

MacMILLAN BLOEDEL LIMITED

1997 ANNUAL REPORT

ALBERNI TREE FARM LICENCE

No. 44

SEPTEMBER 1998

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Chief Forester
Director, Resource, Tenures and Engineering Branch
Regional Manager, Vancouver Forest Region
District Manager, South Island Forest District

BC ASSESSMENT AUTHORITY

Manager Farm & Forest Advisory Service

FISH & WILDLIFE BRANCH

Habitat Protection Officer

DEPARTMENT OF FISHERIES & OCEANS

Senior Habitat Biologist

MacMILLAN BLOEDEL LIMITED

Corporate Counsel, Law Department
Vice President, Woodlands
Vice President, Chief Forester
Manager, Sustainable Forestry
Manager, Forest Data and Analysis
Library, Corporate Forestry—Nanaimo
Planning Forester
Operational Forester
Inventory Analyst
Manager, West Island Division
Manager, Sproat Lake Operation
Manager, Clayoquot Division
Forester, West Island Division
Forester, Sproat Lake Operation
Forester, Clayoquot Division
Forestry Visitor Centre, Port Alberni

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STATEMENT OF AUTHORSHIP

Duane W. Partee, RPF (Ret), has prepared this TFL 44 Annual Report under the direction of P.J. Kofoed, RPF, Planning Forester for MacMillan Bloedel Limited.

The staff from the following Woodlands Divisions/Operations supplied information for this report: Franklin Woodlands, Alberni West and Clayoquot Divisions, and Corporate Forestry—Nanaimo.

P.J. Kofoed, RPF
Planning Forester

MacMillan Bloedel Limited
Solid Wood Group

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1.0 SUMMARY

1997 was the seventh year of Management Plan No. 2 for TFL 44. It was the third of the five-year cut control period 1995-1999.

1.1 Organization of Operations

A reorganization of operations at the beginning of 1997 resulted in three Divisions as follows:

Franklin Woodlands	Blocks I and II.
Alberni West	Blocks III and IV, and Part of Block V.
Clayoquot	Most of Block V and Blocks VI, VII, and VIII.

The Alberni West and Clayoquot (Kennedy) Divisions were formed in areas previously managed as Sproat Lake and Kennedy-Estevan operations.

This divisional organization (1997) is used throughout the report.

A further reorganization occurred in early 1998. Franklin Woodlands and Alberni West have been combined to form the West Island Division. The Sproat Lake operations are administered from the Sproat Lake office. Other areas (1998) including Franklin Woodlands, the Ucluelet Working Circle and the contract operations at Great Central Lake and Henderson Lake are now administered from the Franklin Woodlands office.

The Clayoquot Division continues (1998) to administer activities in the Clayoquot Working Circle of TFL 44.

1.2 General Comments

Poor market conditions in Japan and high costs contributed to a difficult year. Consequently, in the latter part of 1997, MB initiated an intensive review of all aspects of its business. The results of this process will occur largely in 1998.

In the late summer and fall, demand decreased significantly in the Japanese market, particularly for hemlock/balsam lumber products. Demand for redcedar products (mainly sold in the North American market) remained relatively firm during this period. The USA softwood quota restrictions prevented BC companies from redirecting Japan destined lumber to the USA.

Coastal BC continued to be a high cost producer in 1997. Substantial cost increases have occurred in recent years, mainly from increased costs of regulations and from additional stumpage charges.

The result was a significant reduction in harvesting during the last half of 1997, particularly in operations heavy to hemlock and balsam. MB's two whitewood sawmills, Alberni Pacific Division (APD) in Port Alberni and Island Phoenix Division (IPD) in Nanaimo had substantial down time because of the very poor market opportunities.

A comprehensive review of management strategies and operations occurred in late 1997 and early 1998.

The company reaffirmed its commitment to the solid wood products industry in BC. MB's goal is to be a highly respected forest products company. This includes attaining high standards in safety and business success.

Strategies will be developed during 1998 to achieve these goals. The strategies include:

- A dedicated effort to improve safety in the work place.
- Initiating with the IWA a program of co-designing operations, of involving all employees in improving safety and productivity and reducing costs. Competitive operations are critical for both corporate success and for the health of the local economy including provision of employment opportunities.
- Restructuring of operations to reduce overhead costs.
- A thorough examination of forest management practices including traditional clear-cutting. This is in response to market and general public concerns.
- A review of manufacturing and distribution operations to determine more effective ways of meeting customer needs.

1.3 1997 Highlights

- The Annual Allowable Cut for the third year of the current Cut Control Period is 2 138 127 m³. This excludes the SBFEP allocation of 89 873 m³. The total amount of timber harvested in 1997 including residue, was 1 389 408 m³. The volume applied to Cut Control is 1 367 796 m³ when the Undercut Carry Forward Adjustment (21 612 m³) is applied. The AAC compliance is then 64.0%.
- Total contractor production was 541 863 m³, a compliance of 128.1 percent.
- New road construction totaled 105.0 km.
- One operational fire consumed 1.5 ha.
- Site preparation was completed on 238 ha.
- A total of 2 843 ha were planted using 3,136,400 trees. Fill planting 216 ha required 194,000 trees.
- Brushing and Weeding was done on 1 331 ha.
- Stand tending (spacing, fertilization and pruning) was completed on 1 985 ha.
- Management Plan No. 3 was approved for the period 1998 to 2002.
- Public input continued to influence the various plans being developed by MacMillan Bloedel.

2.0 PRODUCTION AND CUT CONTROL

Total TFL 44 production and performance in relation to the AAC is discussed in this section. Individual Working Circle statistics and activities are covered in Section 3.

2.1 Volumes Harvested by MacMillan Bloedel

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

Private	33 675 m ³	2%
Timber Licenses	590 847 m ³	43%
Crown	<u>764 886 m³</u>	<u>55%</u>
Total	<u>1 389 408 m³</u>	<u>100%</u>

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

The percentage of log scale by species and Working Circle is as follows:

Species	Working Circle				
	Alberni East	Alberni West	Clayoquot	Ucluelet	All
Douglas-fir	4	14	1		6
Cedar	38	14	66	80	33
Cypress	1	9	10	5	3
Spruce				1	
Hemlock	42	37	14	10	40
Balsam	15	25	9	1	17
Other		1		3	1
Total	100	100	100	100	100

2.2 Production by Harvest Profile

The Chief Forester's letter setting the TFL 44 AAC (December 31, 1993) required reporting the harvesting performance by operability harvest profiles. Results are based on divisional volume data (excluding residue) and on the inventory classification for operability. In 1997, there was 1 092 306 m³ of first growth harvested in the conventional economic class and 55 631 m³ in the non-conventional economic class. A further 71 233 m³ classified as marginal economic was harvested and 10 455 m³ was from second-growth stands. The details of the Harvest Profile production are shown in Appendix I, Table 1a. Since these volumes are based on the divisional volume reports they differ from the data shown in Table 1 of Appendix I. Appendix I, Table 1B details annual harvest volumes by working circle and operability class for the period 1994 to 1997. Table 1c shows these harvest values adjusted to correspond to official cut control numbers. These results show that harvest targets for non-conventional and marginally economic timber types have on average been achieved or exceeded during the period 1994 to 1997. The table also shows low harvest

volumes in the Clayoquot Working Circles largely a result of the Clayoquot Sound decision and planning process.

2.3 Volumes Harvested by SBFEP

The Small Business Forest Enterprise Program continues to harvest timber in TFL 44. The billed volume in 1997 was 39 740 m³ excluding residue. Details are found in Appendix I, Table 2. Note that the SBFEP harvest volumes are not required for the cut control calculations relative to MacMillan Bloedel's AAC allocation. The following table shows the volume harvested over the last four years. Note that residue may not be billed every year.

Year	1994	1995	1996	1997
Volume Harvested (m ³)	42 036	25 555	121 802	39 740

2.4 Residue

Residue is measured and reported annually for the TFL. Residue and waste applied to Cut Control is the volume billed through the Stumpage and Royalty system in the reporting year, regardless of the year scaled.

A total of 889 plots were established in 93 openings (1 946 ha) in 1997 to measure residue and waste for Cut Control purposes. A total of 76 598 m³ was charged to the AAC in 1997.

2.5 Cutting Balance

This is the third year in the 1995-1999 Cut Control period and the production amounted to 64.0% of the AAC.

YEAR	1995	1996	1997	Total
MB AAC (m ³)	2 138 127	2 138 127	2 138 127	6 414 381
Actual Cut (m ³)				
Log Scale	1 983 963	1 643 863	1 312 810	4 940 636
Residue	168 182	118 962	76 598	363 742
Total Actual Cut (m ³)	2 152 145	1 762 825	1 389 408	5 304 378
Undercut Adj.	(21 612)	(21 612)	(21 612)	(64 836)
Total Cut Control Volume	2 130 533	1 741 213	1 367 796	5 239 542
Percent of AAC	99.6%	81.4%	64.0%	81.7%

1997 harvest levels by Working Circle are shown below:

Working Circle	AAC Contribution m ³	Estimated SBFEP Allocation m ³	MB Allocation m ³	Volume Harvested Including Residue m ³
Alberni East	1 168 000	33 600	1 134 400	1 065 386
Alberni West	571 000	25 700	545 300	295 036
Clayoquot	405 000	29 893	375 107	20 287
Ucluelet	34 000	680	33 320	8 699
Marginal Economic ⁽¹⁾	50 000		50 000	
Total	2 228 000	89 873	2 138 127	1 389 408

- (1) The AAC for TFL 44 includes 50 000 m³ allocated to the marginal economic inventory category. This harvest volume has not been allocated by working circle. The working circle harvest totals include volumes of marginal economic timber. Refer to the discussion in Section 2.2.

