1999 - 2000 ANNUAL REPORT

Louisiana-Pacific Canada Ltd.
Swan Valley Forest Resources Division
Forest Management License # 3

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1999 - 2000 HIGHLIGHTS

LP Oriented Strand Board (OSB) Mill

- Produced 414,333,921 square feet of OSB (3/8" thickness)
- after successful trials, the OSB mill begins to utilize up to 10% white birch in its OSB production

Forest Management Planning

- 92% of proposed cutblocks mitigated prior to AOP approval

Harvesting

- Developed and tested Logging Contractor Audit.
- LP harvests 675,239 m^3 of Hardwood

Forest Renewal

- site prepared 878 hectares
- Snow cached 880,000 seedlings
- planted 1.96 million seedlings

Research and Monitoring

- Re-establishment and measurement of 156 growth and yield permanent sample plots
- Duck Mountain Bird Monitoring Program – 551 stations were sampled
- LP involved with the Sustainable Forest Management Network (SFMN) of Centres of Excellence, WESBOGY growth and yield cooperative, FERIC, and the Canadian Woodlands Forum

1.0 INTRODUCTION

The 1999 – 2000 annual report summarizes the forest management activities undertaken by Louisiana-Pacific Canada Ltd. within FML # 3 and portions of FML # 2 (Tolko Manitoba Inc.) from May 1st 1999 to April 30th, 2000.

The annual report has been prepared according to the conditions outlined in Paragraph 6 (A) of the Forest Management License Agreement (FML # 3) between the Province of Manitoba and Louisiana-Pacific Canada Ltd., dated September 21, 1994. FML # 3 was allocated to the LP to ensure a long term fiber supply for the operation of the Oriented Strand Board (OSB) mill located near Minitonas in the Swan River Valley (Figure 1).

The Agreement was in effect on the date of signing and will expire on December 31, 2014. The Agreement shall be extended and the license renewed subject to the faithful performance by the Company during the preceding period.

The Company was issued an Environment Act License (No. 2191) dated May 27, 1996 to carry out forest management activities within the geographical boundaries of Forest Management License Area # 3. The appeals process resulted in changes to the Environment Act License No. 2191. License No. 2191E was issued and became effective on December 11, 1996, replacing License No. 2191.

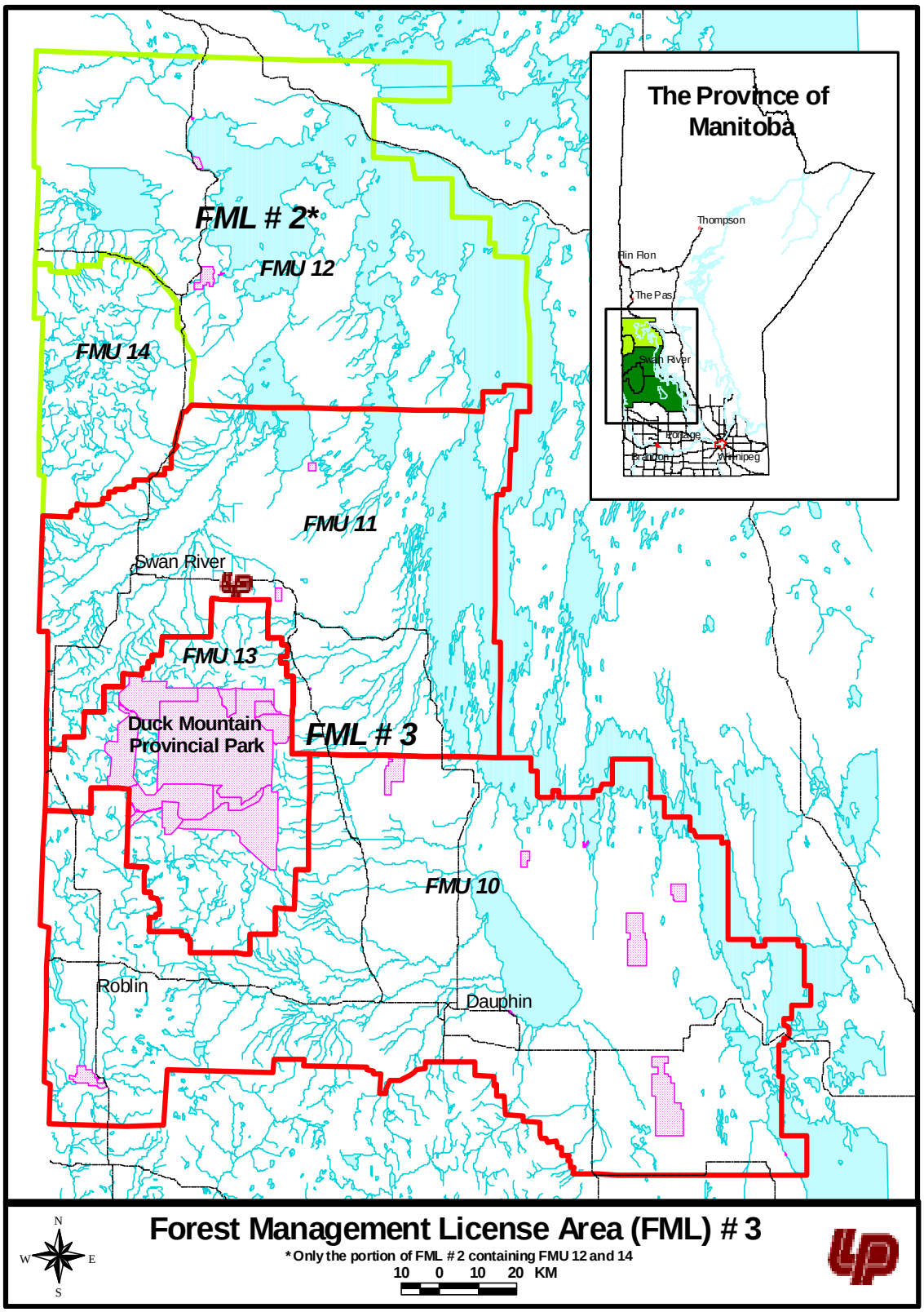

Figure 1. Overview map of the Mountain Forest Section including FML # 3 and a portion of FML # 2

2.0 FOREST MANAGEMENT PLANNING

Forest management planning is used to sustainably manage the renewable resources in FML # 3. Long-term planning is addressed in LP's 10-Year Forest Management Plan, while our Annual Operating Plans (AOP) focus on current plans within the context of those long-term goals. The planning process is open, and seeks advice and input from stakeholders to ensure concerns are mitigated before harvesting begins.

2.1 PLANNING PROCESS

LP continued to improve its' planning process in the following areas:

- Pre-Harvest Surveys (PHS)
- Pre-Harvest Silvicultural Prescriptions (PHSP)
- Integrated Planning Team
- Mitigation of provincial government concerns prior to AOP submission
- Public Involvement

2.1.1 Pre-Harvest Surveys

A pre-harvest survey is a site-specific ecosystem assessment of a harvest area prior to logging. In the 2000 field season, cutblocks that would be harvested in 2001 are surveyed. The assessment is then developed into a site-specific pre-harvest silvicultural prescription (PHSP) which addresses timber and non-timber resource concerns. LP has committed itself to completing PHS's on all areas planned for harvest.

Figure 2.1 A surveyor conducting a vegetation assessment of the herb layer.

The Pre-Harvest Surveys gather data on most aspects of the ecosystem, including:

- in-block waterways
- exceptional features (mineral licks (Figure 2.2), nests *etc.*)
- live and dead standing (snags) tree data
- coarse woody debris (dead trees on the ground)
- vegetation community and V-type
- understory trees (advanced regeneration)
- competitive vegetation (shrub & forb layers)
- soils and S-type
- ungulate browse activity
- vulnerable, threatened and endangered species
- forest health (insects & disease)
- wildlife evidence (tracks or scat)
- site limitations (steep slopes, wet areas)
- heritage resources

Figure 2.2 A moose utilizing a mineral lick.

In the 2000 field season, 2,652 PHS plots were surveyed on 130 cutblocks. This total includes both quota holders as well as LP cutblocks.

2.1.2 LP Planning Team and Pre-Harvest Silvicultural Prescriptions

Following the PHS, a detailed site-specific management plan is developed. The Pre-Harvest Silvicultural Prescription (PHSP) includes:

- Year and Season of Harvest
- Harvest/Silvicultural System (*e.g.* Clear Cut, Understory Protection)
- Wildlife Objectives (*e.g.* Leave trees/structure, buffers, corridors)
- Renewal detail (*e.g.* Site Preparation, Seedlings stock types and densities)
- Monitoring (*e.g.* Timing of regeneration surveys)

To develop a comprehensive PHSP, a great deal of knowledge is needed in many disciplines, such as forest management, operational forestry, silviculture, and wildlife biology. In order to evaluate the PHS data and develop a PHSP, it was found we needed to establish an " Integrated Planning Team". The planning team consists of an area planner, silviculture forester, wildlife biologist and the district forester. This group reviews all information regarding any proposal including operating areas, road developments or harvest blocks. Together they develop a site-specific prescription for each harvest block (Figure 2.3).

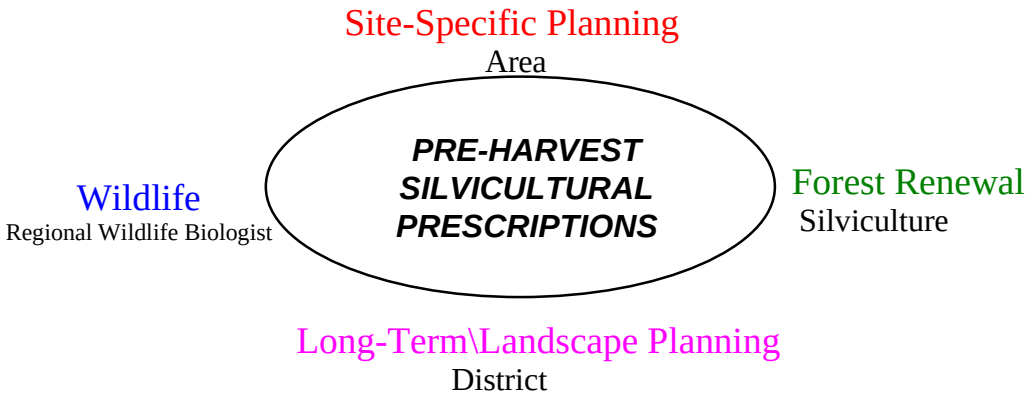

Figure 2.3 An illustration of LP's integrated planning team and the development of PHSPs for the Annual Operating Plan.

2.1.3 Annual Operating Plan Mitigation Process

Each year LP must complete an AOP with a detailed one-year plan and a general three-year projection. This plan is submitted to Manitoba Conservation (MC) for a 60-day approval process. Following the AOP's approval, each proposal in the plan must be permitted through the local MC district office prior to beginning any forest management activities.

In 2000, LP continued to work closely with the Grandview, Roblin, and Swan River Integrated Resource Management Teams (IRMTs) to "streamline" this approval process. Our goal was to mitigate all concerns regarding our proposals **prior** to the AOP submission. 136 of the 148 proposed 2000 cutblocks were successfully mitigated.

2.2 PUBLIC AND STAKEHOLDERS INVOLVEMENT

A large component of the planning process is obtaining input from the public. The citizens of Manitoba are stakeholders in the forest, and have the right to be informed and to provide input into the management of Crown lands. LP is committed to public involvement and provided this opportunity through public open houses, the Stakeholders Advisory Committee, Rural Municipality meetings, and field tours and presentations with local schools and interest groups.

2.2.1 Public Open Houses

In February of 2000, LP held three public open houses regarding the 2000 - 2001 Annual Operating Plan (AOP). The meetings were advertised in the Winnipeg Free Press, Swan Valley Star and Times, Roblin Review, Dauphin Herald, Parkland Shopper, and Hudson Bay Post Review newspapers. Open house meetings were advertised on Dauphin's radio station 730 CKDM. Written invitations were sent to all Stakeholder Advisory Committee (SAC) representatives, local Rural Municipalities, and town offices.

The four open houses were attended by a total of 61 people. LP believes the exchange of knowledge was beneficial for both LP and the people who attended. The following are the location and dates of the 2000 - 2001 AOP open houses:

Location	Date
• Roblin, MB	Jan. 24th, 2000
• Grandview, MB	Jan. 25th, 2000
• Ethelbert, MB	Jan. 26th, 2000
• Swan River, MB	Jan 27th, 2000

2.2.2 Stakeholders Advisory Committee (SAC)

Throughout the 1999 - 2000 operating year, the SAC continued as an integral part of the Company's planning process. The SAC provides valuable insight and information relating to our proposed plans and management activities.

Active representation on the SAC currently consists of the following organizations (listed alphabetically):

- Cottage Owner's Association

- Intermountain Conservation District
- Manitoba Environment
- Manitoba Natural Resources
- Manitoba Naturalists Society
- Manitoba Trapper's Association
- Midwest Manitoba Lodge and Outfitters
- Mountain Quota Holder's Association
- Northern Association of Community Councils (NACC) - Western Region
- Parkland Trails Association
- Parkland West Economic Development
- Riding Mountain National Park
- Swan Valley Sport Fishing Enhancement Inc.
- West Region Elk Management Board

Figure 2.4 Stakeholder's Advisory Committee meeting.

During this report period, SAC meetings were held October 25th, November 22nd, and December 21st, 1999 and Feb. 24, 2000. Members of the SAC have been involved in field tours (July 26, 1999 and February 13th, 2000) to view existing and post logging activities. We value and appreciate the input given by the members of the Stakeholders Advisory Committee and will continue to meet with them on a regular basis.

2.2.3 Local Jurisdictions

LP staff meet regularly with the various local Rural Municipalities to discuss issues or concerns that may arise due to the use of their road networks in accessing harvest blocks, both on Crown land and private land. Meetings are held to discuss proposed haul routes, necessary road maintenance, road repair or construction. Traffic safety (*e.g.* avoiding school bus routes) is another important issue. The use of existing road infrastructure is extremely important in the efficient movement of the wood to the mill.

2.2.4 Other Field Tours and Presentations

The following is a list of meetings, presentations and field tours that LP staff attended in 1999 - 2000:

- **October 6 & 7, 1999** - LP staff provided a sustainable forest management presentation and field trip to the Biology class of the *Swan Valley Region Secondary School (SVRSS*).
- **Feb 1999** - LP Staff gave students from Swan River, Roblin, and Grandview a hands-on field trip of snow-caching tree seedlings

3.0 HARVESTING

The harvest block design is one of the most critical components of forest management. The design must incorporate site specific concerns such as wildlife habitat and ecological features, as well as fit into the larger picture of sustainable forest management and conserving bio-diversity. Current research is suggesting that to achieve this, harvest plans must "emulate natural disturbances". The boreal forest's primary natural disturbance comes from fire. Forest fires create landscape mosaics of large and small openings with irregular boundaries and leave burned and unburned trees standing.

3.1 HARVESTING OPERATIONS

3.1.1 Wildlife Trees

In January 1999, after reviewing current research and literature, LP's Standard Operating Procedures (SOP) were modified to ensure 8 – 12 wildlife trees per hectare are maintained on all cut blocks larger than 10 hectares.

