

## **APPENDIX I**

### **The History of Tree Farm Licence 1**

# The History of Tree Farm Licence 1

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COLUMBIA  
CELLULOSE  
A DIVISION OF THE CELANESE CORPORATION



CHEMCELL  
CANADIAN CHEMICAL AND CELLULOSE COMPANY LTD.



COLUMBIA CELLULOSE COMPANY



Canadian Cellulose

**BCTimber**

A Member of the BC Resources Group



Westar Timber



*Coast Tsimshian  
Resources* limited partnership

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1948 - 2006

## TABLE OF CONTENTS

PREFACE .....	i
INTRODUCTION.....	1
TREE FARM LICENCE 1 .....	1
FOREST MANAGEMENT .....	1
CONCLUSION .....	1
APPENDIX: Maps .....	1
APPENDIX: Amendments to TFL 1 .....	1

## FIGURES

FIGURE 1 TFL 1 HARVEST HISTORY 1952-2002.....	1
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## TABLES

TABLE 1 TFL 1 HARVESTING SUMMARY - 1952 TO 2003 .....	1
TABLE 2 TFL 1 - SBFEP HARVESTING SUMMARY - 1988 TO 2002 .....	1
TABLE 3 TFL 1 SILVICULTURE ACTIVITIES SUMMARY - 1951 TO 2002 .....	1

## PREFACE

*The History of Tree Farm Licence 1* is a dynamic document, which can be updated every five years with the preparation of each new management plan for the Tree Farm Licence (TFL). It outlines the chronology of major events and development and highlights key milestones in the management of the TFL. While errors and omissions may occur, every effort has been made to accurately reflect the history of TFL 1 to date.

A history of amendments to TFL 1 over time is included. There have been almost 100 amendments to the TFL document since its inception.

The efforts and contribution of the many persons who have contributed to the preparation and upkeep of this document over the years are appreciated.

## INTRODUCTION

### Local History

Terrace, BC is located between the junctions of the Skeena River with the Copper (or Zymoetz) River to the east, and the Kitsumkalum River to the west. These rivers and the rich bottomlands provide an abundance of resources that have been utilised by local inhabitants for thousands of years.

The Tsimshian First Nation historically has utilised the waterways and nearby land to provide for their needs. The area provided for a diverse diet, including fish, berries, roots, and game. Cedar bark and trees provided clothing and building materials. Over the centuries, several seasonal and longer-term habitations were established. While the best documented site is near Kitselas Canyon, upstream of the Skeena River confluence with the Copper River, other sites have been used extensively.

The European history of Terrace began in 1912 when it became a place name on a map. This coincided with the construction of the Grand Trunk Railway from Prince Rupert to Hazelton. Construction of the railway began in 1908 and was completed in 1914.

Early homesteaders undertook various endeavours ranging from the production of agricultural crops to prospecting and mining. These were all successful at the local level, but distance to markets prevented the large scale development of many of these endeavours.

The forest industry was the driving force behind the development of Terrace. 1908 saw the first sawmill built in the district. It supplied ties for the Grand Trunk Railway. World War I led to numerous small sawmills being constructed. These mills cut and shipped lumber for the war effort. Sitka spruce, because of its strength and light weight, was in demand. Generally these small mills had a short lifespan. They either burned to the ground or went out of business, only to be replaced by others.

During the 1920's, Terrace was known as the 'Pole Capital of the World.' Cedar poles for use in telegraph and power transmission lines were cut and shipped world wide.

The real development of Terrace coincided with the granting of Tree Farm License (TFL) 1 to Columbia Cellulose Company Ltd., a wholly owned subsidiary of the Celanese Corporation of America in 1948. A condition of the licence required Columbia Cellulose to establish a pulpmill. The company subsequently constructed a pulpmill at Watson Island near Prince Rupert and located their woodlands division in Terrace.

### Background on Tree Farm Licences

In 1942, the government of British Columbia commissioned Chief Justice Gordon H. Sloan to undertake a study of the provincial forest industry. The study took three years to complete and led to the major amendments of the Forest Act in 1947. The main focus of the Royal Commission and the subsequent changes in legislation were designed to maintain the forest industry on a perpetual basis and to sustain the forest resource indefinitely. Under previous legislation the government had leased temporary cutting rights on crown land to commercial timber companies. The amended Forest Act replaced this system with one that provided for long term agreements. The new legislation gave the licensees secure long term cutting rights. In exchange, the licensees undertook responsibility for reforesting the harvested land in compliance with government regulations.

## TREE FARM LICENCE 1

### Celanese Corporation of America

The Celanese Corporation of America operated a successful textile business. It had exclusive rights for acetate sales in the United States and other non-British lands. The company produced acetate from cotton linters.

Immediately following World War II, Celanese began experiencing a crisis in the supply of raw material. The company began searching for a source of raw material from which it could produce acetate - the backbone of its business. By 1945 an alternate source of raw material was discovered - wood cellulose.

Celanese began searching for a vast, steady supply of wood cellulose, which led the company to British Columbia. The company was granted forest management rights to 334,000 hectares of Crown forest land near Terrace (*see Maps at the end of this document*). The tenure, granted May 4, 1948, is what became Tree Farm Licence 1.\* The Celanese Corporation of America became pioneers of British Columbia's new forest management system.

### The Port Edward Pulp mill

As a prerequisite to being granted the Tree Farm Licence, the agreement stipulated that a pulpmill must be constructed. Celanese chose Prince Rupert for the site. The city had a good harbour, and modern dock installations built by the United States government during World War II were sitting idle and available to lease.

A sulphite pulpmill was constructed and began operations in June 1951. Initial production was 200 tonnes per day. By 1958 capacity reached 350 tonnes per day.

Pulp operations were expanded when a new sulphate mill (now known as "A" Mill) was completed in 1964. Subsequent improvements to the mill resulted in more increases in total capacity. By 1974 the total capacity of the sulphite mill was 540 tonnes per day and the sulphate mill was 900 tonnes per day.

The sulphite mill operated until October 1976. At this time, "A" Mill was converted to a kraft pulping process and construction began on a new kraft mill ("B" Mill). The construction and conversion project was completed in 1978.

Further expenditures have resulted in additional production improvements. A new effluent treatment facility was installed in the mid 1980's and a recovery boiler was rebuilt. The pulpmill's capacity grew to 1400 tonnes per day of northern bleached kraft pulp.

The pulpmill has not been in operation since 2001. Financial pressures forced the owners into creditor protection in 1997, and again in 2001. In 1997, a plan to further improve and upgrade the pulpmill was put into place as part of a financial restructuring of the owner. By May 2003, much, but not all of the work had been completed.

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\* The tenure was originally termed a "Forest Management Licence"

## Sawmills

The granting of TFL 1 changed the sawmilling industry in the Terrace area. Initially, the sawmill operators opposed it. The new tenure was viewed as a threat to their timber supply. It tied up large tracts of forested land that were no longer available for timber sales.

This fear was soon put to rest. The pulpmill did not cut the same profile as the sawmills. By utilizing poor quality logs, it made operations economical in areas previously viewed as uneconomical. The presence of the pulpmill started the trend towards better utilization of the forest resource.

The company did not use all the logs it cut. High value spruce and hemlock sawlogs were traded or sold to local mills. Cedar poles were extracted and sold to pole companies, and cottonwood peeler logs were sold to plywood companies. By 1963, five independent sawmills were situated in Prince Rupert and Terrace. Combined, these mills had an annual capacity of 142,000 cubic metres (m<sup>3</sup>).

In 1969 Columbia Cellulose expanded into the sawmill business. The company purchased the Pohle Lumber Operations in Terrace. This had a tremendous affect on logging operations. It began focusing the company on producing sawlogs in addition to pulplogs.

The company expanded by purchasing sawmills in Kitwanga and Hazelton. In 1970, a second small log side (chip'n'saw) was added to both the Pohle and Kitwanga mills. Further improvements resulted in a planer being added to the Pohle mill in 1972. At this time, production of the Pohle mill was 236,000 m<sup>3</sup> annually.

