

Detailed Forest Management Plan Approval Decision



Photo: courtesy of D. Weeks, CANFOR

**Canadian Forest Products Ltd.
Alberta Region, Grande Prairie
Operations
Grande Prairie, Alberta**

**Forest Management Agreement
#9900037**

To commemorate the

APPROVAL

of the

**DETAILED FOREST MANAGEMENT PLAN
(ver. April 2003)**

for

**Canadian Forest Products Ltd.
Alberta Region, Grande Prairie Operations
Grande Prairie, Alberta**

**Forest Management Agreement
#9900037**

As stewards of Alberta's forests we jointly celebrate the approval of the Detailed Forest Management Plan recognizing the culmination of an effective planning process involving the public, forest operators, stakeholders, Canadian Forest Products Ltd. and the Alberta government.

We believe the effective implementation of this plan will sustainably manage the forest resources on the FMA area and will monitor and report the forest condition through time.

On behalf of:

Canadian Forest Products Ltd.

**Alberta Department of
Sustainable Resource Development**

Original signed by

Jim Stephenson
Woodlands Manager

Original signed by

D. (Doug) A. Sklar, RPF
Executive Director
Forest Management Branch

Detailed Forest Management Plan Approval Decision

Canadian Forest Products Ltd.
Alberta Region, Grande Prairie Operations
Grande Prairie, Alberta

Forest Management Agreement
#9900037

Date: November 3, 2003
Effective: May 1, 2003

Approved by: Original signed by
D. (Doug) A. Sklar, R.P.F.
Executive Director
Forest Management Branch
Public Lands and Forests Division

Executive Summary

This Approval Decision documents the facts considered, assumptions made and conditions imposed by the Executive Director regarding the Canadian Forest Products Ltd. (Canfor) detailed forest management plan submitted for department review on June 19, 2003. It brings closure to the DFMP planning process and provides direction for the successful and efficient implementation of the plan.

The department commends Canfor for developing a DFMP that meets the requirements of The Interim Forest Management Planning Manual, Guidelines to Plan Development, April 1998 and the Supplemental Guidelines – Timber Supply Analysis – Documentation of Results. The DFMP reflects the principles of sustainable forest management and provides ecological, economic and social opportunities for the benefit of Albertans. As well, all stakeholders who participated in the planning process have reached consensus on the DFMP. This demonstrates to the department, stakeholders and the public, Canfor's cooperative management approach and a planning process that is inclusive and task orientated and understandable to all. I believe this process has worked well and has benefited those who participated.

The planning team's message is consistent throughout the document and the Company did a good job of providing a rationale for its management approach. Through this plan, Canfor has demonstrated its willingness and propensity for dealing with issues brought forward in the planning process.

The Detailed Forest Management Plan for Canadian Forest Products Ltd. submitted June 19, 2003 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision. The Annual Allowable Cuts are as follows:

Company	Coniferous	Deciduous
	Sustainable AAC m ³	Sustainable AAC m ³
Canfor (1999 to 2019)	630,400	-
Canfor (beginning 2019)	659,950	-
Tolko Ind. Ltd. (G15)	-	113,909
Ainsworth Lumber Company (G15)	-	170,000
Unallocated (G15)	-	167,817
Total	N/A	451,726

Approval Conditions

Approval Condition 1 – Growth and Yield Monitoring

Effective monitoring and validation of DFMP assumptions is paramount to adaptive management, continual improvement and forest sustainability. Canfor will develop and implement a growth and yield monitoring plan designed to validate the yield assumptions used in the current Timber Supply Analysis (TSA).

The following objectives must be addressed by the growth and yield monitoring plan:

- a) Meet the requirements of the 'Standards for Tree Improvement in Alberta'.*
- b) Provide local empirical data to validate the yields forecast by all yield functions and strata used in the TSA, including all post-harvest, natural and managed natural strata.*
- c) Schedules for establishment and re-measurement for both permanent and temporary sample plots for all yield strata as defined in b) above. All PSP measurement protocols must be defined in detail in the Growth and Yield plan.*

- d) *Monitor the growth and dynamics of post-harvest (regenerated) stands using detailed data collected during the establishment and performance surveys. Permanent sample plots must be designed to monitor early stand height growth as well as seedling mortality and ingress. For cut blocks that are planted with genetically improved stock, the measurements for regeneration surveys and post-harvest PSPs must include the identification of planted stock.*
- e) *Strata that predict greater than fire origin yields will meet the requirements of the Enhanced Forest Management Technical Protocols.*
- f) *Canfor will develop a method to compare yield predictions for black spruce leading stands with current volumes available for harvest.*

Approval Condition 2 – Variable Structure Retention Strategy (VSRS)

Canfor must develop stand level management strategies to mitigate the impacts of forestry practices on biological diversity and wildlife habitat. Canfor, in its implementation of the plan must harvest stands as per the harvest sequence and provide structure retention in a range of patch sizes, tree species and sizes. This will ensure natural patterns across the landscape are maintained.

