

ENVIRONMENTAL ASSESSMENT
SCREENING REPORT

INTERIM WOOD SUPPLY PLAN FOR THE
KASKA YUKON TRADITIONAL TERRITORY 2005

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Yukon Government
Forest Management Branch
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Table of Contents

	page #
EXECUTIVE SUMMARY	v
1. TOMBSTONE DATA	1
2. PROJECT BACKGROUND	2
a. Relevant History	2
b. Requirement for Project Assessment	2
3. DESCRIPTION OF PROJECT	3
a. East Hyland Planning Unit.....	3
b. Ecoregion Description and Environment	6
c. Block Descriptions	6
4. PROJECT TRIGGERS AND RESPONSIBLE AUTHORITIES	10
5. SCOPE	10
a. Scope of the Project.....	10
b. Scope of the Assessment.....	10
6. FACTORS CONSIDERED IN THIS ASSESSMENT	11
7. CUMULATIVE EFFECTS	11
a. Scope of the Cumulative Effects	11
i. Regional Issues of Concern	12
ii. Appropriate Regional VECCs	13
iii. Spatial and Temporal Boundaries	15
iii a. Spatial and Temporal Bounds of this Project	15
iii b. The Availability of Existing Data and Knowledge.....	15
iii c. Relevant Ecological Boundaries	16
iv. Other Actions That May Affect The Same VECCs	16
v. Uncertainty	16
b. Changes in the Environment Caused by the Project	17
c. Health and Socio-economic Conditions	19
d. Physical and Cultural Heritage.....	19
e. Current uses of Lands and Resources for Traditional Purposes by Community Members	20
f. Structures or Site that are of Historical, Palentological or Architectural Significance.....	20
g. Any Change to the Project Caused by the Environment.....	20
h. Cumulative Effects Evaluation	20
8. COMMENTS/RECOMMENDATIONS RECEIVED THROUGH CONSULTATION PROCESS	20
a. Mitigation.....	25
b. Stakeholders and Yukon and Federal Government Agencies	25

9. REASONS FOR DECISION.....	36
a. Decision Options.....	36
b. Screening Decision	36
10. REFERENCES	38
a. Personal Communications	39

List of Tables

	page#
Table 1. Environmental Assessment File Information	1
Table 2. Responsible Authority Identification	1
Table 3. Project Location	1
Table 4. Land Cover of the East Hyland Planning Unit	3
Table 5. Reconnaissance Block Summaries for Blocks that are Currently Being Environmentally Screened	8
Table 6. Summer and Winter Harvest Blocks	9
Table 7. Blocks Permitted in the Cosh Creek Operating Unit in 2004	13
Table 8. Regional Valued Ecosystem and Cultural Components	14
Table 9. Possible Environmental Effects Caused by Forest Harvesting in the East Hyland Planning Unit	17
Table 10. Forest Cover Changes Based on Proposed Blocks	18
Table 11. Consultation/ Referral List	22
Table 12. Valued Ecosystem and Cultural Components, Their Significance and Mitigation Required	26
Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch	28

List of Figures

	page#
Figure 1. Overview Map of the East Hyland Planning Unit	5

List of Appendices

- Appendix 1:** Interim Wood Supply Plan for the East Hyland Planning Unit
- Appendix 2:** Comments Received from Stakeholders
- Appendix 3:** Letter Received from N. MacLean (2005)
- Appendix 4:** Cumulative Effects and Cumulative Effects Guide (Hegmann and Green 1997)
- Appendix 5:** Mitigation Measures

EXECUTIVE SUMMARY

This environmental assessment screening report has been completed for 26 blocks in the East Hyland Planning Unit in the southeast Yukon. The volume of timber assessed in this screening report is approximately 186,000 m³, equalling approximately 970 hectares of new harvest area (1,400 hectares of new and existing harvest area).

The Director of the Yukon Forest Management Branch is delegated as the representative of the Responsible Authority (RA; the Minister of the Department of Energy, Mines and Resources) for purposes of carrying out environmental assessments for forest management projects under Section 4.1 of the *Environmental Assessment Act (EAA)*. Given the mitigations provided in this screening report, the RA is satisfied that this project is not likely to cause significant adverse environmental effects. Accordingly, the *EAA* determination is that, subject to the mitigation requirements contained in this screening report, this project is hereby authorized and may proceed.

1. TOMBSTONE DATA

Table 1. Environmental Assessment File Information

Proponent Name	Yukon Government Forest Management Branch
Contact Information	Gary Miltenberger, Director, Forest Management Branch Box 2703 (K-918); Whitehorse, YT, Y1A 2C6 Phone: (867) 456-3838 Fax: (867) 667-3138
Project Title	“Environmental Assessment Screening Report: Interim Wood Supply Plan for the Kaska Yukon Traditional Territory 2005
Physical Work or Activity	Timber harvesting and all associated activities
Multiple Activity	No
E. A. Start Date	December 23, 2004
E. A. Finish Date	May 6, 2005
E. A. Determination	This project is not likely to cause significant adverse environmental effects (s. 16) of EAA.
Subject Descriptor	Forestry
Project Category Code	Point

Table 2. Responsible Authority Identification

Lead Responsible Authority	Department of Energy, Mines and Resources
Responsible Authority Contact Information	c/o Gary Miltenberger, Director, Forest Management Branch Box 2703 (K-918) Whitehorse, YT, Y1A 2C6 Ph: (867) 456-3838 Fax: (867) 667-3138
Other Responsible Authority	None identified
Date EAA Coordination Regulations Triggered	Not applicable
Project Trigger	(s. 8) Inclusion List Regulations; timber volume > 1000 m ³
Lead Type of Approval	Commercial Timber Permits
Status of Approval	Ongoing
Integrated Screening	No
Other Triggers	None
Other Types of Approval	None
Project File Location	Forest Management Branch, Whitehorse, YT

Table 3. Project Location

Region	Yukon Territory
NTS Map #s	095D04
Geographic Location Name	East Hyland Planning Unit
Latitude/Longitude	Approximately 60° N., 128° W.
Watershed/Drainage Region	Irons Creek, Contact Creek, Cosh Creek and the Hyland River flow into the Liard River.
Nearest Community	Watson Lake, YT
First Nation Traditional Territories	Kaska Dene, Liard First Nation, Daylu Dena, Ross River Dene, Kaska Tribal Council
Surrounding Land Status	Crown
Special Designation	None

2. PROJECT BACKGROUND

a. Relevant History

A *Memorandum of Understanding (MOU) on Forest Stewardship for the Kaska Traditional Territory* was signed by the Liard First Nation, Ross River Dena Council, Kaska Dene Council, Indian Affairs and Northern Development and the Government of Yukon on July 29, 2002. The MOU empowered the Kaska Forest Resources Stewardship Council (KFRSC) to pursue a forest management plan for southeast Yukon and an interim wood supply in Forest Management Units Y02 and Y03 and a portion of Y09 (which covers the Kaska Traditional Territory).

The KFRSC is composed of Kaska First Nation members and Government of Yukon representatives and is tasked with directing the development of forest management plans in the Kaska Traditional Territory. On February 3, 2003, the KFRSC recommended that planning begin for an interim wood supply of up to 128,000 m³/year for three years in the East Hyland, Watson Lake and West Rancheria planning units. Eight blocks (C4, C5, C6, C8, C9, C10, C11 and C12), an approximate volume of 104,000 m³ or 405 ha., were environmentally assessed in the Cosh Creek watershed (East Hyland Planning Unit) in 2004. Blocks C4, C10 and C11 (totalling approximately 36,000 m³) were permitted to Yukon companies in 2004.

b. Requirement for Project Assessment

The *Environmental Assessment Act* (EAA; Statutes of the Yukon 2003) describes a project as:

(a) “an undertaking in relation to a physical work such as any proposed construction, operation, modification, decommissioning, abandonment or other undertaking” or “any proposed physical activity not relating to a physical work that is listed in the regulations to EAA.” (pg. 6)

or

(b) “any proposed physical activity not relating to a physical work that is prescribed, or is within a class of physical activities that is prescribed, pursuant to regulations made under paragraph 47 (b).” (pg. 6)

The Inclusion List Regulation “*Order-in-Council 2003/Environmental Assessment Act*,” (Yukon Territory Canada 2003) states the activities requiring an environmental assessment. Section 8 of the Inclusion List Regulation states:

“the cutting and removal of timber under a timber harvesting agreement entered into by the Minister in accordance with the territorial Lands (Yukon Act or the cutting and removal of more than 1,000 m³ of timber that requires a permit pursuant to the Timber Regulation.” (pg. 3)

Since this project consists of harvesting approximately 186,000 m³ of timber, an environmental assessment is required.

