WEYERHAEUSER BC Coastal Group

# **2000 ANNUAL REPORT**

# **TREE FARM LICENCE**

# No. 39

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Weyerhaeuser BC Coastal Group Timberlands

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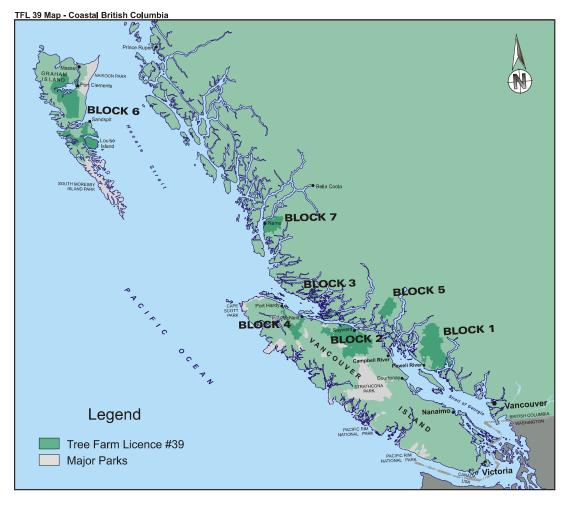
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#### 1.0 Introduction

TFL 39 includes seven geographically separate blocks that are dispersed along the BC Coast and are managed by four of Weyerhaeuser's Coastal BC operations. Refer to the following table and to the location map.

TFL 39 Block	Geographic location	MoF Forest District	Weyerhaeuser Timberlands Operation
Block 1 (Powell River)	Powell River Area	Sunshine Coast	Stillwater
Block 2 (Adam River)	North of Campbell River	Campbell River	North Island
Block 3 (Coast Islands)	Islands off Port McNeill	Port McNeill	Port McNeill
Block 4 (Port Hardy)	North Vancouver Island	Port McNeill	Port McNeill
Block 5 (Phillips River)	NW of Bute Inlet	Campbell River	Stillwater
Block 6 (QCI)	Queen Charlotte Islands	Queen Charlotte Islands	Queen Charlotte
Block 7 (Namu)	Central Coast	Mid Coast	Port McNeill

TFL 39 covers over 800 000 ha, approximately two-thirds of which is productive forest land. The current Management Plan (#7) is for the period to June 30, 2001 and has an Allowable Annual Cut (AAC) of 3 740 000 m<sup>3</sup>/year. This total TFL 39 AAC includes 162 218 m<sup>3</sup>/year allocated to the Small Business Forest Enterprise Program (SBFEP) and 152 522 m<sup>3</sup>/year assigned elsewhere because of the transfer of TFL 39 from MacMillan Bloedel Limited to Weyerhaeuser in November 1999.



The TFL 39 Annual Report for 2000 describes achievements in meeting management obligations and objectives.

#### 2.0 Summary of Major Events and Initiatives in 2000

Strategies continued to focus on corporate goals of safety in the workplace, business success and becoming a highly respected forest products company.

The Company is committed to safety. The result has been a dramatic decrease in medical incidents between 1997 and 1999. The indicator used to measure safety is the Recordable Incident Rate which is very similar to the previously used Medical Incident Rate (MIR) — the number of incidents per 100 workers that require a doctor's medical attention or result in lost work time.

The RIR for the BC Coastal Group for 2000 was 8.3, the same as the MIR achieved in 1999. The corporate commitment and effort to further increase safety (and hence reduce the RIR) is represented by the saying, "We believe in Zero" (zero medical or lost time accidents).

 Good progress occurred in the Forest Project. For all company operations, variable retention was applied on 62% of the area harvested. In TFL 39 the proportion was 51%. Both are well above the target of 40% by the end of 2000.

The second Scientific Panel was convened, performance was monitored, stewardship zones were refined, and training and working group activities continued. Progress was also made in developing a monitoring and adaptive management framework, and monitoring of forest attributes occurred.

 In November 2000, West Island Timberlands received certification status under both the Canadian Standards Association's [CSA] Sustainable Forest Management standards and the ISO 14001 Environmental Management System. Port McNeill was registered for ISO 14001 in December. The Chemainus sawmill also achieved certification for ISO 14001 and, along with the Somass sawmill (Port Alberni) and West Island Timberlands, received registration for chain of custody during 2000. "Chain of custody" is a tracking system that follows the wood from forest to customer and guarantees that established environmental and sustainability standards are met.

In summary, the Weyerhaeuser BC Coastal Group certification at the end of 2000 included:

Unit	CSA Z809 Sustainable Forest Management	ISO 14001 Environmental Management System	Chain of Custody
Timberlands			
North Island	Certified	Certified	Certified
West Island	Certified	Certified	Certified
Port McNeill		Certified	
Manufacturing Facil	ities — Primary		
Chemainus		Certified	Certified
Somass			Certified
Manufacturing Facil	ities — Secondary		
Plenks			Certified
Mid –Island Reman			Certified

The goal is to achieve CSA and ISO 14001 certification at all Weyerhaeuser Coastal Timberlands operations by the end of 2003. In addition, the BC Coastal Group is participating in the process to develop Regional Standards for Forest Stewardship Council (FSC) certification.

North Island Timberlands received a Forest Stewardship Recognition Program (FSRP) award in recognition of the successful implementation of its Environmental Management System. North Island was the first operation in Canada to be certified to both the CSA Sustainable Forest Managemet Standards and the ISO Environmental Management System Standard.

- Important phases of the Stillwater Timberlands Pilot Project (Block 1 of TFL 39) were completed in 2000. These included development of a detailed proposal, draft regulations and a zonation map. These documents were made available for public review in the latter part of 2000 and will form the basis for development of the Forest Stewardship Plan in 2001.
- Eleven new drying kilns were brought on line in 2000 at a cost of over \$10 million as part of Weyerhaeuser's strategy to meet customer demands for more high-value products, especially in export markets. The drying kilns are located at New Westminister (2 new, 4 existing), Alberni Pacific (4) and Chemainus (5). These new kilns mean an additional wood-drying capacity of 20 million board feet (on a 2-inch basis) and were built for easy expansion.

Other items of note include:

- Coast Mountain Hardwoods was purchased by Northwest Hardwoods (a subsidiary of Weyerhaeuser) in September 2000. This purchase, which includes an alder sawmill in Delta, will increase emphasis on utilizing and managing the alder resource in the TFL.
- The first Higher Level Plans (HLPs) for portions of TFL 39 came into effect in 2000. The Vancouver Island Land Use Plan Higher Level Plan Order took effect on December 01, 2000. This HLP includes Blocks 2 and 4 of TFL 39 and makes some components of the VILUP enforceable under the FPC. These involve the Resource Management Zones and objectives including specified variances from the general provisions of the FPC for some of these zones.

The Bunster Landscape Unit is now subject to a higher level plan Order. A small portion of Block 1 is in the Bunster Landscape Unit. Landscape unit plan objectives and Old-growth Management Areas (which meet targets for old seral retention) have been set within this landscape unit under the Plan.

- Markets were generally better than 1999. This is reflected in the higher harvest levels for 2000.
- There was some mill down-time in the first quarter resulting from a tighter inventory control (to reduce costs and log degrade and to stay competitive) combined with bad weather early in the year (harvest volumes were below target in January because of snow).

### 3.0 Management and Obligation Performance

#### 3.1 Timber Harvesting

#### 3.1.1 Volumes Harvested by Weyerhaeuser

Weyerhaeuser harvested volumes (including residue) on private and Crown land within the TFL as follows:

Private	105 306 m <sup>3</sup>	3%
Timber Licenses	544 519 m <sup>3</sup>	16%
Crown	<u>2 828 488 m<sup>3</sup></u>	<u>81%</u>
TOTAL	<u>3 478 313 m³</u>	<u>100%</u>

A detailed summary of timber harvested by division, block, tenure, and species is shown in Table 1a of Appendix I.

#### 3.1.2 Cutting Balance

This is the fifth year in the 1996-2000 Cut Control period. The harvest in 2000 was 101.5% of the AAC. Cut Control status is shown below.

Year	1996	1997	1998	1999	2000	Total
Weyerhaeuser AAC (m <sup>3</sup> )	3 545 640	3 577 782	3 577 782	3 556 889 (1)	3 425 260 (1)	17 683 353
Actual Cut (m <sup>3</sup> )						
Log Scale	3 133 897	2 791 082	2 479 259	3 098 796	3 273 745	14 776 778
Residue	159 971	128 581	85 987	115 953	204 568	695 061
Total Actual Cut (m <sup>3</sup> )	3 293 868	2 919 663	2 565 246	3 214 749	3 478 313	15 471 839
Percent of AAC	92.9%	81.6%	71.7%	90.4%	101.5%	87.5%

(1) The Minister of Forests gave consent for the transfer of TFL 39 to Weyerhaeuser on October 29, 1999. Under Section 56 of the Forest Act, the Licensee's AAC attributable to Crown land is reduced by 5% 14 days after consent is given for the transfer. Hence, effective November 12, 1999, the Company AAC attributable to Crown land has been reduced by 5% (152 522 m<sup>3</sup>) to 2 897 920 m<sup>3</sup>. In total (attributable to Crown land and to private land and timber licences) the Company AAC is reduced from 3 577 782 m<sup>3</sup> to 3 425 260 m<sup>3</sup>. For 1999 the reduction has been prorated over the period (November 12 to December 31) to which it applies.

