

MANAGEMENT PLAN #8

FOR

TFL # 33

Submitted by:



Federated Co-operatives Limited,

Forest Products Division

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A handwritten signature in blue ink that reads "Jeff Lipsett".

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1. INTRODUCTION

1.1. Purpose of the MP

The purpose of the Management Plan (MP) #8 is to identify and have approved by the Chief Forester, Federated Co-operatives Limited's (FCL) management objectives and strategies for achieving those objectives for the timber and non-timber resources within Tree Farm Licence (TFL) 33 (see Figure 1 TFL 33 Key Map). The MP is a strategic five-year plan and operations conducted under TFL 33 must be done so in a manner that is consistent with the objectives and strategies stated in the plan.

1.2. Federated Co-operatives Limited (FCL)



Federated Co-operatives Limited (FCL) began operation in the Shuswap area 54 years ago. TFL 33 was awarded to Shuswap Timbers in 1959 with the initial Cutting Permit issued on March 1, 1960. FCL acquired TFL 33 with the purchase of Shuswap Timbers in 1965. TFL 33, although small in comparison to other TFL's in the province, has played an important role in the past 34 years in providing raw material as part of the licensed quota attributable to FCL.

FCL provides central wholesaling, merchandising and manufacturing services on behalf of its member-owners to more than 300 retail co-operatives in Western Canada and North Western Ontario. Together, FCL and its member retails are known as the Co-operative Retailing System in Western Canada, providing goods and services to an estimated 900,000 individual Co-op members.

FCL maintains its home office in Saskatoon and region offices in Winnipeg, Regina, Saskatoon, Calgary and Edmonton. It is a wholesale supplier of petroleum, food, general merchandise, crop supplies and livestock feed in a market area extending from Lakehead to the Queen Charlotte Islands and from the U.S. border to the Arctic Circle. Its

manufacturing operations include Consumers Co-operative Refineries Limited in Regina, a plywood plant and sawmill in Canoe, B.C. and seven feed plants.



1.3. Description of TFL 33

TFL 33 is situated within the Columbia wet-belt on the Western slopes of the Shuswap Mountain Range (see Figure 2 TFL 33 Key Map). The TFL lies immediately to the north of Sicamous adjacent to Shuswap Lake and comprises a total land base of 8,365 hectares. Elevation of the license area is from approximately 347 meters at lake level to approximately 1700m on Queest Mountain and encompasses five Biogeoclimatic Subzones (BGC Subzones) – the ICHmw2, ICHmw3, ICHwk1, ESSFwc2 and the ESSFwcp.