The low harvest in the Clayoquot Working Circle is largely a result of the Clayoquot Sound decision and planning process. Elsewhere harvests were depressed because of poor markets, particularly in Japan.

2.6 Contractor Production

The percent compliance achieved under the contractor clause regulation was 128.1 percent.

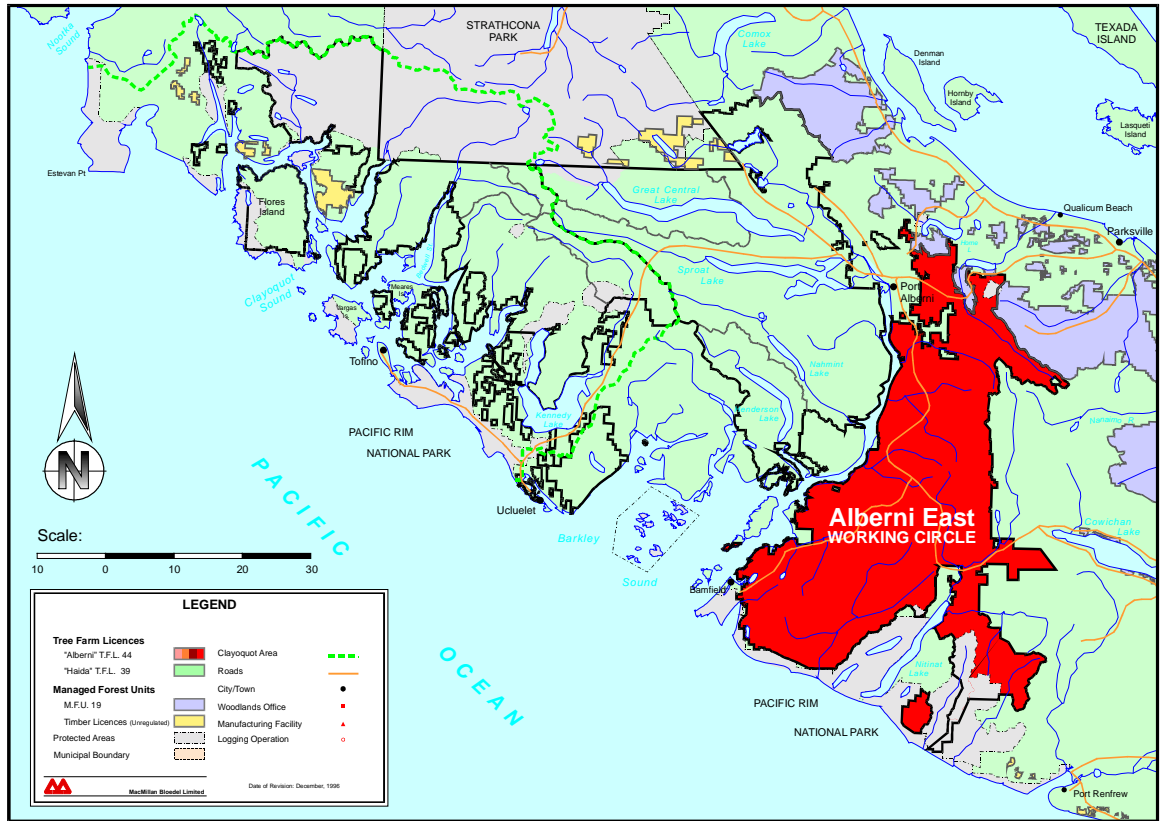
Summary of Contractor Production (m³)

• Full		462 582	85%
• Phase (equivalent volume processed)			
. Roads	73 844		
. Hauling	<u>5 437</u>	<u>79 281</u>	<u>15%</u>
• TOTAL		<u>541 863</u>	<u>100%</u>

3.0 WORKING CIRCLES

Management Plan No. 2 established four Working Circles as basic management units within TFL 44. The AAC for TFL 44 is partitioned by the Working Circle to facilitate geographic distribution of the cut. This portion of the Annual Report contains comments on the harvesting activities in each Working Circle.

Alberni East Working Circle Administered by Franklin Woodlands



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3.1 Alberni East Working Circle

The Alberni East Working Circle is located east of the Alberni Canal, from the town of Port Alberni, south to the Pacific Ocean. Major drainages include the Cameron, Franklin, Sarita, and Klanawa Rivers and China, Coleman, and Carnation Creeks. It is made up of Blocks I and II of TFL 44 and has 139 500 ha of productive hemlock, balsam, cedar and fir forests. The current (1997) partitioned AAC is 1 168 000 m³. Franklin Woodlands administered this Working Circle during 1997.

3.1.1 Annual Harvesting

Franklin Woodlands harvested 1 065 386 m³ in 1997. This volume includes 54 648 m³ of residue (5.1% of the total) charged to the cut. In addition to conventional harvesting methods, longline and/or helicopter systems were used to harvest the timber. A selective logging system is being reviewed for possible future use.

3.1.2 Engineering Development

Mainline access was extended to the Pacific Rim National Park boundary from Black Lake. After major construction of bridges and culverts in 1996, no new construction of this type was undertaken.

3.1.3 Development Plans

The Five-Year Development Plan submitted in June 1997 was approved. Public consultations were held in Bamfield, Victoria, Duncan and Port Alberni.

3.1.4 Cutting Permits

The following Cutting Permits were active in 1997:

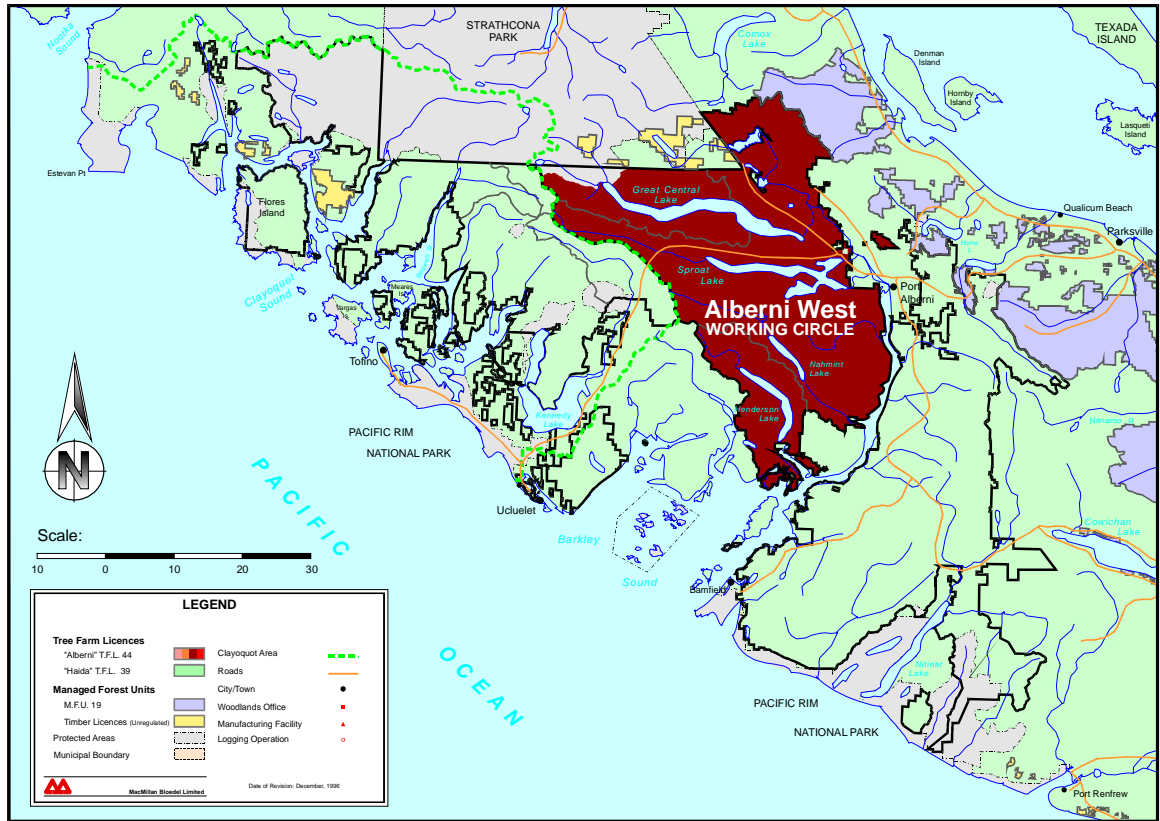
Cutting Permit No.	Location/Drainage	Cutting Permit No.	Location/Drainage
1, 101	Cameron	3	Sarita
2, 202	Franklin	303, 314	West Klanawa
205, 206	Granite	304	Klanawa
207	Parsons Creek	305, 309, 310, 311, 315, 317, 318, 319, 320, 324, 325, 326	Central Klanawa
208	Coleman Creek	307	Darling/Klanawa
209	Worthless Creek	308	Gorge/Klanawa
210	Walbran	312	Sarita Lake
212, 217, 218	Nitinat	313, 4	Sarita River
213	Haddon	316, 323	Darling Creek
216	Harris Creek	503, 506, 508, 510	Michigan Creek
220, 402	Spencer Creek		

3.1.5 Scaling

All harvested wood processed through China Creek, Sarita, Caycuse and Camp B dryland sorts was 100% stick scaled. Insect control at the dryland sorts included pheromone baited traps and piles of low value pulp logs.

Alberni West Working Circle

Administered by
Alberni West Division



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3.2 Alberni West Working Circle

The Alberni West Working Circle lies west of the Alberni Canal, south of Strathcona Provincial Park, and east of the main divide between the Taylor and Kennedy Rivers. The major drainages are the Taylor and Nahmint Rivers, and the Great Central, Sproat, and Henderson Lakes basins. It is made up of a major portion of Block III and all of Block IV of TFL 44 and contains 111 000 ha of productive hemlock, balsam, cedar and fir forests. The current (1997) partitioned AAC is 571 000 m³. Alberni West Division administered this area during 1997.

