

## **District of Mission**

### **Mission Municipal Forest**



## **SUSTAINABLE FOREST MANAGEMENT PLAN**

for

### **MISSION TREE FARM LICENCE #26**

**March 31, 2003**

**Version 1.0**

**Prepared with assistance from:**

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## 1 INTRODUCTION

### 1.1 Brief History of the District of Mission

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

The municipality's population in the year 2002 is about 33,000 and expected, using current trends as analyzed by the Community Development Department, to grow about 1-2% per year to reach approximately 40,000 residents in the next 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.

The District of Mission has managed TFL 26 continuously since its start in 1958. 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.

### 1.2 Description of TFL 26

Mission Tree Farm Licence 26 is one of only two TFLs 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 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.

Almost all of the forest age structure and harvesting is second growth.

TFL 26 is the third smallest of BC's 34 Tree Farm Licenses and accounts for only 0.27% of the total provincial TFL annual allowable cut and 0.06% of the total AAC from all tenures in BC.

Further information on TFL 26 is presented in the Defined Forest Area section of this plan.

### 1.3 Summary of Forest Management and Stewardship Policies

- **Forestry Environmental Policy:** The District of Mission updated Policy and Procedure LIC.12 in December, 2002. The revised policy is titled "Forestry Environmental Policy" and it states:

## **Purpose**

The purpose is to detail environmental policies related to Mission Tree Farm Licence 26 (also known as Mission Municipal Forest), which is managed by Mission's Forestry Department.

## **Forestry Environmental Policy**

The District of Mission is committed to responsible stewardship of the environment in our forestry operations on TFL 26.

We will:

- Meet all applicable laws governing environmental performance.
  - Plan for, set and review forest environmental objectives and targets as well as seek continual improvement in our environmental performance.
  - Use current scientific knowledge to understand ecological responses to natural and human-caused disturbances and then incorporate this knowledge into higher level and operational plans by applying ecosystem management principles to achieve desired future forest conditions.
  - Obtain advice from resource professionals, where required, for issues in resource fields including forest management, fisheries and wildlife biology, archaeology, terrain stability and arboriculture.
  - Practice forest management that incorporates ecological processes and diversity as well as support sustainable, integrated use of the forest.
  - Include old-growth attributes as part of our management strategies as well as increase the volume and distribution of forests with old-growth attributes over time in TFL 26.
  - Direct employees and contractors to immediately cease and report on forest operations, which are resulting in unacceptable environmental impacts and subsequently to undertake appropriate mitigative action.
  - Promote environmental awareness through the Forestry Department including employee/contractor training and/or communications to further the objectives of this policy.
  - Operate in a manner that protects human health and safety, while carrying out activities under this policy.
  - Encourage interested groups and individuals to have input to our forest planning activities.
  - Provide available performance information to the public upon request.
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- **2003 Overall Goal:** The current Goals and Objectives statement for the District of Mission Forestry Department states "To manage TFL 26 (Mission Municipal Forest) considering integrated use, environmental principles, forest management knowledge and

legislative requirements to optimize economic, social and environmental forest values”.

## **1.4 Strategic Objectives**

Mission’s objectives that this SFMP are designed to support are to:

- Increase the quality and quantity of wood supply subject to Mission’s goals and objectives stated above.
- Improve the quality of information used in making resource management decisions in the TFL. Initiating and completing inventories, such as Terrestrial Ecosystem Mapping as well as Biodiversity and Wildlife Capability/Suitability Mapping can do this. Also, completing a site index study to determine the true productivity of the land base will contribute to better understanding of available resource management options.

## **1.5 Links to Operational Planning**

In Mission’s last timber supply analysis, the long-term harvest level forecast was linked to a 20-year plan through a spatial planning process. It is expected that future timber supply analyses will incorporate this or another SFMP in the long-term harvest forecast and further link the harvest forecast to operational planning through a fully spatial 20-year plan.

Often 20-year plans change as a result of actual block layout. These operational changes to the 20-year plan can be fed back into the estate model to ensure that changes in the short-term plans do not jeopardize the long-term goals and objectives for the TFL.

## **1.6 Commitment to Continual Improvement**

In regard to the TFL 26 operation, the District of Mission will use adaptive management principles to continually improve forest ecosystem management. An example of adaptive management in the SFMP context is the above described updating of the spatial data to match actual operations and re-analysis of all resources for the long-term using this updated spatial data.

## **1.7 Purposes of the SFMP**

- Serves as the principal strategy for transferring the District of Mission’s commitment to sustainable forest management into on-the-ground practices.
- Provides necessary evidentiary information in support of Results Based Code Resource Development Permits.
- Provides investment rationale for Forest Investment Account (FIA) expenditures planned for TFL 26.
- Provides background information and a foundation for future TFL certification initiatives.
- Provides consideration and a foundation for considering combining future TFL Management Plans with SFMPs.

## **1.8 Responsible Parties**

This Sustainable Forest Management Plan is for the distinct and defined management unit of Mission Tree Farm Licence 26. The sole licensee for TFL 26 is the District of Mission. The corporate address is:

District of Mission,  
8645 Stave Lake Road, Box 20,  
Mission, BC, V2V 4L9

Website: [www.mission.ca](http://www.mission.ca) E-mail address: [info@mission.ca](mailto:info@mission.ca)

Further information can be found on-line about TFL 26 by going to the District of Mission website and then following the links to 'Municipal Departments' and then 'Forestry'. The information includes topics such as education, recreation, maps, history and the ability to generally view many of the department's files.

TFL 26 is managed operationally by the District of Mission Forestry Department. The address is:

District of Mission Forestry Department,  
33835 Dewdney Trunk Road, Box 20,  
Mission, BC, V2V 4L9

Phone: 604-820-3762

Fax: 604-826-8633

## 2 DEFINED FOREST AREA

The defined forest area for this SFMP is Mission TFL 26. A key map at a scale of 1:250,000 is attached as Appendix A. This map shows the TFL boundaries and also that the TFL is located in the northern part of the District of Mission with all parts of the TFL located relatively close to each other.

The TFL is 10,560 hectares in size, which includes 9,292 hectares (88%) of crown land and 1,268 hectares (12%) of District of Mission owned land.

The TFL has an Allowable Annual Cut approved by the MOF Chief Forester. The current AAC, which was determined by the Chief Forester in July 2001, is 45,000 cubic metres with the following breakdown:

- 38,223 m<sup>3</sup> of crown land volume (Schedule B) available to the District of Mission.
- 5,175 m<sup>3</sup> of private land volume (Schedule A) available to the District of Mission.
- 1,602 m<sup>3</sup> of crown land volume available to the Ministry of Forests for their BC Timber Sales small business program.
- From the above, the total annual TFL 26 volume available to the District of Mission is 43,398 m<sup>3</sup>.
- The AAC was determined using a fully spatial timber supply analysis.

The current standing volume for TFL 26, based on the projected inventory to January 1, 2000, is 2,580,391 m<sup>3</sup>.

Appendix B contains various charts and graphs showing information such as the current timber harvesting land base and biogeoclimatic variants as well as tree species and age class distributions within the TFL.

### 2.1 Strategic Plans Applying to the Defined Forest Area

#### 2.1.1 TFL 26 Management Plan 8

This plan has been approved by the MOF Chief Forester and is valid from September 1, 2001 to August 31, 2006. The MP contains broad, extensive information on the TFL and it discusses various objectives and strategies for each forest resource value.

#### 2.1.2 Timber Supply Analysis (TSA)

The timber supply analysis (TSA) was approved in 2001 for TFL 26. This TSA was fully spatial and provides the opportunity to advance the timber supply analysis and twenty-year plan into a process that can be used, not only for appropriate strategic analysis to meet a regulatory process, but more specifically:

- The analysis results provide a linkage to direct future operational planning;
- The analysis results enable the resource manager to develop plans that have spatial indicators that can be monitored and provide feedback to the strategic plan;
- The model used for the analysis has the potential to spatially model the impact of proposed harvest on non-timber resources over time. This could provide a starting point for

development of a sustainable forest management system; and

- The spatial output can be evaluated manually, modified and incorporated in further spatial analysis.

### **2.1.3 Type I Incremental Silviculture Strategy**

The strategy for TFL 26 was submitted to MOF July, 2001. The emphasis of the silviculture strategy for TFL 26 is to maximize the quality of the timber supply subject to available funding and market conditions for forest products. In this strategy, Mission also wished to increase the available harvest through incremental silviculture and other investments.

### **2.1.4 TFL 26 Resource Management Plan**

This plan was submitted to MOF July, 2001. This plan describes that Mission TFL 26 has many attributes that favour enhanced forestry activities:

- Community forest managed by a municipality so employment and enhancement of the local forest land base is a key economic and social factor.
- About 88% of the timber harvesting land base is medium or good site favouring enhanced forestry investment.
- Many plantations are overstocked from heavy natural fill-in and they will benefit from silvicultural improvement.
- Large current reliance on second-growth forests for harvesting, and
- A history of performing enhanced forestry activities
- The report also discusses issues, strategies and priorities relating to potential silvicultural treatments in the TFL and their effect on timber supply and wildlife habitat.
- Landscape Unit planning is currently being developed for the Hatzic and Alouette LU's, where TFL 26 is located.
- Even though the following are not strategic plans, they are noted elsewhere in this report: Terrestrial Ecosystem Mapping, Wildlife Capability/Suitability Mapping and Terrain Stability Mapping.