Figure 1 TFL 33 Key Map

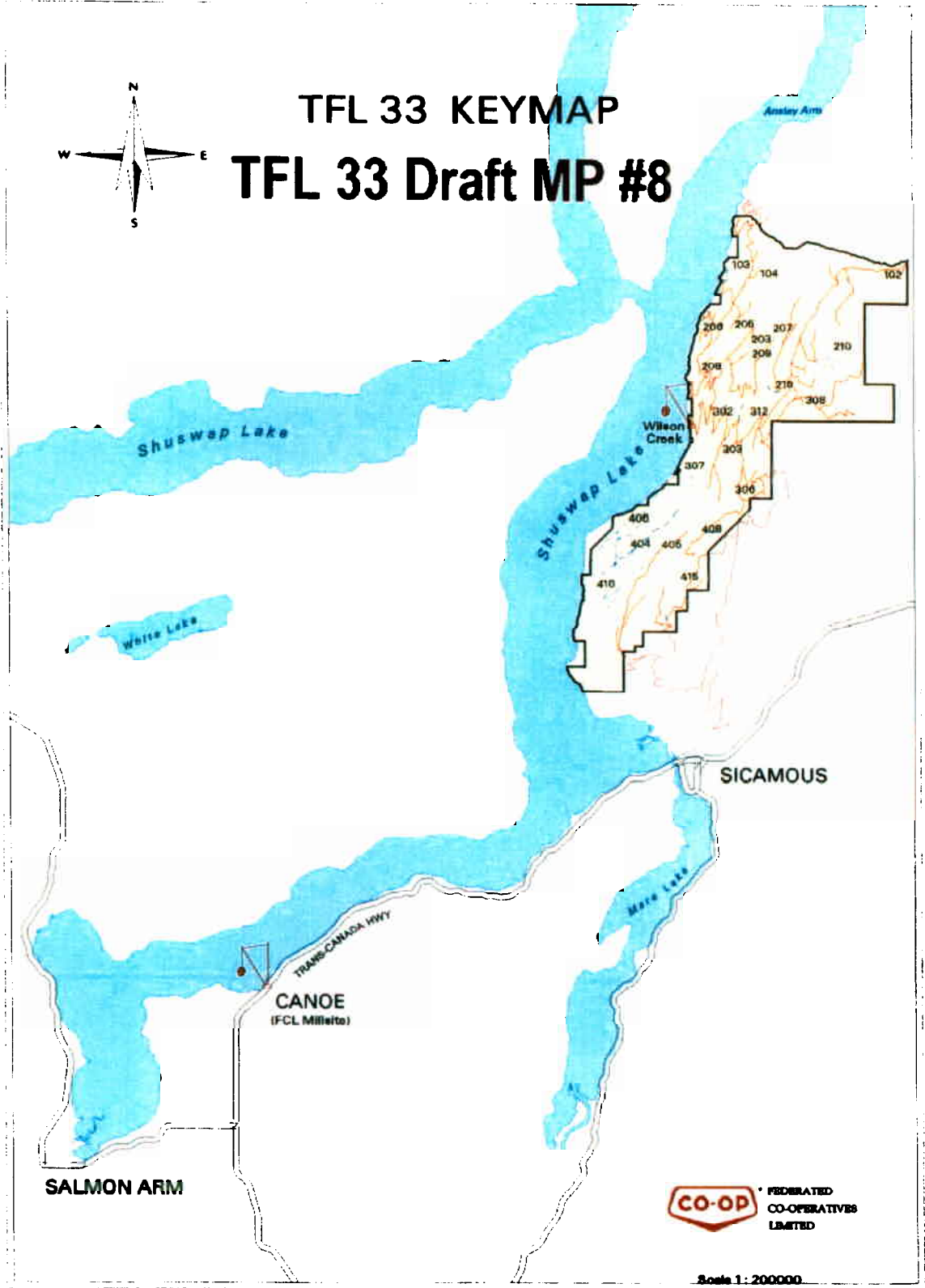
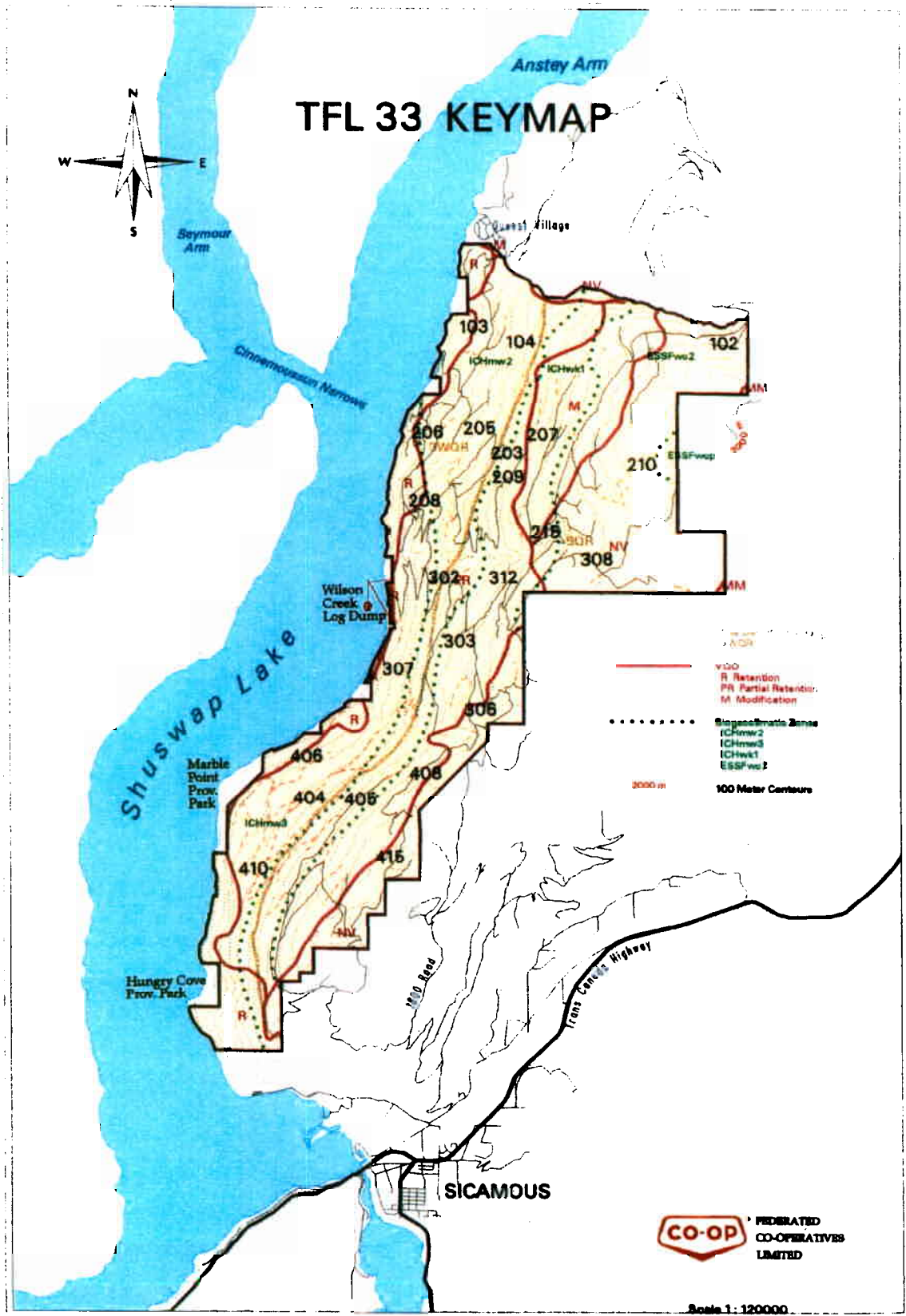


Figure 2 TFL 33 Key Map – MDWR, VQO, and BGC Subzones



1.4. History

TFL 33 was first awarded to Shuswap Timbers of Sicamous in 1959, with the initial cutting permit issued on March 1, 1960. As no roaded access was available to the licence at that time, all the volume was watered on the foreshore and boomed at the conversion plant. Development was concentrated on the lower slopes within close proximity of Shuswap Lake.