#### 3.1.3 Volumes Harvested by SBFEP

Volume harvested in SBFEP sales during 2000 totaled 65 058 m<sup>3</sup> (refer to Appendix I, Table 2). The SBFEP harvest volume and allocation (162 218 m<sup>3</sup>) are separate from the Weyerhaeuser harvest and AAC allocation discussed in Sections 3.1.1 and 3.1.2. The following table shows the SBFEP volume

harvested over the last five years (note that residue may not be billed every year).

Year	1996	1997	1998	1999	2000
Harvest Volume (m <sup>3</sup> )	151 798	160 854	45 571	101 219	65 058

#### 3.1.4 Compliance with Contractor Requirements

Contractor requirements are described in Section 14 of the current TFL 39 Licence Agreement. Further details on the calculation procedure are prescribed in the Contractor Clause Compliance Regulation.

For 2000, 126.1% of compliance was achieved. The calculation is summarized as follows:

	Reference #	Volumes (m <sup>3</sup> )
Weyerhaeuser Allocation of TFL 39 AAC	#1	3 425 260
Weyerhaeuser AAC attributed to Schedule B lands	#2	2 897 920
Weyerhaeuser harvest (excludes residue)	#3	3 273 745
Harvest volume attributed to Schedule B lands (#3 X #2 / #1)	#4	2 769 732
Volume target for Contractor requirements (0.5 X #4)	#5	1 384 866
Total Volume contracted	#6	1 746 236
% compliance ((#6 / #5) X 100)		126.1%

Summary of Contractor production (m<sup>3</sup>)

Full Contracts		1 366 962	78%
Phase Contracts (in equivalent volur harvested)	ne		
Roads F & B	271 299 12 508		
Yarding Loading Hauling	27 895 22 046 7 647		
Dump, Sort and Boom	37 879		
Sub-total		379 273	22%
Total		1 746 236	100%

Note that the 1999 phase percents were used. The 2000 phase percents were not readily available, and any difference in the phase contract contribution would not affect the outcome of meeting the contractor requirement as the full contracts alone amounted to 99% (1 366 962 cf. a target of 1 384 866).

# 3.1.5 Harvest Performance by Block

TFL 39 consists of seven separate Blocks that are geographically dispersed along the BC coast. The approval letter for MP #7 defined AAC contributions by Block (Blocks 3 and 4 were combined) and requested a summary of annual harvest performance by the same units. The following table summarizes harvest by Block for 2000.

Block	MP #7 AAC Contribution	SBFEP Allocation & contribution to 5% reduction m <sup>3 (1)</sup>	MoF District	Weyerhaeuser Allocation m <sup>3</sup>	Volume Harvested including Residue m <sup>3</sup>	Variano m <sup>3</sup>	e %
	m <sup>3</sup>	III		111	m	m	%0
Ι	445 000	42 390	Sunshine Coast	402 610	457 963	55 353	14
II	1 335 000	111 098	Campbell R	1 223 902	1 337 239	113 337	9
III, IV	415 000	30 508	Port McNeill	384 492	438 108	53 616	14
v	100 000	8 353	Campbell River	91 647	86 920	(4 727)	(5)
VI	1 210 000	106 663	Queen Charlotte	1 103 337	978 797	(124 540)	(11)
VII	195 000	15 728	Mid-Coast	179 272	171 145	(8 127)	(5)
Deciduous.	40 000			40 000	8 141	(31 859)	(80)
Total	3 740 000	314 740		3 425 260	3 478 313	53 053	2

(1) This column accounts for TFL 39 AAC that is not credited to Weyerhaeuser. This includes the allocation to SBFEP. It also includes the 5% decrease in Schedule B (Crown) contribution to the Company AAC, because of the transfer of TFL 39 from MacMillan Bloedel to Weyerhaeuser. The allocation of this change by Block is a preliminary estimate and is based on the proportions of Schedule B productive forest area by Block.

# 3.1.6 Harvest Profile (operability class)

Results are based on Divisional volume data (excluding residue) and on the inventory classification for operability. In 2000, 1 776 813 m<sup>3</sup> of first growth was harvested in the conventional economic class and 597 010 m<sup>3</sup> in the non-conventional economic class. A further 7 751 m<sup>3</sup> classified as marginal economic was logged. In addition, 714 947 m<sup>3</sup> of second-growth timber was harvested. These numbers differ from the BCFS Billed volume (Table 1a) due to differing year-end dates. Harvest Profile production is shown in Appendix I, Table 1c.

#### 3.1.7 Harvest from Deciduous Areas

The deciduous AAC allocation of 40 000 m<sup>3</sup> is not specifically assigned by Block but is allocated to areas described as deciduous in the timber inventory. This includes stands with a deciduous species (usually red alder) as the leading or primary species.

In a letter dated August 18, 1998, the Regional Manager confirmed the procedure for reporting of harvest performance in deciduous stands. The following table shows the resulting estimates of deciduous stand volumes for 1996 to 2000. All of this "deciduous" harvest has occurred in Block 1 (Powell River).

Year	Harvest Volume (ooo m <sup>3</sup> )
1996	24 306
1997	6 131
1998	34 119
1999	45 058
2000	8 141
Total	117 755

Harvest from Deciduous Stands (1996 to 2000)

#### 3.2 Higher Level Plans

The Vancouver Island Higher Level Plan (HLP) took effect on December 1, 2000. The HLP includes Blocks 2 and 4 of TFL 39 and makes some components of the VILUP enforceable under the FPC. These involve the Resource Management Zones and objectives, including specified variances from the general provisions of the FPC for some of these zones. The HLP will be incorporated into operational plans and is included in the draft MP #8 for TFL 39.

The Bunster Landscape Unit is now subject to a higher level plan Order. A small portion of Block 1 is in the Bunster Landscape Unit. Landscape unit plan objectives and Old-growth Management Areas (which meet targets for old seral retention) have been set within this landscape unit under the plan.

It is expected that further progress will be made on other landscape unit plans during 2001, particularly in Blocks 1 and 2.

Inland Lake Park has was established by Order-in-Council. This park located south east of Powell Lake removes area from Block 1 (approximately 1 424 ha of timber harvesting landbase in the MP #8 analysis).

Weyerhaeuser is actively participating in the Central Coast Land and Coastal Resource Management Plan (CCLCRMP) planning process. This planning area includes Block 3 (Islands), Block 5 (Phillips River) and Block 7 (Namu) of TFL 39.

#### 3.3 Inventories

#### 3.3.1 Recreation

The Block 1 recreation inventory was reviewed and updated during 2000. It is expected that the results will be available later in 2001.

#### 3.3.2 Timber

During 2000, 32 ha of "31+" cruising were completed. The "31+" cruise is applied to young stands that reach "pole-size", generally between 25 and 40 years of age. This re-inventory includes measurement of site index, basal area and volume.

Weyerhaeuser maintains an inventory of permanent sample plots in mature and second-growth stands to evaluate long-term growth trends. These sample plots are periodically remeasured. Coast-wide a total of 32 second-growth, 5 sustained yield, 104 nutrition,10 mature and 9 thinning plots were remeasured. Specifically in TFL 39, 10 second-growth, 5 sustained yield, 38 nutrition and 10 mature plots were measured in 2000.

#### 3.3.3 Cultural Heritage Resources and Archaeological Sites

A portion of the FRBC Multi-Year Funding has been allocated for Archaeological Inventory Studies (AIS) in Block 6. More field work was completed in parts of Masset Inlet in 2000 and will be continued in 2001.

Weyerhaeuser is working with the Haida and the MoF to bring together existing information to a common standard. This includes the recent AIS work, information collected earlier and locations of culturally modified trees (mapped during cultural heritage resource assessments). The resulting mapped products (digital) will be used in operational planning and for providing improved estimates of timber supply impacts of cultural heritage resources in strategic analyses.

#### 3.3.4 Terrestrial Ecosystem Mapping (TEM)

The objective is to map ecosystems (site series) at 1:20,000 for all Weyerhaeuser BC Coastal Group tenures. This inventory will provide data for strategic and operational planning, including forest level analysis, landscapelevel planning and silviculture prescriptions. Funding is provided by Forest Renewal BC. All projects are being done on the TRIM (NAD 83) base and follow the provincial Resource Inventory Committee (RIC) mapping and database standards. Final digital products were completed for Lois Lake West in Block1 and the Salmon Watershed in Block 2 during 2000.

#### 3.4 Other Items in the MP #7 Approval Letter and AAC Rationale

• Refer to the 1999 Annual Report for a summary of many of the achievements and responses to items in the MP #7 approval letter and AAC rationale.

#### 4.0 Success in Meeting Management Objectives

#### 4.1 Management and Utilization of the Timber Resource

Refer to Section 3.1.

#### 4.2 Forest Health and Protection

Forest protection includes a wide range of activities to eliminate or minimize the effects of fire, disease and insects.