3. DESCRIPTION OF PROJECT

a. East Hyland Planning Unit

The East Hyland Planning Unit, as identified by the KFRSC, is located approximately 45 km east of the town of Watson Lake, adjacent to the Alaska Highway. It is bounded by the Hyland River on the west; Contact Creek on the east; the BC/Yukon border on the south and the headwaters of Irons Creek on the north (IFS 2003; Figure 1). Cosh Creek is a drainage east of Irons Creek that flows into the Liard River. Contact Creek, Irons Creek and the Hyland River also flow into the Liard River.

The East Hyland Planning Unit consists of a large percentage of forested area (89%; Table 4). The area of the East Hyland Planning Unit is approximately 109,000 ha.; 38% (or approximately 41,000 ha.) of the area is less than 30 years old and considered not satisfactorily restocked; however, recent colour air photos show the area has considerable lodgepole pine (*Pinus contorta*) regeneration. It is likely that this area is fully stocked with 10-15 year old lodgepole pine regeneration (M. Thorp 2004 pers. comm.). According to IFS 2003, 39% (or just less than 43,000 ha.) of the area is 80-130 years old.

Table 4. Land Cover of the East Hyland Planning Unit.¹

Planning Area	Approximate Total Forest (ha.)	%	Approximate Total Non-Forest ² (ha.)	%	Approximate Area (ha.)
East Hyland	97,600	89	11,600	11	109,000

¹Adapted from IFS 2003.

²Water and alpine area.

The East Hyland Planning Unit has been divided into five operating units (Irons Creek, Boundary Creek, Cosh Creek, Lost and Hyland). Some blocks in the Cosh Creek, Boundary Creek and Irons Creek operating units are addressed in this environmental assessment. They were chosen as a priority area to locate an interim wood supply for three years. The area had:

- Previous logging history
- Resource information existed (Final Resource Report East Hyland Planning Area; DIAND Forest Resources 2000)
- Fewer conflicts with non-timber values compared to other areas
- Existing road access reduces the amount of new road construction (which has wildlife management benefits) and the amalgamation of forest disturbance to create large patches which provide less disturbance to marten home ranges (large blocks provide opportunity to leave large blocks)
- Sufficient volume was available for three years timber supply
- Opportunity to remove timber and create a forest stand pattern which better represented natural disturbance patterns
- Tradeoff opportunity to harvest volume and then decommission roads, short duration impact versus numerous entries

[Click here to view Figure 1 – an overview map.](#)

b. Ecoregion Description and Environment

The East Hyland Planning Unit is located within the Liard Basin that spans the British Columbia/Yukon/Northwest Territories border. The East Hyland Planning Unit incorporates the Liard Plain, a broad, rolling, low-lying area mantled with glacial drift and outwash deposits in which the Liard River is entrenched (Fisheries and Environment Canada 1977).

The mean annual temperature for the area is approximately -3°C , with a summer mean of 11°C and a winter mean of -18.5°C . Annual precipitation is 350–450 mm (Fisheries and Environment Canada 1977).

The ecoregion is characterized by extensive stands of boreal forest composed of lodgepole pine (*Pinus contorta*), white spruce (*Picea glauca*), black spruce (*P. mariana*), sub-alpine fir (*Abies lasiocarpa*) and trembling aspen (*Populus tremuloides*). In the Liard ecoregion, dry sites support lodgepole pine while moist sites support black spruce and typically a Labrador tea (*Ledum groenlandicum*) and horsetail (Fam. *Equisteraceae*) understory. Permafrost is discontinuous, confined mainly to lower north-facing slopes and sphagnum bogs.

Characteristic wildlife in the greater Liard Basin includes moose: (*Alces alces*), black bear (*Ursus americanus*), wood bison (*Bison bison*), caribou (*Rangifer tarandus*), marten (*Martes americana*), beaver (*Castor Canadensis*), muskrat (*Ondatra zibethica*), Snowshoe hare (*Lepus Americanus*), ruffed grouse (*Bonasa umbellus*) and various owl, raptor, passerine and waterfowl species.

Fisheries studies have been conducted in the East Hyland area; however, these studies are limited. Fish species known or expected in Contact Creek include: arctic grayling (*Thymallus arcticus*), mountain whitefish (*Prosopium williamsoni*) and slimy sculpin (*Cottus cognatus*; Tobler and Richards 2002). Fish species documented in Irons Creek include: arctic grayling, mountain whitefish, slimy sculpin, spoon head sculpin (*Cottus ricei*) and whitefish (general; Tobler 2002). Lake chub (*Couesius plumbeus*) was found in Cosh Creek during a stream assessment in 1996 (De Graff 2004 pers. comm.).

c. Block Descriptions

The goal of the interim wood supply was to propose up to $128,000\text{m}^3$ of wood/year for three years (for a maximum total supply of $384,000\text{m}^3$ in a three year time frame). For planning purposes, blocks were divided into Year 1, 2 or 3 (based on the three year interim wood supply).

Currently the proposed volume for the three year period is approximately 290,000m³ (approximately 104,000m³ was environmentally assessed in 2004 and approximately 186,000m³ is currently being assessed). Assigning specific years of harvesting during the planning stages does not mean that the blocks will be harvested in any particular order, nor does it mean that there will be a market demand to harvest the entire 290,000m³ in a three year period. Therefore throughout this report and maps, the blocks that were referred to as Year 1, 2 or 3 will be referred to as “blocks that were environmentally screened in 2004” and “blocks that are currently being environmentally screened.”

e. Blocks that are Currently being Environmentally Screened

Twenty-six blocks are currently being screened (Table 5). The gross area of these blocks is approximately 1,450 ha while the area of new harvest is approximately 970 ha. (Table 5). Blocks C15L, C15M, C15N, B1, B7A and B7B are proposed for summer logging; while blocks C14A, C14B, C15A, C15B, C15C, C15D, C15E, C15F, C15G, C15I, C15K, C15P, B9, B10, B12, B13, B14, I1, I5, and I6 are proposed for winter logging. Various reasons have been given for proposing summer or winter harvest (Table 6).

Table 5. Reconnaissance Block Summaries for Blocks that are Currently Being Environmentally Screened

Block	Approx. Gross Area (ha.)	Approx. New Harvest Area (ha.)	Approx. Area of Old Blocks (Included in Gross Area; ha.)	Approx. Interior Reserves (ha.)	% Internal Retention (% of Gross)	Avg. Timber Type (Species %) ¹	Avg. Volume/h ha. (m ³)	Total Volume (New Harvest Area; m ³)
C14A	27.4	18.8	6.5	2.1	8%	Pl ₆ Bl ₃ Sw ₁	250	4,700
C14B	100.7	43.5	32.0	25.2	25%	Pl ₈ Bl ₂	220	9,570
C15A	38.2	36.4	0	1.8	5%	Pl ₇ Sw ₃	200	7,280
C15B	58.7	34.8	12.2	11.7	20%	Pl ₈ Sw ₂	225	7,830
C15C	68.6	63.3	0	5.3	8%	Pl ₆ Sw ₃ At ₁	200	12,660
C15D	12.7	12.7	0	0	0%	Pl ₆ Sw ₂ At ₁ Bl ₁	170	2,159
C15E	43.6	25.2	9.7	8.7	20%	Sw ₃ Pl ₃ Bl ₃ At ₁	180	4,536
C15F	85.2	41.7	26.5	17	20%	Sw ₅ Pl ₃ Bl ₂	180	7,506
C15G	47.6	44.1	0	3.5	7%	Pl ₇ Sw ₂ Bl ₁	180	7,938
C15I	87.6	49.2	27.7	10.7	12%	Pl ₅ Sw ₄ Bl ₁	200	9,840
C15K	37.7	24.4	10.6	2.7	7%	Pl ₅ Sw ₃ Bl ₂	150	3,660
C15L	64.5	51.6	0	12.9	20%	Pl ₈ Bl ₂	200	10,320
C15M	26.6	26.6	0	0	0%	Pl ₇ Sw ₂ Bl ₁	180	4,788
C15N	18.1	18.1	0	0	0%	Pl ₇ Bl ₃ Sw ₁	210	3,801
C15P	3.7	3.7	0	0	0%	Pl ₅ Sw ₃ Bl ₂	200	740
B1	41.2	36.1	0	5.1	12%	Pl ₇ At ₂ Sb ₁	125	4,513
B7A	33.9	19.5	11.2	3.2	9%	Sw ₆ Pl ₃ At ₁	120	2,340
B7B	39.8	35.1	0	4.7	12%	Pl ₈ Sw ₂	200	7,020
B9	11.9	11.9	0	0	0%	Pl ₇ Sw ₃	180	2,142
B10	49.6	38.7	0	10.9	22%	Pl ₇ Sw ₂ At ₁	240	9,288
B12	99.7	67.8	0	31.9	32%	Sw ₈ Pl ₁ Bl ₁	115	7,797
B13	115.1	78.3	0	36.8	32%	Pl ₆ Sb ₃ Sw ₁	225	17,618
B14	22.7	21.7	0	1.0	4%	Sb ₇ Pl ₃	150	3,255
I1	157.9	55.9	70.8	31.2	20%	Sw ₆ Pl ₃ Bl ₁	225	12,578
I5	135.6	87.2	0	48.4	36%	Pl ₅ Sb ₂ Sw ₁ Ep ₁ At ₁	200	17,440
I6	21.7	20.6	0	1.1	5%	Pl ₅ Sw ₃ Bl ₁ Ep ₁	218	4,491
Total	1,450	967.8	207.2	275.9			199.3	185,810