In 1965, Shuswap Timbers was purchased by Federated Co-operatives Limited. The official transfer of quota followed in 1970. As a result of the amalgamation, milling facilities were closed in Sicamous and all volume was subsequently directed to Canoe.

All-weather roaded access to the license was completed in 1973 and harvesting was concentrated at the higher elevations of the license. During the term of M.W.P. #5, attention shifted to the lower elevations where the predominate cut was in first pass. Operations during M.W.P. #6 and MP #7 varied between the lower and upper elevations.

Since the date of first award, the standard of utilization upgraded to the close utilization practice that is in effect today. Table 1 summarizes the Amendments to the Licence indicating the withdrawals and additions over the term of the license.



Aerial view of FCL's sawmill and plywood plant at Canoe.

Table 1 Amendments to T.F.L. # 33; 1960 - 1999

Amendment	Date	Basis	Withdrawal (Ha)	Addition (Ha)
1	61/6/09	Addition Marble Point Park	5.7	
2	63/6/05	Lease Lots	2.4	
3	65/6/25	Lease Lots	5.4	
4	67/12/06	Lease Lots	21.0	
5	69/9/07	Deleted Amendment 2		2.4
6	70/11/01	TFL 33 Assigned To FCL		
7	70/11/01	Licence Document		
8	80/5/09	Addition Marble Point Park	25.0	
9	80/5/09	Addition Hungry Cove Park	30.0	
Totals			89.5	2.4
Net Withdrawals			87.1	

The annual harvesting and reforestation accomplishments are shown in Table 2.

Table 2 Harvest and Planting History: 1960 - 1999

Year	Annual Allowable Cut(M3)	Harvested Volume (FCL) (m ³)	Harvested Area (FCL) (ha)	Planting History (Ha)	Comments
1960	10,902	9,534		0.0	Intermediate Utilization
1961	10,902	13,674		0.0	
1962	10,902	7,929		0.0	
1963	10,902	10,290		0.0	
1964	10,902	7,835		0.0	
1965	10,902	8,634		0.0	
1966	10,902	17,191		0.0	
1967	10,902	16,523		0.0	
1968	10,902	0		0.0	Mag Fire Salvage
1969	10,902	13,535		0.0	
1970	26,505	14,527		0.0	Close Utilization
1971	26,505	13,932		0.0	
1972	26,505	26,968		34.4	
1973	26,505	36,330		25.9	
1974	26,505	35,311		0.0	
1975	28,480	32,678		52.2	
1976	28,480	40,531		0.0	
1977	28,480	34,423		81.0	
1978	28,480	19,742		25.9	
1979	28,480	10,163		9.6	Ma Fire Salvage
1980	28,480	27,871		32.5	
1981	28,480	33,549		0.0	
1982	28,480	18,332		0.0	
1983	28,480	23,702		99.5	
1984	29,000	45,014		78.5	
1985	29,000	19,668		110.7	
1986	29,000	40,285		152.4	
1987	29,000	34,588		49.2	
1988	27,500	19,819		175.4	
1989	27,500	23,605		112.2	
1990	27,500	15,091	62.3	58.5	
1991	27,500	24,081	56.2	0.0	
1992	27,500	19,632	23.9	40.9	0 Ha Backlog NSR
1993	27,500	33,963	148.1	128.3	
1994	27,500	39,019	86.3	64.6	
1995	27,500	27,957	50.7	126.8	
1996	25,000	18,645	34.9	39.8	New AAC of 22,500 (July 1, 1996) – prorated to 25,000 for the year.
1997	22,500	22,639	109.1	59.9	
1998	22,500	22,501	65.8	16.0	
1999	22,500	21,911	51.3	75.1	Last Year of Cut Control Period
Totals	926,365	901,622		1,649.3	App. 98% AAC Harvested
			688.6	609.9	Area harvested and planted since 1990. 64 ha scheduled for planting in 2000.

In conjunction with MP # 7, the current AAC was determined by the Chief Forester and took effect July 1, 1996. Relief from the annual cut control requirements (Section 64(5) and 64(2)(a) of the Forest Act) was granted by the Regional Manager on January 25th,

2000. The five-year periodic cut control still applies. The table does not indicate the volume harvested by the Small Business Forest Enterprise Program (SBFEP) allocated at 1,450 m³ per year. Also, the final AAC figures for 1999 are currently unavailable – the annual harvest has been estimated. The reporting periods for AAC are different for MLSIS that the harvest area was determined from. The AAC is based on a November 30th date and MLSIS on March 31. FCL has harvested approximately 98% of the determined AAC since 1960. The amount planted since 1990 is approximately current with the exception of one year of harvest.

Intensive forest management has been carried out on the TFL since 1985. Table 3 summarizes the work that has been done to date.