Leaving structure throughout a cut block not only benefits wildlife but also achieves several other goals such as:

- Meeting Provincial line-of-sight guidelines
- Protecting softwood understory
- Achieving silvicultural objectives e.g. seed source
- Retaining structure in association with in block drains
- Retaining structure on steep slopes to prevent erosion

3.1.2 Best Practices Meeting

In July 1999, LP held a Best Practices meeting for all contractors and their employees (73 people attended). LP has a commitment to ensure these people are aware of their responsibilities when working in the forest. The purpose of these meetings was to provide the contractors who harvest for LP with training and information on various aspects of harvest operations. Topics included: safety; hauling; standard operating procedures; logging techniques; softwood understory protection and strategies; block layout to enhance wildlife habitat; the importance of retention of wildlife trees and the provision of structure

within a cutblock; stream crossings and the use of buffers to minimize impacts on fish and fish habitat; timber administration; forest regulations and contract requirements. Presentations were made by representatives from Manitoba Workplace Safety & Health, Highways and Transportation – Compliance Services, Canadian Woodlands Forum as well as LP Forest Resources and Mill staff.

3.1.3 Contractor Audit

In order to judge the performance of our logging contractors and to ensure our site specific plans (PHSP) are achieved, LP has developed a field audit process. The procedure involves a consistent team of LP staff auditing both and active and completed operations of our logging contractors. The contractors will be judged on many aspects of their work including road construction; wood utilization; understory protection; and safety as well as all forestry and environmental regulations. Two audits were completed on each of LP's active logging contractors. The audit results were positive allowing LP to objectively rate contractor performance as well to better communicate our expectations and ensure compliance.

3.1.4 Independent Logging Contractors (Crown Land)

During the 1999/2000 operating year LP had 22 independent logging contractors harvesting in the Mountain Forest Section. These consisted of both conventional and mechanical harvesting systems. Table 3.1 illustrates the breakdown of contractors by FML. This is up from 1998 due to increased crown lease harvesting.

Table 3.1 Number of harvesting contractors by FML for LP operations.

FML	LOGGING SYSTEM		TOTAL
	MECHANICAL	CONVENTIONAL	
2	5	1	6
3	12	4	16
TOTAL	17	5	22

3.1.5 Timber Purchase Agreements (Private and Crown)

LP signed 166 Timber Purchase Agreements during the 1999/2000 operating year. These consisted of 107 on private land and 59 on Crown land. (Timber Purchase Agreements for Crown land wood are entered into with third party operators who do not harvest for LP under the Company's Independent Logging Contractor Agreement).

3.1.6 Trucking

Approximately 189 trucks are registered to haul hardwood to the OSB mill. During the 1999/2000 operating year 174 trucks were actively hauling. The average haul distance was 98 kilometers in 1999.

All hardwood harvested for LP is delivered in 2.54 meter lengths, therefore several different configurations of trailers can be utilized. In 1999, 40% was delivered by Super-Bee Trains; 28% by Bee Train; 25% by Tri-Axle; and 7% by Self-loading Picker trucks.

3.2 FIBRE PROCUREMENT

LP began harvesting on July 6th, 1999 and finished March 26th, 2000. In the 1999/2000 operating year LP harvested a total of 675,239 m³ of hardwood. Private land wood accounted for 102,844 m³ or 15% while Crown land wood accounted for 572,395 m³ or 85% - 77% Open Crown Land, 8% Agriculture Crown Land (Figure 3.1).

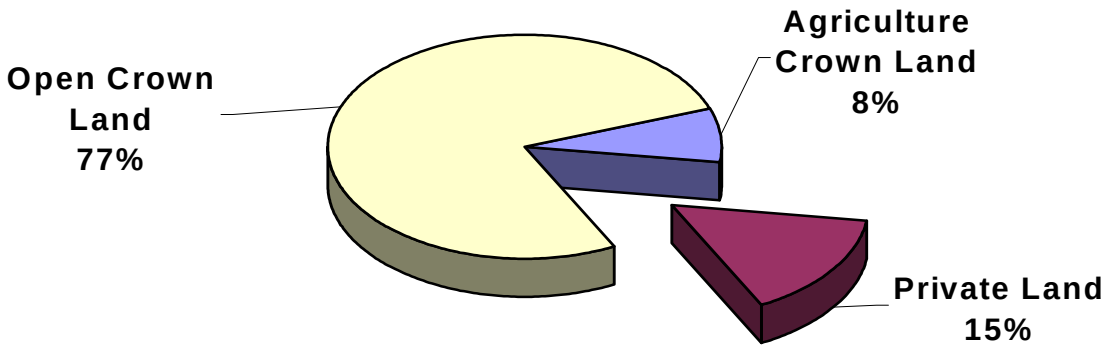

Figure 3.1 Percentage of hardwood volume harvested on Private versus Crown Land – LP.

A total of 432,737 m³ was harvested from FML # 3 and 130,810 m³ was harvested from FML # 2. Figure 3.2 illustrates the distribution of Crown land harvest by FMU. The largest volume of wood harvested is from FMU 13 (Figure 3.3).

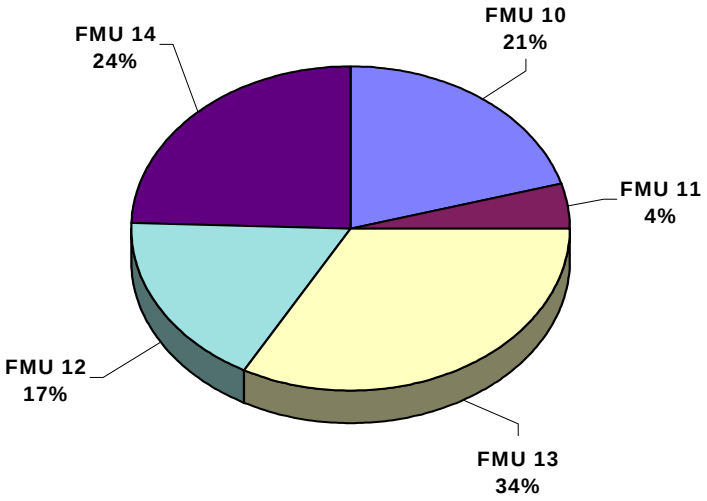

Figure 3.2 Percentage of volume harvested on Crown Land by FMU – LP.

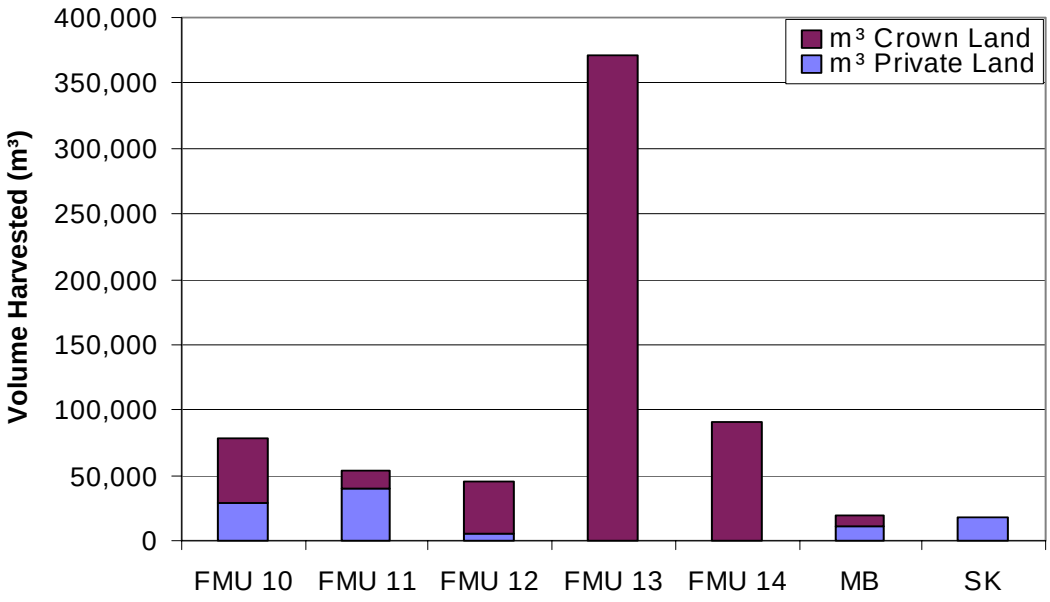

Figure 3.3 Actual volume harvested from Crown land within each FMU.

LP's harvest is below the annual allowable cut (Table 3.2) for all FMUs.

Table 3.2 Actual volume harvested by LP versus the Annual Allowable Cut – Mountain Forest Section Crown Land

Forest Management Unit	1999 Hardwood Harvested (m^3)	Hardwood AAC (m^3)	Percent of AAC Harvested
FMU 10	49,409	100,920	49%
FMU 11	12,741	124,260	10%
FMU 13	370,587	468,900	79%
FML #3 TOTAL	**434,737**	**694,080**	**62%**
FMU 12	40,268	97,020	42%
FMU 14	90,542	156,260	58%
FML #2 TOTAL	**130,810**	**253,280**	**52%**
TOTAL	**565,547**	**947,360**	**60%**

The percent hardwood species harvested in 1999 was 79% Trembling Aspen, 19% Balsam Poplar, and 2% White Birch (Figure 3.4).

LP contractors harvested 445,975 m^3 on all Crown land while 117,573 m^3 was harvested by quota holder contractors and delivered to LP (Crown other). This will continue in future years as mixedwood areas containing both hardwood and softwood volume are harvested by both LP and quota holders.

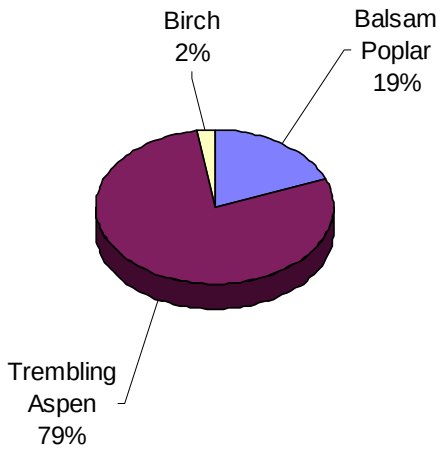

Figure 3.4 Hardwood percentage breakdown for LP 1999/2000 harvest.

3.3 STUMPAGE AND CROWN FEES

In the 1999/2000 operating year a total of $1,775,519.22 was paid by LP and all quota holders in FML # 3. $253,473.60 was stumpage paid on hardwood and $479,188.60 was paid on softwood. Figure 3.5 illustrates the percentage of hardwood and softwood fees collected in 1999/2000. LP collects and submits these fees to the MC quarterly for FML #3. Table A3.3 in Appendix III details the fees collected by quarter as well as the declared manufactured volumes. Table A3.2 describes the volumes reported to LP by the quota holders in FML # 3.

For each cubic metre of Crown wood harvested, a fee is paid into a Forest Renewal and Stand Management Trust Fund. The total of the Forest Renewal Charges (FRC) collected was $935,893.20 in 1999/2000. Charges associated with hardwood totaled 21% or $201,202.50 while 79% or $734,690.70 came from softwood (Table A3.3).

The total of the Forest Protection Charges (FPC) collected was $102,837.67 in 1999/2000. Charges associated with hardwood totaled 74% or $75,602.83 while 26% or $27,234.84 came from softwood.

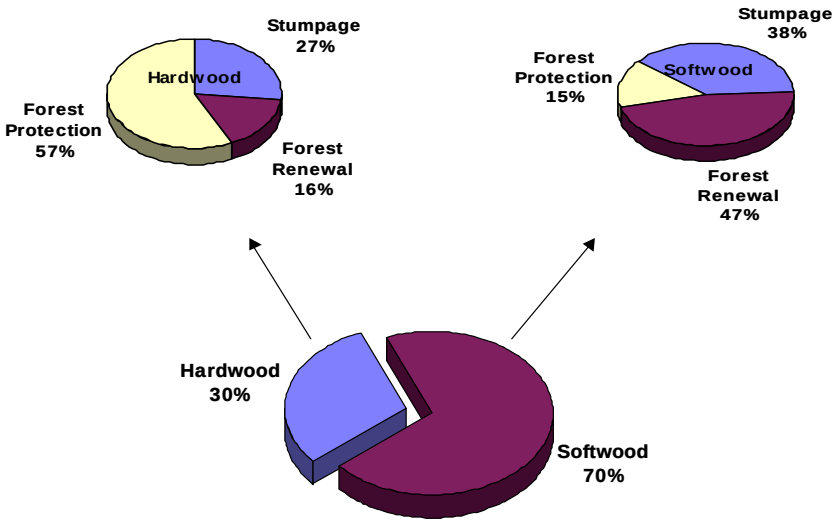

Figure 3.5 Percentage of hardwood and softwood fees collected in 1999/2000 including stumpage dues, Forest Protection Charge (FPC) and Forest Renewal Charge (FRC).

4.0 FOREST RENEWAL

Forest Renewal is an integral part of LP's commitment to responsible forest stewardship and forest management.

LP has been assigned all obligations and responsibilities with respect to forest renewal within FML # 3 (Forest Management Units 10, 11 and 13). The FML Agreement states: "The Company acknowledges its primary forest management and renewal responsibility by ensuring that all harvested areas within FML 3 are regenerated to approved Provincial Standards." These renewal responsibilities apply to all areas harvested by LP and all third parties (*i.e.* quota holders) in FML # 3. This commitment to forest renewal shall ensure and maintain a perpetual sustained timber yield from the productive forest lands of FML # 3.

LP carries out all reforestation activities within FML # 3, financed by a Forest Renewal and Stand Management Trust Fund (Fund) which it has established. Proceeds from the Fund are used to ensure adequate and reasonable reforestation within FML 3. LP as well as all quota holders harvesting merchantable timber from FML # 3 contribute a reforestation fee to the Fund. These fees are collected and administered by LP.

LP has committed to manage and maintain forest ecosystems on a landscape level basis. LP's strategy is to reforest harvested ecosystems to their pre-harvest tree species composition. This is achieved through a variety of silvicultural (harvest) systems (clear-cut, group seed tree and understory preservation/protection) and treatments, which balance the ecology and silvics of the forest with the tree species. These regeneration

strategies will rely on both ‘natural’, “advanced’ and ‘assisted’ regeneration tactics. All silvicultural management interpretations, prescriptions and objectives will be based on the assessment of the forest ecosystem (Vegetation - Type) prior to harvesting (Pre-Harvest Silvicultural Prescription).

LP‘s reforestation responsibility was initiated in 1996 with the signing of the FML Agreement with the Province of Manitoba. The Company’s silvicultural activities have dramatically increase over the last few years with the continuation or commencement of the following initiatives: (i) development of alternative silvicultural systems, (ii) cone/seed collection, (iii) tree planting, (iv) site preparation/scarification, (v) forest plantation survival assessments, (vi) forest regeneration surveys, (vii) establishment of seed orchards, and (viii) silviculture research trials.

Financial information regarding these forest renewal and stand management (Trust Fund) activities/programs are included within this report (Appendix V). The appendix contains financial ledger and withdrawal summaries regarding the Trust Fund’s 1999/2000 programs.

Figure 4.1 Four-year old aspen regeneration within a harvested hardwood V-Type (30,000 stems per hectare).