### **2.1.5 Landscape Reserve Plan**

To help protect current biodiversity values and ensure future achievement of old forest conditions as well as wildlife tree patch objectives, Mission Municipal Forest staff prepared a landscape reserve plan to assist in operational planning. By targeting existing permanent and semi-permanent non-contributing areas, Mission attempted to minimize the initial impact on available harvesting opportunities and timber supply. The intent of the plan is to satisfy objectives for old forest conditions through a retention and recruitment of old forest over time.

### **3 PUBLIC AND FIRST NATIONS PARTICIPATION**

#### **3.1 Public Participation**

As the District of Mission is a local government body, the public has ready access to information and analysis and plan input processes. In addition, the Mayor and six Councillors, who are elected for a term of three years, hold semi-monthly, public Council meetings with a Committee of the Whole structure. This format includes forestry issues for TFL 26. At any of these meetings, the public may request to be heard by Council on various subjects including forestry. The Councillors 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 many municipal employees are familiar with the TFL 26 operation.

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. The public are able to access many District of Mission files via the internet.

In the past, Mission has maintained liaison with other agencies and other resource users through open house viewings of Management Plans and Forest Development Plans. Letters have been mailed to agencies, resource users or representative groups inviting review and comment of these plans. Where specific issues arise, Mission usually meets with the potentially affected user to negotiate or present a proposal that will accommodate the users needs.

While this SFMP is a public document, there are no specific formal public participation processes planned although all the above general processes apply. This plan has not been prepared at this time to satisfy any forest certification processes or the public participation that accompanies such processes. In time, this plan may be combined with other planning processes such as the management plan, a forest stewardship plan or a certification initiative at which time the relevant public input issues will apply.

#### **3.2 First Nations Participation**

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 proposed Forest Development Plans (FDP) or Management Plans. Mission has taken the following steps to ensure open and timely communications on development proposals and ongoing activities on TFL 26:

- Communicated 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.

While this SFMP is a public document, there are no specific formal public or First nations participation processes planned although all the above general processes mentioned in the proceeding section apply.

## 4 SFM GOALS, INDICATORS AND OBJECTIVES

All the SFM goals, indicators and objectives in this document are organized by FIA land based programs to facilitate easier budgeting. The land-based programs are:

1. Strategic Resource Planning
2. Stand Establishment and Treatment
3. Infrastructure
4. Restoration, Rehabilitation and Infrastructure
5. Information Gathering and Management
6. Gene Resource Management
7. Training and Extension

### 4.1 Strategic Resource Planning

Strategic resource planning forms the basis for resource management decisions and investment decisions in the TFL. It is a priority in the short term to complete strategic plans. Strategic planning will focus on Landscape Unit Planning, developing an Incremental Silviculture Strategy and a Sustainable Forest Management Plan. Table 1 illustrates the planned expenditures in the strategic resource planning activity area.

**Table 1 – Strategic Resource Planning Allocation**

Planning Activity	Funding Priority	2002 Funding Allocation	2003 Funding Request	2004 Funding Request	Timeline for Completion
SFMP	H	\$6,200	\$2,000	\$0	March 31, 2004
<b>Landscape Unit Planning</b> OGMA Establishment and WTP Targets.	H	\$9,000	\$2,000	\$0	March 31, 2004
Type 2 Incremental Silviculture Strategy	L-M	\$0	\$0	\$25,000 (phase 1)	March 31, 2005 (phase 1)
<b>Total Strategic Resource Planning</b>		<b>\$15,200</b>	<b>\$4,000</b>	<b>\$25,000</b>	

#### 4.1.1 Sustainable Forest Management Plan (SFMP)

This plan is a simplified version of a certification based SFMP. During the next 2 years Mission may update this SFMP depending on regulatory requirements and available funding. It is likely that the development of a true SFMP will be linked to the next TFL timber supply analysis. This would allow spatial and temporal demonstration of the plan's sustainability. The allocation for SFMP development in 2002 was \$6,200. Mission anticipates a funding requirement of \$2,000 for SFMP updates during 2003.

#### 4.1.2 Landscape Unit Planning

Landscape unit planning includes Old Growth Management Area (OGMA) establishment and wildlife tree patch targets.

The allocation for landscape unit planning in the 2002 fiscal year is \$9,000 with submission planned by March 31, 2003 for the draft Hatzic landscape unit plan to the Ministry of

Sustainable Resource Management for their review. It is anticipated that the MSRM review comments will require some further information or clarification during 2003 prior to final plan approval so a funding requirement of \$2,000 is planned.

### 4.1.3 Old Growth Management Area (OGMA) Establishment

The goal of OGMA establishment is to maintain representative old growth across the landscape throughout various biogeoclimatic subzones. The percent cover of old growth is considered an indicator for maintaining biological diversity.

There are parts of two landscape units within TFL 26, the Hatzic and the Alouette. As the Alouette landscape unit covers only a very small area of the TFL, all the established OGMA's in the TFL will likely occur in the Hatzic landscape unit.

#### Indicator

Percent cover of old growth by LU and BEC variant.

#### Objective

Submit draft OGMA's and draft objectives for OGMA's by LU and BEC variant to the Ministry of Sustainable Resource Management by March 31, 2003. Perform any subsequent follow-up and discussion during the 2003-04 year with MSRM prior to official OGMA designation.

#### Rationale

The percent cover of old growth is considered an indicator for maintaining biological diversity.

#### Current State

The current state of old growth by BEC variant within the Hatzic landscape unit is presented in Table 2. The provincial government has designated this landscape unit with a low biodiversity emphasis.

**Table 2 - Old Growth Requirements in the Hatzic LU**

Landscape Unit	Bec Variant	Target %	Current %
Hatzic	CWHdm	≥3 now, ≥9 in 140 years	1.1
	CWHvm1	≥4.3 now, ≥13 in 140 years	3.2
	CWHvm2	≥4.3 now, ≥13 in 140 years	11.4
	MHm1	≥6.3 now, ≥19 in 140 years	23.0

Within those BEC variants where an old growth shortfall exists, old growth recruitment areas are set up, rather than OGMA's. The targets presented in the table are for the whole landscape unit, not for the TFL portion of it. As landscape unit planning is being carried out for the whole landscape unit, Mission does not have specific targets, rather OGMA's are being established where they best meet the set objectives for the landscape unit.

Table 3 shows the areas for established draft OGMA's in the Hatzic landscape unit. It also illustrates the draft OGMA's in the TFL. The draft OGMA's or recruitment areas in the TFL are not expected to impact timber supply as they are all established within Mission's landscape

reserve or are otherwise located in already constrained areas, except for 9 ha of OGMA recruitment areas. A sensitivity analysis in the last timber supply analysis showed that the landscape reserve plan itself would result in a minor short-term timber flow decrease of 150 m<sup>3</sup>/year (less than one half of one percent) and a long-term harvest level impact of 6.5%.

**Table 3 – OGMAs and Recruitment Areas in the TFL and Hatzic LU**

	<b>OGMA Classification</b>	<b>Contributing (THLB)</b>	<b>Partially Contributing (THLB)</b>	<b>Non-Contributing</b>	<b>Grand Total</b>
Not_TFL	OGMA Recruitment	587	533	3,293 49	4,413 49
Not_TFL Total		587	533	3,342	4,463
TFL26	OGMA Recruitment	9		100 816	109 816
TFL26 Total		9		916	924
Grand Total		596	533	4,258	5,387

From Keystone Wildlife Research, March 2003

### Forecasting

Once the OGMAs have been established, they will likely remain as OGMAs in the long term.

### Monitoring and Evaluation Procedures

After the OGMAs have been established they will be assessed periodically. A general evaluation of old seral distribution will take place in conjunction with timber supply analysis. Major natural disturbances also necessitate an evaluation. On occasion, there may be a need to move OGMAs around or change OGMA definitions from age based to structure based. If this were to happen the state of old growth retention might have to be evaluated as well.

### Knowledge Gaps

There is debate whether age should be used as the only indicator for old growth characteristics. It is possible that old growth conditions could be achieved earlier through forest management; however, it is not clear what these old growth conditions are. Stand structure and its relation to the definition of old growth may need to be investigated.

### Implementation Plans

Draft OGMAs will be submitted to MSRM by March 31, 2003 using FIA funding as discussed above. Follow-up to be done in the 2003-2004 fiscal year using FIA funding.

#### 4.1.4 Wildlife Tree Retention

The purpose of wildlife tree retention is to maintain biodiversity at stand level.

##### Indicator

Percent wildlife tree retention by LU and BEC variant.

##### Objective

Maintain variable percentages of the harvest areas as representative wildlife tree patches by LU

and BEC variant as per the Landscape Unit Planning Guide.

### **Rationale**

Biological diversity at stand level.

### **Current State**

Table 4 shows the WTP targets (percent of a cutblock required in wildlife tree retention) for each BEC variant within the TFL. The targets are based on Table 20(a) of the Biodiversity Guidebook. Mission establishes WTPs as per the existing legislation and guidelines.

**Table 4 – WTP targets in the TFL (% of cutblock in WTP retention)**

Landscape Unit	BEC Variant	Objective %
Hatzic	CWHdm	7.8
	CWHvm1	8.2
	CWHvm2	5.1
	MHmm1	4.8

### **Forecasting**

Operational planning will continue to provide stand level biodiversity through WTPs. Mission has set aside one-rotation or longer WTPs in the TFL. In addition, the TFL 26 landscape reserve plan has reserved areas permanently that will also continue to contribute to stand level biodiversity.

### **Monitoring and Evaluation Procedures**

WTPs are included in silviculture prescriptions (SP), so annual or periodic performance can be monitored through them. Mission will compile the SP data so that WTP achievements can be evaluated.