Table 3 Intensive Forest Management History

Year	Juvenile Spacing	Conifer Release	Pruning	Fertilization	Totals	Cumulative Total
1985	0.0	34.0			34.0	34.0
1986	0.0	15.0			15.0	49.0
1987	39.8	11.6			51.4	100.4
1988	81.2	0.0			81.2	181.6
1989	28.1	0.0			28.1	209.7
1990	0.0	0.0			0.0	209.7
1991	0.0	0.0			0.0	209.7
1992	13.8	0.0			13.8	223.5
1993	0.0	0.0			0.0	223.5
1994	27.7	0.0			27.7	251.2
1995	175.4	53.9	67.5	0	296.8	548.0
1996	131.5	0	132.7	0	264.2	812.2
1997	7.3	0	0	245.4	252.7	1,064.9
1998	0	14.7	36.4	0	51.1	1,116.0
1999	0	0	0	0	0	1,116.0
TOTALS	504.8	129.2	236.6	245.4	1,116.0	

Incremental silviculture work has been funded by FRBC since 1995. Work is currently carried out under a MYA between FRBC and FCL.

2. INVENTORIES

Table 4 outlines the inventories currently available as well as the status of those in progress.

Table 4 Inventory Status for TFL 33

Inventory	Status
Forest Cover	Forest Cover was updated for MP #7. Forest Activity history will be updated as part of the Information package. A review of the non-productive types as listed in the TFL 33 Inventory Audit 1997, will be carried out and the information incorporated into the Information package. Forest Cover history to be updated and submitted annually to District Manager.
Recreation	MOF inventories current to 1998 will be used.
Fisheries	Fish stream identification is currently being carried out under agreement with FRBC. Field sampling took place in 1999. Final report submitted to MOELP in February 2000 (Kamloops Region). Awaiting Quality Control Certificate. Will submit to District Manager upon receipt of certificate.
Wildlife	The OKTSHG inventory is presently available. A revised mule deer winter (MDRW) range map is currently being prepared in conjunction with the Okanagan Shuswap Land and Resources Management Plan (LRMP). MDWR will be much smaller in area than was modeled in the TSA. Other wildlife (Caribou, Grizzly) management is also under discussion at the LRMP – no agreement has yet been reached as to boundaries or management strategies.
Range	There currently is no range, or plans for range use on the TFL.
Cultural Heritage Resources	The MOF, Salmon Arm Forest District has completed a district wide AOA (1997). The information is used in planning.
Landscape	MOF - 1995
ESA Soil Inventory	As per MP#7.
Operability	Submitted to District Manager for approval December 10, 1998.
Terrain Stability Mapping (Level D)	Completed spring 1998 by FCL. Not submitted for approval to MOF. Expected to be updated to Level C in 2000.

3. MANAGEMENT OBJECTIVES

3.1. General Objectives

The general objective of FCL is to recognize and improve the current social, environmental and economic benefits attributable to the practice of forestry on the licence area. Specifically, FCL will maintain a long term, economically viable forest products division, while practicing sound integrated forest management. FCL has been operating for 54 years in the Shuswap area, attesting to the long-term commitment to the local communities.

FCL will comply with the Forest Practice Code of British Columbia Act (FPC) as well as the results of the Okanagan-Shuswap Land and Resource Management Plan (LRMP). The LRMP is still under discussion and not yet finalized.

3.2. Management and Utilization of the Timber Resource

FCL plans to maintain the currently approved Annual Allowable Cut (AAC) of 22,500 m³. The AAC includes 1,450 m³ (7%) managed by the Small Business Forest Enterprise Program of the Ministry of Forests (SBFEP). The Timber Supply Analysis and Information Package (Appendix 5 and 6) provide the detail used in the analysis.

3.2.1. Silviculture Systems

Silviculture systems will vary depending on site-specific requirements (slopes, safety, timber type, etc.) as well as landscape objectives and requirements. Patch cuts and clear cuts with reserves are the most predominant system currently used, although group selection will be phased in with specific development areas. Small CB's will be utilized in order to meet the various management strategies (Mule Deer Winter Range, VQO's, etc.). Current average CB size as approved in the 1998-2003 FDP, is 6.9 ha's.

3.2.2. Harvest Systems

Harvest systems will depend on the silviculture system and site specific requirements (slopes, safety, timber type, etc.). The licensee currently employs a variety of systems within FCL's operating area including conventional ground skidding, low ground pressure, cable and helicopter. Harvesting will comply with the FPC and will incorporate the applicable guidelines and guidebooks as a reference for planning operations. The approved 1998-2003 FDP harvesting percentages are

- Cable, Cable/Conventional - 27%;
- Conventional Ground Skid - 64%;
- Low Ground Pressure - 6% and Helicopter - 3%.

3.2.2.1. Seasonal Flexibility

An appropriate balance of areas for summer and winter logging will be developed to maintain the contractor force at optimum efficiency while at the same time minimizing waste and environmental impact. The logging season will be determined on a site-specific basis. Several factors such as soil, moisture, slope, terrain and market demand by a species will dictate the time of year a block is harvested. Also, where practical, timing of harvesting will be planned with consideration for the summer residents and at high elevations, for snowmobilers.

3.2.2.2. Species Profile and Mix

FCL will seek to harvest the species profile within the planning area. Flexibility will be required and will be part of the planning process in order to ensure that other values such as Mule Deer Winter Range and VQO's are not compromised.