- a) *Canfor will develop a VSRS that utilizes merchantable and non-merchantable components of harvested stands.*
- b) *The strategy must include a cost effective and practical field assessment for structure retention monitoring and reporting.*
- c) *Merchantable volume will be measured and charged as AAC production and will be reconciled every 5 years (i.e., at the end of each cut control period).*
- d) *The VSRS must be submitted by September 1, 2004. Failure to meet this deadline, or to annually report these statistics, will result in a reduction of FMA coniferous AAC by 2% effective May 1, 2003.*
- e) *An analysis must be completed that assesses the impact that this VSRS has on applicable Goals and Objectives and the TSA assumptions stated in the DFMP. The analytical methodology and its results are to be submitted as an appendix to the Strategy by September 1, 2004.*

Approval Condition 3 – Timber Utilization

Standing residual and non-utilized felled merchantable deciduous timber will be accounted for and reported.

- a) *Canfor will track on an annual basis standing residual and non-utilized felled merchantable deciduous timber volume remaining on site following harvesting operations. All merchantable deciduous volume will be chargeable to the deciduous AAC. The five-year Stewardship Report will document and assess this information.*

The department granted Canfor temporary relaxation of timber utilization requirements from 15/10 to 15/13 utilization and from using balsam fir. The following outlines Canfor's requirements for due diligence with respect to tracking the non-utilized deciduous volume generated from their operations and monitoring this temporary situation regarding 15/13 utilization and the exclusion of balsam fir.

- b) *Canfor will assess and report in their five-year Stewardship Report the impact that the relaxed requirements have on DFMP objectives, the spatial harvest sequence, and the sustainable timber supply (both coniferous and deciduous harvest levels).*

Approval Condition 4 – Industrial Timber Salvage

Industrial timber salvage is charged to the AAC of the appropriate timber disposition on the FMA. The DFMP however, does not address the magnitude of the timber drain or how it will be accounted for on the FMA through the plan period.

- a) *Canfor must track removals due to industrial development from the net land base and account for the salvaged timber as production chargeable to the AAC.*
- b) *At the end of the first period (1999 - 2004) Canfor will determine the actual drain and the surplus or deficit will be carried forward to the next period (2004 - 2009) and the quadrant cuts will be adjusted accordingly.*
- c) *Harvest levels have been reduced by **1.5 percent** for coniferous and **0.7 percent** for deciduous that represent the historical average drain for the previous five timber years.*

Approval Condition 5 – Spatial Harvest Sequence (SHS)

The spatial (mapped) harvest sequence is the most important DFMP output as it implements the strategies the Company must follow to achieve the predicted future forest condition. Adherence to this planned harvest sequence is imperative. The Preferred Forest Management Strategy 20-Year Harvest Sequence map present the stands that are scheduled for harvest during this plan period.

The following requirements apply:

- a) *Canfor must follow the mapped harvest sequence as presented in the DFMP. If the SHS is not followed, a complete review of the harvest design to assess landscape issues will need to be undertaken.*
- b) *To provide flexibility to address operational planning concerns, Canfor and the embedded forestry disposition holders are authorized to modify the harvest sequence by replacing up to 20% of the total sequenced area in each compartment, within each decade.*
- c) *Preferably, stands selected to replace those in the DFMP harvest sequence will be selected from the second 10 years of the sequence (years 11 to 20). Where this is not feasible, replacement may be made from any other stand identified in the approved net land base of the DFMP.*
- d) *Where Canfor plans to exceed the variance described in b), prior written approval for such must be granted by the department. In the event the department determines the variance to be a result of inadequate TSA inputs, the department will require the Company to update its TSA and generate a new harvest sequence.*
- e) *The department requires that a detailed comparison (i.e. reporting and variance analysis) be completed every five years in the Stewardship Report.*
- f) *The department will generally not request a modification of the harvest sequence for the first 10 years of the planning period unless it is required by a change in legislation or a policy approved by the Minister.*

Approval Condition 6 - Strategic Planning for Caribou

Canfor has committed to developing a Caribou Habitat Management Strategy that includes a habitat supply review and an evaluation of the current management practices. However, timelines for development of this strategy were not defined in the DFMP. The department requires this strategy to be completed in a timely fashion.

- a) *Canfor will prepare an action plan for developing a Caribou Habitat Management Strategy that is acceptable to the Area Manager, Smoky Forest Area by January 30, 2004. Canfor will work in consultation with key department staff to develop this action plan.*

Approval Condition 7 – Long Term Access Development Plan

Access development and management is a critical function in sustainable forest management and an essential component in implementing the spatial harvest sequence. Canfor's DFMP does not address the development of access corridors necessary to carry out its forest management and timber harvesting operations.

- a) Canfor will develop a forestry road corridor plan for the entire FMA in consultation with the Canfor Forest Management Advisory Committee. Canfor will obtain the written approval of the plan from the Smoky Forest Area Manager and the Senior Manager, Forest Planning Section by November 15, 2004.*

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1. Introduction

The Executive Director of the Forest Management Branch (FMB), Public Lands and Forests Division (PLFD) of the Department of Sustainable Resource Development (SRD) authorizes for implementation, Detailed Forest Management Plans prepared by Forest Management Agreement holders. This Approval Decision documents the facts considered, assumptions made and conditions imposed by the Executive Director regarding the Canadian Forest Products Ltd. (Canfor) Detailed Forest Management Plan (DFMP) submitted for department approval on June 19, 2003.