### **Knowledge Gaps**

It is not known whether WTPs create the kind of structure that is required for stand level biological diversity requirements.

### **Implementation Plans**

WTPs are established as part of operational planning.

#### **4.1.5 Type 2 Incremental Silviculture Strategy**

Mission's objective is to increase the quality as well as the quantity of timber supply through incremental silviculture providing that adequate funding is available. Type 2 incremental silviculture analysis is a forest level analysis providing direction on where and what silviculture investments should be made to meet a set of management objectives. Mission is planning to carry out a type 2 incremental silviculture analysis after they have completed Terrestrial Ecosystem Mapping. There is no allocation for the type 2 for 2003. Mission is proposing to complete a type 2 analysis in 2 phases. Phase 1 is planned for 2004 at \$25,000. Phase 2

would be carried out later in 2005 (beyond the scope of this document) for another \$25,000.

## 4.2 Stand Establishment and Treatment

These activities consist of stand treatment surveys; stand treatments to meet timber and non-timber objectives (incremental silviculture), and forest health treatments. Table 5 provides a breakdown of different stand establishment and treatment activities.

**Table 5 –Stand Establishment and Treatment Allocation**

Activity	Funding Priority	2002 Funding Allocation	2003 Funding Request	2004 Funding Request	Timeline for Completion
<b>Stand Treatments</b>		<b>\$15,690</b>	<b>\$46,291</b>	<b>\$31,480</b>	
Surveys	M	\$4,800	\$0	\$800	Annual
Spacing	M	\$4,620	\$11,041	\$5,180	
Fertilization	M	\$0	\$30,000	\$25,500	Annual
Pruning	M	\$6,270	\$5,250		
Forest Health Treatments	L	\$0	\$0	\$0	*Annual
<b>Total Stand Establishment and Treatment</b>		<b>\$15,690</b>	<b>\$46,291</b>	<b>\$31,480</b>	

\*Funding will be based on hazard & consequence and may be a one-time expenditure

### 4.2.1 Stand Treatments

The Type 1 Incremental Silviculture Strategy completed for Mission TFL 26 identifies 3 principal silviculture strategy components:

- Increase the piece size and the clear wood of timber supply through a combination of density control, pruning and fertilization.
- Increase the timber supply in the short term by fertilizing existing stands that are scheduled for harvesting within the next 20 years.
- Increase the timber supply in the mid term by repeat fertilizing existing stands that are scheduled for harvesting 20 to 80 years from now.

#### Indicator

Allowable Annual Cut (AAC)

#### Objective:

Increase the quality and quantity of AAC.

#### Rationale

There is potential to increase quality and quantity of the AAC through incremental silviculture, by spacing, pruning and fertilizing suitable candidate stands.

Also, collecting better ecological and growth and yield information may lead into an increased AAC if it can be demonstrated that the site productivity of the TFL is greater than previously

thought. The TEM mapping project will help facilitate any future site index work. It will also provide a meaningful framework (through a Type 2 incremental silviculture analysis) to assess where silviculture investments may be most beneficial. TEM and growth and yield are discussed later in this document under “Information Gathering and Management”.

### **Forecasting**

The timber supply analysis and the 20-year plan that were prepared for Management Plan 8 evaluated the short, mid and long-term timber supply for the TFL. The Chief Forester determined the AAC at 45,000 m<sup>3</sup> per year for five years. The 20-year plan demonstrated that the timber supply, as predicted in the timber supply analysis, was available spatially for the next 20 years.

Changes in site productivity on the TFL will be incorporated and accounted for in future timber supply analyses.

### **Monitoring**

Timber supply analysis and the corresponding 20-year plan must be completed for the Chief Forester’s review after every 5 years in British Columbia. The recent changes in the legislation allow the Chief Forester to extend this period beyond 5 years upon the licensee’s application.

### **Knowledge Gaps**

The last timber supply analysis indicated that if the site indices are underestimated in the TFL to the same magnitude as elsewhere on the coastal management units, there is potential to increase the annual harvest significantly. The predicted increases in the analysis were up to 23% in the short term and 14% in the long term. A site index study is required for determining the site indices in the TFL. A proper ecological mapping, such as the on-going TEM, is a prerequisite for such a study.

Incremental silviculture can be used to increase long-term and sometimes short-term harvest levels. However, to assess the incremental silviculture potentially properly, a type 2 incremental silviculture analysis is required. Mission hopes to carry out such an analysis within the next 3 years.

### **Implementation Plans**

#### Surveys

Pre-treatment surveys on the crown land areas in TFL 26 are not required for 2003 as 120 ha were surveyed in 2002. The proposed allocation for 2004 is a modest \$800 to survey an additional 20 ha.

#### Spacing

Mission’s plans are to space 18.1 ha at \$610 per hectare in 2003 and 7.4 ha at \$700 per hectare in 2004. The proposed allocations for 2003 and 2004 are respectively \$11,041 and \$5,180.

#### Fertilization

Mission has identified over 500 ha of stands in the TFL that are considered good candidates for

fertilization. Mission plans to fertilize a minimum of 100 ha of crown land stands in varying age classes in 2003 at the cost of \$300/ha with the proposed allocation of \$30,000. Another \$25,500 is proposed for 2004 to fertilize an area of 85 ha.

#### Pruning

Mission has a higher priority to complete second lift pruning in stands that have previously been first lift pruned rather than begin new first lift pruning. This ensures the investment spent in the previous first lift pruning is not reduced by not second lift pruning.

In the 2002-03 fiscal year Mission pruned 6.6 ha at the cost of \$950.00/ha making up a total expenditure of \$6,270. Mission plans to second lift prune in 2003 with a proposed budget of \$5,250. This would allow second lift pruning of 5 hectares at the cost of \$1,050/ha. Mission has no pruning plans for 2004, however this may change should more FIA funding be available.

### 4.2.2 Forest Health Treatments

Forest health treatments are based on the results of annual surveys and hazard assessments. We estimate that some treatments may be required annually for varying forest health treatments. No funding has been allocated to forest health treatments, however, we expect that there will be flexibility in transferring funds to this activity, should a need arise.

### 4.3 Infrastructure

Forest Investment Account includes funding for infrastructure under recreation and roads activity areas. Table 6 below illustrates the proposed funding under the infrastructure envelope.

**Table 6 – Infrastructure Allocation**

Activity	Funding Priority	2002 Funding Allocation	2003 Funding Request	2004 Funding Request	Timeline for Completion
<b>Recreation</b> Trail Maintenance and Establishment	H	\$6,000	\$6,000	\$6,000	Annual
<b>Total Infrastructure</b>		\$6,000	\$6,000	\$6,000	

#### 4.3.1 Recreation; Trail Maintenance and Establishment

##### Indicator

Trails established and maintained.

##### Objective

Ensure user safety and protection of the environment.

##### Rationale

Poorly maintained trails can be unsafe and lead to environmental damage (siltation of streams,

land slides).

### Monitoring

The condition of the trails is monitored continuously. The trails maintained are documented and reported annually.

From time to time, Mission, constructs new recreation trails to help satisfy heavy demand from the large population in the Lower Mainland region. In recent years, Mission has paid for the new trail construction with their own funding.

### Implementation Plans

Mission's places a high priority in maintaining existing trails to ensure user safety and protection of the environment. The 2002 allocation was \$6,000. The plans are to continue at the same level of maintenance in the future; the 2003 and 2004 proposed allocations are both \$6,000.

## 4.4 Information Gathering and Management

Forest Investment Account funding is available for four activity areas:

- Resource inventories
- Monitoring
- Forest dynamics
- Data management

Mission's goal is to improve the information for forest and biodiversity/wildlife attributes. This is necessary to develop and improve the ecological framework for managing the TFL. Furthermore it will help in determining and potentially adjusting the site index of second growth stands. Also, the overall reliability of timber supply analysis and subsequent AAC determination will improve with better data. Table 7 illustrates the proposed funding for the next 2 fiscal years.

**Table 7 – Information Gathering & Management Allocation**

Planning Activity	Funding Priority	2002 Funding Allocation	2003 Funding Request	2004 Funding Request	Timeline for Completion
<b>Resource Inventories</b>		<b>\$33,700</b>	<b>\$6,000</b>	<b>\$0</b>	
Terrestrial Ecosystem Mapping	M	\$31,000	\$0	\$0	March 31, 2003
Biodiversity/Wildlife Indicators Mapping	H	\$1,500	\$6,000	\$0	March 31, 2004
Air photos (280 ha)	M	\$1,200	\$0	\$0	
<b>Forest Dynamics</b>	M	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	
<b>Total Information Gathering and Management</b>		<b>\$33,700</b>	<b>\$6,000</b>	<b>\$0</b>	

## **4.5 Resource Inventories**

### **4.5.1 Terrestrial Ecosystem Mapping (TEM)**

The current forest cover inventory is based on the 1988-1989 re-inventory. In 1991, approximately 1,200 ha of land was added to the TFL, through the reversion of Timber Berths back to the Crown and subsequently granted to TFL 26. The inventory of this 1,200 ha was completed in 1992. The TFL inventory is updated for depletions regularly.

The forest cover inventory is not adequate in facilitating ecosystem-based management of the TFL. Mission has initiated Terrestrial Ecosystem Mapping (TEM) for developing an ecosystem-based resource management database.

#### **Indicator**

Area of TFL mapped for TEM

#### **Objective**

Complete TEM for TFL 26 by March 31, 2003.