3.2.3. Utilization Standards

The Ministry of Forests, Interior Provincial Utilization Standards will be followed in all operations. Within this scope specific standards in individual cutting permits will be implemented. Utilization standards will be the same as per MP # 7:

Table 5 Utilization Standards

Specification	Species
10 cm Top Diameter	All Species
15 cm Top Diameter	Cw 141+ YEARS
17.5 cm D.B.H.	All Species (Except PL)
12.5 cm D.B.H.	PL
30 cm Stump Height	All Species

3.2.4. Cruising and Scaling

3.2.4.1. Cruising

All cutting permits will be cruised and compiled in accordance with provincial, regional and district requirements in effect at the time of cruising.

3.2.4.2. Scaling

All timber cut under this license will be scaled in accordance with the conditions of the Forest Act and scaling regulations in effect at the time of scaling.

This license is not on a cruise-based assessment.

Scaling will be by weight and will be conducted, prior to log watering, at the licensee's various log dumps on Shuswap Lake. Conversion factors will be maintained and checked regularly to ensure accurate measurement of volume. Check scaling will continue at the Herald's Bay site.

3.2.5. Silviculture



3.2.5.1. Basic Silviculture

FCL will meet the basic silviculture requirements of the Forest Act and FPC Act of BC. The licensee's IO obligations are recognized and priority will be given to achieve free growing on applicable areas. The licensee currently has no backlog NSR areas on the TFL.

Regeneration delay of a minimum of two years will be attained or exceeded. In general, the licensee plants a minimum of 1-year-old stock within a year of harvesting. Generally this policy equates to a 1-year regeneration delay. Mixed planting of a variety of species will be encouraged throughout the license area. Genetically improved stock (Spruce) is currently being planted on the TFL. As other species become available, additional improved stock will be planted on the license area. Given the relatively small amount of seed required, genetically improved Larch, Lodgepole pine and Douglas-fir will be available within the next five years. The use of the improved stock is consistent with the modeling in the timber supply analysis.

Mixed planting to target levels of a variety of species will also be encouraged throughout the license area. Required stocking levels will be achieved within the specified time frame, and to the standards set out in the SP.

3.2.5.2. Site Preparation

Site preparation carried out on TFL 33 will consider the reforestation objective, the need to control pests and disease, and the need to reduce fire hazard. Although once the predominant site prep method on the TFL, broadcast burning is now infrequently used. Mechanical operations utilizing excavators for stumping, screefing, raking and piling are now used almost exclusively. Areas, particularly at the lower elevations, will be reforested with little or no site preparation. Cable harvested areas, due to slope and terrain, will be planted without treatment by utilizing larger stock and immediate planting. Higher elevation sites will be examined on an individual basis in order to ascertain the amount of soil warming required in promoting optimum growth.

3.2.5.3. Brushing and Weeding

Brushing will be carried out on a site-specific basis on those sites where the achievement of a free growing crop is impaired. Manual treatment methods will be employed. Hand tools or brush saws and chainsaws will be utilized to remove competing vegetation. Treatment will be confined to individual tree release.

3.2.5.4. Monitoring of New Forests

New forests will be monitored through regularly scheduled survival and/or stocking surveys. Surveys will follow the general methodology of the standards set by the MOF, but some modification will take place in order to meet FCL requirements. Free growing surveys will be done to the standards and requirements for approval within the allotted time frame as set out in the SP.



Picture of an eleven-year-old Lodgepole pine -Douglas-fir plantation.

3.2.6. Incremental Silviculture

The licensee supports any incremental silviculture activity within its license area, and will pursue opportunities beyond its basic obligations, where a tangible long-term benefit, to the licensee, will be recognized. Due to the potential to lower downfalls in the AAC, all incremental opportunities will be examined. Work will progress as permitted by funding and consideration for forest health. Incremental work on the TFL is currently funded under a Multi-Year Agreement between FRBC and FCL.



3.2.7. Forest Health

The licensee objective is to minimize fibre losses to insects, disease and other pests within the planning area and to continue to ensure the prompt recovery of volume that would otherwise be destroyed. Strategies for recovery of damaged timber will be discussed in detail in the in the Forest Development Plan (FDP).

Where required, insects and disease surveys will be conducted in conjunction with the Ministry of Forests to measure the incidence of infestations identified in the FDP. Generally, the TFL is either accessible by roads or visible from the lake. Any forest health concerns will be apparent and identified during the regular course of work on the TFL. Additional monitoring through aerial reconnaissance will be carried out on the more isolated portions of the license. Specific areas of concern will be addressed on an individual area basis.

Insect populations are generally endemic on the TFL. The diverse timber types and terrain limit the exposure to epidemic populations. Sanitation through increased utilization, prompt landing disposal, recovery of blowdown material and recovery of any infestations has, and will continue, to limit exposure to potential outbreaks.

3.2.7.1. Management - Prevention and Control

Management planned for direct control of bark beetles, defoliators, diseases and major abiotic damage will follow Provincial, Regional and District standards. In addition, specific measures for prevention and control will be implemented.

3.2.7.1.1. Root Rots

Treatments will be based on specific SP's. Identification will be initiated at the SP stage. The incidence of infection as well as the treatable ground within the infection area will be identified. The level and type of treatment will depend on the incidence of the disease. In some instances, the level of treatment will be dictated by other values. Water quality is a prime concern for the cottage owners south and north of Wilson Creek. Where it is perceived that stumping might impact on water quality, alternative species selection will be used.