In 1987, Repap BC Inc. began construction of a new sawmill on the Pohle site in Terrace. Forty-five million dollars were invested to build a brand new, state of the art, sawmill. The mill officially opened September 29, 1988. The lumber production capacity of the new mill is 300,000 m<sup>3</sup>.

In 1987, Repap BC purchased the Smithers sawmill of Groot Lumber Ltd. This was followed by purchase of the Carnaby sawmill and licences from Westshore Terminals in 1992, and obtaining a large percentage of Buffalo Head Forest Products Ltd. (BHFP) in that same year. The Company took full control of BHFP in 1997. In 1995, Repap purchased a stake in the mill and licences of Kitwanga Lumber Company, and took full control in 1999. In 1996 Orenda Forest Products Ltd. was purchased. These purchases were made to enhance the company's lumber business and improve fibre security.

The sawmills have operated sporadically since 1997. The Smithers, Carnaby, and Terrace mills were shutdown in 2001. The Carnaby mill was dismantled in 2005 and the Terrace sawmill was purchased by Terrace Lumber Company and ran intermittently between the fall of 2005 and spring of 2006. Kitwanga Lumber is the only sawmill to remain in production during this period.

## Ownership

TFL 1 has gone through numerous changes throughout its 55 year history. Several different companies have managed the tenure since it was originally awarded to the Celanese Corporation of America's subsidiary Columbia Cellulose Company Ltd. on May 4, 1948.

On July 1, 1973, the Province of British Columbia purchased the Columbia Cellulose Company. A new company, Canadian Cellulose Company Limited, was created and assigned TFL 1.

Eight years later, the British Columbia government created a crown corporation named BC Timber Ltd. On June 1, 1981, B.C. Timber was assigned TFL 1. This company's name was changed in 1984 to Westar Timber Ltd.

On June 23, 1986, Westar Timber Ltd. sold its assets in Prince Rupert and Terrace to Skeena Cellulose Inc. (SCI), a wholly owned subsidiary of Repap Enterprises Inc. TFL 1 was transferred to SCI.

Subsequently in 1996 a separate company, Repap BC Inc. was set up and continued to operate under that name until March, 1997 when Repap BC Inc. was forced into creditor protection under the Company Creditor's Arrangement Act (CCAA). Ownership was transferred to the Royal Bank of Canada and the Toronto Dominion Bank. At that time the Company was renamed Skeena Cellulose Inc. and was operated under CCAA by the receiver (Coopers & Lybrand) Ownership was restructured when the provincial government purchased the Royal Bank's share in November, 1997. SCI began operating without CCAA protection in February 1998 after the creditors approved the restructuring plan.

Falling global pulp markets and a poor Asian economy contributed to SCI falling under CCAA protection again in 2001, when the owners (Toronto Dominion Bank and the Government of BC) refused to extend the Company's credit. Operations were shut down, and a search for a buyer for SCI was initiated in earnest. In May 2002, the assets of SCI were sold to NWBC Timber and Pulp Ltd. The Company was renamed New Skeena Forest Products Inc. in February 2003. New Skeena Forest Products went into receivership in 2004. Through the receiver, TFL 1 was detached from the sawmill in Terrace. The TFL was purchased by Coast Tsimshian Resources Limited Partnership in July 2005.

## Boundary Revisions

Since the TFL was awarded in 1948 the total area has had several revisions. The first amendment occurred in 1949 when the Exstall River Block was deleted and the Whitebottom Block was added (see *Maps at the end of this document*).

In 1951 a number of special timber licences along the lower reaches of the Skeena River, known as the Dane Estates, were purchased by the Company. This fee simple land was placed in the Schedule A land category of the TFL agreement.

The next major amendment in area occurred in the spring of 1959. The Ensheshese River Block, Khutzeymateen Inlet Block, Kwinimass River Block, Lachmach River Block, Nass Bay Block, Toon River Block, Union Lake Block and a portion of the Zymoetz River Block were deleted. In exchange, areas in the Whitebottom Block, Kitsumkalum Block, Lava Lake Block, Andegulay Block and Fishery Bay Blocks were added.

In 1965, the boundaries of the Centre, Khyex and Scotia Blocks were amalgamated into a single contiguous area on both sides of the Skeena River bounded by the height of land. This new area became the Scotia Block. At the same time, the Fishery Bay, Andegulay, Lava Lake, Whitebottom and Kitsumkalum Blocks were extended to the heights of land (see *Maps*).

In 1965, the company was awarded TFL No. 40. This licence consisted of the Nass, Skeena, Sustut and Kiteen Blocks (see *Maps*). TFL 40 was amalgamated with TFL 1 in 1969.

In 1979, the Nass, Skeena, Sustut and Scotia Blocks were deleted.

In 1984, cutting permits 33, 34, 36, 36, 38 were deleted from TFL 1 (see *Maps*). The Minister of Forests subsequently issued three forest licences over this area. In 1985, Forest Licences A16882, A16883 and A16884, were held by West Fraser Mills Ltd. (Skeena Sawmills), Orenda Logging Ltd., and Buffalo Head Forest Products Ltd.

In 1986, TFL 1 was subdivided into TFL 1 and TFL 51. Cutting permits 32 and 35 in the Cranberry area were deleted from TFL 1 and amalgamated to form TFL 51, which was assigned to Westar Timber Ltd.

In 1989, the AAC was reduced by approximately 5% to account for the Small Business Forest Enterprise Program.

On April 30, 1992 a portion of the TFL was deleted to form the Nisga'a Memorial Lava Bed Park.

On May 11, 2000, a portion of the TFL along the lower Nass River, was deleted as part of the Nisga'a Final Agreement

The current boundaries of TFL 1 as of January 1, 2003 are outlined on the map at the end of this document.

## **FOREST MANAGEMENT**

The award of Tree Farm Licence No. 1 signified the start of forest management activities in the Terrace area. Although sawmills had been operating in the area since the early 1900's, the TFL heralded the beginning of forest management with the intent of providing a sustained timber supply.

### **Forest Inventory**

One of the first projects initiated was a forest inventory. Information was necessary to determine the overall sustained yield capacity of the land base and the allowable annual cut. The first inventory project took place in 1948 in the Khutzymateen Block and has continued to the present. Complete re-inventories of the TFL were completed in 1973 and again in 1991. The 1991 re-inventory updated the 1973 inventory, with emphasis on reclassifying the immature and regenerated cover types. In the 1999-2000 field season a vegetative resource inventory (VRI) was undertaken. VRI plot clusters were established in productive stands in inventory stand ages ranged from ten to 110 years. The compiled plot results were used to adjust age, height, site index and volume attributes in the inventory database.

### **Transportation**

Early management objectives focused on developing the licence as a unit. The company wanted to open up the whole tenure as quickly as possible. To achieve this goal, the company had to identify transportation routes to get the logs to the pulpmill at Watson Island. Three main transportation systems were available; truck, rail and water. Initial road construction began in 1950. Road budgets called for 25 miles to be completed in 1951 and 20 miles in 1952. During the mid-1950's road construction began in the Whitebottom (1954) and the Nass (1956). Access into the Nass Valley was by air or water until 1958 when an unpaved road connecting Terrace to the Nass Valley was completed. This road has been upgraded over the years and has been taken over by the BC government as a public highway, providing access to the Nisga'a Lands and the Nisga'a Memorial Lava Bed Park. The majority of the road is now paved.

Water transport has always been an important transportation system to move logs from TFL 1 to the pulpmill. Early transportation systems included log drives down the Kalum, Skeena and Nass Rivers. This system was unsuccessful on the Skeena River and was abandoned in 1950. It was replaced with flat rafts in 1955. On the Kalum River, a log drive was initiated in 1955. Logs were floated down to a dewatering site where the logs were loaded onto rail cars and transported to the pulpmill. The Kalum log drive was abandoned in 1959.

In the 1960's the Nass River was used extensively to transport logs. A series of canals and channels were constructed to facilitate the log drive. Logs were trucked or skidded to the river. Loose logs were driven to catchment areas where they were bundled and boomed. The system remained in place until 1977 when it was abandoned. Numerous log dumps and booming grounds have been utilized. The Ginlulak log dump was constructed in 1960 and remained in use until the mid 1990's. A private log dump at Lax'galtsap (Greenville) is in operation today. Another log dump operates at Minette Bay on the Douglas Channel near Kitimat.