This approval decision also brings closure to the DFMP planning process and provides direction for the successful and efficient implementation of the DFMP.

The conditions in this Approval Decision are consistent with the terms of the Forest Management Agreement (FMA) and failure by Canfor to fulfill the direction provided in this Approval Decision will place the Company in default of their FMA. In this event, the department will notify Canfor in writing of the breach of agreement.

2. Sustainable Resource Development Participants: Detailed Forest Management Plan Appraisal

The following staff members participated in the appraisal of the Canfor's DFMP for content and conformity with department standards and current requirements for detailed forest management plans. All comments and recommendations from staff were considered in drafting the approval decision. I extend my thanks to department staff for a job well done and for their personal and professional commitment to the task.

<u>Reviewer</u>	<u>Title</u>	<u>Registration</u>	<u>DFMP Component</u>
Leonard Barnhardt, RPF	Manager, Alberta Tree Improvement and Seed Centre	CAPF #428	Genetic Diversity (15.11) Objectives Tree Improvement, Seed Collections & Deployment of Improved Seed
Craig Brown, RPF *	Area Forester, Smoky Forest Area	CAPF #490	Sections F and G
Dave Coish, RPF *	Management Planning Forester	CAPF #371	Sections A through M incl.
Dr. Narinder Dhir, RPF	Genetics and Tree Improvement	CAPF #185	Genetic Diversity (15.11) Objectives Tree Improvement, Seed Collections & Deployment of Improved Seed
Greg Greidanus, RPF	Growth and Yield Forester	CAPF #671	Growth and Yield
Dave Hervieux *	Wildlife Biologist, Peace River		Wildlife and Biodiversity
Dr. Shongming Huang, RPF	Senior Biometrician	CAPF #642	Timber Yield Curves
Grant Klappstein	Biometrics Forester		Growth and Yield
Jean Lussier, RPF *	Forester, Grande Prairie	CAPF #80	Sections A through M incl.
Scott Milligan, RPF	Senior Manager, Harvesting and Renewal Section	CAPF #434	Silviculture Strategies
Dave Morgan, RPF	Manager, Forest Biometrics	CAPF #270	Growth and Yield
Marty O'Byrne, RPF *	Senior Forester, Peace River	CAPF #118	Sections A through M incl.
Daryl Price, RPF	Senior Manager, Resource Analysis	CAPF #081	Growth & Yield, Net Landbase, Timber Supply Analysis
Dave Patterson, RPF	Harvesting and Renewal Section	CAPF #248	Silviculture Strategies
Sherra Quintilio, FIT	Wildfire Engineering Section	CAPF #1367	Forest Protection
Dr. Sunil Ranasinghe	Senior Provincial Entomologist		Forest Insects and Disease
Travis Ripley *	Fisheries Biologist, Peace River		Hydrology and Fisheries
Robert W. Stokes, RPF	Senior Manager, Forest Planning Section	CAPF #500	Sections A through M incl.
Bev Wilson, RPF *	Senior Resource Analyst	CAPF #391	Net Landbase, Timber Supply Analysis

* Denotes core review team members
 CAPF – College of Alberta Professional Foresters

3. Forest Management Plan Area

The area under consideration is Canfor's FMA area. FMA #9900037 was allocated to Canfor through Order-in-Council 1292/77, dated December 14, 1977, and subsequently amended through Orders-in-Council 769/91, and 198/99. Section C of the DFMP (Description of the Forest Management Agreement Area) describes the planning area in detail.

The FMA area is comprised of three separate blocks of forest land (649,160 ha) within Forest Management Unit (FMU) G15. This FMU was formerly comprised of portions of four FMUs; G8 (Peace Block), G2 (Puskaskau Block), G5 (contained in the main block) and the north portion of E8 (contained in the main block). The effective date for the creation of FMU G15 is May 1, 2003. The FMA area encompasses portions of four Natural Regions including the Boreal, Parkland, Foothills and Rocky Mountains.

Forest Management Units

Canfor FMA Sustained Yield Unit (SYU / FMU effective May 1, 2003)	Forest Management Units included within Canfor's FMA (FMU prior to May 1, 2003)
G15	G2
	G5
	G8
	north portion of E8

4. Plan Background

Canfor (formerly North Canadian Forest Industries Ltd.) entered into a 20-year FMA with Alberta on May 26, 1964. Since then, this agreement was renewed in 1977 and on May 5, 1999 reissued under a new FMA disposition: FMA 9900037. The FMA 9900037 will expire on April 30, 2019. The DFMP was initially due on May 1, 2001 but two separate extensions were granted; the first due on June 30, 2001 and the other due on July 31, 2001. Canfor submitted their draft DFMP on July 31, 2001.