#### **Rationale**

TEM provides an ecological framework for modern forest management. More specifically:

- TEM makes it possible to adjust site indices to more accurately reflect productivity of second growth stands.
- TEM data allows for ranking areas for fertilization suitability.
- TEM provides natural resources managers with a better ability to anticipate brush hazards.
- TEM provides a reliable way to assess physical operability.
- TEM provides a good way to assess regeneration risk on high elevation sites.
- TEM mapping is a basis for biodiversity and conservation planning.

#### **Current State and Implementation Plans**

All of the TEM work will be completed by March 31, 2003, with a \$31,000 allocation for the current fiscal year.

### **4.5.2 Biodiversity and Wildlife Indicators Mapping**

Sustainable forest management is not possible without adequately managing for biodiversity and wildlife habitat as well. In 2002 Mission initiated a biodiversity and wildlife capability/suitability indicator mapping project. The allocation in 2002 was \$1,500 and the proposed allocation for 2003 is \$6,000.

## **4.6 Forest Dynamics**

Mission may complete a site index study before the next timber supply analysis. This may not happen until 2005, however, should more funding become available, or should Mission's priorities change, some of the work may be carried out in 2004.

## **4.7 FIA Funding for 2003 and 2004**

Table 8 on the next page provides a summary for the proposed FIA funding for 2003 and 2004.

**Table 8 – Proposed FIA Funding, 2003 and 2004**

Planning Activity	Funding Priority	2003 Funding Request	2004 Funding Request	Timeline for Completion
<b>Strategic Resource Planning</b>				
<b>SFMP</b>	H	\$2,000	\$0	31-Mar-04
<b>Landscape Unit Planning</b>	H	\$2,000	\$0	31-Mar-04
OGMA Establishment and WTP Targets.				
Type 2 Incremental Silviculture Strategy, Phase 1	L-M	\$0	\$25,000	31-Mar-05 (phase 1)
<b>Total Strategic Resource Planning</b>		<b>\$4,000</b>	<b>\$25,000</b>	
<b>Stand Establishment and Treatment</b>				
<b>Stand Treatments</b>		<b>\$46,291</b>	<b>\$31,480</b>	
Surveys	M		\$800	Annual
Spacing	M	\$11,041	\$5,180	Annual
Fertilization	M	\$30,000	\$25,500	Annual
Pruning – second lift	M	\$5,250	\$0	Annual
Forest Health Treatments	L	\$0	\$0	Annual
<b>Total Stand Establishment and Treatment</b>		<b>\$46,291</b>	<b>\$31,480</b>	
<b>Infrastructure</b>				
<b>Recreation</b>	H	<b>\$6,000</b>	<b>\$6,000</b>	Annual
Trail Maintenance and Establishment				
<b>Total Infrastructure</b>		<b>\$6,000</b>	<b>\$6,000</b>	
<b>Information Gathering and Management</b>				
<b>Resource Inventories</b>		<b>\$6,000</b>	<b>\$0</b>	
Biodiversity/Wildlife Indicators Mapping	H	\$6,000	\$0	31-Mar-04
<b>Forest Dynamics</b>		<b>\$0</b>	<b>\$0</b>	
<b>Total Information Gathering and Management</b>		<b>\$6,000</b>	<b>\$0</b>	
<b>Grand Total</b>		<b>\$62,291</b>	<b>\$62,480</b>	

**Note that the funding requests mentioned in Table 8 above and previous tables are:**

1. for project costs prior to the overhead allowance (12% in 2002-03 fiscal year). As such, the overhead allowance needs to be added on to these figures to represent the total funding requested.
2. calculated on the assumption that TFL 26 will receive about \$70,000 total funding (\$62,500 + 12% overhead) from FIA for each of the 2003-04 and 2004-05 fiscal years. TFL 26 has other projects that could be done if the FIA funding levels were higher.

## **4.8 Criteria and Indicators not associated with FIA expenditures.**

### **4.8.1 Harvest Rates**

#### **Indicator**

Five-year periodic harvest.

#### **Objective:**

Harvest the AAC allocation over the 5-year cut control period.

#### **Rationale**

Harvesting sustainable harvest level and maintaining sustainable harvest level creates and maintains steady employment opportunities and creates revenue for the District of Mission.

#### **Current Situation**

Mission meets its cut control requirements.

#### **Forecasting**

The timber supply analysis and the 20-year plan that were prepared for management plan 8 evaluated the short, mid and long-term timber supply for the TFL. The Chief Forester determined the AAC at 45,000 m<sup>3</sup> per year for five years. The 20-year plan demonstrated that the timber supply, as predicted in the timber supply analysis, was available spatially for the next 20 years.

#### **Monitoring and Practises**

Mission tracks annually harvested volumes and compares them to the AAC.

### **4.8.2 Harvest Profile**

#### **Indicator**

Harvest profile by species.

#### **Objective**

Approximately harvest the inventory profile over every 5-year period.

#### **Rationale**

Harvesting the species profile maintains the long-term sustainability of the timber supply.

#### **Current State**

Figure 1 compares the harvest profile by species to the inventory profile by species. While the data is not actual harvest data, but from an approved development plan (2000-2004) it demonstrates Mission's commitment to harvest the inventory profile as the comparisons are overall quite close.

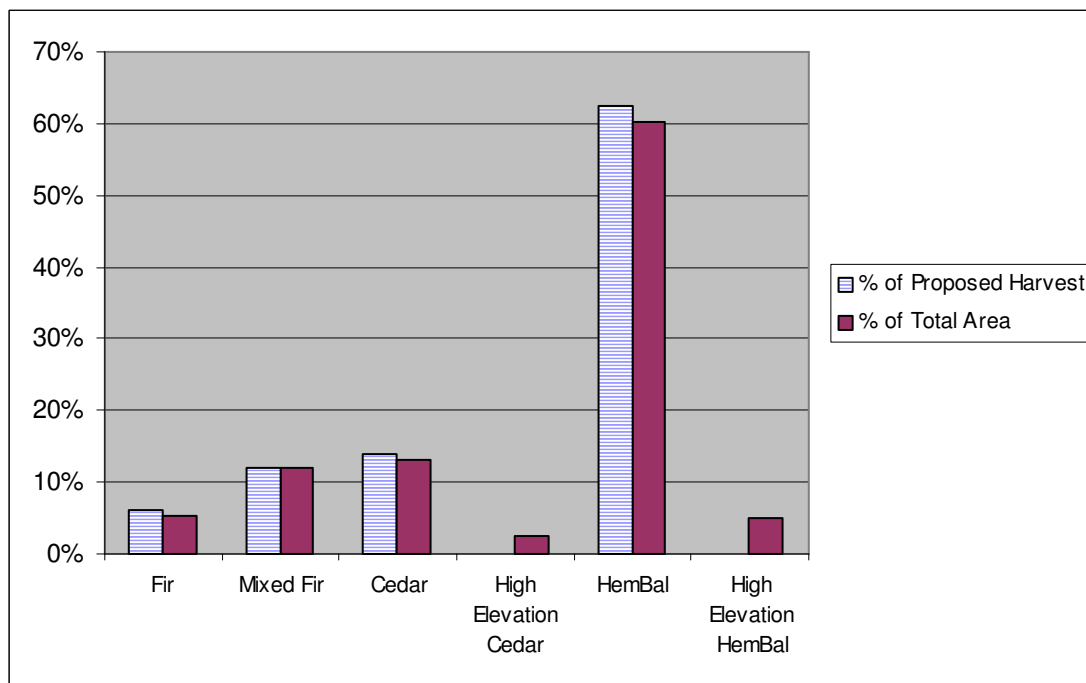


Figure 1 –Proposed Harvest versus Inventory Profile (FDP 2000-2004)

### Forecasting

Forest development plans show proposed blocks for the next five years. These plans also indicate how proposed harvest compares with the species profile.

### Monitoring and Practises

Scale records indicate the species profile harvested. It can easily be compared with the inventory profile.

## 4.8.3 Watershed Management

### Indicator

Water quality and quantity in two watersheds: Kenworthy Creek Community Watershed and Cannell Lake watershed. A Coastal Watershed Assessment Plan (CWAP) for Kenworthy Creek was developed in 1998.

### Objectives

Maintain or improve water quality and quantity in these watersheds. An updated CWAP for the Kenworthy Creek Watershed was done in 2002.

### Rationale

Water quality and quantity from these watersheds is important, as they are a source of water for local residents, farmers and many Mission and Abbotsford water users.

### **Current State**

The Cannell Lake watershed has been excluded from harvesting. Harvesting in the Kenworthy Creek watershed has followed the existing standards (CWAP).

### **Forecasting**

Operational and strategic plans provide forecasting tools that ensure that any development in the Kenworthy watershed remains within acceptable limits for water quality and quantity.

### **Monitoring**

There is no particular water quantity or quality monitoring. It is assumed that completing CWAPs from time to time and adhering to the standards and regulations will ensure the integrity of the watersheds. Any anomalies will be noted and investigated.

### **Practises**

Mission will ensure that:

- Harvesting and road construction within community watersheds will take place during periods that minimize sedimentation.
- Road maintenance is carried out in a proactive manner and that proper drainage is always maintained in roads in community watersheds.
- Access is controlled on sensitive roads during adverse conditions.
- Best management practices are used in riparian areas.

## **4.8.4 Seed Stock**

### **Indicator**

Percent of MOF registered and/or genetically superior seed used

### **Objective**

100% of the seed used for reforestation should be MOF registered and 90% of the seed used should be Class A.

