

# MISSION TREE FARM LICENCE 26



## PROPOSED MANAGEMENT PLAN 8

FOR THE PERIOD

JULY 1, 2001 TO JUNE 30 , 2006

Proposed version: Submitted July, 2001

Prepared by:  
DISTRICT OF MISSION

A handwritten signature in blue ink, appearing to read "K.G. Allan", written over a horizontal line.

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DIRECTOR OF FOREST MANAGEMENT

## FRONT COVER

On Tuesday, April 14, 1992, His Excellency the Right Honourable Ramon John Hnatyshyn P.C., C.C., C.M.M., C.D., Q.C., Governor General of Canada and Head of the Canadian Heraldic Authority, presented a Coat of Arms to the District of Mission. This Coat of Arms is relevant to TFL 26 as it frequently depicts Mission's rich history in forestry. The symbolism of the Coat of Arms is shown below.

**SHIELD OF ARMS:** The core of the design, the shield of arms, is a new symbol in heraldry, the Mission cross, named for Mission and symbolizing three ideas: Mission as crossroads, the historic past and foundation of the community and **Mission's forest wealth**, the District's wealth drawn from agriculture, and natural heritage. On the Mission cross is placed the form of cross favoured by the Oblate Fathers, whose school marked the beginnings of Mission in modern times. The two crosses together represent the amalgamation of the City and the District into one community in 1969.

**CREST (above the Shield):** The helmet and mantling (the decorative cloth in Mission's armorial colours of heraldic silver and green) are the two traditional components of this and most coat of arms. Today they can symbolize, in the same spirit as the knight defending his lands, the determination of citizens to safeguard and strengthen their community. A golden Sto:lo canoe, honouring the First People of Mission and the ongoing importance of the Fraser for transport and fishing, support a sprig of salmonberry. This vigorous plant was important in the diet of the First Peoples and foreshadows the later importance of various berry crops nearer the present day.

**SUPPORTERS:** The grassy compartment on which the deer stand is a symbol for the rich agricultural lands by the Fraser, the site of the earliest part of the community. The multicultural character of Mission's people is represented by the linked dogwood, the provincial flower, the salmonberry and strawberry, the latter also referring to one of the Mission's outstanding early agricultural industries. The stag and the doe symbolize the men and women who have built and will build Mission; pioneers, present day citizens and future residents. **The animals also represent the rich natural heritage of Mission's highlands, in and near TFL 26.** On the pendant of the stag's collar is a **gold fir tree**, symbol of the ongoing importance of the **forest industry and the recreational value of the forest**. The doe's collar pendant features a steam locomotive wheel, recalling Mission's industrial heritage and, specifically, the part played by the railway in the Mission's development. The doe carries Mission's flag, referred to the citizen's responsibility to uphold the community's honour and contribute to its well being.

**MOTTO:** "THE FUTURE OUR MISSION". A call to the community to look ahead to the further development of Mission.

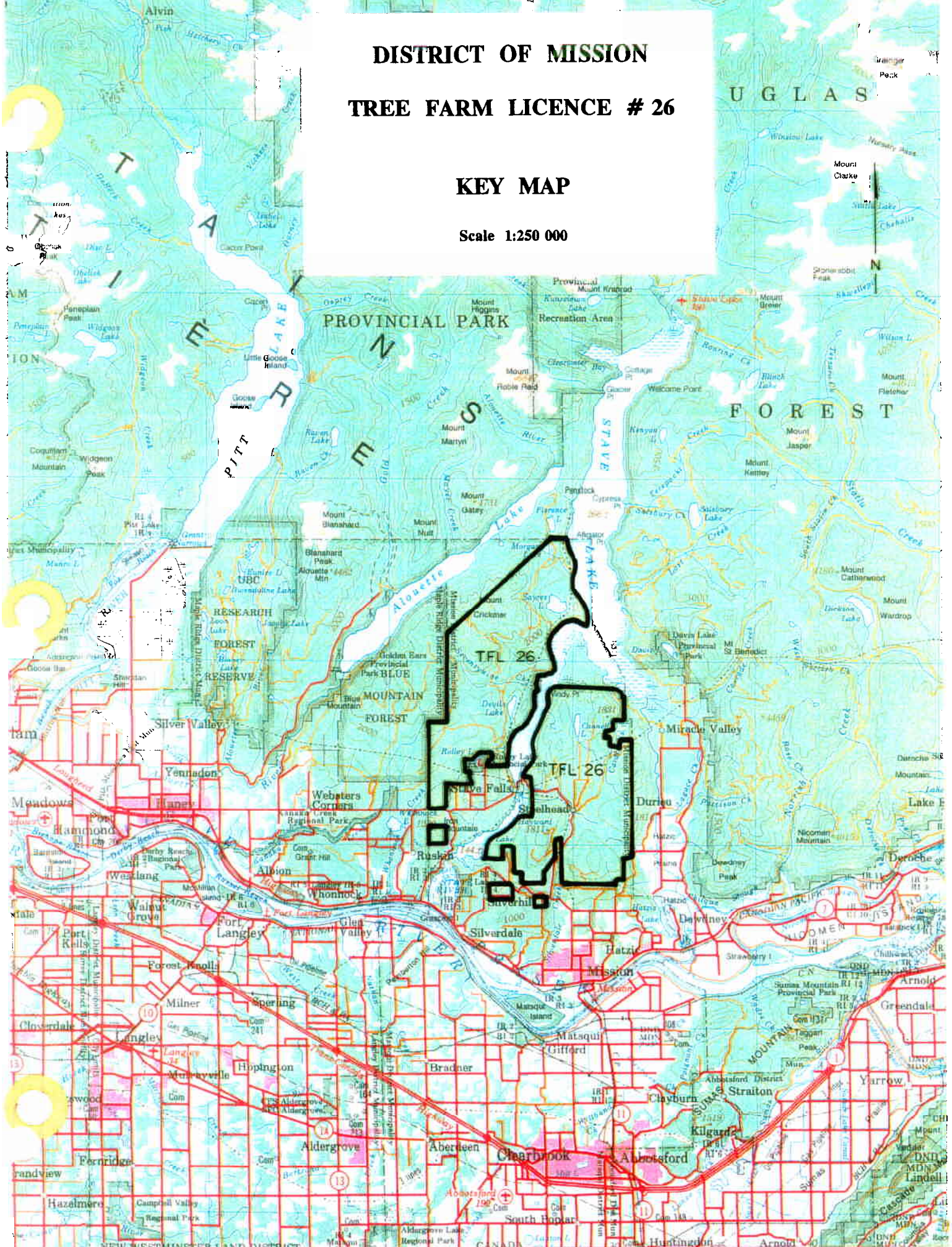
**FLAG:** Composed, according to classic heraldic laws, of the shield of arms arranged to fit a horizontal shape.



**DISTRICT OF MISSION**  
**TREE FARM LICENCE # 26**

**KEY MAP**

Scale 1:250 000





# TABLE OF CONTENTS

	Page
<b>1. Introduction</b>	<b>1</b>
1.1 Purpose of Plan	1
1.2 Content of the Plan	1
1.3 Description of the TFL	1
1.4 History	2
1.5 Description of Licence Holder	2
1.6 Socio-Economics of TLF 26	2
1.7 Manufacturing Facilities and Market Products	2
1.8 Community Involvement and Input	3
<b>2. Resource Inventories</b>	<b>4</b>
2.1 Timber	4
2.2 Growth and Yield	4
2.3 Vegetation Resource Inventory	4
2.4 Terrestrial Ecosystem Mapping	5
2.5 Recreation	5
2.6 Landscape	5
2.7 Fisheries	6
2.8 Wildlife	6
2.9 Terrain Stability Mapping	7
<b>3. Management Objectives</b>	<b>8</b>
3.1 Timber Management and Utilization	8
3.1.1 Proposed Harvest Rates	8
3.1.2 Rationale for Recommended AAC	8
3.1.3 Small Business Enterprise Program	8
3.2 Planning	8
3.2.1 Higher Level Plans	8
3.2.2 Other Planning Initiatives	8
3.3 Roads	10
3.3.1 Construction	10
3.3.2 Maintenance	11
3.3.3 Deactivation	11
3.3.4 Access Management	12
3.4 Harvesting	13
3.4.1 Harvesting Patterns	13
3.4.2 Silvicultural Systems	15
3.4.3 Stand Harvest Priorities	16
3.4.4 Specific Stand Management Strategies	16
3.4.5 Operability Line	18
3.4.6 Utilization Standards	18
3.4.7 Site Degradation	20
3.5 Silviculture	21
3.5.1 History and Achievements	21
3.5.2 Objectives	22
3.5.3 Strategies	22

3.5.4	Not Satisfactorily Restocked .....	23
3.5.5	Basic Silviculture Activities .....	23
3.5.6	Intensive Silviculture Activities .....	26
3.6	Fire Protection .....	28
3.6.1	Fire Prevention .....	28
3.6.2	Fire Preparedness .....	28
3.6.3	Fire Suppression .....	28
3.6.4	Prescribed Burning .....	29
3.6.5	Fire Fuel Management .....	29
3.6.6	Smoke Management .....	29
3.7	Forest Health .....	30
3.7.1	Detection and Treatment .....	30
3.7.2	Insects .....	30
3.7.3	Disease .....	31
3.8	Windthrow .....	32
3.9	Unsalvaged Losses .....	33
<b>4.</b>	<b>Integrated Resource Management .....</b>	<b>34</b>
4.1	Range Management .....	34
4.1.1	Background .....	34
4.1.2	Objectives .....	34
4.1.3	Strategies .....	34
4.2	Recreation Management .....	34
4.2.1	Background .....	34
4.2.2	Objectives .....	35
4.2.3	Strategies .....	35
4.3	Visual Management .....	35
4.3.1	Background .....	35
4.3.2	Objectives .....	36
4.3.3	Strategies .....	36
4.4	Fisheries Management .....	36
4.4.1	Background .....	36
4.4.2	Objectives .....	37
4.4.3	Strategies .....	37
4.5	Wildlife Management .....	37
4.5.1	Background .....	37
4.5.2	Objectives .....	38
4.5.3	Strategies .....	38
4.6	Water Resources .....	38
4.6.1	Background .....	38
4.6.2	Objectives .....	39
4.6.3	Strategies .....	39
4.7	Cultural Heritage Values .....	39
4.7.1	Background .....	39
4.7.2	Objectives .....	40
4.7.3	Strategies .....	40
4.8	Biodiversity .....	31
4.8.1	Background .....	41

4.8.2	Objectives .....	42
4.8.3	Strategies .....	42
4.9	Soils and Terrain Mapping .....	42
4.9.1	Background .....	42
4.9.2	Objectives .....	43
4.9.3	Strategies .....	43
4.10	Trapping and Guiding .....	43
4.10.1	Background .....	43
4.10.2	Objectives .....	43
4.10.3	Strategies .....	44
4.11	Mineral and Gravel Resources .....	44
4.11.1	Background .....	44
4.11.2	Objectives .....	44
4.11.3	Strategies .....	45
<b>5.</b>	<b>Special Projects .....</b>	<b>46</b>
5.1	Mission Sanitary Landfill .....	46
<b>6.</b>	<b>Forest Development Plan .....</b>	<b>47</b>
<b>7.</b>	<b>Contracting .....</b>	<b>48</b>
<b>8.</b>	<b>Revision .....</b>	<b>49</b>
<b>9.</b>	<b>Calendar Year Report .....</b>	<b>50</b>
<b>10.</b>	<b>Public Involvement .....</b>	<b>51</b>
10.1	Consultation with Other Resource Users .....	51
10.2	Public and Agency Involvement .....	51
<b>11.</b>	<b>Review Comments and Differences Between MP's .....</b>	<b>52</b>
11.1	Comments Provided by Regional Manager .....	52
11.2	Comments Provided by Resource Agencies .....	57
11.3	Comments from Public Review Strategy .....	57
11.4	Differences Between Draft and Proposed MP's .....	57

# 1. INTRODUCTION

## 1.1 PURPOSE OF PLAN

The purpose of the proposed management plan (PMP) is to:

- Present to the Ministry of Forests Chief Forester for approval, the District of Mission's objectives and strategies for managing resources within TFL 26.
- Incorporate where appropriate, comments from the Ministry of Forests, other agencies and the public.

The PMP sets out proposed management decisions in the form of management objectives, management strategies, resource use assumptions and proposed 20 year timber supplies. The PMP also includes a proposed allowable annual cut (AAC) for the first five years of its long term timber supply objective.

## 1.2 CONTENT OF THE PLAN

PMP 8 consists of:

- management objectives for the different forest resource uses on the TFL and the management strategies to achieve these objectives.
- in the appendices, the SMOOP, the Timber Supply Analysis Information Package and the Timber Supply Analysis and Twenty Year Plan .
- a map folio containing a series of maps that identify different resource uses and values to prepare the PMP. All maps are at a scale of 1:20,000. Specifically, the maps included show the following information:
  - Base map showing forest cover and biogeoclimatic zones;
  - Twenty Year Plan;
  - Recreation Inventory;
  - Visual Quality Objective;
  - Terrain Stability, and
  - Riparian and Water Management and Stream Classification.

## 1.3 DESCRIPTION OF THE TFL

Mission Tree Farm Licence 26 is one of only two TFL's in British Columbia held directly by a municipality. As well as being a designated TFL, Mission views the operation as a "community forest" and commonly refers to the overall program as the "Mission Municipal Forest".

TFL 26 is generally located in the northern half of the District of Mission which is approximately 70 kilometres east of Vancouver in the north-central Fraser Valley. The licence encompasses 10,560 hectares split into two similar size parts one each on either side of the lower arm of Stave Lake. The terrain is variable with most of the area between

100 to 700 metres above sea level. However, a section in the northwest corner reaches up to the highest point in Mission at 1,356 metres above sea level. Biogeoclimatic zones are predominantly CWHdm and CWHvm1 although there is some CWHvm2 and MMH in the higher elevations.

A philosophy Mission has is that by having direct control of forests in it's "backyard", the municipality can help reach it's overall forestry goal to manage TFL 26 considering integrated use, environmental principles, forest management knowledge and legislative requirements to optimize economic, social and environmental forest values.

#### 1.4 HISTORY

TFL 26, one of the smallest in B.C. in terms of Annual Allowable Cut, has been managed by the District of Mission continuously since it's start in 1958. The TFL has grown a bit in size since it's inception with the addition of adjacent parcels of mainly crown land at various times. A legal description of the TFL is contained in the Licence Area section in the Appendices.

#### 1.5 DESCRIPTION OF LICENCE HOLDER

The District of Mission is a municipal corporation under the Municipal Act of BC. Mission TFL 26 is held directly by the District of Mission and managed by it's Forestry Department with some support services provided by other departments and consultants. The management is very localized with all involved municipal staff located in the same vicinity.