¹Sw= white spruce; F=sub alpine fir; At=trembling aspen; Sb= black spruce; Bl=subalpine fir; P=lodgepole pine. The tree species are not necessarily in order of abundance.

Table 6. Summer and Winter Harvest Blocks

Harvest Season	Blocks and Brief Rationale
	C15L-dry soil conditions, coarse soils and dry access requirements
	C15M-coarse textured soils, mesic site conditions and the lack of in-block spurs roads.
	C15N-dry site conditions, coarse soils and dry access requirements
	B1-coarse soils, flat terrain and easy access
	B7A-coarse soils, easy access and lack of wet soils
	B7B-coarse soils, easy access and lack of wet soils
Winter	C14A-finer soils and localized moist to wet sites
	C14B- although this block could be harvested in the summer, this block has been defaulted to winter harvesting due to the likelihood that C14B would be harvested in conjunction with C14A (which has been slated for winter harvest).
	C15A-localized pockets of finer textured soils and compact till
	C15B-localized pockets of fine textured soils and compacted till
	C15C-localized pockets of fine textured soils and compacted till
	C15D-facilitation of easy crossing of the moist to wet ground in the reserve surrounding the block
	C15E-localized pockets of fine textured soils and compacted till
	C15F-localized pockets of fine textured soils and compacted till
	C15G-localized pockets of fine textured soils and compacted till
	C15I-minimize site disturbance on the steeper portions of the block
	C15K—minimize site disturbance around the access crossing and where the soils are shallow
	C15P-facilitate easy crossing of the moist to wet ground in the reserve surrounding the block
	I1-variable terrain and site degradation risk (shallow compact till in localized areas)
	I5- although this block could be harvested in the summer, this block has been defaulted to winter harvesting due to the likelihood that I5 would be harvested in conjunction with I6 (which has been slated for winter harvest).
	I6-reduce the risk of site degradation on areas with compact till
	B9-harvest method will be conventional ground based roadside harvest
	B10-Reduce potential for soil degradation on the slopes and small subhygric areas
	B12-Reduce potential for soil degradation on the slopes and small subhygric areas where the soils have silty textures in the upper soil profile and where compact till occurs
	B13-reduce the potential for site degradation in areas of compact till or where finer silty soils occur near the surface of the soil profile
	B14- although this block could be harvested in the summer, this block has been defaulted to winter harvesting due to the likelihood that B14 would be harvested in conjunction with B13 (which has been slated for winter harvest)

4. PROJECT TRIGGERS AND RESPONSIBLE AUTHORITIES

According to EAA, an environmental assessment is required for a project requiring a timber permit for a volume greater than 1,000 m³ or if the project requires an environmental screening for any of its components. Since the project involves the timber harvesting and associated activities of 26 blocks in the East Hyland Planning Unit, an environmental assessment is required.

The Yukon Government Department of Energy, Mines and Resources (EMR) Forest Management Branch is the representative of the RA, the Minister of EMR. A RA is an authority that either has proposed the project or has been asked to provide support or approval in the form of funding, land, or a permit, license or other approval specified by regulation (Statutes of the Yukon 2003). The Yukon Government, Department of EMR is the only department that has declared themselves an RA for this assessment.

5. SCOPE

Scope is defined as those components of the proposed development that are considered part of the project for the purposes of environment assessment (Statutes of the Yukon 2003).

a. Scope of the Project

The scope of the project identifies the development activities. The scope of the project includes:

- All phases of the project, including but not limited to, the construction of new in-block roads and the upgrade of existing roads, construction of stream crossings, decommissioning of roads and stream crossings, regeneration of the blocks and associated activities such as regeneration surveys
- The operation of equipment and machinery
- Potential accidents and malfunctions related to the project, or that may occur in connection with the project (i.e. spills, etc.)

b. Scope of the Assessment

The scope of the assessment identifies the environmental components of the screening. The temporal scope of this assessment is based on an individualized 12 year¹ block harvest schedule and includes the environmental effects from the year that the block was harvested plus

¹ For the 12 year period, year 1 is the year of harvest. Then there is a 3 year period for regeneration and 8 years for regeneration establishment, deactivation and rehabilitation of the site, etc.

the duration of any adverse environmental effects triggered during the 12 year time period. After this 12 year time period, forest recovery should be well underway and enough time should have elapsed after tree establishment to ensure that crop trees have reached a stage where they can reasonably be expected to continue development to maturity without significant additional intervention.

The spatial scope of this assessment includes the environment (land, water, air) contained within the proposed project boundaries and the environment outside the project that could be potentially affected through the administration of the project.

6. FACTORS CONSIDERED IN THIS ASSESSMENT

This assessment considers the following factors from Section 12 of *EAA* (pg. 14/15):

- The environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative effects that is likely to result from the project in combination with other projects or activities that have been, or will be carried out
- The significance of the above environmental effects
- Technically and economically feasible mitigation measures, implemented to mitigate potentially significant adverse environmental effects related to the project
- Comments from the public

7. CUMULATIVE EFFECTS

A cumulative environmental effect is defined as the effects on the environment (i.e. Valued Ecosystem and Cultural Components; VECC) which result from effects of a project when combined with those of other past, existing and imminent projects and activities, occurring over a certain period of time and space (Government of Canada 1994). The cumulative effects evaluation considers past and proposed forest harvesting and other activities that have occurred, are occurring or are forecasted to occur in the East Hyland Planning Unit. Ten evaluations were conducted as part of the cumulative effects review; refer to Appendix 4 for the analysis and the associated user guide that assisted with the evaluation of cumulative effects.

a. Scope of the Cumulative Effects

The purpose of defining the scope of the cumulative effects section is to identify the environmental effects considered in regards to a project and identify the likely cumulative

environmental effects and set appropriate geographic and temporal boundaries. The scoping of the cumulative effects section has been divided into: i) regional issues of concerns; ii) appropriate regional VECCs; iii) spatial and temporal boundaries; iv) other actions that may affect the same VECCs and v) uncertainty.

i. Regional Issues of Concern

In regards to regional issues of concern, this section has been divided into past, present and future harvesting activities. Harvesting in the Contact Creek, Cosh Creek and Irons Creek areas began in 1995 (D. White pers. comm. 2004) and a total of 209 blocks were harvested (approximately 1,800 ha.). Most harvesting that occurred during this time consisted of small patch-cuts ranging from less than one ha. to 30 ha.; the average block size was 8.8 ha. (D. White pers. comm. 2004). Some of the harvested blocks have islands of trees or scattered trees left behind. (D. White pers. comm. 2004).

Currently, four timber permits have been awarded in the Cosh Creek Operating Unit. These block descriptions are provided in Table 7.

Table 7. Blocks Permitted in the Cosh Creek Operating Unit in 2004

Block	Opening Size (ha.) ¹	Total Opening Size (ha.; Sum of Existing and Proposed Blocks) ¹	Approximate Volume (m ³) ²	Species ³	Status
C4	33	37	9,400	Pl; Sw; F	Permit awarded in 2004.
C10A	66	183 (combined total for 10A and B)	12,200	F; Sw; Pl	Permit awarded in 2004.
C10B	47	see above	8,400	Pl; F; Sw	Permit awarded in 2004.
C11	14	25	6,000	Sw; Pl; F	Permit awarded in 2004.
Total	160	245	36,000		

¹Approximate total opening size.

²Approximate volume to nearest 100 m³.

