

**Weyerhaeuser BC Coastal Group**

**2000 ANNUAL REPORT**

**ALBERNI TREE FARM LICENCE**

**No. 44**

**March, 2002**

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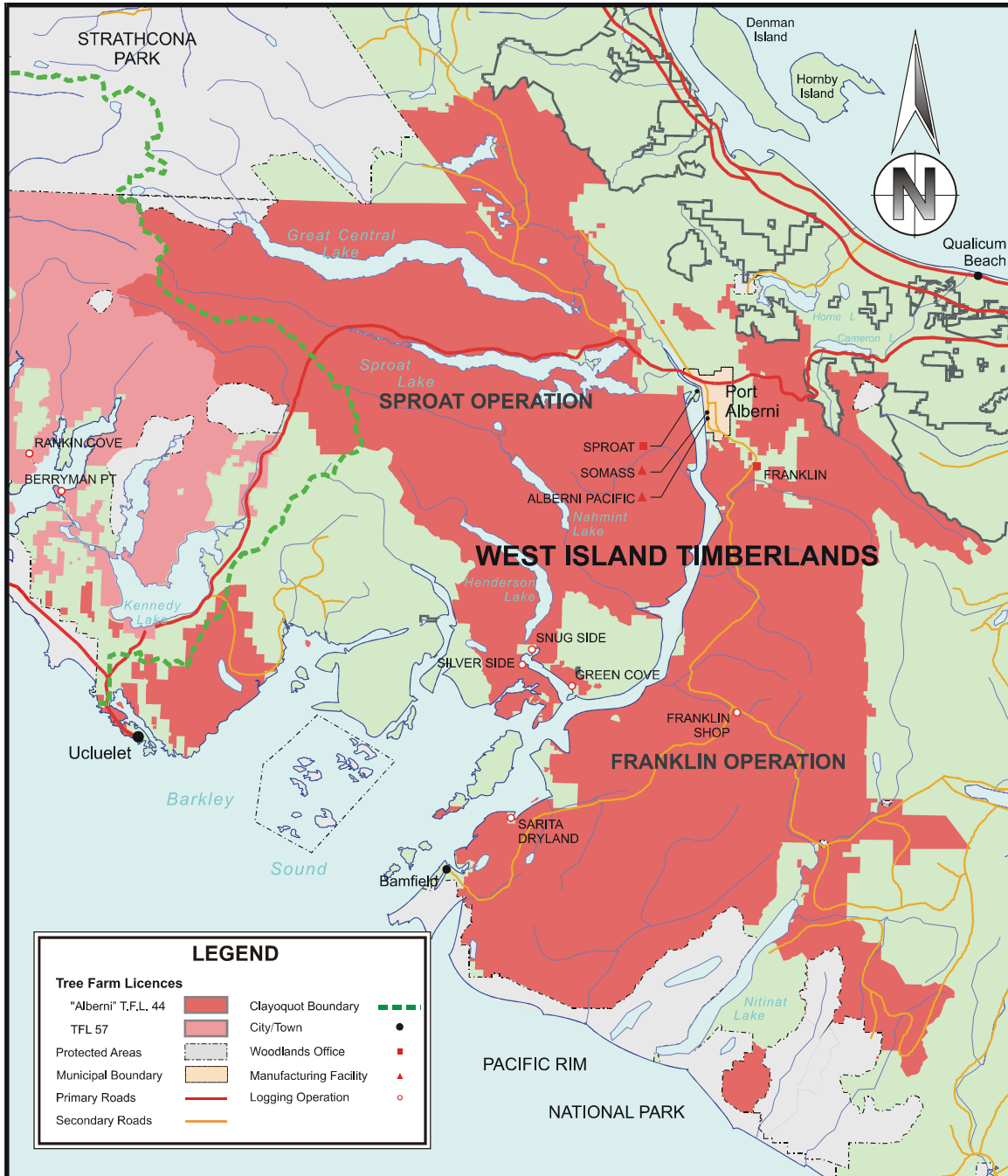
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## 1.0 Introduction

TFL 44 is located in west-central Vancouver Island in the vicinity of the communities of Port Alberni, Ucluelet and Bamfield. It extends from Strathcona Park in the north to Walbran Creek in the south, including land from the Pacific Ocean to the Beaufort Range and Mount Arrowsmith. Refer to the location map.



The TFL is held by Weyerhaeuser with management by West Island Timberlands. It is located in and administered by the South Island Forest District as part of the Vancouver Forest Region (Ministry of Forests)

TFL 44 covers over 320 000 ha, of which approximately 270 000 ha is productive forestland. The current Management Plan (#3) is for the period to December 31, 2002, and has an Allowable Annual Cut (AAC) of 1 766 200 m<sup>3</sup>/year. This total TFL 44 AAC includes 81 608 m<sup>3</sup>/year allocated to the Small Business Forest Enterprise Program (SBFEP) and 48 994 m<sup>3</sup>/year allocated elsewhere resulting from the transfer of TFL 44 from MacMillan Bloedel Limited to Weyerhaeuser in November 1999.

The TFL 44 Annual Report for 2000 describes achievements in meeting management obligations and objectives.