The FMA area has currently an approved Annual Allowable Cut (AAC) of 730,000 m³ coniferous, and 453,712 m³ deciduous. Canfor has rights to 99.5% of the coniferous cut, and the remaining 0.5% is allocated for local timber use (via LTPs). In addition, the Minister has the right to issue up to 10,000 m³ annually from Canfor's portion of the AAC to the Community Timber Program (CTP) if needed. To-date, there has not been a demand for this wood by the CTP and Canfor has utilized the 10,000 m³.

Two other forest companies were granted rights to deciduous timber within the Canfor FMA area: Tolko Forest Industries Ltd. and Ainsworth Lumber Company Ltd. Tolko has 114,712 m³/yr issued under two

deciduous timber allocations (DTA). Ainsworth has a Letter of Agreement with SRD reserving a deciduous allocation of 170,000 m³/yr.

5. **Approval Scope**

This Approval Decision relates to the Canfor's DFMP submitted June 19, 2003. All coniferous and deciduous operators within the FMA area will conduct their activities in accordance with this DFMP.

Canfor will meet the requirements (dates and content) of the Approval Conditions unless the Executive Director, FMB, agrees to alternate requirements in writing.

In the event of an inconsistency between this plan and existing, new or revised legislation or regulation, the legislation or regulation shall apply.

6. **DFMP Comments**

6.1 **General**

Canfor has developed a DFMP that is compatible with the Interim Forest Management Planning Manual, Guidelines to Plan Development, April 1998 and the Supplemental Guidelines – Timber Supply Analysis – Documentation of Results. The DFMP will also serve as a Sustainable Forest Management Plan to fulfill the requirements for certification under the Canadian Standards Association (CSA) Sustainable Forest Management System Standard CAN/CSA-Z809-96. Through this combined planning process, I believe Canfor has developed a DFMP that reflects the principles of sustainable ecological management as described in the Alberta Forest Legacy document and provides economic and social opportunities for the benefit of Albertans. Canfor has accomplished this by effectively linking the DFMP's values, goals, indicators and objectives and has selected a Preferred Forest Management Strategy (PFMS) that best implements this management system.

In the development of the DFMP Canfor provided opportunities for public and stakeholder consultation. The department views this participation as key to the identification and resolution of issues. Canfor's planning process was inclusive and task oriented and understandable to all. I believe this process has worked well and has benefited all who participated.

Canfor has demonstrated its willingness and propensity for dealing with issues brought forward in the planning process. The Forest Management Advisory Committee Issues List (DFMP Appendix 4) and the Incident Tracking System (developed as part of Canfor's Environmental Management System for ISO 14001 certification) documents in detail all stakeholder issues and concerns. As well, Canfor has provided an explanation of how each issue was addressed in the Plan or has provided an action plan to ensure appropriate follow-up action.

7. Growth and Yield

7.1 Growth and Yield Monitoring

Canfor has an existing Growth and Yield program of 867 permanent sample plots (PSPs), and has also collected data from 1395 volume sampling temporary plots (TSPs) to quantify their current AVI. In the DFMP Canfor has presented options for future developments to the current program, however there remains several concerns.

- Canfor does not clearly commit to specific methodologies, processes or timelines mentioned in Appendix 13 and 14 of the DFMP (e.g., post-harvest Permanent Sample Plots; commitment to realized gain trials).
- The timber supply analysis assumes that timber yields from using genetically improved lodgepole pine stock will increase by 7% above that produced by natural stands. This yield assumption is not supported or validated by local empirical data.
- The post harvest yield data is currently not sufficient to verify yield expectations.

Effective monitoring and validation of DFMP assumptions is paramount to adaptive management, continual improvement and forest sustainability. Therefore, given the lack of detail for the proposed implementation and monitoring program, the following is required:

Approval Condition 1 – Growth and Yield Monitoring

Canfor will develop and implement a growth and yield monitoring plan designed to validate the yield assumptions used in the current Timber Supply Analysis (TSA). Canfor's plot establishment schedule will place special weight on obtaining useful amounts of post-harvest data in time to be used in the next DFMP. The program must be reviewed and approved by the Senior Manager, Resource Analysis Section by April 30, 2004 prior to its implementation. Failure to meet this Condition of Approval will result in a reduction of the AAC to a level reflecting natural (i.e. un-enhanced) yields effective May 1, 2003. See Appendix 2 of this document.

The growth and yield monitoring plan will address the following:

- a) The requirements of the *Standards for Tree Improvement in Alberta* (May 1, 2003).
- b) Provide local empirical data to validate the yields forecast by all yield functions and strata used in the TSA, including all post-harvest, natural and managed natural strata.
- c) Schedules for establishment and re-measurement for both permanent and temporary sample plots for all yield strata as defined in b) above. This approach will build separate data sets to be used for independent model construction and validation. All PSP measurement protocols (number and size of plots) must be defined in detail in the Growth and Yield plan.
- d) Monitor the growth and dynamics of post-harvest (regenerated) stands using detailed data collected during the establishment and performance surveys, (as per the Alberta

Regeneration Survey Manual and the ARIS Industry Operations Manual). Additionally, permanent sample plots must be designed to monitor early stand height growth as well as seedling mortality and ingress. For cut blocks that are planted with genetically improved stock, the measurements for regeneration surveys and post-harvest PSPs must include the identification of planted stock.

