

Appendix 1

**Statement of Management Objectives, Options and Procedures including
Objectives and strategies for Employment and Economic Opportunity**

File: 19700-30/TFL 53

August 7, 1998

Doug Perdue, R.P.F.
Dunkley Lumber Ltd.
Operations Forester
P.O. Box 173
Prince George, British Columbia
V2L 4S1

Dear Doug Perdue:

Thank you for your revised Statement of Management Objectives, Options and Procedures, (SMOOP), for Tree Farm Licence #53, dated July 7, 1998. The SMOOP is accepted as submitted.

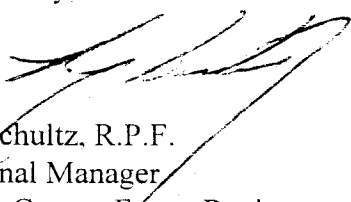


Please submit your updated forest cover inventory to Jack Louie, TFL Inventory Co-ordinator, at Resources Inventory Branch.

The issue of visual management in the viewsheds of Ahbau Lake and the gazetted recreation sites is currently being reviewed by the Prince George district manager. The district manager will provide direction on visual resource management in these areas in a separate letter.

I look forward to continuing to work with you in the development of Management Plan #3.

Yours truly,



Ray Schultz, R.P.F.
Regional Manager
Prince George Forest Region

pc: Phil Zacharatos, District Manager, Prince George Forest District
Brad Harris, Senior Tree Farm Licence Forester, RTEB
Jack Louie, TFL Inventory Coordinator, Resources Inventory Branch
Dave Stevenson, Forest Ecosystem Specialist, MOELP, Prince George

File: 19710-30/TFL 53

June 16, 1998

Doug Perdue, R.P.F.
Operations Forester
Dunkley Lumber Ltd.
P.O. Box 173
Prince George, British Columbia
V2L 4S1

Dear Doug Perdue:

Thank you for your submission dated February 27, 1998, regarding the objectives and strategies for Employment and Economic Opportunity (EEO) and Statement of Management Objectives, Options and Procedures (SMOOP) for Tree Farm Licence 53, Management Plan (MP) #3, dated February 27, 1998.



We have reviewed your EEO and SMOOP and I approve the SMOOP subject to the following conditions:

1. Your submission makes reference to the "Objectives for Employment and Economic Activity". This should read the "Objectives and Strategies for Employment and Economic Opportunities".
2. Section 1.5. First Nations
There are no resident First Nations in the Hixon area; however, the tree farm licence (TFL) is located within the statement of intent area of the Lheidli T'enneh First Nations for treaty negotiations. This should be recognized in your SMOOP.
3. Section 2.1. Overall Objectives
Objectives 3 and 5 are identical. Please delete one of these objectives.
4. Section 2.3.1. Timber
The Ministry of Forests' Timber Supply Branch will provide harvest flow parameters to be used when trying to achieve the objective of increasing the allowable annual cut (AAC) on the TFL. These parameters are outlined in the *Provincial Guide for the Submission of Timber Supply Analysis Information Packages for Tree Farm Licences* (version 3, February, 1998).
5. Section 2.3.1.3. Balsam Residual Stands Partitioned Cut
I recognize the intent of managing these balsam stands is to increase the productivity of

Ministry of
Forests

Prince George Region

Location:
5th Floor
Plaza 400

Mailing Address: .../2
1011 4th Ave
Prince George, BC
V2L 3H9

Tel: 250-565-6100
Fax: 250-565-6671

these areas. Please clarify what is meant by “improving the species composition of these stands”. Will a component of balsam remain in these stands?

6. Section 2.3.1.4. Deciduous Leading Stands

Please indicate if deciduous leading stands will be included in the base case timber supply analysis.

7. Section 2.3.2.1. Visual Quality

I support your objective for visual quality; however, the subsequent explanation of visual impact assessments (VIA) is confusing. In scenic areas with established visual quality objectives (VQO), VIA's are a legislated requirement under the *Operational Planning Regulation* of the *Forest Practice Code of British Columbia Act (FPC)* and are not a requirement of the district manager. In scenic areas where VQO's have not been established, the district manager must determine the specific operational requirement necessary to manage the visual values. Please amend this section to clarify these requirements. The following wording is suggested:

“As required by legislation visual impact assessments will be carried out when proposing to harvest timber or construct/modify roads, or when proposing visually modifying operations in known scenic areas with established VQO's. Visual simulations will be carried out when proposing to harvest timber or construct/modify roads, or when proposing visually modifying operations in known scenic areas without established VQO's as required by the district manager”.

8. Section 2.3.2.4. Water Quality

I understand that information on sensitive soil has been collected on the TFL. Please indicate how this information will be considered in road building and cutblock design.

9. Section 2.3.2.6. Cultural Heritage Resources

This section states that there are no known cultural heritage resources on the TFL. An overview assessment of heritage resources is currently underway in the Prince George Forest District. Please indicate your intent to co-operate with this assessment.

Your statement that a cultural heritage impact assessment will be conducted when proposed timber harvesting, road construction or modifying operations overlap identified cultural heritage areas from the British Columbia government overview assessment is not acceptable. Section 26 of the *Operational Planning Regulation* requires that archaeological impact assessments (AIA) be completed where required by the district manager. The district manager has created a district Standing Operating Procedure for AIA's which describes the considerations and criteria he will use when requiring AIA's under section 26 of the *Operational Planning Regulation*.

10. Section 2.3.2.7. Range Land

Please expand this objective to include a commitment to continue to manage for range values. The following wording may be more suitable:

“Although the range component is and will likely continue to be, a minor component of the TFL resource, it is Dunkley Lumber Ltd. 's objective to not adversely impact range values at their present level of use (272 Animal Unit Months) while allowing for expansion should the need be identified”.

11. Section 2.3.2.8.

Please clarify that wildlife habitats will be addressed through biodiversity management. Fisheries habitat will be managed on a watershed basis.

12. Section 2.3.3. Integrated Use

It is assumed that First Nations uses are included in your commitment to integrate “other uses of the TFL forests through integrated resource management planning processes”. It is also assumed that Dunkley Lumber Ltd. will contact First Nations, such as the Lheidli T’enneh, to integrate their use of the land in question. Please include a commitment to actively seek out any First Nations that may have a traditional use in the TFL.

13. Section 2.3.6. Basic Silviculture

I support your objectives for basic silviculture; however, please clarify the wording on your objectives to “shift to faster growing species where practical”. Please expand this objective to state your intent to plant species which are ecologically suited to the site.

14. Section 2.4.1. Visual Landscape Inventories

The district manager has established VQO’s in the Ahbau Lake viewshed. If the district manager changes these VQO’s prior to the timber supply analysis information package submission (August 31, 1998), then these revisions should be included. Otherwise the current VQO’s at Ahbau Lake must be modelled in the base case. As required under the *Forest Practices Code of British Columbia Act*, Dunkley Lumber Ltd. must follow the VQO’s established by the district manager.

As committed to the Management Plan #2, Dunkley Lumber Ltd. must also complete visual inventories from the gazetted recreation sites on the TFL. Dunkley Lumber Ltd.’s SMOOP objectives should be altered to reflect the intent to manage for visual values from the gazetted recreation sites. If any changes are made to this requirement by the district manager prior to the timber supply analysis information package being submission (August 31, 1998), then these changes should be included.

I do not support your interpretation of the Prince George Land and Resource Management Plan (LRMP) objectives for visual management in enhanced resource management zones. Section 5 of the LRMP document provides further direction on the interpretation of the plan.

15. Section 2.4.3. and 2.4.4.

As stated above, your proposal to address visual impact on the Ahbau Lake viewshed by using block design and forest management considerations rather than the formal application of VQO’s is not acceptable at this time.