3.2.7.1.2. Windthrow

Salvage of windthrow material will continue to be a priority on the licence area. Although, not historically a major problem, priority will continue to be given to the recovery of material affected by wind. Detection will generally be through the reconnaissance methods mentioned previously. Preventive measures, if required, will be planned in conjunction with the approved FDP. Silviculture prescriptions will incorporate the design of appropriate silviculture systems and block layout that reduce the potential of windthrow.

3.2.7.1.3. Bark Beetles

Although generally limited to isolated endemic outbreaks, where accessible, salvage operations will be carried out. The use of trap trees and wood recovery will be considered a priority over the use of lethal trap trees or fall and burn techniques. Salvage of bark beetle infested trees has been a priority over the last several years. The program is outlined in the FDP and is carried out in conjunction with the beetle management program for FCL's other licenses.

3.2.7.1.4. Defoliators

During the course of MP #7, defoliators have not been a concern on TFL 33. Should an outbreak occur, control measures will be outlined in the FDP and work carried out in conjunction with FCL's pest management program.

3.2.7.1.5. Others

Other pests will be dealt with as they occur. There have been no major infestations by other disease or insects over the course of MP # 7.

3.2.7.1.6. Information Systems

All pest related management activity will be orchestrated with the Ministry of Forests (MOF). Results and discussions on pest management activities will be presented to the MOF. Salvage operations will be defined in the FDP and in SP's.

3.2.7.2. Fire Protection

The rapid detection and suppression of fires will minimize losses and damage. Landings will be burned as soon as practical following harvesting. Slash loading on harvested blocks will be monitored and dealt with during site preparation.

3.2.7.3. Pre-organization

Before April 1 of each year, the Licensee will develop a fire protection pre-organization plan consistent with this license, and will include a duty roster in the fire protection pre-organization plan. Monitoring of the weather on the TFL will be carried out by the MOF utilizing the automatic weather station established in 1987.

3.2.8. Engineering

3.2.8.1. Road Construction

All planned roads that are approved in the FDP will follow the requirements of the FPC and will be developed in accordance with the schedules in that plan. In access development, FCL will strive to develop roads two years in advance of logging. FCL plans will work towards avoiding the duplication of access as much as practical.

3.2.8.2. Road Maintenance

A road maintenance plan will be submitted annually in the FDP. Standards will be as per the guidelines and regulations in effect. FCL will commit to implement maintenance in accordance with the FDP as approved by the District Manager.

3.2.8.3. Road Deactivation

Road Deactivation plans will be submitted annually in the FDP. Standards will be as per the guidelines and regulations in effect. FCL will commit to implement deactivation in accordance with the FDP as approved by the District Manager. An Access Management Plan (AMP) has been completed and approved for TFL 33. Deactivation works for non-status roads funded under FRBC through FCL's MYA, will follow the approved plan.

3.3. Protection and Conservation of Non-Timber Values

3.3.1. Visual Quality Objectives

FCL recognizes landscape management concerns and operation plans will be carried out in conjunction the Visual Quality Mapping Objectives (VQO's) as established by the Ministry of Forests (1995), or when completed, the Okanagan-Shuswap LRMP. TFL # 33 is comprised of Retention (R), Preservation (P), Modification (M) and Not Visible (NV).

Cutblock design and in-block reserves are being used and these allow FCL to exceed the conventional disturbance limits without compromising the overall visual quality objectives. The disturbance limits were established as a "... rule of thumb only. They are not intended to replace visual perspective simulation and appropriate landscape design." (Okanagan TSA IRM Timber Harvesting Guidelines, Page 64). FCL manages for visual quality on the landscape by applying a small cutblock strategy and utilizing contours and screening as well as blending blocks into the landscape. The progression from large, square block design to smaller, well placed cutblocks has evolved over time. FCL's 2000-2005 Forest Development Plan (FDP) reflects this strategy. The plan shows 65% of the cutblocks less than 5 hectares, 88% less than 10 hectares and 95% under 20 hectares.

In addition, the time to achieve visual green-up is believed to be considerably less than modeled in the Base Case. However, the analysis inputs were based on TIPSY managed stand age-height information in the absence of alternative information from FCL's inventory records. As stated in the *Forest Practices Code Timber Supply Analysis* (MOF, February 1996), a number of FPC provisions such as riparian and biodiversity requirements, increased partial cutting, and smaller cutblocks are expected to reduce visual impacts. Cutblock design and additional in-block reserve areas will help to reduce these impacts. These mitigating factors have been considered in the LRMP option, and are being addressed in FCL's current management. In his AAC determination for MP #7, the Chief Forester considered these management practices and clearly stated that the Base Case is not an AAC recommendation.

Table 6 summarizes the new VQO forest cover constraints for the LRMP option. VQO disturbance and green-up requirements and the methods to develop final constraint values are provided in the *Okanagan / Shuswap Land and Resource Management Plan Visual Quality Guidelines* (September 8, 1999) (pages 14 – 16). All other REA forest cover constraints are the same as listed in the Information Package.

Table 6 - Revised LRMP Forest Cover Constraints

REA Level 1 - Visuals	Maximum Disturbance (% < years)
1 - VQO-R	15% < 20 years (6m)
2 - VQO-PR	22.5% < 18 years (5m)
3 - VQO-PR/Grizzly	21.2% < 21 years (5m)
4 - VQO-M	30% < 19 years (5m)
5 - VQO-M/Grizzly	30% < 22 years (5m)

Management of VQO's will be guided by the standards of Table 6 until the VQO standards (Appendix IV, Okanagan Shuswap LRMP Visual Quality Guidelines, Okanagan Shuswap Land and Resource Management Plan) are approved by the Shuswap Okanagan LRMP.