4.1 SITE PREPARATION AND SCARIFICATION

Site preparation and scarification are necessary treatments in order to ensure the survival and establishment of coniferous seedlings. In the past LP recruited contractors from outside its FML to complete site preparation/scarification treatments. LP realized that it would be more beneficial to have local contractors performing this work. The company was having difficulty recruiting site preparation contractors to FML 3, therefore a decision was made to develop local contractors. In order to make this a reality, LP committed to the purchase of the necessary site preparation/scarification equipment. By 1999 all site preparation/scarification was completed by local contractors from the Swan

Valley. LP owns a TTS power disc trencher and a set of shark-fin barrels and anchor chains, which it affixes to a local contractor's prime mover throughout the frost-free period. In 1999 LP signed Site Preparation/Scarification Agreements with the following contractors/equipment:

- Ted Schwanke - Triple S Construction Co. Ltd./Ripper Tooth Plow.
- Dennis Dudar – Kulish Logging Ltd./(prime mover for LP's) Power Disc Trencher and Shark-fin barrels and anchor chains.

Table 4.1 summarizes the company's 1999 site preparation activities. A total of 878.4 hectares (ha) were site prepared/scarified. The Shark-fin Barrels and Anchor Chains scarified 105.9 ha, the Power Disc Trencher 447.9 ha, and the Ripper-Tooth Plow 324.6 ha. A complete summary of the harvest blocks treated can be referred to within Appendix IV.

Table 4.1 Actual area site prepared by equipment type.

SITE PREPARATION EQUIPMENT	AREA (ha)
Shark-fin Barrels & Anchor Chain	105.9
Disc Trenching	447.9
Ripper-Tooth Plow	324.6
TOTAL	**878.4**

Shark-fin barrels/anchor chains and disc trenching were prescribed for site preparation to all weather areas, accessible during the spring/summer/fall season. Scarification is prescribed on sites having a shallow organic surface layer, low slash loading and only requiring minimal disturbance. The scarified sites generally are left for natural regeneration (jack pine types), however the disturbance created by the scarification equipment often produces excellent planting microsites within the white spruce/hardwood cover types.

Ripper tooth plowing is prescribed to winter ground/areas, typically comprised of organic surface soils (> 30 cm) and/or areas accessible only during frozen conditions (December to March). Figures 4.2 to 4.4 illustrate the microsites created by these three different implements.

Figure 4.2 Site preparation equipment - ripper tooth plow mounted on a dozer.

Figure 4.3 Site preparation equipment - power disc trencher mounted on a skidder.

Figure 4.3 Scarification equipment – shark-fin barrels and anchor chains being pulled by a skidder.

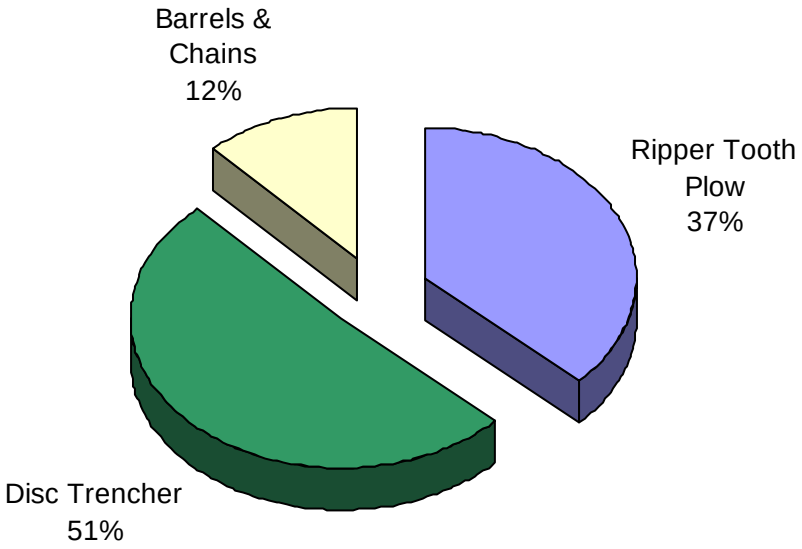

Figure 4.4 Distribution of Site Preparation by equipment type.

4.1.1 *Silvitracs* Scarification Monitoring System

In 1997 Louisiana-Pacific Canada Ltd. purchased two portable *Truckbase Silvitracs* Geographic Positioning Systems (GPS) based Scarification Monitoring Systems. *Silvitracs* is designed to record the precise path taken by scarification/site preparation equipment, correct/analyze the GPS information, measure treatment areas/units, locating and measuring missed areas within the cutblock, monitor machine production and efficiency, process information in order to determine fair contractor payment rates, create a GIS treatment layer/quality map report, and aid management with strategic planning initiatives.

Truckbase Silvitracs consists of an onboard GPS receiver and computer that is mounted on the site preparation equipment (prime mover). The onboard computer is literally a 'black box' programmed to communicate with the GPS receiver computing position, speed and bearing of the prime mover. This information is stored on a PC memory card that can be easily removed and the data transferred to a conventional Windows-based computer. Using *Truckbase's* Corrector and Analysis software the memory card's data is differentially corrected, thereby providing real-time information on the prime mover's location, time, speed, *etc*.

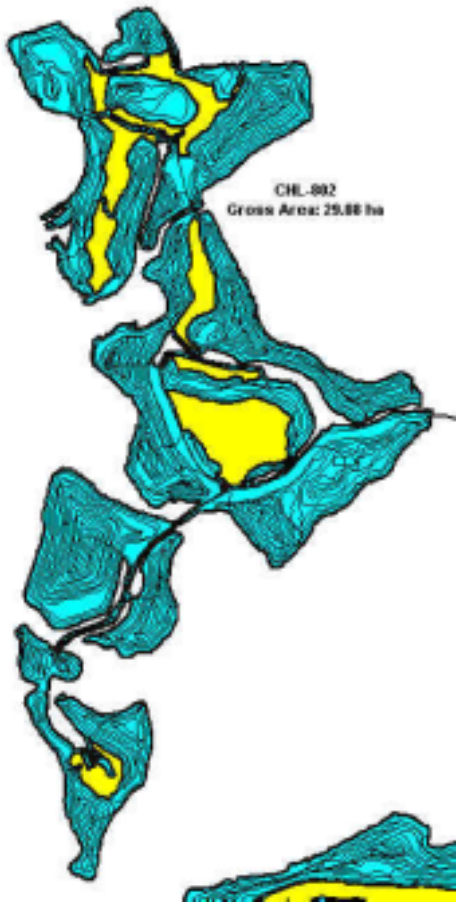

Figure 4.6 *Silvitracs* map showing the exact path of the site preparation equipment. Note the leave areas (residual pockets) in yellow that were not treated.

4.2 SNOW CACHE

Louisiana-Pacific Canada Ltd. snow cached a total of 880,000 white and black spruce bareroot seedlings in February of 1999. The number of seedlings cached by Operating Area are shown in Table 4.2. Mild winter conditions made the snow caching more difficult, but all planned objectives were achieved. The snow accumulation was below average and seasonal temperatures were significantly warmer. All stock was found to be in excellent condition upon removal from the caches in May.

Students from schools in Swan River, Roblin, Grandview and Ethelbert helped in the construction of LP's snow caches in 1999. Students spent the day (field trip) assisting with the unloading of seedlings from the trailer, as well as touring LP harvesting operations and winter site preparation activities.

Table 4.2 Number of seedlings Snow Cached in 1999 by species and operating area.

OPERATING AREA	SEEDLINGS CACHED		TOTAL # OF SEEDLINGS CACHED
	WHITE SPRUCE	BLACK SPRUCE	
Route H	150,000	40,000	190,000
Vimy Ridge	0	130,000	130,000
Four Corners	180,000	20,000	200,000
Valley River	60,000	240,000	300,000
East Favel	0	60,000	60,000
TOTAL	**390,000**	**430,000**	**880,000**

Figure 4.6 Bags/boxes of seedlings are placed on pallets and wrapped in poly prior to being buried with 1 metre of clean snow. A one metre layer of flax straw is then placed over the snow to insulate the snow and seedlings.

4.3 TREE PLANT

Figure 4.7 Planting a spruce seedling within a prepared (mixed and raised) microsite.

In 1999 the company planted a total of 1,956,500 seedlings (Table 4.3) throughout its license area. The spring (May and June) tree plant was comprised of 1,505,600 seedlings, while an additional 450,900 seedlings were planted during the summer plant (July). The table below summarizes the number of seedlings planted by species. The stock was grown by Pineland Forest Nursery (Hadashville, Manitoba) and Brinkman & Associates (North Bay, Ontario). Stock types and species are shown as percentages in Figure 4.8.

LP was to receive 500,000 medium size container (MP # 6) black spruce and 100,000 large size container white spruce from Brinkman & Associates Reforestation ltd. for the summer tree plant (total current crop of 600,000 spruce). LP ended up receiving 450,900 of the black spruce for the 1999 summer tree-planting program. The white spruce was behind schedule (to small to ship and not bud set), so a decision was made by LP to delay shipment and planting of the white spruce stock until the spring (over-winter) of 2000. The white spruce was shipped to Hadashville, Manitoba and over-wintered at the Pine land Forest Nursery facility.

The spring tree plant was awarded to two contractors: Coast Range Contracting Ltd. (or Outland Reforestation Inc.) and Shuswap Silvics Ltd. The summer tree plant was completed by Coast Range Contracting Ltd.

Table 4.3 Number of seedlings planted by season, species, and stock type.

Contractor	Season	Bareroot (BS)	Bareroot (WS)	Total Bareroot	Container (BS)	Container (WS)	Total Container	TOTALS
Refill (Shuswap Silvics)	Spring	0	33,155	33,155	0	4,665	4,665	**37,820**
Refill (Coast Range)	Spring	39,940	0	39,940	20,540	33,315	53,855	**93,795**
subtotal		39,940	33,155	73,095	20,540	37,980	58,520	**131,615**
Total Plant (non refill)	Spring	333,160	400,945	734,105	244,060	395,820	639,880	**1,373,985**
Coast Range	Summer	0	0	0	450,900	0	450,900	**450,900**
TOTALS		**373,100**	**434,100**	**807,200**	**715,500**	**433,800**	**1,149,300**	**1,956,500**

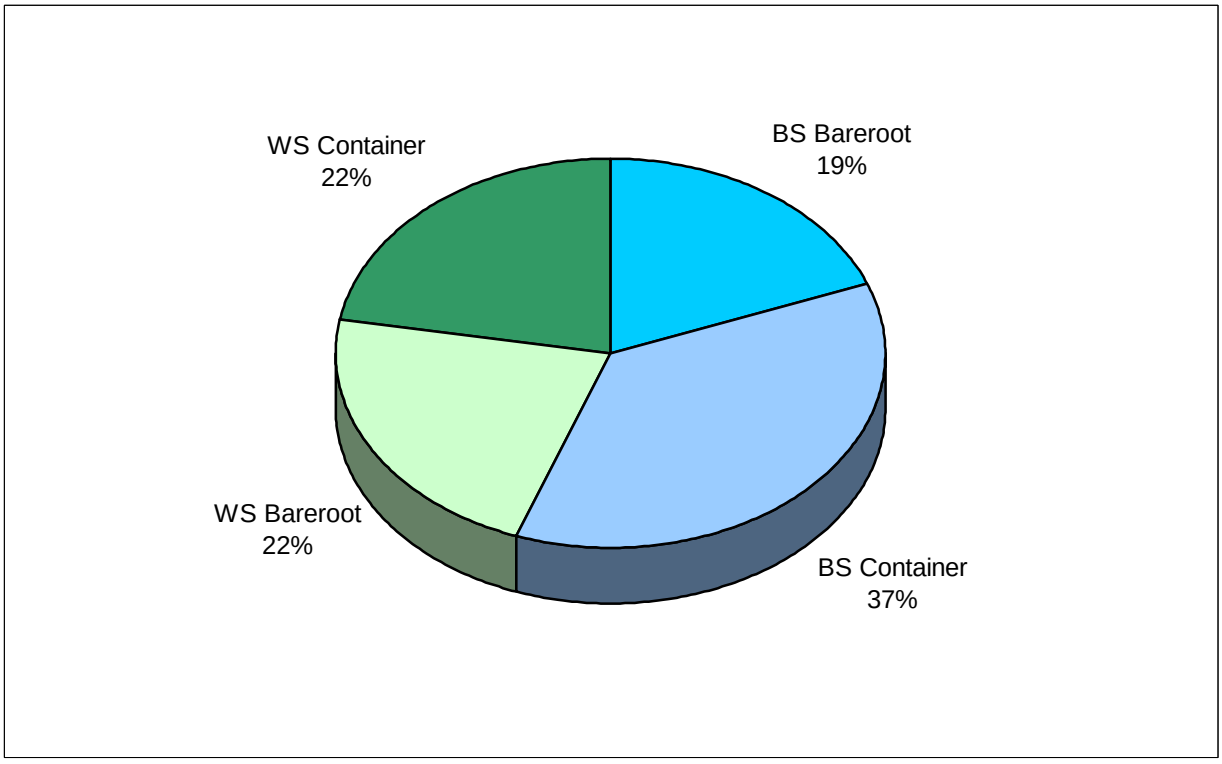

Figure 4.8 Percentage of white and black spruce seedlings by stock type planted in 1999.

4.4 PLANTATION ASSESSMENTS

In the fall of 1999 LP performed plantation survival assessments on all areas planted in 1998 and 1999. A summary of the 1998 (titled '1999 Plantation Survival Assessments) and 1999 (titled '1999 Tree Plant') survey areas can be found within Appendix IV. These assessments are performed to determine the success of the plantations based on seedling survival and vigour. Areas found to have poor seedling survival or vigour were identified for refill/replanting in 2000.

Figure 4.9 Plantation assessment in a mixedwood cutover.

Forest regeneration surveys will be initiated in the fall of 2000. These surveys will be performed on the hardwood sites harvested by LP in the summer of 1996. Annual fall measurements were also completed on the company's seedling stock trial at Tie Camp. These data has been forwarded to Manitoba Conservation.

4.5 CONE COLLECTION

Figure 4.10 Workers feed black spruce tops into a cone combine to separate the cones from the branches.

LP completed a small black spruce cone collection in Febraury of 2000 within the Onion Lake Operating Area of FML 3. A total of two hectoliters of black spruce cones (from provincial seed zone 11.4) were collected. These cones yielded a total of 507,000 viable seeds (253,500 seeds per hl).

The cone collection program was cut short due to conflicts with the contractor. Conicone Resources Inc. was contracted/hired to perform the black spruce collection, but during the actual program Brinkman & Associates Reforestation Ltd. bought out Conicone Resources Inc. Brinkman approached LP with an offer to complete the said work but only at a significantly higher cost to the company. LP decided to terminate the cone collection agreement.

The seeds are then extracted out the cones. Unused seed is kept for future years (Table 4.4).

Table 4.4 FML # 3 seed inventory.

Seedlot Number	Seed Year	Species	Seed Zone	% Viability	Region	Total Seed (Kg)	Viable Seed/ Gram	Total Number Viable Seeds
529	94/95	Black Spruce	11.4D	93	Louisiana P.	4.84	937	4,533,512
688A	97/98	Black Spruce	11.4D	99	Louisiana P.	0.28	961	269,169
688B	97/98	Black Spruce	11.4D	92	Louisiana P.	0.16	1030	164,743
3-00-11.4-834	2000	Black Spruce	11.4D	93	Louisiana P.	0.48	1058	507,784
Black Spruce 11.4 Totals						5.76		5,475,208
689A	97/98	White Spruce	13.4D	81	Louisiana P.	17.24	352	6,075,200
689B	97/98	White Spruce	13.4D	68	Louisiana P.	25.00	336	8,406,500
White Spruce 13.4 Totals						42.24		14,481,700
690	97/98	Jack Pine	4.4D	94	Louisiana P.	12.64	259	3,268,557

4.6 TREE IMPROVEMENT

LP Canada Ltd. (Swan Valley FRD) and Manitoba Conservation signed a Memorandum of Understanding thereby creating a Manitoba Tree Improvement Co-operative. All forest industry companies/FML holders (LP Canada Ltd., Tolko Industries Inc. and PFPC Ltd.) in Manitoba are active members within the tree improvement co-operative. Below is a list of the tree improvement activities completed within FML 3 this year.