Of note in 2000:

#### 4.2.1 Forest Fires

Ten fires burned a total of seven hectares in TFL 39 during 2000. Lightning started one fire in each of Kelsey Bay and Port McNeill operations. The public was responsible for spot fires in Stillwater and one fire in each of Kelsey Bay, Port McNeill and Queen Charlotte operations. Seven ha of NSR were burned in the latter fire. Refer to Appendix I, Table 4.

All divisions used slash accumulation burning to reduce fire hazards at specified landings. A total of 76 ha of logging accumulations were burned in 2000.

Air or ground patrols are usually carried out within two hours after each shift whenever moderate fire hazard conditions exist for more than three days. During the past year, a total of 36 fire watches were flown by FIFT. In addition, 21 fire patrols were flown during periods of high fire hazard.

Additional ground fire patrols were performed during periods of extreme fire hazard.

#### 4.2.2 Insects

Monitoring of conifer sawfly (*Neodiprion spp.*) populations in Block 2 continued. There were no major concerns.

Populations of the black-headed budworm in the Queen Charlottes were monitored (including mapping and sampling). High infestation levels were observed in the Skidegate area and moderate to high levels on Louise Island. Moderate and low to moderate infestation levels occurred in the Alliford and Ferguson areas, respectively. Nil to low infestation levels continued in the Dinan/McClinton area.

Pheromone baited traps continue to be used in log storage areas for ambrosia beetle control.

#### 4.2.3 Disease

No reports of forest diseases were reported in 2000.

#### 4.3 Silviculture

#### 4.3.1 Forest Regeneration

Weyerhaeuser is committed to prompt reforestation of harvested land with appropriate species considering both silvical characteristics and economic values. Treatment activities include site preparation, planting and assessment of regeneration (both planted and natural) performance.

#### Site preparation

In total, site preparation occurred on 567 ha during 2000. Major treatments (by area) included burning accumulations, mechanical scarification, three-meter knockdown, and drainage restoration. Refer to Table 5 in Appendix I for details.

#### Seed Procurement and Tree Improvement

Details on seed procurement, seed inventory and seedling inventory are described in Appendix II.

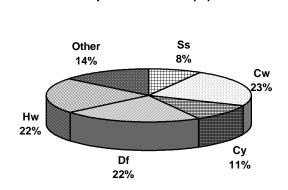
The forest genetics program of Weyerhaeuser's BC Coastal Group deals with supply of genetically improved seed for reforestation use on both Crown and Private Lands.

1n 1999, Weyerhaeuser entered into two long-term (5-year) Seed Supply Agreements — one with Canadian Forest Products and one with Timber West. The Agreements secure high gain genetic seed for future Douglas fir and high gain seed for Hw, Cw, Pw and cutting production for Yc.

The program is exploring other techniques for delivery of high gain products for the reforestation program needs. These techniques include agreements for control-pollinated seed, cutting propagation and the potential of somatic embryogeneses as an alternative technique for Douglas fir.

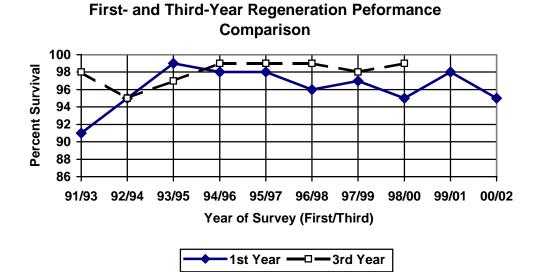
#### Planting

Planting was completed on 3 400 ha of Area Awaiting Restocking (AAR) using 3 331 100 seedlings. Fill planting was done on 192 ha using 144 500 trees to bring the stocking level on those areas to Management Plan standards. Appendix I, Table 6 shows the number of trees planted by operation and Appendix I, Table 7 details the hectares planted by operation and tenure. The following graph details the percent of species planted in 2000



Species Planted (%)

Survival surveys completed one year after planting on 2 883 ha showed a survival rate of 95%. Three years after planting, the survival remained at 99% on the 3 043 ha surveyed in 2000. See Appendix I, Table 8 for details.



The first year survival rate has been at or above the years. With the exception of 1995, the third-year survival has equaled or surpassed the first-year survival performance. Weather conditions are the probable cause for the lower survival rate in 1995. The third-year data does not include plantations that failed the first year.

#### **Natural Regeneration**

Stocking surveys in naturally regenerated areas were conducted on 1 712 ha and 37% were found to be stocked. An assessment of 3 286 ha of naturally regenerated areas three years after the first stocking survey showed 98% to be stocked. Details of these surveys by operation are found in Appendix I, Table 8. Natural stand regeneration has remained above 92% since 1990.



**Natural Regeneration Performance** 

#### 4.3.2 Stand Tending

The following table summarizes stand tending activities for 2000. Details by operation and tenure are described in Appendix I, Table 9.

Treatment	(hectares)
Brushing/Weeding	1 884
Spacing	308
Riparian Spacing	129
Fertilization	3 258
Fertilization at Planting	2 242
Pruning	15
Total	7 836

The substantial areas treated for brushing/weeding and fertilization at time of planting reflect an emphasis on early attainment of well stocked free growing stands.

#### 4.3.3 Erosion Control

A total of 359 ha of slide or roadside areas were treated either by hydro or dry seeding. Refer to Appendix I, Table 10 for details.

#### 4.3.4 Assessments

The results of various types of silvicultural assessments are used for planning future activities, monitoring the success of treatments and to maintain up-to-date forest management records. Appendix I, Table 11 details the 21 706 ha surveyed for various assessments in 2000.

#### 4.3.5 Operational Research

Operational research is carried out in several of Weyerhaeuser's Coastal BC operations. Results can be applicable to TFL 39 when species, site index, terrain and biological conditions are considered. Work in 2000 included:

#### Montane Alternative Silvicultural Systems (MASS)

Research continued on the co-operative Montane Alternative Silvicultural Systems (MASS) study of the biological and economic consequences of various silvicultural systems in higher elevation forests. The participating organizations include: Weyerhaeuser, Canadian Forest Service, FERIC, UBC and UVIC. Final reports for Forest Renewal BC were completed in 2000, representing the completion of FRBC funding for 5-year post-harvest measurement. A MASS website is maintained at: <u>http://www.pfc.cfs.nrcan.gc.ca/practices/mass/</u>

The systems being studied include clearcutting, green tree retention, shelterwood and patch cutting. Harvesting was completed in 1993; post-harvest monitoring continued through 1999. Weyerhaeuser studies included regeneration, growth and yield, hydrology, forest bird diversity and vegetation succession. A few highlights of research results and management implications include:

- Total seed-fall was adequate for natural regeneration success in all treatments but species with larger seed (Ba, Yc) may not adequately regenerate the centre of large clearcuts without advance regeneration. Shelterwoods can maintain similar seed-fall levels to uncut old growth forests.
- Advance regeneration of Ba and Hw survives logging and is capable of release from growth suppression in all silvicultural systems used in this study. There was no significant relationship between age and post-harvest height growth in either species. Incidence of dwarf mistletoe on Hw regeneration was negligible five seasons after harvesting.
- Small patch-cuts and low levels of dispersed green tree retention do not show significant adverse impacts on early survival and growth of montane conifers. Height and diameter growth of Ba was slower in the old growth and shelterwood treatments compared to the more open clearcut, patch cut and green tree retention. Hemlock growth was reduced only in the old growth. Based on relative growth in the shelterwood, Hw appears to be more shade tolerant than Ba and should be considered the preferred choice of these two species for shelterwoods or other shaded environments. Modification of shelterwood design (e.g. strips, groups or lower uniform densities) may be required to allow sufficient light penetration for the release of advance regeneration.
- Wind and snow damage occurred to leave-trees and stand edges in all treatments. After six seasons, the green tree (GT) treatments lost about 8 stems per ha (sph) or 29% of the leave-trees to damage and the shelterwood (SW) treatments lost 21 sph (10%). The patch cut (PC) and clearcut (CC) treatments lost the equivalent of 6 and 9 sph, respectively. Although trees in the intermediate crown class had the greatest total number of windthrown stems, the proportion of windthrow was greatest among dominants in both the GT and SW treatments. Western red cedar appeared to be more windfirm than either amabilis fir or western hemlock on well-drained soils. Permanent growth and yield plots show that total volume growth of residual stands has been affected by windthrow over the first 5 years, resulting in net negative growth in the green tree retention and shelterwood.

- Vegetation reached at least two-thirds of pre-harvest cover after 5 years in all treatments. Harvesting disturbance caused changes in the dominance and composition of shrub cover. The shelterwood maintained the greatest diversity of understory trees, shrubs and bryophytes compared to the other systems. Species gains exceeded losses on treatment plots; however, bryophytes and herbs that prefer moist, shaded habitats generally decreased after harvesting. Maintaining intact patches appears to be the best strategy for conserving vegetation diversity.
- Pre-harvest breeding bird communities were dominated by a few abundant species. Of 26 species detected, 4 species accounted for 64% of all bird detections, and 10 species accounted for 96%. Different levels of canopy retention produced dramatic effects upon breeding birds. Species richness and bird abundance were reduced 3 years after harvesting. Most common species (9 species) showed evidence of population decline, 2 species showed significant increase, and 3 species showed unchanged abundance. Few species were completely lost or added to the avifauna. Only 17 species were recorded during winter surveys, of which 2 species accounted for two-thirds of detections. The vast majority (85%) of winter resident birds were concentrated in the old-growth and the unlogged portions of patch cut blocks. Results suggest that patch retention can benefit resident birds.
- Greater snow depths occurred in the clearcut and other open treatments compared to the SW and uncut old-growth. Silvicultural systems can be used to modify the impacts of harvesting on snow accumulation, melting and other hydrological processes.