The municipality's population in the year 2000 was about 33,000 and expected, using current trends as analyzed by the Community Development Department, to grow about 2% per year to reach approximately 41,000 residents in the following ten years. The municipality has a fairly broad base of economic activity including significant involvement by the forest industry and is a residence of many forestry workers.

#### 1.6 SOCIO-ECONOMICS OF TFL 26

The District of Mission employs eight full time people directly to manage and work in TFL 26. Up to ten other District of Mission employees are employed occasionally for casual or related services to the operation. In addition, about 25 more contract and consulting employees are involved for various full and part time functions directly in the TFL during the year.

Some of the TFL benefits include providing for community capital assets or offsetting residents' tax burden, local employment, recreational opportunities and forest education.

#### 1.7 MANUFACTURING FACILITIES AND MARKET PRODUCTS

TFL 26 has no manufacturing facilities nor any requirements to do so. As such, Mission's market products are primarily logs supplemented by relatively small amounts of salvage wood and botanical products. The species profile is mainly all second growth western hemlock, Douglas-fir and western red cedar with minor amounts of amabilis fir, yellow cedar and deciduous. The District of Mission does not own or manage a dry land sort.



## 1.8 COMMUNITY INVOLVEMENT AND INPUT

By virtue of the District of Mission being a local government body, the public has ready access to information and input processes. In addition, the Mayor and six Councilors, who are elected for a term of three years, have a Committee of the Whole structure which includes forestry issues for TFL 26. Their overall Committee of the Whole meets on a regular basis and is open to the public. The Councilors also make themselves available to the public for discussion and input.

The Forestry Department is one of the departments in the District of Mission management and operations structure. As such, information about the TFL is shared regularly at various municipal meetings and so a broad array of municipal employees are familiar with the operation.

## 2. RESOURCE INVENTORIES

### 2.1 TIMBER

During the term of MP 6, a major re-inventory of the entire TFL was done in 1988 and early 1989. This re-inventory utilized 1988 aerial photography and extensive ground sampling. This inventory was used for MP 7.

The TFL forest inventory has been updated for depletions to January 1, 1998 and has been projected for growth to January 1, 2000. This current inventory was used for the timber supply analysis as detailed in the Appendices section of this report.

Mission maintains a Geographic Inventory System (GIS) with which the existing inventory is updated every 2 -3 years. This update schedule is appropriate considering the small size of Mission TFL. All map sheets are on the Terrain Resource Information Management (TRIM) map base in NAD 83 format. In 1995, low elevation aerial photographs were used to determine a significantly more accurate level for all creeks, lakes, roads and contours in the TFL. The contours are now mapped at a 5 metre interval.

Section 2.3 addresses the issue of a timber re-inventory for TFL 26. Inventories will be conducted for new areas added to TFL 26, as necessary.

### 2.2 GROWTH AND YIELD

Due to the small size of the TFL, no formal Growth and Yield plots have ever been established.

### 2.3 VEGETATION RESOURCE INVENTORY

From 1995 to 1997, the Ministry of Forests conducted Phase 1 (photo interpretation) of a VRI project which covered all of the Fraser TSA and some parks. Due to FRBC funding limitations, TFL 26 was not included in this project as it was felt by the MOF that the TFL inventory was newer and of significantly higher quality than the existing TSA inventory.

In 1999 and 2000, about 85 Phase 2 ground plots were being established throughout the TSA. Again, the TFL was not included for the same reasons as above. The Phase 2 plots will help the TSA at its overall planning level although there may be limited operational level information due to the limited number of plots established. The District of Mission will continue to monitor the progress of the TSA VEG project and incorporate any relevant information gained into the TFL where feasible.

At this time, the TFL timber inventory is still providing accurate overall results and will continue to be used with no plans of a re-inventory during the term of MP 8. However, the District of Mission is concerned with what appears to be relatively low site indexes in the inventory compared to recent silviculture survey results and as such, may conduct some field work and a subsequent analysis of this function. If this work is conducted, Mission intends to review the proposed method of site index data collection with the MOF Research Branch to ensure its acceptability for use in any future timber supply analysis.

## 2.4 TERRESTRIAL ECOSYSTEM MAPPING

Although Forest Renewal BC funding has been applied for, no funds have ever been made available to TFL 26 to conduct a TEM project. The District of Mission remains interested in conducting this type of project and will consider doing so should FRBC or similar funding become available. If this project is done, potential objectives may include items such as improving information and planning processes related to ecosystem mapping, wildlife habitat, site index determination, TFL development and biodiversity.

## 2.5 RECREATION

A Recreation Inventory and Recreation Analysis were completed in 1993. This inventory has only had minor updates to recognize new features, particularly recent trails.

The Recreation Inventory identifies both actual and potential recreation features, their location and the sensitivity of a feature related to forest management activities. Although the inventory found that the TFL does not contain areas of unusual or rare regional recreation significance, there are some popular recreation uses. These include several hiking or multi-purpose trails on both crown and private land, two lakes and numerous road systems used for hunting, hiking, accessing good viewpoints and other recreational activities.

The Recreation Opportunity Spectrum (ROS) mapping which indicates relative access and wilderness criteria for recreation areas shows that the entire TFL 26 is classified as "Roaded Resource" category. This indicates a relatively high level of forest accessibility.

In addition, using MOF Environmentally Sensitive Area classification, 74.8 hectares of the TFL are classified as moderately sensitive to recreation (E2r). These areas are generally located near Devil's Lake, Hoover lake and the Rolley Falls Trail. In the timber supply analysis, due to various land base exclusions, only 18.0 ha. or 32.5% of the timber in these areas remains in the Timber Harvesting Land Base.

The Recreation Analysis assesses the supply of recreation opportunities (features, activities, settings) in TFL 26 with existing use and future projected demand for public recreation. Several management objectives were developed in the analysis to meet the existing and future recreation demands.

The recreation inventory will be reviewed during the term of MP 8 to determine if significant changes have resulted that may reflect on management objectives. Where such changes occur, the inventory will be updated. Maps of the updated Recreation Inventory are included in Appendices section of this plan.

In March 1999, a Forest Renewal BC funded Forest Recreation Plan was completed which amalgamated various recreation documents, data and ideas into one central plan for TFL 26. This plan provides a vision for recreation within TFL 26, goals for managing the recreation resource and features and identifies future forest recreation opportunities.

## 2.6 LANDSCAPE

A Landscape Inventory and Analysis for TFL 26 was completed in 1993 and used in MP 7. Due to some concerns with how the inventory had been conducted combined with new standards, an FRBC funded project was conducted in 1998 and early 1999 to complete a

new Visual Landscape Inventory for the entire TFL. The inventory classified and recognized the range of visual values and sensitivities in TFL 26 and is documented in a map included in the Appendices section.

Approximately 60% of the TFL is classified as having some visual values in the new VLI. This will have a significant impact on timber availability in the timber supply analysis although this percentage is less than the former visual inventory.

The results of this inventory were incorporated with the surrounding TSA inventory with interim recommended Visual Quality Classes produced in 2000 for the TFL. From these, plan view denuded % figures were determined for each VLI polygon for use in the timber supply analysis. These levels of permitted denudation help maintain the visual objectives for the TFL and provide guidelines for harvesting. The table shown below summarizes the percent alteration limits being applied in the timber supply analysis to the different rVQC polygons:

**Table 1**  
**Maximum % Alteration for rVQC Zones**

rVQC Zone	THLB Area (Ha.)	Productive Area (ha.)	Height (m.)	Maximum % Alteration < Ht.
PR-H	567	728	4	5
PR-M	1,433	1,922	4	10
PR-L	1,678	2,300	4	15
M	480	564	4	20

## 2.7 FISHERIES

A comprehensive default stream classification system was developed for the TFL and submitted with the 1998 Forest Development Plan. The same classifications, upgraded with new information, were used for the current 2000 Forest Development Plan. This classification identifies both fish and non fish bearing streams.

During the development of the FDP, where fish presence is seen as a reasonable possibility, but not positively known, fish presence is assumed. However, when subsequent logging or road development is scheduled to take place adjacent to a creek where fish presence or absence is suspect, an on-site fish inventory of the creek is carried out to positively identify whether fish are present or not.

## 2.8 WILDLIFE

No areas have been classified as sensitive to wildlife (Ew) in the TFL under the MOF Environmentally Sensitive Area process which was confirmed by Fish and Wildlife Management personnel for MP 7. No wildlife inventory has been carried out in the TFL to date.



## 2.9 TERRAIN STABILITY MAPPING

An FRBC funded TSM project was completed for the entire TFL from 1997 to 1999. Areas not in Community Watersheds were mapped to a 'C' level while areas within the Kenworthy and Cannell Community Watershed areas were mapped to a 'B' level.

Using geological, hydrological and topographical information gathered from aerial photographs and field visits, this inventory classifies the TFL into units ranging from Terrain Stability Class I (no terrain stability problems expected) to Terrain Stability Class V (high likelihood of landslides following development). The resultant classifications are then used regularly to determine what type of forest management is appropriate and what level of more detailed geo-scientist analysis is required prior to development. Terrain Stability Classes IVR, IV and V respectively have timber harvest netdowns in the timber supply analysis of 10%, 30% and 80% with the total of these three netdowns equaling 810.9 ha.

A map in the Appendices section shows terrain stability mapping.

### **3. MANAGEMENT OBJECTIVES**

#### **3.1 TIMBER MANAGEMENT AND UTILIZATION**

##### **3.1.1 PROPOSED HARVEST RATES**

The proposed harvest rate for the period of Management Plan 8 is 43,000 cubic metres per year, an increase of 1,000 cubic metres from the current harvest level. No AAC is proposed for the deciduous partition. The proposed harvest rate includes the Small Business Forest Enterprise Program cut detailed in section 3.1.3. The Timber Supply Analysis Report in the Appendices section of this plan provides the supporting data and analysis results which led to the recommended harvest level.

The proposed harvest rate is higher than the current coniferous AAC, despite the smaller timber harvesting landbase (9.5%) compared to the last timber supply review. The current, less restrictive Visual Quality Objective (VQO's) in the Visual Landscape Inventory as well as some modifications in minimum harvestable ages since the last timber supply review account for most of this increase. The minimum harvest ages used in the new timber supply analysis have been modified to reflect current management in the TFL as shown in the timber supply analysis Information Package.

##### **3.1.2 RATIONALE FOR RECOMMENDED AAC**

The timber supply analysis indicates that the timber supply in TFL 26 is strong. The recommended harvest rate does not compromise future harvest rates. It will eventually produce a balanced age class distribution, while also achieving the old growth retention targets. Adopting the landscape reserve plan, which is explained in Biodiversity section 4.8, will only have a small long-term impact on the timber supply.

##### **3.1.3 SBFEP**

The Small Business Forest Enterprise Program (SBFEP) has an allocated annual cut of 1,602 m3 AAC of crown timber on the TFL as established in 1988 under section 32(2) of Bill 28. This volume has been historically allocated to SBFEP on a block by block basis through a negotiating process every five years. This method is planned to continue.

#### **3.2 PLANNING**

##### **3.2.1 HIGHER LEVEL PLANS**

No higher level plans exist within or related to TFL 26.

##### **3.2.2 OTHER PLANNING INITIATIVES**

###### **3.2.2.1 Landscape Unit Plans**

Landscape units have been identified in the draft Landscape Unit plan for the Fraser TSA. Over 90% of the TFL falls into the Hatzic Landscape Unit which has been assigned a preliminary biodiversity emphasis option of low. Less than 10% of the TFL falls into the

Alouette Landscape Unit which has been assigned a preliminary biodiversity emphasis option of intermediate. Landscape Units were ranked according to a set of criteria that took into account the current biological diversity of each landscape unit.

The TFL makes up approximately 13% of the Hatzic LU. The remainder consists primarily of MOF Small Business Forest Enterprise Program forest area as well as urban, rural and farming areas.

The TFL makes up approximately 2% of the Alouette LU. The remainder of the area consists primarily of Golden Ears Provincial Park with some other forested areas and rural and urban areas.

In the absence of an approved Landscape Unit Plan, the Biodiversity Guidebook and District policies for managing biodiversity were used as a guide in implementing the objectives for biodiversity for the Landscape Units. The Landscape Unit Planning Guide was also referred to in determining the appropriate objectives and strategies. While priority was given to the establishment of long-term old growth management areas and wildlife tree retention, the requirements for seral stage, landscape connectivity and species composition were also considered.

#### 3.2.2.2 Local Resource Use Plans

Local Resource Use Plans (LRUP) are sometimes used to establish management guidelines for integrating different resource uses in a specified area. Local resource uses may include such items as recreation, fishing, hunting and domestic watersheds. The Recreation Inventory and Recreation Analysis reports have already included adequate consideration for these resource uses in this Management Plan. No LRUP's exist that influence the TFL area.

#### 3.2.2.3 Twenty Year Plan

The Twenty Year Plan identifies the area and timber volumes, in 5 year periods or quartiles, to be harvested from the TFL between 2000 and 2019.

The objective of the plan is to provide a long term planning tool that will supplement and guide the Forest Development Plan. The plan considers harvesting objectives as well as the requirements for other resource values. While the plan focuses on activities within the TFL, the impact on biodiversity requirements within the entire landscape unit are also considered.

The Twenty Year Plan is tied spatially and temporally to the Timber Supply Analysis. By using this approach, the impact on timber supply can easily be determined for any change to the plan. The use of GIS technology also allows for more efficient updates to the Twenty Year Plan, both spatially and graphically. There is an opportunity to update the Twenty Year Plan along with Forest Development Plan updates to reflect changes as a result of field confirmation.

The Twenty Year Plan is shown in detail in the Appendices along with the timber supply analysis. The plan includes detailed harvest summaries and a spatial representation of harvesting, access requirements and interaction with other resource objectives including old growth management areas.

An optimization algorithm was used to link the timber supply analysis with operational and tactical planning to generate a spatially feasible twenty-year plan. The focus of the

twenty-year plan is on the achievement of a suitable blocking pattern and harvest schedule. The blocks for the first 5 years were hardwired in the model from the latest approved forest development plan, and the other input data, including forest cover constraints, were maintained from the timber supply analysis. A desired future condition was not modeled in the twenty year plan, as there were no patch targets or other landscape level spatial targets that needed to be reached over time. The forest cover constraints essentially defined the desired future condition.

There are some inherent conflicts between the twenty year plan and the set visual quality objectives. In some cases, more harvest may be proposed in an area than visual quality cover constraints would formally allow. It is important to note that many visual quality constraints can be successfully dealt with in practice through landscape design. As such, these constraints are somewhat theoretical and often difficult to model adequately in timber supply modeling.