WHITE SPRUCE - MOUNTAIN BREEDING ZONE 13.4

Birds Hill Clonal Orchard

- Maintenance continued – Mowed on May 20 –21, June 8 – 9 and Aug.4-5, 1999. Application of VISION to control grass competition near trees on June 2 and 7, 1999. The orchard was fertilized on June 2.

Shortdale Family Test

- Inspection conducted on Aug 10.

Boggy Creek Family Test

- An application of Methoxychlor was ground applied on April 7 and 8, 2000 to control Terminal Weevil.

- Inspection conducted on August 10.

Antler Corner Family Test

- Brushing of the hardwood competition was undertaken on Oct. 19 – 20, 1999. Brushing was completed summer of 2000.

Rice Creek Family Test

- Test was mowed on July 12 – 15, 1999 A mechanical breakdown prevented completion of mowing.

Family Test Measurement Analysis

- Dr. J. Klein completed the analysis of the 10 year height measurements of the family tests and submitted results including family ranking which will allow for roguing of the orchard.

Clone Bank

- The clone bank was mowed on May 27 and June 7.

BLACK SPRUCE - MOUNTAIN BREEDING ZONE 11.4

- The plus tree selection program was completed with 120 plus trees aerial selected on Nov. 18 – 19, 1999. An additional 5 plus trees were ground selected on Jan. 12, 2000. Total of 450 plus trees were selected.

- Two family test sites and a seed orchard site were selected and sites were flagged on May 18 – 19, 1999.

    - The seed orchard located in the Wine Lake Operating Area – Block 13292701 – 09 (1988 A.O.P.) was shear bladed Jan 13 – 18, 2000

    - The family test site located in the Wine Lake Operating Area – Block 13292701 – 10 (1999 A.O.P) was shear bladed on Jan. 10 – 12, 2000.

    - The family test site located in the Cryderman Operating Area – Block 13352502 –13 (1998 A.O.P.) was shear bladed on Jan. 6 – 9, 2000.

Seedling Stock Production

- Pineland Forest Nursery seeded the breeding zone 11.4 family test and seed orchard crop

Figure 4.11 Black spruce seed orchard stock being grown at Pineland Forest Nursery.

5.0 ROAD CONSTRUCTION AND ACCESS MANAGEMENT

Road Construction can have a significant impact to the forest landscape. For that reason, LP continued to utilize existing trails and roads where possible (Tables 5.1 and 5.2). LP continued to close or deactivate roads when harvesting and renewal activities were complete.

5.1 ROAD UPGRADE AND CONSTRUCTION

The only major road construction project that took place in 1999 was a 3 km extension of the Upper Dam road in FMU 13.

Table 5.1 Road upgrade and construction summary by FML for LP operations.

FML #	Road Upgrade (km)	New Road Construction (km)	TOTAL (km)
2	41.5	4.0	**45.5**
3	41.75	34.75	**76.5**
TOTAL	**83.25**	**38.75**	**122.0**

Table 5.2 Road construction by class for both LP and Quota Holders for FML # 3

	Road Class (km)				TOTAL
	2	3	4	5	(km)
LP	3.0	11.5	59.25	22.0	**95.75**
Quota Holder	0.0	2.0	22.75	1.5	**26.25**
TOTAL	**3.0**	**13.5**	**82.0**	**23.5**	**122.0**

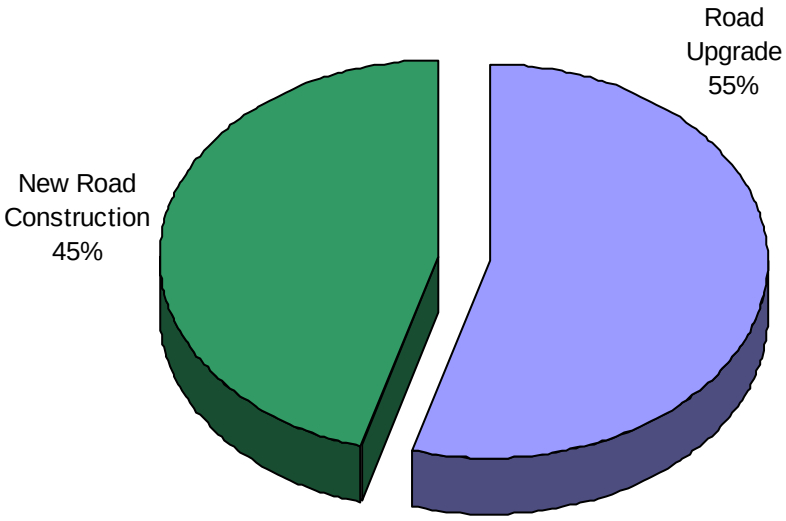

Figure 5.1 LP road construction by type for FML # 3.

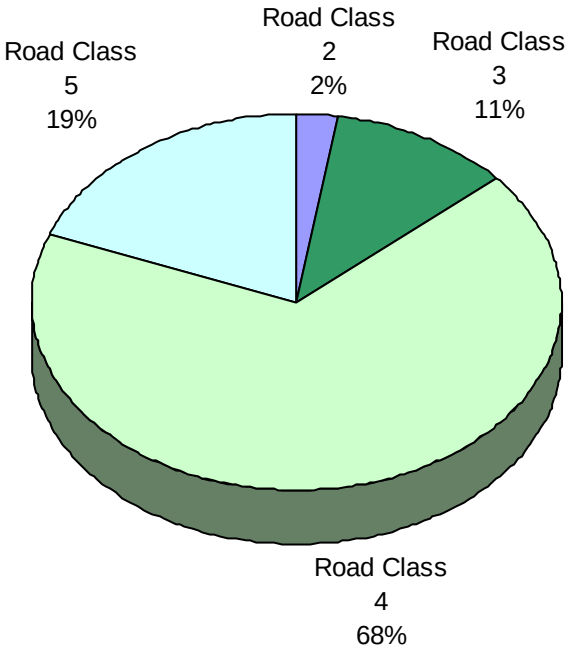

Figure 5.2 Road class percentages for both LP and Quota Holders - FML # 3

The following tables list the actual road construction (in kilometers) by FMU, road class, and type for both LP and Quota holders.

Table 5.3 Road upgrade and construction summary for FMU 11 - LP operations.

Road Class	Road Upgrade (km)	New Road Construction (km)	TOTAL
2	0.0	0.0	**0.0**
3	0.0	0.0	**0.0**
4	0.5	0.5	**1.0**
5	0.0	0.0	**0.0**
TOTAL	**0.5**	**0.5**	**1.0**

Table 5.4 Road upgrade and construction summary for FMU 12 - LP operations.

Road Class	Road Upgrade (km)	New Road Construction (km)	TOTAL
2	0.0	0.0	**0.0**
3	0.0	0.0	**0.0**
4	10.5	0.0	**10.5**
5	0.5	0.0	**0.5**
TOTAL	**11.0**	**0.0**	**11.0**

Table 5.5 Road upgrade and construction summary for FMU 13 - LP operations.

Road Class	Road Upgrade (km)	New Road Construction (km)	TOTAL
2	0.0	3.0	**3.0**
3	4.0	6.5	**10.5**
4	18.5	14.75	**33.25**
5	2.0	0.5	**2.5**
TOTAL	**24.5**	**24.75**	**49.25**

Table 5.6 Road upgrade and construction summary for FMU 14 - LP operations.

Road Class	Road Upgrade (km)	New Road Construction (km)	TOTAL
2	0.0	0.0	**0.0**
3	1.0	0.0	**1.0**
4	10.5	4.0	**14.5**
5	19.0	0.0	**19.0**
TOTAL	**30.5**	**4.0**	**34.5**

Table 5.7 Road upgrade and construction summary for FMU 13 – Quota Holder operations.

Road Class	Road Upgrade (km)	New Road Construction (km)	TOTAL
2	0.0	0.0	**0.0**
3	0.0	2.0	**2.0**
4	16.75	6.0	**22.75**
5	0.0	1.5	**1.5**
TOTAL	**16.75**	**9.5**	**26.25**

5.2 ACCESS MANAGEMENT

Building logging roads can have positive and/or negative impacts on the forest resource. LP utilizes a variety of techniques to manage access into logging roads, including:

- Road closures
- Road decommissioning
- Removal of stream crossings
- Gates

LP hopes to minimize the impacts of roads, while maximizing the benefits of short-term road access.

Figure 5.3 An example of a decommissioned road.

5.3 STREAM CROSSING PROGRAM

As part of LP's forest management planning requirements all stream crossings required for accessing cutblocks must be identified in our annual plan, potential impacts assessed and mitigative measures determined. LP endeavors to minimize impacts on aquatic ecosystems and maintain fish habitat throughout it's planning area. In order to assess the quality of the stream ecosystems affected, prior to implementing a stream crossing, a comprehensive survey is done to assess the aquatic habitat and surrounding area. Data collected during the survey includes the a description of the physical characteristics of the stream and banks, a biological inventory of fish species present, invertebrates, aquatic and shoreline vegetation and hydrological data such as velocity and depth. LP submits stream crossing information to both MC and the Department of Fisheries and Oceans (DFO).

Detailed stream assessments were completed at seven proposed stream crossings during the 1999 field season. Five of the streams had fish species present, while two streams had no fish (Table 5.8).

Table 5.8 1999 stream assessment summary.

Stream Crossing ID	Stream Type	Fish Spp1	Fish Spp2	Fish Spp3	Fish Spp4	Fish Spp5
13282602-C4	Perennial	Brook Stickleback				
13292601-C1	Intermittent	Brook Stickleback	Johnny Darter			
133324CW-C3	Perennial	Blacknose Shiner	Blacknose Dace	Finescale Dace	Longnose Dace	Iowa Darter
13352401 - C2	Ephemeral	none				
13352401 - C3	Ephemeral	none				
SGL – C01	Perennial	Brook Stickleback	Fathead Minnow			
WEF – C01	Perennial	White Sucker	Spottail Shiner	Brook Stickleback		

6.0 RESEARCH AND MONITORING

6.1 PERMANENT ECOLOGICAL MONITORING PLOTS (PSP)

Louisiana-Pacific Canada Ltd. (LP) is responsible for the sustainable management of the forest resources in Forest Management License (FML) Area #3 in western-central Manitoba. As part of LP's Forest Management Plan, and in accordance with their Environmental License Agreement, LP Swan Valley Forest Resources Division (FRD) is establishing ecological monitoring permanent sample plots (PSPs) within its license area. The primary objectives of this program are as follows:

1. To assess stand dynamics such as succession, regeneration, and mortality within major forest cover-types;
2. To provide information that will be used to formulate yield curves and tables, taper functions, timber supply models, *etc*;
3. To provide representative areas for the study of forest management treatments;
4. To collect data that enables LP to monitor the long-term health of the forest ecosystem; and
5. To develop relationships between stand structure, forest ecosystem classification (FEC), vegetation and soil types, forest successional pathways, and wildlife habitat and biodiversity conservation attributes.

LPs permanent sample plots are established according to the protocol outlined in the LP Ecological Monitoring PSP Field Procedures Manual. The plots are established in clusters of three, within each randomly selected stand that meets specific site criteria. Each square plot is approximately 22m X 22m (0.050 hectares). Within each plot, data are collected for a variety of ecological attributes, which enable the program to meet its objectives. This includes measurements of trees, vegetation, soils, wildlife habitat values, downed woody debris, vegetation-type classification, *etc*. All ecological monitoring PSPs are scheduled for re-measurement at five-year intervals.

In 1994, LP initiated its PSP Program by establishing 150 plots within hardwood dominated areas. Initial measurements on these PSPs were completed by 1997. In 1998, LP established, and completed initial measurements on, 21 PSPs within mixedwood areas. In 1999, LP established and completed initial measurements on an additional 129 PSPs within mixedwood areas. Another accomplishment in the 1999 field season was the establishment and initial measurements completed on 27 hardwood PSPs in the Interlake Plain Ecoregion.

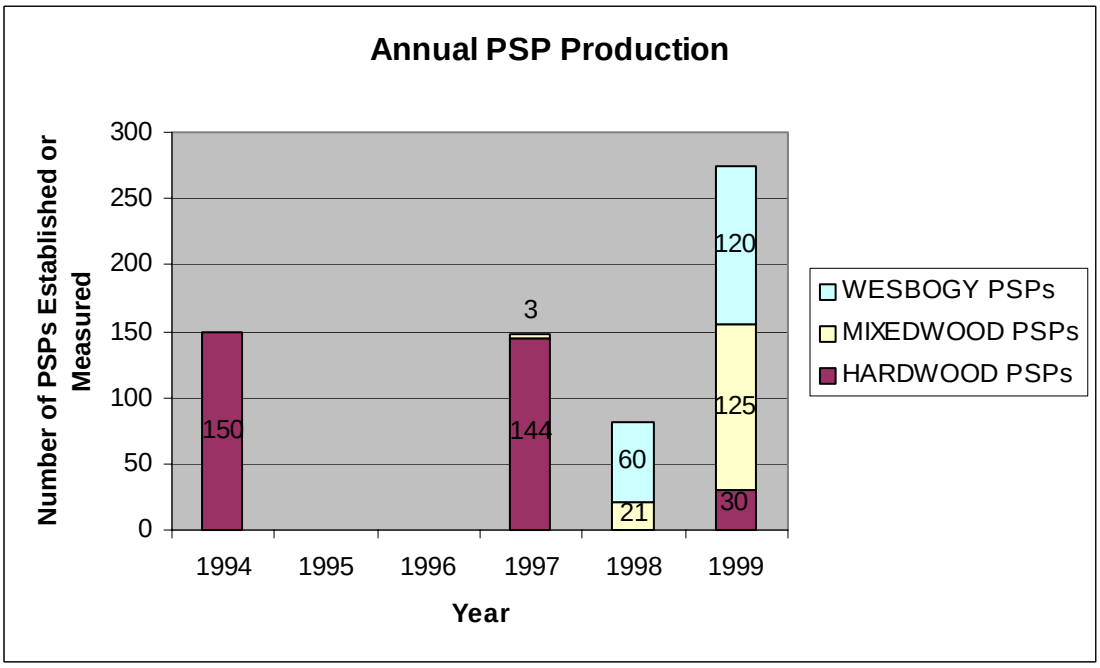

Figure 6.1 Permanent sample plot establishment and remeasurement history.

Notes:

1. 150 hardwood PSPs were established and some measurements were taken in them in 1994. In 1997 these plots were revisited and further measurements were taken, however, one cluster (three PSPs) had been harvested and one cluster (three PSPs) could not be located (this cluster was located & measured in 1999).
2. In 1998 21 mixedwood PSPs were established in the Mid-Boreal Upland Ecoregion, and 60 WESBOGY PSPs were also established in 1998. Initial measurements (60 plots) and first year measurements (60 plots) were completed in the spring and fall respectively in 1999.
3. In 1999 125 mixed-wood PSPs were established in a variety of Ecoregions, 27 hardwood PSPs were established in the Interlake Plains Ecoregion, and the 3 hardwood PSPs that could not be located in 1997 were measured.