16. Section 2.4.6. Landscape Level Biodiversity

This section specifies how landscape level biodiversity will be modelled in a sensitivity analysis. Please clarify how landscape level biodiversity will be modelled in the base case. Appendix III of the *Provincial Guide for the Submission of Timber Supply Analysis Information Packages for Tree Farm Licences* provides information on biodiversity modelling in the timber supply analysis. The biodiversity management plan must go through an Ministry of Forests/Ministry of Environment, Lands and Parks approval process to ensure it meets the intent of managing stand level and landscape level biodiversity. Also, the draft biodiversity emphasis options have been renamed to the “Draft Recommended Biodiversity Emphasis Options for Landscape Units in the Prince George Forest District”.

17. Section 2.4.13. Interior Watershed Assessment Procedure (IWAP) on Naver Creek

I am pleased that Dunkley Lumber Ltd. has signed a contract with the Ministry of Forests to complete an IWAP on Naver Creek. However, I would like to clarify your statement that the LRMP no longer refers to the need for an IWAP on Naver Creek because the working group did not consider it appropriate to single out the Naver watershed. It is my understanding that the LRMP’s strategy concerning the IWAP on Naver Creek was removed from the LRMP because the IWAP was already in progress and almost completed. It was not because the working group considered it inappropriate to single out the Naver.

18. Section 2.4.14. Stream Classification

Please indicate which stream inventory will be used for the base case for the timber supply analysis.

19. Section 2.4.15.

The *Forest Practices Code of British Columbia Act* has recently been amended. Consequently, TFL Management Plans are no longer included in the definition of a higher level plan.

20. Section 2.5. Inventories

Please confirm that all inventories will be submitted for review and approval by the appropriate Ministry of Forests and Ministry of Environment, Land and Parks staff prior to the timber supply analysis.

21. Fish and Wildlife

There are substantial strategies in the LRMP to address wildlife issues. Please clarify how these resources will be managed during the term of Management Plan #3.

22. Section 2.6. Management Options and Timber Supply Analysis

This section discusses management options for Management Plan #3 in terms of scenarios and building blocks. Current timber supply analyses are structured in terms of a base case and sensitivity analyses instead of scenarios and building blocks. The base case forecast is the timber supply forecast which illustrates the effect of current forest management practices on the timber supply using the best available information. Sensitivity analyses examine how the uncertainty in data and management assumptions affect timber supply. Please

restructure section 2.6. to reflect a base case (current management) and sensitivity analyses. Options in addition to the base case and sensitivity analyses are welcome and will be presented to the chief forester for consideration.

In addition to the above, the following points should be addressed:

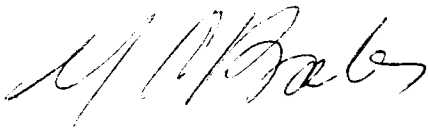
- The new provincial procedures indicate that scenic areas with established VQO's are to be modelled in the base case and that recommended visual quality classes are to be modelled through sensitivity analysis. I recommend that you consider modelling the visual quality constraints as current practice in the base case. Sensitivity analysis can be used to compare other scenarios to the base case.
- The table on page 47 should be adjusted to reflect the terminology used in the new provincial procedures (ie. Visual Quality Objectives should be replaced with Sensitive Areas with approved VQO's).

I look forward to receiving these revisions by July 2, 1998. I do not anticipate that these revisions will cause delays in the submission of your information package to the timber supply forester. Please ensure that the information package is submitted to Susann Brown, Timber Supply Forester, by August 31, 1998.

This letter forms an integral part of the SMOOP dated February 26, 1998, and should be attached to it.

If you have any questions regarding this matter please contact Yvonne Parkinson at this office.

Yours truly,



Ray Schultz, R.P.F.
Regional Manager
Prince George Forest Region

pc: Susann Brown, Timber Supply Forester
Yvonne Parkinson, Timber Tenures Specialist, Prince George Forest Region

**STATEMENT OF
MANAGEMENT OBJECTIVES,
OPTIONS AND PROCEDURES**

**DUNKLEY LUMBER LTD.
TREE FARM LICENCE No. 53
NAVER
MANAGEMENT PLAN #3**

PREPARED BY:

**DOUG PERDUE, R.P.F.,
OPERATIONS FORESTER**

SUBMISSION DATE: JULY 6, 1998

INTRODUCTION

Tree Farm Licence #53(TFL) is a relatively small forest area, but it is of critical importance to the viability of Dunkley Lumber Ltd (Dunkley) and to the local communities that depend on the Company. The TFL was awarded to Dunkley in September 1989. Dunkley has undertaken its mandate to manage the forest resources with commitment and innovation. During the term of Management and Working Plan (MWP) #1 silviculture, harvesting and planning initiatives were put in place that resulted in an increased Allowable Annual Cut (AAC) for Dunkley for the term of Management Plan (MP) #2.

The term of MP #2 continued the successful forest management programs implemented during MWP #1 and saw Dunkley embark on an information gathering quest. The Timber Supply Analysis (TSA) process for MP #2 highlighted the need for additional information on TFL resources to enhance forest management decisions. The introduction of the Forest Practices Code of British Columbia Act (FPC) and the Draft Prince George Land and Resource Management Plan (LRMP) process are also driving forces behind the need for additional inventory information.

Dunkley anticipates that MP #3 will see the completion of the current inventory projects on the TFL and the development and implementation of plans based on the information that has been collected. This document, Statement of Management Objectives, Options and Procedures (SMOOP) sets out the intended management objectives, current issues and analysis options that will guide the development of management strategies proposed for MP #3.

The objectives and strategies outlined in the SMOOP also take direction from the LRMP. The LRMP proposes that the TFL be managed as an Enhanced Resource Management Zone (ERMZ). The management intent for an ERMZ is to develop and enhance the timber resource consistent with the objectives of the Resource Management Zone (RMZ). This RMZ category is a good fit for the TFL, which is being intensively managed as a working forest to enhance Dunkley's long-term secure wood supply.

Dunkley has organized the SMOOP to present objectives for employment and economic activities as the first section. These objectives direct the overall tone for the SMOOP and the subsequent Management Plan. Strategies must reflect the importance of the TFL fibre supply to Dunkley's viability and the related issues of community stability and employment.

1.0 OBJECTIVES FOR EMPLOYMENT AND ECONOMIC OPPORTUNITY

The TFL wood supply is the nucleus of the sawmill log requirements of 600,000 m³/yr. The TFL supplies a secure fibre source meeting approximately 30% of mill requirements. The TFL may allow Dunkley, through the application of progressive forest management techniques, to improve the security of our wood supply through increases in the AAC. This is a critical strategy in light of the concern that policy changes and regulatory provisions threaten to reduce our unsecured fibre supply. The concept of zonation with the recognition of the TFL as an intensive forest management zone is paramount to Dunkley meeting our Employment and Economic Opportunity Objectives.

Dunkley's objectives for employment and economic activity are as follows:

To maintain Dunkley as a viable entity capable of providing a secure source of employment and economic benefits to local communities.

To manage the forestlands as a working forest where the primary resource activities are timber harvesting and forest management practices aimed at the provision of a continuous and expanding timber supply through which economic opportunities at Dunkley will be maintained.

On December 16, 1997 Dunkley presented a "Strategy for Securing Long Term Jobs at Dunkley Lumber Ltd." to the Honorable David Zirnvelt, Minister of Forests. This presentation summarizes the employment situation at the Manufacturing and Forestry Operations and the very real threat to job security that a reduction in log supply would bring.

Excerpts from this presentation are provided below to describe the nature of operations at Dunkley. Figure No. 1 presents a map of the TFL location, nearby communities and mill operations.

1.1 Nature of Operations

1.1.1 Log Conversion

Dunkley's sawmill converts approximately 600,000 m³ per year, producing in the order of 190 million board feet of dimension lumber. The sawmill and planermill are recognized as one of the most sophisticated and efficient in the Interior of BC. In terms of getting the most out of each cubic meter of log, our mill achieves one of the highest lumber recoveries in the Interior, and is among the top three mills in overall lumber recovery. This is achieved through a combination of high technology equipment and a work force dedicated to achieving high standards.