Significant amounts of the visual quality related harvest-scheduling conflicts pertain to the blocks in the Ministry of Forests approved forest development plan for the next five years. Mission is confident that these blocks can be harvested without adverse visual impacts through careful design and public consultation.

In summary, the Twenty Year Plan shows that the proposed annual allowable cut of 43,000 m<sup>3</sup>/year can be maintained over the term of Management Plan 8. This level includes an allocation of 1,602 m<sup>3</sup> per year for the SBFEP.

### 3.3 ROADS

#### 3.3.1 CONSTRUCTION

Tree Farm Licence 26 is a small TFL with a relatively well developed major arterial and secondary road system in most areas. The 1:20,000 scale maps in the Appendices section show existing TFL roads while the Twenty Year Plan map shows the projected main road development in the next 20 year period.

Most operational roads are constructed to MOF Class 5 standards which require a stabilized subgrade width of five metres. Where circumstances necessitate, however, road construction standards are based on the following factors:

- Terrain, soil and environmental factors;
- Timber volumes being accessed; and
- Anticipated level of traffic including the public and other industrial users.

The Florence Lake Forest Service Road, which roughly parallels the southwestern side of Stave Lake for 18 km., is the only Forest Service road in the TFL and is mainly constructed to a Class 5 standard with some Class 4 sections, which requires a stabilized subgrade width of six metres.

Planning of all major access roads will be carried out to allow for orderly development or harvesting. Design and location of roads will consider maximum favourable grades of 15% and maximum adverse grades of 10% in order to maintain reasonable average hauling speeds and contribute to ease of maintenance. There will be no restriction on the use of roads by forest industrial users although road use agreements and payments may



be required. Temporary industrial users will be charged a maintenance fee for each truckload hauled only if use exceeds 2 days and will vary according to load size and truck type.

All access structures will be built in accordance with the Forest Road Regulation and be guided by the Ministry of Forests Engineering Manual and the Forest Road Engineering Guidebook. The construction techniques used will comply with Forest Practices Code Act standards. Principles related to the "total chance" concept shall be followed in the planning of all access development.

Over the term of MP 8, Mission plans to construct approximately five kilometres of road per year.

### 3.3.2 MAINTENANCE

Mission will carry out road maintenance in accordance with the FPC Act. Road maintenance on the TFL is enhanced through an intensive patrol of roads to identify potential areas of concern, particularly during periods of heavy rainfall. This proactive approach generally identifies areas of concern before they become a problem. Areas of concern include:

- Plugged culverts and ditch lines;
- Channeling or puddling of water on road surfaces; and
- Tension cracks or other signs of fatigue in the road prism.

Road construction techniques also consider the inclusion of self-maintaining structures such as fords in place of or as a fail safe for culverts and depressions or dips in the road surface at watercourses. In-sloping or out-sloping of the road surface on temporary roads is also considered to minimize the degree of maintenance required.

The objectives of road maintenance on the TFL are to:

- Minimize sedimentation, erosion and potential impact on downstream values;
- Control water;
- Minimize degradation of road surfaces; and
- Minimize the amount of maintenance required by building self maintaining structures into the road during construction.

### 3.3.3 DEACTIVATION

Deactivation is carried out through implementation of a comprehensive access management plan scheduled through the Forest Development Plan and identified through access management recommendations as a result of watershed assessments.

Level of deactivation is determined based on condition, future need and level of access required for the road and includes temporary, semi-permanent and permanent.

The general public, agencies and First Nations can provide input on the level of deactivation through forest development plan reviews. This input is helpful due to the degree of recreational and other resource use within the TFL.

Priorities for deactivation on existing roads are based on condition of the road and the potential for road failure. Priority will be given to road systems that have the following attributes:

- Roads on steep hillsides with slopes greater than 60%;
- Roads built several years ago when bulldozer construction with large cuts and fills were common; and
- Roads in areas of the TFL receiving higher rainfall.

The objectives of deactivation in the TFL are to:

- Minimize maintenance required by putting the road in a self-maintaining state.
- Establish or reestablish natural drainage patterns
- Minimize potential for sedimentation and road failure
- Maintain or enhance water quality
- Ensure public, licensee, agency and First Nations concerns are addressed when determining level of deactivation
- Carry out "four wheel drive" access deactivation where possible rather than full deactivation to ensure ongoing access for forest management activities and fire protection purposes.

Future road deactivation will be identified as part of an access management plan for all roads in the TFL. Currently, seasonal or temporary deactivation is carried out annually for most active road systems. Most inactive roads are already deactivated to a seasonal level and are monitored annually

### 3.3.4 ACCESS MANAGEMENT

Mission recognizes the principle of generally providing unrestricted public access to many crown land areas within the TFL. A well balanced forest management program requires some public access restrictions in the following circumstances:

- A significant fire hazard exists;
- Security for machinery or facilities and to prevent excessive vandalism or garbage dumping;
- To provide for non-motorized forest recreational experiences in a relatively urban area like Mission and to protect a recreation opportunity;
- To limit damage to roads or areas sensitive to excessive use;
- To protect the privacy and enjoyment of residents in our community along municipal roads who live near the forestry roads;
- To protect community drinking water values such as in the Cannell Lake drainage;
- To protect limited wildlife or fisheries values such as in Hoover Lake; and
- Safety concerns.

Where access is limited, Mission maintains a liberal 'key-loan' policy for recreation, hunting or general public use. This policy has worked well without public, agency or licensee concern for several years and will be continued.

#### 3.3.4.1 Road Signs

TFL 26 does not generally use a system of posted road signs to guide logging traffic, except on the Florence Lake Forest Service Road. The Florence Lake Forest Service Road is open to the public at all hours and has extensive non-logging traffic so road and speed signs are maintained. All logging trucks are "highway" size (less than 2.5 metres wide) and roads are of sufficient widths that these procedures have never been required for safety on all other TFL roads.

Notice signs are posted at the start of certain roads to specify if active logging is in progress. Other signs are used to specify if roads have been permanently deactivated or if there are gates to be aware of.

#### 3.3.4.2 Radio Usage

Logging traffic is not controlled by radio usage in the TFL. However, District of Mission vehicles are equipped with two way radios which are used for communication within and between departments. The radio frequency is 150.800 for Rx and 155.54 for Tx.

### 3.4 HARVESTING

#### 3.4.1 HARVESTING PATTERNS

##### 3.4.1.1 Block Size

In Management Plan 7, harvesting patterns in TFL 26 were determined by several factors. Firstly, as the TFL is comprised primarily of second-growth stands with a small component of over mature timber, harvesting patterns were determined partially by stand maturity, particularly in the lower slope areas where extensive harvesting occurred in the early 1900's.

Harvesting units have traditionally varied in shape and size in order to provide for post-harvesting treatments, protection from windthrow as well as consideration for impacts to fish, water, wildlife, recreation, aesthetics, greenup, adjacency and other values.

During the term of MP 8, harvesting units will continue to be designed in consideration with the above points and will generally be limited to an average maximum size of 25 hectares. In practice, cut block size will be designed on a site specific basis and often will average from 10 to 15 hectares although the range can be from smaller than 1 hectare up to about 40 hectares, where warranted. The relatively small cut block size is quite often determined by natural boundaries such as young, immature timber surrounding patches of older second-growth timber.

During the latter part of Management Plan 7, biodiversity objectives including wildlife tree retention and landscape reserve have been taken into account in block size rationale. Block sizes in MP 8 will show a variety of sizes as described above.

##### 3.4.1.2 Timber Profile

Harvest patterns during MP 7 reflected the entire timber profile of coniferous trees. Variations occur annually to reflect priorities such as market values and forest health concerns. Full utilization of the profile will also be the long-term objective in considering harvest patterns over the term of Management Plan 8 to avoid a future shift toward a species mix heavier in less desirable species although short term variations will again occur where warranted by other considerations.



### 3.4.1.3 Terrain Profile

TFL 26 has a wide variation in terrain. The topography of the TFL varies from fairly steep slopes in the northern section of the western part of the TFL to more gentle and moderately sloped areas through most of the eastern side and the southern half of the western part of the TFL.

Cable harvesting will continue to be used in most areas although ground based methods will also be used regularly where conditions permit. TFL 26 has a long history of successfully using a skidder, and more recently an excavator, to remove timber within soil degradation guidelines. This will continue in MP 8 where judged appropriate. Helicopter or aerial methods may be used although this use is believed to be fairly infrequent.

### 3.4.1.4 Seasonal

In general, each harvesting area will be examined to assess and prescribe the optimal logging season. The determining factors will include access, slope, terrain, silvicultural objectives, harvest priorities, protection of the environment and forest resource values.

Specifically, harvesting in high-elevation areas will be minimal in the next twenty years. The stand cutting priority on the TFL has shifted mainly to second-growth stands in low and middle elevations.

On average, the projected seasonal cutting programs involve less than 5% in high-elevation stands that usually consist of over mature, lower quality mountain hemlock, balsam and cypress species. Due to their elevations, these stands will be harvested during the summer and fall months. The lower and middle elevation stands will be harvested in all seasons with less emphasis on the winter months or during high fire hazard periods.

Harvesting of forest lands is and will continue to be carried out to coastal close utilization standards.

## 3.4.2 SILVICULTURAL SYSTEMS

The primary silviculture system utilized on the TFL in the past has been clearcutting with a recent shift to clearcutting with reserves which combines varying degrees of retention. Retention strategy has generally included wildlife tree patches combined with individual or clumped wildlife trees and riparian reserves or management zones. Select harvesting has been utilized primarily within riparian management zones and along block edges by "feathering" to promote wind firmness.

During the term of MP 8, biodiversity objectives will play a major role in determining appropriate silviculture systems. Partial cutting or variable retention systems are identified on the current 2000-2005 Forest Development Plan to be used in most future areas. This system maintains varying percentages of timber for wildlife, old growth retention and riparian protection. Use of this silviculture system will aid in reducing fragmentation on the TFL while addressing other resource values.

The lower and middle elevation areas in the TFL generally consist of second-growth stands predominantly with western hemlock and Douglas-fir. As coastal Douglas-fir is shade intolerant, particularly in Mission's wetter climate and mistletoe is frequently present in the western hemlock, partial cut harvesting systems will generally be designed to let in to the forest a significant amount of sunlight.

The upper elevation areas consist of stands with more shade tolerant tree species which could possibly regenerate adequately using selective or partial cutting systems. However, several factors indicate that partial or selective logging generally is not a practical option for these areas:

- Rugged terrain precludes the use of ground skidding and limits the ability of cable or aerial systems to perform effective selective logging harvesting methods;
- Extreme wind and weather would create significant blowdown concerns; and
- Forest management economics are often more marginal in these stands and generally not justifiable for harvesting because of increased development and harvesting costs.

Coastal harvesting sites occasionally require prescribed burning to prepare for regeneration or reduce fire hazard. Mission prefers to regenerate harvesting sites without burning whenever possible primarily due to considerations for smoke management in the Fraser Valley, a high air pollution area. By following close utilization harvesting standards in second-growth stands, proper regeneration is normally always achievable by Mission without broadcast burning.

Commercial thinning, as explained in section 3.5.6.3 will also be used to provide for non-clearcut fiber requirements. Other alternate silviculture systems, as approved by the MOF, may be used on a trial basis during the term of MP 8.

### 3.4.3 STAND HARVEST PRIORITIES

In general, stand cutting priority is currently determined by a number of factors including stand age, condition, biodiversity, site productivity, visual, forest health, accessibility, species mix as well as current and projected markets.

Harvesting priorities will be considered as follows:

- Stands where action is required to address insect and disease concerns.
- Salvage of wind thrown or fire damaged timber to minimize the potential for insect outbreaks and reduce unrecovered losses.
- Target stands that will help in achieving the desired spatial distribution of old growth management areas over the landscape unit, in the shortest time frame possible, while minimizing the impact on timber supply and other resource values.
- Target stands that will help in achieving the desired seral stage distribution over the landscape unit, in the shortest time frame possible, while minimizing the impact on timber supply and other resource values.
- Decadent or stagnated stands which are not required for old growth management where harvesting will improve site productivity.
- Other healthy, vigorous stands which meet minimum harvesting criteria.

### 3.4.4 SPECIFIC STAND MANAGEMENT STRATEGIES

#### 3.4.4.1 Problem Forest Types

In general, TFL 26 is fortunate in having forest types with very few significant silvicultural or forest management problems. The existing problem forest types to consider are:

Non-merchantable: Recent analysis identified a total of 196.2 hectares of non-merchantable stands in the productive land base. Any areas in this category that exhibited all the following attributes have a 100% netdown:

- High elevation (over 800 metres);
- Over mature (200 years plus);
- Low density (crown closure 50% or less) stands; and
- On poor sites.

This has resulted in 117.6 ha. being netted down from the timber harvesting land base. The determination of the above criteria for deciding on uneconomic areas is guided by the knowledge of local, long term staff and has been found to be fairly site specific.

Deciduous stands: TFL 26 has 815.4 hectares of deciduous leading stands which have traditionally been excluded from the land base contributing to the recommended harvest rate due mainly to:

- Poor markets for deciduous species;
- Generally low volume per hectare;
- Unfavourable access costs due to having to construct new roads to access the deciduous stands. This factor becomes more consequential as the deciduous stands usually have about half the volume per hectare of coniferous stands. As such, the high road cost per cubic metre of harvested deciduous timber is proportionately about double that of harvested coniferous timber; and
- Expensive reforestation costs for harvested deciduous stands due to:
- Higher cost per cubic metre logged as deciduous volumes are about half conifer volumes per hectare;
- Highly productive soils which favour rapid growth of brush species; and
- Brush being well established prior to harvesting due to a lower density in the deciduous canopy.

In MP 7, a partition annual allowable cut of 3,000 cubic metres was established for deciduous stands. Due to various factors as mentioned above, this partition cut was not utilized in MP 7. Although it is the jurisdiction of the MOF Chief Forester to determine if a partitioned cut is necessary, Mission preference is that no special partition cut for deciduous will be used in MP 8. Deciduous species utilization will be optional and any deciduous wood scaled will have the volume applied to the regular annual allowable cut.

Higher density second-growth: For sake of completeness, this issue is mentioned as a potential one although it has never posed a significant operational problem. TFL 26 has numerous areas of second-growth, hemlock leading stands that are relatively dense. Although these stands produce reasonably high volumes per hectare, they have a relatively high percentage of gang sawlog, chip-n-saw and pulp wood. These stands provide a significant portion of the historical harvest profile. Market prices from the previous business cycle and future projections indicate these stands still will be viable for harvest and consequently were included as usual in determining the harvest rate.