Figure 6.2 Season staff measuring the WESBOGY mixedwood trial.

LP is a member of the Western Boreal Growth and Yield Cooperative (WESBOGY). The general objective of this cooperative is to promote further understanding of the effects of intensive management strategies on boreal mixedwood forest dynamics. As a member of this cooperative LP agreed to establish 60 mixedwood density study (MDS) PSPs. Establishment of these 60 MDS PSPs was completed in 1998. Initial measurements of these PSPs were completed in the spring of 1999, and re-measurements were completed in the fall of 1999.

6.2 DUCK MOUNTAIN FOREST BIRD MONITORING PROJECT

The Duck Mountain Forest Bird Monitoring project continued in 1999. This project was initiated in spring 1997 to fulfill a condition of LP's Environmental License. Baseline data is collected in support of concerns raised at the Clean Environment Commission Environmental Hearings about neo-tropical migrant and resident bird populations, and potential impacts of forest management activities on the bird's breeding habitat in the Duck Mountains.

The multi-year objective of the bird monitoring project is to identify and quantify factors which influence the distribution and abundance of bird species in the Duck Mountains. The third year objective was to identify breeding habitat associations of birds across coniferous dominated mixedwood stands. A total of 511 stations were sampled in coniferous mixedwood stands, and 131 aspen plots (from year 1 of the study) and 151 aspen dominated mixedwood plots (from year 2 of the study) were re-sampled. A total of 116 bird species were recorded at bird stations. The top 10 bird species observed included:

Nashville Warbler	Red-eyed Vireo
Ovenbird	Chipping Sparrow
White-throated Sparrow	Blackburnian Warbler
Ruby-crowned Kinglet	Black-throated Green Warbler
Yellow-Rumped Warbler	Chestnut-sided Warbler

Only two of the top 5 species remained the same between 1997, 1998 and 1999 sample years. At least 5 of the top 10 species were different, and 12 of the top 25 birds changed in rank in 1999. As expected, most of the species which increased in rank were mixedwood or coniferous habitat specialists (Rob Berger, Wildlife Resource Consulting). In addition, 20 primary and secondary cavity-nesting species were recorded on the plots. This year's efforts bring the total number of bird species recorded in the Duck Mountains from 1997-1999 to 206 bird species.

Figure 6.3 A woodpecker after emerging from a nesting cavity.

The bird monitoring program will continue in 2000. The fourth year of the study will concentrate on re-sampling plots from 1997, 1998 and 1999.

6.3 FOREST RESEARCH and MONITORING ASSOCIATIONS

LP continued its' association with a number of partners and research organizations including:

- the Sustainable Forest Management Network of Centres of Excellence (SFMN)
- the Western Boreal Growth and Yield Cooperative (WESBOGY)
- the Forest Engineering Research Institute of Canada (FERIC)
- the Canadian Woodlands Forum (CWF)

As well as the above organizations, LP and LP staff continue to hold membership and/or participate on committees of the

- Canadian Pulp and Paper Association (CPPA)
- Canadian Forestry Association (CFA)
- Manitoba Forestry Association (MFA)
- Canadian Institute of Forestry (CIF)
- Manitoba Model Forest (MMF)
- Ecosystem Based Management Pilot Project for Ecoregion 90

6.3.1 Sustainable Forest Management Network of Centres of Excellence

LP joined the Sustainable Forest Management Network of Centres of Excellence (SFM-NCE) in early 1997. The SFM-NCE provides research support for the development of a total management protocol for Canada's Boreal Forest so it will be sustained in all its physical, biological, ecological and economic dimensions for future generations. This includes creating environmental technologies and management strategies for sustaining all values inherent in boreal forests (SFM-NCE, 1998)

The network is a research consortium of 120 Canadian researchers from 25 universities across the country, federal and provincial government agencies, and 9 forest industry partners. The SFMN researchers are among the country's best from four areas: 1) biology; 2) forestry; 3) engineering; and 4) social sciences. The key to the networks approach is integration of various disciplines in research projects. The Network's research and scientific excellence program is composed of three interdisciplinary themes. They are:

- **Legacy 1**: Understanding Disturbance Minimal Impact Technologies (MIT)
- **Legacy 2**: Strategies for Sustainable Forest Management
- **Legacy 3**: Impact Minimization Planning and Practices (P& Socio P)

LP staff members are representatives on a number of network committees including the Research Planning Committee and Partners Committee.

LP received additional funding for some projects to begin in the summer of 2000. The following list of SFMN supported research outlines the project title, principal investigator and university affiliation.

- **Forecasting our Future Forests: Integrated Ecological Resource Management in the Duck Mountains** (This is an integrated approach to forest management planning and includes the projects below) Dr. Norm Kenkel, Group leader, University of Manitoba

- **Forest succession and post-logging regeneration dynamics in the Duck Mountain Ecoregion, west-central Manitoba** . Dr. Norm Kenkel, University of Manitoba.

- **Impact of slash loading and residual trees on soil temperatures and aspen regeneration**. Dr. Ken Van Rees, University of Saskatoon.

- **Historical disturbance regime and dendrochronological study of FML area #3.** Dr. Jacques Tardiff, University of Winnipeg, Centre for Forest Interdisciplinary Research

- **Multiscale landscape indicators of forest bird diversity and community structure**. Dr. Robert Rempel, Lakehead University.

- **The management of boreal riparian areas: development of stand level wetland classification guide for operational use, ecologically-based buffer management guidelines and integrated watershed management protocols**. Dr. Dale Vitt, University of Alberta

- **Assessing factors of seedling mortality of important boreal species across the Canadian boreal forest**. Dr. Norm Kenkel, University of Manitoba. (funded by the SFMN)

6.3.2 Western Boreal Growth and Yield Cooperative (WESBOGY)

LP became a member of the Western Boreal Growth and Yield Cooperative (WESBOGY) in 1997-1998. The WESBOGY Cooperative is currently comprised of members representing governments, academic and forest industry agencies. The general objective of this cooperative is to advance the understanding of the dynamics of the boreal mixedwood forest (under management). LP realizes that a better understanding of the dynamics of these mixedwood forests is necessary.

Specific objectives of the WESBOGY cooperative are:

- to access total and individual species productivity in various densities and mixtures
- to develop an individual tree growth model using stand growth, mortality and Crown dynamics;

- to simulate a model of Crown dynamics of aspen and spruce mixedwood stands
- to develop, share and exchange growth and yield data (PSP data matrix) between all cooperative members
- to formulate short-term and long-term growth and yield research priorities

6.3.3 Forest Engineering Research Institute of Canada (FERIC)

FERIC, the Forest Engineering Research Institute of Canada, is a private, non-profit research and development organization. FERIC's goal is to improve Canadian forestry operations related to the harvesting and transportation of wood, and the growing of trees, within a framework of sustainable development.

FERIC's research and development programs cover the engineering, human, operational and environmental aspects of harvesting, processing and transportation of forest products; silvicultural operations; and the specific problems encountered in small-scale operations. In addition, FERIC conducts contract research on projects selected for their value to its' partners, whose research is field-oriented, and is carried out in close cooperation with woodlands personnel. FERIC's research focuses on the following areas:

- Wood Harvesting
- Transportation and Roads
- Silvicultural Operations
- Small-scale Operations
- Engineering Design/Specialized Technologies

By joining FERIC, LP gained access to not only over 20 years of technical reports but their latest software and research staff. One piece of FERIC software that LP uses is called *Interface*.

Interface is decision-support software for analyzing wood costs and is available to all member companies of FERIC. It allows the user to focus on details of costing an operation, and explores how each harvesting and regeneration decision affects subsequent phases. The harvesting and regeneration modules can be used separately, allowing the user to focus solely on a particular harvesting or regeneration operation. The two modules are integrated, thus allowing the forest manager to evaluate the effects of harvesting decisions on the subsequent regeneration system. The harvesting module encompasses all phases of logging and transportation, while the regeneration module covers all phases of forest renewal on the site. Interface analysis is based on total wood costs, which include the cost of forest renewal.

The Interface decision support software will permit the following applications:

- calculate the costs and regeneration success of integrated or independent harvesting and regeneration operations
- analyze variations in the productivity or cost of an operation based on changes in various factors

- compare silvicultural systems (harvesting and regeneration combined) under specific operating conditions and perform economic analyses
- measure the economic impact of factors such as understory protection, fragmentation of harvesting areas, *etc*.

6.3.4 Canadian Woodlands Forum

The Canadian Woodlands Forum (CWF) is a membership-based organization with the improvement of the competitiveness of the Canadian forest industry as it's goal. It members include contractors, foresters and the mills and business that support the forest industry.

Although the CWF is not a research organization, it does provide its members with information regarding forestry trends from across Canada. The CFW provides information on forest management, harvesting operations, and forestry equipment. It is LP's belief that by keeping informed of and working with others in the forest industry it will continue to stay competitive and keep it's practices current.

6.4 Other research and monitoring initiatives

LP has also provided direct funding to the following projects:

- **Influence of forest harvesting on arthropod biodiversity in mixedwood ecosystems**. Dr. Richard Westwood, University of Winnipeg, Centre for Forest Interdisciplinary Research .

- **Forest site quality evaluation and classification of three stand types in western Manitoba**. Dr. Steve Titus, University of Alberta.

There are a number of collaborative projects that are supported by LP and other partners, depending on the project. Support may include research funds, baseline data, preharvest survey or ecological monitoring plot data, GIS thematic information, aerial photo and satellite imagery and GIS technical support. These projects include

- **Land Use in the Intermountain Conservation District: Interactions between Forestry and Agriculture** . Nicole Mischuk, Masters candidate. Natural Resource Institute, University of Manitoba.

- **Climate change impacts on productivity and health of aspen forests in the western Canadian interior** . Michael Michaelian, Northern Forestry Centre, Canadian Forest Service, Edmonton.

- **Prairie Region landscape analysis of bird communities and habitat associations**. Dr. Peter Farrington, Canadian Wildlife Service, Saskatoon.

- **Localization of the Mixedwood Growth Model for Saskatchewan and Manitoba.** Dr. Steve Titus, University of Alberta.

- **Assessing factors of seedling mortality of important boreal species across the Canadian boreal forest**. Dr. Norm Kenkel, University of Manitoba. (funded by the SFMN).

- **Development of an analytical framework to assess adaptability of forest operations to climate change**. Prairie Adaptations Research Centre, Saskatoon.

7.0 EMPLOYMENT SUMMARY

As well as the employment generated directly by LP's OSB mill, a great deal of employment has been created in the forestry sector of the Mountain Forest Section. LP has distributed the economic benefits of harvesting and trucking activities throughout the entire FML area, other parts of Manitoba and into Saskatchewan.

Much forestry employment is seasonal or contracted, therefore all figures have been converted into equivalent person/years. The equivalent of 405 full time jobs were attributed to LP's forestry operations in 1999/2000 season (Table 7.1). This is a 6% increase (~23 full-time equivalent positions from 1998/1999). The added employment can be attributed to the increase in fibre harvested and LP's larger renewal program (*e.g.* tree planting).

Table 7.1 Employment in person years for all activities related to LP's operations.

HARVESTING	PERSON/YEARS
LP Crown Land Logging	131.8
TPA Crown Land Logging	38.3
Private Land Logging	112.5
All Trucking	87.0
SUBTOTAL	369.6
RENEWAL	**PERSON/YEARS**
Site Preparation	1.0
Snow Caching	0.2
Planting	6.0
Plantation Surveys	0.1
SUBTOTAL	7.3
LP FOREST MANAGEMENT	**PERSON/YEARS**
LP Regional	4.0
LP Full Time	13.0
LP Part Time/Contract	2.9
LP Seasonal	7.6
Consultants	0.6
SUBTOTAL	28.1
TOTAL	**405.0**

For all calculations a year is considered 250 working days. For each sector the following equation was used to determine the number of person/years:

(# of employees X # of weeks X # of days/weeks)/250 days/year

APPENDIX I
GLOSSARY OF TERMS

Annual Allowable Cut (AAC) - the volume of wood which can be harvested from an area each year on a sustainable yield basis. In Manitoba, AAC volumes are determined by the MC Forestry Branch

Coarse Woody Debris – dead and down trees on or near the forest floor.

Conventional Logging - a logging system that includes chains saw operators and cable-line skidders.

Crown Land - forest lands owned by the Province of Manitoba

Crown Other – a term used by LP in this document for summarizing hardwood delivered to the OSB mill that was harvested by a quota or permit holder.

Cutblock - a designated area within which harvesting has been proposed or taken place.

Forest Ecosystem Classification - a management oriented classification system for Manitoba Forests. It is intended to identify and describe accurately the major forest conditions in Manitoba including vegetation and soils types and management interpretations.

Forest Management License (FML) Area - the area in western Manitoba described within the Forest Management License Agreement between the Province of Manitoba an LP.

Forest Management Unit (FMU) - designated areas of the Province of Manitoba by the MNR for the administration of the forest resource.

Forest Renewal -projects that are aimed at establishing a new forest stand on a site following a disturbance.

Hardwood - tree species with the typical broad-leafed appearance. These tree species loose their foliage during the winter months. Species included in this group are balsam poplar, trembling aspen, white birch, Manitoba maple etc.

Integrated resource Management Team (IRMT) - a regional Manitoba Natural Resource team organized to review natural resource issues. They are comprised of members of the following branches: Forestry, Wildlife, Regional Operations, Lands, Fisheries, Water Resources, and Parks and Natural Areas.

Manitoba Conservation (MC) - the department of the government which is responsible for the administration and overseeing of the management of the natural resources on Crown lands. MC includes several branches each responsible for the administration of a

particular segment of the natural resource. These branches include: Forestry, Wildlife Regional Operations, Lands, Fisheries, Water Resources and Parks and Natural Areas.

Mechanical Logging - a logging system that includes mechanical tree felling and skidding equipment.

Operating Area - a designated area used for the operational management of timber harvesting. These areas are often delineated based on natural features and or access routes.

Oriented Strand Board (OSB) - a type of particle board in which logs are processed by cutting strands tangentially from the longitudinal face of the log so the grains of the wood runs the length of the strand. Strands are bonded together with resins under heat and pressure.

Permanent Ecological Monitoring Plots (PSP) - a permanent research plot that is established and re-measured at regular intervals to monitor changes over time.

Pre-Harvest Silvicultural Prescriptions (PHSP) - a detailed site-specific management plan developed prior to harvesting.

Pre-Harvest Surveys (PHS) - a detailed site-specific assessment of ecosystem elements within a proposed cutblock conducted prior to harvest.

Quota Holders - parties other than LP who have been granted the right to harvest timber within the FML area by the Government of Manitoba.