As technology improved, trucks became more and more the method of transport. The purchase of the Pohle Lumber Company also had a tremendous impact on the movement of logs. Watson Island was no longer the main destination for the logs. Logs had to be sorted and the sawlogs transported to the sawmill. By 1969 the transportation networks were as follows: logs from the Kalum, Copper and portions of the Whitebottom, Lava Lake and Aiyansh Blocks were trucked to a reload area. Logs from the Scotia Block and Dane Estates were boomed and towed to the pulpmill.

Rail transport of logs was used, but not extensively, and was abandoned in 1983. Since that time all logs have been delivered to the sawmills by truck. Rail is now used for moving residual chips from some of the sawmills.

Road transport is now the primary transportation method for logs from the bush. Over 1300 km of roads and more than 110 bridges has been established over the TFL. Permanent road access has been constructed into all major valleys of the TFL.

## Harvesting

The first company foresters regarded the timber resource on TFL 1 as being very decadent, estimating 60% defect in the stands. Early cutblock configurations consisted of clearcuts surrounded by seed blocks and firebreaks. Seed blocks were to be left for 10 years and firebreaks for a minimum of five years. The maximum opening size was 60-80 hectares.

The first cutblocks were logged in 1951 in the Dane Estates, Kalum and Khutzeymateen Blocks. The predominant silviculture system on TFL 1 has been clearcutting. Some alternate silviculture systems have been employed. From 1951-1960 some selective logging took place on floodplain areas to remove spruce and some areas have been selectively logged to remove cedar poles. In the 1990's, the viability of commercial thinning of second growth in the Kitsumkalum Block was tested with a modest increase in the market value of small logs. Since 2001, selection logging of cottonwood sites has occurred on lower elevation and floodplain sites.

The Nass area of TFL 1 was developed in the late 1950's. The first cutblocks were logged in 1959 and Nass Camp was established in 1961. With the development of the Kiteen, which started in 1990, all of the major valleys in the TFL have been developed.

Intermediate utilization (I.U.) standards were followed until 1966. At this time the company voluntarily went to close utilization (C.U.) standards. The maximum stump height was reduced from 18 inches to 12 inches, the minimum top diameter was reduced from 8 inches to 6 inches, and the minimum butt diameter was reduced from 12 inches to 8 inches. Current utilization standards are maximum stump height of 30 cm, minimum top diameter of 15 cm and minimum tree diameter of 17.5 cm.

Cable logging systems have been the dominant system throughout the history of the TFL. In the early years, steam donkeys provided logging power on the slopes, while crawler tractors and horses were used on lower elevation areas. With the improvements to the technology of ground-based machinery, there has been an increase in its use; however, cable systems remain the dominant harvest system. Skyline systems and helicopter logging were introduced in 1993. They are costly and will only work in certain timber and terrain types, but they are an integral part of the logging system "tool box" used on TFL 1.

The cost of harvesting on TFL 1 is high due to the poor timber quality (high cull percentage) and difficult terrain (similar to the coast). The resource also has a high pulplog component. Since pulp logs are generally of a lower value than saw logs, this has also contributed to the economic difficulties of operating on the TFL, particularly during periods of low markets. The volumes harvested in comparison to the Allowable Annual Cut (AAC) as shown in the following tables demonstrates the fluctuations in the harvest over the years.

## Long-term Planning

Part of the premise behind the granting of Tree Farm Licence 1 was to provide an area-based tenure that was continually renewable. This would provide for a greater certainty that investments made on the tenure would provide a return in the future. Management Plans were prepared and updated on a regular basis. These management plans indicated the directions and strategies that the company intended to follow. In the early years of TFL 1, the primary strategies were infrastructure development and obtaining information on the forests: inventory and success of regeneration. This was followed by the establishment of growth and yield plots, and silvicultural and operational trials.

Company foresters and managers carried out strategic planning on the TFL. Management plans continued to be the primary strategic planning document for the TFL, and government agencies were generally not involved in planning unless requested by the company. With the improvement of computer technology in the early 1980s, planning started to include forecasting and modelling. Specialist contractors conducted most of this work until 1994, when the company implemented its own in-house Geographical Information System (GIS) on an ARC/INFO base.

In 1992, the Kalum Land and Resource Management Plan (LRMP) process was implemented on the Kalum Timber Supply Area (TSA). This process did not include TFL 1. In 1995, the introduction of the *Forest Practices Code Act of BC* indicated a significant policy shift in government, and planning on TFL's was no longer considered entirely separate from TSA's. In 1996, TFL 1 was brought into the Kalum LRMP process, and the final LRMP was approved in 2002. Several other initiatives of the government have been applied on TFL 1, including Landscape Unit planning, the Identified Wildlife Management Strategy and the Kalum Sustainable Resource Management Plan (Kalum SRMP).

The TFL management plan is not a designated higher level plan by government, and while still useful, it has diminished in its strategic importance to the Company.