#### Effects of Prescribed Burning on Some Coastal BC Sites

Three research sites comparing a range of burning intensities with unburned areas are located southwest of Port Alberni in TFL 44. Fifteen-year year tree growth, vegetation and nutrition assessments were completed in fall 2000. The best growth of Douglas fir, western red cedar and yellow-cedar was on the highest intensity burns; however, these fires consumed significant amounts of nitrogen and other nutrients that may affect long-term productivity. Short-term foliar nutrition of the conifer species was not adversely affected by burning. Understory vegetation composition and cover differed significantly among burned and unburned treatments. High intensity fires reduced the cover of salal and other ericaceous shrubs. Reduced shrub competition was a primary factor causing improved tree growth. The first of three journal publications on fire effects, vegetation response and site productivity was completed. Papers on the latest measurements will be completed in 2001.

#### Salal-Cedar-Hemlock Integrated Research Program (SCHIRP)

This multi-agency research co-operative was established to determine the processes causing poorly performing plantations on salal-dominated sites in wet climates and to develop silvicultural treatments. A field trial funded by FRBC was established near Ucluelet within TFL 44 in March 1996 to test optimum combinations of species (Cw, Hw and 50-50 mix), fertilization (7 grams N and P),

mechanical site preparation (excavator spot scarification) and density (1,000 and 2,000 sph) for CwHw-Salal sites. This trial will help us extrapolate the SCHIRP results from northern Vancouver Island to a wider range of sites. Five year tree growth, vegetation cover and foliar nutrition measurements were completed in fall 2000. Highlights of findings include:

- After 5 growing seasons, western red cedar survival was over 95% while western hemlock survival ranged from 64% to 78%. Survival was poorest for western hemlock in the site preparation and fertilization treatment.
- Site preparation alone did not appear to affect seedling height or stem volume of either Cw or Hw. Fertilization significantly increased fifth year height in Hw. Combining site preparation with fertilization significantly increased fifth year height and stem volume over fertilization alone for both species. Fertilization caused a six-fold increase in fifth year Hw stem volume and more than tripled Cw stem volume. Both salal and deerfern cover were lower in plots with site preparation.
- In the main study, granular fertilizer was applied in a shovel hole near each planted tree. To test performance of alternative fertilizer delivery methods, a separate trial was established to test granular fertilizer with either surface or buried application, Silva-Pak "teabags", Apex Gold latex bags and unfertilized "controls." All fertilization methods delivered about 7 g of nitrogen near each planted seedling. The best responses were to either teabags or granular fertilizer applied 10cm deep. Granular fertilizer applied 10cm deep was the only fertilizer that significantly improved both height growth and volume growth of both species. Teabags improved both height growth and volume growth of Cw but not Hw. Granular fertilizer applied on the surface and the latex envelopes appear to be the least effective delivery methods for these species on salal sites.

#### **Fertilization Trials**

Three fertilizer experiments funded by FRBC were installed in two 10-to-13-yearold, spaced hemlock stands and one mixed (50:50 Hw:Fd) in TFL 39, Block 2. First season growth response was measured in fall 1999. The objectives were to measure volume per ha growth response to N and N + P and to examine whether stand measurements, foliar analysis or soil analysis provide any basis for selecting sites to fertilize. One hemlock stand received N at three levels, 0, 100 or 200 kg N per hectare and P at the same three levels in 3 x 3 factorial design. The other two stands received three fertilizers, N, N+P, or N+P+K+S, at each of the levels 0, 100, or 200 kg N per hectare.

Nitrogen and phosphorus together resulted in greater volume growth than N alone at two sites. At one site, volume growth response of hemlock was 12% to 200 kg N per ha, but 19% to 200 kg N + 100 kg P per ha. At the other hemlock site there was a 17% increase in stem volume growth caused by N fertilization at 200 kg N in the absence of P. At the mixed site, the average volume growth response of both hemlock and Douglas-fir to 200 kg N was 7%, and to 200 kg N + 100 kg P was 15%. Volume growth of Douglas-fir averaged 9% more than

hemlock. The NPKS fertilizer did not result in as great a response as the NP fertilizer.

#### **Growth and Yield Research**

In 2000 some 37 natural permanent plots, 104 thinning- fertilizer (experiments), 10 old-growth and 9 special thinning study plots were remeasured as part of Weyerhaeuser's remeasurement program of natural and managed permanent plot program.

In addition, 40 random prism/fixed area plots were established in several areas harvested by variable retention in 1999. The intent was to commence a long-term analysis of 'edge' effects on growth response within patches, among dispersed trees and in harvested areas with distance to trees or patches.

A total of 40 planted transects (40-60m long) were established on a variety of sites to examine the effect of shading on seedling growth response. Light was also monitored at most sites using a combination of sensor and fish-eye photography.

#### 4.4 Resource Protection

#### 4.4.1 Forest Project

In June of 1998, Weyerhaeuser BC Coastal Group announced a New Forest Management Strategy. Key components include phasing in variable retention over a five-year period and an increase in conservation of old-growth forests and wildlife habitat.

The implementation of the strategy is on schedule.

- In 2000, for all Company coastal operations, variable retention was applied on 62% of the area harvested. For TFL 39 the proportion of area harvested with variable retention was 51%. Refer to Table 1b in Appendix I.
- In 2000 a Scientific Panel was convened to review the Second Year's progress on implementation of the Forest Project. Fourteen scientists were invited to the workshop to act as an expert panel. About half of the scientists were nominated by environmental organizations and half by the Company. Also attending were representatives from seven environmental organizations and Weyerhaeuser. The Panel provided praise for both stand level implementation and progress in adaptive management. It also indicated that more work needed to be done in landscape forecasting and visualization. It noted that landscape context issues and old growth restoration on the east side of Vancouver Island were areas we needed to focus on for Year 3.
- Assessment and revisions of Stewardship Zones is ongoing. During 2000 consultation with Government and Divisional engineers has resulted in some shifting of zones. A complete ecological analysis of the zones has been conducted and was presented during the Year 2 Panel Review. This analysis will be redone following the 2001 revisions. It will compile a description of

each of the zones in terms of old-growth remaining, old-growth protected, and the extent to which reserve areas and ENGO concern areas have been incorporated.

- Emphasis has been placed on training. To-date, approximately 300 people have taken training courses covering safety, objectives, prescriptions and layout for variable retention. A video has been produced to introduce employees to the rationale and basic elements of the VR approach. There are plans to develop training videos that cover the detailed contents of the workshops.
- An evaluation was completed of 56 Variable Retention cutblocks representing 1676 hectares logged in 2000 to monitor performance and identify areas for improvement. Key findings from this Symmetree Consulting evaluation include:
  - Safety: some potentially dangerous trees were not cut or marked;
  - Sixty-eight percent of the blocks were rated as good to excellent examples of VR;
  - All of the blocks met the Company's standards for VR, although 14% had some question as to achievement of goals;
  - Average "forest influence" (portion of block within one tree height of some timber edge) was 80%—well above the 51% minimum requirement for the Retention system;
  - > A two-pass approach was prescribed on 11% of blocks sampled;
  - Visual impacts: many blocks had a portion (usually about 20 to 30%) that was judged as "too open" to meet visual goals;
  - About 80% of retention was judged to be of good to optimal ecological quality for wildlife.
- A strategy for windthrow planning and monitoring was also developed during 2000. A sample of individual VR cutblocks will be monitored each year to assess wind damage, record observations in a database and run analyses for trends. Findings will be communicated to operations to help improve cutblock planning. A windthrow hazard model designed by Dr. Steven Mitchell is being calibrated for Weyerhaeuser lands in coastal B.C. in order to complete hazard maps for all coastal operations over the next two years. Windthrow hazard maps were developed for Port McNeill Timberlands under a contribution agreement with the University of British Columbia. Preliminary design was completed for the windthrow monitoring program for testing in 2001.

The Variable Retention Working Group facilitates on-going development of planning and policies. This group of foresters, forest engineers and biologists representing the BC Coastal operations meets on a regular basis.

#### 4.4.2 Adaptive Management and Monitoring

The Adaptive Management (AM) and Variable Retention (VR) Working Groups have finalized a preliminary monitoring framework. It will use an extensive and intensive split:

• Extensive — The extensive or passive adaptive management framework will consist of monitoring structure and organism presence or absence along with windthrow and forest health problems in current and future VR settings. During 2000, 93 new VR settings were assessed for forest attributes including snags, coarse woody debris, live trees and stand structure, as well as evaluating lichens, birds, terrestrial gastropods, salamanders, aquatic breeding amphibians and squirrels as indicator organisms.

The program will continue to assess structural attributes in 2001 and will include birds, bryophytes and lichens, terrestrial and aquatic amphibians, terrestrial gastropods and squirrels in the organism assessment.