3.2.1 Annual Harvesting

Harvest during 1997 was 295 036 m³. This volume includes 20 186 m³ of residue, or 6.8% of the total wood harvested. Harvesting was mainly completed using conventional methods, but longline, helicopter and hoe- chucking systems were also used. Several methods of harvesting are being considered for future use, including: shelterwood, strip shelterwood, clearcut with reserves and group selection.

3.2.2 Engineering Development

Extensions were built on the Nahmint mainline and to roads in the Danolyn area. Bridges were constructed on the Pass 300 and Skull Lake Roads in 1997.

3.2.3 Development Plans

The Five-Year Plans for Uchuck, Great Central Lake and the Sproat Lake operating areas were approved in 1997.

3.2.4 Cutting Permits

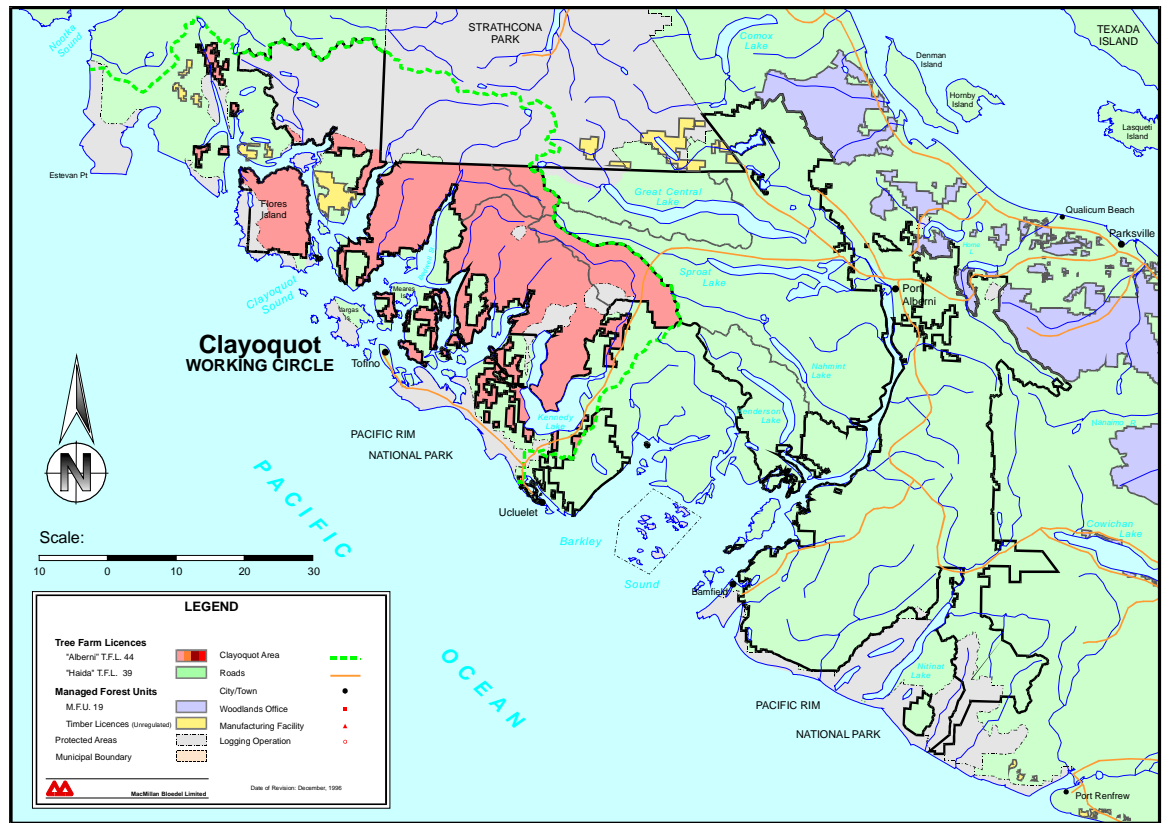
The following Cutting Permits were active in 1997:

Cutting Permit No.	Location
604-630	Sproat Lake area
701-711	Nahmint
802, 804, 806, 815, 816	Snug Cove
808, 814	Silverside
839, 840	Viewside
835, 836	Lakeside

3.2.5 Scaling

Logs taken to dryland sorts at Sproat Lake, Snug Cove and Browns Bay were 100% stick scaled. The dryland sorts were protected by pheromone baited traps.

Clayoquot Working Circle Administered by Clayoquot Division



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3.3 Clayoquot Working Circle

The Clayoquot Working Circle is located west of the divide between the Kennedy and Taylor Rivers and extends to the Pacific Ocean to include Flores Island, but excludes the area southeast of Kennedy Lake. Major drainages include the Kennedy and Cypre Rivers, and Tofino and Tranquil Creeks. It is made up of a portion of Block III, the majority of Block V, and all of Blocks VI, VII and VIII of the TFL and contains 70 000 ha (excluding Meares Island) of productive cedar, hemlock and balsam forests. The current (1997) partitioned AAC is 405 000 m³. During 1997 the Clayoquot Division administered the Working Circle from offices located in Ucluelet and Port Alberni.

3.3.1 Annual Harvesting

The volume harvested in the Clayoquot Working Circle was 20 287 m³. The Division was unable to meet the partitioned AAC target due to the extended delays in approving harvesting plans. This volume includes 1 764 m³ of residue, or 8.7% of total cut. The Division used the Wyssen system in Tranquil Inlet. Future plans include variable retention harvesting.

3.3.2 Engineering Development

Mainline road maintenance continued in the Clayoquot Working Circle. No additional mainlines were built.

3.3.3 Developments in Clayoquot Sound

In April of 1997, MacMillan Bloedel and the local Nuu-chah-nulth First Nations signed a Joint Venture Agreement for the northern portion of the Clayoquot Working Circle, the portion formerly managed by Estevan Division. Negotiations continued for including the southern portion (formerly managed by Kennedy Lake Division). In June of 1998, a Joint Venture Agreement was signed for most of the Clayoquot Working Circle. The resulting newly formed Iisaak Forest Resources will now be assigned a Board of Directors and initial staff positions will be filled.

In the context of the agreement, planning and operations will conform to the requirements of the Forest Practices Code and will be consistent with the special requirements of the Clayoquot Sound Scientific Panel as established by the Clayoquot Sound Central Region Board.

The procedure applied to the MP #3 Timber Supply Analysis for the Clayoquot Working Circle was developed by the Chief Forester after discussions with the Central Region Board. The Chief Forester determined an AAC of 130 000 m³ for the Clayoquot Working Circle for the period 1998 to 2002.

Iisaak Forest Resources is proceeding with the development of a business plan. Preliminary engineering and interim watershed plans were initiated in 1997.

MacMillan Bloedel phased out most of the operations at the Clayoquot (Kennedy Lake) Division during 1997. The final closure occurred on January 31, 1998. Transition work on salvage operations and watershed restoration work is occurring and it is expected that work on silvicultural obligations will continue for several years. Many members of the workforce have been transferred to other MB coastal operations. Other staff have created companies for local work in salvage operations, engineering, silviculture and scaling/dryland sort processing.

3.3.4 Cutting Permits

The following Cutting Permits were active during 1997:

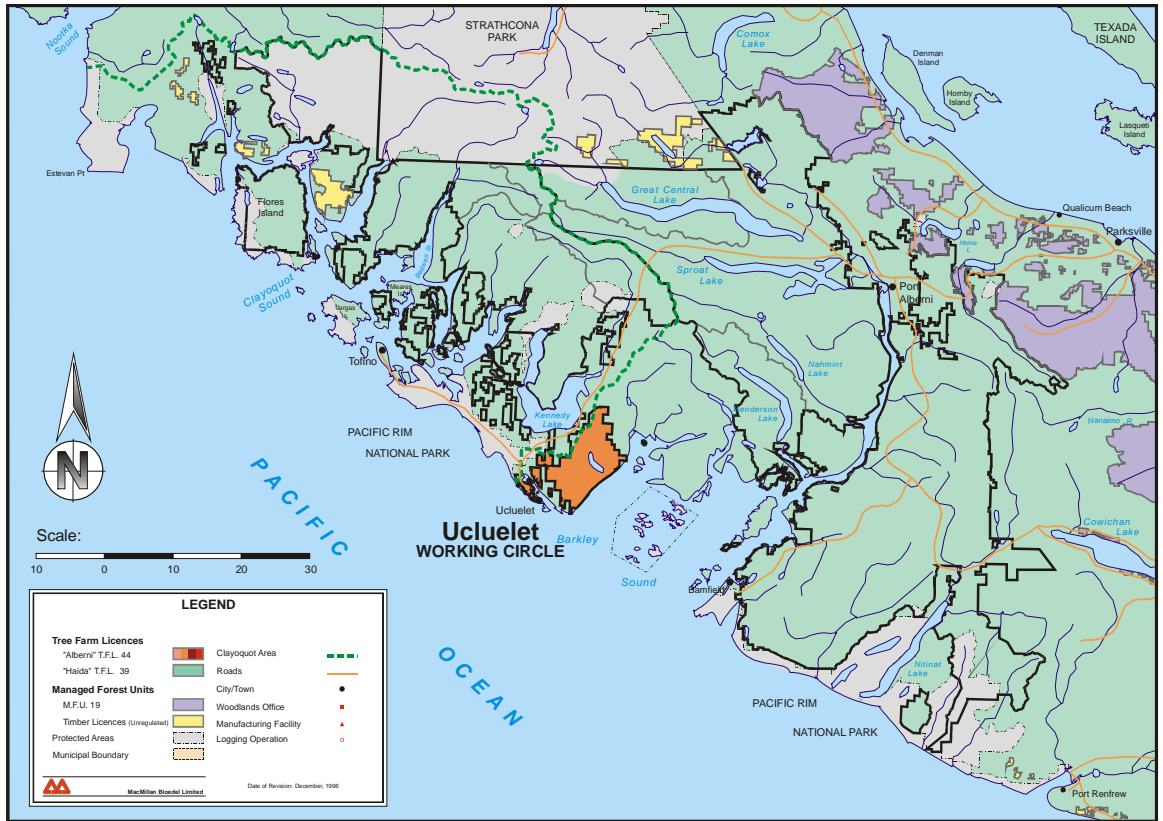
Cutting Permit No.	Location
10	Kennedy Lake
12	Rankin Cove
851	Fortune
853	Tranquil Creek

3.3.5 Scaling

Logs were 100% stick scaled at the Ucluelet and Cypre Dryland Sorts. Ambrosia beetles were controlled by the use of pheromone baited traps.