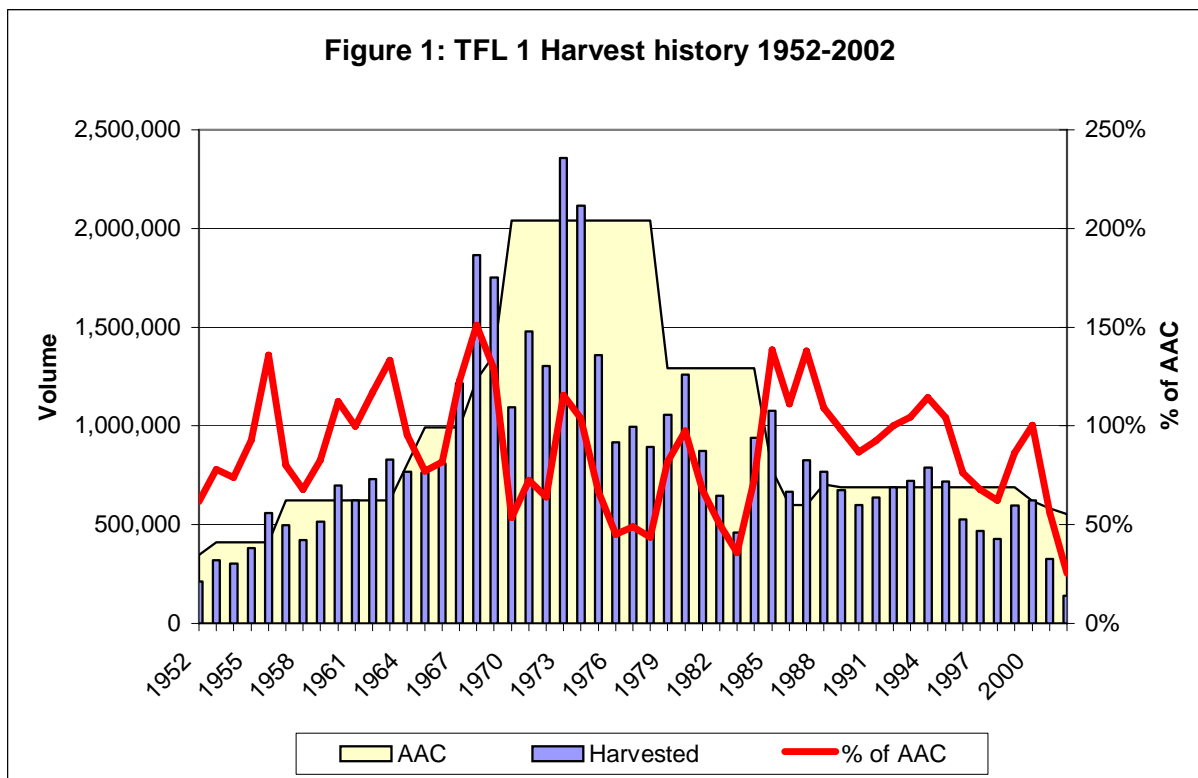


Figure 1 TFL 1 Harvest History 1952-2002

**Table 1 TFL 1 Harvesting Summary - 1952 to 2003**

Licensee	MP #	Year	TotalArea (ha)	Working Forest (ha)	AAC <sup>1</sup> (m <sup>3</sup> )	Harvested <sup>2</sup> (m <sup>3</sup> )	% of AAC
<b>Columbia Cellulose</b>	<b>1</b>	1952		266,715	347,000	213,600	62%
		1953			411,000	320,206	78%
		1954			411,000	304,072	74%
<b>Columbia Cellulose</b>	<b>2</b>	1955	832,395	321,810	411,000	380,997	93%
		1956			411,000	558,371	136%
		1957			623,000	498,566	80%
		1958			623,000	421,883	68%
		1959			623,000	514,034	83%
<b>Columbia Cellulose</b>	<b>3</b>	1960	831,086	289,906	623,000	699,179	112%
		1961			623,000	621,475	100%
		1962			623,000	729,429	117%
		1963			623,000	830,659	133%
		1964			807,000	769,617	95%
<b>Columbia Cellulose</b>	<b>4</b>	1965	863,559	333,701	991,000	763,188	77%
		1966			991,000	810,194	82%
		1967			991,000	1,217,103	123%
		1968			1,235,000	1,865,383	151%
		1969			1,359,000	1,753,273	129%
<b>Columbia Cellulose</b>	<b>5</b>	1970	2,697,611	835,794	2,039,000	1,093,583	54%
		1971			2,039,000	1,477,536	72%
		1972			2,039,000	1,303,042	64%
<b>Canadian Cellulose</b>		1973			2,039,000	2,358,672	116%
		1974			2,039,000	2,117,047	104%
		1975			2,039,000	1,359,717	67%
		1976			2,039,000	916,887	45%
		1977			2,039,000	996,222	49%
		1978			2,039,000	892,690	44%
	<b>6</b>	1979	980,873	378,372	1,292,000	1,055,311	82%
		1980			1,292,000	1,260,583	98%
<b>BC Timber</b>		1981			1,292,000	872,597	68%
		1982			1,292,000	645,780	50%
		1983			1,292,000	461,164	36%
<b>Westar Timber</b>		1984			1,292,000	939,855	73%
		1985			777,000	1,076,104	138%
<b>Skeena Cellulose Inc.</b>	<b>7</b>	1986	596,933	159,378	600,000	666,951	111%
		1987			600,000	827,226	138%
		1988			705,000	769,369	109%
		1989			690,000	675,917	98%
		1990			690,000	598,380	87%
		1991			690,000	638,038	92%
		1992			690,000	690,094	100%
		1993			690,000	721,289	105%
<b>Skeena Cellulose Inc.</b>	<b>8</b>	1994	609,204	152,918	690,050	789,240	114%
		1995			690,050	719,396	104%
<b>Repap BC Inc.</b>		1996			690,050	527,006	76%
<b>Skeena Cellulose Inc.</b>		1997			690,050	467,551	68%
		1998			690,050	428,938	62%
<b>Skeena Cellulose Inc.</b>	<b>9</b>	1999	610,691	134,642	690,050	596,804	86%
		2000	518,291	115,171	620,064	623,130	100%
		2001			581,050	325,670	56%
		2002			552,069	139,468	25%
<b>New Skeena Forest Products Inc.</b>		2003			552,069	Not available	N/A

<sup>1</sup> does not include SBFEP apportionment of 14,975 m<sup>3</sup> in 1998 and 29,950 m<sup>3</sup> from 1989 onwards.

<sup>2</sup> does not include volume harvested through the SBFEP since its inception in 1988.

**Table 2 TFL 1 - SBFEP Harvesting Summary - 1988 to 2002**

<b>MP #</b>	<b>Year</b>	<b>AAC</b> [m <sup>3</sup> ]	<b>Vol. Sold</b> [m <sup>3</sup> ]	<b>Vol. Logged</b> [m <sup>3</sup> ]
<b>7</b>	<b>1988</b>	14,975	Nil	Nil
	<b>1989</b>	29,950	11,974	Nil
	<b>1990</b>	29,950	7,836	25,693
	<b>1991</b>	29,950	Nil	Nil
	<b>1992</b>	29,950	155	155
	<b>1993</b>	29,950	Nil	Nil
<b>8</b>	<b>1994</b>	29,950	Nil	Nil
	<b>1995</b>	29,950	45,126	17,034
	<b>1996</b>	29,950	81,535	1,238
	<b>1997</b>	29,950	8,297	3,586
	<b>1998</b>	29,950	254,140	56,795
<b>9</b>	<b>1999</b>	29,950	Nil*	52,922
	<b>2000</b>	29,950	Nil*	14,936
	<b>2001</b>	29,950	Nil*	19,399
	<b>2002</b>	29,950	Nil*	1,875
	<b>2003</b>	29,950	Not available	Not available

\* Some minor salvage sales were issued under SBFEP, but numbers were small, and are not readily available

## Silviculture

Initial reforestation practices focused on obtaining natural regeneration. Logged areas were left to regenerate naturally. Company foresters felt that cutblocks could be restocked naturally provided there was an adjacent seed source. The first surveys to assess stocking levels were conducted in 1954. The surveys determined that natural regeneration was not always satisfactory and that some planting may be necessary.

The first plantation was established in 1956. Thirty-five acres in the Dane Estates were planted with cottonwood. The lack of available planting stock resulted in the company developing a nursery to raise conifer seedlings at a site off the West Kalum Road in 1957. In 1958 the first conifer seedlings were planted, with the initial plantations designed as trials. Larch, Douglas-fir and Hemlock, wildings were planted. The first significant planting program came about as a result of the 1958 forest fires: over 6,700 hectares of forested land was burned and required planting. Initial planting densities used 10 feet spacing. Between 1956 and 1969 the percentage of species planted was 55% Sitka spruce, 30% western hemlock, 10% pine and balsam and 5% exotics. In 1992 the species distribution was 30% western hemlock, 20% pine, 15% balsam, 15% cedar, 10% spruce, and 10% cottonwood. In 2000, planting consisted of 33% Amabilis Fir ("Balsam"), 24% western hemlock, 14% hybrid spruce, 11% lodgepole pine, 8% cedar, 4% mountain hemlock, 4% Sitka alder, and 2% subalpine fir. The change in species reflects, to some extent, the change in the ecological characteristics of the areas being logged. Also, company foresters had learned from the early reforestation practices and had improved knowledge of the suitable reforestation regimes, based on ecological attributes and characteristics of the sites. Starting in 1988, reforestation plans for each cutblock were documented in silvicultural prescriptions.

The first site preparation treatment took place on a cutblock on the Skeena River floodplain in 1957. The area was scarified to prepare for planting cottonwood. Broadcast burning was not carried out until 1962. The philosophy towards burning changed during the 1960's. The area burned each year increased from

1962 until it peaked in 1972. Since that time it has decreased significantly as it became evident that burning could be detrimental to obtaining acceptable regeneration. The last broadcast burn on TFL 1 occurred in the spring of 1988.

The first stand tending treatments occurred in 1958. Initial treatments were set up as trials. Stand tending programs have been ongoing ever since. The first large-scale tending operations took place in 1983. In response to poor economic conditions in the Terrace area, the Provincial and Federal governments funded Canada Works and EBAP (Employee Based Assistance Programs) to put people back to work. Between 1983 and 1985 almost 4,700 hectares were spaced and brushed.

The first pruning of hemlock and amabilis fir took place in 1992. Between 100 and 200 hectares of established plantations were pruned annually from 1993 to 1996. The area pruned each year has decreased since that time.

A ten hectare fertilization trial was established in 1996 and will continue to be monitored over time. If trial results are favourable, fertilization may be scheduled in conjunction with other enhanced silviculture treatments.

The first commercial thinning (CT) took place in 1994, with more than 25,000 m<sup>3</sup> harvested from 200 hectares since then. Currently, CT is not considered economically viable for several reasons: high delivered log cost, no local facility with the capability to handle a small log profile, and a limited supply of CT wood. However, as more second growth stands approach age 40, and with a relatively small increase in the value of small logs, or decrease in the delivered log cost, commercial thinning could become a viable enterprise.