• Intensive — the intensive or active adaptive management framework will consist of five designed comparisons replicated three times and focused on specific stand level questions. Each Division will establish two or three comparison blocks over the next 4 years (15 total, Company-wide). Each block will have 4 or 5 treatments: clearcut, uncut (old-growth or 2<sup>nd</sup> growth), and two or three variable retention alternatives (20 ha minimum size for each treatment). The first installation in the Tsitika Landscape Unit will be harvested in the fall of 2001.

In addition to this intensive and extensive framework, the AM Working Group is refining the criteria and indicator approach summarized below: the refinements will be focusing on implementation of a scoring- and a management action threshold system. The linking of monitoring back to management action is a fundamental component of an effective operational AM program.

- Indicator 1- Representation (Coarse Filter) Ecologically distinct habitat types are represented across the tenure to maintain *lesser known species and ecological functions.*
- Indicator 2- Structure (Medium Filter) The amount, distribution, and heterogeneity of habitat and landscape elements are maintained over time.
- Indicator 3- Species (Fine Filter) Productive populations of species are well distributed throughout the tenure.

#### 4.4.3 Enhanced Forest Management Pilot Project [EFMPP]

The EFMPP was initiated with FRBC funding and is a combined Weyerhaeuser/Government initiative to develop a silvicultural investment strategy integrated with a total resource harvest plan for Block 2, TFL39. Phase 1 of the project was completed during 1998/99 with an analysis of the social and economic impact of spatial harvest constraints with clearcutting as the assumed harvest method. The results indicated Forest Ecosystem Networks and adjacency were the largest spatial constraints, and a spatial silviculture investment plan was developed to address these constraints and potentially relieve their AAC impact.

Subsequent to this, Weyerhaeuser has initiated a strategy to shift its harvest and silviculture systems from clearcutting to variable retention distributed within a framework of Stewardship Zones across all its tenures.

This led the Steering Committee to request a re-analysis of Block 2 forecasting and spatial constraint impacts under variable retention systems. During 2000 the spatial harvest-scheduling tool was used to conduct spatial and aspatial harvest schedules to determine the comparative difference in harvest volume, values and habitat supply between a variable retention schedule within a framework of stewardship zones and a clearcut schedule that complies with BCFP Code standards. The analysis has been completed and report writing is underway.

In addition, the Steering Committee requested the development and implementation of an Adaptive Management and Monitoring program to assess impacts of implementation of retention systems (refer to the notes on Adaptive management and Monitoring).

#### 4.4.4 Landscape Unit Planning

Training on implementation of the Landscape Planning Guidebook occurred during early 2000.

Landscape unit planning is well underway in both Blocks 1 and 2. Block 7 is on hold until the mid-coast planning process is completed and the lan landscape unit has the priority focus for QCI.

#### 4.4.5 Recreation/Landscape

Weyerhaeuser has built and maintains a number of campsites throughout TFL 39. The following activities were reported for 2000.

- Eve River: A total of eight sites were maintained at the Junction Pool (5), Tsitika Crossing (2) and Montague Creek(1) locations
- **Queen Charlotte:** A total of three sites in the Ferguson area were maintained by Queen Charlotte Timberlands.
- **Port McNeill:** The campsites maintained by Port McNeill are all located in Block IV. Six additional RV sites were added to the Clint Beek Recreation Site (making a total of 13). Other sites maintained include locations at Rupert Arm (2), Alice Lake (4), Kathleen Lake (4), and Maynard Lake (2).
- **Stillwater:** Campsites in this Division are located on some of the many lakes found in the area. The Powell Lake Canoe Route has a total of 17 sites. All these sites were maintained in 2000.

#### 4.4.6 Wildlife

Specific assessments occurred as part of operational planning. These included assessments of elk and deer winter habitat in Block 2, identification of deer winter range in Block 1, and assessment of goshawk nest activity and nest searches in Blocks 1, 2 and 6.

During 2000 Weyerhaeuser, through FRBC funding, was involved in population inventory of Northern Goshawks on Vancouver Island. This work was managed by the MoWLAP.

#### 4.4.7 Hydrology

Weyerhaeuser continued to participate in an FRBC project to collect flow data on the Benson River (from a previously established hydrometric station) in Block IV. The information will be added to the Ministry of Environment Lands and Parks database containing all hydrometric and climatic information available from hydrometric and weather stations located in the Vancouver Island Region.

#### 4.4.8 Soils

#### **Woodlands Waste Management Best Practices**

The Weyerhaeuser B.C. Coastal Woodlands Best Management Practices for Waste Management were updated. They are available on a website.

#### Landfill Spatial Database

This database was fine-tuned during 2000. More feedback and changes are planned before expected distribution to operations in 2001.

#### 5.0 Timber Processing

The following table lists the primary destinations for logs from TFL 39 in 2000. The total volume varies from Billed volume because of differences in reporting periods.

In 2000, 50% of TFL 39 log volumes went directly to Company sawmills and 27% (pulplogs) went to Pacifica's mills (primarily Powell River). Of the 23% that is categorized as resale, 4% were delivered to Fields Sawmills in Courtenay (as part of a log supply agreement between Weyerhaeuser and Fields) and 10% went to sawmills and cedar shake mills in the Vancouver/Fraser Valley area. These external sales are offset to some extent by mill purchases as logs are traded to better suit mill requirements.

Destination	2000 estimate (000 m <sup>3</sup> )	% of TFL 39 Harvest		
Weyerhaeuser Sawmills:				
Alberni Pacific, Port Alberni	244	8.2%		
Somass, Port Alberni	73	2.4%		
Chemainus	119	4.0%		
Island Phoenix, Nanaimo	222	7.4%		
New Westminister	276	9.2%		
Canadian White Pine, Vancouver	275	9.2%		
Custom Cut	276	9.2%		
Pacifica, Powell River	780	26.1%		
Pacifica, Port Alberni	23	0.8%		
Resale:				
Fields	119	4.0%		
Other Vancouver Island	92	3.1%		
Vancouver Area	298	10.1%		
North Coast	41	1.4%		
Other	148	4.9%		
Total	2,986	100%		

# 6.0 Employment and Economic Opportunities

#### Forest Renewal BC (FRBC)

Weyerhaeuser and FRBC have a 5-year Multi-Year Agreement (MYA) that extends through March of 2003. During 2000, funding for projects in TFL 39 totaled almost \$10 million. The wide range of funded activities included silviculture (e.g. brushing and weeding, juvenile spacing and pruning), assessments, inventories, stream rehabilitation and road deactivation. More details on the type of projects funded are described in Appendix I, Table 12.

#### **First Nations**

Relationships between Weyerhaeuser and local communities are important. Employment objectives include moving towards achieving a work force that broadly reflects the demographics of the local communities in which operations are located. Local Weyerhaeuser managers are responsible for developing relationships with local communities including First Nations.

Weyerhaeuser is currently developing business relationships and opportunities with several First Nation's groups in TFL 39. These relationships will be based

on sound business practices. The focus is on capacity building (training – development of skills) and on building enduring business relationships.

First Nations partners in the FRBC Multi-Year Agreement include the Sliammon, KwaKuitl Laich-Twil-Tach, Musgamagw, Heiltsuk, Quatsino and Haida. During 2000 they were involved in silviculture and in-stream work projects.

#### 7.0 Knowledge Gaps

Emphasis continues to be on addressing the uncertainties of the Forest Project of variable retention. Refer to Section 4.4.2 on adaptive management and monitoring and to the MASS project and growth and yield research in Section 4.3.5

#### 8.0 Administrationand Community Involvement

#### 8.1 Management Plan Process

The process for developing Management Plan (MP) #8 continued throughout 2000.

The Information Package was accepted by Timber Supply Branch in February.

In September the Timber Supply Analysis was submitted to Timber Supply Branch and the Twenty-year Plans were submitted to the Forest District Managers.

The draft Management Plan was submitted to the Vancouver Forest Region Manager in early November 2000. Public review of the draft MP extended from November 2000 until February 2001. It included:

 Advertisements were placed in regional and local papers to advise the general public:

that the draft MP #8 was available for review;

of locations where a copy of the draft MP #8 could be accessed;

of the schedule and locations of open houses for review and discussion of MP #8.

- Copies of the advertisement, a newsletter, a survey form and public input received to-date were sent to those on the TFL 39 mailing list.
- Copies of the draft MP #8, newsletter and survey form were made available at advertised locations.
- Open houses were held at ten locations in the Queen Charlotte Islands, the Mid-Coast, Northern Vancouver Island and Powell River during mid November.

 Special invitations were sent to First Nations groups to meet with them for discussion of issues of special concern.

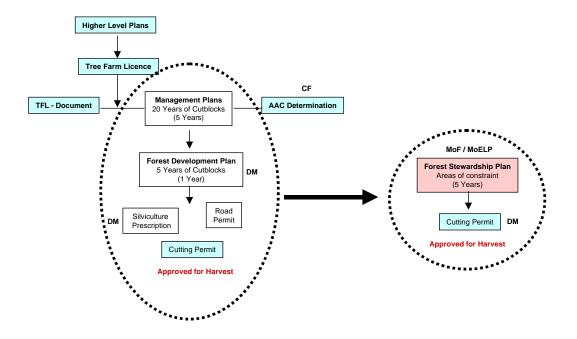
The MP #8 process and presentation benefited from various initiatives involving computer technology. A computerized planning tool was used to prepare the Twenty-Year Plan, resulting in substantial savings in cost and operational planning resources. The main presentation of maps was presented in a digital form, resulting in a more useful product (user can choose scale and combinations of themes, etc.) at a much reduced cost. Similarly the MP text, and particularly the appendicies, were distributed digitally.