Ucluelet Working Circle

Administered by
Clayoquot Division



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3.4 Ucluelet Working Circle

The Ucluelet Working Circle is located northeast of the community of Ucluelet, lying between Kennedy Lake and Barkley Sound. This is a portion of TFL 44 Block V and contains 10 000 ha of productive cedar and hemlock forests. The current (1997) partitioned AAC is 34 000 m³. The Clayoquot Division administered the area in 1997.

3.4.1 Annual Harvesting

The total harvest in this Working Circle was 8 699 m³. No residue was billed in 1997. All material was harvested by conventional methods.

3.4.2 Engineering Development

No new road or bridge construction occurred in this Working Circle in 1997.

3.4.3 Development Plans

The Five-Year Development Plan for the Ucluelet Working Circle was extended to 1997.

3.4.4 Cutting Permits

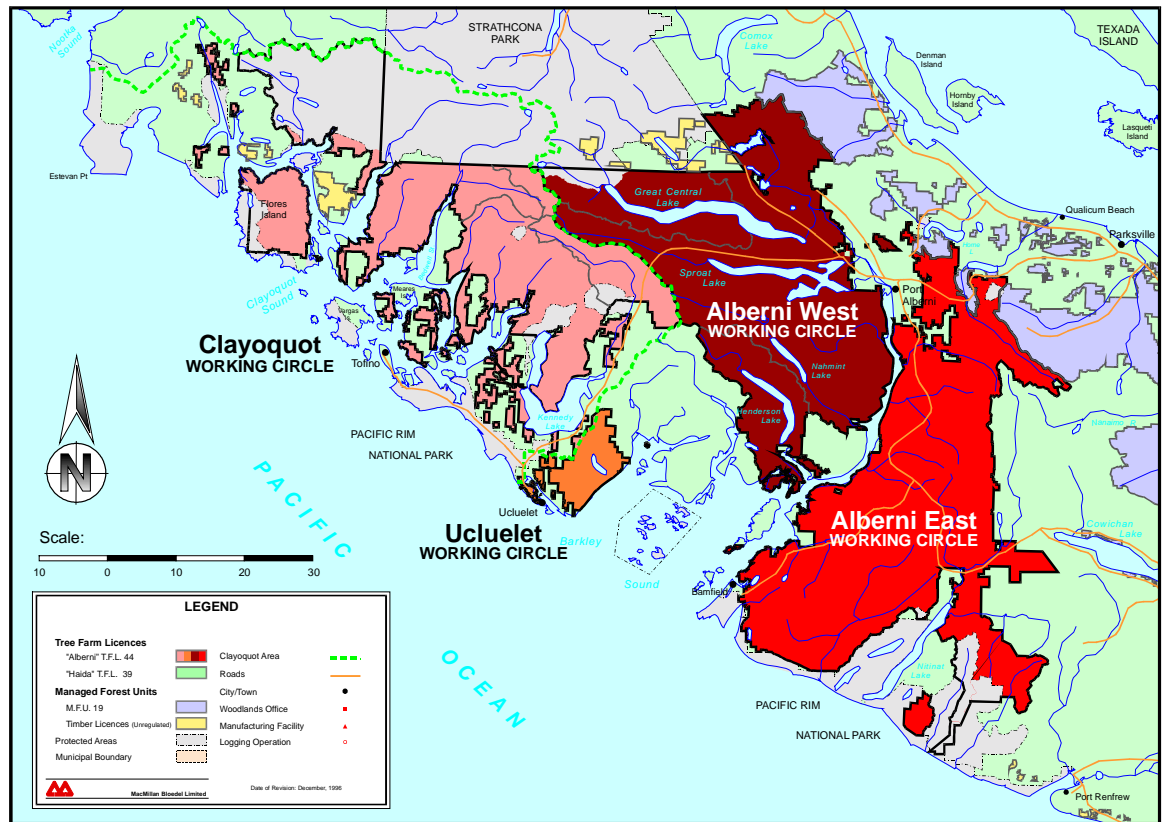
Two Cutting Permits were active in the Ucluelet Working Circle in 1997, namely:

Cutting Permit No.	Location
855, 861	Barkley

3.4.5 Scaling

Logs were 100% scaled at the Ucluelet dryland sort. Pheromone baited traps were used to control the Ambrosia beetles.

Inventory, Forest Protection, Silvicultural and Administrative Activities Map



4.0 1997 GENERAL ACTIVITIES

The following sections describe the inventory, forest protection, silviculture and administrative activities completed during 1997.

4.1 Inventory Activities

Inventory Section, of Corporate Forestry, is responsible for obtaining data and maintaining records pertaining to timber inventory.

4.1.1 Operational Cruising

A total of 1 878 ha of Operational Cruising were completed in 1997 to supply timber volume and grade information for 85 Cutting Permit Applications.

4.1.2 Second-Growth Inventory

In order to maintain an accurate inventory of immature stands, MacMillan Bloedel has established a program of Second-Growth Inventory. Young stands are cruised as they become stabilized, usually at about Age 31. A total of 626 ha were sampled during the past year in the Alberni East and Alberni West Working Circles.

4.1.3 TFL 44 Inventory Audits

Two areas were audited in 1997. Block III was checked with 93 random plots. The paired t-test showed no significant difference between the sample average volume and the inventory. Block IV (Henderson Lake) was cruised with 75 random plots. Again, the paired t-test showed no significant differences.

4.1.4 Residue Sampling

Contractors established 889 plots to measure residue on 93 completed settings. The residue was measured to the standards set by the BC Forest Service. Inventory Section performed audits on the contractors at the request of the Divisions.

4.1.5 Inventory Maintenance

The annual updating of the forest cover and volume data is required to maintain current information for management and harvesting decisions. Updated information includes harvesting, reforestation, silvicultural treatment, road construction and land acquisition or disposal activities. The Inventory Revisions to December 1996 were completed in 1997.

4.2 Forest Protection

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

4.2.1 Forest Fires

An electrical short in a piece of logging equipment apparently started the fire in the Alberni East Working Circle that burned 1.5 ha of mature timber. A small spot fire in Alberni West Working Circle was attributed to the public. See Appendix I, Table 4 for details.

4.2.2 Fire Control Planning/Protection

Prior to the fire season, each division prepared a pre-organization plan outlining the procedures and responsibilities for all phases of the divisional fire prevention and protection effort. Contact was maintained with operators in adjacent areas

and with Small Business Forest Enterprise Program operators within the TFL to ensure coordination of prevention and suppression activities.

Roads providing fire protection access to inactive portions of the TFL were inspected prior to the onset of the fire season to ensure their usability.

4.2.3 Slash Disposal

Alberni East reduced slash on 47 ha of harvested Crown land by broadcast burning. Burning of roadside accumulations on grapple yarder operations and areas where piles were made by mechanical piling or windrowing increased to 84 ha from the 74 ha burned in 1996 (see Appendix I, Table 5).

4.2.4 Fuel Management Plans

Approved Fuel Management Plans are in place for all divisions and are reviewed periodically to ensure their validity.

4.2.5 Fire Patrols

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 31 fire watch patrols were flown. In addition, 18 patrol missions were flown during periods of high fire hazard.

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

4.2.6 Fire Suppression Equipment

Suppression equipment to meet or exceed required levels was maintained at all divisions, including foam application equipment. Fire trucks were added to the equipment located at Cypre River (2) and Rankin Cove (2).

4.2.7 Weather Stations

- Alberni East: Six weather stations were maintained during 1997. The stations were located in the following areas: Br 440, Granite Creek, Newstead 411, Walbran, North Fork, 213 Repeater and Thistle Mine Road.
- Alberni West: MB maintained the weather station in the Ash River area. The Forest Service maintained stations in the Cous River and Beaver Creek areas, and at View Side on Great Central Lake.
- Clayoquot: Clayoquot Division maintains the Snug Cove, Northridge Road and Tranquil Creek stations.

4.2.8 Insects

No insect activities were reported in 1997.

4.2.9 Disease

The TFL 44 Divisions did not report any disease activity in 1997.

4.3 Forest Regeneration

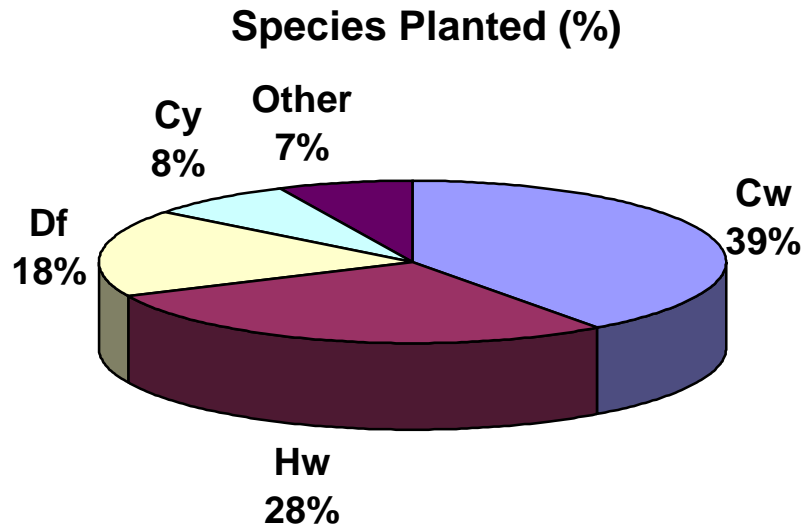
The initial regeneration of harvested forests includes preparation of the growing site, production of seedlings, planting and measuring the results of regeneration activities.