One of the objectives of the Jobs and Timber Accord (Accord) is to get the most out of each cubic meter of wood. Dunkley not only meets this objective, but also has done so in its recovery program for many years.

Dunkley's product line incorporates the following:

- boards (1x3, 1x4, 1x6)
- dimension lumber (2x3, 2x4, 2x6, 2x8, 2x10, 2x12)
- specialty sizes - upon request
- value-added raw materials (see Section 1.1.3)
- trim-blocks (from 8 to 24 inches)
- chips - to Quesnel River Pulp
- shavings and sawdust - to Westpine MDF, Quesnel
- whole log chips - both aspen and SPF pulplog to Quesnel River Pulp

Variety of product line has been a major area where Dunkley has been able to increase jobs in manufacturing. By working on all of these ancillary fields: getting the most out of the log, providing more jobs and supporting the re-manufacturing sector, our contribution in meeting the objectives of the Accord is achieved.

1.1.2 Lumber Markets

Our vision in striving for excellence and leading edge technology in our operation stems from our recognition that, whether we like it or not, we have to compete in a global economy. Diversity in product lines, consistent quality and reliability of supply has enabled us to establish an excellent reputation in the world marketplace. Diversity of markets has been and continues to be our critical focus, as shown below:

Overseas.....	20-30%
Canada.....	30-40%
United States.....	40-50%

Dunkley's overseas market share is one of the highest in the northern Interior, where the average for overseas sales is in the order of 7 to 10%. Dunkley is a member-shareholder of Interex Forest Products, which markets our overseas shipments. Our products are sold into Japan, Holland, Belgium, Germany, United Kingdom, Saudi Arabia, Taiwan, South America and Israel. Of these, Japan is our largest individual overseas market. Last year forty-nine different Japanese companies purchased our lumber.

Due to the high technology of the sawmill, Dunkley is able to respond quickly to new markets whether in imperial or metric sizes. This flexibility in design and marketing enables us to fill our customer's needs.

1.1.3 Products Supplied to Secondary Manufacturing

The Wood Fibre Transfer Program of the Accord is designed to increase the volume of raw material to secondary manufactures. This requires licensees in the Interior to offer 16% of their replaceable license volume to secondary manufactures.

Dunkley has built up, and is continuing to build, business relationships with independent secondary manufacturers in the Northern Interior and throughout BC. Our record of sales is testimony to our efforts to supply lumber products to value-added plants.

The following shows the volume of lumber sold (not simply offered) to independent secondary manufacturers as a percentage of our replaceable AAC:

1993.....	17%
1994.....	18%
1995.....	16%
1996.....	19%
1997(y-t-d).....	23%

The above amounts far exceed the 16%, which are only required to be “offered” for sale under the Accord. We are proud of this achievement.

How does this translate into jobs? The Central Interior Wood Processors Association, in their 1995 membership survey, used a factor of 1.2 jobs for every 1,000 m³ of lumber processed in their plants. Dunkley’s average volume contribution over the five years above supports approximately **35 full-time jobs** in secondary manufacturing.

Dunkley is taking an approach to selling to re-manufacturers which differs from most in that it recognizes the need of this sector to be able to access raw material when they need it, not when a licensee wants to sell. **We are, therefore, maintaining a “Warehouse” approach**, so that our partners in the value-added business know where to go for material at any time. This works well for both of us.

Our principle secondary manufacturing customers are:

Westech Wood Products Ltd.....	Williams Lake
Canadian Woodworks Ltd.....	Prince George
Woodland Lumber Ltd.....	Prince George
M&T Wood Products Ltd.....	Mackenzie
Ospika Lathe.....	MacKenzie
Sylvanex Lumber Products Ltd.....	Surrey
West Hill Lumber Ltd.....	Prince George
D&D Pallet.....	Abbotsford
Advantage Reman.....	Surrey

Our business with secondary manufacturers is significant. Of our customer base of 96 companies in North America, three of the above are among the top 15 in volume purchases.

We have shown that Dunkley started working with secondary manufacturers well before the Accord was introduced. Dunkley not only supports 35 full-time secondary manufacturing jobs, but also sustains several jobs in our plant. This is an interesting aspect that we feel further reinforces our commitment to supplying secondaries. The mutual dependency - jobs on our end and supply assurance on theirs - makes for good business relationships.

1.2 Volume of Wood Processed from TFL and Other Sources

1.2.1 Current Log Sources

Our operation requires approximately 600,000 m³ of logs per year. We have traditionally secured this volume from the following sources:

TRADITIONAL LOG SOURCES

Status	Source	Volume(m3)	% of Supply
Replaceable Replaceable	TFL #53 TSL A19981	176,080 604	30
Non-Replaceable Expires 2009	FL A27823 (Takla Track)	22,222	3.7
	Small Business Progam	Various	30-40
	Other Provinces and Territories	Various	20-30
	Private	Various	5-10
Total		600,000	100

We realize we have a significant volume that we must locate each year. We have always addressed our wood supply needs through a "building block" approach. As a positive step, the Ministry has recently awarded us a "building block" in the form of FL A57544. This will add a further 50,000 m³/ year to our supply, but only for a five-year period. At the end of the day, our secure replaceable licence volumes only amount to 30% of our needs.

1.3 Employment

Our employees are the key to Dunkley's overall success. They are involved in every facet of work, which is undertaken, and in most of the decision making processes. They have worked hard and thoughtfully to make Dunkley the success that it is. We are genuinely proud of our employees. The fact that over 50% have been with us 10 years or longer indicates we provide a good workplace where people can invest in their future. We must honor this bond of faith in our company.

As a company dedicated to our employees, the communities and the land, we cannot overstress how we feel at any threat of job losses. It is paramount in our endeavors to make these jobs secure for our employees in the long term.

1.3.1 Jobs in Manufacturing

Our industry has often been criticized for carrying out sawmill rationalization at the expense of jobs. Indeed, statistics support the fact that, as sawmills have been modernized and upgraded, mill jobs have been lost. While the statistics may be true of the industry as a whole, we at Dunkley have made technical sawmill advances, and increased the number of jobs in doing so. **We have, in fact, bucked the industry trend!**

The table below shows the increase in the number of jobs in our sawmill operations since 1977.

JOBS IN MANUFACTURING

Year	# Jobs
1977	140
1984	143
1994	157
1997	164

We want to emphasize that there has been a remarkable stability in employment over the last twenty years. This is not by accident. Dunkley has always been aware of the social contract it has with the employees and the community and has, therefore, striven to maintain its employment obligations.

It may well be asked how we achieved this increase in employment against the trend. The jobs as they were originally structured in the 1960s and 1970s bear no resemblance to the jobs of today. They have shifted to more technical applications, such as by-product recovery, computer monitoring for lumber flow and lumber quality, strict maintenance programs, and safety procedures.

We cannot abrogate our social contract to the community. This is why we are trying to develop a strategy to secure these jobs by increasing our volume of secured timber.

1.3.2 Jobs in Forest Management

The table below shows the state of forestry jobs in 1977 and how our employment base in resource management has grown over time.

JOBS IN FORESTRY OVER TIME
(Based on 180 mds/yr)

Year	Resource Management	Harvesting	FRBC Jobs	Total
1977	1 - 2	50 - 60	N/A	57
1994	9	50 - 60	1	65
1995	10	50 - 60	17	82
1996	11	50 - 60	23	89
1997	11	50 - 60	27	93
1998 projected	11	50 - 60	36	102

Our commitment to the TFL is demonstrated by the fact that we employ *four full-time professional foresters* plus supporting technicians in our forestry department. This is a very high ratio of foresters for an annual cut of only 176,080 m³ per year, but in our view it is an insurance on the well being of the public lands we have been entrusted to manage.

1.4 The Communities

Dunkley's operations, both woods and mill, have been part of the Hixon community since 1951. As other companies have shut mills and moved operations, a very close relationship has developed between company and community. We are the only major employer in this community and almost half of our work force lives in Hixon and the surrounding area. The rest of our employees are from Quesnel and Prince George. This unique situation makes us a corporate citizen in all three communities.