Between 1996 and 2001, funding for enhanced silviculture treatments was provided by Forest Renewal BC (FRBC). In 2002, FRBC was dismantled by the provincial government, and reduced funding for enhanced silviculture was provided through the Forest Investment Account (FIA).

## **Forest Health & Protection**

The forests of TFL 1 are generally in good health. The mature forest has not seen significant disturbances, which have led to the current forest character of predominantly age class 9, with high levels of cull and pulp quality timber. Regenerating the stands is fairly straightforward, with only minor forest health considerations. Regenerated forests grow well, and are not subject to significant forest health risks.

### ***Fire***

Fire has had a long history on TFL 1. Hot, dry summers used to be common, and large catastrophic fires were not uncommon. Significant burns in the past on the area of TFL 1 include the West Copper, the Clore, the Lower Kiteen, and the western slopes above the northern section of Kalum Lake.

Fire was the most prevalent forest protection issue in the past, and is also the factor most easily influenced by people. For example, the Company used to do a fair amount of broadcast burning, which always carried the risk of escape. As a result of the burning programs, and the hot dry summers of the 1960s through to the early 1980s, the Company had extensive fire prevention activities, including scheduled shut downs in the 1970s and 1980s.

In the 1980s, broadcast burning fell out of favour as a management tool, and is no longer carried out. The climate in the 1990s and particularly over the past ten years has been characterised by cool, moist summers with mild winters. As a result, there have been no fires of any significance on TFL 1 in recent years. Fire prevention continues to be a focus, but not at the same intensity as in past decades.

### ***Windthrow***

There is limited information regarding historical levels of windthrow. Currently, however, wind is the most prevalent damaging agent on TFL 1. This is likely at least partially a result of the increase in small reserve and buffer areas. Significant salvage efforts are made each year to harvest windthrown timber, and management is difficult in the decadent stands of the area.

Windthrow has likely been an endemic factor on the TFL for many years, but the extent of the impact would not have been readily apparent in the past when primary access to the main valleys in TFL 1 was not yet complete.

Information on windthrow is somewhat limited. Most windthrow is largely limited to relatively small (< 2 ha) patches, with a few patches in the 2 – 5 ha range. This could be considered indicative of endemic levels of windthrow. Patches greater than 5 ha are quite rare, and would be considered to be a result of a catastrophic event (i.e. resulting from atypical wind patterns/ storms). These events are impossible to predict or manage for.

With the completion of the primary access into all the valleys of TFL 1, identification and salvage of windthrow patches is relatively straightforward.

### **Pests**

TFL 1 has relatively few concerns with pests. This was not the case in the past.

In the 1960s and 1970s, a prime species for planting was spruce. Planting often consisted of only one or two species, so the density of spruce on many sites was quite high. This allowed the spruce leader weevil (*Pissodes strobi*) to extend its range onto TFL 1 and severely damage many plantations. As a result, planting programs since 1988 have limited the amount of spruce to be planted on a site.

In the late 1990s, Mountain Pine Beetle was detected on TFL 1. Probing was conducted in 2000, and indicated that it is an endemic population. Management consists of monitoring and, if necessary, small infestations can be sanitation logged or felled and burned.

Voies are a concern on newly planted sites. They can cause significant damage and even outright plantation failures. The vole population follows a boom and bust cycle, in sync with predator populations. The mid 1990's was a peak for the vole population, but it is currently not as prevalent a concern on the TFL.

Another mammal that has caused significant damage to young stands is the porcupine. Like the vole, the porcupine population seems to pass through cycles. In the late 1980s and early 1990s, damage was quite prevalent, and a lot of time and effort was put into studying the porcupine population. Research plots were established to allow monitoring of population trends: the population is currently on the wane.

### **Disease**

The old forest type that characterises TFL 1 is subject to an endemic suite of pathogens, including mistletoe, rots, and conks. These are simply the result of forests with a preponderance of stems that are past their prime and are slowly dying. Management has consisted of focusing on these older stands for harvest, which allows establishment of young, thriving, healthy forests.

*Dothistroma* infection, (a pine needle blight), in pine-leading stands has recently become a concern, largely as a result of cool wet summers in the late 1990's and early 2000's. The management of this fungal attack is being carried out jointly with the Kalum and Kispiox Forest Districts, and is being funded through the Forest Investment Account.

## **CONCLUSION**

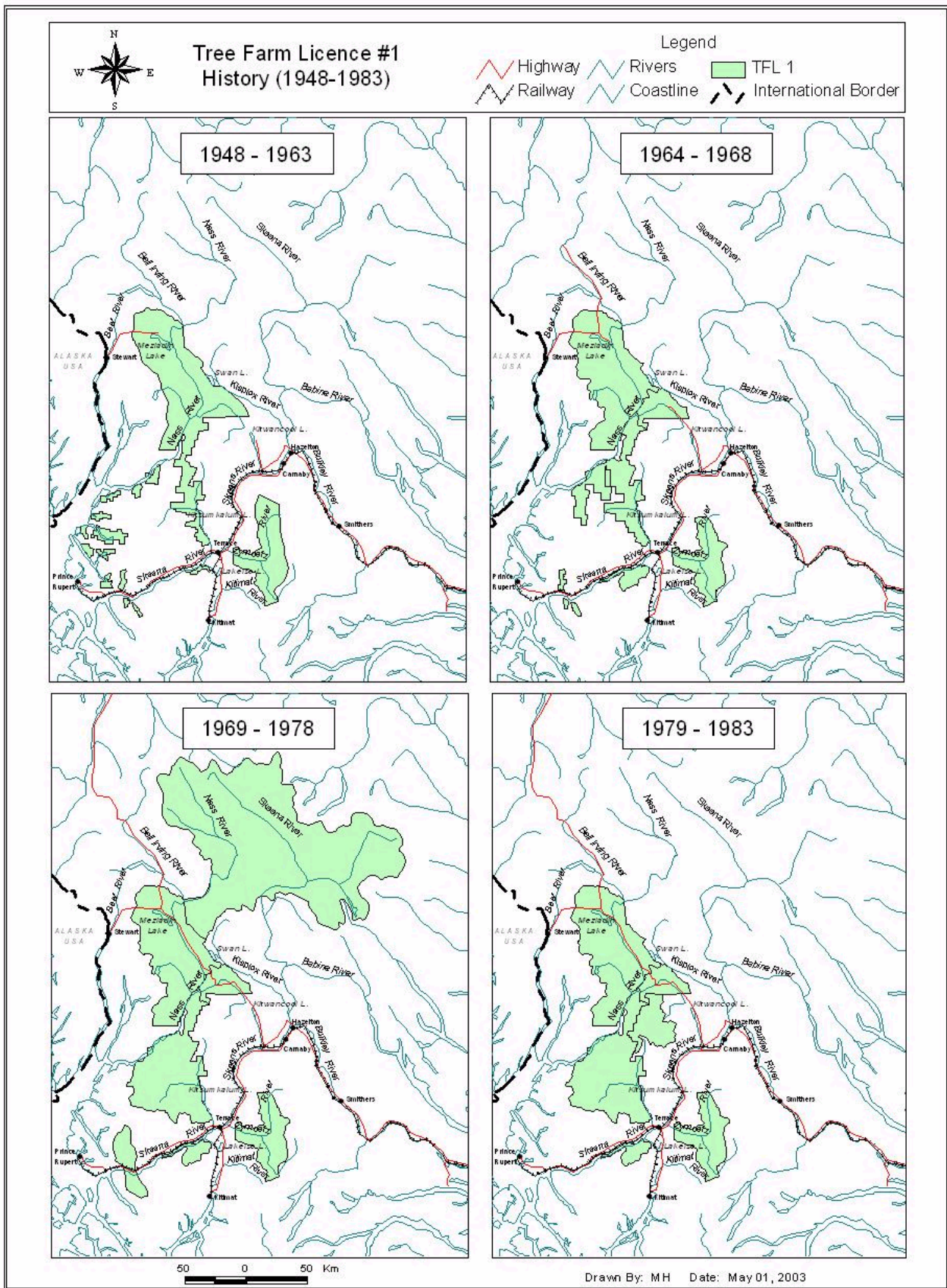
Since 1948, Tree Farm Licence 1 has expanded and contracted in response to markets and ability of the owners to utilise and market the resources in the region. Currently, the TFL is the smallest that it has ever been both in physical size and in Allowable Annual Cut. Forest legislation introduced in 2002 and 2003 has further decreased the size of the TFL.