4.3.1 Site Preparation

In addition to the areas treated by burning, a total of 107 ha were treated by mechanical scarification using excavators. Table 5 in Appendix I contains the details.

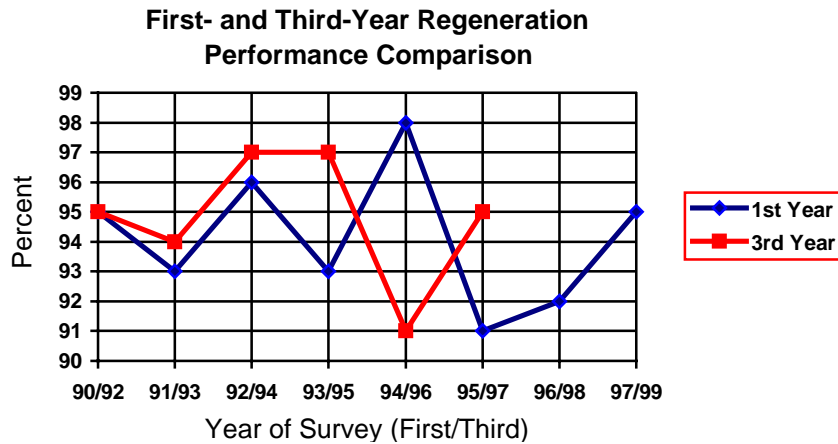
4.3.2 Artificial Reforestation

- **Tree Improvement:** The Coastal Tree Improvement Council has been replaced by an Interim Council to develop a business plan for delivery of the Provincial Tree Improvement Program through the FRBC. The plan is to set up a Forest Genetics Council and use the business plan to prioritize investment areas as a guide for FRBC investment and an arms-length company to broker seed orchard seed purchases for members. The program would cover both breeding and seed orchard operators.
- **Seed Procurement:** Cone collections from seed orchards produced 11.6 hL of cones. Wild cone collections produced 7.3 hL of cones. Details by species are listed in Appendix II, Table 1.
- **MB Seed Inventory:** The 1997 seed inventory exceeds 728 kg. Details of the species distribution are found in Appendix II, Table 2.
- **Planting Stock:** The seedling inventory held by MacMillan Bloedel at the end of 1997 was 6,808,000 trees. The sowing requests for the fall of 1997 and the spring of 1998 totaled 8,645,000 seedlings. Table 3 in Appendix II shows the details of the inventory
- **Planting:** Planting was completed on 2 843 ha of Area Awaiting Restocking (AAR) using 3,136,400 seedlings. Fill planting was done on 216 using 194,000 trees to bring the stocking level on those areas to Management Plan standards. Appendix I, Table 6 shows the number of trees planted by Division and Appendix I, Table 7 details the hectares planted by Division and tenure. The following graph details the percent of species planted in 1997.



4.3.3 Survival

Survival surveys, completed one year after planting, on 4 345 ha showed a survival rate of 95%. No Division had less than an 85% survival rate. Three years after planting, the survival rate remained at a high level, 95%, on the 3 316 ha surveyed in 1997. See Appendix I, Table 8 for details.

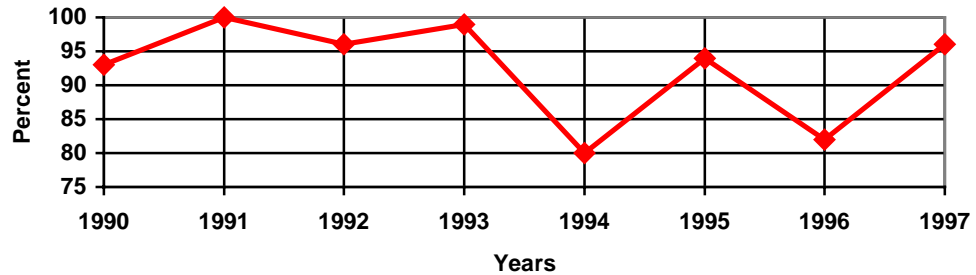


Re-examinations of third-year plantations showed regeneration performance exceeded survival performance on areas planted three years earlier for the Years 1992 through 1995. A number of factors contributed to the drop in third-year regeneration performance for 1996, namely: extreme weather conditions causing desiccation, stressed planting stock, poor planting quality, elk browsing, road deactivation and inadequate site preparation. The third-year regeneration performance again exceeded the first-year plantation survival in 1997. The third-year data does not include plantations that failed the first year.

4.3.4 Natural Regeneration

Stocking surveys were conducted on 1 157 ha and 14% were found to be stocked. After three years the naturally regenerated areas were 96% stocked, based on a survey of 307 ha. Details of these surveys by Division are found in Appendix I, Table 8. Natural stand regeneration has remained above 80% over the last eight years.

Natural Regeneration Performance

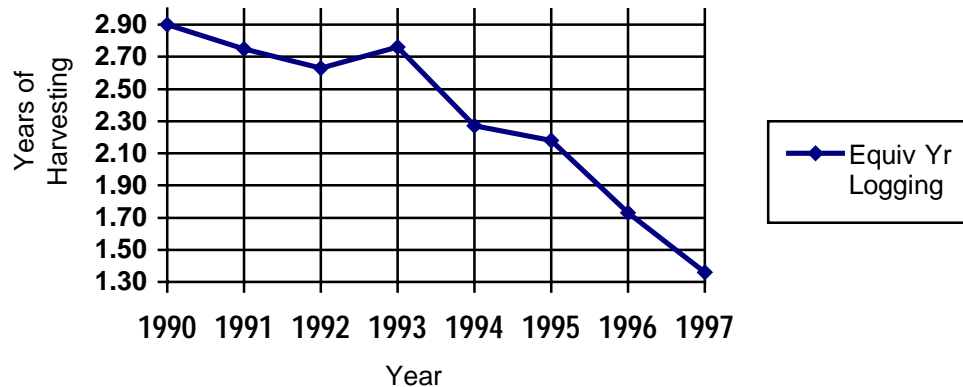


4.3.5 Areas Awaiting Restocking (AAR) Status

The inventory of Areas Awaiting Restocking in TFL 44 at the end of 1997 was 3 593 ha, a drop of 1 075 ha from the 1996 inventory (refer to Appendix I, Table 9).

The graph shows the trend of AAR expressed in terms of logging history.

Equivalent AAR



When the annual AAR is compared to the average area harvested over the previous ten years, the 1997 area represents 1.36 years of logging. The downward trend in the ratio of unstocked area to logged area continues, with the exception of 1993. Over the past eight years the level of AAR has consistently been below the three-year benchmark.

4.3.6 Free-Growing Status

Appendix 1, Table 13 summarizes areas that require MoF approval for free-growing status. These areas, generally, have been harvested since October 1, 1987. During 1997, free-growing status was declared for 907 ha of forestland harvested prior to 1988.

4.4 Stand Tending

Silvicultural activities continue after reforestation. Several projects were completed in 1997. Details of Divisional activity are found in Appendix I, Table 10.

4.4.1 Brushing and Weeding

All Divisions within the TFL completed brushing and weeding projects. A total of 1 331 ha were treated using hack and squirt, saws and other methods.

4.4.2 Juvenile Spacing

Juvenile spacing was completed on 167 ha using chain saws.

4.4.3 Fertilizing

Most divisions applied fertilizer during planting operations, treating a total of 1 080 ha. The Divisions in Alberni West and Clayoquot Working Circles fertilized 654 ha after planting.

4.4.4 Pruning

Pruning was done on 84 ha.

4.4.5 Erosion Control

A total of 352 ha were dry or hydroseeded during 1997. Both roadside and slide areas were treated. Details are found in Table 11 of Appendix I.

4.5 Assessments

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

4.5.1 Silvicultural Assessments

The results of various types of silvicultural assessments are used for planing future activities, monitoring the success of treatments, and to maintain up-to-date forest management records. Appendix I, Table 12 details the 26 765 ha surveyed for various assessments in 1997.

4.5.2 Silvicultural and Land Use Audits

Audits allow MacMillan Bloedel to evaluate performance compared to standards in a number of land use and forestry disciplines. Qualified personnel conduct these audits and the results are discussed with appropriate divisional staff.

4.6 Funding Credits

Funding credits received by MacMillan Bloedel in 1997 totaled \$3,733,557 to accomplish activities on 5 381 ha. Industry Outstanding funds were used for brushing and weeding and assessments. FRBC funds were used for silviculture, road deactivation, watershed restoration and management. Details of Division funding are found in Appendix I, Table 14.

4.7 Public Involvement

A number of communities are within or adjacent to the licence. Many of the residents are directly or indirectly dependent on the forest.

Public interest in resource management planning has increased the need for review of development and management plans by the general public. In addition, MacMillan Bloedel's Forestry Information Centre in Port Alberni provides an opportunity for the general public to learn more about the total forest environment.

4.7.1 Employment and Economic Opportunities

MB continues to support local employment. The main strategy for achieving continuing employment is to ensure that the company operations are competitive in the global market place. The current (1997, 1998) comprehensive review and restructuring efforts are focussed on returning the company to a competitive position.