For those employees who live in the community their financial security is tied to Dunkley's ability to continue operating the sawmill on two-shifts. In turn, this security depends on Dunkley's ability to secure timber supply for the long term.

Dunkley annually spends more than \$60 million on goods and services locally. The economic benefits flowing from the Dunkley business are spread regionally into Quesnel and Prince George as well as the Province as a whole. In addition the annual payroll of more than \$13 million is supporting families in Hixon, Quesnel and Prince George.

The Company and the local communities have a close working relationship that goes beyond security of employment. Dunkley is an active supporter of education, sports and cultural events, not only in Hixon but also in Prince George and Quesnel. In addition, we are a significant participant in funding local health and education institutions as well as numerous charities.

There is indeed an implied social contract with our communities. We feel a deep responsibility. We recently received a letter from the Hixon Community Association that reads, in part:

“... we would like to extend our thanks for your ongoing support of our community. Your generosity over the past years has been above and beyond any expectations the people of Hixon may have had. Our continued alliance with Dunkley Lumber is a very important part of our community's future and prosperity. We value our close working relationship and look forward to another amiable year....”

It is this bond that is driving us to formulate a strategy to secure long term jobs.

1.5 First Nations

The Provincial Government's forest policy has encouraged companies to pursue business ventures with First Nations. There are no resident First Nations in the Hixon area; therefore no logical joint ventures could be pursued. However, Dunkley has dealt extensively with First Nations in buying logs in British Columbia, the Yukon and the Northwest Territories and have earned a solid reputation in building reliable business relationships with First Nations in Western Canada. Dunkley has also worked with Tanizul Timber, Teeslee Forest Products and the Takla Lake Band, and is a member of Takla Track & Timber.

Through our past dealings, we have demonstrated sound working relationships with First Nation's groups. Potential opportunities for joint ventures are in logging and silviculture. Dunkley remains open to considering mutually beneficial joint ventures with First Nations.

1.6 Future Action to Meet Employment and Economic Opportunity Objectives

One of the key components to meeting the employment and economic opportunity objectives is to develop strategies for the TFL that will improve the secured fibre supply at Dunkley. The LRMP recognizes this with the designation of the TFL as an ERMZ. The challenge to Dunkley and the Government agencies is to ensure that the TFL management reflects this zonation and the benefits of economic stability to both the local and provincial economies.

2.0 MANAGEMENT OBJECTIVES

Dunkley proposes the following objectives to provide the overall direction in the management of TFL #53.

2.1 Overall Objectives

- *To maintain Dunkley as a viable entity capable of providing a secure source of employment and economic benefits to local communities.*
- *To manage the forest lands as a "working forest" where the primary resource activities are timber harvesting and forest management practices are aimed at the provision of a continuous and expanding timber supply within the framework of integrated multi-resource planning.*
- *To conduct management practices and to develop new procedures which will maintain and enhance the productivity of the forest land base through which increases in the allowable annual cut will be achieved.*
- *To integrate the use of TFL forests for timber, range, recreation, fish and wildlife and other user groups.*
- *To conduct operations in an environmentally sound manner.*

2.2 Commitments

This section summarizes the commitments agreed to by Dunkley in the application for the TFL and in the TFL document. A review of the commitments made in MP #2 was submitted to the Regional Manager in a letter of August 8, 1997.

2.2.1 Licensee Commitments

There are no outstanding commitments made by Dunkley in the application for the TFL.

2.2.2 Non-Standard TFL Document Commitments

In the evolving framework of the TFL document it is not clear what constitutes a “non-standard” clause. In reviewing TFL #53, Dunkley identified three clauses, two because they were in the “Miscellaneous” clause section of the document and the third because it seemed unique to the TFL.

Document Clause: 14.02

The Licensee will use the services of one or more registered professional foresters as reasonably required to manage the Licence Area according to this Licence.

Performance:

Dunkley has used the service of the Association of BC Registered Professional Foresters to meet legislated requirements. There are currently four R.P.F.'s on staff at Dunkley.

Document Clause: 14.04

In addition to other reports required by the Licensor, each year during the term of this Licence, the Licensee will deliver to the Regional Manager an annual report in respect of this Licence. In a form and on a schedule specified by the Licensor that includes, but is not limited to, a report on all audits or reviews conducted by the Licensor and all reviews specified by other Resource Agencies.

Performance:

An Annual Report is submitted on a yearly basis to the Regional Manager.

Document Clause: 2.09

If during the first ten years of the term of this Licence the Chief Forester reduces the AAC for the Prince George Timber Supply Area as a result of losses of timber caused by mountain pine beetle infestation. The AAC for the balance of the term of this Licence or any replacement of this Licence will be reduced by a volume equal to $167,380 \text{ m}^3$, minus the product of:

- (a) $167,380 \text{ m}^3$, and
- (b) the AAC of the Prince George Timber Supply Area in the year of the reduction divided by $8,605,000 \text{ m}^3$.

Performance:

This clause will expire on January 1, 1999; therefore no action is required.

2.3 TFL Objectives

The following are proposed management objectives that are intended to be included in MP #3.

2.3.1 Timber

Dunkley's objective is to increase the AAC to supply at least 50% of the mill capacity.

In the AAC determination for MP #2 the Chief Forester set an AAC of $204,700 \text{ m}^3$ for the term January 1, 1994 - January 1, 1999. This level will be re-evaluated in a new TSA that will reflect Dunkley's management practices and the timber inventory updated to December 1, 1997.

2.3.1.1 Harvest Methods

Dunkley's objective is to ensure that harvest methods are prescribed on a site-specific basis and that operations are conducted so as to minimize soil disturbance, soil compaction and other environmental concerns.

Harvest methods include conventional ground based systems, horse logging, overhead cable system and helicopter logging.

2.3.1.2 Utilization Specification

During the term of MP #3, Dunkley's objective will be to conduct harvesting coniferous to utilization standards, as indicated in Table 1.

Table 1: Utilization Specifications

Species	Min. DBH(cm)	Stump Ht(cm)	Top Diam(cm)
Spruce	17.5	30	10
Balsam	17.5	30	10
Douglas-fir	17.5	30	10
Lodgepole Pine	12.5	30	10

2.3.1.3 Balsam Residual Stands Partitioned Cut

To establish a partitioned cut in low volume residual balsam stands to facilitate improvements in productivity.

A partitioned cut, of up to 20,500 m³ (total volume) was established for the term of MP #2 to account for the harvest of balsam leading residual stands that contain merchantable volume. The partitioned cut is proposed as part of a three-pronged approach to increase the proportion of spruce and pine in the stands and promote better stocking of I.U. balsam stands. Balsam remains as a component of the treated stands. Natural regeneration and site preparation followed by planting are the other options. The program is described in greater detail in Section 2.4.10.

2.3.1.4 Deciduous Stands

To improve Dunkley's deciduous fibre supply.

Dunkley will investigate the inclusion of deciduous leading stands in the net productive land base as a sensitivity analysis. This will help to meet Dunkley's objective of securing a deciduous fibre supply to meet, in part, chip production requirements. Having said this, Dunkley also recognizes the importance of deciduous leading stands in contributing to biodiversity. The biodiversity aspect of the deciduous stands will be addressed if the deciduous leading stands are proposed for inclusion in the net productive landbase for MP #3.

2.3.2 Non-Timber Values

2.3.2.1 Visual Quality

To meet the visual quality objectives as determined by the District Manager for known scenic areas.

As required by legislation visual impact assessment will be carried out when proposing to harvest timber or construct/modify roads, or when proposing visually modifying operations in known scenic areas with established VQO's. Visual simulations will be carried out when proposing to harvest timber or construct/modify, or when proposing visually modifying operations in known scenic areas without established VQO's as required by the District Manager.

2.3.2.2 Biological Diversity

To manage and conserve biological diversity on TFL #53.

