

BLOCK REPORT

Client: Yukon Forest Management Branch
Job #: 040313
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Company: Industrial Forestry Service Ltd.
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COSH CREEK BLOCK C5

Location and Access

This block is located in the vicinity of Cosh Creek, ± 50 km east of the town of Watson Lake, Yukon within the Y02 Forest Management Unit and the Liard Basin Ecoregion.

The town of Watson Lake is situated along the Alaska Hwy at Mile 635. From Watson Lake, proceed eastward along the Alaska Hwy for approximately 75 km to reach the beginning of the Cosh Mainline Road (about 2 km west of the Contact Creek Lodge). Heading north along the Cosh Mainline Road, continue for about 3.4 km at which point the boundary of Block C5 is reached. Landing #1 has been proposed on the right side of the Cosh Mainline Road another 130m from its first intersection with the boundary.

The total distance to Watson Lake is approximately 78.5 km.

Located Roads

Four block roads and eight landings (including one built landing) have been proposed for this block. The large number of proposed roads and landings (considering the harvesting boundary is <100 ha) is a result of the fact that this block is split up into four sections (A, B, C, and D) all of which being rather irregular in shape. All roads and landings should be constructed to allow for easy rehabilitation following harvesting activities

Areas of note along the Block C5 road system include the following:

- The C5-1 Road is located through broken ground with grades ranging from 5% adverse to 10% favourable. Side slopes vary along this road but are up to 30%.
- A short (19m) section of out of block road is found at the start of the C5-1 Road. This section of road crosses an old cut trail that has been used for the boundary of Block C5B.
- At 100m along the C5-1 Road, a small esker is crossed, requiring about a 1.5m through-cut for approximately 20m in length.
- The first 43m of the C5-2 Road crosses an existing plantation. This distance was kept to a minimum while maintaining alignment and providing a suitable approach onto the Cosh Mainline.
- The switchback located near Landing #4 on the C5-2 Road crosses a non-classifiable drain (NCD) twice (thus the two proposed culverts to ensure drainage

patterns are maintained) and has grade pitches of up to 16%. However, the average favourable grade through this switchback is 7%. The NCD that is crossed is not significantly evident at either of the culvert locations, however, the drainage structures have been proposed to maintain proper movement of any potential sub-surface water.

- The remainder of the C5-2 Road is favourable with the majority of the road located on grades of between 0-5% and side slopes of 5-15%.
- The C5-3 Road is located along adverse grades ranging from 2-6% with side-slopes of 15-22%.
- The first 300m of the C5-4 Road are located along a fairly flat existing road before entering the timber at the block boundary (GPS 40). The existing road will require some minor upgrading. The remainder of the road is favourable along grades of 4-8% and side slopes of 10-25% (averaging about 15%).

The majority of skidding in Block C5 will be favourable along moderate slopes with exception to the following:

- Adverse to Landing #1 from the south along slopes of 10-20%. Landing #1 has been proposed north of the Cosh Mainline as it was deemed unnecessary to propose construction on the south side for such a small amount of skidding (traffic control can be employed for skidding across the Cosh Mainline). The majority of the wood that will be taken from this section can be side-hill skidded to the proposed skid trail and then to the large existing Landing #2. Landing #1 will primarily service the finger of timber located north of the landing.
- Adverse to Landing #3 from the west and northwest along slopes of 15-20%.
- Adverse to Landing #4 from the west and southwest along slopes of 15%. The small triangle of wood near boundary GPS #23 can be skidded across the mainline to Landing #4 or, more reasonable, to the roadside of the C5-4 Road.
- Adverse to Landing #5 from the along slopes of 10-15% for short distances. Most of the wood below Landing #5 can be skidded favourable down to Landing #1.
- The finger of timber south of Landing #6 is found along a large bench. Adverse skidding in this area should not exceed 10%.
- Landing #7 has been proposed to service the entire Block C5C. All of the timber can be skidded favourable to either the landing or the road, as the lowest point of this section of the block is where the road enters the timber at GPS #40. Skidding directly to Landing #7 would be adverse from the west along 15-20% slopes for very short distances.
- Adverse from the west of Landing #8 along slopes of 5-15%.

Block Boundary

The Block C5 boundary has been slightly modified from that which was proposed in the Interim Wood Supply Plan. What has changed is the gross block area that has been reduced to 83 ha. from 136 ha. The areas of note that helped to determine the location of the proposed harvesting boundary are as follows:

- Block C5C has been included to the originally proposed block boundary to make up for the volume that has been lost in other areas of the block. This section was

found to be of suitable volume with good access and very low risk of resource conflict issues. The northern boundary of this section has been located outside of the Riparian Management Area (RMA) of Stream 'C' and provides a buffer along the NCD above the Stream 'C' reach break. The boundary sticks to the dry ground just above the natural basin of Stream 'B', thus excluding a high value habitat area that has been included into the landscape level Forest Ecosystem Network (FEN).

- The eastern edge of Block C5C, north of GPS #45, follows a dry draw with a natural stand opening.
- The southern and southeastern edges of Block C5C follow existing cut-blocks and the southwestern edge follows the Cosh Mainline right of way.

Harvesting Strategy

- This block will be managed for coniferous species.
- Season of Harvest: Winter. *
- Harvest System: Variable Retention (with even age silviculture).
- Harvest Method: Ground-based Conventional. Skidding to landings.
- Suggested Equipment: Feller buncher and grapple skidder.

**Summer Option* – for harvesting this block during the summer months, the following steps must be taken:

- All access routes must be upgraded to allow for summer haul.
- Harvesting must be done during dry soil conditions to minimize site degradation.
- Minimize duff disturbance to reduce aspen suckering (i.e., use a dispersed skidding pattern, do not blade skid trails, if available use rubber tired skidders).
- Access would become permanent for any road that access more than one landing. In the case of Block C5, this would include the C5-2 Road to the junction with the C5-3 Road (the remaining roads, or sections of roads, would remain temporary access).
- A minimum 5m Machine Free Zone must be placed on either side of any NCD's. Designated skidder crossings of these drains will be proposed if required.