Road Classes - the type of roads built for the extraction of timber. LP uses the following definitions:

- **Class I** - All-weather road; graded and gravelled; $\leq$20 year life span; 45m right-of-way
- **Class II -** All-weather road; graded and gravelled; <20 year life span; 30m right-of-way
- **Class III** - Dry weather road; minimal grading and graveling; 1-10 year life span
- **Class IV**- Winter road (frost); stumped, no gravel; life span 1-5 years
- **Class V**- Winter only road; little development; used to cross lowlands, swamps and water bodies; life span 1-5 years

For reporting purposes LP uses the following definitions for each type of road construction:

- **Existing Road Maintenance:** Where an existing road or trail was utilized requiring minimal road work (*e.g.* grading).
- **Existing Road Upgrade:** Where an existing road or trail was utilized but significant road work was required to allow logging trucks to move efficiently and safely (*e.g.* widening of right-of-way, “cat work”, grading *etc.*).

- **New Road Construction:** Where no road or trail existed previously, requiring design, layout and complete construction (*e.g.* Harvesting and stumping of right-of-way, cut and fill leveling, grading *etc.*).

Silviculture - the science and art of growing and tending a forest based on the knowledge of the forest species requirement.

Site Preparation - the treatment of a harvest cutblock prior to planting to enhance the growth of desired tree species.

Softwood - conifer tree species with the typical "evergreen" appearance. Species included in this group are black spruce, white spruce, jack pine, balsam fir and tamarack.

Stakeholders Advisory Board (SAC) - a group of individuals representing the various stakeholders within the FML area. The SAC plays an integral role in the planning process by reviewing LP's operating plans and Standard Operating Procedures. The SAC members bring valuable local knowledge and concerns to LP's planning process.

S-Type – soil type classified in the field, using the soil key within the forest ecosystem classification for Manitoba field guide (Zoladeski *et. al* 1995).

Timber Purchase Agreements - Crown land wood agreements are entered into with third party operators who do not harvest for LP under the Company's Independent Logging Contractor Agreement.

V-Type - vegetation type classified in the field, using the vegetation key within the forest ecosystem classification for Manitoba field guide (Zoladeski *et. al* 1995).

ADDENDUM (block areas in hectares added – Sept. 2001)

APPENDIX II - FIBRE PROCUREMENT

The following tables (A2.1 – A2.5) contain the hardwood volume harvested by LP on crown land. As well, these tables contain the total hardwood volume received from quota and/or lease holders (crown other). The hardwood volume is measured and recorded in tonnes when it crosses the scales at the LP OSB mill site. It is then converted to cubic meters using varying conversion factors that account for the changing weight/density of the hardwood throughout the year. The conversion factors used were:

		BA/TA	WB	
Quarter 1	Tonnes x	1.100	1.100	= m^3
Quarter 2	Tonnes x	1.049	1.100	= m^3
Quarter 3	Tonnes x	1.020	0.955	= m^3
Quarter 4	Tonnes x	0.982	0.901	= m^3
Average	Tonnes x	1.038	1.014	= m^3

Table A2.1 Hardwood volume from Crown land within FMU 10

	VOLUME (m3)				
CUT BLOCK NUMBER/AREA	Balsam Poplar	Trembling Aspen	White Birch	TOTAL	AREA (ha)
102511L1-01	14.60	2721.30	0.00	2735.91	32.9
102929L1-01	672.06	2509.07	24.55	3205.69	17.3
10302301-01	1779.09	5352.24	0.00	7131.33	37.1
ETH-L01	1074.40	1194.46	0.00	2268.86	18.0
ETH-L02	412.53	624.01	0.00	1036.55	6.1
GRL-L01	2661.23	2599.60	0.00	5260.83	32.9
GRL-L02	0.00	883.61	0.00	883.61	9.0
GRL-L03	2201.87	8149.09	0.00	10350.96	70.7
NRW-L01	339.95	6178.55	0.00	6518.49	60.9
NRW-L02	343.74	6023.55	0.00	6367.29	68.3
NRW-L03	117.43	2350.00	0.00	2467.43	38.4
NRW-L04	30.23	1151.58	0.00	1181.80	15.9
Crown Other	0.00	0.00	0.00	0.00	

Table A2.2 Hardwood volume from Crown land within FMU 11

	VOLUME (m^3)				
CUT BLOCK NUMBER/AREA	Balsam Poplar	Trembling Aspen	White Birch	TOTAL	AREA (ha)
11342301-01	288.07	920.36	0.00	1208.43	10.9
11342301-03	31.74	251.39	0.00	283.14	2.6
11342301-07	374.87	1982.58	0.00	2357.45	13.3
11342301-08	306.67	1189.94	0.00	1496.61	10.1
11342301-09	306.71	1199.74	0.00	1506.45	8.3
113423L1-01	6.63	187.31	0.00	193.94	8.4
BSN-L01	654.73	2214.86	168.25	3037.85	16.1
SLT-L50	255.44	177.73	0.00	433.17	2.1
Crown Other	602.63	1621.73	0.00	2224.36	

Table A2.3 Hardwood volume from Crown land within FMU 12

	VOLUME (m^3)				
CUT BLOCK NUMBER/AREA	Balsam Poplar	Trembling Aspen	White Birch	TOTAL	AREA (ha)
12422601-01	4017.38	945.32	31.15	4993.85	33.4
12442401-05	79.24	2336.58	0.00	2415.82	19.4
12442401-06	0.00	1770.68	0.00	1770.68	19.5
12442701-01	2837.47	5866.46	0.00	8703.93	35.5
12442701-02	362.94	1575.72	0.00	1938.65	14.0
12442802-02	1663.54	2456.90	7.37	4127.82	52.6
NVE-L01	553.29	1318.21	0.00	1871.49	20.9
NVE-L02	158.20	603.16	0.00	761.36	10.0
NVE-L05	18.63	938.41	0.00	957.05	14.6
NVE-L08	1739.27	4983.31	0.00	6722.59	56.1
Crown Other	1265.63	4562.34	177.19	6005.16	

Table A2.4 Hardwood volume from Crown land within FMU 13

	VOLUME (m3)				
CUT BLOCK NUMBER/AREA	Balsam Poplar	Trembling Aspen	White Birch	TOTAL	AREA (ha)
13272601-02	569.03	1518.66	22.36	2110.05	23.1
13272601-03	1076.43	3173.65	96.24	4346.32	19.6
13272601-04	268.95	3604.74	44.32	3918.00	16.7
13282304-01	1288.86	5494.22	668.37	7451.45	41.9
13282304-02	539.02	3703.20	203.90	4446.12	30.9
13282304-03	486.81	4598.17	82.41	5167.39	28.3
13282304-04	1155.14	4778.55	257.47	6191.16	37.5
13282304-05	546.50	4767.91	122.05	5436.45	51.4
13282501-06	303.80	6094.10	0.00	6397.90	37.4
13282602-03	1523.15	6231.90	231.45	7986.50	39.7
13282602-04	1442.46	5819.37	519.00	7780.82	40.3
13282701-01	356.22	4854.23	0.00	5210.45	30.3
13282701-02	0.00	35.15	0.00	35.15	40.8
13282701-02	1382.69	5754.01	290.23	7426.92	40.8
13282701-03	908.16	6218.53	47.00	7173.69	35.9
13292301-04	1589.55	6198.37	569.74	8357.65	37.6
13292301-05	42.44	2082.65	13.90	2139.00	12.8
13292301-06	234.26	2338.21	121.00	2693.47	13.6
13292601-01	20.74	3824.03	0.00	3844.77	29.1
13292601-02	119.65	3934.64	0.00	4054.29	38.9
13292601-03	84.81	2212.87	0.00	2297.69	12.4
13292601-04	1754.23	14036.75	0.00	15790.98	68.8
13292601-05	515.82	5683.11	41.78	6240.71	22.5
13292601-06	956.08	7333.72	25.81	8315.61	39.8
13292601-10	801.82	8423.35	76.01	9301.18	47.5
13292602-11	567.97	3963.29	0.00	4531.26	43.4
13292602-12	613.43	5908.64	0.00	6522.07	34.5
13292602-13	640.24	3716.41	0.00	4356.65	10.1
13292701-10	1469.08	9429.29	0.00	10898.37	59.0
13302302-02	202.92	898.10	0.00	1101.02	36.6
13302901-04	944.15	2375.38	298.91	3618.44	19.8
13302901-07	693.24	2673.59	0.00	3366.83	22.7
13302901-10	1370.68	8823.72	433.72	10628.11	64.4
13312302-01	396.08	1137.79	204.63	1738.50	9.6
13312302-04	303.35	2906.17	126.07	3335.59	19.1
13312302-07	794.87	5131.25	980.61	6906.73	41.3
13312302-08	124.00	1718.87	221.32	2064.18	12.6
13322801-01	400.19	2010.17	0.00	2410.36	13.9
13322801-03	72.56	2165.02	0.00	2237.58	12.0
13322802-01	116.64	848.73	0.00	965.37	43.0
13322802-02	204.24	2923.52	0.00	3127.75	26.3
13342701-12	1844.58	9157.77	0.00	11002.34	59.5

CUT BLOCK NUMBER/AREA	VOLUME (m3)				AREA (ha)
	Balsam Poplar	Trembling Aspen	White Birch	TOTAL	
13352401-05	32.30	1773.94	34.37	1840.62	9.9
13352401-06	99.79	4233.15	245.77	4578.72	26.3
13352401-07	74.97	1711.88	273.05	2059.90	12.8
13352401-08	315.56	2715.67	755.31	3786.54	29.4
13352401-09	69.68	1750.75	132.69	1953.13	8.3
13352502-08	1069.12	2719.33	0.00	3788.45	17.3
13352502-09	118.29	2180.07	91.14	2389.50	14.4
13352502-10	132.29	6189.53	0.00	6321.82	36.8
13352502-11	74.80	5324.92	0.00	5399.72	30.6
CRP-002	293.17	9177.73	366.89	9837.78	54.3
CWW-006	1571.37	2399.30	921.39	4892.05	30.6
CWW-007	2413.44	6488.06	1603.66	10505.17	61.3
Demo Site	0.00	381.85	0.00	381.85	
EBT-001	42.62	0.00	0.00	42.62	54.2
Crown Other	19630.23	68899.56	1354.84	89884.63	

Table A2.5 Hardwood volume from Crown land within FMU 14

CUT BLOCK NUMBER/AREA	VOLUME (m3)				AREA (ha)
	Balsam Poplar	Trembling Aspen	White Birch	TOTAL	
14382802-05	513.16	1075.25	1266.24	2854.65	45.4
14382802-06	1086.30	3034.18	1049.92	5170.39	43.0
14382802-07	710.39	2701.43	123.34	3535.16	31.6
14382802-08	1547.35	5796.04	134.81	7478.19	35.3
14392601-08	713.82	5041.98	0.00	5755.80	62.0
14402601-02	419.49	3037.23	0.00	3456.72	16.5
14402601-03	2886.91	3550.69	4.64	6442.24	24.8
14402602-05	2027.97	3480.16	0.00	5508.14	46.4
14402801-01	128.74	0.00	0.00	128.74	9.0
14402801-02	63.84	0.00	0.00	63.84	0.6
14402801-03	64.22	0.00	0.00	64.22	2.7
14402801-04	798.37	140.21	0.00	938.58	12.8
14402801-05	1058.10	521.73	0.00	1579.83	37.7
14402902-01	570.91	1845.47	0.00	2416.38	18.8
14402902-02	1334.61	2662.82	0.00	3997.43	30.2
14402902-03	711.98	375.82	0.00	1087.80	6.3
14402902-04	443.00	217.25	0.00	660.25	28.1
14402902-06	1460.51	1455.55	0.00	2916.05	45.4
14412602-01	255.28	2860.22	0.00	3115.49	20.3
14432603-06	559.89	3708.76	25.42	4294.07	33.5
14442801-01	178.83	8879.02	561.86	9619.70	90.3
Crown Other	3279.95	15514.81	664.00	19458.75	

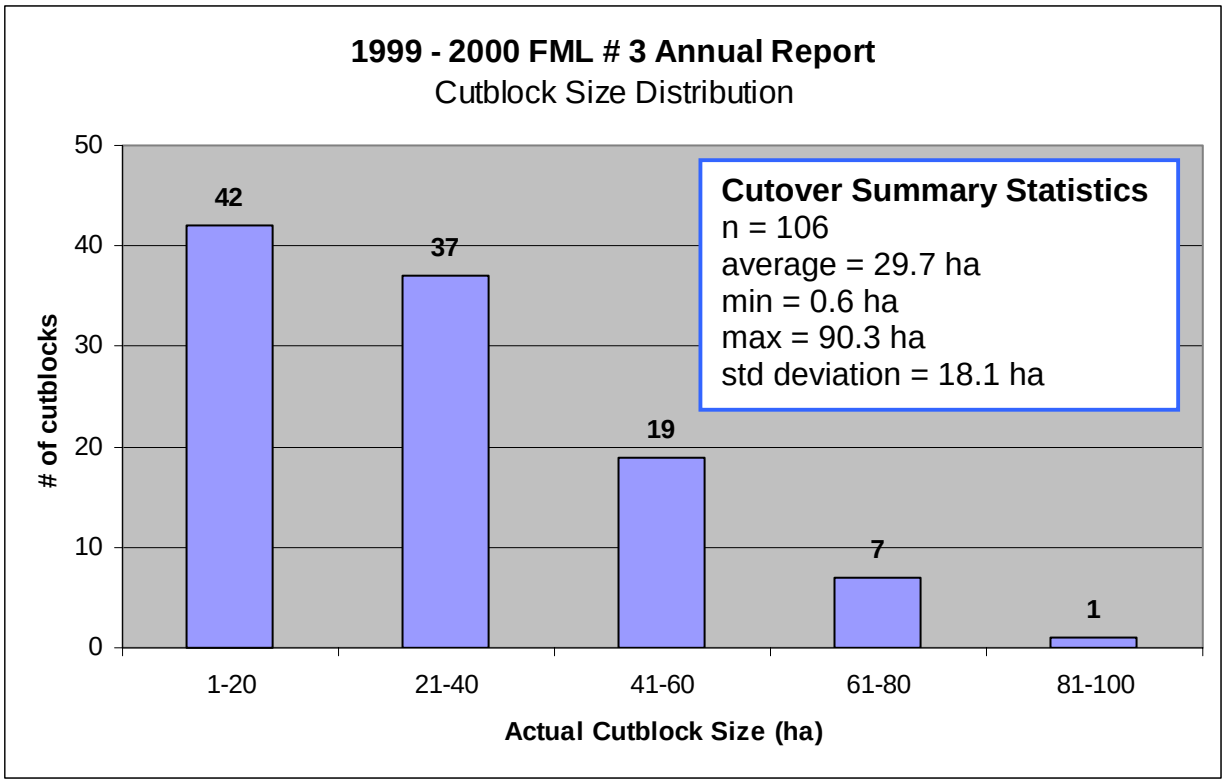

Figure A1. 1999-2000 FML # 3 cutblock size distribution.

