BLOCK REPORT

Client: Yukon Forest Management Branch
Job #: 040313
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Company: Industrial Forestry Service Ltd.
Revised Date: August 9, 2004

COSH CREEK BLOCK C9

Location and Access

This block is located in the vicinity of Cosh Creek, ±52 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 6.8 km to the junction with a large branch road (the C9 Branch Road) at GPS 36. Stay right at this junction and follow the C9 Branch Road for 1.9 km to reach the junction with a small secondary road that commences on the right (heading easterly). This last junction is located within an existing cut-block and the boundary of Block C9 is reached by following the secondary road for 70m to reach the cut-block edge. Continue a further 110m to the location of the proposed Landing #1 found on the right side of the secondary road. The total distance from Landing #1 to Watson Lake is approximately 83.9 km.

Located Roads

One block road and four landings have been proposed for this block. Road and landing locations have been proposed in such a way as to balance skidding distances throughout the block and to have each landing service approximately 10ha of area. All roads and landings should be constructed to allow for easy rehabilitation following harvesting activities.

Areas of note along the Block C9 road system include the following:

- An existing road is located in the western portion of this block and accesses a cut-block located in the middle of this block. The entire length of this built road is utilized for purposes of harvesting Block C9, however the landing that the built road accesses will not be utilized. The start of the built road (outside of the block) has a steep (15%) gradient that then levels off once the block boundary is reached. The remainder of the built road is flat to rolling with upgrading required. One culvert is required for the upgrading of this road for winter harvesting. Two landings (#1 and 4) have been proposed along this built road to service the northwestern portion of the block.

- The C9-2 Road commences off of the built road that accesses the C9-1 Road. It is located through rolling terrain with slopes that generally range from 5-15%. Grades along this road are favourable for most of it's length (average 5% with pitches of 10%) except for the final 240m where the road descends to the location of Landing #3. Adverse grades along this last section of the C9-2 Road range from 2 to 7%.

The majority of skidding in Block C9 will be favourable on moderate slopes with the following exceptions:

- Adverse to Landing #1 from the north along slopes of up to 20%.
- Adverse to Landing #2 from the north along slopes of about 10%. Areas north of this landing can also be skidded to Landing #4.
- Adverse to Landing #3 from the north through rolling terrain and slopes of around 10%. Areas to the south of this landing are relatively flat.
- Adverse to Landing #4 from the north along slopes of 15-25% for short distances.

Block Boundary

The Block C9 harvesting boundary has been slightly modified from the area that was proposed in the Interim Wood Supply Plan. The most noticeable change is the reduction in size from a proposed 103 ha. to 88.7 ha The areas of note that helped to determine the location of the proposed harvesting boundary are as follows:

- Much of the northwestern boundary, between the built road and just past GPS #34, excludes areas of small, low volume pine and excessive adverse slopes as the terrain begins to break toward Stream 'J' to the north. Beyond GPS #34, a small, dry drain with steep banks is excluded before dropping northward again to follow the defined timber type and stream break.
- Near GPS #29, a larger non-classifiable drain (NCD) was also excluded from the harvest boundary as it contained steep, unstable banks.
- The southern boundary from GPS #529 to 536 is a natural stand boundary that excludes a dense old growth fir type and a small non-productive (NP) pothole that appeared to have some minor wildlife use.
- The section of the southern boundary, from GPS #5 to 529, and the section of the western boundary, from GPS #536 to 34 follow existing cut-block edges.

Special Management Areas and Additional Reserve Areas

GPS #136 through to #7 were originally part of a Special Management Zone with and emphasis on retaining fir. After further consultation with the Technical Wood Supply Committee and the Kaska Forest Stewardship Council, this area was removed as a harvestable portion of the block.

The remainder of the northern boundary, from GPS #29 to just past GPS #22, the steep, defined break to Stream 'J' is followed with some areas of broken terrain and several small, old slumps being excluded. Due to the steep terrain and the clayey soils, the areas

to the north of the harvesting boundary appear to be potentially unstable and have therefore been included into the landscape level Forest Ecosystem Network (FEN). South of GPS #22, steep (45%+) slopes were excluded followed by a defined timber type of scattered deciduous, brush and large fir. These types were followed until GPS #10 where a ±50m reserve was placed around a wildlife den (this den is small and does not appear to have been in recent use). Steep breaks, rock outcrops, and areas of excessive adverse terrain were excluded along much of the eastern boundary to GPS #8. From GPS #8 to 5, the boundary follows a natural stand edge (old fire boundary) excluding dense immature fir with some vets scattered throughout.

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.
- Rubber tired skidders (low ground pressure is recommended) should be used to reduce compaction and side degradation due to areas of clayey soils.
- Minimize duff disturbance (i.e., use a dispersed skidding pattern, do not blade skid trails).
- A minimum 5m Machine Free Zone must be placed on either side of any NCD's (if encountered). Designated skidder crossings of these drains will be proposed where 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

Four internal biodiversity reserve areas have been located totaling 44.0 hectares (49.6% of the gross block area) to provide stand structural diversity, escape cover, visual screening and representative wildlife habitat. These areas have been excluded from consideration for harvesting due to the following reasons:

- Internal reserve (see GPS #652) is representative of the harvest stand, has good structural diversity and contains mature pine and fir with clumps of fir vets in the understory. Gaps in the stand were used for a boundary wherever possible to increase windfirmness.
- The south-central reserve just south of Landing # 3is a sub-hygric area of open Black spruce surrounded by dry pine and fir of variable sizes. The stand structure is more diverse than the adjacent harvestable stands.
- The southern most reserve is a uniform high volume stand adjacent to old cut areas on each side. The stand is representative of the pine and fir types being harvested.

To meet the objectives of a Variable Retention silviculture system, 10-20 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).

Streams and Wetlands

One Class 4 stream (labeled Stream 'J' on the site plan map) is located within the vicinity of this block.

Wildlife

Very little wildlife sign was noted in this block with the exception of a small den that was excluded from the harvest area. The den had no evidence of recent use and probably belonged to a small furbearer in the past. In addition, grouse and ptarmigan were noted, particularly on the edges of the old adjacent harvest areas.

Small sections of minor game trails were noted in the vicinity of GPS #2 and 5. These trails are probably a result of ungulate movement into the existing clear-cut areas for feeding because the adjacent forested stands, which make up Block C9, are of such low habitat value. No special actions are warranted in these areas other than the variable retention prescribed.

Terrain Stability

Evidence of potential terrain instability was noted in the vicinity of the two drains, near the northwest corner of the block, and in areas along the steep break north of the northern boundary. Indicators included old ($\pm$100 years) slumps with patches of younger trees,

and areas of exposed rock noted along the eastern boundary. All areas of concern have been excluded from the harvesting boundary.

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 this block has low visual concerns as it is naturally screened by adjacent stands and land formations. Dispersed retention of 10-20 trees/hectare, as well as the proposed aggregated retention, is sufficient to ensure visual objectives have been met.

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:

- The wildlife den that appears on the reconnaissance map was marked incorrectly and is actually located in the vicinity of GPS #10. This area (connected to the landscape level FEN) was excluded, even though the den did not appear to have been used in recent years.
- Several additional reserves were added to increase retention of mature fir.

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 fieldwork (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.