Mission believes there is no justification to space the existing older stands in this type as the return on investment will not be warranted. Many of the younger stands of this type have been spaced in recent years and Mission will seek funds to space any new stands of this type. In addition, Mission will be responsible to space any future stands that exceed maximum density standards as approved in each Silviculture Prescription.

#### 3.4.4.2 Deciduous Stands

All deciduous leading stands are deducted from the timber harvesting landbase. Deciduous species include mainly red alder leading stands with some big leaf maple, birch and cottonwood. There is a total of 815.4 ha. of deciduous leading stands on the TFL.

Mission intends to retain the majority of deciduous leading stands for their contribution to biodiversity, wildlife habitat and aesthetics. Where favourable market conditions exist, a portion of the deciduous leading stands may be harvested.

While the long term viability of deciduous stands is less than coniferous stands they do form an important component of the natural landscape and landscape diversity.

The deciduous component in merchantable conifer leading stands (primarily alder, maple, cottonwood and birch) is utilized when markets are available. This deciduous volume is not included in the total available merchantable volume as identified in section 6.10 of the Timber supply analysis information package.

In MP 7, a partition annual allowable cut of 3,000 cubic metres was established for deciduous stands. Although it is the jurisdiction of the MOF Chief Forester to determine if a partitioned cut is necessary, Mission preference is that no special partition cut for deciduous will be used in MP 8. Deciduous species utilization will be optional and any deciduous wood scaled will have the volume applied to the regular annual allowable cut.

#### 3.4.5 OPERABILITY LINE

Operability lines show the limit of areas which are physically accessible to conventional harvesting systems. Comprehensive operability mapping was completed and used for the timber supply analysis of MP 7. The same mapping has been used for MP 8 as no significant factors have changed. Due to a combination of poor quality, low value timber, low timber volumes and difficult, expensive access, this mapping identified 192.6 hectares of netted down inoperable stands which were not used to determine the recommended AAC.

Above the operability line, two areas totaling 15.9 hectares gross size have been included as areas containing stands available for harvesting by aerial systems. These two areas were included in determining the recommended AAC.

As TFL 26 is relatively small and well developed, the current operability line is felt to be an accurate projection of future development. Operability lines will be adjusted in the future where either conventional or unconventional harvesting methods are then determined to be feasible or not. In general, the operability line is intended to be a guideline which provides a geographic link with the timber supply analysis but not a firm limit of operability if future circumstances dictate otherwise.

#### 3.4.6 UTILIZATION STANDARDS



Utilization standards will conform to those specified in the TFL 26 document issued to the District of Mission which are normally based on the MOF "Coast Utilization Standards". Although not required to be shown here, for reference Table 2 lists the current TFL 26 document standards.

**TABLE 2**  
**UTILIZATION STANDARDS - COAST**

Category (for all species)	Age (Years)	
	Immature 1-120	Mature 121+
Maximum stump height	30 cm.	30 cm.
Minimum top diameter or slab thickness	10 cm.	15 cm.
Minimum log or slab length	3.0 m.	3.0 m.

### 3.4.7 SITE DEGRADATION

#### 3.4.7.1 Causes

Site degradation can be segmented into two categories, that resulting from permanent access structures and dispersed, on block disturbance.

Permanent access structures include permanent roads and landings. Dispersed, on block disturbance includes skid trails, backspur trails and similar ground based activities required for harvesting.

#### 3.4.7.2 Minimizing Degradation and Rehabilitation

Mission does not often build temporary roads as long term access is usually desired to provide for silviculture projects and fire protection. If a temporary road is constructed on the TFL, Mission will fully rehabilitate this road. Rehabilitation of previously constructed roads is subject to:

- Future harvesting requirements.
- Chance of rehabilitation success based on previous construction techniques.
- Requirements to reduce environmental impacts. Deactivation vs. rehabilitation.
- Access requirements of other resource users.

Deactivation of previously constructed roads will be identified through assessments and provided for comment through the Forest Development Plan.

Mission minimizes degradation due to landings by proper setting and road engineering and by constructing small landings where feasible. Most are permanent landings which are not scheduled for rehabilitation as they will be required for future passes. Thorough debris cleanup facilitates either tree planting or grass seeding on as much of the landing area as possible.

Dispersed on block site disturbance within the Net Area to Reforest (NAR) is minimized through the use of mainly cable harvesting in the TFL. Where ground harvesting is used, soil types, equipment and season of operation have been checked to be suitable for the ground conditions.

Reforestation of 100% of the NAR is a key objective on the TFL.

### 3.5 SILVICULTURE

#### 3.5.1 HISTORY AND ACHIEVEMENTS

Silviculture activities have played a strong role in forest management of the TFL since it was awarded in 1958. Virtually all harvested areas have been planted with a small portion being restocked through natural regeneration.

An average of about 77,000 seedlings per year have been planted in the TFL from 1958 to 1999. This averages about 1,400 seedlings planted per logged hectare over this time period. This amount of planting combined with a careful brushing program over the years means that TFL 26 has an insignificant amount of "non-satisfactorily restocked" (NSR) or unstocked areas. The current NSR area is 52.9 hectares which represents recent harvesting waiting to be reforested in the next planting season.

Silviculture activities over the term of Management Plan # 7 focused on:

- establishing crops of healthy, ecologically suitable trees promptly after harvesting operations.
- encouraging a diversity of species.
- maintaining regeneration delay at about one year.
- achieving faster green up through various techniques such as prompt planting usually within a year of harvest, use of relatively large seedling stock, use of 'A' class seedlings with enhanced genetic worth, timely brushing, use of fertilizer tea bags in some areas and planting relatively high densities.
- pursuing funding from Forest Renewal BC to carry out enhanced forestry activities such as juvenile spacing and pruning.

As in the recent past, significant site preparation was neither required nor carried out on almost all areas. Some minor brush/slash piling and abatement of wood debris piles by burning was carried out where warranted. Most harvested areas are planted as is with proper microsite selection.

Various silviculture surveys were carried out during MP 7 to assess issues such as seedling survival, regeneration delay, free growing as well as pre- and post- brushing, spacing and pruning assessments.

Brushing activities occurred on approximately 440 hectares during MP 7 mainly in younger plantations to improve survival due to competition and to ensure free growing standards will be met on time. All brushing was done by manual methods with no herbicides used.

To the end of 1999, 751 hectares of juvenile spacing have been carried out in the TFL, mostly since the early 1980's. Spacing activities during MP 7 focused on improving stand quality and improving growth in suppressed stands and met the parameters set by the Chilliwack Forest District.

To the end of 1999, about 408 hectares of pruning have been carried out in the TFL, mostly since the early 1980's. Pruning activities during MP 7 were limited to select stands that exhibited the best opportunity for improvement in tree quality and met the parameters set by the Chilliwack Forest District.

A table in the Licence Area section of the Appendices section shows the history of major silviculture activities in the TFL since the year of origin, 1958.

### 3.5.2 OBJECTIVES

Mission's silviculture objectives during MP 8 are:

- To apply silvicultural treatments and other management practices to the forest lands so that an optimum mixture of harvestable size, high quality wood products and short rotations is achieved within the constraints imposed by maintaining and enhancing the productive forest land base and the diversity of species.
- Regenerate all harvested areas promptly to take advantage of productive growing capacity and reduced competition.
- Monitor stands to assess plantation survival, performance, health and need for treatments.
- Encourage a diversity of species in all plantations.
- Continue with activities that will reduce stand density and competition in suppressed stands.
- Continue with activities that will aid in achieving free growing and green up status in the shortest possible time frame.
- Continue with activities that will improve overall wood quality.

In regard to product mix, TFL 26 does not have supply arrangements with any particular processing facility. Mission generally sells logs on the open market primarily for economic considerations. Mission believes the best strategy is:

- Sustained timber flow is the most important consideration;
- When sustained timber flow is reasonably met, Mission generally desires to produce sawlogs. Using approved harvesting criteria, our estimates show most stands without incremental silviculture will produce mean diameters from 33 to 42 cm. with an average of approximately 37 cm. (considering trees larger than 17.5 cm. diameter). Mission will seek funds for incremental silviculture and when this funding is obtained, work will be performed resulting in an increased mean diameter corresponding to the level of incremental work performed. As such, Mission feels the mean diameter of most harvested trees will be conservatively 40 cm.
- Mission will also seek funds to prune an estimated average 300 stems per hectare in most spaced, medium and good site, Douglas-fir leading plantations thereby creating clear wood on the larger, prime crop trees in these areas.

### 3.5.3 STRATEGIES

The following strategies will be implemented over the term of this plan to help achieve the above objectives:

- Planting of all harvested areas that are part of the net area to reforest will take place within 2 years of harvesting at a maximum. In almost all cases, planting will take place the year following harvest.

- Monitor stands through walk-throughs and surveys to assess plantation survival, performance, health and need for treatments.
- Plant a mixture of biologically appropriate species wherever possible.
- Encourage natural fill in on plantations, including some deciduous species, where forest health or stand performance can be improved
- Use genetically improved stock (disease/insect resistant or improved growth), where available, to improve stand performance and increase chance of plantation success.
- Juvenile space areas that are suppressed due to stand density or competing vegetation to realize improved site potential.
- Space to levels that will reduce competition or suppression while allowing for future commercial thinning opportunities and minimizing forest health risks such as root rot.
- Identify select high quality productive stands for pruning to improve overall wood quality.
- Carry out a fertilization assessment using existing TFL data followed up by field visits to candidate sites.
- Carry out a Silviculture Strategy, Type 1 and if Forest Renewal BC funds permit, a Type 2 to aid in assessing TFL silviculture priorities.

#### 3.5.4 NOT SATISFACTORILY RESTOCKED

There are currently only 52.9 ha. of current NSR on the TFL. The goal is to maintain the current NSR to a level which reflects the annual rate of harvest.

#### 3.5.5 BASIC SILVICULTURE ACTIVITIES

##### 3.5.5.1 Seed Collection

Most of the operable area of the TFL is below 600 metres and most of the seedlings planted in this elevation range are Douglas-fir and western red cedar. Both of these are generally available from Class A, seed orchard seed. As such, Mission purchases most of the TFL's seed needs from other forest licensees with seed orchards that have a surplus supply of their own Class A seed. During MP 7, more than 90% of stock planted on the TFL was from Class A seed with this trend forecast to continue in MP 8.

Mission has a good inventory on hand for foreseeable Class B (forest) seed needs. When more of this seed is needed, Mission will either purchase surplus seed from other licensees or, monitor cone crops on the TFL periodically for seed collection potential.

Mission will use Class A seed firstly, when available, for planting obligations on the TFL.

Section 8.7.3 of the Timber supply analysis information package details the volume gain values used in the timber supply analysis.

##### 3.5.5.2 Silviculture Prescription

The Silviculture Prescription (SP) provides site-specific strategies for integrated forest management that are consistent with the broader objectives stated in the forest development plan.

The SP is the most detailed and final operational plan designed to describe and prepare individual areas for harvesting and identify post harvest silviculture standards for stocking and free growing.

Prior to harvest, all areas harvested in the TFL will have a SP signed and sealed by a Registered Professional Forester and approved by the MOF.

#### 3.5.5.3 Site Preparation

Site preparation is rarely necessary in the TFL as suitable and sufficient natural microsites generally exist so most areas are planted as is.

When used, methods have included broadcast burning, spot burning and mechanical methods such as debris piling. The use of broadcast burning will continue to play a minor role in site preparation due to its incompatibility with current harvest practices, most logging is in second growth forests with less wood residue, proximity to many people in the Fraser Valley combined with local air quality concerns and the requirements for biodiversity and wildlife. Broadcast burning may be considered where it is seen as a required site preparation tool.

Objectives for site preparation will be to:

- Create favourable microsites for planting where natural spots are insufficient.
- Minimize the time frame between harvest, site preparation and planting to maximize the potential for plantation success.

Strategies to achieve these objectives include:

- Reduce competition due to brush.
- Reduce excessive slash loads and unacceptable planting mediums that reduce favourable microsites.
- Create favourable microsites where cold, wet or compacted soils will inhibit tree growth.
- Schedule site preparation activities to occur as soon as possible after harvesting is completed.

#### 3.5.5.4 Planting and Regeneration

All areas harvested on the TFL within the net area to reforest as identified on prescriptions will be planted. Table 8.72 in the Timber supply analysis information package identifies how existing Analysis Units will be regenerated after harvesting and the expected regeneration delay period. Most of the time, areas are planted within one year of harvest.

Planting objectives include:

- ensuring a site is reforested as quickly as possible following harvest which will give the plantation the best chance of survival by reducing the potential for brush competition.
- establishing biologically suitable species.
- selecting a proper microsite to ensure adequate root and shoot growth in the first few years of establishment.

- establishing genetically superior seedlings where available.

#### 3.5.5.5 Surveys and Assessments

##### SURVIVAL AND REGENERATION SURVEYS

A silviculture survey will be carried out on all plantations generally one growing season after planting. The purpose of the survey will be to determine seedling survival and regeneration stocking, provide information for regeneration delay reporting as well as monitor plantation health.

Survey results are often used for recommending or scheduling of fill planting, subsequent surveys or future stand tending treatments.

##### FREE GROWING SURVEYS

Free growing surveys will be conducted on all harvested areas within the time frames identified in approved Silviculture Prescriptions. Mission's objective is to meet free growing status by the early free growing date on most plantations. Surveys will be completed to current MOF standards.

##### STAND TENDING SURVEYS

Stand tending surveys or walk-throughs will be completed where a potential need for treatment to reduce competition is identified during previous walk-throughs or surveys. The objective will be to improve stand performance and quality and achieve free growing status in the shortest time frame possible.

Stand tending surveys may also be carried out after free growing status is achieved where a potential for spacing, pruning or fertilization is identified. Normally, stand tending surveys after free growing are funded through Forest Renewal BC or similar crown funding.

##### OTHER ASSESSMENTS

OAF1 allows for yield reductions associated with non-productive areas in the stand, uneven spacing of crop trees (clumping), and endemic and random loss. OAF2 allows for volume losses due to maturity, attributable to decay, wastage and breakage factors.

The OAF's applied in PMP 8 are based on MOF values for the development of MSYTs and are consistent with the values used in the 1998 Fraser TSA Analysis Report. From observations and operational experience on the TFL, it is believed that a 15% and 5% reduction for OAF 1 and 2 as used in this PMP in plantation stands may be too high. The OAFs are thought to be excessive, since the TFL consists of very good growing sites, experiences a lot of natural fill-in leading to full stocking, low site degradation, low amounts of rock outcrops and low endemic accounts of insects and disease. A sensitivity analysis was conducted for PMP 8 which modeled these values respectively as 12% and 3%.

An OAF survey procedure was developed and released in December, 1998. During the term of MP 8, Mission may conduct these surveys and use the results in considering appropriate OAF's for the next management plan.