³Pl=Lodgepole pine; Sw=white spruce; F=sub-alpine fir. Not in any particular order.

Other projects have occurred in the East Hyland Planning Unit; specifically in the vicinity of the Cosh Creek, Irons Creek and Boundary Operating Areas. These other projects contribute to the cumulative effects of the area. For example, the Alaska Highway was completed (but not paved) in 1942 and was completely paved in 1988 (S. Cole pers. comm. 2004). The Alaska Highway is periodically upgraded (i.e. widened, paved, etc.) and gravel is obtained for the construction activities from the borrow pits along Alaska Highway. No known oil/gas or mineral exploration has occurred in the East Hyland Planning Unit.

ii. Appropriate Regional VECCs

The regional VECCs are discussed in Tables 8 and 9.

Table 8. Regional Valued Ecosystem and Cultural Components

Component Type	VECCs	Justification
ENVIRONMENTAL		
Ungulates	Woodland caribou	Maintain quality habitat
Ungulates	Moose	Maintain quality habitat
Furbearers	Marten	Trapping values
Forest birds	Northern goshawk, boreal owl, three-toed woodpecker, pileated woodpecker, passerines, water fowl	Maintain quality habitat
Aquatic resources	Fish and fish habitat, water quality	Maintain aquatic quality
CULTURAL		
Traditional and community lifestyle	Trapping, hunting, gatherings, berry picking	Maintain traditional and cultural lifestyles
Wilderness values	Recreation, visual quality, tourism, etc.	Maintain wilderness values of the area

iii. Spatial and Temporal Boundaries

The purpose of the spatial and temporal boundaries section is to establish a frame of reference for assessing cumulative environmental effects and facilitates their identification (CEAA 2003). This section will discuss the spatial and temporal bounds of this project, the availability of existing data and knowledge and the relevant ecological boundaries.

iii a. Spatial and Temporal Bounds of this Project

Regarding the spatial scope of this assessment, this project is bounded on the west by Cosh Creek, Contact Creek to the east, a tributary to Contact Creek to the north and the Alaska Highway to the south. This project encompasses approximately 76 square km.

The temporal scope of this cumulative effects assessment includes the environmental effects of any past projects in the East Hyland Planning Unit, the environmental effects caused by the current project for 12 years (one year for forest harvesting, three years for regeneration and eight years for regeneration establishment, site deactivation and rehabilitation, plus the duration of any adverse environmental effects triggered during this time period) and any future projects forecasted for the East Hyland Planning Unit.

iii b. The Availability of Existing Data and Knowledge

The availability of existing data is important in assessing the cumulative effects. Current and past forest harvesting in the East Hyland area has occurred where information has been obtained and was useful for this project (regeneration, operability, etc.). This information includes air photos, a resource report, miscellaneous reports (IFS 2003, KFRSC 2004, Tobler 2004, Tobler and Richards 2002, Thomas Heritage Consulting 2004, etc.), forest cover maps, overview flights and field assessments.

There are knowledge gaps for the East Hyland Planning Unit. These data and knowledge gaps include: field heritage assessments, overview fisheries and wildlife inventory and habitat assessments. However by being conservative and using precautionary measures and the existing data and knowledge, there is sufficient data and knowledge of the East Hyland Planning Unit to effectively assess the cumulative effects of this project. The precautionary approach has been taken in relation to mitigative measures prescribed. These measures include: riparian management areas, set-aside areas and Forest Ecosystem Networks, variable retention (and

retention of all deciduous and snags that are considered safe), reserves, coarse woody debris piles left randomly on blocks, etc. It is believed that the mitigations proposed are conservative enough to overcome these gaps. Also the Land Stewards and the KFRSC has provided valuable information in regards to this project.

In addition to the existing data and knowledge for the East Hyland Planning Unit, new fisheries and heritage information was collected for the area in 2004. In August 2004, stream assessments were conducted associated with future harvesting in the East Hyland Planning Unit (Tobler 2004). Also an overview assessment of potential heritage resource concerns was carried out for the East Hyland Planning Unit (Thomas Heritage Consulting 2004).

iii c. Relevant Ecological Boundaries

Currently there are no known ecological boundaries (such as physiographic, vegetation, land use, habitat, soil and surface materials) that are limiting to this project. The Rancheria Caribou Herd's range is not within the bounds of this project.

iv. Other Actions That May Affect The Same VECCs

Other actions that may affect the VECCs are listed below:

- woodland caribou and moose populations
 - increase in noise, increase in road access, increase in hunting)
- Forest bird populations (northern goshawk, boreal owl, three-toed woodpecker, pileated woodpecker, passerines)
 - increase in noise; decrease in cover and habitat
- Old forest species (marten)
 - increase in noise, access, decrease in cover and habitat
- Maintenance of traditional and community lifestyle and uses.
 - increase of access may cause an increase of usage
- Wilderness values (e.g. recreation, visual quality, tourism)
 - increase of usage, affect to visual quality

v. Uncertainty

Some uncertainty will be always associated with environmental assessments (CEAA 2003). According to CEAA (2003), uncertainty can be related to scientific methodology, data availability and accuracy, new or unproven technology, new or unfamiliar environmental setting, or the uncertainty of future projects. In the preparation of this environmental

assessment screening report, the most up to date information and professional knowledge and judgment was used.

b. Changes in the Environment Caused by the Project

The project, timber harvesting of 26 blocks in the East Hyland Planning Unit, will cause changes to the environment in the Irons Creek, Cosh Creek and Boundary operating units. The volume proposed for harvest is approximately 186,000 m³, or 970 hectares of new harvest area, ranging from 3.7 (C15P) to 87.2 ha (I5) and averaging approximately 37 ha. The total block (existing and proposed) size is approximately 1,400 ha. ranging from 3.7 (C15P) to 157.9 ha. (I1) and averaging approximately 56 ha.

Changes to the environment may include, but are not limited to: seral stage, wildlife habitat and forest dependent wildlife species, fragmentation, visual quality, roads and landings, hydrology and pollution (Table 9).

Table 9. Possible Environmental Effects Caused by Forest Harvesting in the East Hyland Planning Unit

Alterations	Possible Environmental Effects
Harvesting	There will be an effect on wildlife habitat and forest dependent wildlife species; industrial noise; fragmentation and visual quality. Blocks C14A, C14B, C15E, C15F, C15K, C15L, C15N, I1, B1, B7B, B9 and B13 have been classified as having possible visual quality concerns from viewpoints along the Alaska Highway. These blocks have been engineered to minimized visible impacts from the Alaska Highway.
Roads and landings	Erosion, increase in access. Until the roads are deactivated, the East Hyland area will be more easily accessed than it currently is and the increase in access may result in the Cosh Creek watershed being frequented more by recreationalists and other users temporarily. Generally, in-block roads will be permanently deactivated. The Cosh Creek mainline and the main access routes for the I and B blocks will be seasonally deactivated using water bars and ditching to minimize erosion.
Hydrology	Erosion and sediment caused by culvert installation for summer harvesting.
Reforestation	Brush competition, increased snow press damage, areas of non sufficient restocked.
Pollution	Oil, litter, sewage, etc.

Spatial analysis was completed in Irons Creek and Contact Creek watersheds to determine changes in the seral classes due to the proposed timber harvesting (Interim Wood Supply Technical Working Group; IWSTWG 2004). Table 10 shows that the Irons Creek watershed will increase by 3.5% for early seral and decreased by approximately 3.5% in mature

seral class (IWSTWG 2004). The Contact Creek watershed will increase in early seral by 1.3% and decrease in mature by the same amount (IWSTWG 2004).

Table 10. Forest Cover Changes Based on Proposed Blocks¹

Seral Class	Seral Class %	Seral Class %	Seral Class %	Seral Class %	%
WATERSHED	0-29	30-79	80-129	130+	Total
Irons Creek	35.3	22.7	40.0	2.0	100
Contact Creek	35.4	23.0	40.7	0.8	100
Post Harvest Seral Class					
WATERSHED	0-29	30-79	80-129	130+	Total
Irons Creek	38.8	22.7	36.5	2.0	100
Contact Creek	36.7	23.0	39.4	0.8	100

¹Interim Wood Supply Technical Working Group (2004)

Wildlife habitat and forest dependent wildlife species will be impacted by the forest harvesting. Measures such as protecting corridors, avoiding nest and den sites, limiting fragmentation, placing coarse woody and debris piles, etc. should provide mitigation options that will limit the impact that forest harvesting has on wildlife and wildlife habitat.