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

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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 44 the proportion was also 64%. This is 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.
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- 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
<b>Timberlands</b>			
North Island	Certified	Certified	Certified
West Island	Certified	Certified	Certified
Port McNeill		Certified	
<b>Manufacturing Facilities — Primary</b>			
Chemainus		Certified	Certified
Somass			Certified
<b>Manufacturing Facilities — Secondary</b>			
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 Management Standards and the ISO environmental Management System Standard.

- Progress has continued on projects that have evolved from the Alberni Co-design project and re-engineering initiatives of recent years. This includes implementation of a back-hauling process for transporting logs out of and into the Alberni Valley (as logs are traded to better suit mill requirements) and development of a system for delivering fibre directly from logging sites to mills.
- The Ministry of Forests, South Island District and Franklin Operation signed a one-year Fibre Flow Memorandum of Understanding to streamline the approval process for harvesting and road construction and hence to increase the harvesting and roading approval levels. The initiative was a success. A review at the end of September showed that the target measures for approvals had been exceeded.
- 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 Westminster (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 Plan (HLP) for TFL 44 came into effect in 2000. The Vancouver Island Land Use Plan Higher Level Plan Order took effect on December 01, 2000. This HLP 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.
- 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**

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#### **3.1 Timber Harvesting**

##### **3.1.1 Volumes Harvested by Weyerhaeuser**

The year 2000 cut control statement for TFL 44 has not been formally released by the Ministry of Forests because the under-cut for the period of 1995 to 1999 has not yet being resolved. Volumes reported here and in other sections of this report are preliminary estimates. Such estimates of Weyerhaeuser harvested volumes (including residue) on private and Crown land within the TFL are as follows:

Private	395 705 m <sup>3</sup>	26%
Timber Licences	482 484 m <sup>3</sup>	32%
Crown	<u>645 891 m<sup>3</sup></u>	<u>42%</u>
TOTAL	<u>1 524 081 m<sup>3</sup></u>	<u>100%</u>

Details of harvested volumes by operation, tenure and species are found in Appendix I, Table 1a.

##### **3.1.2 Cutting Balance**

This is the first year in the 2000-2004 Cut Control period. The preliminary estimate is that harvest in 2000 was 93.2% of the Allowable Annual Cut (AAC).

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Cut control status is shown below.

<b>YEAR</b>	<b>2000</b>
Weyerhaeuser AAC (m <sup>3</sup> )	1 635 598
Actual Cut (m <sup>3</sup> )	
Log Scale	1 456 002
Residue	68 079
Total Actual Cut (m <sup>3</sup> )	1 524 081
Percent of AAC	93.2%

Changes in 1999 have affected the TFL 44 AAC and its allocation. These changes are summarized in the following table. They include:

- A reduction in the TFL 44 AAC by 123 800 m<sup>3</sup> resulting from the transfer of much of the Clayoquot Working Circle to TFL 57.
- A reduction in the TFL 44 AAC available to the Licensee. With the transfer of TFL 44 from MacMillan Bloedel to Weyerhaeuser, the Licensee's AAC attributable to Crown Land has been reduced by 5%.

The changes in the TFL 44 AAC and its allocation that occurred during 1999 are summarized in the following table:

	<b>TFL 44 before Oct 27, 1999</b>	<b>Less TFL 57</b>	<b>TFL 44 net of TFL 57</b>	<b>Less SBFEP</b>	<b>Less 5% for company transfer</b>	<b>Net Company Allocation</b>
TFL 44 Economic (excl. Clayoquot)	1 720 000		1 720 000			
Marginal Economic <sup>(1)</sup>	40 000		40 000			
Total (excl. Clayoquot)	1 760 000		1 760 000			
Clayoquot	130 000	123 800	6 200			
<b>Total TFL 44</b>	<b>1 890 000</b>	<b>123 800</b>	<b>1 766 200</b>	<b>81 608 <sup>(2)</sup></b>	<b>48 994</b>	<b>1 635 598</b>

<sup>(1)</sup> The MP #3 AAC allocation includes 40 000 m<sup>3</sup> from the marginal economic inventory category.

<sup>(2)</sup> The original allocation of TFL 44 AAC to SBFEP was 89 873 m<sup>3</sup>. Of this, 8 265 m<sup>3</sup> was transferred with TFL 57 and the balance (81 608 m<sup>3</sup>) remains in the residual TFL 44.

### 3.1.3 Volumes Harvested by SBFEP

Volume harvested in SBFEP sales during 2000 totaled 56 339 m<sup>3</sup> (refer to Appendix I, Table 2). The SBFEP harvest volume and allocation 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> )	121 802	39 740	77 387	88 994	56 339

### 3.1.4 Compliance with Contractor Requirements

Contractor requirements are described in Section 14 of the current TFL 44 Licence Agreement. Further details on the calculation procedure are prescribed in the Contractor Clause Compliance Regulation.

For 2000, 124.8% of compliance was achieved. The calculation is summarized as follows:

	Reference #	Volumes (m <sup>3</sup> )
Weyerhaeuser Allocation of TFL 39 AAC	#1	1 635 598
Weyerhaeuser AAC attributed to Schedule B lands	#2	930 884
Weyerhaeuser harvest (excludes residue)	#3	1 456 002
Harvest volume attributed to Schedule B lands (#3 X #2 / #1)	#4	828 669
Volume target for Contractor requirements (0.5 X #4)	#5	414 334
Total Volume contracted	#6	517 291
% compliance ((#6 / #5) X 100)		124.8%

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

Full Contracts:	403 008	78%
Phase Contracts (in equivalent volume harvested)		
Roads	114 283	
Sub-total	114 283	22%
<b>Total</b>	<b>517 291</b>	<b>100%</b>

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 97% (403,008 cf. a target of 414, 334).