- e) Strata that predict greater than fire origin yields will meet the requirements of the Enhanced Forest Management Technical Protocols.
- f) Canfor will develop a methodology to compare yield predictions for black spruce leading stands with current volumes available for harvest.

I recommend that Canfor consult with the department prior to and during the development of this program to ensure the department's needs are met.

7.2 Tree Improvement

I recognize that Canfor is actively involved in forest genetics programs and I support and encourage companies to develop and test new strategies for improved productivity and stand performance. FMB has recently completed a comprehensive forest genetics policy entitled *Standards for Tree Improvement in Alberta* that will guide the deployment of improved stock, and foster an environment conducive to research and investment in forest genetics. The Company's adherence to this policy will provide a long-term linkage between DFMP assumptions and the operational deployment of improved stock.

8. Variable Structure Retention Strategy (VSRS)

Canfor plans to maintain forest seral stages within the natural disturbance regimes at present and at key points in time. This is believed to be critical to the goal of conservation of biological diversity. Another requirement in meeting this goal is to develop stand level management strategies to mitigate the impacts of forestry practices on biological diversity and wildlife habitat. To achieve this, Canfor must harvest stands as per the harvest sequence and provide variable structure retention in a range of patch sizes, tree species and tree sizes. This will ensure natural patterns across the landscape are maintained.

Throughout the Province, forest industries practice merchantable green-tree retention within cut blocks to create residual (post-harvest) stand structure. SRD has approved Detailed Forest Management Plans that propose variable structure retention targets between 1% and 15% of merchantable volume. I expect Canfor in the development of their strategy to propose procedures that meet similar achievable targets. The goal is to leave enough structure to obtain adequate biodiversity benefits. It is essential that your strategy include clear and measurable objectives and targets.

Approval Condition 2 – Variable Structure Retention Strategy

- a) Canfor will develop a VSRS that utilizes merchantable and non-merchantable components of harvested stands to create an optimum amount of retained stand structure within cut blocks.
- b) The VSRS must include a cost effective and practical field assessment for structure retention monitoring and reporting.
- c) Merchantable volume will be measured and charged as AAC production and will be reconciled every 5 years (i.e., at the end of each cut control period).
- d) The VSRS must be submitted by September 1, 2004 and meet the approval of the Senior Manager, Forest Planning Section by this date. Failure to meet this deadline, or to annually report these statistics, will result in a reduction of FMA coniferous AAC by 2% effective May 1, 2003.
- e) An analysis must be completed to validate that the VSRS supports the achievement of applicable Goals and Objectives and quantifies the net impact on the TSA. The analytical methodology and its results are to be submitted as an appendix to the Strategy by September 1, 2004.

9. Timber Supply

The review of the timber supply analysis verified the methodology used, and the completeness and accuracy of the documentation provided. The Resource Analysis Section conducted a TSA model run using the Canfor proposed harvest sequence and produced similar results using Canfor's analysis criteria.

Canfor has chosen TSA Run Scenario 4C as its preferred forest management strategy. This scenario produces a coniferous harvest level of 640,000 m³ for the first 20 years and then a step-up to 670,000 m³ for the rest of the planning horizon. The coniferous AAC is heavily dependent on following the regeneration assumptions and silviculture strategies made in the DFMP and TSA.

For example:

- Yield table shifts – under stocked stands regenerate to fully stocked stands (i.e. A/B density regenerate to C/D density)
- Predicted time (years) to breast height has been reduced
- A 1.07 volume multiplier has been applied for using genetically improved lodgepole pine planted stock
- The deciduous harvest level is maintained at or near the prescribed level and is sustained by volumes generated from harvesting C and CD stands.
- The coniferous harvest level is stepped up in order to generate sufficient volumes of deciduous timber to meet the deciduous AAC of 453,712 m³.

The timber supply analysis projects the silvicultural transition of A and B density stands to C and D densities. This is a common assumption in DFMPs in Alberta, however concerns have been raised about maintaining the ecological contribution that these low-density stands provide. I offer this as an observation and a “heads up” for future planning. I do not propose any changes to the DFMP to address this concern at this time.

TSA Run Scenario 6C is a sensitivity analysis that examines the risks associated with the proposed regeneration assumptions and silvicultural strategies. This TSA run demonstrates that should the assumptions not be realized, the harvest level (i.e. 640,000 m³) will be maintained for the first 15 years, but reduced to 618,000 m³ for next 5 years to year 20, and followed by a further step down to 550,000 m³ AAC (a 14% decrease from 640,000 m³) for the remainder of the planning horizon.

The 6C analysis also showed that the deciduous cut could not be maintained at the even-flow harvest level without seriously impacting the coniferous timber supply. Consequently, the deciduous harvest level would fall within a range of 245,907 m³ to 490,134 m³ (average being 350,648 m³; a 23% decrease from 453,712 m³).

This analysis indicates a significant potential risk to the sustainable timber supply should the forecasts not be attained.