### **Rationale**

Registered and improved seed provides a potential for higher growth rates of plantations. It also ensures genetic diversity through using genetically diverse seed stock.

### **Current State**

Each year Mission plans for seed collection or seed purchase based on reforestation needs. The goal is to maintain and plant at least 90% of the seed source as Class A seed.

### **Forecasting and Practises**

Mission will continue to use Class A seed when available for planting obligations in the TFL.

#### **4.8.5 Forest Health**

##### **Indicator**

Prevention, detection and treatment of forest health threats.

##### **Objective**

Detect and treat forest health concerns in a timely manner, minimize non-recoverable losses and maintain the productivity of the land base on the TFL.

##### **Rationale**

Insects, diseases and wind can cause damage to the growing stock of the TFL and reduce the productivity of the land base.

##### **Current State**

Forest health problems in the TFL are not significant. There are some mistletoe infected Hw stands and endemic level of root rot. Windthrow problems occur on occasion during strong winter storms. They are most common adjacent to harvested stands within two years of harvest.

##### **Forecasting**

There are currently no forecasting tools to forecast insect, disease or windthrow effectively.

##### **Monitoring and Practises**

While no landscape level monitoring plans are required through regulation or policy, Mission monitors insect and disease occurrence during data collection for silviculture prescriptions, and through stocking, free growing and other silviculture surveys. If significant insect or disease damage is detected, this may be dealt with through timely harvesting to remove infected trees or through activities related to reforestation, such as stumping in case of root rot. Reforestation related activities must be described in silviculture prescriptions.

Mission uses cut block design to prevent wind throw. Should wind throw occur, where feasible the fallen trees are salvaged at the earliest opportunity to avoid deterioration of wood quality and non-recovered losses.

#### **4.8.6 Regeneration Success**

##### **Indicator**

Percent of successfully regenerated cut blocks.

##### **Objective**

Mission's goal is to successfully reforest 100% of the harvested blocks within the regeneration delay period specified in the silviculture prescription for each block.

##### **Rationale**

Reforestation within the specified period is generally accepted as an indicator for sustainable forest management. It is essential in capturing the productivity of the land base and

consequently maintaining harvest levels consistent with the approved AAC.

### **Current State**

As a result of Mission's successful silviculture program, the NSR areas in the TFL are generally limited to current NSR representing recent harvesting waiting to be reforested in the next planting season.

### **Forecasting**

Mission knows which sites are generally more difficult to reforest and adopts silviculture practices accordingly.

### **Monitoring and Practises**

Mission carries out regeneration delay surveys and pre-brushing reccies and has generally a good picture regarding the state of its plantations. Mission's success in reforestation is based on:

- Establishing crops of healthy ecologically suitable trees promptly after harvesting.
- Encouraging biological diversity of species.
- Selecting suitable microsites when planting.
- Maintaining a regeneration delay at about one year.
- Timely brushing.
- Using fertilizer teabags on some of the planted seedlings.
- Planting relatively high densities.

## **4.8.7 Free Growing Success**

### **Indicator**

Percent of cut blocks meeting free growing.

### **Objective**

Mission's goal is to meet free growing in 100% of the harvested blocks within the free growing window for each block.

### **Rationale**

Meeting free growing within the specified period is generally accepted as an indicator for sustainable forest management. It is essential in capturing the productivity of the land base, maintaining the planned species composition and consequently maintaining harvest levels consistent with the approved AAC.

### **Current State**

As a result of Mission's successful silviculture program Mission meets its free growing obligations.

### **Forecasting**

Mission knows which sites may have problems meeting free growing and adopts silviculture practices accordingly.

### **Monitoring and Implementation Plans**

Mission carries out regeneration delay surveys and pre-brushing reccies and has generally a good picture regarding the state of its plantations. Mission's success in reforestation is based on:

- Establishing crops of healthy ecologically suitable trees promptly after harvesting.
- Encouraging biological diversity of species.
- Selecting suitable microsites when planting.
- Maintaining a regeneration delay at about one year.
- Brushing surveys.
- Timely brushing.
- Using fertilizer teabags on some of the planted seedlings.
- Planting relatively high densities.

## **4.8.8 Site Degradation**

### **Indicator**

Percent of areas not meeting site degradation specifications as per SPs

### **Objective**

Reforest 100% of the Net Area to Reforest (NAR) plus ensure that 100% of harvested areas are in compliance with the site degradation objectives specified in SPs.

### **Rationale**

Minimizing site degradation ensures a productive ecosystem, protects the forest land base and protect the soil.

### **Current State and Practices**

Mission does not often build temporary roads, as long-term access is desirable for fire protection and silviculture projects. If temporary roads are built, Mission will usually fully rehabilitate these roads.

## **4.8.9 Area Lost to Forest Roads**

### **Indicator**

Percent of existing and future roads by productive forest area.

### **Objective**

Existing and future roads are not to occupy more than 3% of the productive forest area.

### **Current State**

Currently less than 2% (178 ha) of the productive forest area is occupied by existing roads.

### **Forecasting**

The last timber supply analysis forecast an additional 99 ha to be taken by permanent roads for the TFL to be fully roaded. This would make approximately 277 ha of permanent roads which is approximately 2.8 % of the total productive forest area.

### **Monitoring and Practices**

The total area taken by permanent roads is monitored and recorded for the timber supply analysis after every 5 years. At that time, the requirement for future roads is also estimated.

## **4.8.10 Terrain Stability Assessments**

### **Indicator**

Operational plans are consistent with terrain stability assessments.

### **Objective**

All operational plans must be consistent with terrain stability assessments.

### **Rationale**

Terrain stability assessments and compliance with them is required for protecting the forest soils by ensuring that areas that have a moderate or high likelihood of landslides after harvesting or road construction are identified.

### **Current State**

A terrain stability mapping project was completed for the entire TFL between 1997 and 1999. Areas that were not community watersheds were mapped to a C level while the areas within the Kenworthy and Cannell community watersheds were mapped to a B level.

The classification is used to determine what kind of management is appropriate and what level of more detailed analysis is required prior to development. In the determination of the timber harvesting land base Mission removed 10%, 30% and 80% of areas designated as terrain stability classes IVR, IV and V correspondingly.

### **Forecasting**

The terrain stability map provides direction when terrain stability assessments are required. However, these assessments are carried out for any unstable or steep slopes.

### **Monitoring and Practices**

Mission uses the terrain classification map and on-site terrain stability assessments to ensure appropriate management.

#### **4.8.11 Deactivation**

##### **Indicator**

Restoration of existing roads.

##### **Objective and Rationale**

Deactivate existing roads to:

- Minimize the potential for sedimentation and road failure.
- Maintain or enhance water quality.
- Establish or re-establish natural drainage patterns.

##### **Monitoring and Practices**

Mission's priority is to deactivate roads that are on steep hillsides with slopes greater than 60%. Roads that were built years ago using bulldozers with large cuts and fills, or roads in areas that receive higher rainfall are also a priority.

#### **4.8.12 Archaeological Sites**

##### **Indicator**

Damage to known archaeological sites.

##### **Objective**

No archaeological sites damaged as a result of timber harvesting.

##### **Current State**

The Chilliwack Forest District completed an archaeological overview assessment for the Fraser timber supply region, including the TFL. Where the overview assessment indicates that an area proposed for development has high or moderate potential for archaeological values, a more detailed assessment is carried out to determine if evidence of historic use exists. So far no definite archaeological sites with First Nations artifacts have been found in the TFL. However, some possible Culturally Modified Trees (CMT's) were identified during archaeological assessments in stands less than 100 years old as well as some definite CMT's created within the past ten years in one area.

##### **Forecasting**

There is no information at this time to suggest what impact - if any - archaeological sites may have on resource management on the TFL.

##### **Monitoring and Practices**

Monitoring occurs for each cut block to ensure that no sites are destroyed. Mission strives to identify and protect areas of cultural significance by:

- Carrying out assessments as needed;
- Implementing recommended strategies for the protection of archaeological sites if they are identified;

- Foster open communication with local first nations;
- Refer all proposed development to identified cultural resource users.

#### **4.8.13 Riparian Area Protection (Fisheries Management)**

##### **Indicator**

Cut blocks adjacent to riparian areas meeting regulatory requirements.

##### **Objective**

All Cut blocks adjacent to riparian areas must meet regulatory requirements. It is Mission's objective to maintain water quality in fish bearing streams and lakes, and maintain or enhance fish habitat.

##### **Rationale**

A generally accepted sustainable forest management goal is to maintain the diversity of native species (riparian species composition) and protect aquatic habitat. A high value is placed on riparian ecosystems as the vegetation close to the streams and lakes protects the water quality and stabilizes stream banks. The riparian vegetation also has an important role in regulating water temperatures and providing a supply of woody material to the streams.

##### **Current Situation**

There are a number of streams, lakes and wetlands in the TFL, many of which have known resident fish populations. Riparian area management in the TFL is based on the direction from the Forest Practices Code. Approximately 203 ha, 5 ha and 18 ha of stream, lake and wetland riparian areas correspondingly are excluded from harvesting.

##### **Monitoring and Practices**

Mission follows the following practices for riparian area management:

- Comply with the Riparian Management Area Guidebook
- Schedule harvest to minimize sedimentation and curtail harvesting in adverse weather conditions.
- Consider projects to enhance riparian and fish habitat where assessments indicate the need.
- Schedule in-stream work on fish streams within established work windows whenever possible.
- Take preventative measures to minimize sedimentation when carrying out forestry activities.
- Employ fisheries resource consultants for field evaluations of potentially affected streams when required.