### 3.1.5 Second-Growth Harvest

In the approval letter for MP #3, the Chief Forester requested; "I would like to see performance in harvesting second growth stands near the minimum harvest age during the term of this plan."

The MP #3 second-growth harvest strategy (Section 6.57 of MP #3) makes provision for first harvest pass opportunities at an earlier age than previously considered. For simplicity they were grouped as follows:

Species Association	Site Index Range (m)	Minimum Harvest Age (years)
Douglas-fir	<27	70
Douglas-fir	>=27	50
Western hemlock	<27	60
Western hemlock	>=27	40

The approach for reporting on the 2000 second-growth harvest include:

- Species is based on the leading species (most stands contain a mixture of species).
- Where available, age is from the operational cruise. Areas have been grouped by 10-year age classes.
- The site indexes are grouped as shown in the following table.

The total second-growth harvest volume reported in the following table differs slightly from volumes reported in Table 1c.

Leading Species	Site Index Range (m)	Age Class (years)	Harvest Volume (m <sup>3</sup> )	% of Harvest
Douglas-fir	>=36	41-50	6 101	2.1%
		51-60	64 267	22.6%
		61-70	29 554	10.4%
		71-80	1 589	0.6%
	31-35	61-70	19 708	6.9%
		71-80	36 276	12.8%
		81-90	7 140	2.5%
		91-100	10 949	3.9%
	27-30	51-60	7 951	2.8%
		71-80	6 059	2.1%
		91-100	14 123	5.0%
	<21	151+	427	0.2%
Western hemlock	>=36	51-60	7 303	2.6%
		61-70	12 345	4.3%
	31-35	51-60	31 292	11.0%
	27-30	101+	16 046	5.6%
	21-26	81-90	6 609	2.3%
		101+	6 328	2.2%
<b>Total</b>			<b>284 067</b>	<b>100%</b>

### 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 there was 801 000 m<sup>3</sup> of first growth harvested in the conventional economic class and 210 000 m<sup>3</sup> in the non-conventional economic class. A further 28 000 m<sup>3</sup> classified as marginal economic was logged. In addition 275 000 m<sup>3</sup> of second-growth timber was harvested. These numbers differ from the MoF Billed volume (Table 1a) due to differing year-end dates. Harvest Profile production is shown in Appendix I, Table 1c.

## 3.2 Higher Level Plans

The Vancouver Island Higher Level Plan (HLP) took effect on December 1, 2000. The HLP 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 the forthcoming Management Plan #4.

### 3.3 Inventories

#### 3.3.1 Visual Landscape

An update (to MoF 1997 standards) of the visual landscape inventory was completed in 2000. The recommended visual quality classes in this inventory will be used in the analysis for MP #4.

The South Island Forest District Manager has made Scenic Areas known within TFL 44. Two scenic area zones are defined. Zone 1 includes the more visually sensitive areas such as the area around Port Alberni, the Alberni Canal, the Port Alberni to Ucluelet highway and the Nahmint Watershed. Zone 2 identified somewhat lower priority visual landscape areas such as the Great Central Lake and the road from Port Alberni to Bamfield.

#### 3.3.2 Terrain

Most of TFL 44 has been mapped for terrain stability; however, the mapping in different areas has occurred at various times during the past 25 years at various levels of detail and to different standards.

A three-year FRBC-funded project was initiated in 2000. The purpose of this project is to ensure that Crown land and Timber Licences in TFL 44 will have terrain stability mapping which conforms to current RIC standards, satisfies the BC FPC Regulations and meets operational planning needs.

The assessment report completed after the first year provides a review of existing mapping, identifies gaps, and includes a work plan for the following two years.

#### 3.3.3 Timber

A program to test (or audit) the accuracy of the TFL 44 mature (1970s) inventory was completed in 2000. The results of these tests, summarized in the following table, show no significant difference between the test plot volumes and the inventory.

**Table 1.1 Results of Inventory Audits in TFL 44**

TFL 44 Block	Average volume (m <sup>3</sup> /ha)		No. of Sample Points	T	Critical t Value
	Inventory	Audit			
1 (Cameron)	732.9	758.5	69	<b>0.5065</b>	1.9955
2 (Nitnat)	962.5	960.3	98	<b>-0.0427</b>	1.9847
3 (Sproat Lake)	662.8	611.7	92	<b>0.8744</b>	1.9731
4 (Henderson)	541.9	622.5	75	<b>1.4793</b>	1.9761

During 2000, 477 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 44, 10 second-growth and 17 nutrition were measured in 2000.

### **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, landscape-level 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. A final digital product was completed for the Klanawa Watershed in 2000. A completed product for the Sarita Watershed is expected in 2001.

### **3.3.5 Cultural Heritage Resources**

The locations of culturally modified trees [CMTs], discovered during surveys of proposed harvest blocks, have been entered into a GIS coverage. This information will contribute towards determination of allowances for CMTs in the MP #4 analysis.