Although the blocks have been engineered to minimize visual impacts from the Alaska Highway, visual quality will be affected by the proposed harvesting. Blocks C14A, C14B, C15E, C15F, C15K, C15L, C15N, I1, B1, B7B, B9 and B13 have been classified as having possible visual quality concerns from viewpoints along the Alaska Highway. Retention and feathering techniques and Alaska Highway buffers should minimize visual quality concerns.

Access will have an impact on the environment. Roads that are already present in the East Hyland Planning Unit will be upgraded as appropriate for summer and/or winter logging. New mainline and in-block roads will be built according to the THPOG (DIAND Forest Resources 1999) guidelines and if required, land use permits shall be obtained by the Government of Yukon.

Generally, in-block roads will be permanently deactivated once harvesting obligations are met. The Cosh mainline, as well as the mainlines accessing the B and I blocks, will be seasonally deactivated post-harvest. Details regarding the scheduling for seasonal deactivation, permanent deactivation, access control points will be provided in an access management plan (IWSTWG 2004).

There are summer harvest options for B1, B7, C15L, C15M and C15N. For summer harvesting, 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 site degradation due to areas of clayey soils
- Minimize duff disturbance (i.e. use a dispersed skidding pattern, do not blade skid trails)
- A minimum 5 m Machine Free Zone must be placed on either side of any non classified drainage. Designated skidder crossings of these drains will be proposed

c. Health and Socio-economic Conditions

No known health conditions will be caused by this project. The following socio-economic conditions with regards to this project have been raised:

- Economic effect on trappers and guide outfitters
- Short-term increased access for hunters and berry pickers and negative affects from increased harvesting

d. Physical and Cultural Heritage

Thomas Heritage Consulting (2004) conducted an overview assessment of potential heritage resource concerns for the East Hyland Planning Unit in 2004. According to Thomas Heritage Consulting (2004), no heritage sites have yet to be identified within the East Hyland Planning Unit; however, there are areas within the East Hyland Planning Unit that correspond, in whole or partially, with areas of heritage potential.

Of the six cut blocks (C14, C16, L31, L32, L33 and H26) that Thomas Heritage Consulting (2004) identified as corresponding with areas of heritage potential, C14 is the only block applicable to this environmental assessment. This block has heritage interest due to the elevated topographical features overlooking a wetland/stream system and because there potential travel and/or trapping routes. Two mitigation strategies were provided by Thomas Heritage Consulting (2004); these include: 1) to buffer the terrace edge and 2) conduct a post impact monitoring of terraces for the presence of archeological remains. A pre-harvest field assessment will determine whether these two mitigation strategies are required, and if required, buffering the terrace edge and post impact monitoring shall be conducted.

e. Current uses of Lands and Resources for Traditional Purposes by Community Members

The East Hyland Planning Unit is traditionally used by community members and recreationalists; some of the outdoor recreation activities include: hunting, trapping, berry picking and traditional gatherings. Furbearer trapping has been conducted for many years in the Cosh Creek area and in nearby Contact Creek and Coal River (R. Hennings, pers. comm. 2004). According to IFS (2003), there is evidence that the Cosh Creek mainline had been used as a trapping route.

f. Structures or Site that are of Historical, Palentological or Architectural Significance

In relation to this project, there was no structure or site that is of historical, palentological or architectural significance located.

g. Any Change to the Project Caused by the Environment

It is difficult to determine or predict whether there will be any change to the project caused by the environment. Some examples of possible changes to the project caused by the environment include, but are not limited to:

- Unusual weather occurrences
- Insect and disease outbreak
- Forest fire

h. Cumulative Effects Evaluation

The likelihood and significance of the cumulative effects was determined to be low (Appendix 4, Form 10). The forms in Appendix 4 summarize the cumulative effects evaluation.

8. COMMENTS/RECOMMENDATIONS RECEIVED THROUGH CONSULTATION PROCESS

The goal of this environmental assessment is to focus on significant and potentially significant environmental effects. Stakeholder groups, identified in Table 11, were asked to review the information provided (the maps, block reports, etc.).

As part of the review process, the FMB Environmental Assessment (EA) Coordinator reviewed and compiled all of the responses received by the FMB. All documentation received by the FMB is attached to this report (Appendix 2).

Table 11. Consultation/Referral List.

Organization	Contact Person	Incoming Comments
FEDERAL GOVERNMENT		
Environment Canada/Canadian Wildlife Service	Scott Herron 393-7975 Mile 91782 Alaska Hwy, Whitehorse, Y1A 5B7	Received February 11, 2005
Department of Indian and Northern Affairs Canada	Laura Spicer 667-3326	No response
Fisheries and Oceans Canada	Eero Karanka 393-6703 100-419 Range Road, Whitehorse, Y1A 3V1	No response
YUKON GOVERNMENT		
	Box 2703 Whitehorse, Y1A 2C6	
Community Services-Community Development Branch	Gerry Gerein 667-5707	No response
Community Services-Protective Services	Dan Boyd 667-3224	No response
Community Services-Protective Services	Al Beaver 456-3966	No response
Community Services-Land Development	Brian Ritchie 667-3093	No response
ECO-Environmental Assessment	Shane Andre 456-3803	No response
Economic Development- Investment, Trade and Business Development	Rick Sudeyko 667-3430	No response
EMR- Assessment and Abandoned Mines	Marg Crombie 393-7098	No response
EMR-Agriculture Branch	David Beckman 667-5838	No response
EMR-Client Services and Inspections Branch	Richard Potvin 536-2256 Box 289 Watson Lake Y0A 1C0	No response
EMR Library	Aimee Ellis 667-3108	No response
EMR-Integrated Resource, Policy and Planning	Diane Brent 667-5471	No response
EMR-Land Use	Marg White 667-3173	Received February 8, 2005
EMR-Lands Branch	Lyle Henderson 667-5218	No response
EMR-Mineral Development Branch Yukon Geology Survey	Ken Galambos 667-5996	No response
EMR-Mineral Management Branch	Nancy Moore 536-7366	No response
EMR-Oil and Gas Business Development and Pipeline Branch	Brian Love 667-3566	No response

Table 11. Consultation/ Referral List cont'd.

Organization	Contact Person	Incoming Comments
EMR-Oil and Gas Management Branch	John Masterson 667-5026	No response
EMR-Sustainable Resources	Greg Komaromi 667-3140	No response
Environment	Ken Kiemele 667-5093	No response
Highways and Public Works-Lands and Granular Resources	Florian Vedress 633-7905	Received January 12, 2005
Justice-Solicitor	Laurie Henderson 667-5391	No response
Tourism and Culture- Tourism Product Development and Research	Robert Clark 667-5632	No response
Tourism and Culture-Tourism Product Development and Research	Cathryn Paish 667-5433	Received February 12, 2005
Tourism and Culture-Yukon Archaeology	Ruth Gotthardt 667-5983	Received January 21, 2005
Yukon College Library	Jane Haydock 668-8870	No response
INTEREST GROUPS		
Association of Yukon Renewable Resources	-	No response
Canadian Parks and Wilderness Society	Theresa Gulliver 393-8080 Box 31095 Whitehorse, Y1A 5P7	Received February 14, 2005; addendum (with Yukon Conservation Society received February 14, 2005)
Rhonda Rosie-resident of area	P.O. Box 860 Watson Lake, YT Y0A 1C0	No response
South East Proper Land Use Society	Tor Forsberg 536-2984 Box 505, Watson Lake, Y0A 1C0	Received February 11, 2005
Tourism Industry Association	-	No response
Town of Watson Lake	-	No response
Watson Lake Chamber of Commerce	-	No response
Wilderness Tourism Association of the Yukon	Blaine Walden 668-3369 # 4-1114 First Ave. Whitehorse, Y1A 1A3	Received February 10, 2005
Yukon Agricultural Association	-	No response
Yukon Chamber of Mines	-	No response

Table 11. Consultation/ Referral List cont'd.