#### 3.5.5.6 Maximum Density Spacing

Where indicated in an approved Silviculture Prescription, maximum density spacing will be done prior to free growing if a silviculture survey shows the number of countable stems is

greater than the maximum allowed in the SP. The maximum number of countable stems is normally 5,000. The objective of maximum density spacing will be to reduce stand suppression due to overstocking. The spacing will reduce the number of stems to within the range specified in the SP, often 500 to 900. The post spacing density will reflect commercial thinning opportunities where they exist while also minimizing forest health concerns.

#### 3.5.5.6 Brushing

Brushing will be carried out where indicated as necessary from a walk through or survey to reduce competition from herbaceous and woody vegetation. Treatments will normally be done manually as they all have been for the past several years. However, chemical and biological methods may also be considered where appropriate although the amount of these treatments is foreseen as minimal.

Retention of some deciduous stems will be considered where they prove beneficial to stand performance or add to biological diversity and still allow for a free growing stand.

### 3.5.6 INTENSIVE SILVICULTURE ACTIVITIES

#### 3.5.6.1 Spacing

Incremental silviculture activities are generally done in TFL 26 for the following reasons:

- to produce higher value lumber and value added specialty products,
- to produce higher volumes,
- to produce merchantable timber sooner to help fill timber age class imbalances, and
- to improve or modify wildlife habitat.

Incremental silviculture activities are relatively feasible to conduct in many parts of TFL 26 due to:

- Close access to markets,
- Generally moderate terrain, and
- Productive growing sites.

Where favourable site conditions exist, future timber values can be optimized by applying proven stand tending treatments. Funding for these treatments will be sought from various sources, such as Forest Renewal BC.

TFL 26 has already implemented a relatively high level of spacing (pre-commercial thinning) and other forms of incremental silviculture activities. When external funding is obtained, incremental silviculture activities:

- have been and will continue to be concentrated on the more productive sites. Treatments with uncertain benefits, or which may increase timber volume without necessarily improving the net stand value, will be lower priority.
- will generally concentrate on spacing or fertilization first and pruning second but this order may be varied where specific circumstances justify otherwise.
- will be employed to generally produce the desired sawlog profile stated in the Silviculture Objectives section of this PMP.



While Mission is very interested in carrying out incremental silviculture whenever funding sources are available, it is not prepared to make a long term commitment to a specific level of work without funding from external government sources. As a result, analysis options have not assumed incremental silviculture beyond the past work which has already affected stand development.

In regard to incremental silviculture activities, Mission will follow the current approved Regional stand tending guidelines.

#### 3.5.6.2 Pruning

Pruning activities will continue to concentrate on the most productive sites where overall stem quality is expected to improve through to rotation.

Pruning will concentrate in Douglas-fir leading stands that have either been spaced or have natural density levels that are low enough to allow continued growth on pruned trees for a number of years.

#### 3.5.6.3 Commercial Thinning

During MP 7, Mission conducted several trials and then operational commercial thinnings. During the trials, information was gathered on costs, revenues, production, logging profile effects, thinning differences between natural and planted stands as well as damage potential reduction to crop trees.

In MP 8, commercial thinning will be considered where an opportunity exists to harvest a percentage of volume in a stand prior to rotation, while retaining the remainder of the stand for harvest at ages as identified in the timber supply analysis information package. Requirements for other resource, social and economic values will be considered on a site specific basis when setting objectives for commercial thinning. Objectives for commercial thinning are to:

- Improve stand quality.
- Improve growth potential of remaining stems.
- Provide flexibility in timber flow.
- Obtain timber volume that would otherwise become an endemic loss.
- Obtain volume in visually constrained areas.

Strategies for achieving these objectives include:

- Removal of diseased, deformed or dead merchantable stems while considering biodiversity requirements.
- Reduce competition due to crown closure and available growing space.
- Target stands where a growth response can be expected in the remaining stems.
- Target stands that would be otherwise constrained due to greenup, wildlife, visuals or other values.

Limiting factors include:

- Forest health concerns such as root rot.

- Risk of blowdown.
- Periods in the log market where prices for the smaller commercial thinning material is too low.

Commercial thinning potential will also be considered during the stand tending phase. Where applicable, stands will be spaced to appropriate densities in preparation for a commercial thinning once the stand reaches a merchantable size.

#### 3.5.6.4 Fertilization

Fertilization will be considered to improve growth where high site productivity is expected and trees exhibit signs of nutrient deficiency not attributable to other factors. Most coastal forests are generally deficient in nitrogen.

In the latter part of MP 7, Mission has some funding from Forest Renewal BC to conduct fertilization planning that involves searching the TFL data base using algorithms designed to identify candidate fertilization areas. Additional funding will be sought to perform field checks on identified candidate stands and then for fertilization on the stands chosen as suitable for this treatment.

### 3.6 FIRE PROTECTION

#### 3.6.1 FIRE PREVENTION

Mission's policy is to minimize losses of forest resource values to fire. Industrial activities will be carried out in a manner that will minimize the potential for fire. Potential hazards created as a result of industrial activities will be abated in a timely manner.

Designated recreational areas will be monitored during fire season to ensure use of fire by the public is consistent with regulations and fire hazard.

Mission employees and contractors will actively participate in the detection and prevention of fires.

#### 3.6.2 FIRE PREPAREDNESS

Mission will submit a fire preparedness plan prior each year consistent with Section 27 and 28 of the Forest Fire Prevention and Suppression Regulation. At the start of the fire season, all contractors and Mission forestry crews will be equipped to the standards outlined in the Regulation.

Mission maintains a standby roster of trained personnel during fire season, who are available for initial detection, suppression and coordination of fire fighting activities. The location of proposed industrial activities for the fire season is identified in the fire preparedness plan each year.

TFL 26 is reasonably well roaded, which provides for access of equipment and manpower for prompt action on fire outbreaks in many areas. During periods of higher fire hazard, additional patrols are carried out on major roads and recreational sites in the TFL.

#### 3.6.3 FIRE SUPPRESSION

The Forest Fire Prevention and Suppression Regulation will be complied with in all fire suppression activities. Mission will ensure that initial attack and suppression crews take action on all identified fires in the TFL.

#### 3.6.4 PRESCRIBED BURNING

Prescribed burning activities on the TFL, which were regularly done in the 1980's, became almost nonexistent in the 1990's mainly due to:

- harvesting is primarily done in second-growth stands which produce less decay, waste and breakage than old-growth stands,
- adherence to second-growth utilization standards produces reduced amounts of wood debris,
- the TFL has a relatively scattered, small-block harvesting pattern which produces smaller volumes of contiguous wood debris throughout the forest,
- more wood waste is often preferred to enhance biodiversity, and
- smoke management considerations in the Fraser Valley airshed.

This practice will continue over the term of MP 8. Prescribed burning will be generally limited to pile burning although broadcast burning will still be considered where appropriate.

Prescribed burning activities will account for appropriate burning conditions and proximity to adjacent fuels.

#### 3.6.5 FIRE FUEL MANAGEMENT

Slash levels will be minimized where not required for coarse woody debris/biodiversity. Coarse woody debris objectives take into account fire hazards created by slash and provide strategies for minimizing the hazard.

Logging debris piles are burnt as soon as possible after harvesting is completed.

Spacing activities normally specify a minimum five metre buffer along driveable roads.

#### 3.6.6 SMOKE MANAGEMENT

Mission minimizes the use of prescribed burning for the reasons described in the Prescribed Burning section above including smoke management considerations in the Fraser Valley, which is a high air pollution area. However, where broadcast burning is required, Mission will follow the current MOF Chilliwack Forest District Smoke Management Guidelines. Also, where prescribed slashburning is used, site sensitivity will be evaluated prior to burning. Weather stations may be used to evaluate the fire weather indices.

### 3.7 FOREST HEALTH

#### 3.7.1 DETECTION AND TREATMENT

Objectives of the forest health program on the TFL are to:

- Detect and treat forest health concerns in a timely manner.
- Minimize unrecoverable losses.
- Maintain productivity of the landbase on the TFL

To achieve the above objectives, during data collection for a Silviculture Prescription, plantation survival, stocking, free growing, pre-stand tending and other silviculture survey, the incidence and impact of forest pests will be recorded and monitored. General observations are also made during normal road patrols in the TFL. When significant forest health problems are encountered, Mission will follow MOF guidelines.

The following sections identify insects, disease and related forest health concerns and provide strategies for treatment where applicable.

#### 3.7.2 INSECTS

The following insects have been detected on the TFL or in the immediate vicinity during the term of Management Plan 7:

- **Balsam woolly aphid** (*Adelges piceae*) was noticed to have caused some mortality during MP 6 in *Abies amabilis* (amabilis fir) trees in the western, moderate to higher elevation areas of the TFL. As a result, some stands were harvested during MP 7 in these areas. Amabilis fir may be replanted, but in moderate proportion with a greater reliance on other suitable species.
- **Western Hemlock Looper** (*Lambdina fiscellaria lugubrosa*) was noticed in significant numbers for the first time in many years in 2000 primarily in the northern sections of the TFL and beyond. In particular, a patch of trees in the MOF managed provincial forest located north of Isle Slough which is beyond the northeast section of the TFL had some dead tops which the MOF has attributed to this looper. Although tree damage was not noted in the TFL, looper moths were spotted inside the TFL in the fall time.

During the winter of 2000/01 the MOF will be looking into options of if and how this outbreak should be treated. They indicated they had several outbreaks mainly within their Fraser TSA areas during 2000. However, they indicated they knew of no insecticides which are currently registered to be used operationally on this looper. As of early 2001, the MOF Region indicated as the Looper infestations were not judged as very severe in 2000, they would likely take a 'wait and see' approach for 2001. Mission will attend any scheduled meetings to plan to deal with this looper.

- **Phantom Hemlock Looper** (*Nepytia phantasmaria*) was also noticed at the same time and in the same locations as noted above in the Western Hemlock Looper section. Apparently this is common for them to appear with the Western Hemlock Looper. Although this looper is not regarded as serious as the other looper, it's treatment will also be considered at the same time.

- **Cedar Mite** (*Trisetacus chamaecypari*) is very minor with no need for action;
- **Spruce Weevil** (*Pissodes strobi*) is not significant as spruce spp. are not planted in TFL 26 on an operational basis and natural seeding is extremely small. No action is needed;
- **Cooley Spruce Gall Adelgid** (*Adelges cooleyi*) is very minor with no need for action.

### 3.7.3 DISEASE

- **Root Rot:** Both *Armillaria* root rot (*Armillaria ostoyae*) and Laminated root rot (*Phellinus weirii*) have been identified on the TFL mainly in the drier parts of the CWH biogeoclimatic zone. Incidence levels appear to be lower in the wetter parts of the CWH and very low in the MH zone. In most instances, surveys show less than 1 or 2% root rot presence.

Treatment for stands with root rot is identified at the silviculture prescription stage. Treatments used on the TFL at the reforestation stage include mixed species planting and planting of more resistant species. Subsequent silviculture surveys or pre-stand-tending surveys are used to identify root rot levels in young plantations prior to potential spacing or pruning treatments. When found, Mission follows Vancouver Region Root Rot guidelines or Chilliwack District directives.

- **White pine blister rust** (*Cronartium ribicola*) has infected most of the *Pinus monticola* (white pine) trees although there are very few in the TFL. The only significant concentration of white pine is a one-hectare plantation established in 1986 that is about 80% affected. This plantation has now been spaced with the removal of infected trees and alternate species left as the main crop trees. Until resistant white pine are developed, Mission will only plant this species on a research basis.
- **Hemlock Dwarf Mistletoe** (*Arceuthobium tsugense*) is quite common, particularly in overstocked, older second-growth *Tsuga heterophylla* (western hemlock) stands. The presence of mistletoe occasionally warrants consideration for earlier harvesting, particularly where the infection is heavy or significant stand stagnation has occurred. Mistletoe is not usually a significant problem in thrifty, non-overstocked plantations.

Where identified and where incremental silviculture funds are available, stands with potential for significant future mistletoe infestation will be spaced favouring removal of significantly infected trees. Commercial thinning activities, when undertaken, will consider mistletoe concerns and will be done favouring removal of significantly infected trees and non-thrifty, understory hemlock in general.

- **Sirococcus Shoot Blight** (*Sirococcus strobilinus*) is very minor with no need for action;
- **Swiss Needle Cast** (*Phaeocryptopus gaumanii*) was observed on young Douglas-fir in the western part of the TFL. This is seen as a fairly minor disease with no practical control in natural settings so no action is planned.

Mission will continue to cooperate with the Ministry of Forests and the Canadian Forest Service to monitor and identify pest problems on the TFL.

### 3.8 WINDTHROW

Windthrow problems occur occasionally during strong winter storms, usually with northerly or easterly outflow winds. Windthrow is most common adjacent to harvested stands within two years of harvest but also occurs in unharvested areas. Areas to be harvested are designed to minimize blowdown from these winds. Where blowdown patches are reasonably accessible and contain more than 75 cubic metres of timber, Mission normally performs salvage harvesting.

The following strategies have been implemented when considering block design and addressing existing blowdown:

- Position block boundaries in drier well drained ecosystems where trees are deeper rooted.
- Locate boundaries along natural wind firm timber type breaks such as treed swamps where a gradual decrease in tree size or "stepped effect" exists.
- Use other natural wind firm boundaries such as rock, slopes breaks or brush.
- Orient blocks to minimize the impact of prevailing high winds. Use historical weather station data where available.
- Feather prone block edges by removing larger stems to disperse the wind and mimic the structure of natural openings.
- Where terrain is uniform or wind firm boundaries are lacking, smaller openings will be considered. Where this conflicts with patch size distribution guidelines and may result in further fragmentation, larger openings can be created over time allowing time for edges to become wind firm.
- Tree pruning using helicopter or climbing methods have been used in many recent settings to reduce the amount of crown on leave trees within or near setting boundaries.

In stands with existing blowdown the following strategies are used in producing a new wind firm boundary:

- Where the blowdown has occurred in a wetter ecosystem identify a drier area or natural wind firm feature to establish the new boundary on.
- Determine if the stand is wind firm as a result of the windthrow. Where this occurs, careful extraction of the wind thrown timber should be carried out to minimize the potential for destabilizing standing trees.
- Consider leaving the windthrow if a wind firm boundary has been created, volume is low, salvage presents a risk of further destabilizing the stand and there is low risk to forest health.

To minimize the potential for deterioration of wood quality and unrecovered losses due to windthrow, Mission monitors for windthrow through driving patrols after significant windstorms.