## **Appendix A**

### **1:250,000 Key Map of TFL 26**

## Appendix B

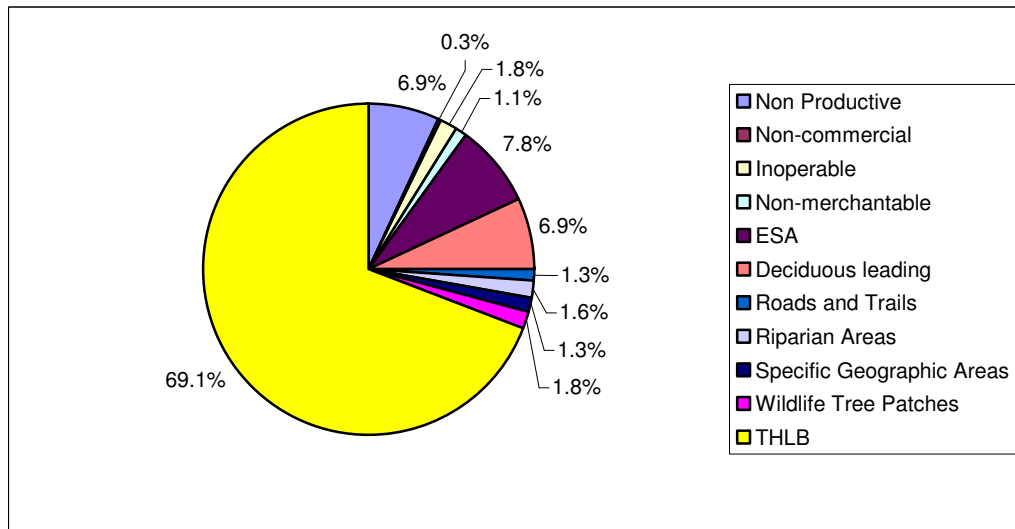
### Timber Harvesting Land Base – Base Case - TFL 26

Classification	Productive Area (ha)	Netdown Area (ha)	Netdown Area as % of Productive Land Base	Schedule A Lands Net Area (ha)	Schedule B Lands Net Area (ha)
Total Land base	10,560.4	10,560.4		1,268.8	9,291.6
Non Forest	724.5	724.5		81.5	643.2
<b>Total Productive Forest</b>	<b>9,835.9</b>	<b>9,835.9</b>	<b>100 %</b>	<b>1,187.5</b>	<b>8,648.4</b>
Reductions to Total Productive Forest:					
Noncommercial	35.9	35.9		2.6	33.3
Inoperable	196.1	192.6		0	192.6
Non-merchantable	196.2	117.6		0	117.6
Environmentally Sensitive Areas	2,379.1	822.8		59.6	763.2
Deciduous leading - not utilized	815.4	732.0		204.1	527.9
Roads and Trails	159.8	141.5		15.8	125.9
Riparian Areas	226.1	167.8		41.8	126.1
Specific Geographic Areas	155.9	137.4		0	137.4
Wildlife Tree Patches		194.3		26.6	167.7
<b>Total Reductions to Productive Forest</b>		<b>2,542.2</b>	<b>25.8 %</b>	<b>350.5</b>	<b>2,191.7</b>
<b>Total Reductions to Land base</b>		<b>3,266.7</b>	<b>33.2 %</b>	<b>432</b>	<b>2,834.9</b>
<b>Total Reduced Land base</b>		<b>7,293.7<sup>a</sup></b>	<b>74.1 %</b>	<b>837</b>	<b>6,456.7</b>
<b>Current Timber Harvesting Land base</b>		<b>7,293.7</b>		<b>837</b>	<b>6,456.7</b>
Future Reductions:					
Proposed Roads	26.1	23.3		4.4	18.9
Future Roads		99.1		12.8	86.3
<b>Total Long-Term Land base</b>		<b>7,171.3</b>	<b>72.9 %</b>	<b>819.8</b>	<b>6,351.5</b>

a Includes 52.9 net ha of NSR (Schedule A = 9.6 ha; Schedule B = 43.3 ha)

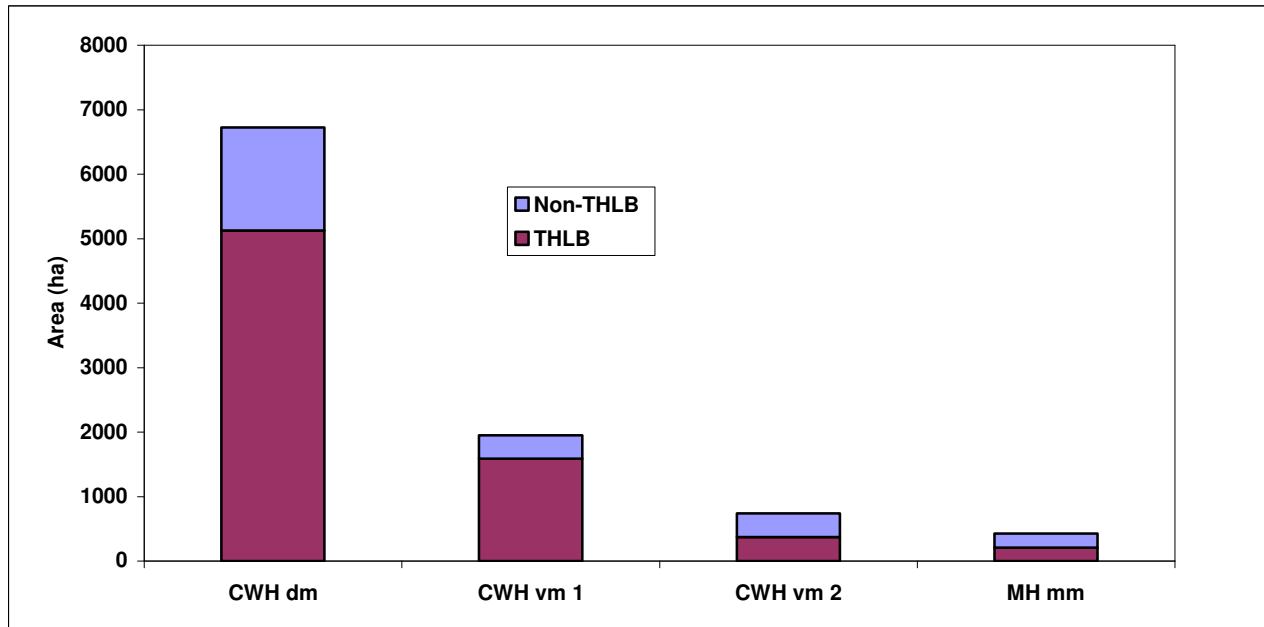
Note that the netdowns include a category called 'Deciduous leading – not utilized'. The final AAC determination and total timber harvesting land base determined in current MP 8 include most of this area.

The current THLB in TFL 26 represents about 69% of the gross TFL area. The following figure graphically illustrates the reductions applied to the land base.



**Timber harvesting land base.**

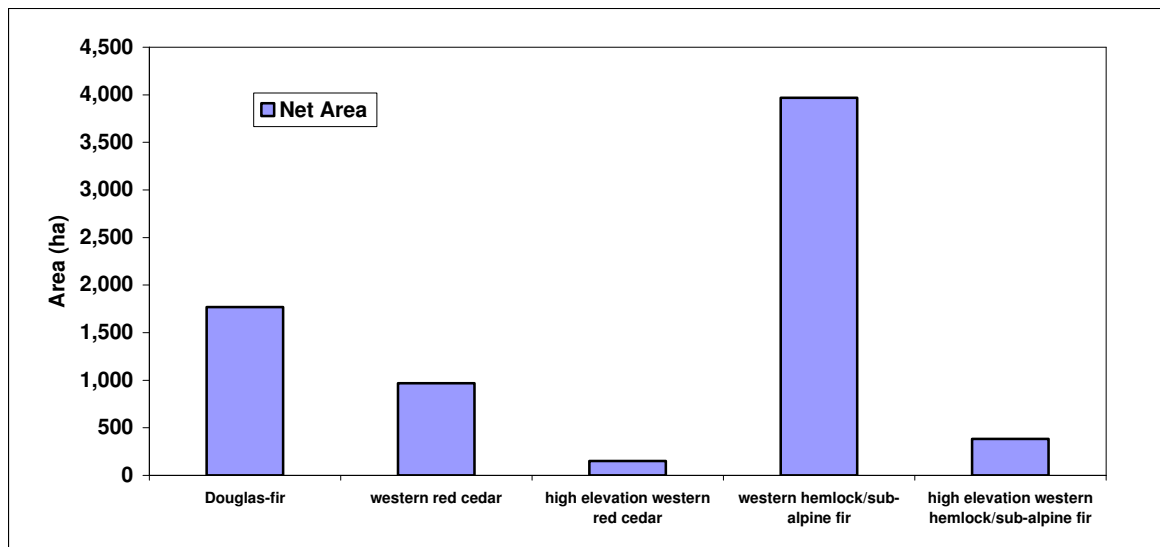
The following figure illustrates overall distribution of biogeoclimatic variants within the TFL. The figure also shows the proportion of each BEC variant in the THLB and non-THLB land base. As shown, the majority of the THLB and gross land base is represented by the CWHdm biogeoclimatic variant.



