WTRA):** totalling 1.0 ha **Leave Trees** Retain **40-45 stems per ha** targeting small groups. Areas containing large vets and trees with more advanced lichen development will be targeted for retention. Retention will add structure and heterogeneity to the resultant stand to add to objectives of snow intercept/travel corridor as well as encourage lichen growth. Reserving clumps/small groups will retain elements of the pre-existing stand including advanced regen and shrubs/herbs including cedar, hemlock, falsebox, bunchberry and foamflower. Retain all advanced regen (layer 3 & 4) where practicable.

H. STOCKING REQUIREMENTS (As per DSE South Columbia Default Stocking Standards Version 1.0, April 1, 2018)

LICENCE #	CP	BLOCK	OPENING NUMBER	LOCATION
A30171	420	9	82K075	North Duncan

H1 ECOLOGICAL INFORMATION

SU	Net Area (ha)	Zone	Subzone	Variant/ Phase	Site Series (complex - %)	Elevation			Slope position	Soil Texture (0-30cm)
						Min	Max	Avg		
A	20.4	ICH	wk	1	01(80%)04(20%)	820	920	870	Middle/Lower	SiL/SL

RATIONALE FOR STOCKING STANDARD FSP ID SELECTION

STANDARDS UNIT FSP ID #	CHANGE FROM STANDARD PRACTICE	COMMENT: (For example: Forest health (DRA) or Rocky site)
A: 1057894	N/A	

H2 STOCKING REQUIREMENTS FOR SILVICULTURAL SYSTEMS OTHER THAN SINGLE TREE SELECTION

Standard unit	Standards ID	Regen Delay (years)	Free Growing Early (yrs)	Free Growing Late (years)
A	1057894	4	9**	20

Preferred Species		Acceptable Species		Post Spacing Density (sph)				Max Coniferous (sph)
Species	min ht(m)	Species	min ht (m)	Min	700	Max	1800	10,000
Cw Hw[201] Fd[9,14,58,203] Pw[31]	Fd- 1.4, Pw- 2.0, Cw Hw- 1.0	Lw[9,14,16,32] Sx[10,13,204]	Lw- 2.0, Sx- 1.0	Well Spaced Trees (sph)				
				Target	Minimum pref&acc	Minimum preferred		Min Horizontal Inter-tree distance (m)
				1200	700	600		2.0*
						Height Relative to Competition (%)		
						150		

Footnotes.

** Early Free Growing has been left in for information purposes only. In RESULTS it is in the comments section only and does not preclude making FG declarations early.

Other Required Stocking Information/Footnotes :

9- suitable on warm aspects

10 – suitable on cool aspects

13- suitable at upper elevations

14- suitable at lower elevations

16- suitable in the southern portion of biogeoclimatic unit

31 - must use of blister rust resistant stock. See BC Journal of Ecosystems and Management 10(1): 97-100 for supplementary information.

32- limited by growing-season frosts

58 – South Area – Fd limited to a max 50% of preferred and acceptable well-spaced PLANTED stems in the IDFmw and all subzones of the ICH due to root rot. See amendment #3 to the existing Selkirk District Stocking Standards (2022). See Root Rot Handbook (2017, in press).

201 – Maximum 50% of preferred and acceptable well-spaced trees

203- Recommended on sites for climate change adaptation

204- Not recommended due to climate change concerns

* - a reduced MITD of 1.7m may be used to facilitate planting superior microsites, when sites have: mechanical site preparation (mounding and disk trenching), been previously fill planted, or conditions where obstacle planting for snow creep is necessary. Reduced MITD applies to PLANTED TREES ONLY

H3 SITE PREPARATION

TECHNIQUE (S) / LIMITING FACTORS

Options

- Pile, or pile and burn, slash accumulations on roadsides and landings, or within the NAR.
- Piling treatment during dry weather conditions or when soils not saturated.
- Burn piles in the spring or fall.
- Mechanical bunching (pile and burn) where feasible.
- Piles in the NAR may be left unburned in order to contribute to wildlife habitat and coarse woody debris values.
- Mechanical site preparation (e.g.: mounding, scarification) where necessary and feasible, combined with brush/slash piling, utilizing an excavator.
- Care should be taken while working around leave trees to avoid damage to the stems.
- Steep slopes with 40-45 stems/ha retention may limit machine operability.
- Steep slopes may require broadcast burning where excavator use is not feasible.
- Broadcast burn in spring or fall when conditions permit.