It is our intent that a TFL specific Biodiversity Management Plan (Landscape Unit Plan) will accompany MP #3. It will contain strategies designed to manage biological diversity on the TFL. The plan will also address wildlife management based on the habitat work included in our Terrestrial Ecosystem Mapping project.

2.3.2.3 Soils

Dunkley's objective is to protect soil and soil fertility by minimizing activities that cause soil degradation and by rehabilitating damaged sites.

2.3.2.4 Water

Dunkley's objective is to protect the quality and quantity of ground and surface water.

Dunkley has completed a Level D Terrain Stability Assessment Inventory that in part identifies potentially unstable and unstable areas and high erosion hazard areas. Level A Field Terrain Stability Assessments will be completed as required by the Forest Practices Code when considering road building or cutblock design activities in the potentially unstable or unstable areas. Site specific erosion control plans will be formulated for all major culverts, bridges, and road construction as well as deactivation or other engineered works on high terrain hazard areas ("unstable" or "potentially unstable").

2.3.2.5 Recreation Resources

Dunkley's objective is to manage the TFL recreation resources within the framework of developing and enhancing the timber resource.

The strong tie between people who live and work locally and who use the TFL for recreation is important. The forest industry background of the locals brings with it an understanding and acceptance of forest management activities on the areas that we use for recreation.

2.3.2.6 Cultural Heritage Resources

An overview assessment of heritage resources is currently underway in the Prince George Forest District.

Dunkley will cooperate with this assessment. An archaeological impact assessment will be conducted where required by the District Manager.

2.3.2.7 Range Land

Although the range component is and will likely continue to be, a minor component of the TFL resources, it is Dunkley Lumber Ltd.'s objective to not adversely impact range values at their present level of use (272 Annual Unit Months) while allowing for expansion should the need be identified.

2.3.2.8 Wildlife and Fish Habitats

It is Dunkley's objective to conserve and enhance fisheries resources and associated habitats. We strive to plan and manage the land so as to reduce conflicts between wildlife and human activities.

The TFL specific biodiversity plan will contain a wildlife habitat component. The intent of the plan is to identify species specific habitat areas based on suitability and to develop management strategies within these areas to manage for wildlife. The species selected will include those identified in the LRMP as well as Provincially identified yellow or blue listed species. Fish habitat will be managed on a watershed basis.

2.3.3 Integrated Use

Dunkley will integrate the timber, range, recreation, fish, wildlife and other uses of the TFL forests through ongoing integrated resource management planning processes.

2.3.3.1 First Nations

The TFL is located within the statement of intent area of the Lheidli T'enneh First Nations for treaty negotiations. Dunkley will contact First Nations, such as the Lheidli T'enneh, that may have a traditional use in the TFL to integrate their use of the land.

2.3.4 Fire Preparedness

2.3.4.1 Fire Prevention

It is Dunkley's objective to conduct its operations in accordance with Ministry Policy and Regulations.

The responsibility for the prevention and control of wild fires and the initiation of prescribed burns are embodied in the Ministry's fire policy and regulations.

2.3.4.2 Fire Suppression

The objective of suppression will be to work in conjunction with the Ministry to ensure fast initial action and to control any fires by 10:00 a.m. of the day following detection.

2.3.4.3 Prescribed Fire

Prescribed burning activities will be carried out in accordance with an approved burning plan and a burning permit as required by the FPC.

2.3.4.4 Fuel Management

Fuel hazard and risk assessments and hazard/risk reduction activities will be carried out as required by the FPC. Fuel management activities will be carried out in a timely manner as required.

2.3.5 Forest Health

Dunkley's forest health activities are designed to meet two objectives:

- i. to minimize endemic losses to forest stands through preventative measures such as trap trees, bait trees, and multi-species planting.*
- ii. to minimize non-recoverable losses through an aggressive salvage program.*

2.3.6 Basic Silviculture

The basic silviculture program will focus on enhancing the productivity of the forest land base. This will be achieved through continuing the programs of minimizing regeneration delay, use of genetically superior seed, planting at increased stocking levels, using species shifts to faster growing species which are ecologically suited to the site. Planting will be followed up with efficient plantation maintenance. Dunkley's silviculture objectives reflect the intent of managing the TFL as a working forest.

- To obtain the maximum timber harvest from TFL #53 within the land capability, and economic and social limitations.*
- To maintain and enhance productivity of the forest land base with a view to increasing allowable annual cut levels.*
- To restock and achieve free-to-grow status on all cutover lands to targeted stocking levels with desired species within a minimum time period to maximize fibre production.*
- To restock all current and backlog NSR lands, and maintain a "steady-state" silviculture program over time.*
- To convert problem forest (excluded) stands into timber stands (contributing) with commercially acceptable species capable of maximizing yields.*
- To enhance growth potential on the TFL by improving site occupancy through increased stocking levels and effective plantation maintenance.*

2.3.7 Intensive Silviculture

The intensive silviculture objectives are to enhance timber values and increase the long run sustainable yield.

The gains realized through intensive forest management practices such as, conifer release (cleaning), juvenile spacing, pre-commercial thinning, site rehabilitation, fertilization, and commercial thinning will increase the long run sustainable yield.

2.3.8 Road Construction, Maintenance and Deactivation

The objective of road construction and maintenance is to provide access for forest management activities. The objective of road deactivation is to maintain and enhance water quality, soil conservation and forest productivity.

2.4 Management Issues

The following issues were identified by the Ministry of Forests and provided to Dunkley with the Regional Manager's SMOOP initiation letter of October 31, 1997.

2.4.1 Issue:

A commitment was made in MP #2 to complete a landscape inventory from Ahbau Lake and each of the gazetted recreation sites on the TFL. Please indicate how you will address your commitment to complete these inventories. We recognize the VQO's for these areas may not be required at this time; however, the visually sensitive areas should be mapped and rated as per the new inventory standards. This information should be used in the development of your SMOOP and MP as well as in operational planning.

Action (Ahbau):

The Ahbau Lake Visual Landscape Inventory fieldwork was completed in the summer of 1997. This inventory was submitted to the Ministry of Forests as

approved by the District Recreation Officer on May 1, 1998. This inventory is being completed as per the new visual landscape inventory standards.

At a meeting with Regional and District Staff on May 27, 1998 to clarify SMOOP issues, the Regional position was put forth that managing the Ahbau Lake viewshed without the establishment of VQO's was not acceptable.

As a compromise Dunkley suggests that the visual sensitivity units (VSU's) seen directly from the Ahbau Lake Campsite be made a known scenic area. Those VSU's seen only from the lake surface would become a visually sensitive area without RVQC's. We see this proposal as a methodology to manage and conserve the Ahbau Lake viewshed while at the same time achieving the Objectives for Employment and Economic Opportunity (OEEO) and SMOOP objectives. This issue has been referred to the District Manager for a decision on adequately managing the visual resources in the area. Additional information that is relevant to the management of this area is presented below:

- The LRMP document includes a strategy in the Recreation and Tourism section to "Establish Visual Quality Objectives for High Priority Scenic Areas". No scenic areas were identified in TFL #53 nor were recreation sites (including Ahbau Lake), in general, identified as high priority scenic areas. Recreation sites were not specifically excluded from the need for visual landscape inventory in the LRMP. Our interpretation is that the LRMP does not provide specific direction on this issue.
- The LRMP document does however categorise the TFL as an enhanced resource management zones (ERMZ) with the management intent of development and enhancement of the timber resource consistent with the objectives of the RMZ. In an ERMA, we believe the concept of managing visually sensitive area with block design, rather than VQO's or RVQC's is more

appropriate. Without an effort to define the intent of the LRMP zonation in terms of real on the ground action, the usefulness of the document is severely weakened.