Organization	Contact Person	Incoming Comments
Yukon Conservation Society	Karen Baltgailis 668-5678 302 Hawkins Street Whitehorse, Y1A 1X6	Received February 11, 2005 and addendum received on February 14, 2005
Yukon Fish and Game Association	-	No response
Yukon Fish and Wildlife Management Board	-	No response
Yukon Land Use Planning Council	-	No response
Yukon Prospectors Association	-	No response
Yukon Outfitters Association	Terry Kennedy 4194 A 4th Avenue Whitehorse, Y1A 1J8	No response
Yukon Trappers Association	-	No response
FIRST NATIONS		
Kaska Forest Stewardship Council	Norm MacLean	No response
Kaska Dene Council	Dave Porter	No response
Kaska Tribal Council	Hammond Dick	No response
Liard First Nation	Liard McMillan	No response
Daylu Dena	George Miller	No response
Ross River Dene Council	Jack Caesar	No response
Council of Yukon First Nations	-	No response

This assessment will examine the significant and potentially significant effects that the project will have on the environment under the authority of EAA, as well as determine if any mitigation is required. Table 12 describes the VECCS and the likelihood of impact from harvesting, the mitigation required and significant effects that the proposed forest harvesting will have on the Cosh, Irons and Boundary Creek watersheds.

a. Mitigation

Mitigation is the elimination, reduction, or control of a project's adverse environmental effects, including restitution for any damage to the environment caused by such effects through replacement, restoration, compensation, or any other means (Canadian Environmental Assessment Agency 1994).

Although the majority of the blocks are proposed as winter harvest, there are summer harvesting options for blocks C15L, C15M, C15N, B1, B7A, and B7B. According to IFS (2003), summer harvesting should only be proposed if the following conditions are met:

- 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 and if available use rubber tired skidders
- A minimum 5 meter Machine Free Zone ribbon must be placed on either side of all non-classified drainages or seepages

Mitigation options are discussed in Tables 12 and 13 and Appendix 3 and a list of mitigations is located in Appendix 5.

b. Stakeholders and Yukon and Federal Government Agencies

Specific comments or recommendations and suggested mitigations have been identified in Table 12.

Table 12. Valued Ecosystem and Cultural Components, Their Significance and Mitigation Required.

VECC	Likelihood of Impact From Harvesting	Mitigation Required	Significant Effects
Forest birds	<p><u>Northern goshawk</u>- No Northern goshawk nests were noted by field crews during the reconnaissance phases; however, formal goshawk surveys have not been conducted in the East Hyland Planning Area. <u>Black tern</u>-low; Yukon's only recorded black tern colony is located at Blind Lake, approximately 22 km from the proposed blocks. <u>Boreal owl</u>- Forest Ecosystem Network (FEN) will provide habitat for later seral species such as the boreal owl. <u>Three-toed woodpecker</u>-low; FEN will provide habitat for later seral species such as the three-toed woodpeckers. <u>Passerines</u>-low (moderate if summer harvest); the harvesting area is at the northern edge of range; however, harvesting activities that are scheduled for summer shall be conducted when the impact is anticipated to be low. <u>Trumpeter swan</u>-low; forest harvesting is not within proximity of large bodies of water (such as Blind Lake). Blind Lake is located approximately 22 km from the proposed blocks.</p>	<p>Mitigation has been provided for forest bird species (i.e. the majority of the blocks will be winter harvesting, leaving all snags that are considered safe, deciduous trees and coarse woody debris in blocks and riparian zones in riverine areas, etc.). Northern goshawk nests found during the reconnaissance level planning stage will have a 24 ha. reserve area established adjacent to contiguous mature forests to prevent islands of harvested areas forming around them. Nests found post project approval will be buffered with a 200-metre leave area, without a 24 ha. reserve area.</p>	None
Wilderness values (visual quality; recreation; tourism)	<p>Low to moderate-some harvest activities will be observed from the Alaska Highway.</p>	<p>Although some visual quality from the Alaska Highway will be affected by harvesting, dispersed/aggregated retention will help minimize the visual impacts of the blocks. Blocks visible from the Alaska Highway shall be feathered and buffered.</p>	None
Moose population	<p>Low- moose is a key sport hunting species and there is key calving habitat within 4 km of the Hyland River, which is not in close proximity to the proposed blocks.</p>	<p>No further mitigation required.</p>	None

Table 12. Valued Ecosystem and Cultural Components, Their Significance and Mitigation Required cont'd

VECC	Potential Impact From Harvesting	Mitigation Required	Significant Effects
Woodland caribou population	Low-the winter range of the Rancheria Caribou Herd presently does not extend into the East Hyland planning area. Caribou were viewed in alpine sites of the northeast corner of the East Hyland planning area (part of summer range), which is not in proximity to the planned areas.	There is no evidence that the current plan will impact caribou or caribou habitat; no mitigation required.	None
Marten population	Low or moderate-according to MacLean (2005), currently 4 of 74 potential female home ranges are considered marginal or unsuitable and it is predicted that the proposed blocks may increase the number of potential marginal or unsuitable female home ranges to 8. Within the Contact Creek watershed, 0 home ranges are considered marginal or unsuitable and with the proposed blocks, 2 female home ranges are predicted to be considered marginal or unsuitable.	Mitigations have been addressed for the marten in the plans (i.e. coarse woody debris piles (3m x 3m x 3m) will be left randomly in the blocks, all snags, except those that are considered safety hazards, dispersed retention, FEN, internal reserves); no additional mitigation required.	None
Aquatic resources	Low-the potential impact to the aquatic resources from this project is considered low.	Mitigations have been addressed for aquatic resources (i.e. riparian management areas; machine free zone around non-classified drainages and seepages that are adjacent to or blocks, use of clean snow and corduroy for winter stream crossings). Stream crossing assessments were completed in 2004.	None
Maintenance of traditional and community lifestyle (trapping, wilderness values, hunting, berry picking, traditional gathering sites)	Low-the IWSC is not privy to traditional land use practices or land steward information. At this time the Kaska and the KFRSC do not have a Traditional Knowledge (TK) Protocol, but a TK Protocol will likely be developed in the future to guide the collection and use of TK of Kaska people as per the MOU. No known cultural sites or issues exist within the harvest area of the blocks; however, block C14 has been identified as an area with heritage potential.	A pre-harvest survey will determine if a 60 m buffer shall be placed around the terrace edge of Block C14 and whether post impact monitoring of the terrace for the presence of archaeological remains is required. TK pertaining to the harvest area shall be documented as soon as possible.	Minor

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Government of Canada, Environment Canada		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Migratory Birds Regulations	Environment Canada cannot provide a written opinion that the project will not result in contravention of the Migratory Birds Regulations.	Continue to practice due diligence and continue to involve Canadian Wildlife Service-Yukon and other agencies, stakeholders and interest groups in land and resource use planning.
Organization: Government of Yukon, Highways and Public Works, Transportation Engineering		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Access and permits	New access and the reinstallation of existing access will require an access permit from the Transportation and Maintenance Branch. Upgrading of existing roads should be done under a land use permit as these roads are not maintained.	Appropriate permits shall be obtained when required.
Organization: Government of Yukon, Land Use		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Land use permits	Land use permits may be required if they are not included in the blocks or the harvesting units.	Land use permits shall be obtained if required.
Access	Access through private property on the way to Block B1 may be a problem if there were no access conditions provided.	The status of the gravel pit and private land shall be confirmed prior to layout.
Organization: Government of Yukon, Heritage Resources		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Block C14	C14-Buffer the terrace edge and conduct post-impact monitoring of terraces.	Complete a pre-harvest field assessment prior to harvesting to determine whether a 60 m buffer shall be placed around the terrace edge or whether post impact monitoring of the terrace for the presence of archaeological remains is necessary.
Organization: Government of Yukon, Tourism		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Tourism concurs with WTAY's comments	n/a	n/a

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Yukon Conservation Society		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Ecosystem-based management	The final IWSP for years 2 and 3 needs to clearly state that the IWSP is not ecosystem-based planning and that the long-term plan will be done according to ecosystem-based principles.	In a letter from MacLean (2005) addressed to the EA Coordinator (received by FMB on March 29, 2005), the IWS (as identified in the MOU) does not meet some of the ecosystem criteria; however, several ecological considerations and aspects of ecosystem-based planning were applied in the planning phases. These ecological considerations and aspects of ecosystem-based planning are described in MacLean (2005; Appendix 3). The IWSP shall state that not all ecosystem-based criteria were met; however, aspects of ecosystem-based planning were applied during the planning phases.
Cut block size	Cut blocks should not be further than 200 m from an edge.	This plan was designed by using aspects of ecosystem management. C15 was designed using a holistic approach and includes already cut areas, peninsular residual patches, other cuts in close proximity and forest separating cuts (refer to pages 77-78 of the Forest Stewardship Council-Canada Working Group National Boreal Standard 2004). Some of the connectivity corridors do not meet the 200 m criteria; however some of the corridors are in excess of the 200 m guideline. The 200 m was a guideline, not a requirement as adequate dash distance was present between the residual stands, Wildlife Tree Patches and corridors. Old blocks, which have approximately 10 years of regeneration (1.5-3 m height), were incorporated within the proposed blocks. A rationale shall be provided in the IWSP where the distances between the blocks were < 200m.