### 3.9 UNSALVAGED LOSSES

Unsalvaged losses represent natural events that are non-recoverable and result in a decrease in the productivity of the TFL. These losses focus on the epidemic losses that are not salvaged, whereas the endemic losses are accounted for through operational adjustments and netdown reductions in the timber supply analysis. With the TFL's extensive road system, there is often reasonable opportunity for salvage of insect, disease and fire-affected stands.

Unsalvaged losses from fire are virtually nonexistent in TFL 26. As the TFL occurs in the wettest part of the Fraser Valley, fire occurrence is limited. The virtual elimination of broadcast burns and slash burns, accompanied with good access and extensive patrolling of the TFL, minimizes fire losses.

Losses due to blowdown has also been only a minor reduction within TFL 26 again due to good access and recovery. A summary of the assumptions made is included in section 9.1 of the Timber supply analysis information package.

## **4. INTEGRATED RESOURCE MANAGEMENT**

### **4.1 RANGE MANAGEMENT**

#### **4.1.1 BACKGROUND**

Range activities do not exist in TFL 26 and it is considered that there is very limited potential for range or grazing activities.

#### **4.1.2 OBJECTIVES**

Due to the absence of range values or potential, no objectives for range activities are set.

#### **4.1.3 STRATEGIES**

Although Mission does not anticipate future range activities, it would be willing to set appropriate objectives and management strategies if range values become relevant to the TFL.

### **4.2 RECREATION MANAGEMENT**

#### **4.2.1 BACKGROUND**

TFL 26 is located relatively close to major population centres. The District of Mission's population is approximately 33,000 people. The population of Abbotsford and Maple Ridge, both within a half hour drive, is approximately 150,000 people. The population of the entire Lower Mainland/Fraser Valley region is more than one and a half million people.

TFL 26 does not contain areas of high provincial or regional recreation significance. However, because the TFL is in close proximity to an expanding urban population with increasing forest recreation desires, recreation areas and landscape features are regarded as having a growing importance in the TFL.

TFL 26 provides a wide range of recreational opportunities, many of which have been made easier through the access gained along the extensive network of logging roads and trails. The main recreational activities on or adjacent to the TFL include hiking, hunting, mountain biking, horseback riding and boating with more limited cross country skiing, snowmobiling and fishing.

There are no official recreation sites in the TFL although the construction and maintenance of several trails on crown land used to be funded by the MOF. A recreation map showing the location of recreation sites and associated activities is provided in the map folio.

No commercial recreation operators are located within the TFL nor have any contacted us to inform us that their business relies on recreation features within the TFL. If contacted by any such operators, Mission will have discussions with them to ascertain the nature of the their business and how the TFL's operations may affect the business.



#### 4.2.2 OBJECTIVES

The recreation resource is an important component of the day to day operations on the TFL. Mission actively participates in any activity that serves to maintain or enhance this resource. The following objectives and strategies will be implemented during Management Plan 8 to aid in the protection of recreational values:

- Manage recreation resource values through integrated resource management in accordance with MOF policies and procedures.
- Minimize conflict between recreational and other resource values.
- Understand the objectives of and cooperate with recreational user groups in proposals for recreational pursuits.
- Ensure the public is aware of the recreational opportunities on the TFL.

#### 4.2.3 STRATEGIES

- Refer to MOF recreation manuals, FPC guidebooks and recreation inventories when considering areas for recreation potential to ensure all resource values are considered.
- Ensure recreational user groups are informed of activities that may impact recreational values through notification and meetings.
- Utilize GIS technology to model the interaction of all resource values to ensure a sustainable recreational resource.
- Participate in the BC Hydro sponsored Stave and Hayward Recreation Advisory Committee to ensure sufficient advice and input is received for proposed and actual recreation activities near Stave and Hayward Lakes.
- Schedule forestry activities to minimize the potential for conflict on recreational pursuits.
- Establish information signs and provide recreational maps of the TFL to assist recreation users in accessing the TFL.

### 4.3 VISUAL MANAGEMENT

#### 4.3.1 BACKGROUND

A new Visual Landscape Inventory (VLI) was completed in 1999 which provides a good tool for managing the visual quality in the TFL. Where harvesting is proposed in identified visually sensitive areas, various tools are used to ensure the applicable visual quality can be met. Mission uses the Chilliwack Forest District Standard Operating Procedure for Visual Resource Management as a guide for achieving visual quality objectives. The timber supply analysis information package shows more detail.

The timber supply analysis base case indicates a significant impact on timber supply due to visual green up requirements in areas with visual quality objectives. As the spatial modeling in these areas is 2 dimensional, the model is unable to adequately account for mitigating factors such as visual screening, landscape design techniques and alternative

silviculture methods. These mitigating factors, as well as 3-D modeling in visually sensitive areas will be practiced over the term of MP 8.

The implementation of the following objectives and strategies during MP 8, should help to minimize the potential impact visual quality objectives will have on timber supply.

#### 4.3.2 OBJECTIVES

- Meet with established visual quality objectives while minimizing the potential impact on timber supply.

#### 4.3.3 STRATEGIES

- Use established landscape design techniques, considering line and form, which will allow for better timber flow, while still meeting the visual quality objectives .
- Use alternate silviculture systems, where applicable, to minimize the visual impact.
- Plant larger seedlings and consider using seedling fertilizer in the more visually sensitive logged areas to accelerate better visual quality.
- Use terrain modeling techniques, appropriate for the given visual sensitivity, to simulate proposed harvesting in the perspective view.
- Use computer models such as FORUM, to model proposed harvesting spatially and temporally in the planimetric view.
- Perform computer modeling in the perspective or 3-D view, on representative visual polygons, to show how visual quality objectives can be met over time.

### 4.4 FISHERIES MANAGEMENT

#### 4.4.1 BACKGROUND

There are a number of streams, lakes and wetlands in the TFL which have known resident fish populations. The fisheries inventory in these areas has provided valuable information on fish habitat and rearing potential in many of the lakes and streams. Some of the fisheries inventories include assessments which have identified areas where rehabilitation or enhancement could improve the quality of fish habitat. Under the Forest Practices Code, these waters all have Riparian Management Zones (RMZ) and/or Riparian Reserve Zones (RRZ) which restrict various forestry operations within the zones.

In addition to these RMZ's and RRZ's, fish populations are enhanced through the Ministry of Attorney General, Stave Lake Corrections Camp fish rearing station on Sayres Lake located in a UREP area adjacent to the northwest part of the TFL.

Section 6.12.1 of the Timber supply analysis information package (IP) shows that streams in TFL 26 account for 203.2 hectares of reserve area. Section 6.12.2 of the IP shows that lakes in TFL 26 account for 5.2 hectares of productive reserve area. Section 6.12.3 of the IP shows that wetlands in TFL 26 account for another 17.7 hectares of reserve area.

The following objectives and strategies layout a framework for ensuring the continued quality of fish habitat.

#### 4.4.2 OBJECTIVES

- Maintain water quality in fish bearing streams and lakes.
- Maintain or enhance fish habitat

#### 4.4.3 STRATEGIES

- Schedule harvest activities to minimize sedimentation in fish bearing streams and lakes. Curtail harvesting during adverse conditions.
- Consider projects to enhance or rehabilitate fish habitat where assessments indicate the need.
- Schedule instream works on fish streams within established instream work windows whenever possible.
- Take preventative measures to minimize sedimentation when carrying out forestry activities.
- When required for forestry development, Mission will employ a fisheries resource consultant to perform field evaluation and electro-shocking of potentially affected streams in the TFL.

### 4.5 WILDLIFE MANAGEMENT

#### 4.5.1 BACKGROUND

Various species of wildlife are found throughout the TFL, such as black-tail deer, coyote, black bear, raccoons and raptor species. Certain conditions in the TFL have historically been conducive to this type of wildlife habitat including:

- Relatively small cut blocks occurring in a widely scattered pattern have provided a good distribution of adequate food, shelter and reproductive sites;
- Most lower areas of the TFL are subject to municipal bylaw firearm restrictions; and
- The practice of cutting snags during shake salvage operations is more restrictive than in the past, which provides greater cavity nesting habitat.

Waterfowl or raptor species, such as eagles or hawks, occasionally use specific areas of the TFL in certain seasons and conditions. Whenever identified, raptor nest sites will be protected by buffer zones, timing restrictions or other measures in line with MOELP Fish and Wildlife Management guidelines.

No areas have been classified as sensitive to wildlife (Ew) in the TFL under the MOF Environmentally Sensitive Area process which was confirmed by Fish and Wildlife Management personnel for MP 7.

The Biodiversity section later in this part of the PMP explains Mission's Landscape Reserve plan. This plan shows numerous permanent and long-term reserves across the entire TFL which will aid in determining the level of reserve trees and patches within specific cutblocks as they are developed. This will also help the Forestry staff plan for

wildlife habitat requirements within the reserve areas. This plan is now part of the approved 2000 Forest Development Plan.

During the term of MP 8, Mission will continue to work with the MOELP Fish and Wildlife Management staff in developing site specific objectives and practices where necessary.

#### 4.5.2 OBJECTIVES

The Identified Wildlife Management Strategy Guidebook identifies management strategies for the wildlife indicated above. Where these species are confirmed on the TFL, guidebook procedures will be followed in reporting and managing for the species at risk. In addition, the following objectives and strategies will guide the management of all wildlife on the TFL.

- Provide more comprehensive, detailed information on wildlife habitat and develop appropriate management strategies.
- Minimize conflict between wildlife and other resource users.
- Incorporate wildlife habitat values into long term harvest strategies.

#### 4.5.3 STRATEGIES

- Schedule harvesting and road construction activities during periods that minimize disturbance of wildlife.
- Work with MOELP staff in developing management strategies for key wildlife.
- Consider alternative silviculture systems in identified habitat where there is a demonstrated benefit.
- Follow biodiversity guidelines for the management of habitat distribution and dispersal at the landscape level.
- Use computer modeling techniques to show how habitat requirements can be met spatially over time.
- Establish wildlife tree reserve and coarse woody debris objectives that provide a benefit to wildlife habitat.

### 4.6 WATER RESOURCES

#### 4.6.1 BACKGROUND

Water values are an important consideration, particularly in the eastern area of the TFL due to the TFL's close proximity to rural areas of Mission. Two Community Watersheds are present in the TFL, the Kenworthy Creek CW and the Cannell Lake CW. In addition, there are some individual water licences downstream of the TFL.

The Cannell Lake CW is a primary source of water for numerous Mission and Abbotsford water users. The water distribution system is managed by the Fraser Valley Regional District (FVRD).

The Kenworthy Creek CW supplies water for some residents and farmers located in the Hatzic Prairie area east of the TFL. The water intake for these users is located fairly close

to where Kenworthy Creek exits the TFL on its east side. In 1998, a CWAP was completed for this watershed.

The following objectives and strategies take into account management strategies identified through the CWAP as well as issues specific to the TFL

#### 4.6.2 OBJECTIVES

- Maintain or improve water quality and quantity.
- Prepare a new Coastal Watershed Assessment Plan for the Kenworthy Creek CW based on the new CWAP Guidebook procedures. Include the new CWAP in the 2002-2006 Forest Development Plan.

#### 4.6.3 STRATEGIES

- Carry out harvesting and road construction during periods that minimize sedimentation.
- Be proactive with road maintenance to ensure that proper drainage is maintained.
- Carry out road deactivation as identified through the access management plan and deactivation prescriptions.
- Ensure access is controlled on sensitive roads during adverse conditions.
- Use best management practices for harvest prescriptions in riparian areas.
- The current CWAP for Kenworthy Creek CW shows proposed development in this area will be about 5% during the 1998-2002 period which is within the acceptable standards. Future Forest Development Plans will show updated figures with the intent that indices remain in the low to moderate range.

The entire Cannell Lake watershed land area of 155.9 hectares has been classified as highly sensitive to water values under the MOF Environmentally Sensitive Area classification (Eh). For the purpose of MP 8, Mission will:

- Use the height-of-land as the watershed boundaries and
- Treat the entire area as "Eh" resulting in a 100% timber supply netdown.

### 4.7 CULTURAL HERITAGE VALUES

#### 4.7.1 BACKGROUND

Cultural values on the TFL may include archaeological and historical sites as well as areas of traditional use such as hunting, gathering or areas of spiritual significance. The Kwantlen First Nation, through studies done by BC Hydro, have been shown to have historically used the areas close to and in the present day Stave Lake. The Sto:lo First Nation are just entering the beginning phases of the lands claims process and their exact claim areas are not yet public.

An archaeological overview assessment was completed by the Chilliwack Forest District for the Fraser TSA region which identifies areas of archaeological potential. Where an area proposed for development indicates high or moderate potential a more detailed

assessment is carried out to determine if evidence of historic use can be found. Local band members are hired to participate in all archaeological field surveys that occur on the TFL.

Several areas have been field surveyed by Archaeologists over the past four years with no sites identified up to 1999. In 2000, one Archaeologist found some trees in proposed development areas of the TFL most of which he called "possible" or "likely" Culturally Modified Trees (CMT's). However, another Archaeologist examined the same trees and concluded they were not CMT's or perhaps "possible" leading to some uncertainty of the cause of the missing bark. However, the Archaeological Branch of Small Business, Tourism and Culture and the Kwantlen First Nations were notified of the finds. None of these potential CMT's predate 1846, so they are not subject to the B.C. Heritage Conservation Act.

If previously unidentified sites are excavated during operations, Section 51 of the FPC Act will be followed. Development around newly discovered sites will be suspended until a proper assessment of the site has been completed. Efforts are currently underway to develop an improved modeling tool to predict the occurrence of areas of cultural significance in the Chilliwack Region.

Mission, either through the MOF aboriginal consultation process or by ourselves, openly refers proposed timber, road and silviculture activities. This happens particularly at the forest development plan stage when band members can provide additional information where studies completed to date may be lacking. A copy of the Forest Development Plan will be forwarded to bands that include the TFL as part of their interest area. Mission will document discussions with the bands and make them available to the District Manager upon request.

Mission commits to the MOF's "Aboriginal Rights and Title Policy" (June 1999) and any current Chilliwack Forest District directives regarding communications with First Nations.

#### 4.7.2 OBJECTIVES

- Identify and protect areas of cultural significance.
- Ensure development proposals do not adversely affect identified cultural values.

#### 4.7.3 STRATEGIES

- Carry out assessments as the need is identified through MOF predictive models.
- Implement recommended strategies for the protection of archaeological sites where they are identified.
- Foster open communications with local first nation bands.
- Refer all proposed development to identified cultural resource users.

## 4.8 BIODIVERSITY

### 4.8.1 BACKGROUND

Biodiversity and old growth management are recognized as important provincial issues. Biodiversity management on the TFL during MP 7 has been guided by the biodiversity guidebook and district policies for wildlife tree retention and biodiversity management.