A number of surveys and studies of cultural heritage resources are underway or have been completed. They include Traditional Use Studies and Archaeological Inventory Studies, and many have been funded by FRBC. This information contributes towards the design of field surveys for identifying cultural heritage resources during operational planning. A summary of the completed surveys will be included in the 2001 TFL 44 Annual Report.

### **3.3.6 Coastal Watershed Assessment Procedures (CWAPs)**

As directed by the District Manager, CWAPs were completed for the Sproat Lake community watershed, Macktush Creek and Cous Creek.

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## **4.0 Success in Meeting Management Objectives**

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

Refer to Section 3.1.

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## **Nahmint Watershed Harvest Level**

Consistent with the commitment in Section 4.31 of MP #3, harvest levels in the Nahmint Watershed have been guided by the schedule described in the South Island District Manager's letter of March 27, 1997. Harvest in the Nahmint Watershed during 2000 is estimated as 130,911 m<sup>3</sup>.

For the years 1997 to 2000, the total harvest is estimated at 300,000 m<sup>3</sup> compared to the target (total for the four years) of 360,000 m<sup>3</sup>. Unless otherwise directed Weyerhaeuser will continue to harvest, on average, within the directed rate of cut for the period to 2003. As in 2000, individual year harvests may be relatively high but that will be balanced by low harvests in other years (e.g. 1997 to 1999) to result in an average that does not exceed the target average.

### **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**

One fire (caused by the general public and occurring on 0.5 ha), was reported in 2000. See Appendix I, Table 4 for details.

Burning of roadside accumulations on grapple yarder operations and areas where piles were made by mechanical piling or windrowing amounted to 21 ha (see Appendix I, Table 5).

Aerial fire watch patrols were carried out by Forest Industries Flying Tankers (FIFT) within two hours after each shift whenever moderate fire hazard extended for more than three days. During the past year, a total of 33 fire watch patrols were flown. In addition, 11 patrol missions were flown during periods of high fire hazard.

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

#### **4.2.2 Insects**

No major changes in insect activity were noted in 2000. Pheromone baited traps continue to be used for ambrosia beetle control in log storage areas.

#### **4.2.3 Disease**

Pre-harvest mapping is used to locate the root rot *Phellinus werri* in second-growth harvest areas. Stumping (after harvest) has been the most common treatment in severely infected areas.

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## **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 226 ha during 2000. Major treatments (by area) included mechanical scarification, three metre knockdown, and burning accumulations. 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.

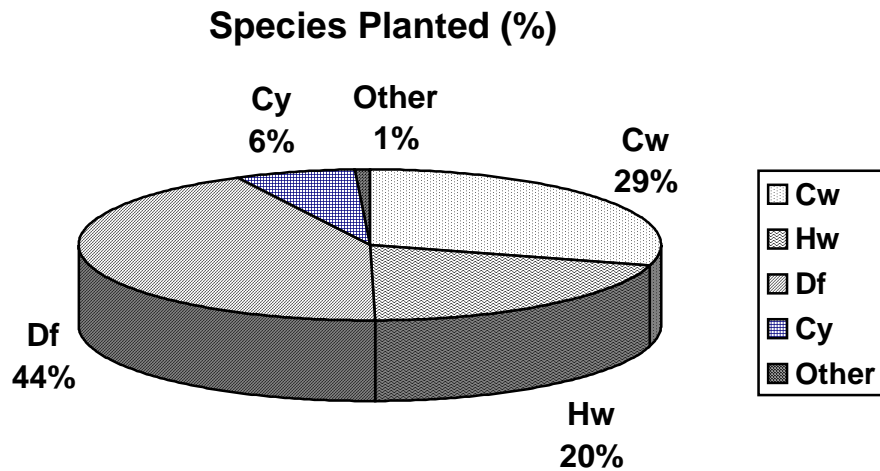
The forest genetics program of Weyerhaeuser's BC Coastal Group deals with supply of genetically improved seed for reforestation use on both Crown and Private Lands.

In 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 embryogenesis as an alternative technique for Douglas fir.

#### **Planting**

Planting was completed on 1 414 of Area Awaiting Restocking (AAR) using 1 771 300 seedlings. Fill planting was done on 224 ha using 153 800 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.



A total of 4 092 hectares were examined during 2000 to ascertain the condition of stocking and to schedule appropriate treatments. Details are found in Appendix I, Table 10, Regeneration Surveys.

#### 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 8.

Treatment	(hectares)
Brushing/Weeding	468
Riparian Spacing	6
Fertilization	446
Fertilization at Planting	1 293
Pruning	52
<b>Total</b>	<b>2 265</b>

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

#### 4.3.3 Erosion Control

A total of 116 ha were dry- or hydroseeded during 2000. Both roadside and slide areas were treated. Details are found in Table 9 of Appendix I.

#### 4.3.4 Assessments

Assessments and audits are performed to ensure work is done to prescribed standards.

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 10, Silvicultural Assessments, lists the details of the 12 453 ha assessed in 2000. In addition, regeneration surveys occurred on 4 092 ha.