- The implementation of the Forest Practices Code is resulting in blocks with a softer visual impact. This reduces the need for VQO establishment.
- The Ministry of Forests has identified the need to manage visual resources to mitigate impacts on the timber supply to free up wood in the short term as part of the Jobs and Timber Accord. Mitigating impacts to achieve the 2% Provincial buy back goal identified in the Chief Forester's Forest Practices Code-Timber Supply Analysis Report also requires changes to "on the ground management practices". The need to manage visual resources to mitigate impacts on the timber supply was identified as a critical initiative in a memorandum from Jana Kumi to the Regional Managers and District Managers on March 17, 1998. We see our proposal for Ahbau Lake as one way of helping to achieve these Ministry objectives.
- The inability to separate the inventory of visual landscape features from the management implication is a large concern for Dunkley. In other words, with the completion of an inventory come the requirement to model impacts in a TSA. This has serious negative implications on fibre supply, and meeting the social and economic objectives proposed for the TFL. The methodology for modelling a VQO or RVQC in timber supply modelling is essentially the same as is the operational management implications. The problem of the linkage of inventory and management implications still exists in a known scenic area.

In summary, we propose that the areas seen only from the surface of Ahbau Lake be managed as a visually sensitive area rather than a known scenic area. We commit to the continued use of visual design methods in this area to adequately manage and conserve the visual resources. The Visually Sensitive Units seen from the campsite could be made known and RVQC's or VQO's applied.

Action (Recreation Sites):

Dunkley made a commitment in MP #2 to conduct a landscape inventory from each of the gazetted recreation sites on the TFL. However, also identified in MP #2 was the problem that there is no way to separate the physical inventory of landscape features from the management and timber supply implications. This seems to be reinforced in the issue brought forward in the Regional Manager's SMOOP initiation letter of October 31, 1997 as quoted below:

“ A commitment was made in MP #2 to complete a landscape inventory from Ahbau Lake and each of the gazetted recreation sites on the TFL. Please indicate how you will address your commitment to complete these inventories. We recognise the VQO's for these areas may not be required at this time; however, the visually sensitive areas should be mapped and rated as per the new inventory standards. This information should be used in the development of your SMOOP and MP as well as in operational planning”.

This implies that, as a minimum, RVQC's would be implemented.

The Procedures for Factoring Visual Resources into Timber Supply Analysis also indicate that this problem has not been resolved. “RVQC's are to be modelled as used when planning how to manage and conserve the resource”. We had hoped that this problem would be resolved before undertaking the project. This is not the current situation.

In addition to the points brought forth in the Ahbau Lake viewshed issue the following information should be considered in determining the need for a visual landscape inventory for the TFL recreation sites:

- During 1997, we collected use data on the TFL recreation sites. Based on recreation site vehicle counts and road station questionnaires, use estimates are as follows:

Recreation Site	Recreation Site Vehicle Count	Road Station Questionnaire
Ahbau Lake	3,563	4,360
Stony Lake South	257	N/A
Genevieve Lake	298	1,673
Teapot Lake	634	933
Naver Bridge	850	793
Yardley Lake	212	576
Hay Lake	127	193

- The majority of use at the recreation sites was in the activity of forestry-mining work (i.e., tree planter and spacing accommodations) followed by hunting and fishing. It is important to note that use of the sites is extremely low and that visual issues are non-existent.
- The SMOOP presented to the Regional Manager revolves around maintaining Dunkley as a viable entity and maintaining jobs through the provision of a secure timber supply. Additional restrictions on the timber supply due to additional areas within a known scenic area will be counter to these objectives. The cost of additional visual impact assessments will also be counter to recent Government streamlining and cost saving initiatives. Any visually sensitive areas that are made known and incorporated into operational planning would have to be modelled in the timber supply analysis. All of this is counter to the direction of the SMOOP and OEE0.

In summary, we propose that with consideration of the implementation of the Forest Practices Code, the new information acquired during the term of MP #2 on usage, and the unresolved issue of the management implications from the inventory that the resources on the TFL can be adequately managed and conserved without a landscape inventory from the gazetted recreation sites on the TFL. This decision, we feel, would best reflect the current management situation on the TFL.

We have requested that the District Manager in consideration of the above information provide us with direction on managing the Visual Landscape resources on the TFL.

2.4.2 Issue:

The MP #2 Recreation Analysis refers to the possibility of stocking recreational lakes on the TFL. What steps have been taken to address this initiative?

Action:

Dunkley supports lake stocking as a worthwhile project to promote accessible recreational fishing on the TFL. As a result we undertook lake inventory projects on Hudson and Mary Lakes. It was discovered that both of these lakes contain resident fish populations. Ministry of Environment, Lands and Park's policy does not support stocking of lakes with an existing resident fish population and as a result this project can not proceed unless an exemption to the policy is granted.

2.4.3 Issue:

VQO's have been established in the Ahbau Lake and Highway 97 viewshed areas. Please provide some indication of how these VQO's and any past harvesting in this area will be managed during the term of MP #3.

Action:

In the highway viewshed there is no recent harvesting, although blocks are planned in the Forest Development Plan. Visual Impact Assessments are completed for those blocks, within the known scenic areas. Strategies used to manage for visual quality on these blocks include digital terrain modelling and boundary design to take visual management into account. Tree retention, both overstory and understory is also prescribed to manage for visual concerns. For example, horse logging is prescribed in Cutting Permit 77 to maintain the healthy understory crop. The intent of this prescription is to carry out an overstory removal, while maintaining visually effective green-up consisting of a healthy spruce, Douglas-fir, and balsam understory.

Blocks proposed in Ahbau Lake and Highway 97 viewshed areas are subject to visual impact analysis as per the requirements of the Operational Planning Regulations. The Silviculture Prescriptions for blocks in the viewsheds will also address site-specific measures to address visual landscape planning.

Two blocks were harvested in the Ahbau Lake viewshed during the term of MP #2. These blocks were designed using digital terrain modelling and the boundaries were adjusted to accommodate the management of visual quality. Cable harvesting was prescribed on portions of the blocks to avoid skid trails to reduce the visible impact. A regeneration delay of less than one year has occurred on the harvested area. A component of pine was mixed into the plantations, which were planted at a target density of 1800 sph. All of these factors will promote fast green-up. During the term of MP #3 plantation monitoring and brushing and weeding, as required, will be scheduled to promote fast green-up on these blocks. These actions demonstrate Dunkley's commitment to visual management in the Ahbau Lake area.

2.4.4 Issue:

The Prince George District anticipates receiving Visual Landscape Inventory updates of Ahbau Lake and Highway 97 area by January 1998. We expect that the updated linework and existing approved VQO's will be used in the development of your SMOOP and MP. If these updates show new areas not previously identified, as visually sensitive, recommendations of VQO's should be made to the District Manager for his approval. This updated information should also be incorporated in your next MP.

Action:

The Visual Landscape Inventory updates of Ahbau Lake and Highway 97 are underway and scheduled for completion by March 31, 1998.

As explained in Section 2.4.1, Dunkley proposes that the visually sensitive area as seen from Ahbau Lake be used to identify the area where block design and forest management considerations are used to address visual impacts rather than having formally designated VQO's. We feel that this approach to landscape management is more in line with the LRMP and the objectives for the TFL.

VQO's for the Highway viewshed will be recommended in the updated Visual Landscape Inventory and incorporated in the next MP, if approved by the District Manager. Again we feel that this is in agreement with the direction of the LRMP.

The revised Visual Landscape Inventory will replace the existing VQO's for the development of the SMOOP and the MP.

2.4.5 Issue:

A commitment was made in MP #2 to update the recreation inventory (i.e., recreation features and ROS) once during the term of the Plan and in time for inclusion in MP #3. When do you anticipate that these inventories will be updated to the revised standards?

Action:

The first TFL recreation inventory was completed during the preparation of MP #2. At that time we recognized that revised line work for the Visual Landscape Inventory would change the recreation inventory polygons. We also recognized that road development could change the recreation opportunity spectrum. We made a commitment to update the recreation inventory to incorporate this information.