Due to the absence of an approved landscape unit plan to address the landscape level component of biodiversity, the majority of operational efforts have focused on achieving recommended stand level objectives. Wildlife tree patch reserves as well as individual wildlife trees and small group reserves are retained in or adjacent to the majority of cutblocks. All wildlife tree patches are tracked with data such as size and stand attributes recorded. This data is valuable in ensuring a diversity of stand level attributes are well distributed at the landscape level.

Since beginning planning for MP 8, Mission has prepared its own Landscape Reserve plan. The purpose of this plan is to assist the forest managers in addressing the spatial and non-spatial issues associated with landscape based management. As a first attempt, the landscape reserve plan will serve to address management issues like wildlife tree patch and old growth reserve requirements through targeting the existing permanent and semi-permanent netdown areas that currently exist in TFL 26. The intent is that the Landscape Reserve plan will be considered in the timber supply analysis and twenty-year harvest plan development and be tested and improved through the analysis capabilities of FORUM. While developing the Landscape Reserve Plan, conversations were had with local MOF and MOELP staff who had good input suggestions as well as agreeing with the overall benefits of this type of plan.

Although the Landscape Reserve Plan was not submitted for approval as a separate stand alone plan, it is an integral part of the approved 2000 Forest Development Plan. As such, it is being operationally used by Mission as well as being recognized and approved by the local agencies for operational use. A sensitivity analysis was done on this plan and is presented in the timber supply analysis report.

The Landscape Reserve Plan spatially identifies numerous areas proposed to be set aside as reserves, many of which are in areas with riparian, terrain or visual issues or values. Reviewing agencies can readily see on the FDP, proposed block specific as well as the landscape reserves to confirm that overall biodiversity requirements are being met.

Over 90% of TFL 26 is in the proposed Hatzic landscape unit which has a biodiversity emphasis option of low that allows for up to 2/3 draw down in requirements for old growth. As detailed in section 10.2.2.3 of the Timber supply analysis information package, landscape level biodiversity targets in the timber supply analysis base case scenario only considered old seral requirements based on the 10/45/45 proportion. As biodiversity and landscape unit planning have become quite dynamic, sensitivity analyses were also done to consider the effects of the proposed landscape unit planning as well as Mission's own Landscape Reserve plan as mentioned above.

TFL 26 has currently virtually all second growth timber in low elevation areas. As such, the landscape level biodiversity proposed in this PMP will allow immediate reaching of old growth targets in the upper elevation CWH vm2 and MH zones while the lower elevation CDW vm1 and CWH dm zones will not reach these targets for about 170-190 years.

Biodiversity objectives and strategies to be implemented during MP 8 are derived from direction set forth in the biodiversity guidebook, the Landscape Unit Planning Guide and District policies for managing biodiversity. The twenty year plan also provides guidance by showing spatially how biodiversity objectives can be met over time.

#### 4.8.2 OBJECTIVES

- Achieve targets for old growth and wildlife tree retention while minimizing impact on timber supply.
- Achieve targets for seral stage and block distribution to reduce fragmentation and emulate natural disturbance patterns.
- Maintain or enhance old growth and ecosystem connectivity across the landscape over time.
- Ensure requirements for biodiversity on the TFL are consistent with objectives in the remainder of the landscape unit.
- Ensure biodiversity is maintained at both the landscape and stand level.
- Continue to refine Mission's Landscape Reserve Plan to improve its operational use even more.

#### 4.8.3 STRATEGIES

- Use computer modeling and analysis to show spatially, how old growth objectives and seral stage requirements can be achieved and maintained over time.
- Propose development, as guided by the twenty year plan, that will minimize fragmentation by considering size pattern and distribution in cutblock design.
- Utilize Mission's Landscape Reserve plan to use presently constrained areas such as riparian management areas, lakeshore management zones, high use recreation areas and unstable terrain to ensure connectivity.
- Encourage species diversity through mixed species planting and natural fill in.
- Develop coarse woody debris strategies that will provide stand level diversity while addressing other resource concerns.
- Ensure open communications with the MOF or other licensees in considering biodiversity objectives at the landscape level.

### 4.9 SOILS AND TERRAIN MAPPING

#### 4.9.1 BACKGROUND

Protection and conservation of soils is an important consideration in the management of forest land on the TFL. Soil degradation as a result of access construction and harvesting can result in a significant loss of productive forest land.

During MP 7, Mission has identified site specific objectives in the Silviculture Prescriptions related to minimizing site degradation, soil compaction and soil loss. Where sensitive soils



or steep slopes are encountered, appropriate harvest systems and season of operation are considered to minimize the potential for degradation.

An FRBC funded Terrain Stability Mapping (TSM) project was completed for the entire TFL from 1997 to 1999 as described in the Resource Inventories section of this PMP.

This inventory classifies the TFL into units ranging from Terrain Stability Class I (no terrain stability problems expected) to Terrain Stability Class V (high likelihood of landslides following development). The resultant classifications are then used to determine what type of forest management is appropriate and what level of more detailed geo-scientist analysis is required prior to development. When indicated as necessary, geo-scientist analysis and reports are completed on relevant development areas.

During MP 8, the following objectives and strategies will be implemented to protect or conserve soils and retain site productivity.

#### 4.9.2 OBJECTIVES

- Minimize soil degradation and resultant loss of site productivity.
- Return nonproductive sites to productivity where possible.
- Complete detailed assessments to identify areas of potential instability and soil sensitivity.

#### 4.9.3 STRATEGIES

- Conduct harvesting operations during appropriate seasons or with site sensitive equipment where soils are sensitive.
- Rehabilitate all temporary access structures on completion of harvesting and site preparation activities.
- Use the existing Terrain Stability Mapping for the TFL to help determine appropriate levels of detailed terrain assessments where a potential for instability exists.
- Identify existing roads and landings that are no longer required, for rehabilitation, where they can be returned to the productive landbase.

### 4.10 TRAPPING AND GUIDING

#### 4.10.1 BACKGROUND

No trappers or guide outfitters are known to operate within TFL 26. However, trappers and guide outfitters with interest or knowledge of TFL 26 are able to provide input during forest development plan and management plan reviews or at other times. Any information they provide concerning wildlife management would be considered in development plans and harvesting proposals. Objectives and strategies for the management of the potential trapping and guiding resource include:

#### 4.10.2 OBJECTIVES

- Protect and enhance wildlife habitat.

- Incorporate stand and landscape level wildlife habitat values into development planning.
- Encourage open communications with trappers and guide outfitters.
- Where necessary and feasible, develop more detailed information on wildlife habitat in the TFL.

#### 4.10.3 STRATEGIES

- Continue to determine if there are any trappers and guide outfitters operating in the TFL and if so provide them with opportunities to review development proposals through referrals and consultation.
- If trapper and guide outfitter needs are determined, identify stand and landscape level attributes that are important to species identified as significant to this purpose. Incorporate these attributes into development proposals.
- If trapper and guide outfitter needs are determined, complete wildlife habitat capability and suitability study to provide more detailed information on habitat that is important to them.

### 4.11 MINERAL AND GRAVEL RESOURCES

#### 4.11.1 BACKGROUND

One crown grant mineral claim (DL 6331) exists within the TFL near the western boundary. Other non-crown grant mineral claims also exist although they have not been clearly identified to Mission. Mission plans to have all mineral claims identified by the Ministry of Energy and Mines during the term of MP 8. Currently, where active claim posts are identified during layout, efforts are made to protect them or the claimant, where known, will be identified where removal is required. At this time, Mission is not aware of any known action other than exploration planned by Mineral Claims holders.

There are also gravel leases within TFL 26 generally granted to sand and gravel extraction companies by MOELP. Mission honors the terms of the existing gravel leases but believes any further gravel leases or extensions should be carefully evaluated prior to being issued as the land use for subsequent forestry purposes generally ends up with significantly degraded sites even after rehabilitation.

#### 4.11.2 OBJECTIVES

- Protect active mineral claim posts.
- Identify where active claims exist within the TFL.
- be involved in providing referral comments on any gravel lease requests within TFL 26.

#### 4.11.3 STRATEGIES

- Where active claim posts are identified in areas proposed for development all reasonable efforts will be made to preserve them. Where removal is required for road construction or other activities the affected party, where known, will be contacted.
- Obtain maps and/or associated data showing active mineral claims within the TFL.
- provide referral comments related to land use and TFL interests on proposed gravel leases or mineral claims within TFL 26.

## 5. SPECIAL PROJECTS

### 5.1 MISSION SANITARY LANDFILL

For about 30 years, Mission, through its Engineering Department, has operated the Mission Sanitary Landfill (Landfill). The purpose of the Landfill has been to locally dispose of the community's non-recyclable solid wastes with approximately 14,000 metric tonnes deposited annually. The Landfill operates under a permit from the Ministry of Environment, Lands and Parks as well as being a recognized waste disposal facility in the Fraser Valley Regional District's Solid Waste Management Plan. Both of these are mandated under provincial legislation, regulation and policy.

The Landfill is seen as a very important community facility valued in the millions of dollars. Mission has spent more than \$1,500,000 in the past four years to upgrade to meet current environmental standards. Approximately 11 hectares of Mission's own land in the Landfill currently exist within TFL 26 and another 4 hectares of TFL crown land also are used. As the Landfill reaches capacity in about the next five years, rather than engage in hauling waste to other communities, Mission believes the best solution is to utilize additional land immediately adjacent to the existing Landfill for future community solid waste disposal. This expansion would include both Mission's own land and other crown land currently in the TFL.

In recent years, since the start of the Forest Practices Code and the Forest Land Reserve, Mission has found that the Landfill has become incompatible with normal uses of TFL land. Some examples are with seeking exemptions for reforestation due to the final impervious layer required on the Landfill, the issuance of Cutting Permits and the removal of gravel prior to solid waste disposal.

In order to facilitate current compatible land uses as well as the efficient use and expansion of the landfill, Mission will be attempting to seek solutions with the relevant provincial ministries during the term of MP 8. While Mission's preferred solution is to remove the current and future land needed for the Landfill from the TFL due to the general incompatibility of the two uses as well as the importance of this facility and function to the community, Mission is willing to work with Provincial ministries to find practical and reasonable solutions to this issue.

## 6. FOREST DEVELOPMENT PLAN

A Forest Development Plan (FDP) shall be submitted as required by the District Manager. In 1998, Mission started submitting the FDP on a biannual basis. This is planned to continue in MP 8. The FDP will be prepared in accordance with regional guidelines and any District Manager directives.

The FDP incorporates the objectives and strategies of the Management Plan into an operating plan giving detailed information on proposed development. Due to the anticipated greater accuracy of the Twenty Year Plan in PMP 8 as a result of spatial modeling, this plan will be considered for proposed development and interaction with other resource values. The FDP in turn provides guidance for the Silviculture Prescription (SP), the most site specific operational plan.

The FDP will also be subject to Public Review in accordance with regional guidelines and any District Manager directives.

## 7. CONTRACTING

In accordance with Part 14.0 of the replacement document for the TFL, at least 50% of the timber volume attributable to Schedule 'B' lands harvested each calendar year by Mission shall be harvested by contractors.

Unless specific relief is granted by the Ministry of Forests, the contract timber proportion will be in accordance with the Timber Harvesting Contracts and Subcontracts Regulation.

Currently, most silviculture and harvesting activities are performed by contractors. Table 3 provides the percentage compliance during the term of MP 7. Satisfactory compliance was achieved in every year during MP 7.

TABLE 3  
CONTRACTOR CLAUSE PERCENT COMPLIANCE  
DURING THE TERM OF MP 7

Year	Harvested volume (m <sup>3</sup> )	Harvested volume attributed to Schedule 'B' lands	Total volume contracted under full and phase contracts.	Total volume contracted expressed as a % of compliance required (*)
1999	43,393	38,353	29,775	155
1998	25,599	22,732	13,906	122
1997	25,538	22,678	19,642	173
1996	32,235	28,625	26,984	188
1995	58,917	50,094	28,116	112
1994	43,472	36,962	27,411	148

\* This figure is to be over 100% or application must be made to Minister of Forests for relief.

## 8. REVISION

Revisions to the Management Plan shall be made in accordance with the following conditions as set forth in the Tree Farm Licence 26 Document dated July 22, 1999.

### Paragraph 2.38

If the Chief Forester considers that:

- damage to timber in the Licence Area as a result of fire, flood, wind, insects, disease, or other causes,
- operations conducted in accordance with the management plan are causing or could cause serious damage to the natural environment, including soils, fisheries, wildlife, water, range and recreation resources,
- establishment, variance, cancellation or replacement of a higher level plan
- interference with an aboriginal right, or
- a change in the allowable annual cut as a result of a determination by the Chief Forester under the Forest Act

have rendered the management plan in effect under this licence inadequate, the Chief Forester, in a notice given to the licensee, may require that the management plan be amended.

### Paragraph 2.39

A notice referred to in paragraph 2.38 must specify:

- why the Chief Forester considers the management plan has been rendered inadequate,
- the extent to which the management plan is inadequate, and
- the changes required by the Chief Forester.

### Paragraph 2.40

Where the Chief Forester gives the Licensee a notice referred to in paragraph 2.38, the Licensee, within three months after the date on which the notice is given, will submit for the Chief Forester's approval a proposed amendment to the management plan, which incorporates the changes referred to in subparagraph 2.39(c), to have effect during the unexpired term of the management plan.

## 9. CALENDAR YEAR REPORT

The Tree Farm Licence 26 replacement document dated July 22, 1999, specifies that the annual report will no longer be a standard requirement as shown below in section 11.00 of the TFL document:

### Section 11.00 REPORTING

11.01 The Regional Manager, in a notice given to the Licensee by April 1, may require the Licensee to submit a report containing such information as the Regional Manager requires regarding

- the Licensee's performance of its obligations under or in respect of this Licence, the approved management plan, the allowable annual cut rationale, and conditions from the Chief Forester's management plan approval letter, and
- the processing or other use or disposition of the timber harvested under this Licence in the previous calendar year if the information is not included in any other reports which the Licensee must submit under the Acts or regulations referred to in paragraph 9.01.

11.02 Upon receipt of a notice referred to in paragraph 11.01, the Licensee, on or before the date specified in the notice, must submit a report to the Regional Manager containing the required information.

11.03 Subject to paragraph 11.04, the Regional Manager may include the information contained in a report submitted under paragraph 11.02 in any reports prepared by the Ministry of Forests for the public review.

11.04 Subject to the *Freedom of Information and Protection of Privacy Act*, the Regional Manager will not disclose information provided in confidence by the Licensee in a report submitted under paragraph 11.02.

The Regional Manager has now replaced the requirement for a set annual report with a Calendar Year Report which is to have the content and timing specified yearly by the Regional Manager.