It is important to consider cutblock-level management of harvesting in the visually sensitive areas and how this management allows harvesting to proceed without causing significant negative impacts on the landscape. FCL will review opportunities for "visual rehabilitation" on areas previously harvested. Balances between current designed harvest and pre-Okanagan Guideline harvest will have to be evaluated in order to examine and design rehab opportunities. FCL will also examine the relationship between the plan view and perspective view when completing Visual Impact Assessments (VIA's). VIA's are generally carried out after FDP approval and before SP approval. The examination will allow for a comparison of the plan view versus perspective view for disturbances. The information may be useful in evaluating disturbance levels for the next Timber Supply Review (MP #9).

3.3.2. Biological Diversity

Biodiversity will be incorporated as per the Okanagan-Shuswap LRMP slated to be completed in the near future. As an interim measure, the base case will be addressed based on a 45/45/10 modeling procedure and drawn down to one third and recruited over three rotations. The LRMP Table is currently proposing the TFL as a separate Landscape Unit (LU). The proposed BEO is Low. Wildlife tree patches and riparian management areas will be incorporated into operational plans.

3.3.3. Soils

FCL will provide for the protection and conservation of soils by minimizing the amount of landbase occupied by permanent structures required accessing and removing timber. Levels of disturbance will be in compliance with the applicable regulations and guidelines.

3.3.4. Protection of Water Quality and Quantity

There are numerous water licenses and users located throughout the area. FCL recognizes the protection of water quality and quantity and will address both in planning and implementing operations. Consultation through the FDP will address concerns raised by licensed and non-licensed water users and will consider those concerns during road construction, harvesting, site preparation and reforestation plans. Descriptions of operational protection measures will be included in operational plans (FDP, SP, etc.).

Licensed water lines will be indicated on the FDP maps. Registered waterlines that may be effected by proposed Category "A" blocks will be notified directly. Other users, where addresses are known or specific landowners or leaseholders have expressed interest by supplying their address will be contacted as part of the FDP process. Addresses of interested parties have been supplied to FCL either in response to the FDP

advertisements or at the annual or biannual meetings on the TFL. Properties that do not have a licensed water line are very difficult to track as they are bought and sold continually. The biannual meetings are in response to a two-year FDP plan approval that FCL has recently applied for. Property owners are encouraged at the meetings to supply FCL with their updated mailing address. The meetings are for general information dissemination or for specific discussion on particular development issues. Notification of the meetings is through formal mail-outs, postings at the cabins and word of mouth.

The list of registered water licenses as well as interested groups such as Hasemann Creek Property Owners or Beales Creek Residents and interested individuals are kept in FCL's office. Copies of referral letters and correspondence to the interested parties will be included in the FDP submission to the MOF.

3.3.5. Recreation Management

Recreation use is important within and outside TFL 33. The present recreational opportunities that relate to hunting, snowmobiling and landscape values will be maintained. There is currently only limited recreational activity on the license area. As a result, no information has been, or is planned, to be collected. The Ministry of Forests, Salmon Arm Forest District, has completed a recreation inventory of the licence area. The inventory and any updates will be incorporated into plans and operations.

Recreational use during the spring, summer and early fall is generally confined to Shuswap Lake and adjacent to the beach areas. The beach areas are either in private lots, lease lots or maintained as parks (Hungry Cove and Marble Point). FCL has, and will continue to, consult with the cabin owners on development proceedings. Where possible, concerns and agreements will be incorporated into the planning process.

Snowmobiling is an important winter recreation activity that occurs on the upper elevations of the TFL. FCL will continue to communicate plans with local organized clubs in order to manage access-timing issues.

3.3.6. Cultural Heritage

In areas where development may impact on potential or existing archaeological sites the licensee will ensure that the appropriate Archeological Impact Assessment (AIA) and Band consultation is carried out so that measures can be taken to protect the site.

FCL consults with native bands by having an archeologist review the Forest Development Plan in terms previous AIA's or areas of concern based on indicated traditional use (reference – District Manager's letter dated February 28th, 2000). The archeologist reviews the plan with the bands and proposes a list of AIA's that will be required. Field crews supplied by the various bands collect information. The results of any findings are contained in a final report that is referred to the bands, the MOF and the Archaeology branch. SP's incorporate the findings of the AIA's, and where required, adjustments are made in the field to protect any findings.

If heritage sites are discovered during logging or site preparation, all operations will cease until a proper assessment of the area has been made.

3.3.7. Range Management

No range use exists or has taken place on the license area. FCL will cooperate with the MOF if a demand for a program develops.

3.3.8. Fish and Wildlife Habitat

FCL will ensure that fish habitat is recognized and appropriate protection consideration is given. A FHAP was completed in 1997. Further fish stream inventories are being conducted under FRBC funding and are scheduled to be approved in 2000 (see 2. Inventories). The final inventory product has been submitted to MOELP for approval as per the FRBC sampling plan.

FCL recognizes the importance of animal habitat within the planning area. Consideration for habitat protection will follow the LRMP, when completed, in designing and

implementing operations. Current management follows the OKTSHG for Deer Winter range.