APPENDIX III – QUOTA HOLDER VOLUMES AND STUMPAGE

Table A3.1 Quota Holder Volume Summary by Quarter for 1999/2000. (shaded areas indicate F-40 not completed)

May 1, 1999 to April 30, 2000																
FMU 13	Holder	Quota	Allowable Cut/99		Over/Undercut 98		Jun-30 1999		Sep-30 1999		Dec-31 1999		Apr-30 2000		TOTAL	
Quota Holder Name	No.	No.	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD
Angus, Len & Bill	W-1498-R	156	167.12	0	8.62	0	0	0	0	0	116.68	0	59.05	0	175.73	0
BASARABA, Les	W-1547-SR	Auction	0	1000	0	472.13	0	0	0	0	0	187.5	0	303.88	0	491.38
Bielek, Peter	W-1497-SR	154	0	191.42	0	191.42	0	0	0	0	0	0	0	382.84	0	382.84
Bresky, Herb & Sons	W-1514-SR	185	1819.15	10000	1678.58	0	0	0	0	7368.91	1723.51	2475.86	0	0	1723.51	9844.77
Cords, Tom & Don	W-1499-GV	158	104.85	0	85.95	0	0	0	0	0	0	0	187.5	0	187.5	0
Dubek, Metro M.	W-1500-GV	159	232.19	0	46.46	0	0	0	0	0	0	0	243.62		243.62	0
Dudar Forest Products	W-1559-SR	Auction	0	1000			0	0	0	0	0	0	0	607.61	0	607.61
Dudar, Harold	W-1101-G	160	0	0			0	0	0	0	22.23	0			22.23	0
Dudar, Harold	W-1501-G	160	630.1	0			0	0	0	0	0	0			0	0
Fullerton, William	W-1504-SR	165	329.77	1355.18	329.17	965.12	0	0	0	0	400	187.5	259.1	1427.4	659.1	1614.9
GURICA, Ernie	W-1545-SR		0	1000	0	155.33	0	0	0	0	0	59.8	0	701.5	0	761.3
Halabisky, Walter	W-1506-G	167	197.77	0	5.34	0	0	0	0	0	0	0	0	0	0	0
Harapiak, Stanley	W-1508-GV	169	407.93	0	176.58	0	0	0	0	0	-70.48	0	230.45	0	159.97	0
Hay, Robert	W-1509-SR	171	1898.11	36.38	1771.62	-5.86	0	0	0	0	437.67	0	3284.58	5.9	3722.25	5.9
Intermountain Logging	MW-1524-SR	202	84.12	3923.07	1.44	29.02	0	0	0	0	0	0	0	0	0	0
Kotyk Lumber Ltd.	MW-1495-SR	152	3879.4	2091.4	2820.43	1180.77	0	0	0	0	0	0	4520.08	1822.05	4520.08	1822.05
Pachkowski, Ted	W-1515-G	186	113.94	0	50.48	0	0	0	0	0			129.61	0	129.61	0
Penner Bros. Logging	W-1550-SR	Auction	0	3000	0	1724.98	0	0	0	0	0	900.41	0	2547.98	0	3448.39
Perchaluk, John & Sons	W-1517-GV	188	637.12	29.28	-14.7	29.28	0	0	0	0	0	0	642.85	37.5	642.85	37.5
Pine Falls Paper	MW-1492-D	149	10108.37	232.89	4990.18	1.78	0	0	0	0	4439.15	0	2437.6	58.25	6876.75	58.25
Pine Falls Paper	MW1540D	149	20000	0	0	0	0	0	0	0	0	0	0	0	0	0
Poyser, David	W-1518-R	191	498.48	201.19	130.22	-5	0	0	0	0	0	0	533.68	196.19	533.68	196.19
Puchailo, Danny	W-1520-G	194	497.4	0	243.9		0	0	0	0	0	0	673.08	0	673.08	0
Riehl's Logging	MW-1522-SR	198	0	10288.42		-580.11	0	0	0	0		5440.73	0	4267.58	0	9708.31
Roblin Forest	MW-1523-	199	24153.85	2039.46	0	1865.61	0	0	6196.75	1954.62	5116.82	325.15	10974.5	175	22288.07	2454.77

Products Ltd.	R															
Soloway, Harvey Lee	W-1511-SR	175	0	113.03			0	0	0	0	0	0	0	0	0	0
Spruce Products Ltd.	MW-1541-d		0	29432	0	7033.95	0	0	0	1224.3		11781.6	0	9545.8	0	22551.8

Table A3.2 Quota Holder Volume Summary by Quarter for 1999/2000. (shaded areas indicate F-40 not completed) continued

Spruce Products Ltd.	MW-1525-SR	206	97603.59	470.63	24910.03	0	0	0	3489.27	0	32439.24	0	57229.1	470.63	93157.61	470.63
Stratuliak, Nestor		211	4.21	31.4	4.21	31.4	0	0	0	0					0	0
THOMAS, Robert	W-1549-SR	Auction	0	2000	0	-0.24	0	0	0	0	0	0	0	1999.76	0	1999.76
Trembach, Gerald	W-1530-GV	212	0	63.3	0	-59.6	0	0	0	0					0	0
Zander, Rune	W-1534-SR	218	75.09	39.27	75.09	0	0	0	0	0	0	0			0	0
Zaretsky,Ted & Brown,Stewart	W-1503-R	164	342.21	1299.87	290.42	1299.87	0	0	0	0	0	0	0	1763.99	0	1763.99
FMU 13 TOTAL			163784.77	69838.19	37604.02	14329.85	0.00	0.00	9686.02	10547.89	44624.82	21358.64	81404.80	26313.88	135715.64	58220.41

May 1, 1999 to April 30, 2000

FMU 11	Holder	Quota	Allowable Cut/99		Over/Undercut 98		Jun-30		Sep-30		Dec-31		Apr-30		YTD	YTD
Quota Holder Name	No.	No.	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD
Burke, Frank T.	W-1537-SR	9	62.5	0	62.5	0	0	0	0	0	0	0	0	0	0	0
Cocks, Earl	W-1538-SR	11	80	0	-3.16	0	0	0	0	0	0	0	0	0	0	0
Eagle, Stuart	W-1502-SR	163	0	1004.33	0	450.53	0	0	0	0	0	0	0	1531.6	0	1531.6
Graham, Malcolm	W1542/43	264	0	2000		2000	0	0	0	0	0	0	0	2000	0	2000
Pine Falls Paper Co. Ltd.	W-1493-W	149	848.47	0	1216.47	0	0	0	0	0	793.07	0	419.25		1212.32	0
Prairie Forest Prod.	W-1513-SR	182	210	0	6.68	0	0	0	0	0	0	0	0	0	0	0
Spruce Products Ltd.	W-1528-SR	206	974.83	0	883.95	0	0	0	0	0	1917.98	0	0	0	1917.98	0
Zander, Stuart	W-1533-SR	217	36.12	16.82	-23.55	-8.31	0	0	0	0	0	0	0	0	0	0
FMU 11 TOTAL			2211.92	3021.15	2142.89	2442.22	0	0	0	0	2711.05	0	419.25	3531.6	3130.3	3531.6

Louisiana-Pacific	Holder	Quota	Allowable Cut/99		Over/Undercut 98		Jun-30		Sep-30		Dec-31		Apr-30		YTD	YTD
Quota Holder Name	No.	No.	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD	SFWD	HDWD
FMU 10							0	0	0	13142.2	0	19114.0	0	16037.0	0	48293.2

FMU 11							**0**	**0**	**0**	**0**	**0**	**3311.39**	**0**	**9939.97**	**0**	**13251.36**
FMU 13							**0**	**0**	**0**	**66942.2**	**0**	**94716.3**	**0**	**157594.3**	**0**	**319252.9**
Louisiana-Pacific TOTAL			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**80084.4**	**0**	**117141.7**	**0**	**183571.3**	**0**	**380797.4**

Table A3.2 Quota Holder Volume Summary by Quarter for 1999/2000. (shaded areas indicate F-40 not completed) continued

TOLKO - FMU 13	**Holder**	**Quota**	**Allowable Cut/99**		**Over/Undercut 98**		**Jun-30**		**Sep-30**		**Dec-31**		**Apr-30**		**YTD**	**YTD**
Quota Holder Name	**No.**	**No.**	**SFWD**	**HDWD**	**SFWD**	**HDWD**	**SFWD**	**HDWD**	**SFWD**	**HDWD**	**SFWD**	**HDWD**	**SFWD**	**HDWD**	**SFWD**	**HDWD**
Tolko Manitoba Inc.	**Special**						**0**	**0**	**64.82**	**0**	**12952.42**	**0**	**14205.66**		**27222.9**	**0**

Table A3.3 Fees collected in 1999/2000 for LP and Quota Holders

Date	Volume Manufactured (m3)	Stumpage Dues	Forest Renewal Charge (FRC)	Forest Protection Charge (FPC)	GST on FPC	Late Filing Penalties	TOTAL
May 1 - June 30/99	1,254.37	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
July 1 - Sept 30/99	93,807.59	$50,407.81	$41,001.47	$15,525.17	$1,086.75	$0.00	$108,021.20
Oct 1 - Dec 31/99	128,442.11	$72,033.56	$58,592.27	$22,085.64	$1,545.97	$431.41	$154,688.85
Jan 1 - April 30/00	212,312.58	$131,032.23	$101,608.76	$37,992.02	$0.00	$0.00	$270,633.01
HARDWOOD TOTAL	**435,816.65**	**$253,473.60**	**$201,202.50**	**$75,602.83**	**$2,632.72**	**$431.41**	**$533,343.06**
May 1 - June 30/99	1,150.38	$218.32	$328.58	$12.94	$0.91	$29.31	$590.06
July 1 - Sept 30/99	20,513.66	$49,385.69	$20,556.27	$763.01	$53.41	$390.19	$71,148.57
Oct 1 - Dec 31/99	65,404.09	$116,533.00	$226,430.41	$8,402.88	$588.20	$0.00	$351,954.49
Jan 1 - April 30/00	100,386.75	$313,051.59	$487,375.44	$18,056.01	$0.00	$0.00	$818,483.04
SOFTWOOD TOTAL	**187,454.88**	**$479,188.60**	**$734,690.70**	**$27,234.84**	**$642.52**	**$419.50**	**$1,242,176.16**
COMBINED TOTAL	**623,271.53**	**$732,662.20**	**$935,893.20**	**$102,837.67**	**$3,275.24**	**$850.91**	**$1,775,519.22**

APPENDIX IV – RENEWAL DETAILS

Table A4.1 Site preparation and scarification summary by treatment block.

FMU	Operating Area	Block Number	Prescription Treatment	Area Prepared (ha)	TOTAL (ha)
11	4 Corners	113229S2-02	Ripper Tooth Plow	18.3	
13	4 Corners	133229S1-03	Ripper Tooth Plow	24.7	
13	4 Corners	133229S1-06	Ripper Tooth Plow	26.0	
13	4 Corners	133229S1-02	Ripper Tooth Plow	31.9	
13	East Favel	133425S1-10	Ripper Tooth Plow	20.2	
13	Route H	132923S2-09	Ripper Tooth Plow	31.3	
13	Route H	132923S2-02	Ripper Tooth Plow	10.7	
13	Singush Lake	132924S3-01	Ripper Tooth Plow	8.6	
13	Valley River	132926S1-01	Ripper Tooth Plow	6.9	
13	Valley River	132926S1-02	Ripper Tooth Plow	10.6	
13	Valley River	132927S2-01	Ripper Tooth Plow	18.2	
13	Valley River	132927S2-02	Ripper Tooth Plow	45.4	
13	Valley River	13292602-12	Ripper Tooth Plow	22.1	
13	Island Lake	132925S1-36	Ripper Tooth Plow	35.9	
13	Ethelbert Trail	133023S1-05	Ripper Tooth Plow	13.8	**324.6**
13	Vimy Ridge	133223S1-01	Disc Trencher	38.4	
13	Vimy Ridge	133223S1-02	Disc Trencher	14.0	
13	Vimy Ridge	133223S1-03	Disc Trencher	20.8	
13	Vimy Ridge	133223S1-04	Disc Trencher	15.1	
13	Vimy Ridge	133223S1-05	Disc Trencher	14.9	
13	West Favel	133425S2-01	Disc Trencher	20.9	
13	West Favel	13342504-05	Disc Trencher	20.2	
13	Island Lake	132925S1-36	Disc Trencher	3.4	
13	Upper Dam	13292601-03	Disc Trencher	0.6	
13	Upper Dam	13292601-01	Disc Trencher	20.2	
13	Upper Dam	13292601-10	Disc Trencher	34.8	
13	Upper Dam	13292501-06	Disc Trencher	25.7	
13	Vimy Ridge	VM-20	Disc Trencher	23.5	
13	Vimy Ridge	VM-44	Disc Trencher	9.5	
13	Sarah Lake	133228S3-07	Disc Trencher	28.6	
13	Onion Lake	133225S1-13	Disc Trencher	12.2	
13	Ethelbert Trail	133023S1-05	Disc Trencher	15.0	
13	Sarah Lake	WC-96-01	Disc Trencher	57.8	
13	Sarah Lake	133328S1-01	Disc Trencher	42.0	
13	Sarah Lake	133328S1-02	Disc Trencher	30.4	**447.9**
13	Island Lake	132925S1-34	Barrels & Chains	31.7	
13	Onion Lake	133225S1-13	Barrels & Chains	13.1	
13	Cowan West	133424S1-35	Barrels & Chains	9.7	
13	West Favel	133425S3-02	Barrels & Chains	2.0	
13	Vimy Ridge	VM-10	Barrels & Chains	47.5	
11	North Duck	113623S1-01	Barrels & Chains	1.9	**105.9**
				GRAND TOTAL	**878.35**

Table A4.2 Snow cache details.

Route H (February 24, 2000) 40,000 Black spruce G+2 = 205 boxes @195 (Dbox) 143,500 White Spruce BR = 287 bags@500/bag 6,500 White Spruce MP3 = 18 boxes@360/box(Cbox)
Vimy Ridge (February 25th, 2000) 105,840 Sb MP 6 = 294 boxes @ 360/box (C box) 24,160 Black Spruce G+2 = 124 boxes (Dbox)

Four Corners (February 28th, 2000) 180,000 Bareroot White Spruce = 360 bags @500/bag 20,000 G+2 Black spruce = 103 boxes @195/box (D box) 1 trailer full

Valley River #1 (February 29th, 2000) 175,000 White Spruce MP #3 = 486 boxes @ 360/box (C boxes) 20,000 Black Spruce G+2 = 103 boxes @195/box (D boxes) One Trailer Full

Valley River #2 (February 29th, 2000) 65,000 White Spruce MP3/6 = 181 boxes @ 360/box (C box) 40,000 Black Spruce G+2 = 205 boxes (D boxes)
East Favel (March 1st, 2000) 60,000 Black Spruce G+2 = 308 boxes @ 195/box (D boxes) 1 trailer

Table A4.3 Seedling shipping schedule.

Stock Shipped for Snow Caching February/March 1999

Species	Zone	Stock	Total
Black Spruce	11.4	BR 1.5+1.5	85,100
Black Spruce	11.4	BR G+1.5	3,000
Black Spruce	11.4	BR G+2	285,000
White Spruce	13.4	BR G+2	209,100
White Spruce	13.4	BR 2+2	225,000
Black Spruce	11.4	Multipot 6	165,600
White Spruce	13.4	Multipot 3	65,160
Total			**1,037,960**

Stock Shipped Spring 1999

Species	Zone	Stock	Total
Black Spruce	11.4	Multipot 6	99,000
White Spruce	13.4	Multipot 3	368,640
Total			**467,640**

note: Current Crop Seedlings shipped from Brinkman & Associates to LP in 1999

Stock Shipped for Snow Caching February/March 2000

Species	Zone	Stock	Total
White Spruce	13.4	BR G+2	11,500
White Spruce	13.4	BR 2+2	312,000
Black Spruce	11.4	BR G+2	204,390
White Spruce	13.4	Multipot 3	246,600
Black Spruce	11.4	Multipot 6	105,840
Total			**880,330**

Table A4.4 Seedlings planted in 1999 by treatment block and tree species.