H4 PLANTING

SU	Area (ha)	Regen. Method	Species	Age	Stock Type	Season	Stems/Ha	Total Stems
A	20.4	Plant	Cw PwFd(LwSe)	1+0	PSB 412A	Spring	1400-1600	28,560-32,640

LIMITING FACTORS / COMMENTS:

- Hw limited to a maximum of 50% of preferred and acceptable well-spaced stems
- Fd limited to a maximum of 50% of preferred and acceptable well-spaced PLANTED stems
- Pw must be blister rust resistant stock
- Manage for a high diversity of planted trees as a climate change adaptation strategy. Increasing species diversity may help buffer the negative impacts of climate change, and make forests more resilient when faced with extreme weather events. This strategy is meant to reduce the forest health risks to future timber supply by providing a diversity of species should one or more become susceptible to pests or other damaging agents.

  Replanting these stands with a higher diversity of species, including species that are more adapted to hotter and drier growing conditions like Lw, will promote a stand that is more likely to tolerate a warming climate.
- Microsite selection for Lw, Fd, should be concentrated to warm aspects, with Cw and Se populating draws, cooler aspects and cold air exposures. LiDAR imagery will aid silviculture planning.
- Limiting factors include warm shallow soils on ridges and rock outcrops-moisture deficits are expected to persist through the summer.
- Plant as soon as possible following harvesting or site prep operations. **Note:** a post-harvest assessment should be completed to assess the necessity of site preparation prior to planting. If site prep is needed, the person completing the assessment will generate a prescription surrounding the areas that are required and the methods to be employed.
- Anticipated Timing/Constraints: Treatment needs will be assessed through periodic walkthroughs and silviculture surveys.
- Monitor for signs of ungulate browse during silviculture surveys.

H5 BRUSHING / STAND TENDING

TECHNIQUE (S) / LIMITING FACTORS

Current Brush Hazard: Low levels of brush inside harvest area.

Future Brush Hazard: Moderate overall with potential for higher hazards. Timely crop establishment will be crucial in managing for brush hazard. Deciduous was noted as a component of nearby juvenile stands.

Brushing Methods: Should brushing become necessary, manual treatments are the preferred methods.

Risks and Considerations: Woody brushing or stand tending treatments must be carefully assessed due to pathogen ability to colonize wounds on stocking.

Anticipated Timing: Treatment needs will be assessed through periodic walkthroughs and silviculture surveys. Treatment timing will be prescribed at the time of brush assessment.

I. ADMINISTRATION

<table>
<tr><td colspan="2">RPF SIGNATURE AND SEAL:</td></tr>
<tr><td>RPF Name (Printed)
I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.

Date: RPF #:</td><td>RPF Signature and Seal</td></tr>
<tr><td>SITE PLAN PREPARED BY:
Tom Haukaas, RFT</td><td rowspan="2">MAJOR LICENSEE SIGNING AUTHORITY:</td></tr>
<tr><td>SITE PLAN ATTACHMENTS:</td></tr>
<tr><td>☑ SP MAP(S)</td><td>Licence Holder Signing Authority Signature

Licence Holder Signing Authority Name (Printed)

Date: _____</td></tr>
</table>

Area Calculations	Standards Units					
	A				TOTAL HA	%
HAZARD RATINGS:						
Compaction	High					
Soil Displacement	Moderate (9) - High (16)					
Soil Erosion	High (27-30)					
Forest Floor Displacement	Moderate (9-10)					
Mass Wasting	Moderate (32-33)					
Harvest System	Cable and Ground Based					
TOTAL AREA	25.5				25.5	
						% WTP/RES
WTRA	1.0				1.0	3.9
NP FOR	-					
OTHER Reserve	1.0				1.0	3.9
						% Disturbance
Proposed roads	3.1				3.1	12.2
Existing roads	-					
Landings	-					
Total disturbance permanent access structures	**3.1**				**3.1**	**12.2**
NET AREA TO BE REFORESTED	**20.4**				**20.4**	
Sensitive Soils (Y/N)	No					
Temporary Access Structures: Road, landing, excavated or bladed trails that will be rehabilitated (% of NAR).	5% (excavated/bladed trails)					
Max. Allowable dispersed Soil Disturbance (% of NAR by Standards Unit) as a result of harvesting, mechanical site preparation, or hazard abatement activities.	10%					

Rehabilitation/Deactivation measures:

All landings and trails within the NAR are temporary and will be rehabilitated by decompacting, re-contouring, surface restoration, followed by planting.

Note: PAS areas calculated with GIS.

Temp Landings:

6 landings @ 0.2 ha each = 1.2 ha

See **Section F.4** for discussion of rehabilitation of excavated/bladed trails.