The quality of the resource has been the greatest challenge for the owners of the TFL over the years. Second-growth forests on the TFL will have lower pulp contents than the first harvests, and this represents significant opportunities for a stable operation in the long term.

Table 3 TFL 1 Silviculture Activities Summary - 1951 to 2002

		MP #1				MP #2				MP #3					MP #4					MP #5									
Activity		1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Logged	[ha]	182	202	495	462	940	1290	1096	1147	1002	1313	1178	1648	2046	1767	1756	1271	2023	3326	3101	1848	2669	2418	3948	3286	2046	1409	1328	1276
Natural Regen	[ha]	155	269	475	446	732	963	918	5828	970	1258	1301	1402	1896	1250	1383	1030	1352	1705	1733	1001	1691	1668	2757	1991	1054	747	276	2710
Planted	[ha]	27		20	16	208	327	178	34	26	160	187	246	244	197	248	297	603	638	747	676	626	651	1063	808	330	585	184	10
# Trees Planted	[000's]						6		9	26	166	203	248	236	187	160	231	353	527	782	681	666	765	1222	849	275	630	209	540
		MP #6							MP #7							MP #8					MP #9								
Activity		1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003			
Logged	(ha)	1725	2005	1557	787	1538	2247	2037	1128	2073	1648	1734	1253	1765	1566	1500	1639	1508	987	1033	975	1363	1286	684	293				
Commercial Thin	(ha)																	64	122	31	0	0	0	0	0				
Natural Regen	(ha)	2833	1930	832	825	857	860	64	420	391	827	604	240	1325	847	518	664	881	334	237	579	759	581	395	474				
Site Prep	(ha)							7			234	699	540	352	130	41	40	27	22	65	0	0	0	0	0				
Planted	(ha)	224	224	1154	1482	616	666	1027	1057	416	1882	725	2390	1279	1838	1658	1638	66	1203	860	860	1201	357	323	0				
# Trees Planted	(000's)	324	296	1456	1740	749	890	1223	900	375	1346	507	1496	987	1360	1232	1322	1050	1069	839	726	1047	327	354	0				
Brushed	(ha)					385	1957	93	196	203	428	669	820	1010	99	463	642	796	689	612	965	587	205	212	0				
Pruned	(ha)														20	101	142	153	199	24	96	0	30	28	30				
Pre-Comm Thin	(ha)	76	262			932		445		180		108			775	991	836	1060	902	962	1007	672	859	369	278				
Surveys																													
Regen	(ha)						1949	338	420	391	3066	4470	1530	2360	1457	1739	937	1227	1306	943	1666	1187	1218	1456	747				
Survival	(ha)						916	988					570	1535	1672	1865	916	1971	1677	1400	1519	1232	1790	221	80				
Intermed	(ha)															531	1508	970	1109	1331	1113	645	1419	462	86				
Free growing	(ha)								7779	13918	16335	2626	1108	3920	1924	1021	1669	1443	1993	1867	2162	2554	2813	888	842				

## **APPENDIX 1-1: MAPS**



## **APPENDIX 1-2: AMENDMENTS TO TFL 1**

## AMENDMENTS TO THE TFL 1 AGREEMENT

Amendment	Date	Description
	May 4, 1948	Date of the original indenture for Port Edward Forest Management Licence #1
The first four amendments to the Forest Management Licence were not numbered. Three of these provided for additions to Schedule "A" land of:		
	25 Jan. 1951	Dane Estate Timber Licences 7461, 7462, 9502 to 9507 inclusive and 13146;
	26 Jan. 1955	Block B of N 1/4 of Lot 1423 R5 C.D.
	22 Apr. 1955	Lot 6810 R5 C.D.
	12 Oct. 1954	The remaining unnumbered amendment deleted 15 acres more or less of Lot 1098 Cassiar District.
Between 1955 and 1965 Schedule "A" lands were also added to the Licence under numbered amendments. These listed in order of their date of inclusion within the Licence are:		
Note: Amendments concerning licence agreement changes and boundary descriptions are No.'s 4, 12, 20, 28, 34, 48, 68, 78 and TFL document effective July 4, 1986. No amendments using the numbers 27 or 64 were issued. All other amendments concern deletions from TFL 1 lands.		
1	8 Dec. 1955	Lot 5612 R5 C.D.
2	10 Feb. 1956	Marsh Timber Licences 4243P and 4244P
3	26 June 1956	Lots 5144, 2275, 3059 & 1749 R5 C.D.
4	16 July 1956	Deleted Clause 42 of the original indenture.
5	9 Aug. 1956	Pt. Lot 1701, Bl. 6 Lot 1704, Lot 7916 R5 C.D.
6	5 Oct. 1956	Lots 5831, 5838, 5957, R5 C.D.
7	20 Dec. 1956	Lot 6512
8	30 July 1957	Nass Timber Licences 11352 to 11359 inclusive.
9	5 Dec. 1957	Lot 5611 R5 C.D.
10	11 Feb. 1958	The N 1/2 of S/W 1/4 Lot 1718 Cassiar District containing 80 acres and being the Nass Service Centre area was deleted for agricultural purposes.
11	6 Oct. 1958	The fractional 1/2 of Lot 4013 Cassiar District containing 146 acres and located north of the Tseax River was deleted.
12	24 Apr. 1959	Provided the boundary description of TFL 1.
13	10 July 1959	Pt. Lot 532 R5 C.D.
14	21 Aug. 1959	Lot 4015 Cassiar District
15	5 Oct. 1959	Lot 1926 R5 C.D.
16	27 Jan. 1960	Lot 4360 R5 C.D.
17	9 Mar. 1960	Hart Properties - Fr. NW 1/4 L. 1400, Fr. SW 1/4 L. 1400, E 1/2 of SE 1/4 L. 1427, NE 1/4 L. 1427, NE 1/4 of NW 1/4 L. 1427, NE 1/4 & NW 1/4 & SE 1/4 L. 1428, Bl. A of SW 1/4 L. 1800, SE portion & fr. N 1/2 L. 1800, and L. 1118 all in R5 C.D.
18	29 Apr. 1960	The Dept. of Fisheries access road from the Stewart Cassiar public road to Meziadin Falls was deleted. This amendment was later cancelled and replaced by Amendment 61.
19	1 Aug. 1960	Killutsal I.R. #1 and 1A R5 C.D.
20	14 Nov. 1962	Amendment 20 replaces Clause 26 of the original indenture. It outlines the use of the Tree Farm Licence as being granted for the maintenance of the pulpmill and Watson Island and associated manufacturing facilities.
21	2 Nov. 1960	Lots 1936 and 5976 R5 C.D.
22	28 July 1961	A 200 foot wide right-of-way was deleted for the Stewart Cassiar Highway located north of Meziadin Lake in the Aiyansh Block.
23	14 Feb. 1962	The portion of Lot 4012 Cassiar District lying north of the Tseax River was deleted under Amendment 23.
24	7 Mar. 1962	N/W 1/4 Lot 1934 Cassiar District
25	12 Mar. 1962	However, because of an error in description, this amendment was cancelled and replaced with Amendment 25.
26	7 June 1962	Lot 7647 and SW 1/4 Lot 1800 R5 C.D.
(27)		There was no Amendment 27
28	14 Sept. 1962	Provides the consent to assignment of TFL 1 to Celgar Limited.
29	8 Nov. 1963	Fr. SW 1/4 Lot 4006 Cassiar District
30	25 Nov. 1963	Lot 7755 R5 C.D. containing 0.23 acres was deleted. This is located west of Scotia River south of the Skeena River and contains BC Tel's Kwinitsa passive West TV and radio repeater system.
31	12 Aug. 1964	Deleted 40 acres of unsurveyed land south of lot 1729 (Peter Hughans' Farm), Cassiar District. This was for purchase by Lloyd Brinson.
32	24 Mar. 1965	SE 1/4 Lot 1411 R5 C.D.