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Yukon Conservation Society cont'd		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Internal Grouped Retention	Internal retention percentages should be based on cut block size i.e. blocks less than 10 ha: 0% retention; blocks 10-60 ha. 10 % retention; blocks 60-80 ha. at least 20% retention and blocks 80 ha and larger: at least 30 % retention.	As noted in MacLean (2005), a consistent percentage approach of internal grouped retention should be applied in the Site and Harvest Plans. This would mean that larger blocks would generally have a larger range of internal retention. More detail needs to be provided in the IWSP in regards to the average amount of internal retention and the optimal range of internal retention for the plan. If operationally possible, internal retention shall increase to $\geq 20\%$ in blocks C15C and C15I.
Composition of Internal Grouped Retention	Internal retention must be representative of the species, age and size of trees being logged.	Internal retention shall represent the pre-harvest forest species mix, tree height, size and age classes present in the block as much as possible.
Dispersed Internal Retention	Dispersed internal retention should not be cited as mitigation for visual impacts.	Internal retention assists in minimizing effects of visual impacts.
Access	Acknowledge that access is pretty much permanent so accessing new areas must be carefully considered in the context of using available access where possible and minimizing new access.	Deactivated roads may still be accessible by ATVs and snowmobiles and there shall be a statement in the IWSP report and the access plan that reflects this. New access routes shall be carefully planned to 1) limit the density of new access 2) strategic access control points for physical barriers shall be identified, 3) appropriate water crossings and culverts shall be installed to maintain soil and water quality and 4) new access routes will be monitored for impacts.
Age class of old blocks	Calculate the table of Page 9 so that the cumulative effects of past and proposed logging are clear.	The IWSTWG and the KFRSC will be made aware of this request. Past, current and future development activities in the East Hyland Planning Unit shall be stated in the IWSP.

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Yukon Conservation Society cont'd		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Mapping	Each map should have appropriate legends. An outline around existing openings would have made it easier to make interpretations from maps where several of the colours are very close to each other. Review maps before distribution to ensure the clarity of information on the maps.	Maps shall have appropriate legends and colour schemes shall be selected so map features are easier to read. Maps shall be reviewed by the IWSTWG and /or the KFRSC prior to the distribution of the project description.
Clarity of Information	Future environmental assessments should incorporate all changes recommended by the KFRSC before being distributed for environmental review.	To speed up the reviewing process (as recommended by the KFRSC), the project description was distributed prior to capturing all of the changes recommended by the KFRSC. If possible, future project descriptions shall be distributed after all changes have been made.
Demand for wood	KFRSC direct the FMB and TWG to refrain from creating the development plan and laying out the years 2 and 3 blocks until there is clear demand for this wood, or at least until Year 1 wood is harvested.	The environmental assessment has been completed for the remaining Interim Wood Supply blocks. The Forest Management Branch will proceed with hiring a contractor to conduct block layout field work. Once completed, this work will finish YFMB obligation to the MOU of establishing an interim wood supply.
Organization: Wilderness Tourism Association of the Yukon		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Block layout	Feather the blocks that are visible from the Alaska Highway.	Blocks that are visible from the Alaska Highway shall be feathered.
Buffer to the Alaska Highway	Increasing buffer to the Alaska Highway.	Blocks shall have $\geq 150\text{m}$ as a buffer to the Alaska Highway.
Retention	Deciduous tree species should not be considered in the retention percentages.	Deciduous trees provide retention and should be considered in the retention percentages.

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Southeast Yukon Proper Land use Society cont'd.		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Ecosystem based management approach	KFRSC needs to acknowledge that this plan is not an ecosystem based approach and KFRSC needs to commit to completing long term planning in a different fashion.	In a letter from the KFRSC that was addressed to the EA Coordinator (received by FMB on March 29, 2005), the IWS as identified in the MOU, does not meet ecosystem-based management criteria; however, several ecological considerations and aspects of ecosystem-based management were applied in the planning phases. The IWS plan shall reflect that all ecosystem-based criteria were not met; however, aspects of ecosystem-based planning were applied during the planning phases.
Some blocks are less than 200 m from each other and some blocks are greater than 60 ha.	Larger areas could be shaped differently (long and narrow) to minimize impact.	C15 was designed using a holistic approach and includes already cut areas, peninsular residual patches, other cuts in close proximity and forest separating cuts (refer to pages 77-78 of the Forest Stewardship Council-Canada National Boreal Standard 2004). Some of the connectivity corridors do not meet the 200 m criteria; however some of the corridors are in excess of the 200 m guideline. The 200 m was a guideline, not a requirement as adequate dash distance was present between the residual stands, Wildlife Tree Patches and corridors. A rationale shall be provided in the IWSP when the distances between the blocks were < 200m.
Internal retention is not representative of what will be cut.	In blocks larger than 60 ha, retention should be at least 30%.	There are six cutblocks >60 ha., that have less than 30% internal retention. Currently the average internal retention is approximately 19%; this amount of internal retention will increase with increases to the internal retention to blocks C15C and C15L.

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Southeast Yukon Proper Land use Society cont'd.		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Ecosystem-based management approach	KFRSC needs to acknowledge that this plan is not an ecosystem-based approach and KFRSC needs to commit to completing long term planning in a different fashion.	In a letter from the KFRSC that was addressed to the EA Coordinator (received by FMB on March 29, 2005), the IWS as identified in the MOU, does not meet ecosystem criteria; however, several ecological considerations and aspects of ecosystem-based management were applied in the planning phases. The IWSP shall reflect that all ecosystem-based criteria were not met; however, aspects of ecosystem-based planning were applied during the planning phases.
Organization: Canadian Parks and Wilderness Society-Yukon Chapter		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Access	There needs to be careful consideration before new access is provided into an area.	New access routes shall be carefully planned to: 1) limit the density of new access, 2) strategic access control points for physical barriers shall be identified, 3) appropriate water crossings and culverts shall be implemented to maintain soil and water quality and 4) new access routes will be monitored for impacts. An access monitoring plan shall be completed.
Ecosystem-based planning	KFRSC should issue a statement indicating that Years 1-3 plans are not ecosystem-based. Refer to CPAWS-Yukon's comments and recommendations submitted during year 1 screening in 2004.	In a letter from (MacLean 2005) that was addressed to the EA Coordinator (received by FMB on March 29, 2005), the IWS as identified in the MOU, does not meet ecosystem criteria; however, several ecological considerations and aspects of ecosystem-based forestry were applied in the planning phases. The IWS plan shall reflect that all ecosystem-based criteria were not met; however, aspects of ecosystem-based planning were applied during the planning phases.

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Canadian Parks and Wilderness Society-Yukon Chapter cont'd.		
Identified Concerns	Identified Concerns	Identified Concerns
Retention	1) Ensure that site and harvest plans and maps for all proposed blocks accurately indicate the proportions of aggregate and dispersed retention. 2) Emphasize representative aggregate retention and ensure retention is representatively distributed within cutblocks and designed according to the best available information. 3) All cutblocks < 50 ha should have at least 20% variable retention that is predominately aggregate. Cutblocks > 50 ha should have proportionately larger amounts of retention.	1) Site, harvest plans and all maps shall accurately indicate the proportions of aggregate and dispersed retention. 2) Retention shall be representatively distributed within the cutblocks as much as possible. 3) There are two cutblocks (blocks C15C and C15I > 50 ha. that have <20% internal retention. If possible (depending on site specifics), internal retention shall be increased from 8% to $\geq 20\%$. Currently there is 12% internal retention proposed for C15I. There are steeper slopes and a greater windthrow potential associated with C15I, but if operationally possible, internal retention shall be increased from 12% to $\geq 20\%$.
Winter harvesting	Either outline minimal site disturbance methods for summer harvesting of blocks C15L, C15M, C15P, B1, B7A and B7B, or change to winter harvesting only, or remove blocks from the plan.	Although there were contradictions in the IWSP with regards to summer or winter harvesting, C15P is winter harvesting only and the IWSP shall be updated to reflect this. There is a summer option for blocks C15L, C15M, B1 and B7 as long as the following criteria are met: 1) access routes must be upgraded to allow for summer haul and harvesting must be done during dry soil conditions to minimize site degradation, 2) rubber tired skidders (low ground pressure is recommended) should be used to reduce compaction and site degradation due to areas of clayey soils, 3) there is minimal duff disturbance (i.e. use a dispersed skidding pattern, do not blade skid trails), and 4) a minimum 5 m Machine Free Zone shall be placed on both sides of all non classified drainages.