**Area in biogeoclimatic variants within TFL 26.**

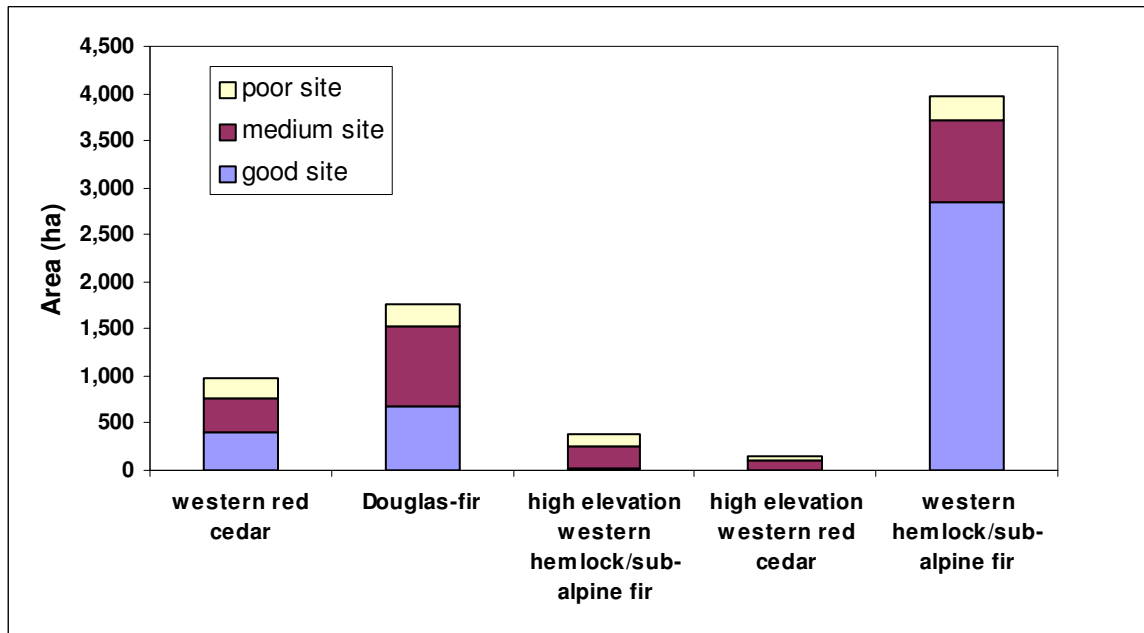
The following figure illustrates the current composition of the THLB by dominant tree species. Western hemlock and sub-alpine fir dominate the stands on about 55% of the THLB (plus 5%

for high elevation western hemlock and sub-alpine fir). Douglas-fir and western redcedar cover 24% and 13% of the THLB respectively.



**Dominant tree species distribution within the timber harvesting land base.**

The next figure illustrates the distribution of site productivity of the dominant stand types within the timber harvesting land base. Site productivity is defined as good, medium and poor based on site index. Good sites occupy approximately 54% of the land base; medium sites about 34% and about 12% are poor sites. Sites with very low productivity (stands greater than 200 years in age occurring on generally poorer sites and having crown closures of less than 50%) are excluded from the THLB.



Dominant tree species distribution within the timber harvesting land base by site productivity.

The following figure illustrates the current age class composition of the total Provincial Crown forested area and the THLB. Approximately 15% of the THLB is less than 20 years old and about 68% of the THLB is between 21 and 80 years old leaving 17% for stands older than 80 years. Only 1.45 % of the THLB is older than 250 years.

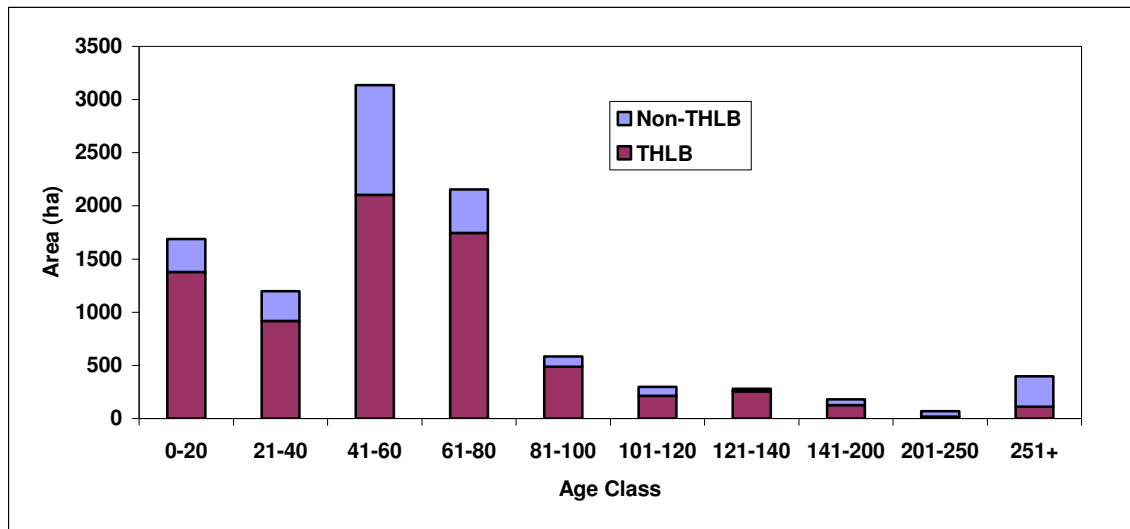


Figure 2 - Current age class distribution within TFL 26.

The forested stands outside of the THLB represent 26% percent of the total forested land base and are a significant factor in the availability of timber supply. Currently about 12% of the forested area outside of the THLB is older than 250 years.

**Appendix C**  
**SILVICULTURE HISTORY OF TFL 26**

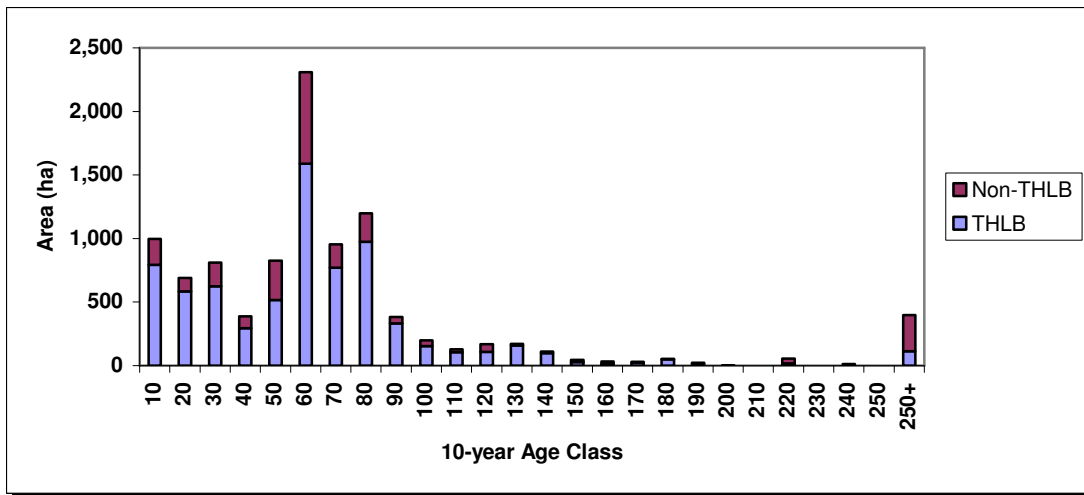
<b>Year</b>	<b># Seedlings Planted</b>	<b># Hectares Spaced</b>	<b># Hectares Pruned</b>
1958	0		
1959	0		
1960	35,500		
1961	50,500		
1962	119,000	2	
1963	93,000		
1964	63,000	2	
1965	52,000		
1966	109,000		
1967	109,000		3
1968	77,500		9
1969	101,500		12
1970	77,000		130
1971	133,000		
1972	156,000		
1973	148,000		
1974	112,000		
1975	126,000		16
1976	157,500		
1977	173,000		
1978	175,000		
1979	64,400		
1980	87,000		
1981	51,650	5	
1982	46,120	5	
1983	35,000	10	
1984	30,995	10	
1985	0	41	
1986	6,835	33	
1987	111,210	93	5
1988	54,015	9	
1989	39,630	33	
1990	106,785	72	36
1991	76,260	85	1
1992	80,130	25	
1993	49,353	74	
1994	42,866	15	23
1995	98,520	85	91
1996	67,150	49	28
1997	36,427	36	5
1998	28,450	13	8
1999	32,780	54	40
2000	71,340	7	103
2001	73,815	129	5
<b>Total</b>	<b>3,358,231</b>	<b>887</b>	<b>515</b>

Note: Some of pruned hectares are for both first and second lift in the same plantations at different times so the total of 515 ha. is more than the actual land base pruned.