However, during the term of MP #2 it has become evident that the recreation inventory is not used in operational planning. As a result, updating the information is a low priority. The revised standards may also make an update more expensive and time consuming than originally envisioned. For these reasons we do not anticipate undertaking an update of the recreation inventory in time for inclusion in MP #3. The project will be delayed until there is a need for the work and funding can be secured.

2.4.6 Issue:

It is unlikely that the Landscape Unit Plan for the TFL area will be approved in time to be included in the base case for the TSA. Please indicate how you intend to incorporate landscape level biodiversity either with or without Landscape Unit Plan. We suggest the following. If the base case does not incorporate landscape unit planning, a sensitivity analysis of the proposed landscape unit objectives would be completed. If a Landscape Unit Plan is approved for the TFL area, it would be included in the base case. Some stand level biodiversity assumptions may also change as a result of landscape unit modelling.

Action:

Landscape level biodiversity will be modelled in the base case following the procedure provided in Appendix III of the Provincial Guide for the Submission of Timber Supply Analysis Information Packages for Tree Farm Licences.

The "Draft Recommended Biodiversity Emphasis Options for Landscape Units in the Prince George Forest District" proposes that the TFL be managed as a low biodiversity emphasis area. This will be examined in the TSA as a sensitivity run.

If the absence of an approved Landscape Unit Plan for the TFL we will take direction from the Deputy Minister's memo "Achieving Biodiversity Timber Impacts" to model landscape level biodiversity in a sensitivity analysis. Dunkley is in the process of completing a TFL specific biodiversity and wildlife management plan for the TFL. The strategies for this plan will be modelled as completion of the plan allows to provide information to the Chief Forester.

2.4.7 Issue:

Stand level biodiversity management is expected across the landscape as per the FPC Biodiversity Guidebook. Historically, exceptions have been made to the stand level biodiversity requirements in the blowdown zone of the TFL. As exceptions to the biodiversity requirements in the blowdown zone will not longer apply, please describe how this issue will be considered in the MP.

Action:

Stand level biodiversity will be examined in three runs in the TSA:

- i. Legislated requirements (i.e., riparian management areas),
- ii. District policy(i.e., stand level biodiversity policy, lakeshore management areas), and
- iii. A TFL specific proposal for biodiversity management.

These runs will also incorporate Landscape Unit objectives as they relate to stand level management.

Windthrow continues to be a problem to which Dunkley directs a great deal of time and effort. Riparian Management areas and distance to cover requirements may compromise the place of block boundaries in the most windfirm location. Dunkley is committed to minimize windthrow and to aggressively salvage damaged timber to minimize NRL's and to reduce forest health risks from, for example, spruce bark beetle.

To address the windthrow concern and related biodiversity objectives, Dunkley has hired Keystone Wildlife Research to develop a TFL specific biodiversity plan to address both Landscape Level and Stand Level biodiversity. The purpose of the plan is to develop strategies for biodiversity management that reflect site-specific local conditions. It is intended that this plan will be implemented during the term of MP #3.

2.4.8 Issue:

In order to clearly distinguish between areas contributing and not contributing to the timber supply for the TFL, MP #3 should include a map, which clearly distinguishes between productive and non-productive areas.

Action:

A map will be produced of the net operable land base for inclusion in MP #3. This map will distinguish productive and non-productive areas.

2.4.9 Issue:

What progress has been made on the SIBEC project for the site index of balsam I.U. stands?

Action:

The SIBEC project was started in 1997 with funding provided by FRBC. Phase I of the project is the production of Terrestrial Ecosystem Maps (TEM) for the TFL land base. The initial field sampling is complete and draft maps are scheduled to be produced by March 31, 1998. Field verification and production of the final maps is scheduled for the summer of 1998. Phase II of the project will consist of site index sampling based on the TEM polygons. One of the emphasis areas of the SIBEC sampling will be the balsam I.U. stands. We intend to have both phases of the project completed by September 1998 for inclusion in the TSA data package.

2.4.10 Issue:

The current AAC for the TFL includes a partition for balsam I.U. stands. Please provide information on the past performance on the utilization of these balsam I.U. stands.

Action:

A partitioned cut of 20,500 m³ for balsam I.U. stands was established for the term of MP #2. As of March 1, 1998 8,134 m³ of I.U. stand volume has been harvested under this partition. This harvesting activity generates poor quality logs at a very high cost. These factors in combination with market conditions and influences such as the U.S. Lumber Quota have not made it possible to carry out a larger scale I.U. logging program.

Budget constraints within the Ministry of Forests have not enabled site preparation and survey work to be conducted on I.U. stands to-date during MP #2. FRBC funding for backlog reforestation has been scheduled for 1998. This will include some balsam I.U. stands.

The I.U. logging program has been successful in converting 114 ha of I.U. stands to young spruce and pine plantations. It is our intent to continue with the rehabilitation program in MP #3 as market conditions allow.

In order to respond quickly to favourable conditions, Dunkley has four I.U. blocks under cutting permit; three additional I.U. blocks with approved Silviculture Prescriptions and two more blocks in an approved Forest Development Plan. These blocks in total contain 20,218 m³.

2.4.11 Issue:

Please describe improvements to site productivity information on the TFL.

Action:

Dunkley anticipates that three components can be used to provide the Chief Forester with improved site index information for the TSA.

- i. Site index after species conversion on a stand will be based on information published by the Ministry of Forests.
- ii. The old growth site index project results, if available, will provide improved information for the older age classes on the TFL, and
- iii. The SIBEC project for the TFL will address balsam l.u. stands older age classes and partial cut areas on the TFL.

2.4.12 Issue:

How will issues associated with the implementation of the LRMP be addressed?

Action:

Dunkley is a member of the LRMP Working Group. Implementation and transition provisions are contained within the LRMP document. When the working group reaches consensus the implementation and transition sections of the Plan will be followed.

2.4.13 Issue:

The LRMP refers to the need for an IWAP on Naver Creek. It is not clear whether the IWAP will be completed prior to the TSA. If the required IWAP information is not available in time to be modelled in the base case, objectives set out in co-operation with the Regional Hydrologist must be incorporated into a sensitivity analysis.

Action:

The LRMP no longer refers to the need for an IWAP on Naver Creek. Dunkley has completed an IWAP, as modified for the Watershed Restoration Program (WRP), on the Naver Creek Watershed. This project, with Dunkley as the lead proponent, is being co-ordinated by MOF, MELP, DFO and FRBC. The purpose of this overview assessment is to aid in scheduling further WRP work in the Naver Watershed.

2.4.14 Issue:

Please indicate what stream classification work has been done to-date.

Action:

Stream classification of in-block streams is carried out as part of the fieldwork prior to submitting a Silviculture Prescription. Dunkley is also administering a Fish and Fish Habitat Inventory through FRBC. Work on the Ahbau and Willow watersheds has been submitted to the MELP for approval. The Naver watershed will be completed in 1998/99 if funding is available.

The information from the Silviculture Prescription work and the Ahbau and Willow watershed Fish and Fish Habitat inventory will be used for the base case for the timber supply analysis.

2.4.15 Issue:

Although the TFL management plan is a strategic planning document, it will not be automatically designated a Higher Level Plan under the FPC.

Action:

As TFL Management Plans are no longer included in the definition of a higher level plan, Dunkley proposes that the MP document be adopted as policy to guide forest management activities on the TFL. This would be a similar approach to that used for portions of the LRMP not declared as a Higher Level Plan.

2.4.16 Issue:

In addition to the issues identified by the Ministry of Forests, Dunkley proposes to include an initiative to reflect the ERMZ of the TFL in the LRMP. The management intent of the ERMZ is the development and enhancement of the timber resource consistent with the objectives of the RMZ.

This initiative would explore management strategies intended to meet the management intent of the ERMZ.