Table 13. Identified Concerns and Mitigation Suggestions Received by the Forest Management Branch cont'd.

Organization: Canadian Parks and Wilderness Society-Yukon Chapter cont'd.		
Identified Concerns	Suggested Mitigation	Action Needed/Mitigation Measures
Forest cover	1) Determine the range of naturally occurring proportions of forest cover within watersheds and an acceptable amount of alteration to these proportions to maintain natural, fully-functioning forested watershed processes 2) Place a 300 m buffer around all 130+ forest cover in both watersheds and proposed cutblocks and agree to no future harvesting of these forest types and ensure that none of the proposed cutblocks lie within this 300 m buffer 3) Consider the amount of timber harvesting that takes place.	1) The range of naturally occurring proportions of forest cover within watersheds is not available and this recommendation has been passed onto the KFRSC. 2) According to MacLean (2005), there are no blocks within 300m of an old forest stand in either Irons or Contact Creek watersheds; therefore a 300 m buffer is not necessary. 3) The proposed harvesting is necessary to reach the interim wood supply volume.
Interior forest	1) Determine and implement a scientifically-based target for the amount of forest interior that must be maintained within watersheds and across landscapes to meet predetermined goals. 2) Agree that no further forestry operations will proceed in the Cosh/Contact and Irons watersheds until the majority of forest stands have regenerated to mature stages.	1) Landscape planning shall be addressed in the strategic plans that are currently under development. 2) Land use planning will prescribe where further forestry operations will proceed.
Hydrology and wildlife	1) Specify and follow appropriate stream crossing guidelines 2) Address hydrological values and assign measurable indicators in regional and sub-regional ecosystem-based planning 3) In addition to northern goshawk locations, implement a 200-m buffer around all areas of known use to wildlife (such as mineral licks, springs, denning sites, etc.) and wildlife corridors to and from these sites.	1) Stream crossings, as recommended in Tobler (2004), shall be followed. 2) According to MacLean (2005), new hydrological information should be collected and the existing data sets should be expanded upon by the federal and territorial governments in the future. 3) Mineral licks and springs that are frequented by wildlife and denning sites shall be protected by a 200 m buffer. Wildlife corridors shall be maintained.

9. REASONS FOR DECISION

On April 1, 2003, the Director of the Yukon Government Forest Management Branch (Director FMB) was delegated as representative of the RA (the Minister) for purposes of carrying out environmental assessments under the Section 4.1 of *Yukon Environmental Assessment Act* by the Department of Energy, Mines and Resources Minister (for matters relating to forest management for the Yukon Territory). Accordingly, it is the responsibility of the Director FMB to render a decision on this environmental assessment.

a. Decision Options

Section 16.1 (pg. 18) of the *Yukon Environmental Assessment Act* requires that:

“The responsible authority shall take one of the following courses of action in respect of a project after taking into consideration the screening report and any comments filed pursuant to subsection 14(3):

- (a) subject to subparagraph (c)(iii), where taking into account the measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the responsible authority considers appropriate are implemented;*
- (b) where, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is likely to cause significant adverse environmental effects that cannot be justified in the circumstances, the responsible authority shall not exercise any power or perform any duty or function conferred on it by any other Act that would permit the project to be carried out in whole or in part; or*
- (c) where:*
 - the project, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, is likely to cause significant adverse environmental effects and paragraph (b) does not apply, or*
 - public concerns warrant a reference to a mediator or review panel, the responsible authority shall refer the project to the Minister for a referral to a mediator or a review panel in accordance with Section 25.*

b. Screening Decision

Having reviewed and considered the likely environmental effects of this project, the issues raised in the referral responses by individuals and agencies and after due consideration, the RA has concluded that the final screening report for this project accurately and appropriately addresses the significant and/or potentially significant environmental effects that have been identified.

Given the mitigations provided in the screening report, combined with the analysis and mitigations provided above, the RA is satisfied that this project is not likely to cause significant adverse environmental effects. Accordingly, the *Yukon Environmental Assessment Act* determination is that, subject to the mitigation requirements contained in the screening report and in the Reasons for Decision as per above, this project is hereby authorized.

Authorization: _____(original signed)_____ _____
 Gary W. Miltenberger, R.P.F (BC) Date
 Director, Forest Management Branch

10. REFERENCES

Canadian Environmental Assessment Agency. 2003. *Cumulative Effects Assessment Practitioners Guide.*

DIAND Forest Resources. 2000. *Final Resource Report East Hyland Planning Area Forest Management Unit Y02.* August 3, 2000.

DIAND Forest Resources. 1999. *Timber Harvest Planning and Operating Guidebook. Incorporating Environmental and Human Values into Timber Harvest Planning.*

Fisheries and Environment Canada. 1977. *Ecoregions of Yukon Territory.*

Forest Stewardship Council Canada Working Group. 2004. *National Boreal Standard Version 3.* January 16, 2004 (FSC Canada Version).

Government of Canada. 1994. *A Reference Guide for the Canadian Environmental Assessment Act: Addressing Cumulative Environmental Effects.* Prepared by the Federal Environmental Assessment Review Office.

Hegmann, G. and J. Green. 1997. *Users Guide for Level 1 Screening of Cumulative Effects Yukon DIAND Northern Affairs Program.* Prepared for Department of Indian and Northern Development. Prepared by Axys Environmental Consulting Ltd.

Industrial Forestry Service Ltd. 2003. *Interim Wood Supply Plan for Forest Management Units Y02, Y03 and Y09 in the Kaska Yukon Traditional Territory.* Prepared for the Kaska Forest Resources Stewardship Council and the Forest Management Branch, Yukon Territorial Government.

Interim Wood Supply Technical Working Group (IWSTWG). 2004. *Interim Wood Supply Plan for the East Hyland Planning Unit.* Prepared for the Kaska Forest Resource Stewardship Council.

Kaska Forest Resources Stewardship Council. 2004. *Interim Wood Supply Plan: Summary Report of the Kaska Forest Resources Stewardship Council Interim Wood Supply and Recommendation.*

MacLean, N. 2005. *Comments of the Interim Wood Supply Plan for the East Hyland Planning Unit.* Letter Prepared by Kaska Forest Resources Stewardship Council, submitted to R. Sharples, Environmental Assessment Coordinator, March 25, 2005.

Statutes of the Yukon. 2003. *Environmental Assessment Act.*

Thomas Heritage Consulting. 2004. *Overview Assessment of Potential Heritage Concerns in the East Hyland, Watson Lake, West Rancheria and Ross River Planning Areas.* Prepared for Heritage Resources Unit and Forest Management Branch.

Tobler, P. 2004. *Stream Assessments Associated with Years 2 and 3 for the East Hyland Planning Unit.* Letter Report Prepared by EDI Environmental Dynamics Inc., submitted to S. Cole, District Forester, August 31, 2004.

Tobler, P. 2002. *Environmental Management Plan: Irons Creek Crossing, KM 918.6 Alaska Highway.* Prepared by EDI Environmental Dynamics Inc.

Tobler, P. and K. Richards. 2002. *Contact Creek-Fish Habitat Compensation Plan.* Prepared by EDI Environmental Dynamics Inc.

Yukon Territory Canada. 2003. *Order-in-Council 2003. Environmental Assessment Act Inclusion List Regulation.*

a. Personal Communications

Cole, S. 2004. pers. comm. Conversation between Scott Cole, RPF, District Forester, Watson Lake, Yukon Government Forest Management Branch and Robin Sharples, Environmental Assessment Coordinator, Yukon Government Forest Management Branch, dated April 7, 2004.

De Graff, N. 2004. pers. comm. Email to Robin Sharples, Environmental Assessment Coordinator, Yukon Government Forest Management Branch, from Nick De Graff, Can-nic-a-nick Environmental Sciences, dated March 23, 2004.

Hennings, R. 2004. pers. comm. Phone conversation between Ryan Hennings, District Conservation Officer, Department of Environment, Watson Lake and Robin Sharples, Environmental Assessment Coordinator, Yukon Government Forest Management Branch, dated April 7, 2004.

Thorp, M. 2004. pers. comm. Conversation between Myles Thorp, Manager, Forest Planning and Development, Yukon Government Forest Management Branch and Robin Sharples, Environmental Assessment Coordinator, Yukon Government Forest Management Branch, dated March 19, 2004.

White, D. 2004. pers. comm. Email sent from Don White, Silviculture Technician, Yukon Government Forest Management Branch to Robin Sharples, Environmental Assessment Coordinator, Yukon Government Forest Management Branch, dated March 16, 2004.