In late 1997, MB and FRBC commenced negotiating a multi-year agreement for funding silvicultural, watershed restoration, inventory and other management activities in TFL 39 and TFL 44.

Participation of First Nations in the workforce has increased substantially during recent years. There has continued to be some participation in harvesting. Most of the gains have been in silviculture, particularly in enhanced forestry work, funded by FRBC. Five First Nations now have crews working in the field. In addition they do some work in basic forestry activities such as planting and brushing and weeding.

The logging operations employ band members to assist with the operational planning process, in particular to act as a liaison on concerns regarding cultural heritage values.

MB and the five First Nations of the Nuu-chah-nulth Central Region have signed a Joint Venture Agreement for most of MB's Clayoquot Sound operations. The Joint Venture Company has an employment target for First Nations to achieve 50% of all company forest industry jobs in Clayoquot Sound within 10 years.

4.7.2 Development Plans

The public reviewed the Divisional Development Plans at open houses held in Port Alberni, Tofino/Ucluelet, Duncan, Bamfield and Victoria.

4.7.3 Management Plan #3

Public review is an important part of the management plan process. Management Plan #3 for TFL #44 was prepared and submitted in 1997.

Copies of the Statement of Management Objectives Options and Procedures (SMOOP) were made available for public review during March and April.

The draft management plan was made available for review at Ministry of Forests and MacMillan Bloedel offices during August and September. Open Houses were held at Tofino/Ucluelet, Port Alberni, Duncan, Victoria and Bamfield. Meetings were also held with various groups including First Nations and local government to discuss the management plan process and results.

4.7.4 Alberni Valley Forestry Information Centre

The Alberni Forest Information Centre, located on the Quay in Port Alberni hosted over 24,288 visitors during 1997. School presentations/tours involved 2,340 students in 94 program activities. Public forestry and special tours were made available to an additional 923 visitors in 94 groups. During July and August mill tours for Alberni Specialties, Somass and Alberni Pacific Divisions were booked through the Information Centre (67 tours, 408 participants).

The Alberni Forest Information Centre participated in National Forest Week with public tours, a Tree Growing Contest for Grade Five students and a display at the Alberni Mall, which was visited by 425 people. As well, the Information Centre had a display booth at the Alberni District Fall Fair, earning 1st place in the Government and Industry Category. Over 1,800 people visited the booth over the four-day event.

4.7.5 Public Information

A Recreation and Logging Road Guide, produced utilizing state-of-the-art digital cartographic technology, was made available to the general public at various locations in Port Alberni and Nanaimo. Approximately 15,000 copies were distributed in 1997. A second edition will be printed in 1998.

4.8 Operational Research

Operational research is carried out in several of MacMillan Bloedel's divisions and managed forest units. Results can be applicable to TFL 44 when species, site index, terrain and biological conditions are considered.

4.8.1 Forest Renewal

Forest Renewal research in the Montane Alternative Silvicultural Systems (MASS) project focuses on performance of Douglas-fir, hemlock and western

redcedar in various silvicultural systems in higher elevation forests. Activities/results during 1997 included:

- A seedling experiment with two species (amabilis fir and western hemlock) and four treatments (fertilization, vegetation control, both and none) was established in 1996 on all five silvicultural settings (clearcutting, green-tree retention, shelterwood and patch cutting). Preliminary results indicate the most significant single growth factor during the first four growing seasons is nitrogen nutrition. All seedlings had significantly higher first season growth with fertilization than with any other treatment. Excavations of whole trees and subsequent biomass allocation assessments were completed in 1997 to determine if the pattern of biomass allocation was different than the height and volume growth performance. The tests showed the total biomass allocation essentially matched the height and volume growth responses.
- Seedling growth has not been significantly different on the various silvicultural system settings, except the extremely slow growth in the old-growth control area. This is consistent with the collected microclimate evidence that indicated more similarity in temperature and light regimes than was expected.

4.8.2 Ecology

MacMillan Bloedel's forest ecology program addresses issues pertaining to sustainable management of forest ecosystems. Its main project areas are silvicultural systems, site productivity, and ecosystem classification and mapping.

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

Ecology research continued on the Montane Alternative Silvicultural Systems (MASS) project. This project is designed to study the biological and economic consequences of various silvicultural systems in higher elevation forests. The systems being studied include: clearcutting, green tree retention, shelterwood and patch cutting. Harvesting was completed in 1993; post-harvest monitoring continued through 1997. MB studies included: regeneration, growth and yield, microclimate, hydrology, forest bird diversity and vegetation succession. Nearly 75 people visited the site in 1997, bringing the total number of visitors to almost 800. In addition, another 2,000 people around the world have participated in seminars given by the researchers. Activities in 1997 include:

- Windthrow monitoring: Windthrow is present in all of the cut blocks, but has varied between treatments. After four years, green tree retention has lost an average of 7.9 sph; patch cut—5.2 sph; shelterwood—18.7 sph and clearcut—8.5 sph due to windthrow. The greatest windthrow losses were in the intermediate crown class. Western redcedar appears to be more windfirm than either amabilis fir or western hemlock.
- Conifer seedfall and regeneration: Seedfall traps were sampled in May, August and November. The number of seeds collected was greatest in the first season, dropped off significantly in the second season, but

rebounded in the last two seasons. Partial cutting seems to have stimulated the seed production as the greatest amount of seed has been collected from the shelterwood areas in the last two years. Low numbers of seeds reached the center of the 69 ha clearcut; however, natural stocking through advanced regeneration and seedlings has been adequate in most areas. Stocking in the partially cut stands is typically high.

- **Natural Vegetation:** The cover, frequency and number of species of understory plants decreased after all harvesting treatments. Three years after treatment the cover increased in the harvested areas primarily due to herbaceous colonizers. The shelterwood areas retained the greatest diversity of understory trees, shrubs and bryophytes compared to other systems.
- **Bird Diversity:** Pre-harvest breeding bird communities were dominated by a few abundant species. Of the 26 species detected, 10 species accounted for 96% of the population. Three years after harvest only 17 species were recorded during winter surveys with two species totaling 68% of the population. Few species were completely lost or added to the population. The vast majority (85%) of the winter resident birds was concentrated in the old growth and unlogged portions of patch cut blocks. Retention of relatively intact old-growth forest patches appears to be a more useful strategy for conservation of some plant and bird species and in maintaining stand structural elements than uniform distribution of leave trees. This approach also appears to have cost, wind-firmness and safety advantages.
- **Salal-Cedar-Hemlock Integrated Research Program (SCHIRP)**

MB has participated in a multi-agency cooperative Salal-Cedar-Hemlock Integrated Research Program (SCHIRP) since 1986. A field guide to site identification and treatment was published in 1996. In March 1996 a replicate trial was established near Ucluelet to test optimum combinations of species, fertilization, mechanical site preparation and planting density. The new trial will expand the usefulness of the SCHIRP results to a wider range of sites.

After two growing seasons at the Ucluelet site, western redcedar survival ranged from 95% to 98% while western hemlock ranged from 70% to 83%. Site preparation alone did not produce increased seedling height or stem volume. Fertilization significantly increased second year height growth and stem volume of both species. Combining treatments increased stem volume over the treatment of fertilizer alone. When using fertilizer, "tea-bags" or applying fertilizer 10 cm deep produced the best results.
- **Ecosystems 2000**

The objective of this project is to map the ecosystems (site series) on all of MacMillan Bloedel tenures at a scale of 1:20 000. This inventory will be an important component of landscape-level planning. Fieldwork has been completed in the Walbran-Caycuse, Sproat, Nahmint and Taylor Special Management Zone (SMZ) areas in TFL 44. This data is at various stages

of conversion to digital products. During 1998 fieldwork is planned in the Klanawa, Great Central Lake and Henderson Lake areas. The project is expected to be complete in 2002.

4.8.3 Growth and Yield

MacMillan Bloedel 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. Company wide—a total of 129 Second-Growth Plots, 73 Planting Assessment Plots, 22 Sustained Yield Plots, 129 Spacing Assessment Plots and 54 nutrition plots were remeasured. Specifically, in TFL 44, the respective numbers of plots measured in each category was 59, 52, 5, 10 and 22.

4.9 Integrated Resource Management

MacMillan Bloedel is actively engaged in managing the forest resources within the TFL. This occurs in accordance with the Forest Practices Act (FPC) and Regulations and as directed by FPC Guidebooks. This involvement includes maintaining information (inventories) on a number of non-timber forest values. These inventories are updated on a regular basis. It also includes research as well as specific management actions. The following summarizes activities in 1997.

4.9.1 Recreation/Landscape

Franklin Woodlands maintains a total of 20 campsites located in campgrounds on Sarita, Nitinat and Flora Lakes.

Alberni West has a campground at the MacTush Log Dump. Scouts Canada manages the 50-site campground.

An update to the Visual landscape inventory and the Recreational Analysis was initiated with Juan de Fuca Environmental Consulting.

4.9.2 Wildlife

Wildlife management focused on assessment and protection of important habitat in 1997. Ongoing adjustments were completed to the wildlife inventories in conjunction with agency staff during the development plan process. These adjustments included deer winter ranges, deer zones and Marbled Murrelets.

The company continued monitoring west coast Bald Eagle nest sites in partnership with the Canadian Wildlife Service. The objective of these surveys is to compare the productivity of west coast Bald Eagle nests with those in other areas of BC. Present indications are that west coast nests have a comparatively low productivity.

4.9.3 Fisheries

MacMillan Bloedel and the Ahousaht First Nation have formed a partnership to complete watershed restoration work on the Cypre River. Assessments and

prescriptions were completed in 1997 for work to be done in 1998. This work includes constructing a rearing channel and some riparian restoration.

Other restoration work included instream restoration work in the Henderson Lake area and assessments for the Sarita River project to be completed in 1998. Both of these projects are being completed under partnership agreements with First Nations.