2.5 Inventories

During MP #2 Dunkley initiated data collection in such project areas as:

<u>Inventory Project</u>	<u>Completion Date</u>
Level D Terrain Stability Inventory	Complete
Gap analysis and Permanent Sample Plot establishment program	Complete
NSR classification reconciliation project	Complete
Interior Watershed Assessment Procedure on the Naver Creek Watershed	Complete
Recreation Use Survey	Complete
Updated Landscape Inventory	Complete
Fish and Fish Habitat Inventory: Ahbau, Willow Watersheds	Complete
Terrestrial Ecosystem Mapping project with wildlife features	June 1998
SIBEC project to improve site index information	October 1998
Fish and Fish Habitat Inventory: Naver Watershed	March 1999

The scheduled data package submission date is August 1998. Those projects scheduled for completion after that date present a problem on how to accommodate the information into the TSA. It is important that the results of these projects are included to improve the information on which the Chief Forester can base the review of the MP. Dunkley proposes that the supplementary analysis of the late arriving information pertinent to MP #3 be accommodated within the MP schedule. This will allow the schedule for completion of MP #3 to proceed, while at the same time, recognizing the importance of the additional information.

Inventory to be used in the timber supply analysis will be submitted for review and approval by the appropriate Ministry of Forests and Ministry of Environment Lands and Parks staff.

2.5.1 Forest Inventory

Dunkley completed a forest inventory in 1992. Annual updates have been carried out to keep the inventory up-to-date for harvesting and silviculture activities. Dunkley intends to use the inventory as updated to July 1, 1997 for use in the TSA. This will provide up-to-date information to the Chief Forester

2.5.2 Recreation Inventory

As discussed in Section 2.4.5 the recreation inventory has little application in operational planning on the TFL. No work to update this inventory is planned at this time.

2.5.3 Fisheries Inventory

Information from the Fish and Fish Habitat inventory will be used in the analysis of biodiversity issues in MP #3. The Ahbau and Willow watersheds are scheduled for completion by March 31, 1998. Work on the Naver watershed is scheduled for summer 1998 and will be incorporated in the analysis if available.

2.5.4 Wildlife Inventory

The TEM project on the TFL contains a wildlife component. This project, which is Phase I of the TFL SIBEC work, will be used to develop a TFL biodiversity and wildlife strategy that we intend to analyze for MP #3. The TEM project is scheduled for completion in summer of 1998. The wildlife component of the TEM will be used in the analysis of biodiversity issues on the TFL.

2.5.5 Range Inventory

Range is a very minor component of TFL activity and is not actively managed.

2.5.6 Cultural Heritage Resources

Advice from the Heritage Conservation Branch of the Ministry of Small Business, Tourism and Culture stated that there were no known heritage sites on record in TFL #53. No inventory projects are planned for this resource category.

2.5.7 Visual Quality Objectives

The landscape inventory for Highway 97 and Ahbau Lake is scheduled for completion by March 31, 1998. This updated information for Highway 97 will be included in the TSA.

2.5.8 Sensitive Soils

The ESA-soils was completed as part of the 1992 inventory. This information will be used in defining the net productive forestland base in the TSA.

2.5.9 Recreation Sites

The seven recreation sites on the TFL are included in the recreation inventory. The recreation sites will be used in defining the net productive forestland base in the TSA.

2.5.10 The Type of Timber and Terrain

A Level D Terrain Stability Assessment was completed on the TFL in 1995. This assessment is used as a key to identify where Level A assessments are needed for specific blocks.

In terms of operability, large areas of economically or physically inoperable forests do not exist on TFL #53. Individual polygons are assessed for inclusion in the net land base.

2.6 Management Options and TSA

This section presents the Management Options that are intended to be included in the TSA for MP #3.

The Base Case will examine the impact of current management practices on the timber supply.

The other options will use changes to the Base Case to examine the sensitivity of the timber supply to management options that can be explored for inclusion into MP #3.

Base Case

Purpose: To identify the short and long term harvest level based on the current level of integrated resource management, harvesting and silviculture performance.

Issue	Option	Management or Land Base Option	Run
Utilization Standards	1. Natural stands will be managed to close utilization standards and managed stands will be harvested to a minimum DBH of 12.5 cm for all species.	M	1
Deciduous Stands	1. Exclude the deciduous leading stands from the net productive land base.	L	1
Silviculture	1. Use species mix, densities and regen delay based on current performance.	M	1
	2. Model the impact of using genetically improved stock in the reforestation program.	M	1
Site Index	1. Model the impacts of improved site index information on the growth and yield of the TFL land base.	M	1
Legislated FPC Requirements	1. Model the legislated requirements of the FPC and the regulations, Prince George District Stand Level Biodiversity Policy, and Landscape Level Biodiversity following the Provincial Guide for the submission of Timber Supply Analysis Information Packages for Tree Farm Licences.	L/M	1
Sensitive Areas with approved VQO's	1. Model the impacts of the known scenic area with approved VQO's.	M	1
Roads	1. Model the reduction in permanent losses to roads and landings resulting from changes in logging systems and an increase in permanent deactivation.	L	1
Deciduous Stands	1. Model the natural succession of deciduous leading stands.	L	1
Balsam Residual Stands	1. Maintain a partitioned cut to facilitate rehabilitation under-performing balsam I.U. stands.	L	1

Sensitivity – Biological Diversity (Landscape and Stand Level)

Purpose: To determine the impact of various biodiversity management strategies on the harvest level. This batch of runs will examine different options for managing both stand level and landscape level biodiversity. This will be modelled using the options as sensitivity runs against the base case.

Issue	Option	Management or Land Base Option	Run
Biological Diversity	1. Model without the Prince George District Stand Level Biodiversity Policy building on the base case.	L/M	2
	2. Model the TFL land base with a low emphasis landscape level biodiversity emphasis, building on the base case.	M	3
	3. Model the TFL specific plan for biodiversity management (Stand-alone building on the base case).	L/M	4
	4. Model a reduced age for "old" seral age stands.	M	5

Sensitivity – Visually Sensitive Areas

Purpose: To incrementally isolate the downward pressures on timber supply related to VQO's. These runs will be structured to manage visual resources to mitigate impacts on the timber supply. These runs will examine different options for managing visual quality on the TFL, using the base case as the starting point.

Issue	Option	Management or Land Base Option	Run
Scenic Areas	1. Relax the modelling procedures for VQO's to reduce the impact of the FPC.	M	6
	2. Model the impacts of non-clear cut logging in the Highway viewshed.	M	7
	3. Model a reduction in known scenic areas.	M	8
	4. Reduce VEG height to reflect high density planting.	M	9

Sensitivity – Improved Utilization

Purpose: To assess the possibilities of changing utilization standards on the TFL. Utilization of some deciduous leading stands will be assessed. These runs will examine options to change the utilization of the fibre on the TFL, using the base case as the starting point.

Issue	Option	Management or Land Base Option	Run
Balsam Residual Stands	1. Leave the under-performing balsam I.U. stands to regenerate naturally.	L	10
Deciduous Stands	1. Include the deciduous leading stands in the net productive land base.	M	11
	2. Convert the deciduous leading stands after harvest.	M	11

Sensitivity – ERMZ

Purpose: To assess the impact of strategies that could be used to implement the management intent of an ERMZ. These runs will model the impacts of strategies that could be used to implement an ERMZ.

Issue	Option	Management or Land Base Option	Run
Silviculture	1. Model the impacts of commercial thinning and partial cutting through reduced adjacency constraints.	M	12
	2. Model the impact of a forest fertilization program.	M	13
Roads	1. Model an expanded permanent road deactivation program to increase forest productivity.	L	14
Green-up	1. Model a reduced green-up height.	M	15
OAF	1. Model a reduced OAF resulting from an enhanced level of management.	M	16

MP #3

Purpose: To assess the impacts of the management regime proposed for MP #3. It will incorporate the management options modelled as sensitivity runs that Dunkley proposes to include in MP #3.

3.0 PUBLIC INVOLVEMENT

A review strategy for TFL #53 MP #3 was submitted to the Regional Manager on August 28, 1997. The Regional Manager approved the strategy with some additions to the referral group and clarification of the referral of the draft management plan. Dunkley will comply with these changes. A revised review strategy is enclosed in Appendix No. 1.