Operating Area	Block Number	Area (ha)	Planting Season (M/Y)	Seedlings			Total Seedlings
				White Spruce	Black Spruce	Jack Pine	
Island Lake	IL-97-01	31.3	May-99	15,965	39,830	0	55,795
Island Lake	IL-97-02	27.4	May-99	9,000	33,100	0	42,100
Ethelbert Trail	SG-97-27	25.8	May-99	1,625	36,275	0	37,900
Ethelbert Trail	SG-97-28	54.5	May-99	14,720	52,995	0	67,715
Ethelbert Trail	SG-97-30	34.3	May-99	21,750	34,715	0	56,465
Arm Lake	13282601-05	27.15	May-99	32,800	0	0	32,800
Arm Lake	13282601-04	18.2	May-99	28,225	360	0	28,585
Arm Lake	13282601-06	36.9	May-99	53,375	2,925	0	56,300
Valley River	132926S1-03	34.9	May-99	62,675	10,710	0	73,385
Arm Lake	13282601-02	10.33	May-99	12,890	0	0	12,890
Valley River	132926S1-01	12.2	May-99	22,600	9,030	0	31,630
Valley River	132926S1-02	10	May-99	52,080	0	0	52,080
Silver Creek	132725S1-12	19.1	Jun-99	7,700	21,555	0	29,255
Silver Creek	132625S1-11	25.9	Jun-99	10,840	25,390	0	36,230
Silver Creek	132625S1-14	10.3	Jun-99	12,860	8,050	0	20,910
Jackfish Lake	13282401-03	14.62	Jun-99	14,945	5,890	0	20,835
Upper Dam	13282503-96-03	10	Jun-99	8,150	1,075	0	9,225
Island Lake	132924S4-01	8.2	Jun-99	6,600	4,350	0	10,950
Laurie Lake	TI-96-05	38.3	Jun-99	0	37,820	0	37,820
Clearwater Creek	13332301-04	13.5	Jun-99	17,565	4,950	0	22,515
Clearwater Creek	13332301-03	13.3	Jun-99	20,175	1,185	0	21,360
Clearwater Creek	13332301-02	11.1	Jun-99	21,960	0	0	21,960
Cowan West	133424S1-35	30	Jun-99/Jul-99	26,820	11,000	0	37,820
Cowan West	133424S1-12	37.1	May-99	55,820	0	0	55,820
East Favel	133425S1-05	30.4	May-99	6,680	39,695	0	46,375
East Favel	13342501-07	12	May-99	13,280	9,605	0	22,885
East Favel	13342501-05	17.1	May-99	2,055	19,240	0	21,295
East Favel	13342501-06	5	May-99	2,915	11,035	0	13,950
Singush Lake	SG-97-24	35	May-99	12,545	56,130	0	68,675
Singush Lake	SG-97-22	24.7	May-99	8,275	45,125	0	53,400
Singush Lake	SG-97-21	18.2	May-99	26,200	7,740	0	33,940
Tee Lakes	133227S3-03, 04	19.6	May-99	18,270	12,010	0	30,280
Tee Lakes	133227S3-02	23	May-99	31,155	12,690	0	43,845
Tee Lakes	133227S3-01	32.9	May-99	41,620	10,350	0	51,970
Tee Lakes	WC-96-07	23	May-99	26,075	17,300	0	43,375
Tee Lakes	WC-96-06	21.8	May-99	5,980	2,520	0	8,500
Tee Lakes	WC-96-02	21	May-99	0	39,940	0	39,940
Cowan West	133424S1-23	45	Jul-99	0	25,300	0	25,300
Sarah Lake	133328S1-02		Jul-99	0	22,375	0	22,375
Sarah Lake	133328S1-01		Jul-99	0	40,475	0	40,475
Tee Lakes	WC-96-01		May-99/Jul-99	1,260	51,970	0	53,230
West Favel	13342604-96-01	23.1	May-99	13,230	11,535	0	24,765
West Favel	13342604-96-02	25.4	May-99	26,880	7,760	0	34,640
West Favel	13342604-04	26.2	May-99	31,925	6,695	0	38,620
Vimy Ridge	VM-13	42.7	Jul-99	0	45,325	0	45,325
Silver Creek	BE-96-01	2	May-99	0	1,000	0	1,000
West Favel	133425S2-01	20.9	Jun-99	24,860	7,635	0	32,495

Table A4.4 Seedlings planted in 1999 by treatment block and tree species (continued).

West Favel	13342604-05	20.2	Jun-99	36,225	0	0	36,225
Vimy Ridge	133223S1-03		Jul-99	0	48,800	0	48,800
Vimy Ridge	133223S1-02		Jul-99	0	23,100	0	23,100
Vimy Ridge	133223S1-01		Jul-99	0	49,575	0	49,575
Vimy Ridge	133223S1-04		Jul-99	0	67,325	0	67,325
Vimy Ridge	133223S1-05		Jul-99	0	32,450	0	32,450
Vimy Ridge	VM-44		Jul-99	0	16,325	0	16,325
Stoski Road	BE-96-07	15	Jul-99	0	8,025	0	8,025
Onion Lake	133225S1-10	15	Jul-99	0	15,100	0	15,100
				860,570	**1,105,355**	**0**	**1,965,925**

Table A4.5 Plantation survival assessments.

Operating Area	Block Number	Season
Cowan West	133424S1-05	spring
Cowan West	133424S1-11	spring
Four Corners	113229S2-01	spring
Jackfish Lake	13282401-96-01	spring
Laurie Lake	TI-96-05	spring
Silver Creek	132625S1-09	spring
Silver Creek	132625S1-10	spring
Silver Creek	132625S1-16	spring
Silver Creek	BE-96-04	spring
Stoski Road	BE-96-07	spring
Tee Lakes	WC-96-02	spring
Tee Lakes	WC-96-06/07	spring
Tee Lakes	WC-97-04	spring
Upper Dam	Upper Dam	spring
Valley River	JC-97-01	spring
Clearwater Creek	13332301-01	summer
Cowan East	113523S1-01	summer
Cowan East	133424S1-20	summer
Island Lake	132925S1-31	summer
Island Lake	132925S1-31	summer
Island Lake	IL-96-04	summer
Island Lake	IL-96-26	summer
Island Lake	IL-96-27	summer
Madge Lake	13312901-96-01	summer
North Duck	113623S3-06	summer
Onion Lake	133225S1-08	summer
Route W	13342701-96-01	summer
Sarah Lake	13322803-01	summer
Sarah Lake	133228S3-05	summer
Sarah Lake	133228S3-06	summer
Silver Creek	132624S1-01 & 02	summer
Silver Creek	132625S1-12,13 & 15	summer
Stoski Road	BE-97-07	summer
Tee Lakes	133227S3-02 & 03	summer
Vimy Ridge	VM-16	summer
Vimy Ridge	VM-22	summer
Vimy Ridge	VM-43	summer
Wine Lake	13292703-96-C1	summer

APPENDIX V – STAND MANAGEMENT FUND

Table A5.1 Stand Management Fund Bank Ledger from April 30, 1999 to April 30, 2000

		Deposit						
	Date	**Quota Hardwood**	**Quota Softwood**	**LP Hardwood**	**Total**	**Interest**	**Withdrawal**	**Balance**
Carry over from 1998/1999 season	30-Apr-99							**$973,112.02**
Interest earned	1-May-99					$2,775.98		$975,888.00
Q1/99(Jan-March)LP Costs withdrawal	7-May-99						$130,420.63	$845,467.37
Interest earned	1-Jun-99					$2,426.56		$847,893.93
Interest earned	2-Jul-99					$2,264.92		$850,158.85
EBM Pilot Project	27-Jul-99			$25,000.00	$25,000.00			$875,158.85
Interest earned	3-Aug-99					$2,357.60		$877,516.45
January 1 - April 30/99	31-Aug-99	$91,405.25	$518,677.53	$75,043.63	$685,126.41			$1,562,642.86
May 1 - June 30/99 (Zander, Thomas)	7-Sep-99		$66.56		$66.56			$1,562,709.42
Overcharge (Kotyk Lumber)	7-Sep-99	($139.38)			($139.38)			$1,562,570.04
Q2/99 (April - June) LP Costs withdrawal	8-Sep-99						$201,861.54	$1,360,708.50
April 30 Supplement - Zander	22-Sep-99		$181.87		$181.87			$1,360,890.37
Reversal EBM Pilot Project	17-Sep-99						$25,000.00	$1,335,890.37
April 30 Supplement - Spruce Products	17-Sep-99		$80.15		$80.15			$1,335,970.52
Interest earned	1-Sep-99					$2,421.77		$1,338,392.29
Careerstart grant	14-Oct-99			$6,864.00	$6,864.00			$1,345,256.29
April 30 Supplement - Nathan Sieger	18-Oct-99	$404.66	$114.50		$519.16			$1,345,775.45
Q3/99 (July - Sept) LP Costs withdrawal	20-Oct-99						$811,902.32	$533,873.13
June 28 - Sept 30 - LP cut requirements	29-Oct-99			$35,985.27	$35,985.27			$569,858.40
Interest earned	1-Oct-99					$3,477.99		$573,336.39
June 30 - Sept 30 - QH requirements Province of MB - seasonal emp grant	9-Nov-99	$4,750.92	$20,139.17	$1,600.00	$26,490.09			$599,826.48
June 30 - Sept 30 - Tolko requirements	17-Nov-99		$296.87		$296.87			$600,123.35
Interest earned	1-Nov-99					$2,857.07		$602,980.42
June 30 - Sept 30 - Don & Tom Cords	2-Dec-99		$5.73		$5.73			$602,986.15
Province of MB - Scarification % payment	17-Dec-99			$2,458.00	$2,458.00			$605,444.15
Q4/99 (Oct - Dec) LP Costs withdrawal	17-Dec-99						$197,131.72	$408,312.43
Interest earned	1-Dec-99					$1,644.29		$409,956.72
Interest earned	4-Jan-00					$1,517.32		$411,474.04
Oct 1 - Dec 31/99 - LP cut requirements	1-Feb-00			$52,207.26	$52,207.26			$463,681.30
Interest earned	1-Feb-00					$1,222.71		$464,904.01
Oct 1 - Dec 31/99 - QH requirements	10-Feb-00	$5,127.54	$167,108.33		$172,235.87			$637,139.88
Oct 1 - Dec 31/99 - QH/LP requirements	29-Feb-00	$59,322.08		$562.80	$59,884.88			$697,024.76
Interest earned	1-Mar-00					$1,733.12		$698,757.88
Dudar Forest Products Overdue account since April 30/99	3-Apr-00	$694.67			$694.67			$699,452.55
Interest earned	3-Apr-00					$2,268.82		$701,721.37
MB third party harvesting payment	13-Apr-00		$8,547.56		$8,547.56			$710,268.93
Carry over to 2000/2001								$ 710,268.93

Table A5.2 Stand Management Fund withdrawal Summary for 1999/2000

	Jan - March 1999	April - June 1999	July - Sept 1999	Oct - Dec 1999	Jan - March 2000	April - June 2000	Total Costs
PSP	$947.22	$23,400.80	$47,087.92	($725.61)	$11,197.64	$66,251.69	$148,159.66
Site Prep / Scarification	$71,190.93	$67,878.54	$77,102.58	$48,404.03	$50,946.12	$67,125.37	$382,647.57
Seedling storage/seeds	$0.00	$13,024.07	$5,694.46	$9,040.00	($10,567.43)	$471.31	$17,662.41
PHS	$1,036.28	$4,706.19	$34,606.71	($5,232.93)	($343.00)	$30,045.89	$64,819.14
Tree Plant	$2,808.25	$67,413.06	$305,603.46	($4,153.87)	$0.00	$258,555.29	$630,226.19
Tree Improvement	$0.00	$2,708.50	$6,504.93	$8,120.99	$12,949.10	$40.95	$30,324.47
Aerial Photographs	$0.00	$0.00	$0.00	$16,074.32	$0.00	$40.45	$16,114.77
Snow Cache	$12,161.90	$4,045.87	$0.00	$2,222.50	$4,982.09	$8,844.48	$32,256.84
Surveys	$58.54	$80.85	$33.71	$3,295.99	$0.00	$188.60	$3,657.69
Research / Development	$0.00	$0.00	$0.00	$41,574.79	$0.00	$0.00	$41,574.79
Administration	$42,217.51	$18,603.66	$335,268.55	$78,511.51	$65,209.85	$52,130.55	$591,941.63
TOTAL	$130,420.63	$201,861.54	$811,902.32	$197,131.72	$134,374.37	$483,694.58	$1,959,385.16

APPENDIX VI – STREAM CROSSINGS

Table A6.1 Proposed and actual stream crossings.

CROSSING NAME	TYPE OF CROSSING		INSTALLED	REMOVED	COMMENTS
	PROPOSED	ACTUAL			
13272601-C1	Snow and ice	Culvert	Yes		left culvert in for future use
13272601-C2	Snow and ice	Snow and ice			
13282304-C1	Snow and ice	Snow and ice			
13282602-C1	Snow and Ice	Snow and ice			opened up dam, leveled road
13282602-C2	Snow and ice	Culvert	Yes		left culvert in for future use
13282602-C3	Snow and ice	Culvert	Yes		left culvert in for future use
13282602-C4	Snow and ice with culvert	Culvert	Yes	Yes	removed, sloped and seeded
13282602-C5	Snow and ice with culvert	Snow and ice			
13292301-C2	Snow and ice	Snow and ice			no futher work required
13292601-C1	Culvert	Culvert	Yes		clay filled and rip-rapped
13292601-C2	Culvert	Culvert	Yes		clay filled and rip-rapped
13292601-C3	Culvert	Culvert	Yes		clay filled and rip-rapped
132927S2-C1	Snow and ice	Wooden Culvert	Yes	Yes	
133023S2-C1	Culvert	Culvert	Yes		left in for future use -SPL
133425S3-C2	Snow and Ice	Snow and ice			
133426S2-C2	Snow and Ice	Snow and ice			
133426S2-C3	Snow and Ice	Snow and ice			
13342701-C4	Culvert	Culvert	Yes		left culvert in for future use
13352401-C2	Culvert	Culvert		Yes	removed and seeded
13352401-C3	Culvert	Culvert		Yes	removed and seeded
CRP-C01	Culvert	Culvert	Yes		left culvert in for future use
CRP-C02	Culvert	Culvert	Yes		left culvert in for future use
CRP-C03	Culvert	Culvert	Yes		left culvert in for future use
CRP-C04	Culvert	Culvert	Yes		left culvert in for future use
CRP-C05	Culvert	Culvert	Yes		left culvert in for future use
CRP-C06	Culvert	Culvert			left culvert in for future use
CRP-C07	Culvert	Culvert			left culvert in for future use
CWW-C01	Culvert	Culvert		Yes	sloped and seeded
CWW-C02	Culvert	Culvert		Yes	sloped and seeded
CWW-C03	Culvert	Culvert		Yes	sloped and seeded
DFR-C01	Snow and Ice	Snow and ice			
JFL-C01	Snow and Ice	Snow and ice			
SGL-C01	Snow and Ice	Snow and ice			
SRL-C01	Culvert	Culvert	Yes	Yes	
STR-C01	Snow and Ice	Snow and ice			

VLR-C01	Snow and Ice	Snow and ice			
VLR-C02	Snow and Ice	Snow and ice			