#### 4.3.5 Operational Research

Operational research is carried out in several of Weyerhaeuser's Coastal BC operations. Results can be applicable to TFL 44 when species, site index, terrain and biological conditions are considered. Work in 2000 included:

##### **Montane Alternative Silvicultural Systems (MASS)**

Research continued on the cooperative 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: <http://www.pfc.cfs.nrcan.gc.ca/practices/mass/>

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 center 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.
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- 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

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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 cooperative 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-year-old, 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

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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 44 the proportion of area harvested with variable retention was 64%. 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
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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
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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 four 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*.
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- **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 Landscape Unit Planning**

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

It is expected that work will commence on priority landscape units in 2001.

#### **4.4.4 Recreation/Landscape**

Franklin Woodlands maintains campsites located in campgrounds on Flora, Sarita, and Nitinat Lakes.

Alberni West has a campground at the MacTush Log Dump. Scouts Canada manages the 52-site campground.

#### **4.4.5 Wildlife**

Area specific assessments of deer winter habitat and goshawk nest activity were undertaken.

During 2000 Weyerhaeuser, through FRBC funding, was involved in population survey work on the Northern Goshawk on Vancouver Island. The work was managed by the MoWALP

A report on Marbled Murrelet Nesting Habitat Evaluations in TFL 44 was completed in 2000. This FRBC-funded project assessed 26 areas for Marbled Murrelet nesting suitability and tested the practicality of doing such ratings from a helicopter.

#### **4.4.6 Hydrology**

Weyerhaeuser continued to be involved in FRBC-funded hydrometric studies in the Upper Nahmint and Walbran Watersheds. For more detail refer to the 1999 Annual Report.

Rainfall shutdown criteria (for operations) were introduced in 2000. The primary purpose of these criteria is worker safety — they were developed in conjunction with the Workers Compensation Board (WCB).

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#### 4.4.7 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 44 in 2000. The total volume varies from the billed volume because of differences in reporting periods.

In 2000, 62% of TFL 44 log volumes went directly to Company sawmills and 17% (pulplogs) went to Pacifica's mills, mostly in Port Alberni. Of the 21% that is categorized as resale, more than half were delivered to sawmills and cedar shake mills on Southern Vancouver Island. These external sales are offset to some extent by mill purchases as logs are traded to better suit mill requirements.

Destination	1999 estimate (000 m <sup>3</sup> )	% of TFL 39 Harvest
<b>Weyerhaeuser sawmills:</b>		
Alberni Pacific, Port Alberni	332	24.9%
Somass, Port Alberni	237	17.8%
Chemainus	129	9.7%
Island Phoenix, Nanaimo	24	1.8%
New Westminister	57	4.2%
Canadian White Pine, Vancouver	<1	0.0%
Custom Cut	50	3.8%
<b>Pacifica</b>		
Port Alberni	221	16.6%
Powell River	10	0.7%
<b>Resale:</b>		
Vancouver Island	138	10.3%
Lower Mainland	33	2.5%
Other	102	7.7%
<b>Total</b>	<b>1,333</b>	<b>100%</b>

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## 6.0 Employment and Economic Opportunities

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### Franklin Forest Products

Weyerhaeuser is committed to the Mediation Plan for Franklin Forest Products, dated April 29, 1994. The current economic plan provides up to 40 000 cubic meters of marginally economic timber to be harvested annually by Franklin Forest Products. The timber is harvested under cutting permits issued to Weyerhaeuser pursuant to TFL 44. During 2000 the MoF scale for these cutting permits, including residue, amounted to 18 374 m<sup>3</sup>.

### Cooperation with Local Companies

Local initiatives include working with other local companies such as Franklin Forest Products, Coulsen Forest Products and Nagaard Sawmills, where a common approach is to direct fibre to the most appropriate mill. The participants benefit from this more efficient use of the timber resource.

### 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 44 totaled close to \$3.9 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 11.

### First Nations

Weyerhaeuser is committed to continuing the development of mutually beneficial relationships with First Nations whose communities are within the TFL operating area. Initiatives supported by Weyerhaeuser include:

- The development of independent Aboriginal contract logging businesses through the allocation of timber volumes for harvesting.
- Business alliances with several First nations in salvage and minor forest product recovery programs.
- Employment in silvicultural work.
- Employment in archaeological assessment work.
- Working with First Nations on fishery projects.

Refer to Appendix III of MP #4 for a fuller description of economic co-operation and business relationships between Weyerhaeuser and First Nations.

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## **7.0 Knowledge Gaps**

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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

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## **8.0 Administration and Public Involvement**

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### **8.1 Management Plan Process**

Management Plan #3 continues until December 2002. Although the process for developing Management Plan #4 (for the period 2003 to 2007) does not formally commence until 2001, considerable work occurred during 2000 on preparation of data for the MP #4 analysis. Refer to Section 3.3 on inventories. Meetings on inventories and assumptions for the analysis were held with Regional and District MoF and District MoELP staff.

### **8.2 Alberni Forest Information Centre**

The Alberni Forest Information Centre, located on the Harbour Quay in Port Alberni, hosted over 20 000 visitors during 2000. Attendance was down slightly from the previous year, reflective of the overall decrease in tourism numbers for the Pacific Rim. School presentations and tours involved 2 579 students and 83 program activities. A total of 75 public forestry, and mill tours (new for 2000) were made available to 460 visitors. Customer tours made up the majority of the 28 other tours conducted, involving 352 visitors.