3.3.9. Other Opportunities

The following are potential opportunities that could be carried out during the course of MP #8:

1. **Issue:** Under the package discussion of the LRMP, portions of Timber License 635 (TO 635) held in FCL's name, are proposed to be included in a park. The area of TFL #33 is very small in relation to other TFL's in the province. A potential opportunity exists to include area that would be removed from the TO into TFL #33. Also, due to the disjointed locations of the TO throughout FCL's operating area, the opportunity for inclusion of the TO area, or an area similar to the TO, into TFL#33 will be explored. Given FCL's good record of forest management on the TFL, the additional area inclusion would be beneficial to both FCL and the Province.
Action: Begin discussion with appropriate agencies as to the legal and technical requirements required to role FCL's Timber License TO 635 into TFL # 33.
2. **Issue:** Site Index Estimation - formal transition of site indices from old growth will soon be available. Site Index assessments in the TFL require further review. The opportunity to realize timber supply benefits exists.
Action: Utilize data, as it becomes available, on old growth site index in order to produce site index adjustments.
3. **Issue:** Growth and Yield Information - growth and yield information have not been collected nor have permanent sample plots been established on the TFL. Many analysis functions require more specific local data, particularly the actual height to green-up.
Action: Research the establishment of permanent growth plots on the TFL - particularly in the managed stands. To date, there are no standards to establish permanent plots for managed stands. Consideration will be given for monitoring managed stands for increased growth and yield information that would aid in ameliorating any timber supply declines due to the FPC or the impending LRMP. FRBC funding initiated for 2000-2001 to examine opportunities and to map a strategy for plot establishment.
4. **Issue:** Vegetation Resource Inventory (VRI) - an update of the inventory using VRI standards would provide current inventory information. Due to the size of TFL 33 it may be more efficient to include the VRI inventory within a TSA inventory.
Action: Review the status of VRI for the TSA and examine the opportunity to include the TFL or carry out the inventory as a separate entity. FRBC funding secured for 2000-2001.

4. CONSULTATION AND INTEGRATION OF HARVESTING ACTIVITIES WITH NON-TIMBER USERS

The licensee is committed to taking an active role in public education and providing opportunity for public input. Input is sought from other resource users through the referral and consultation of the FDP and MP through direct notification of licensed users - including water licensee's, guides and trappers - government agencies and local Indian Bands. As well local advertising of the plans as required under the FPC Act of B.C. will continue.

In addition to the licensed users, unlicensed water users are invited to participate in the MP and FDP process through advertising, Open Houses, informal meetings and where practical, direct referral.

FCL will establish liaison with a band or tribal council representative for consultation of Management and Forest Development Plans. A consultation process will be agreed to and a review of sustenance activities initiated. Records of all decisions and actions that are taken or not taken will be kept. The results of the consultations will be addressed in FDP's. FCL will work with the Salmon Arm Forest District and within the MOF's "Protection of Aboriginal Rights Policy" to identify and resolve issues. There are four Indian Bands with interests in FCL' operating area - Adam's Lake, Neskonlith, Little Shuswap and Spallumcheen. FCL generally deals specifically with Little Shuswap and Spallumcheen Indian Bands in regards to TFL 33.

The licensee is committed to addressing the concerns of the local resource user groups, First Nations, licensed and unlicensed water users and to fostering the public involvement process as it relates to forest management activities. To achieve this, the licensee will continue to meet with concerned groups annually on an informal basis. Meetings have occurred with various private interests since the approval of MP #7. The latest meeting occurred in August 1998 to discuss proposed development South of Wilson Creek. Approximately 30 people along with FCL staff and District reps from MOF Salmon Arm attended. All owners, including licensed and unlicensed water users from Wilson Creek Dump up to and including Hasemann Creek were invited to attend. The current FDP was approved for a two-year term in 1998. As a result, no meetings were carried out in 1999. The next meetings will be scheduled for 2000.

5. IMPACT SUMMARY - KEY SIMILARITIES AND DIFFERENCES BETWEEN MP # 7 AND DRAFT MP # 8

The implementation of MP #7 resulted in an 18% AAC reduction. The bulk of the reduction was attributable to the inclusion of Visual Quality Objectives. The reduction in harvest meant an overall drop of 1.4% in the tenured AAC available overall to FCL. FCL has always tried to manage milling operations within the cut allotted by tenured licenses. The reduction in harvest volume resulted in a loss of both economic and production opportunity resulting in higher unit costs and less revenue both to FCL and its suppliers. The 1.4% loss also resulted in a 1.4% reduction in wood available to be harvested by FCL's contract loggers and the loss of opportunity to the contractor's suppliers and related economic multipliers.

The implementation of MP# 8 should not have a short-term effect on FCL. The cut, as indicated in the TSA, can be managed at the present level of 22,500 m³. The cut can remain the same due to the more progress use of VQO management (see 3.3.1 *Visual Quality Objectives*) as indicated in the LRMP Option. Production levels and harvestable wood available to FCL's contractors would remain the same.

Protection and conservation of values would be the same as MP #7. Operations in MP #8 are fully under the FPC Act of BC. The TFL was previously managed under the stringent Okanagan Timber Harvesting Resource Guidelines – which were the precursor to the FPC.