## 10. PUBLIC INVOLVEMENT

### 10.1 CONSULTATION WITH OTHER RESOURCE USERS

Mission maintains liaison with other agencies, and other resource users, through open house viewings of the SMOOP, Management Plan and Forest Development Plans. Letters are also mailed to agencies, resource users or representative groups inviting review and comment of these plans. Where specific issues arise, Mission will meet with the potentially affected user to negotiate or present a proposal that will accommodate the users needs.

The Kwantlen First Nation (Kwantlen), through studies done by BC Hydro, have been shown to have historically used the areas close to and in the present day Stave Lake. The Sto:lo (Sto:lo) First Nation are just entering the beginning phases of the lands claims process and their exact claim areas are not yet public. Mission maintains ongoing communications with Kwantlen and Sto:lo regarding any proposed development. Mission has taken the following steps to ensure open and timely communications on development proposals and ongoing activities on TFL 26:

- Communicate with the designated First Nations research staff for review of proposed plans including the Management Plan and Forest Development Plan.
- Hand deliver and discuss the Plans to the designated First Nations research staff or other members at a time and place of their choosing.
- Involve band members in surveys directly related to sustenance or areas of historical potential including Archaeological field surveys.
- Where an issue or request has been referred, a follow up in writing to show how Mission has accommodated First Nations concerns.

### 10.2 PUBLIC AND AGENCY INVOLVEMENT

Mission follows the MOF referral and consultation process for all significant TFL plans including MP, SMOOP and Forest Development Plans. This includes timely newspaper advertising, plan viewing periods and Open Houses. The public and agencies may respond by methods such as in person, in writing, by fax and by e-mail. Mission considers all input received and will provide the District Manager with copies when the input is part of the recognized process.

In addition, Mission has frequent public Council meetings where forestry is often one of the agenda items. The public may request to be heard by Council at any of these meetings. As Mission is a municipality, the Freedom of Information and Protection of Privacy Act allows the public legal access to all applicable TFL 26 information.

As per the TFL 26 licence document, the SMOOP will not be required for MP 9.

## 11. REVIEW COMMENTS AND DIFFERENCES BETWEEN MP'S

This proposed PMP is to provide a summary of:

- all comments provided by the Regional Manager within two months of the date on which the Regional Manager receives a draft management plan to review, and
- all comments received by the District of Mission from resource agencies and others in the public review strategy regarding the draft management plan, and
- the differences between the draft management plan and the proposed management plan, including differences resulting from modifications made in response to comments on the draft MP made by the MOF Regional Manager, resource agencies and during the public review strategy.

### 11.1 COMMENTS PROVIDED BY REGIONAL MANAGER

The comments on draft MP provided by the MOF Regional Manager are duplicated below. Note that the comments are repeated verbatim and that due to different word processor programs being used, the referenced sections do not all correspond with the actual PMP section numbers although the section titles are accurate. The District of Mission response follows the MOF comments and is in italics:

**General:** Please ensure the proposed MP undergoes a thorough proof reading. *Mission response: done.*

#### **Section 1.1 Purpose of Plan**

This section should be revised to be more consistent with the "Purpose" statement on page 121 of the TFL MP Guide. The first 2 lines of this paragraph are not necessarily accurate. *Mission response: done.*

#### **Section 1.2 Content of the Plan**

The reference to "Discharge of Firearms Bylaw Schedule "A" map" appears to have been included in error. *Mission response: reference to the map has been removed.*

The Chilliwack Forest District could not locate a TFL forest cover map in their copy of the draft MP. Please ensure they have been provided with one. Also note that if possible, colour theming by forest cover age class improves the utility of the map. *Mission response: MOF District will receive the forest cover map with the PMP and colour theming by age class will be done.*

#### **Pages 3, 57**

The total area is 10 560 ha. Under MP 7, it was 10 413 ha. Please explain the difference of 147 ha. There are no instruments to account for the difference. Appendix 6.1.1.1 states: "There have been no deletions or additions to the TFL 26 land base since MP 7." *Mission response: further explained after Table 4 in the Licence Area section.*

#### **Section 1.3 Description of the TFL**

In paragraph 2, line 3, reword..."one each on either side....".

In the same paragraph, replace ASL with “above sea level”. *Mission response: changes done.*

#### **Section 1.4 History**

Revise line 2 to read “The TFL has grown a bit in size since...” *Mission response: change done.*

#### **Section 1.8 Community Involvement and Input**

Reword line 3 to read “....who are elected for a term of three years” *Mission response: change done.*

#### **Section 2.3 Vegetation Resource Inventory**

You are encouraged to review your proposed method of site index data collection with Albert Nussbaum at the Ministry of Forests Research Branch to ensure its acceptability for use in timber supply analysis. *Mission response: further explained in the relevant section.*

#### **Section 2.5 Recreation**

The detailed Forest Recreation Plan completed in 1999 (FRBC funded) amalgamated a variety of recreation documents, data and ideas into one central plan for the TFL yet there is no mention of this valuable source of information. This reference should be included in this section of the MP as it would provide the necessary vision and recommended strategy for managing recreation resources within the TFL. *Mission response: Plan now referenced in the relevant section.*

#### **Section 2.6 Landscape Inventory**

Include in this section a summary of the percent alteration limit zones being applied to the partial retention rvqc polygons. *Mission response: done in the relevant section.*

#### **Section 2.7 Fisheries**

The MP explains that in some areas, fish presence may be assumed in a stream where no inventory has been carried out. Detail the criteria used in such circumstances to assume fish presence. *Mission response: further explained in the relevant section.*

#### **Section 3.1.1 Proposed Harvest Rates**

Explain why the minimum harvest ages have changed relative to the last timber supply review. *Mission response: further explained in the relevant section.*

#### **Section 3.1.2 Rationale for Recommended AAC**

It would be helpful to include a reference here to where the reader could find an explanation of the landscape reserve plan. *Mission response: further explained in the relevant section.*

#### **3.2.2.3 Twenty Year Plan**

The last paragraph should provide more detail with respect to how the TYP was optimized in the model, what future desired conditions were achieved and what adjustments to forest cover constraint or VEG requirements were necessary to meet the proposed harvest level of 43,000 m<sup>3</sup> per year. *Mission response: further explained in the relevant section.*

### **Section 3.4.6 Utilization Standards**

Page 19, Table 1:

Paragraph 4.08 of the TFL 26 agreement states that the Schedule C specs take precedence over what is in the MP. Note that the standards in the TFL agreement are slightly different: Columns would be labeled 1-120 and 121+. Note that the standards also do not have to be placed in the next MP, unless they are proposed to be different from what is in the TFL agreement. *Mission response: changed to be consistent in the relevant section.*

#### **1.1.4.1 Problem Forest Types**

Management Plan #8 excludes all deciduous leading and minor stands (approx. 750 hectares) of timber from TFL #26. While there has been no performance in the utilization of deciduous in the TFL, elsewhere in the Chilliwack Forest District, deciduous species have been in high demand. There is a Deciduous forest licence in the Fraser TSA and we believe that this commercial species can equally be managed in this TFL due to the close proximity to the markets. A portion of these stands should be included in MP #8 and some level of planned deciduous harvest proposed.

The last paragraph of this section needs to be rephrased to indicate that it is the jurisdiction of the chief forester to determine if a partitioned cut is necessary, but that the licensee's recommendation or preference is.... *Mission response: changed in the relevant section.*

#### **Section 1.1.2 Operability Line**

Provide mapping of the operability line and non-merch stands. *Mission response: done in the map folio section.*

#### **Section 1.2.1 Silviculture History and Achievements**

Please provide some examples of how green up is being expedited in some areas. *Mission response: further explained in the relevant section.*

#### **Section 1.2.5.2 Silviculture Prescription**

For the sake of clarity, 'Prior to harvest,' should be added to the beginning of the last paragraph. *Mission response: done in the relevant section.*

#### **Section 1.2.6.3 Commercial Thinning**

What was learned from the trial commercial thinning operations? *Mission response: further explained in the relevant section.*

#### **Section 1.4.2 Insects (b) Western Hemlock Looper**

On page 31, in the last paragraph, change the word "herbicide" to "insecticide." *Mission response: done in the relevant section.*

### **Section 1.5 Windthrow**

Note that the removal of larger stems along block boundaries may expose less windfirm co-dominant and suppressed stems. More detailed information for your consideration can be found in the Windthrow Handbook for B.C. Forests. Please contact Greg Gage, TFL

Forester, Vancouver Forest Region if you wish further information. *Mission response: comments noted although no changes made.*

### **Section 1.3.1 Visual Management Background**

Although visual impact does have an impact on the timber supply, it must be managed for due to public recreating within the area. Whether it is boating or canoeing on Rolley Lake or Stave Lake, or using the campsites, the visual experience is part of the recreational experience. Combine this with the fact that the TFL is accessible to a large population base, and it is understandable that there would be a concern for visual quality. These would be some of the reasons why the scenic areas were made known by the District Manager.

There is confusion surrounding the colour themes on the "VQO" map (which is actually recommended visual quality class (rVQC)) produced by Forest Ecosystem Solutions Ltd. Please clarify if it is themed for rVQC, or EVC as it appears to state in the query legend. If it is the latter, please submit another map to the regional office regarding the known scenic areas and rVQCs, once it has been reviewed and cleared with the district manager. *Mission response: The VQO map in proposed MP 8 are themed for rVQC.*

### **Section 2.3.2 Visual Management Objectives**

The objective of "eliminating" the impact of visual quality objectives on timber supply does not appear possible given the high percentage of the TFL subject to visual constraints. *Mission response: change made in the relevant section.*

### **Section 2.3.3 Visual Management Strategies**

For clarity, revise the first bullet to read "...which will allow for better timber flow...." *Mission response: change made in the relevant section.*

### **Section 2.5.1 Wildlife Management Background**

Please confirm with district MOF staff that the Landscape Reserve Plan has been approved as part of the year 2000 FDP. More detail is required to explain how the Landscape Reserve plan was developed and how it is intended to integrate with existing (WTP/old seral) biodiversity requirements. *Mission response: further explained in the Biodiversity section.*

### **Section 2.6.1 Water Resources Background**

Include in the objectives or strategies key indicators from the CWAP (i.e. ECA limits, hydrological equivalency information) *Mission response: further explained in the relevant section.*

### **Section 2.8.1 Biodiversity Background**

It would be helpful to have a summary of this data included in the calendar year reports. *Mission response: will consider doing so although no changes needed in the PMP.*

### **Section 2.10 Trapping and Guiding Background**

Confirm with MELP that there are no registered traplines within TFL 26. *Mission response: messages left with MOELP have not yet been answered on this subject. Further inquiries will be done.*

**Page 50 Annual Report**

This section should be rewritten to say that the annual report has been replaced by a calendar year report. *Mission response: change made in the relevant section.*

**Page 51 Public Involvement**

As per the TFL 26 licence document, the SMOOP will not be required for management plan No. 9. *Mission response: comment noted and change made in the relevant section.*

**Miscellaneous**

As per schedule D of the TFL 26 licence document, the draft and proposed MPs are to highlight the key similarities and differences between the draft management plan or the proposed management plan, as the case may be, and the management plan in effect or last in effect under this licence, and in a summary form compare;

(i) the impact, if any, that implementation of the management plan in effect or last in effect under this licence had, and

(ii) the impact, if any, that the licensee anticipates implementation of the draft management plan or the proposed management plan, as the case may be, will have on factors such as harvest levels, economic opportunities, the number of persons employed by the licensee and contractors of the licensee, and the protection and conservation of non-timber values.

*Mission response: In general terms, there will be few significant changes happening in MP 8 compared to MP 7 primarily as the AAC levels are very similar and the resulting logs will still be sold mainly in an open market situation. As such, economic opportunities, harvest levels and the number of persons employed by the licensee and contractors are not proposed to be affected significantly. The protection and conservation of non-timber values is seen as overall greater in MP 8 compared to MP 7. For instance, wider and more extensive riparian zones have been applied in the newer MP in keeping with current forest practices leading to improved fisheries and water protection. Also, new inventories for visual quality and terrain stability provide more relevant protection in these areas. Long term reserve areas and retained trees and patches are more extensive in the new plan leading to better wildlife protection and also visual quality.*

Ensure the proposed management plan is prepared and signed and sealed by a Registered Professional Forester, and signed by the licensee or authorized representative.

*Mission response: done.*

The proposed MP is to include:

SMOOP

Twenty Year Plan

Information Package

Timber Supply Analysis

Refer to the TFL 26 document for a complete listing of additional requirements of the proposed MP. *Mission response: done.*

## 11.2 COMMENTS PROVIDED BY RESOURCE AGENCIES

No additional comments were provided by resource agencies other than those already included in the Regional Manager's comments above.

## 11.3 COMMENTS FROM PUBLIC REVIEW STRATEGY

Written comments were received on the draft MP by three people as follows:

- Sharie Conroy had a concern regarding logging that had taken place in a previous recreation area in a Woodlot east of Mission. She asked that this concern be passed on to the Chilliwack Forest District which was done. There were no TFL 26 concerns to follow up on or changes to the PMP required.
- Wendy Edelson had a concern about certain crown forest lands adjacent to TFL 26 that had been allocated by the MOF to another licensee's chart area. She says she would have liked to have seen these areas allocated to Mission TFL 26 for management. As these lands are not currently in TFL 26, there is no action needed by Mission. She also asks about the impact of species planted and other management regarding future global warming possibilities. Although we cannot predict the extent or impact of global warming and should not necessarily jump to significant management changes as a result of such assumptions, we are shifting toward a higher component of Douglas-fir for various reasons which would help withstand global warming changes better as well. A telephone conversation has been had with Ms. Edelson so there is no further action required on this subject. No changes were made to the PMP on this topic.
- Ronn Harris expressed two concerns: one about the lack of detail in MP 8 regarding non-timber resources such as salal harvest and another regarding overall land use planning. As Mr. Harris is our current shake salvage contractor and has been for several years, we have frequent verbal discussions on a variety of issues. Mr. Harris's main concern here is related to the future possibilities of botanical forest products harvesting apart from shake and shingle salvage. After he made these written comments, we verbally explained existing MOF botanical forest products policies, also that a MP does not usually go into operational detail on these items but does refer to the issue on a more broad planning and management level and that we are open to a wide variety of suggestions as to management options for this topic. As the questions have been answered, no further action is planned and no changes were made to the PMP.

## 11.4 DIFFERENCES BETWEEN DRAFT AND PROPOSED MP'S

The differences in this proposed MP from the previously submitted draft MP are mainly in response to the Regional Manager's review comments as described above. No changes were needed as a result of comments provided by the public. Description of the changes made are noted following the various review comments above.