The Information Centre participated in the Alberni Valley Rock and Gem Show in March which attracted 1 589 people. During National Forest Week (May) the judging for the 10<sup>th</sup> Annual Tree Growing contest was held. As well, the Forest Information Centre had a display at the Alberni District Fall Fair (September) with over 3 600 visiting the booth over the four-day event.

### **8.3 Forest Development Plans (FDP)**

A Forest Development Plan (2000-2004) was submitted and approved for Alberni East. Public review meetings were held in Bamfield, Port Alberni, Duncan and Victoria.

Preparation of a FDP for Alberni West included public review meetings at the Sproat Lake Community Hall, the Echo Centre and MacLeans Sawmill. In addition three open house meetings were held to discuss harvest plans for two areas in the West Bay area of Sproat Lake.

### **8.4 Public Advisory Group**

The West Island Woodlands Advisory Group (WIWAG) was initially formed to meet public input and consultation requirements for attaining CSA Z809 Sustainable Forest Management certification standards. The group has a broad representation from the local community and is continuing to be effective in

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communicating community input and concerns and for developing joint understanding of forestry planning and issues.

APPENDIX I - Table 1a

**TFL 44 Volume Harvested in 2000**  
Based on Cut Control Letter Issued by Vancouver Forest Region  
Volumes (m<sup>3</sup>)

Working Circle	Tenure	Ha	Fir	Pine	Cedar	Cypress	Spruce	Hemlock	Balsam	Decid	Total Billed	Residue	Total Cut Control
Alberni East	Private		104,022	275	10,091	686	29	78,895	4,125	47	198,170	13,210	211,380
	TL		23,709	2,816	101,568	7,808	1,470	175,616	63,851	6	376,844	23,258	400,102
	Crown		32,626	3,849	173,296	9,833	587	172,031	71,170	22	463,414	13,126	476,540
	<b>Total</b>	<b>1,199</b>	<b>160,357</b>	<b>6,940</b>	<b>284,955</b>	<b>18,327</b>	<b>2,086</b>	<b>426,542</b>	<b>139,146</b>	<b>75</b>	<b>1,038,428</b>	<b>49,594</b>	<b>1,088,022</b>
Alberni West	Private		137,512	270	12,996	884	337	21,758	3,134	77	176,968	7,282	184,250
	TL		20,445	301	17,930	2,212	25	32,067	8,057	3	81,040	1,344	82,384
	Crown		47,893	469	21,261	7,580	21	50,403	25,116	31	152,774	9,858	162,632
	<b>Total</b>	<b>581</b>	<b>205,850</b>	<b>1,040</b>	<b>52,187</b>	<b>10,676</b>	<b>383</b>	<b>104,228</b>	<b>36,307</b>	<b>111</b>	<b>410,782</b>	<b>18,484</b>	<b>429,266</b>
Clayoquot	Private												
	TL												
	Crown			36		3,815	99	119	854	111	5,034		5,034
<b>Total</b>			36		3,815	99	119	854	111	5,034		5,034	
Ucluelet	Private				73						73		73
	TL												
	Crown				1,650		36				1,686		1,686
	<b>Total</b>				1,723		36				1,759		1,759
<b>Total</b>	Private		241,534	545	23,160	1,570	366	100,653	7,259	124	375,211	20,492	395,703
	TL		44,154	3,117	119,498	10,020	1,495	207,683	71,908	9	457,884	24,602	482,486
	Crown		80,555	4,318	200,022	17,512	763	223,288	96,397	53	622,908	22,984	645,892
	<b>Total</b>	<b>1,780</b>	<b>366,243</b>	<b>7,980</b>	<b>342,680</b>	<b>29,102</b>	<b>2,624</b>	<b>531,624</b>	<b>175,564</b>	<b>186</b>	<b>1,456,003</b>	<b>68,078</b>	<b>1,524,081</b>

Note: The volumes harvested in Clayoquot and Ucluelet Working Circles are salvage volumes and have no hectares recorded.

Appendix I - Table 1b

**TFL 44 Logged Hectares  
by Silvicultural System - 2000**  
As Reported by the Timberlands Operations

Silvicultural System and Variant		Hectares
<b>Non Variable Retention</b>		Logged
Clearcut		563
	With Reserves	69
Total Non Variable		632
<b>Variable Retention</b>		
Retention	Group	388
	Dispersed	
	Group and Dispersed	726
	With Reserves	13
	Subtotal	1,127
Shelterwood	Group	15
	Irregular	6
	Subtotal	21
Total Variable Retention		1,148
<b>Grand Total</b>		1,780
Percent Variable Retention		64%

Appendix I - Table 1c

**TFL 44 Volume Harvested by Operability Class - 2000**

As Reported by Timberlands Operations <sup>(1)</sup>

Excludes Residue  
Volume (000 m<sup>3</sup>)

	TFL 44 excluding Clayoquot	Clayoquot	Total
First Growth			
Conventional	796	5	801
Non-Conventional	210		210
Marginal	28		28
<b>Total</b>	<b>1 034</b>	<b>5</b>	<b>1039</b>
Second Growth			
Conventional	274		274
Non-Conventional	1		1
<b>Total</b>	<b>275</b>		<b>275</b>
<b>Grand Total</b>	<b>1 309</b>	<b>5</b>	<b>1 314</b>

- (1) Volume data is based on Timberlands Operations and may not agree with official MoF scale due to differing year-end dates.
- (2) Volumes exclude residue.
- (3) Harvest volumes do not include SBFEP.
- (4) Conventional, Non-Conventional and Marginal categories are based on inventory classification and not on actual harvest method.
- (5) The Clayoquot volumes are salvage volumes and are arbitrarily assigned to the Conventional operability class.