#### 8.2 Stillwater Timberlands Pilot Project

In the summer of 1999, the BC government established a program (Part 10.1, FPC), for creating pilot projects to explore more efficient and less costly ways to combine forest management with the protection of social and environmental values.

The Stillwater Pilot Project area encompasses Block 1 of TFL 39, some 180,000 hectares near Powell River on the Sunshine Coast. Roughly half the area is productive forest land.

First Nations, local and regional governments and a community advisory group were invited to participate in the design of the Pilot Project. The input received during this process allowed a core team, consisting of Weyerhaeuser staff, government agencies and consultants, to produce a Detailed Proposal, Draft Regulations and a Zonation Map. The documents were made available for a 60day public review during the latter part of 2000 and will form the basis for the development and implementation of the Forest Stewardship Plan.



These documents were further reviewed with the Community Advisory Group, affected First Nations, the Association of B.C. Professional Foresters, the B.C. Environmental Network and the Forest Practices Review Board.

Some additional comment on the zonation map. The Community Advisory Group with Weyerhaeuser and agency staff defined forest stewardship zones for TFL 39 Block 1. This includes ten old-growth zones, six habitat zones and seven recreational and tourism zones. The zones and objectives for the zones were defined in the detailed proposal and will be referenced in the Stillwater Pilot Project Regulation and described in the Forest Stewardship Plan. Reserve zones and/or management zones have also been defined adjacent to specified trails. These are also (or will be) described in the documents referenced above. These zones and management areas will be recognized in future timber supply analyses.

#### 8.3 Forest Development Plans

Forest Development Plans (FDPs) were approved for operations in Blocks 1, 2, 5 and 6. Open houses for public review of FDPs were held at Powell River (Block 1), the Company Menzies Bay office (Block 2), Campbell River (Block 5) and in Masset, Port Clements, Sandspit and Queen Charlotte/Skidegate in the Queen Charlotte Islands. A draft FDP was prepared for Block 7 (Namu).

#### 8.4 Community Advisory Groups

Community (Public) Advisory Groups (CAGs) have now been formed at North Island Timberlands (TFL 39 Block 2 — Campbell River — Sayward area), Stillwater Timberlands (TFL 39 Block 1 — Powell River Area) and Port McNeill Timberlands (TFL Blocks 3&4 — Port McNeill/Port Hardy area). The latter two groups were formed in 2000. The Port McNeill group involves both Weyerhaeuser and Western Forest Products forest management areas on North Vancouver Island. The community advisory groups have a broad representation from the local community. They are proving to be effective in communicating community input and concerns and for developing joint understanding of forestry planning and issues.

#### 8.5 Other Community Involvement

Public events were attended to distribute information. These include the Port McNeill Fall Fair and a National Forestry Week display, and attendance at a children's festival in Campbell River.

Meetings were also held with specific interest groups and to discuss development plans for specific areas. For example these include meetings between Stillwater Timberlands and public groups on plans for Stillwater Bay, Hotham Sound and Haslam Street, and similarly between North Island Timberlands and the Sayward Community and community leaders.

#### TFL 39 Volume Harvested in 2000 Based on Cut Control Letter Issued by Vancouver Forest Region Volumes (m<sup>3</sup>)

Disala	Timberlands	Tanuna	L La	<b>F</b> in	Dine	Coder	0	Carries	Llamlask	Delegar	Desid	Total	Desidue	Total Cut
Block	Operation	Tenure	Ha	Fir	Pine	Cedar	Cypress	Spruce	Hemlock	Balsam	Decid	Billed	Residue	Control
I	Stillwater	Private		29 147	10	1 049		15	4 982	2	28	35 233	243	35 476
		TL							3			3		3
		Crown		178 096	38	59 968	11 931	342	134 556	29 236	356	414 523	16 102	430 625
		Total		207 243	48	61 017	11 931	357	139 541	29 238	384	449 759	16 345	466 104
II	North Island	Private												
		TL		20 789	252	103 889	16 882	497	124 580	68 003	4	334 896	13 792	348 688
		Crown		125 684	292	83 918	62 418	5 049	385 154	276 735	569	939 819	48 732	988 551
		Total		146 473	544	187 807	79 300	5 546	509 734	344 738	573	1 274 715	62 524	1 337 239
111	Port McNeill	Private		448		220		3 914	14 807	3	28	19 420		19 420
		TL		236	1	3 889	98	320	17 647	859	146	23 196	750	23 946
		Crown		134	4	2 237	10	1 199	54 493	10 852	119	69 048	5 456	74 504
		Total		818	5	6 346	108	5 433	86 947	11 714	293	111 664	6 206	117 870
IV	Port McNeill	Private		20	10	1 063	1	271	7921	1 039	2	10 327	3 862	14 189
		TL		6 844	75	21 650	2 665	590	31680	14 482	2	77 988	4 611	82 599
		Crown		4 551	23	33 484	10 708	2 070	114364	46 961	24	212 185	11 265	223 450
	0	Total		11 415	108	56 197	13 374	2 931	153 965	62 482	28	300 500	19 738	320 238
V	Stillwater	Private		10					10			70		70
		TL		19	00	00.477	8	6	40	00.007		73	1.0.10	73
		Crown		1 024	28	22 177	9 794	102	27 646	22 027		82 798	4 049	86 847
VI	000	Total		1 043	28	22 177	9 802	108	27 686	22 027		82 871	4 049	86 920
VI	QCD	Private			912 5	9 249 35 770	1 222 2 677	5 862 7 096	17 302 36 910		1	34 547 82 459	1 674 6 751	36 221 89 210
		TL		27 582	э 20 522	305 632	2 677 35 069	7 096 109 874	274 540	101	י 75	82 459 773 415	79 951	853 366
		Crown Total		27 582	20 522	305 632	35 069	109 874	328 752	<u>121</u> 121	75	890 421	88 376	978 797
VII	Port McNeill	Private		21 362	21 439	300 001	20 200	122 032	320 / 32	121	76	090 421	00 3/0	910 191
VII		TL												
		Crown		1	11	51 794	15 918	8 854	59 228	28 009		163 815	7 330	171 145
		Total		1	11	51 794	15 918	8 854	59 228	28 009		163 815	7 330	171 145
	I													
	ALL	Private		29 615	932	11 581	1 223	10 061	45 012	1 044	58	99 527	5 779	105 306
		TL		27 888	333	165 198	22 330	8 509	210 860	83 344	153	518 615	25 904	544 519
		Crown	4.007	337 072	20 918	559 210	145 848	127 490	1 049 981	413 941	1 143	2 655 603	172 885	2 828 488
		Total	4 095	394 575	22 183	735 989	169 401	146 060	1 305 853	498 329	1 354	3 273 745	204 568	3 478 313

# TFL 39 Logged Hectares by Silvicultural System - 2000 As Reported by the Timberlands Operations

Silvicultural	System and Variant	Hectares					
Non Variab	le Retention	Logged					
Clearcut		870					
	With Reserves	1,097					
	Group	47					
	Subtotal	2,014					
Patch Cut	Irregular	1					
Total Non V	/ariable	2,015					
Variable Re	Variable Retention						
Retention	Group	1,701					
	Dispersed	56					
	Group and Dispersed	282					
	Strip	8					
	With Reserves	19					
	Subtotal	2,066					
Patch Cut	With Reserves	13					
Selection	Dispersed	1					
Total Variat	ble Retention	2,080					
Grand Tota	al	4,095					
Percent Va	riable Retention	51%					

# Appendix I - Table 1c

# TFL 39 Volume Harvested by Operability Class -2000

As Reported by the Timberlands Operations <sup>(1)</sup> Excludes Residue Volumes (m<sup>3</sup>)

		First Growth		Second Growth					
Block	Conventional	Non-conventional	Marg. Economic	Conventional	Non-conventional	Total			
	48,748	67,881		331,306		447,935			
II	748,296	330,447		161,509		1,240,252			
III, IV	216,670	53,123		131,355		401,148			
V	42,708	37,999				80,707			
VI	624,520	77,848	7,751	63,745		773,864			
VII	95,871	29,712		27,032		152,615			
Total	1,776,813	597,010	7,751	714,947		3,096,521			

<sup>(1)</sup> Volume data (m<sup>3</sup>) based on Timberlands Operations records and may not agree with official BCFS billed volumes due to differing year-end dates.