Potential Resource Conflicts:

- marten boxes were found at various points along the Cosh Mainline Road. Consultation with the trapper before harvesting will allow him/her to relocate these "sets".

Temporary Access Structures and Drainage Control

- Scatter construction and harvesting debris away from seasonal draws.
- Maintain natural drainage patterns immediately after harvesting.
- Rehabilitate all roads and landings that have been designated as "Temporary Access" and included within the "Net Area to be Reforested" (refer to the FMB

Site and Harvest Plan for further details concerning temporary and permanent access).

Biodiversity Areas and Wildlife Tree Retention

Five biodiversity reserve areas have been located totaling 35.5 hectares (44.3% of the gross block area) to provide stand structural diversity, escape cover and representative wildlife habitat. These areas have been excluded from consideration for harvesting due to the following reasons:

- In 5A, two reserves separated only by the 5-2 road in the vicinity of Boundary Stations #9 and #18 provides stand structural diversity and escape cover arranged across the slope (connectivity to 5C as noted below).
- In 5C a single reserve on the eastern most edge of the block widens an escape cover corridor that runs parallel to the slope connecting reserves in 5C, 5D and 5A with timber outside the block. This linear timbered area will serve as a wildlife tree patch with connectivity to the adjacent forest as well as provide visual screening.

To meet the objectives of a Variable Retention silviculture system, 25-35 trees/hectare (preferably large, mature, and wind firm trees) will be retained uniformly throughout the harvested area of this block (as per the FMB Site and Harvest Plan leave tree specifications)

In general, the groups of trees, where the forest cover is totally undisturbed by harvest, should be considered stocked. On all other partially or fully disturbed areas, an intensive (100x100m grid) **Post Harvest Survey** can be used to delineate stocked and plantable portions for subsequent silviculture activities.

Streams and Wetlands

The Cosh Creek, a Class 3 stream, and two small Class 4 streams (labeled Stream 'B' and 'C' on the site plan map) are located within the vicinity of this block. Stream 'B' being just north of Block C5B, has a very small (0.05ha) section of riparian management zone (RMZ) within the harvesting boundary and this will be treated as per the adjacent treatment unit. The Riparian Management Areas (RMA's) of Cosh Creek and Stream 'C' are entirely outside of the Gross Block boundary (i.e., 100% retention in the RMA).

Wildlife

Wildlife sign noted in the vicinity of this block includes a moose browsing in one of the existing cut-blocks and both moose and wolf tracks found along the Cosh Mainline road. Occasional marten tracks were observed in the reserve areas, harvest area, and in the old blocks (i.e., randomly throughout the Cosh Creek area).

Terrain Stability

No terrain stability indicators were identified within this block. Some areas of exposed rock and steep (60+%) slopes were found south and southwest of Landing #1 and have been excluded from the block.

Visual Sensitivity

This block has been classified, in the IWSP, as having potential visual sensitivity from viewpoints along the Alaska Hwy. A Digital Terrain Model (DTM) has been completed for this block to help determine the level of variable retention that will be required. Based on the results of the DTM it has been found that the southeast corner of Block C5A is highly visible from the Alaska Highway however, dispersed retention of 25-35 trees/hectare in C5A, combined with the 35.5 ha of aggregated retention, is sufficient to ameliorate visual concerns. The existing visual quality will also improve since the retention proposed in Block C5 will help to feather the edges of the existing cut-blocks (also highly visible), allowing them to better blend in with adjacent stands.

Cultural Heritage

Crewmembers from the local First Nation community assisted in all operational field stages of this project. No observations were made by any of the field crews that would suggest cultural, archaeological, or historical sites were in the vicinity of, this block. However, as no formal archaeological assessment has been carried out, harvest supervisors must be aware of the potential for such sites and cease operations immediately should any be discovered during harvest operations.

Site Specific Block Refinements

The following refinements to the proposed block boundaries (presented at the end of Phase I to the Interim Wood Supply Committee) were made during the final layout phase to better address site-specific issues particular to each block:

- Block C5C has been added to the proposed block boundary for reasons described in the 'Block Boundary' section of this report.
- The RMZ along Stream 'B' has been excluded from the harvesting boundary with the exception of 0.05ha of area. This will be treated as per the adjacent treatment unit (i.e., variable retention @ 25-35 trees per ha.).
- Connecting reserves have been left in Blocks C5A, C5C and C5D. The reserves are either aligned N - S to provide cross slope connectivity or NE – SW to encompass sub-hygric seepage sites and NCD's which eventually drain into Stream 'B' further down the slope.
- Areas of rock outcrops and excessively steep terrain have been excluded from the harvesting boundary for potential terrain stability issues.
- 26.1 ha on the east most portion has now been delineated as an internal reserve. This resulted from recommendations from the Kaska Forest Stewardship Council and the Interim Wood Supply technical working group.

Field Crew

Timber reconnaissance in this block was done by Kevin Parker and Paul Schuetz, while silviculture and ecotype information was collected by Barry Mills and Greg Jonuk. Engineering related field work (including boundary and roads) was done by Barry Mills and Paul Schuetz and the timber cruising was completed by Greg Jonuk and Kevin Parker. First Nation crewmembers that worked in this block include Glenis Allen, Sylvia Crouse, Dustin Dickson, Richard Dickson, Neona Pitman, and Ken Stewart. All phases of fieldwork were completed from September to November 2003, with the final revisions and block boundary painting being completed in May of 2004.