APPENDIX I - Table 2

**TFL 44 SBFEP Timber Harvested - 2000**  
 Based on Billing from Vancouver Forest Region  
 Volume (m3)

BCFS District	Total Volume
South Island	56 339

APPENDIX I - Table 3

**TFL 44 Road Construction Report - 2000**

Operation	New Construction (km)			Debuilt Road (1) (km)
	Mainline Branch	Spur	Other	
Franklin	11.5	75.8		2.0
Sproat	13.2	36.4		1.3
Contract	5.0	10.1		
<b>Total</b>	<b>29.7</b>	<b>122.3</b>		<b>3.3</b>

- (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.

APPENDIX I - Table 4

**TFL 44 Alberni Timberlands Fire Report - 2000**

Number and Causes of Fires										
Operation	Lightning		Escape Slash		Operational		Public		Total	
	No.	Ha	No.	Ha	No.	Ha	No.	Ha	No.	Ha
Franklin							1	0.5	1	0.5
<b>Total</b>							<b>1</b>	<b>0.5</b>	<b>1</b>	<b>0.5</b>

Area Burned by Forest Fires (ha)					
Operation	Mature	Immature	AAR	NSR	Total
Franklin		0.5			0.5
<b>Total</b>					<b>0.5</b>

APPENDIX I - Table 5

**TFL 44 Site Preparation - 2000**  
(Hectares)

Operation	Tenure	Burn Accum. <sup>(1)</sup>	Mechanical	Three Metre Knockdown	Total Hectares
Franklin	Private	2	46		48
	Crown	15	32		47
	<b>Total</b>	<b>17</b>	<b>78</b>		<b>95</b>
Sproat	Private	2	28	45	75
	Crown		8	46	54
	<b>Total</b>	<b>2</b>	<b>36</b>	<b>91</b>	<b>129</b>
Contract	Private				
	Crown	2			2
	<b>Total</b>	<b>2</b>			<b>2</b>
<b>Total</b>	Private	4	74	45	123
	Crown	17	40	46	103
	<b>Total</b>	<b>21</b>	<b>114</b>	<b>91</b>	<b>226</b>

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

APPENDIX I - Table 6

**TFL 44 Summary of Planting - 2000**  
(000s of trees)

Type of Planting	Species	Operation			Grand Total
		Franklin	Sproat	Contract	
		No. Trees (000s)	No. Trees (000s)	No. Trees (000s)	No. Trees (000s)
<b>Normal</b>	Bg		1.3		1.3
	Bn	1.3	1.1		2.4
	Cw	344.7	99.5	76.7	520.9
	Cy	77.0	25.7	11.5	114.2
	Df	281.3	351.9	125.6	758.8
	Hm	6.0	2.1		8.1
	Hw	224.9	95.2	39.8	359.9
	Pw		5.5		5.5
	W			0.2	0.2
	<b>Total</b>	<b>935.2</b>	<b>582.3</b>	<b>253.8</b>	<b>1 771.3</b>
<b>Fill</b>	Cw	89.0	0.2	4.7	93.9
	Cy			4.3	4.3
	Df	14.3	1.7	2.9	18.9
	Hw	30.2	3.3	2.2	35.7
	Ss	0.8			0.8
	Se	0.2			0.2
	<b>Total</b>	<b>134.5</b>	<b>5.2</b>	<b>14.1</b>	<b>153.8</b>

APPENDIX I - Table 7

**TFL 44 Hectares Planted - 2000**  
(hectares)

Operation	Tenure	Normal	Fill	Total Hectares	Plant + Fertilize
Franklin	Private	250	31	281	280
	Crown	513	172	685	609
	<b>Total</b>	<b>763</b>	<b>203</b>	<b>966</b>	<b>889</b>
Sproat	Private	155		155	131
	Crown	294	5	299	126
	<b>Total</b>	<b>449</b>	<b>5</b>	<b>454</b>	<b>257</b>
Contract	Private				
	Crown	202	16	218	147
	<b>Total</b>	<b>202</b>	<b>16</b>	<b>218</b>	<b>147</b>
<b>Total</b>	Private	405	31	436	411
	Crown	1 009	193	1 202	882
	<b>Total</b>	<b>1 414</b>	<b>224</b>	<b>1 638</b>	<b>1 293</b>

Note: Planted and Fertilize hectares included in hectares planted.