The preferred scenario was selected with the full knowledge of all stakeholders and the department believes that each stakeholder understands and accepts the implications to their allocation should the forecasts not be fully realized. It is neither acceptable nor appropriate for the department to approve a plan that it believes will fail. Although there are risks associated with this plan, Canfor has demonstrated its intent and capacity to deliver on its commitments. Considering this, the level of risk in this case is acceptable to the department.

9.1 Timber Utilization

9.1.1 Deciduous timber

At present, the sustainable deciduous harvest level proposed in the DFMP is not fully allocated. Therefore, it is unlikely that full utilization of the merchantable deciduous volume produced by Canfor's operations will occur. Considering that all merchantable volume contributes to the sustainable timber supply, all standing residual and non-utilized felled merchantable deciduous timber will be accounted for and reported.

9.1.2 Coniferous timber

The department has granted Canfor a temporary relaxation of timber utilization requirements from 15/10 to 15/13 utilization and from using balsam fir. I appreciate that return on investment is marginal given the current international trade situation, however, I am concerned about the long-term impacts of these changes on meeting DFMP objectives and the sustainability of the timber supply.

The following outlines Canfor's requirements for due diligence with respect to tracking the non-utilized merchantable deciduous volume produced by their operations and monitoring this temporary situation regarding 15/13 utilization and the exclusion of balsam fir.

Approval Condition 3 – Timber Utilization

- a) Canfor will track on an annual basis standing residual and non-utilized felled merchantable deciduous timber volume remaining on site following harvesting operations. All merchantable deciduous volume will be chargeable to the deciduous AAC. The five-year Stewardship Report will document and assess this information.
- b) Canfor will assess and report in their five-year Stewardship Report the impact that the relaxed requirements have on DFMP objectives, the spatial harvest sequence, and the sustainable timber supply (both coniferous and deciduous harvest levels).

10. Industrial Timber Salvage

Industrial timber salvage is charged to the AAC of the appropriate timber disposition on the FMA. The DFMP however, does not address the magnitude of the timber drain or how it will be accounted for on the FMA through the plan period. As this timber drain is not considered in the TSA, I believe a reasonable estimate to account for future timber drain is necessary.

Approval Condition 4 – Merchantable Timber Salvage Drain

- a) Canfor must track removals due to industrial development from the net land base and account for the salvaged timber as production chargeable to the AAC. Timber volumes will be reconciled at the end of every five-year period. Each operator will share this drain in proportion to their percentage allocation of the total AAC. The method of determining the percentage reduction to the AAC is presented in Appendix 3 of this document.
- b) At the end of the first period (1999 - 2004) Canfor will determine the actual drain and where salvaged volumes are greater or lesser than the predicted average volumes, the surplus or deficit will be carried forward to the next period (2004 - 2009) and the quadrant cut will be adjusted accordingly.
- c) Harvest levels have been reduced by **1.5 percent** for coniferous and **0.7 percent** for deciduous that represent the historical average drain for the previous five timber years.

11. Preferred Forest Management Strategy (PFMS)

The DFMP reasonably describes the predicted outcomes of the preferred forest management strategy. As outlined in the Implementation (DFMP Section I), and the Performance Monitoring

and Reporting (DFMP Section J), companies will closely monitor the actual results to ensure the attainment of planned outcomes. It is essential that a credible program of monitoring, reporting, and corrective action be carried out by all forest operators on the FMA to validate predictions and ensure success in achieving the desired results. I strongly believe that effective monitoring and validation of DFMP assumptions is paramount in achieving forest sustainability.

Considering the details presented in the landscape assessment, sensitivity analysis, spatial harvest sequence, and together with the completion of the Approval Conditions, I am satisfied that the preferred forest management strategy is reasonable and sustainable.

12. Spatial Harvest Sequence (SHS)

The spatial (mapped) harvest sequence is the most important DFMP output as it implements the strategies the Company must follow to achieve the predicted future forest condition. The future forest condition, while dependent on many factors, is strongly influenced by harvest patterns, intensity and schedules. It presents spatially and temporally how the integration of environmental, economic, and social values will be achieved on the FMA. Adherence to the planned harvest sequence is imperative to achieving the predicted future forest.

Canfor appears to have backed off from following their proposed harvest sequence generated in Scenario 4C. In a document submitted to SRD in August 2002, *"A Process to Update DFMP Timber Supply Analysis with the Current Annual Operating Plan,"* Canfor proposes to test every AOP against the DFMP predictions. While this continuous comparison and testing of annual plans to the long-term plan is desirable, I am concerned that the annual timeframe is too short to assess any significant difference. Over the long-term, there is potential for small but incremental changes to occur. On an individual or annual basis these may be insignificant, but compounded over the term of the DFMP they may preclude the desired future condition from being attained.

Approval Condition 5 – Spatial Harvest Sequence

The Preferred Forest Management Strategy 20-Year Harvest Sequence map presents the stands that are scheduled for harvest during this plan period.