# TFL 39 SBFEP Timber Harvested - 2000

Based on Billing from Vancouver Forest Region Volume (m<sup>3</sup>)

BCFS	Total
District	Volume
Mid Coast	29 575
Queen Charlotte	35 443
Sunshine Coast	40
Total	65 058

#### **APPENDIX I - Table 3**

#### TFL 39 Road Construction Report - 2000

		New C	Construction	n (km)	Debuilt
	Timberlands	Mainline			Road (1)
Block	Operation	Branch	Spur	Other	(km)
	Stillwater	23.9	24.3		
II	Eve	5.2	13.8		0.2
	Kelsey Bay	4.5	27.2		0.1
	Menzies Bay	15.2	21.6		0.4
	Total	24.9	62.6		0.7
111	Pt McNeill	26.3	0.8		
IV	Pt McNeill	20.1	0.4		
V	Stillwater	2.7	4.3		
VI	QC	20.9	49.0		
VII	Pt McNeill	3.1	0.2		
	Total	121.9	141.6		0.7

(1) Debuilt roads are defined as those in which the road structure has been rehabilitated as close to the original land profile as is feasible and, where practicable, restored to forest growing production.

#### TFL 39 Fire Report - 2000

		Number and Causes of Fires											
	Timberlands	Lightn	ing	Escape	e Slash	Opera	ational	Pub	lic	Total			
Block	Operation	No.	Ha	No.	Ha	No.	Ha	No.	Ha	No.	Ha		
I	Stillwater							5	Spot	5			
II	Eve River												
	Kelsey Bay	1	spot					1	spot	2	sp		
II	Menzies Bay												
111	Port McNeill	1	spot							1	sp		
IV	Port McNeill							1	spot	1	sp		
V	Stillwater												
VI	QC							1	7	1			
	Total	2						8	7	10			

			Area Burned	by Forest Fires (ha)		
Block	Operation	Mature	Immature	AAR	NSR	Total
I	Stillwater		spot			spo
II	Eve River					
II	Kelsey Bay				spot	spo
II	Menzies Bay					
111	Port McNeill	spot				spo
IV	Port McNeill	spot				spo
V	Stillwater					
VI	QC				7	
	Total				7	

				(	Hectares)					
						Brush/	Three	Alder		
	Timberlands		Broadcast	Burn		Grass	Metre	Seed Tree	Drainage	Total
Block	Operation	Tenure	Burn	Accum. <sup>(1)</sup>	Mechanical	Control	Knockdown	Control	Restore	Hectares
	Stillwater	Private		3						3
		Crown		20						20
		Total		23						23
II	Eve River	Private								
		Crown		5	22		21			48
		Total		5	22		21			48
	Kelsey Bay	Private								
		Crown		18	95		21			134
		Total		18	95		21			134
	Menzies Bay	Private								
		Crown		6	14		18			38
		Total		6	14		18			38
	Total	Private								
		Crown		29	131		60			220
		Total		29	131		60			220
III	Port McNeill	Private								
		Crown						20		20
		Total						20		20
IV	Port McNeill	Private								
		Crown		7						7
		Total		7						7
V	Stillwater	Private								
		Crown		3						3
		Total		3						3
VI	QC	Private								
		Crown		2	54		94		110	260
		Total		2	54		94		110	260
VII	Port McNeill	Private								
		Crown		12		10		12		34
		Total		12		10		12		34
	All Blocks	Private		3						3
		Crown		73	185	10	154	32	110	564
		Total		76	185	10	154	32	110	567

# TFL 39 Site Preparation - 2000 (Hectares)

<sup>(1)</sup> Actual hectares of roadside accumulations burned.

#### TFL 39 Summary of Planting - 2000 (000s of trees)

						Timbe	rlands Ope	ration				
		Bk I		Bk	c II		Bk III	Bk IV	Bk V	Bk VI	Bk VII	Grand
_		Stillwater	Eve	Kelsey	Menzies	Total	McNeill	McNeill	Stillwater	QC	McNeill	Total
Туре		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
of		Trees	Trees	Trees	Trees	Trees	Trees	Trees	Trees	Trees	Trees	Trees
Planting	Species	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)
	Ba	3.4	24.4	56.4		80.8		59.1			19.8	163.1
	Bg					0.0			4.8			4.8
	Bn	1.1				0.0						1.1
	Cw	197.2	28.4	96.0	11.9	136.3	19.5		82.6	134.4		770.8
	Су	52.4	29.3		11.9	154.8		49.6	11.6	12.3	71.1	351.8
	Df	442.7	43.6	136.2	80.0	259.8	21.7	3.2				727.4
	Hm		2.6	57.1		59.7						59.7
	Hw	2.4	29.5	347.9	48.8	426.2	6.5		46.2	142.8	21.2	733.1
	PI					0.0		5.0		232.9		237.9
	Pw	2.6				0.0						2.6
	Ss		4.0			0.0	13.5	7.1		247.4	9.8	277.8
	Se		1.0			1.0						1.0
	Total	701.8	158.8	807.2	152.6	1 118.6	61.2	330.2	145.2	769.8	204.3	
Fill	Ax	1.8	0.4	0.0		0.0						1.8
	Ba	1.9	2.1	0.8	0.0	2.9			5.0			4.8
	Cw	10.8	4.9	10.6	0.2	15.7	3.2		5.3 1.8			35.0 20.7
	Cy Df	10.9	1.0 7.4	6.0 12.8	1.0 1.8	8.0 22.0			1.0			20.7 25.2
	Hw	3.2 0.6	7.4 9.8	33.6	8.0	22.0 51.4			3.2			25.2 55.2
	Ss	0.0	9.0	55.0	0.0	0.0			3.2		1.8	1.8
	Total	29.2	25.2	63.8	11.0	100.0	3.2	0.0	10.3	0.0	1.8	144.5

TFL 39 Hectares Planted - 2000
(hectares)

	Timberlands				Total	Plant +
Block	Operation	Tenure	Normal	Fill	Hectares	Fertilize
I	Stillwater	Private	55		55	55
		Crown	504	69	573	573
		Total	559	69	628	628
II	Eve River	Private				
		Crown	137	6	143	93
		Total	137	6	143	93
	Kelsey Bay	Private				
		Crown	823	58	881	416
		Total	823	58	881	416
	Menzies Bay	Private				
		Crown	107	25	132	127
		Total	107	25	132	127
	Total	Private				
		Crown	1 067	89	1 156	636
		Total	1 067	89	1 156	636
	Port McNeill	Private				
		Crown	84	9	93	18
		Total	84	9	93	18
IV	Port McNeill	Private	42		42	
		Crown	298		298	57
		Total	340		340	57
V	Stillwater	Private				
		Crown	145	19	164	164
		Total	145	19	164	164
VI	QC	Private				
		Crown	1 061		1 061	739
		Total	1 061		1 061	739
VII	Port McNeill	Private				
		Crown	144	6	150	
		Total	144	6	150	
All	Total	Private	97		97	55
		Crown	3 303	192	3 495	2 187
		Total	3 400	192	3 592	2 242

Note: Planted and Fertilize hectares included in hectares planted.

			Natural			Plantation	
	Timberlands	Examined	Stocked	Percent	Examined	Successful	Percent
Block	Operation	(ha)	(ha)	Stocked	(ha)	(ha)	Successful
		St	ocking Surve	y	Surviva	l Survey (Fire	st Year)
I	Stillwater	109		0	270	255	94
II	Eve	172	23	13	345	339	98
	Kelsey Bay	571	42	7	349	308	88
	Menzies Bay	4	4	100	149	146	98
	Total	747	69	9	843	793	94
	Pt McNeill	54	47	87	9	9	100
IV	Pt McNeill	6	6	100	336	326	97
V	Stillwater	97		0	161	161	100
VI	QC	651	461	71	1 055	1 011	96
VII	Pt McNeill	48	48	100	209	197	94
	Total	1 712	631	37	2 883	2 752	95

# TFL 39 Plantation Survival And Regeneration Performance Report - 2000

		Regene	eration Perfor	mance	Regene	eration Perfor	mance
			(Third Year) (Third Ye		(Third Year)		
	Stillwater				753	753	100
	Eve	519	512	99	239	239	100
	Kelsey Bay	848	828	98	569	569	100
	Menzies Bay	858	848	99	205	205	100
	Total	2 225	2 188	98	1 013	1 013	100
	Pt McNeill				24	24	100
IV	Pt McNeill				689	675	98
V	Stillwater				235	230	98
VI	QC	1 061	1 024	97			
VII	Pt McNeill				329	329	100
	Total	3 286	3 212	98	3 043	3 024	99

#### Appendix I - Table 9

# TFL 39 Stand Tending - 2000 (hectares)

	Timberlands		Brushing/		Riparian		Plant +		Total
Block	Operation	Tenure	Weeding	Spacing	Spacing	Fertilize	Fertilize	Pruning	Hectares
I	Stillwater	Private	84				55		139
		Crown	867				573		1 440
		Total	951				628		1 579
	Eve River	Private							
		Crown	40	91	17		93		241
		Total	40	91	17		93		241
	Kelsey Bay	Private							
		Crown	27		65		416		508
		Total	27		65		416		508
	Menzies Bay	Private							
		Crown	26		47	2 353	127	13	2 566
		Total	26		47	2 353	127	13	2 566
	Total	Private							
		Crown	93	91	129	2 353	636	13	
		Total	93	91	129	2 353	636	13	3 315
111	Port McNeill	Private							
		Crown	20	6			18		44
		Total	20	6			18		44
IV	Port McNeill	Private							
		Crown		22		905	57	2	986
		Total		22		905	57	2	986
V	Stillwater	Private							
		Crown	124				164		288
		Total	124				164		288
VI	QC	Private							
		Crown	673	189			739		1 601
		Total	673	189			739		1 601
VII	Port McNeill	Private							
		Crown	23						23
		Total	23						23
All	Total	Private	84				55		139
		Crown	1 800	308	129	3 258	2 187	15	
		Total	1 884	308	129	3 258	2 242	15	