MacMillan Bloedel provided support to the First Nations to start enhancement work with coho on the Pachena River. Support was also provided to the Tofino Enhancement Society to tag/mark fish being incubated at their hatchery and scheduled for release into the Cypre River.

Franklin Woodlands continues to maintain access to the Carnation Creek project area and maintain the weir used to count fish.

Some Clayoquot FRBC funding was used for DNA analysis to identify eight different sockeye stocks in Kennedy Lake. This information will assist enhancement of stocks in proportion to their historic occurrence, thus meeting Clayoquot Panel recommendations to maintain genetic diversity. DFO, several First Nations and the World Fisheries Trust are involved in the work.

4.9.4 Water

Coastal Watershed Assessments processed during 1997 included 13 watersheds/basins (69 131 ha) and were conducted in the following Working Circles:

- **Alberni East:** completed work in China basin and Sarita watershed while work in progress includes Cameron River, Caycuse Basin, China Creek, and Sugsaw watersheds.
- **Alberni West:** completed work in Coeur D'Alene and Sproat watersheds while work in progress includes the Somass basin.
- **Ucluelet:** completed work in the Itatsoo watershed.

A Watershed Resource Inventory was initiated in 1997 in the Upper Nahmint Watershed. The inventory will collect and geographically relate water quality and quantity data to non-timber resources and forestry activities. Work completed in 1997 included the location and site verification of seven sites, installation of hydrometric instrumentation on primary control reaches and installation of peak flow crest gauges on secondary control reaches. The project is scheduled to be complete in three to five years.

4.9.5 Soils

Terrain mapping in Franklin Woodlands was carried out in the Haddon Creek watershed (2 308 ha). Terrain mapping was completed in the following community watersheds: Cameron, and Caycuse, China and Somass basins. A mapping project, including surface erosion mapping, was carried out in the upper Taylor River area (1 914 ha), part of the Sproat Lake Community watershed.

Work in the Ucluelet Working Circle included completed terrain mapping in the Itatsoo, Mack and Mercantile community watersheds.

Work done in 1997 included:

- Terrain stability assessments of hillslopes and gullies for proposed roads and harvesting areas,
- Landslide investigations,
- Geotechnical assessments of problem areas on existing roads,
- Hydrotechnical assessments of floodplains, logged and unlogged stream channel fluvial geomorphology,
- Surface erosion potential for proposed harvesting areas, and
- Windthrow assessments.

A slope stability monitoring and landfill gas monitoring programs were carried out on the China Creek Landfill. Priority stabilization and closure plans have been developed and will be initiated in 1998.

A Woodlands Waste Management Standard was developed in 1997. Requirements for the storage and disposal of various waste materials are outlined and new "best management practices" are proposed for implementation in 1998 at all Divisions to reduce short-term and long-term environmental risks from landfills, dryland sorts, debris burn sites, shops and camps.

4.9.6 Biological Diversity

The biodiversity model developed by UBC's Institute for Applied Conservation Biology was incorporated into the GIS system in 1995. Calibration of the model for coastal conditions using Permanent Sample Plot data is complete. A contractor has assisted in developing natural disturbance module for the model that includes both wind and fire as disturbance elements. Partial harvesting and natural disturbance factors have been incorporated in the model and will be tested in 1998.

4.9.7 Cultural Heritage

The emphasis has been on identifying sites of potential interest by reviewing operational plans with First Nations Groups and by retaining field staff that are trained to recognize cultural heritage sites. Where necessary, specialists are hired to ground truth sites. In some operations First Nations members are employed and trained to assist with this process.

As needed, prescriptions are developed for cultural heritage sites in conjunction with specialists including MoF staff.

4.10 Administration

The administration activities necessary to operate a TFL in 1997 are discussed in the following sections.

4.10.1 TFL 44 Amendments

There were no amendments made to the TFL 44 Agreement in 1997.

4.10.2 Property Additions/Deletions

Two properties, totaling 1.6 ha, were sold during 1997. Part of Lot 35, Alberni Land District (1.19 ha) was sold for highway widening and part of the SW ¼ Sections 9 & 16, Township 1, Barclay District (0.424 ha) involved land for the construction of a bridge.

4.10.3 Managed Forest 74

Managed Forest 74, which comprises the privately owned lands in Schedule "A" of TFL 44, is managed to the standards adopted for all of TFL 44. There is no cut control requirement on MF 74.

4.10.4 Annual Allowable Cut

The Annual Allowable Cut in TFL 44 for 1997 is 2 228 000 m³. The SBFEP allocation is 89 873 m³, leaving 2 138 127 m³ as MacMillan Bloedel's portion of the TFL AAC.

4.10.5 Regional and Landscape Planning

Major initiatives continue on the development of boundaries and management objectives for landscape units. These are largely in draft form and await formal recognition before being implemented.

The Vancouver Island Land Use Plan has had considerable impact on the Licence. Protected areas include areas in the Upper Carmanah and Walbran Watersheds, now part of the Carmanah-Walbran Park and the addition of the McBride Watershed to Strathcona Park.

Areas previously identified as Low Intensity Areas (LIAs) under the Regionally Significant Land Category are now identified as Special Management Zones (SMZs). SMZs have been established in TFL44 in part of the Walbran Watershed, the Nahmint Watershed, the Strathcona-Taylor area and adjacent to Barkley Sound and the Alberni Inlet. SMZs are areas for which conservation of one or more resource values, such as habitat, recreation, scenery and community watersheds is a priority. The management emphases (objectives) have been defined for each SMZ. The special requirements for SMZs are being built into Forest Development Plans as information becomes available and decisions are reached by the agencies involved.

The Vancouver Island Resource Targets Technical Team submitted their final report in November or 1997. The report recommends locations and management objectives and strategies for Enhanced Development Zones and General Management Zones (previously referred to as High Intensity Areas and General Forest Areas). Government has not yet approved this report.

The MoF and MoELP have developed a Regional Landscape Unit Planning Strategy. This initiative has defined draft landscape unit boundaries and assigned biodiversity emphases to these units. These plans have not been approved. Further developments regarding landscape unit planning are expected in 1998.

MB is continuing to develop its capabilities for landscape reporting to assist with the landscape planning process.

4.10.6 Management Plan #2 Extension

The Chief Forester granted an extension of Management Plan #2 to 1997 in 1996.

4.10.7 Preparation of Management Plan #3

The process for preparing and submitting MP #3 was completed in 1997. This included submission of the Statement of Management Objectives, Options and Procedures (SMOOP) in early March. Copies of SMOOP were made available for public review during March and April.

The Timber Supply Analysis, Twenty-Year Plan and draft Management Plan were submitted in July. Public review of the plan included open houses at Tofino/Ucluelet, Port Alberni, Duncan, Victoria and Bamfield. Copies of the plan were also available for public review at MoF and MB offices. A report on the public review process and results was submitted to the MoF.

Management Plan #3 for the period from 1998 to 2002 was approved in December 1997. An Annual Allowable Cut (AAC) of 1 890 000 m³ was determined by the Chief Forester in January of 1998. The AAC includes an allocation of 130 000 m³ to the Clayoquot Sound portion of the TFL.

4.10.8 TFL Annual Report

The Annual Report for the activities within TFL 44 in 1996 was submitted in June 1997.

APPENDIX I - Table 1

TFL 44 Volume Harvested in 1997
 Based on Cut Control Letter Issued by Vancouver Forest Region
 Volumes (m³)

Working Circle	Tenure	Ha	Fir	Pine	Cedar	Cypress	Spruce	Hemlock	Balsam	Decid	Total Billed	Residue	Total Cut Control
Alberni East	Private	1					76	238	20		334		334
	TL	497	34 853	1 574	203 532	2 274	782	210 381	74 656	33	528 085	26 877	554 962
	Crown	453	7 401	2 587	176 635	8 769	1 473	209 396	76 030	28	482 319	27 771	510 090
	Total	951	42 254	4 161	380 167	11 043	2 331	420 015	150 706	61	1 010 738	54 648	1 065 386
Alberni West	Private	25	21 096	93	906	793	2	6 824	1 979	101	31 794	676	32 470
	TL	54	5 842	84	1 700	384		13 537	8 228	7	29 782	4 129	33 911
	Crown	310	13 299	1 671	34 939	23 220	1	80 459	59 648	37	213 274	15 381	228 655
	Total	389	40 237	1 848	37 545	24 397	3	100 820	69 855	145	274 850	20 186	295 036
Clayoquot	Private												
	TL		166	1	1 742	25		12	28		1 974		1 974
	Crown	16	36	12	10 479	1 720		2 594	1 708		16 549	1 764	18 313
Total	16	202	13	12 221	1 745		2 606	1 736		18 523	1 764	20 287	
Ucluelet	Private		11	1	830			29			871		871
	TL												
	Crown	8	25	215	6 164	405	58	879	81	1	7 828		7 828
Total	8	36	216	6 994	405	58	908	81	1	8 699		8 699	
Total	Private	26	21 107	94	1 736	793	78	7 091	1 999	101	32 999	676	33 675
	TL	551	40 861	1 659	206 974	2 683	782	223 930	82 912	40	559 841	31 006	590 847
	Crown	787	20 761	4 485	228 217	34 114	1 532	293 328	137 467	66	719 970	44 916	764 886
	Total	1 364	82 729	6 238	436 927	37 590	2 392	524 349	222 378	207	1 312 810	76 598	1 389 408

Appendix I - Table 1a

TFL 44 Production by Harvesting Profile and System - 1997

As Reported by the Woodlands Divisions ⁽¹⁾

Excludes Residue

Volumes (m³)

Harvesting System	Harvest Profile ⁽²⁾													
	Conventional				Non-conventional				Total				Grand Total	
	Economical		Marg. Economical		Economical		Marg. Economical		Economical		Marg. Economical		Total	
	Volume	ha	Volume	ha	Volume	ha	Volume	ha	Volume	ha	Volume	ha	Volume	ha
First Growth														
Clear Cut	945 942	957	5 690	8	26 549	26	719	1	972 491	983	6 409	9	978 900	992
Clear Cut with reserves	138 785	198	56 484	90	18 385	24	8 340	12	157 170	222	64 824	102	221 994	324
Variable Retention	2 342	3			9 080	13			11 422	16			11 422	16
Patch Cut					1 617	3			1 617	3			1 617	3
Salvage	5 237								5 237				5 237	
Total	1 092 306	1 158	62 174	98	55 631	66	9 059	13	1 147 937	1 224	71 233	111	1 219 170	1 335
Second Growth														
Clear cut	1 078	7							1 078	7			1 078	7
Clear cut with reserves	9 377	23							9 377	23			9 377	23
Total	10 455	30							10 455	30			10 455	30
Grand Total	1 102 761	1 188	62 174	98	55 631	66	9 059	13	1 158 392	1 254	71 233	111	1 229 625	1 365

⁽¹⁾ Volume data (m³) based on Divisional records and may not agree with official BCFS billed volumes due to differing year-end dates.