The following requirements apply:

- a) Canfor must follow the mapped harvest sequence as presented in the DFMP. It is anticipated that approval of AOPs will be simplified when Canfor adheres to this harvest sequence. If the SHS is not followed, a complete review of the harvest design to assess landscape issues will need to be undertaken.
- b) To provide flexibility to address operational planning concerns, Canfor and the embedded timber disposition holders are authorized to modify the harvest sequence by replacing up to 20% of the total sequenced area in each compartment (to be defined in the Operating Ground Rules), within each decade.

- c) Preferably, stands selected to replace those in the SHS will be selected from the second 10 years of the sequence (years 11 to 20). Where this is not feasible, replacement may be made from any other stand identified in the approved net land base of the DFMP.
- d) Where Canfor plans to exceed the variance described in b), prior written approval for such must be granted by the department. The department's decision to authorize this deviation will be determined through discussions with the Company and a detailed analysis of the factors contributing to the variance. In the event the department determines the variance to be a result of inadequate TSA inputs, the department will require the Company to update its TSA and generate a new harvest sequence.
- e) The department requires that a detailed comparison (i.e. reporting and variance analysis) be completed every five years in the Stewardship Report. I believe this is the appropriate period for comparing and contrasting actual performance with planned targets, and for taking corrective actions where required.
- f) The department will generally not request a modification of the harvest sequence for the first 10 years of the planning period unless it is required by a change in legislation or a policy approved by the Minister.

13. Strategic Planning for Caribou

Canfor recognizes that a strategic plan for caribou management is essential to guide its operations into the future (DFMP, Section 5.3.3.1.4). The plan identifies the listed caribou habitat constraints as interim measures only, until long-term provisions are developed. Canfor has committed to developing a Caribou Habitat Management Strategy that includes a habitat supply review and an evaluation of the current management practices. However, timelines for development of this strategy were not defined in the DFMP. The department requires this strategy to be completed in a timely fashion.

Approval Condition 6 – Strategic Planning for Caribou

- a) Canfor will prepare an action plan for developing a Caribou Habitat Management Strategy that is acceptable to the Area Manager, Smoky Forest Area by January 30, 2004. Canfor will work in consultation with key department staff to develop this action plan.

14. Long-term Access Development Plan

Access development and management is a critical function in sustainable forest management and an essential component in implementing the spatial harvest sequence. Canfor's DFMP does not address the development of access corridors necessary to carry out its forest management and timber harvesting operations.

Approval Condition 7 – Long Term Access Development Plan

- a) Canfor will develop a forestry road corridor plan for the entire FMA in consultation with the Canfor Forest Management Advisory Committee. Canfor will obtain the written approval of the plan from the Smoky Forest Area Manager and the Senior Manager, Forest Planning Section by November 15, 2004.

15. Approved Annual Allowable Cuts

The harvest levels as proposed in Section H, and Appendix 3 - Resource and Timber Supply Analysis of the Canfor DFMP provide the basis for the determination of the approved Annual Allowable Cuts. Appendix 2 of this document presents the approved AACs.

16. Authorization

The Detailed Forest Management Plan for Canadian Forest Products Ltd. submitted June 19, 2003 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision.

Appendix 1

Historical Approved Annual Allowable Cuts (Source: Canfor DFMP)

Coniferous Allocations within FMA -- Effective: November 29, 1991 to April 30, 2003

FMU	Company	Disposition #	% of Coniferous AAC	Coniferous AAC (m ³ /yr)	Utilization Standard
G15 (G2C, G5C, G8C & E8C)	Canfor FMA	FMA 9900037	100%	716,350	15/10
	Local timber use			3,650 ¹	15/10
	Community Timber Use			10,000 ²	15/10
		Total	100.00	730,000	

¹FMA to provide timber for local use (0.5%) of the annual allowable cut).

²FMA to provide timber up to 10,000 m³ annually for the Community Timber Use program, if required.

Deciduous Allocations within FMA

FMU	Company	Disposition #	Deciduous AAC (m ³ /yr)	Utilization Standard
G2C	Tolko Industries Ltd.	DTAG02C001	60,500	15/10
		Total	60,500	15/10
G5C	Tolko Industries Ltd.	DTAG050001	54,212	15/10
	Ainsworth Lumber Company	DTA (pending)	170,000	15/10
		DTA (unallocated)	169,000	15/10
		Total	393,212	15/10
		Grand Total	453,712	15/10

Appendix 2

Canfor Detailed Forest Management Plan

Approved Annual Allowable Cuts (May 1, 2003 – April 30, 2019)

(FMU G15: Effective May 1, 2003 – 15/10 utilization standard)

Company	Coniferous Timber				Deciduous Timber	
	Allocation (%)	Sustainable AAC ¹ (m ³ /yr)	Sustainable AAC (m ³ /yr) Imposed if Approval Condition 1 is not achieved, (TSA run 5C)	2% Annual Cut Reduction (m ³) (2004 to 2009) (Imposed if Approval Condition 2 is not achieved)	Non-Sustainable AAC Reconciliation Volume (m ³) ³ To be harvested during 1999 to 2009	Sustainable AAC ² (m ³ /yr)
Canfor (1999 to 2014)	100	630,400	541,750 ⁵	-12,608 m ³ /yr		
Canfor (2014 to 2019)	100	608,730 ⁴	541,750	-12,175 m ³ /yr		
Canfor (beginning 2019)	100	659,950	541,750	-13,200 m ³ /yr		
Tolko Industries Ltd. (G15)					236,621 (audited)	60,077
Tolko Industries Ltd. (G15)					23,912 (audited)	53,832
Ainsworth Lumber Company (G15)						170,000 Fixed Volume (tentative)
Unallocated (G15)						167,817 ⁶
Total					260,533	451,726

¹ A 1.5 % reduction of the proposed DFMP coniferous harvest level as an estimate of future timber drain due to industrial salvage was taken to determine the coniferous AAC.