Appendix I - Table 8

**TFL 44 Stand Tending - 2000**  
(hectares)

Operation	Tenure	Brushing/ Weeding	Riparian Spacing	Fertilize	Plant + Fertilize	Pruning (1)	Total Hectares
Franklin	Private	17		16	280		313
	Crown	224			609		833
	<b>Total</b>	<b>241</b>		<b>16</b>	<b>889</b>	<b>0</b>	<b>1 146</b>
Sproat	Private	19			131		150
	Crown	189	6	430	126		751
	<b>Total</b>	<b>208</b>	<b>6</b>	<b>430</b>	<b>257</b>	<b>0</b>	<b>901</b>
Contract	Private						0
	Crown	19			147	52	218
	<b>Total</b>	<b>19</b>			<b>147</b>	<b>52</b>	<b>218</b>
<b>Total</b>	Private	36	0	16	411	0	463
	Crown	432	6	430	882	52	1 802
	<b>Total</b>	<b>468</b>	<b>6</b>	<b>446</b>	<b>1 293</b>	<b>52</b>	<b>2 265</b>

(1) pruning of white pine for forest health reasons

Appendix I - Table 9

**TFL 44 Erosion Control Seeding - 2000**  
(Hectares)

Operation	Tenure	Hydro Seeding	Dry Seeding	Total Hectares
Franklin	Private	20		20
	Crown	67	1	68
	<b>Total</b>	<b>87</b>	<b>1</b>	<b>88</b>
Sproat	Private	11		11
	Crown	13		13
	<b>Total</b>	<b>24</b>		<b>24</b>
Contract	Private			
	Crown	4		4
	<b>Total</b>	<b>4</b>		<b>4</b>
<b>Total</b>	Private	31		31
	Crown	84	1	85
	<b>Total</b>	<b>115</b>	<b>1</b>	<b>116</b>

APPENDIX I - Table 10

**TFL 44 Miscellaneous Stand Surveys and Assessments - 2000**  
(hectares)

Silvicultural Assessments

Operation	Pre-Harv Prescript	Post-Harv Prescript	Stand Maintenance Prescript	Post Treatment Evaluation	Free-to- Free Grow	Green-up Surveys	Site Degradation Surveys	Root Rot Surveys	Total Area Assessed
Franklin	1 996	1 163	363	66	1 316	382	299		5 585
Sproat	994	1 103	80		1 357		1 734	77	5 345
Contract		12	131		971	392	17		1 523
<b>Total</b>	<b>2 990</b>	<b>2 278</b>	<b>574</b>	<b>66</b>	<b>3 644</b>	<b>774</b>	<b>2 050</b>	<b>77</b>	<b>12 453</b>

Regeneration Surveys

Operation	Survival	Walk- through	Stocking	Regen Performance	Regen Delay	Total Area Assessed
Franklin	926	1349	105	710	159	3249
Sproat		253			168	421
Contract	28	250	51	93		422
<b>Total</b>	<b>954</b>	<b>1852</b>	<b>156</b>	<b>803</b>	<b>327</b>	<b>4092</b>



APPENDIX I - Table 11

**TFL 44 Funding Credits - 2000**

Operation	Source	Activity/Description	\$	Ha	Km
Alberni	FRBC	Archaeological Study	92 361		
Timberlands	FRBC	Backlog Forestry Surveys	149 608	3 926	
	FRBC	Brushing and Weeding	498 050	366	
	FRBC	Detailed Assessment - Instream	24 826		10
	FRBC	Detailed Assessment - Upslope Roads	48 977		31
	FRBC	Enhanced Forest Inventories	32 213	898	
	FRBC	Fertilization	108 200	433	
	FRBC	Fish Habitat Assessment	6 891		6
	FRBC	Forest Health Treatment	64 796	52	
	FRBC	Gully Rehabilitation	30 428	4	
	FRBC	Juvenile Spacing	56 329	21	
	FRBC	Monitor/Evaluate Upslope	18 528		
	FRBC	Overview Assesemnt/Plan	19 661	24 220	
	FRBC	Park Improvement	30 894		
	FRBC	Road Deactivation	1 515 373		44
	FRBC	Road Rehabilitation	113 290		13
	FRBC	Site Preparation	29 189	6	
	FRBC	Stream Rehab	370 304		4
	FRBC	Terrain EcoSys Mapping	381 723		
	FRBC	Terrain Stability Mapping	84 133	16 000	
	FRBC	Water Quality Testing	193 058		
	FRBC	Wildlife Inventory	30 053	65 950	
<b>Total</b>			<b>3 898 885</b>	<b>111 876</b>	<b>108</b>

1) This table may include some activity that occurred in TFL 57 (formerly TFL 44)

APPENDIX I I - Table 1

**Weyerhaeuser Cone Collection - 2000**  
as of December 31, 2000

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

APPENDIX II - Table 2

**Weyerhaeuser Seed Inventory - 2000**

Species	Weyerhaeuser Seed Inventory <sup>(1)</sup>				
	Seed Orchard Seed (gm)	Seed Orchard Control Cross (gm)	Wild Seed <sup>(2)</sup> (gm)	Total Seed (gm)	Approx. Seedlings (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
<b>Total</b>	<b>143 607</b>	<b>638</b>	<b>611 617</b>	<b>755 862</b>	<b>30 792</b>

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

<sup>(2)</sup> Wild seed from all seed zones are included

APPENDIX II - Table 3

**Planting Stock Inventory and Sowing Request**  
as of December 31. 2000

Species	Planting Stock Inventory plus Request		
	(000s of Trees)		
	Spring 2001	Fall 2001 / Spring 2002	Total
Ba	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
Py	1		1
Ss	308	403	711
Sx	6	8	14
Yc	168	685	853
<b>Total</b>	<b>6,610</b>	<b>9,860</b>	<b>16,470</b>

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