<b>Amendment</b>	<b>Date</b>	<b>Description</b>
33	11 June 1965	Deleted a portion of Lots 2450-A and 2451-A Cassiar District, being approximately 103 acres, for gravel pit purposes. This is located on the north side of the Meziadin River at the Department of Fisheries fish ladder.
34	13 Aug. 1965	Amendment 34 was a revised agreement for TFL 1. It included a legal description of Schedule "B" land and an updated list of Schedule "A" land. Three additional parcels - former Indian Reserves 9 and 66 and Lot 7550 - all in the Scotia River area and containing 65.9 acres were added to Schedule "A".
<b>Amendments to Former TFL 40 dated 5 February 1965</b>		
1	13 Aug. 1965	Amendment 1 dealt with changes in form only to Clauses 46 and 48 of the indenture pertaining to Crown regulations on disposition of the Licence.
2	16 Nov. 1965	Revised TFL 40 boundaries to exclude the Cedar River drainage and include a connecting corridor to the Aiyansh Block of TFL 1.
3	6 Feb. 1967	A 100 ft. square area located on Mount Hoeft was deleted from the Licence for a BC Tel passive radio communications site.
4	14 Nov. 1967	A 210' x 200' area located on the north shore of Johanson Lake was deleted for cabin site purposes.
5	25 Oct. 1968	Under Amendment 5 an area 660' x 100' adjacent to Lot 6793 Cassiar and located on the easterly shore of Sustut Lake was deleted for the purpose of a fishing camp.
6	31 Oct. 1968	An area approximately 4 chains x 5 chains bordering Slamgeesh Lake was deleted for a guide base camp.
<b>Amendments to TFL 1 (continued)</b>		
35	20 Aug. 1965	Deleted two access roads from TFL 1 that were required by BC Tel for access to their radio repeater sites. 1) Road commencing near mile 46 Meziadin Road and continuing to the Brown Bear Lake radio site. 2) Road commencing from Stewart Cassiar Highway in Lot 2470 Cassiar and continuing to the Meziadin Lake radio site.
36	10 June 1966	A 300 foot right-of-way through the Kalum, Lava and Aiyansh Blocks was deleted to accommodate the clearing and construction of BC Hydro's Terrace to Alice Arm transmission line. This 300' right-of-way was temporary and expired 1 June 1968. It was to be replaced with a permanent withdrawal of a 200 foot right-of-way on completion of construction and surveying.
37	14 Sept 1966	The SE 1/4 of the SE 1/4 of Lot 1722 Cassiar and the W 1/2 of the SW 1/4 of the SW 1/4 of 1723 Cassiar was deleted from the Tree Farm Licence. The deletion was for agricultural purposes in favour of Silas Davis.
38	15 March 1967	Deleted Lot 1 of Lot 2275 R5 C.D. containing 30.66 acres. This released the area from Schedule "A" lands for sale to BC Hydro for their Skeena sub-station. A 50 ft wide strip along the south boundary was not sold by the Company but kept for access purposes to the remainder of the Lot.
39	14 April 1967	BC Tel's Meziadin radio repeater site and two adjacent 50 ft wide corridors were deleted from the licence. The site is 100 ft x 110 ft located adjacent to Meziadin Lake in Lot 2464 Cassiar District. The corridors adjacent to the radio site were cleared to prevent transmission interruption. In 1972 the site was enlarged to 400' by 400' by map notation.
40	1 Sept 1967	The school ground at Bojak's (Hal Timber) Camp containing 2.87 acres was deleted.
41	14 Dec. 1967	Under Amendment 41 a 400 ft. x 400 ft. site located southeast of Aiyansh on Mount Priestly was deleted for the purpose of a BC Telephone passive radio repeater site.
42	19 June 1968	Withdrawal of land for right-of-way of the Pacific Northern Gas Ltd. pipeline. However, it was defective and three weeks later was replaced with Amendment 44.
43	24 July 1968	On completion of the survey of this property Amendment 37 was cancelled and replaced with Amendment 43. The area thus deleted was reduced to Block A of D.L. 1722 being 60 acres in size.
44	13 March 1969	As Amendment 43 also included the section of the Company's main logging road, it was cancelled and replaced with Amendment 45 which corrected the description to delete Block A of the SE 1/4 of Lot 1722 Cassiar save and excepting the 100 foot right-of-way. The final area was 56.7 acres.

Amendment	Date	Description
45	11 July 1968	Deleted 53 acres right-of-way from the Khyex, Whitebottom and Copper Blocks and being 378 acres with an approximate 85 foot width for the gas pipeline. The lands were withdrawn for the period of time required to clear and construct the pipeline but not beyond 31 August 1969.
46	14 May 1969	6.64 acres of Lot 2450 Cassiar, lying north of Meziadin River, was deleted for use as an airstrip, for Dome Petroleum Explorations Ltd. This was an extension of the original strip which was within area previously deleted from the Licence.
47	22 Oct. 1969	A 40 ft wide right-of-way was deleted from the south east portion of the Whitebottom Block for road access to MacGillis & Gibbs Company's TSHL A-00139.
48	26 March 1970	TFL 1 as described under Amendment 34 inclusive of Amendments 35 to 47 and former TFL 40 were amalgamated. Significant changes in the revised agreement were: length of tenure changed from perpetual to 21 years; contractor clause changed from 30% to 50%; Forest Service control over operations increased.
49	12 Dec. 1969	During the amalgamation of TFL's 1 and 40, two amendments, 49 and 50, were inadvertently processed which covered the same area and for the same purpose - a Forest Service reserve on Meziadin Lake. On the issuance of #50 amendment #49 was cancelled.
50	20 Apr. 1970	Deleted 27.2 acres of Lot 2664 Cassiar District located on the east side of Meziadin Lake for a Forest Service protection headquarters site with docking facilities. This area was brush with scattered balsam and spruce.
51	15 June 1970	Deleted 0.29 acres in the Kwinatahl area. This is a 112 foot square site and was used for the installation of an eight watt directional rebroadcasting system for the Stewart community. No timber volumes were involved.
52	27 July 1970	Deleted 16.41 acres Schedule "A" and 277.285 acres Schedule "B" (total 293.695 acres) for the purpose of a BC Hydro right-of-way through the Whitebottom and Dane Estates. The right-of-way width is 150 feet.
53	12 Jan. 1971	Deleted 0.92 acres from Schedule "B" land of Dane Estate Timber Licence 13146P for the purpose of a trapline cabin site. It is located on an island in the Skeena River south of Exchamsiks River Park. The area had formerly been eliminated from Schedule "A" land and transferred to Schedule "B" status.
54	11 May 1971	Temporarily removed approx. 33 acres of Schedule "B" land for the purpose of an access road right-of-way bridge approach and site, borrow pit and campsite in order to construct and bridge across the Nass River in the Meziadin Lake area. After the bridge was constructed and final survey completed, this document was replaced by Amendment 58 being the permanent deletion of the Nass Bridge area.
55	14 Jan. 1972	Deleted 0.52 acres Schedule "B" land (150' x 140') for the purpose of a BC Tel VHF tower and radio repeater complex. This is located approximately 7 miles northwest of Old Aiyansh in the Kwinamuck Block.
56	23 Feb. 1972	A 100 ft. wide right-of-way, being approximately 1,430 acres, was temporarily deleted. After construction and final survey of the right-of-way, a permanent amendment is intended to replace this one. This reserve was first established in 1959 prior to the map reserve for TFL 40 on 22 July 1960. It was later cancelled in 1963, TFL 40 was awarded in 1965, and the railroad reserve was again established 19 March 1969 over unalienated and unencumbered Crown lands.
57	20 Mar. 1972	An area 100' x 200' and being 0.414 acres was deleted for the purpose of a BC Tel radio site located on top of Bell Irving mountain.
58	18 Apr. 1972	Amendment 58 replaced Amendment 54 and permanently deleted the Nass River Bridge and its approach roads. The final surveyed area deleted is 4,900 feet long, 200 feet wide and being 22.5 acres.
59	31 July 1972	A 100' x 100' site located on top of Mount Madely in the Kwinageese area of the Nass Block was deleted for the purpose of Department of Highways communications facilities.
60	1 Sept. 1972	Under Amendment 60 approximately 66 acres lying north of the CNR mainline within TL 9504P was deleted for the purpose of a gravel reserve for the Department of Highways for use in their reconstruction of Highway 16. This was a part of the Timber Licence which had formerly reverted from Schedule "A" to Schedule "B" tenure.