# Appendix I - Table 10

	Timberlands	Hydro	Dry	Total
Block	Operation	Seeding	Seedling	Hectares
	Stillwater	95		95
11	Eve River	19		19
	Kelsey Bay	14		14
	Menzies Bay	44		44
	Total	77		77
IV	Port McNeill	43		43
V	Stillwater	16		16
VI	QC		118	118
VII	Port McNeill	10		10
All	Total	241	118	359

# TFL 39 Erosion Control Seeding - 2000 (Hectares)

# TFL 39 Miscellaneous Stand Surveys and Assessments - 2000 (hectares)

				Stand	Post-	Site	Pre-Treat.		Total
	Timberlands	Pre-log	Post-log	Maintenance	Treatment	Degrade	Mechanical	Free	Area
Block	Operation	Prescript	Prescript	Prescript	Evaluation	Survey	Site Prep	Growing	Assessed
	Stillwater	507	145	1 381	88		1 403		3 524
II	Eve River	1 524	559		9			975	3 067
	Kelsey Bay	1 614						532	2 146
	Menzies Bay	835	255					899	1 989
	Total	3 973	814		9			2 406	7 202
111	Port McNeill	342	316		231	2		90	981
IV	Port McNeill	315	1 565	366	448	47		2 992	5 733
V	Stillwater	125		178	50		450		803
VI	QC		876					944	1 820
VII	Port McNeill	319	119		214	10		981	1 643
	Total	5 581	3 835	1 925	1 040	59	1 853	7 413	21 706

# TFL 39 Funding Credits - 2000

Block	Operation	Source	Activity/Description	\$	Ha	Km
I	Stillwater	FRBC	Backlog Forestry Surveys	23 106	168	
		FRBC	Brushing and Weeding	70 621	63	
		FRBC	Detailed Assessment - Riparian	12 800	150	
		FRBC	Enhanced Forestry Surveys	17 767	327	
		FRBC	Planting	18 934	8	
		FRBC	Pruning	46 901	21	
		FRBC	Riparian Rehabilitation	3 775		
		FRBC	Road Deactivation	528 541		41
		FRBC	Terrain EcoSys Mapping	306 101	5 218	
		FRBC	Water Quality Test (5)	27 209		
		FRBC	Wildlife Inventory	138 428	416	
		Total		1 194 183	6 371	41
=	North Island	FRBC	Backlog Forestry Surveys	118 255	1 224	
	Timberlands	FRBC	Brushing and Weeding	9 992	8	
		FRBC	Detailed Assessment - Instream	9 937		2
		FRBC	Detailed Assessment - Upslope Roads	100 711		83
		FRBC	Enhanced Forest Model Project	638 995	3 200	
		FRBC	Enhanced Forestry Surveys			
		FRBC	Enhanced Silvics Studies	25 645		
		FRBC	Fertilization	560 988	2 354	
		FRBC	Fish Habitat Assessment			
		FRBC	Fish Inventory	10 828		
		FRBC	Growth and Yield Projects	173 643		
		FRBC	Hillside Rehab	36 516	11	
		FRBC	Juvenile spacing	203 756	99	
		FRBC	Monitor/Evaluate Upslope			
		FRBC	Planting			
		FRBC	Pruning	35 820	13	
		FRBC	Riparian Treatment	57 246	22	
		FRBC	Road Deactivation	1 131 493		37
		FRBC	Silviculture Studies, Backlog	3 000		
		FRBC	Site Preparation	346 499	123	
		FRBC	Stream Rehab			
		FRBC	Surveys, Enhanced	25 456	5 041	
		FRBC	Terrain EcoSys Mapping	169 505	0011	
		FRBC	Wildlife Inventory	67 810	1 620	
		Total	Wildlife Inventory	3 726 095	13 715	122
III, IV	Pt McNeill	FRBC	Backlog Forestry Surveys	85 389	4225	122
111, TV		FRBC	Brushing and Weeding	80 193	53	
		FRBC	Detailed Assessment - Instream	11 007	55	6
		FRBC	Detailed Assessment - Riparian	11 007		0
		FRBC	Detailed Assessment - Upslope Roads	64 505		45
		FRBC	Enhanced Surveys	30 975	395	
		FRBC	Fertilization	257 239	528	
		FRBC	First Nations Training	75 027	9	
		FRBC	Fish Inventory	16 511	9	
		FRBC	Juvenile spacing	81 663	42	
		FRBC	Overview Assessment	21 043	42 8 500	
		FRBC	Riparian Rehabilitation	19 576	8 500 5	
		FRBC	Road Rehab	400 104	5	22
						32
		FRBC	Stream Rehabilitation	94 357	40 757	1
		Total		1 237 589	13 757	84

# TFL 39 Funding Credits - 2000

Block	Operation	Source	Activity/Description	\$	Ha	Km
V	Stillwater	FRBC	Brushing and Weeding	25 140	18	
		FRBC	Detailed Assessment - Upslope Roads	6 139		
		FRBC	Enhanced Forest Surveys	17 912	395	
		FRBC	Juvenile spacing	46 136	30	
		FRBC	Planting	34 597	16	
		FRBC	Road Deactivation	398 680		2
				528 604	459	2
VI	QC	FRBC	Backlog Forestry Surveys	81 637	3 039	
		FRBC	Brushing and Weeding	638 746	541	
		FRBC	Detailed Assessment - Instream	123 702	30	
		FRBC	Detailed Assessment - Roads	108 484	110	
		FRBC	Enhanced Surveys	10 681	181	
		FRBC	Fertilization	9 463	11	
		FRBC	Fish Inventory	124 827		1 48
		FRBC	Hillside Rehab	146 588	58	
		FRBC	Juvenile spacing	229 180	141	
		FRBC	Monitor/Evaluate Upslope	97 348		
		FRBC	Overview Assessment	57 536		33
		FRBC	Planting	22 703	13	
		FRBC	Road Deactivation	798 005		g
		FRBC	Silviculture Studies, Backlog	18 606		
		FRBC	Stream Rehab	314 676		
		FRBC	Wildlife Inventory	69 657	200 000	
		Total		2 851 839	204 124	1 93
VII	Pt McNeill	FRBC	Detailed Assessment - Instream	55 859		2
		FRBC	Enhanced Surveys	3,017		
		FRBC	Hillside Rehab	25 165		
		FRBC	Juvenile spacing	83 012	27	
		FRBC	Road Deactivation	91 076		
		FRBC	Stream Rehab	195 249		
		Total		453 378	27	3
	Total			9 991 688	238 426	2 23

# Weyerhaeuser Cone Collection - 2000

as of December 31, 2000

		Kilograms of Seed					
	Weyerhaeuser	Contract	Wild				
Species	Orchards	Orchards	Collections	Total			
Bn	17.5		32.2	49.7			
Cw		3.9		3.9			
Fd		14.9		14.9			
Pw		0.1		0.1			
Total	17.5	18.9	32.2	68.6			

#### APPENDIX II - Table 2

#### Weyerhaeuser Seed Inventory - 2000

		Weyerhaeuser	Seed Invento	ory <sup>(1)</sup>	
		Seed			
	Seed	Orchard	Wild	Total	Approx.
	Orchard	Control	Seed <sup>(2)</sup>	Seed	Seedlings
Species	Seed (gm)	Cross (gm)	(gm)	(gm)	(000's)
Ba			369 513	369 513	1 771
Bg			14 354	14 354	160
Bn			21 996	21 996	105
Cw	8 940		36 320	45 260	9 262
Fd	89 042	638	24 409	114 089	3 837
Hm			673	673	82
Hw	35 571		38 798	74 369	9 894
Lw			493	493	22
Plc			1 606	1 606	205
Pli			38	38	6
Pw	406		12 238	12 644	252
Ss	9 648		4 065	13 713	2 284
Sx			3 105	3 105	398
Sxs			525	525	39
Yc			83 484	83 484	2 475
Total	143 607	638	611 617	755 862	30 792

<sup>(1)</sup> Does not include seed from 2000 collections

 $^{\rm (2)}\,$  Wild seed from all seed zones are included

# Planting Stock Inventory and Sowing Request

	Planting Stock Inventory plus Request						
	(	000s of Trees)					
	Spring	Fall 2001 /					
Species	2001	Spring 2002	Total				
Ва	145	170	315				
Bn	4	97	101				
Cw	1,854	2,228	4,082				
Dr	35	26	61				
Fdc	2,978	4,412	7,390				
Hm		68	68				
Hw	793	1,425	2,218				
Plc	172	159	331				
Pw	146	179	325				
Ру	1		1				
Ss	308	403	711				
Sx	6	8	14				
Yc	168	685	853				
Total	6,610	9,860	16,470				

as of December 31. 2000

Note: 2 072 000 Fdc was sown using seed from USA.