² A 0.7 % reduction of the proposed DFMP deciduous harvest level as an estimate of future timber drain due to industrial salvage was taken to determine the deciduous AAC.

³ The non-sustainable AAC includes reconciliation volumes granted to Tolko Industries Ltd. from the previous cut control periods. Tolko must harvest at a **higher non-sustainable AAC for the period (1999-2009)** to completely utilize this retroactive volume.

⁴ 618,000 m³ (TSA run 5C) x 1.5% (reduction due to industrial salvage) = 9,270 m³; 618,000 m³ - 9,270 m³ = 608,730 m³

⁵ 550,000 m³ (TSA run 5C) x 1.5% (reduction due to industrial salvage) = 8,250 m³; 550,000 m³ - 8,250 m³ = 541,750 m³

⁶ 169,000 m³ (TSA run 5C) x 0.7% (reduction due to industrial salvage) = 1,183 m³; 169,000 m³ - 1,183 m³ = 167,817 m³

Appendix 3

Industrial Timber Salvage Drain

Method of Calculation:

1. Land Status Automated System (LSAS) summaries of non-timber dispositions within the FMA approved during the previous 5 timber years were used to estimate the average annual timber drain that could be expected to occur in the DFMP plan period. Annual summaries of disposition areas include (EZE, LOC, MLL, MLP, MSL, PIL, PLA, PLS, SML).

Timber Year	Area of Dispositions Approved by Timber Year across Gross FMA Landbase (Ha)	Area of Dispositions Approved by Timber Year across Net FMA Landbase (Net = 73.0% of Gross) (Ha)
May 1, 1998 to April 30, 1999	283.065	206.6
May 1, 1999 to April 30, 2000	391.803	286.0
May 1, 2000 to April 30, 2001	562.264	410.5
May 1, 2001 to April 30, 2002	299.267	218.5
May 1, 2002 to April 30, 2003	242.510	177.0
Five Year Total	1,778.909	1,298.6
Five Year Average	355.782	259.7

2. Annual areas for the gross FMA landbase were converted to annual areas for the net productive landbase based on *DFMP Table 4: Net Landbase Summary*. The Net Productive Landbase represents 73.0% of the Gross Landbase: $(474,193.04 \text{ ha} / 649,159.89 \text{ ha} \times 100 = 73.0\%)$
3. Five year average areas were calculated. *Reference – DFMP Appendix 3, page 30, 6.2.1.2.1 Table 3. Landbase Summary*
4. The percentage split between the coniferous and deciduous landbases was determined by using DFMP yield curve assignments. (Coniferous – 60.95%, Deciduous – 39.05%). *Reference – DFMP Appendix 3, page 34, 6.2.1.2.3 Table 7. Area by Yield Group.*
5. Average area of dispositions by landbase (coniferous/deciduous) is determined by applying the percentage split (#4) to the five-year average area.
6. The current (2002-03) Timber Damage Assessment table provided FMA average volumes/ha for coniferous (62.5 m³/ha) and deciduous salvage (31.6 m³).
7. The average areas by landbase were multiplied by the FMA average TDA volumes/ha to determine average annual volumes.
8. The average annual volumes were expressed as a percentage of the recommended DFMP harvest levels. These percentages were applied as a reduction to the DFMP proposed harvest levels to determine the approved Annual Allowable Cuts for coniferous and deciduous timber.

APPENDIX 3 (CONT.)

Table 6.

Category	Area of Dispositions Approved by Timber Year across Gross FMA Landbase (Ha)	Area of Dispositions Approved by Timber Year across Net FMA Landbase (Net = 73.0% of Gross) (Ha)	FMA Timber Damage Assessment (Average FMA TDA Table Volume Yield) (m ³ /Ha)	Annual Volume Estimate of Timber Drain (m ³)	Reduction Applied to DFMP Recommended Harvest Levels to Account for Estimated Future Timber Drain (%)
Five Year Average Area of Non-Timber Dispositions	355.782 Ha	259.7 Ha	-	-	-
Average Area for Coniferous Landbase (60.95%)	N/A	158.3 Ha	62.5	9,893.8	9,893.8 / 640,000 m ³ X 100 = 1.5%
Average Area for Deciduous Landbase (39.05%)	N/A	101.4 Ha	31.6	3,204.2	3,204.2 / 453,712 m ³ X 100 = 0.7%