Amendment	Date	Description
61	17 Aug. 1972	Amendment 18 was cancelled and replaced by Amendment 61. Under this amendment a 100 foot wide right-of-way located along the east side of Meziadin Lake from the Stewart Cassiar Highway to the Nass Bridge was deleted for public road access. This covered approximately 8.6 miles of road.
62	26 Feb. 1973	An area approximately 3.37 acres was deleted to enable enlargement of the BC Tel radio site from 130' x 100' (Amendment 35) to 400' x 400'. This site is located in the Derrick Lake area of the Aiyansh Block.
63	5 Dec. 1972	Under Amendment 63 140 acres were deleted for a Crown subdivision to be located adjacent to Meziadin Lake within portions of Lots 2455 and 2456 Cassiar Land District.
64	Not issued	There is no amendment with number 64. It was intended to delete part of Lot 2481 Cassiar at the north end of Meziadin Lake for a Department of Highways maintenance yard. However, the Minister declined to sign it and it was never processed because of the high recreational value of the area. The maintenance yard was constructed and the area is withdrawn under Amendment 74.
65	25 Feb. 1973	A road right-of-way 100 feet in width was deleted for the purpose of a Forest Service Development Road running from the Nass Bridge south to the Kwinageese junction - a distance of 19 miles. It has been named the Kispiox-Nass Forest Service Road.
66	15 Nov. 1973	Block A of Lot 453 Cassiar District being 10 acres in size was deleted for residential purposes for M. Dobie. It is located in the Nass Service Centre area.
67	5 June 1973	3.5 acres located at the junction of the Meziadin Lake road and the Stewart Cassiar Highway for service station and grocery store facilities.
68	25 Nov. 1974	The indenture providing the Crown right to grant the licence within Schedule "B" land of T.F.L. #1 is Amendment 68. This indenture was included in T.F.L. #1 licence to enable the Forest Service supply areas in which the British Columbia and Canadian National Railway could obtain ties for their operating needs. Any cuts from tie sales obtained under this indenture would be included in the actual TFL cut.
69	Not issued.	
70	17 Sept. 1976	This amendment was revised by Amendment 71.
71	24 Mar. 1977	Withdrew a corridor along the Tseax River to the volcanic cones and Crater Lake for the purpose of creating Aiyansh Volcanic Park.
72		Revised by Amendment 75.
73	29 May 1978	Removed lots 2275 and 3059 from Schedule "A" lands.
74	16 June 1978	Deleted Ministry of Highways' yards located north of Meziadin Lake.
75	15 June 1978	Removed lot 5612 from Schedule "A" lands.
76	3 Aug 1978	Removed area facilitating land exchange with the Takla Indian Band and BC Railway right-of-way for the Dease Lake extension.
77	3 Aug 1978	Removed Hart Farm area for park establishment purposes. As part of this transaction the previous owner obtained ownership in fee simple of the Kalum Shop and Hazelton Reload sites.
78	27 Feb. 1979	Revised Schedule "B" lands, deleting the Nass-Stewart-Sustut blocks of TFL 40, including the Kiteen Block of TFL 40 and deleting the Scotia block of TFL 1.
79	24 Aug. 1979	These three amendments removed Lots 7550, I.R. #9, 3961 (I.R. 66), 1926, 1936 and 4015 from Schedule "A" of TFL 1 for the purpose of homestead and agricultural development.
80	15 Oct. 1979	
81	10 Mar. 1980	
82	20 May 1980	This corrected the description of the south boundary Copper Block to agree with National Topographic Mapping.
83 84 85	19 Mar. 1981	Amendments 83, 84 and 85 removed the West Kalum, Cedar and Nass Forest Roads including the Kinskuch and Kwinatahl Branches from the Licence.
86	3 Feb. 1981	This removed the portion of the Kleanza Forest Road which extends into TFL 1 from the Licence.
87	21 Oct. 1981	Removed area between Meziadin Lake and Highway 37 for the purpose of park development.
88	4 Nov. 1983	Removed twelve parcels of Schedule "A" lands: Pcl "A" Lot 532; Lot 1749; Lot 5144; Lot 5611; Lot 5831; Lot 5838; Lot 5957; Lot 6512; SE 1/4 Lot 1411; Lot 4360; Lot 5118; Lot 7619; for the purpose of homestead sale to the public.
89	23 Jan. 1984	Removed 17.69 ha from Block A of Lot 1800 from Schedule "A" land for the purpose of waterfowl management.

<b>Amendment</b>	<b>Date</b>	<b>Description</b>
90	31 Dec. 1984	Covered the downsizing of TFL 1 by deleting Cutting Permits 33, 34, 36, 37 and 38 of the Meziadin Block. It allowed the Forest Service to issue three Forest Licences over the areas deleted aiding in the development of the forest resource of the area. The area was deleted as the company considered it no longer required the allowable cut potential from that portion for its mills.
91	1 Nov. 1985	Provided for the issuance of cutting permits on TFL 1 by either the Regional or District Manager.
92	Not issued	
93	Not issued	
94	4 Jan. 1986	Deleted 86.76 ha from Schedule "A" lots of TFL 1 for sale to the public. These lots were not contiguous with the main portion of TFL 1. The lots deleted were 6810, 7647, Block 6 of Lot 1704, and part Lot 1701, all R5 C.D.
	10 July 1986	On July 10, 1986, TFL 1 was amended by the issuance of a new TFL 1 agreement to Skeena Cellulose Inc., which through REPAP purchased the Terrace and Prince Rupert operations including timber resources from Westar. The area of TFL 1 was revised to exclude the Cranberry drainage formerly covered under C.P.'s 32 and 35 and upper Ginmiltkin drainage. The AAC was reduced from 750,000 m <sup>3</sup> to 600,000 m <sup>3</sup> .
95	10 Nov. 1986	Deleted 13.61 ha from Lot 2299, Range 5, Coast Land District
	24 Nov. 1987	AAC increased to 720,000 m <sup>3</sup> .
96	20 July 1988	Deleted approximately 8.8 hectares for a lightning detector site.
	3 Jan. 1989	AAC was reduced by 5% to account for Small Business Forest Enterprise Program (SBFEP).
97	Not signed	The purpose of this amendment is for a text revision under Section 33 of the <i>Forest Amendment Act</i> .
98	Not signed	The purpose of this amendment is to delete BC Hydro transmission line from Nass Camp to the Kiteen River, and the Nisga'a Memorial Lava Bed Park from Schedule 'B' Lands. The Nisga'a Memorial Lava Bed Park was created on April 29, 1992 by OIC. A recreation area was also created on that date. Total area to be removed is approximately 9000 ha.
	May 11, 2000	Reduction in the area of TFL 1 to coincide with the signing into force of the Nisga'a Final Agreement
	May 11, 2000	Reduction in the AAC of TFL 1 to account for the removal of the Nisga'a Final Agreement Lands
	2004	Reduction in AAC of TFL 1 to account for Forest Revitalization Act
		Deletion for Nisga'a Highway right-of-way.
<b>Addendum</b>		
1	24 Feb. 1976	During the 1974 fall floods that section of the Copper River main haul road between Clore River and Limonite Creek was badly damaged by large washouts. Addendum 1 of TFL 1 provided for the reimbursement of reconstruction costs through stumpage offset. Before issuance of this addendum the main Copper haul road was reclassified from private logging road to Copper River Forest Service Road.