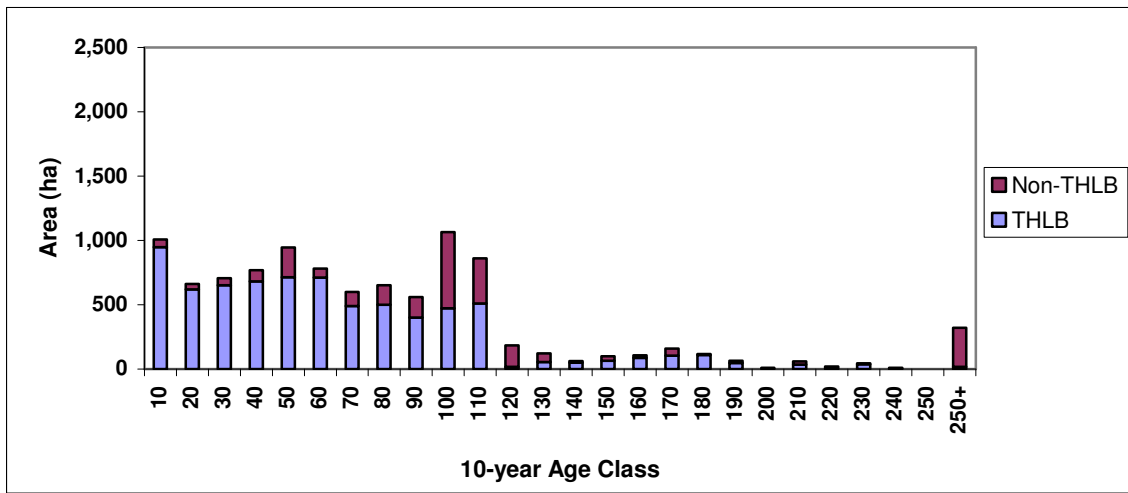
### Appendix D Age Class Profile Over Time

As determined in the 2001 timber supply analysis for TFL 26, an assessment of the age class profile over time indicates how the land base would change over the next 250 years for the base case harvest forecast. The following six figures show the predicted age class distribution for the base case scenario at 50-year intervals.

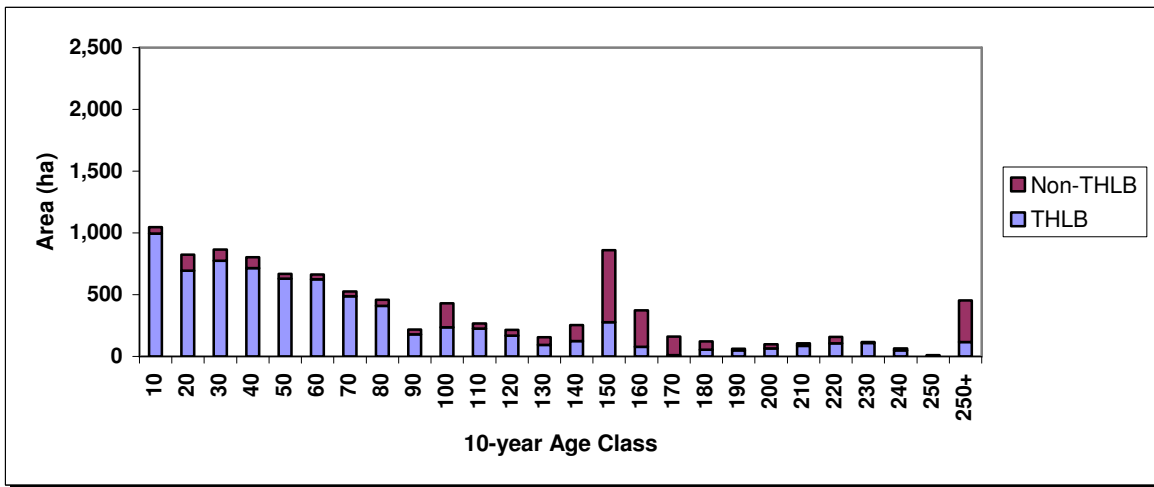
Strategic timber supply analysis is based on incorporating the management of age classes across a forest estate for both the assessment of an achievable harvest level and non-timber forest cover requirements. The area in distinct age classes determines the opportunity for harvest, satisfaction of forest cover requirements, and future sustainability. It is also important to realize the temporal changes with forest age composition and a given harvest forecast.



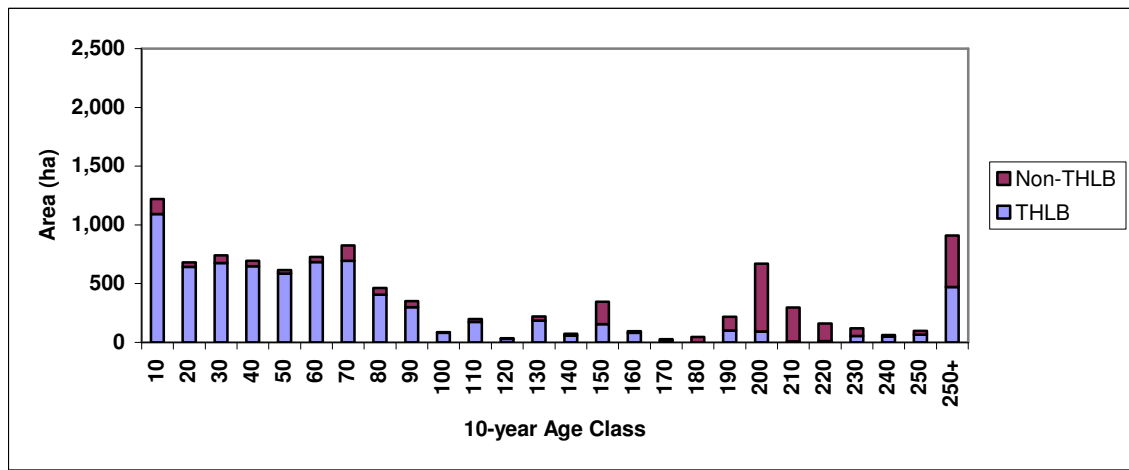
Current age class distribution.



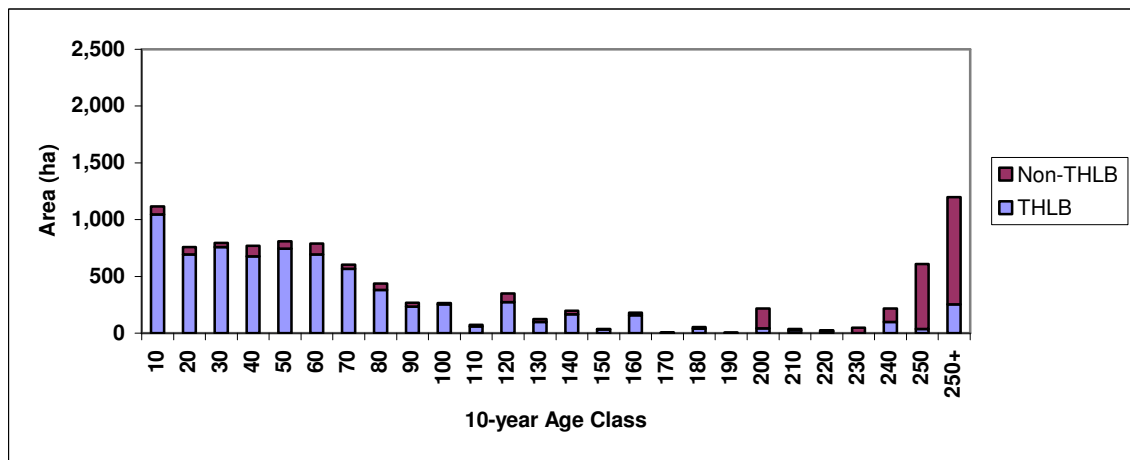
Age class distribution in 50 years.



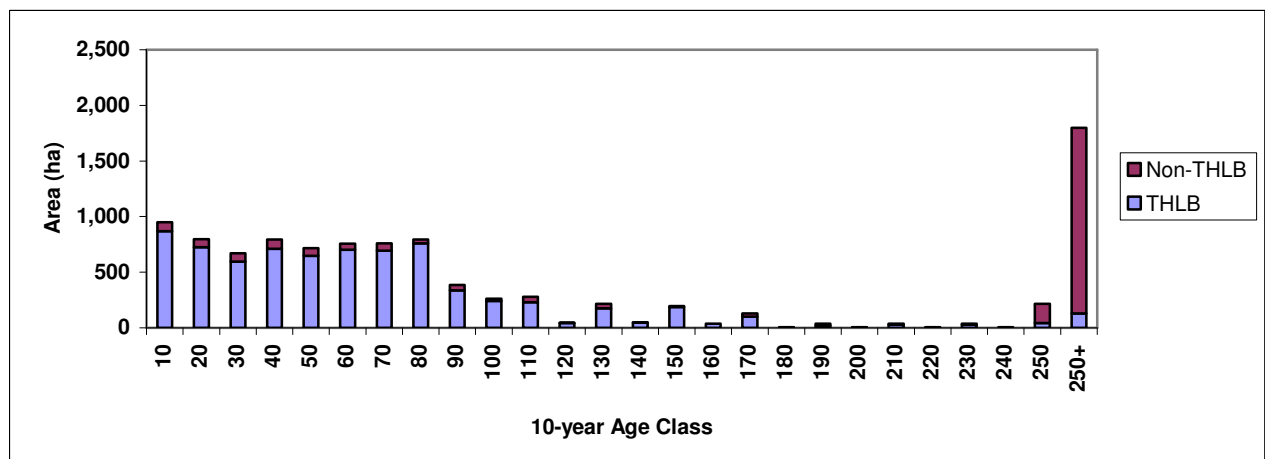
Age class distribution in 100 years.



Age class distribution in 150 years.



Age class distribution, year 200.



Age class distribution in 250 years.

The current age class distribution shows a concentration of stands in the 51-60 age class. By 100 years, the age class forest structure is mostly in a regulated state with the exception of a small portion of stands that must be retained for old growth and for VQOs.

Stands older than 250 years cover only a small portion of the current THLB and throughout the planning horizon old age stands are retained to meet the old growth biodiversity retention targets. At 150 years there are approximately 450 hectares of stands within the THLB that are older than 250 years. By year 200, half of these stands are harvested. Finally, at 250 years most of the old growth retention targets can be met in the non-THLB areas. Only 130 hectares of old forest remain in the THLB at year 250.