⁽²⁾ Conventional, Non-conventional and Marg-economic categories are based on inventory classification and not actual harvest method.

Appendix I - Table 1b

Harvest by Working Circle and Operability Class
From Divisional Records for 1994 to 1997
(000 m³)

Working Circle and Operability Class	Year				4-Year Average
	1994	1995	1996	1997	
a) First Growth					
Alberni East					
Conventional	888	1 028	1 121	941	994
Non-conventional	9	124	3		34
Marginal		25	1	2	7
Total	897	1 177	1 125	943	1 035
Alberni West					
Conventional	464	455	231	140	322
Non-conventional	85	117	74	46	81
Marginal	6	10	72	70	40
Total	555	582	377	256	443
Ucluelet					
Conventional	14	37	1	4	14
Non-conventional					
Marginal			7		2
Total	14	37	8	4	16
Clayoquot					
Conventional	244	100	44	8	99
Non-conventional	15	45		9	17
Marginal	9	5			4
Total	268	150	44	17	120
TOTAL					
Conventional	1 610	1 620	1 397	1 093	1 429
Non-conventional	109	286	77	55	132
Marginal	15	40	80	72	53
Total	1 734	1 946	1 554	1 220	1 614
b) Second Growth					
Alberni West					
Conventional	1			10	3
c) TOTAL	1 735	1 946	1 554	1 230	1 617

- 1) The Division harvest estimates differ from the official MoF billed volumes.
- 2) Volumes exclude residue.
- 3) Harvest volumes do not include SBFEP.
- 4) Volumes for 1994 have been changed (corrected) from those reported in TFL 44 Management Plan #3, Appendix VIII, Table 4.12.2.
- 5) Conventional, Non-conventional and Marginal categories are based on inventory classification and not on actual harvest method.

Appendix I - Table 1c

**Harvest by Working Circle and Operability Class
Adjusted to Official AAC Numbers for 1994 to 1997**

(000 m³)

Working Circle and Operability Class	Year				4-Year Average	Partition from MP 2
	1994	1995	1996	1997		
a) First Growth						
Alberni East						
Conventional	977	1 122	1 254	1 063	1 104	1 145
Non-conventional	10	135	3		37	23
Marginal		27	1	2	8	
Total	987	1 284	1 258	1 065	1 149	
Alberni West						
Conventional	494	461	271	161	347	485
Non-conventional	91	119	87	53	88	86
Marginal	6	10	85	81	45	
Total	591	590	443	295	480	
Ucluelet						
Conventional	26	62	1	9	25	34
Non-conventional						
Marginal			8		2	
Total	26	62	9	9	27	
Clayoquot						
Conventional	278	143	53	9	121	384
Non-conventional	17	65		11	23	21
Marginal	10	7			4	
Total	305	215	53	20	148	
TOTAL						
Conventional	1 775	1 788	1 579	1 242	1 597	
Non-conventional	118	319	90	64	148	
Marginal	16	44	94	83	59	50
Total	1 909	2 151	1 763	1 389	1 804	
b) Second Growth						
Alberni West						
Conventional	1			10	3	
c) TOTAL	1 910	2 151	1 763	1 399	1 807	

- 1) Volumes from Table 1b have been adjusted according to MoF billed volumes.
- 2) Volumes include residue.
- 3) Harvest volumes do not include SBFEP.
- 4) Volumes for 1994 have been changed (corrected from those reported in TFL 44 Management Plan #3, Appendix VIII, Table 4.12.2).
- 5) The Clayoquot partition is based on the distribution between conventional and non-conventional in the Chief Forester's letter of December 31, 1993 and the reduced AAC in the Chief Forester's letter of May 27, 1994.
- 6) Conventional, Non-conventional and Marginal categories are based on inventory classification and not on actual harvest method.

APPENDIX I - Table 2

TFL 44 SBFEP Timber Harvested - 1997
Based on Billing from Vancouver Forest Region
Volume (m³)

BCFS District	Timber Sale	Billed Volume
South Island Forest District	A55359	39 740
Total		39 740

Note: Billed Volume excludes residue.

APPENDIX I - Table 3

TFL 44 Road Construction Report - 1997

Working Circle	Operation	New Construction (km)			Debuilt Road ⁽¹⁾ (km)
		Mainline Branch	Spur	Other	
Alberni East	Franklin		72.5		
Alberni West	Contract		11.0		1.0
	Company	4.3	17.2		10.0
	Total	4.3	28.2		11.0
Clayoquot					15.0
Ucluelet					3.9
Total		4.3	100.7		29.9

(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 Fire Report - 1997

Number and Causes of Fires										
Working Circle	Lightning		Escape Slash		Operational		Public		Total	
	No.	Ha	No.	Ha	No.	Ha	No.	Ha	No.	Ha
Alberni East					1	1.5			1	1.5
Alberni West							1	Spot	1	Spot
Total					1	1.5	1		2	1.5

Area Burned by Forest Fires (ha)					
Working Circle	Mature	Immature	AAR	NSR	Total
Alberni East	1.5				1.5
Alberni West					
Total	1.5				1.5

APPENDIX I - Table 5

TFL 44 Site Preparation - 1997
(Hectares)

Working Circle	Tenure	Broadcast Burn	Burn Accum. ⁽¹⁾	Mechanical	Total Hectares
Alberin East	Private		6	2	8
	Crown	47	37	74	158
	Total	47	43	76	166
Alberni West	Private		1	11	12
	Crown		25	10	35
	Total		26	21	47
Clayoquot	Private				
	Crown		15	10	25
	Total		15	10	25
Total	Private		7	13	20
	Crown	47	77	94	218
	Total	47	84	107	238

⁽¹⁾ Actual hectares of roadside accumulations burned.

APPENDIX I - Table 6

TFL 44 Summary of Planting - 1997
(000s of trees)

		Woodlands Operation				Grand Total
		Working Circles				
		Alberni East	Alberni West	Clayoquot	Ucluelet	
Type of Planting	Species	No. Trees (000s)	No. Trees (000s)	No. Trees (000s)	No. Trees (000s)	No. Trees (000s)
Normal	Ba	39.1	3.8	8.2		51.1
	Bn	31.1				31.1
	Cw	831.6	140.9	189.9	21.6	1 184.0
	Cy	92.9	114.5	33.3		240.7
	Df	279.7	274.2	7.4		561.3
	Dr		1.2	7.4		8.6
	Ds	4.2				4.2
	Hm	64.4	38.0			102.4
	Hw	674.4	188.4	56.3	2.5	921.6
	Pl	5.0				5.0
	Pw		7.9			7.9
	Ss				1.1	1.1
	Sx	17.4				17.4
	Total	2 039.8	768.9	303.6	24.1	3 136.4
Fill	Bn	0.1				0.1
	Cw	62.5	8.8	69.1	9.8	150.2
	Cy	5.7	0.1	6.3		12.1
	Df	11.5	3.0	7.3		21.8
	Ds	1.4				1.4
	Hw	3.2	0.2	5.0		8.4
	Total	84.4	12.1	87.7	9.8	194.0

APPENDIX I - Table 7
TFL 44 Hectares Planted - 1997
 (hectares)

Working Circle	Tenure	Normal	Fill	Total Hectares	Plant + Fertilize
Alberni East	Private	429	6	435	258
	Crown	1 356	94	1 450	446
	Total	1 785	100	1 885	704
Alberni West	Private	156		156	140
	Crown	675	15	690	234
	Total	831	15	846	374
Clayoquot	Private				
	Crown	206	95	301	2
	Total	206	95	301	2
Ucluelet	Private	1		1	
	Crown	20	6	26	
	Total	21	6	27	
Total	Private	586	6	592	398
	Crown	2 257	210	2 467	682
	Total	2 843	216	3 059	1 080

Note: Planted and Fertilize hectares included in hectares planted.

APPENDIX I - Table 8

TFL 44 Plantation Survival And Regeneration Performance Report - 1997

Working Circle	Operation	Natural			Plantation		
		Examined (ha)	Stocked (ha)	Percent Stocked	Examined (ha)	Successful (ha)	Percent Successful
		Stocking Survey			Survival Survey (First Year)		
Alberni East	Franklin	1 002	73	7	2 433	2 348	97
Alberni West	Contract	117	65	56	577	491	85
	Company	22	22	100	774	751	97
	Total	139	87	63	1 351	1 242	92
Clayoquot	Alberni West (part)				32	32	100
	Clayoquot	16	7	44	529	502	95
	Total	16	7	44	561	534	95
Total		1 157	167	14	4 345	4 124	95

		Regeneration Performance (Third Year)			Regeneration Performance (Third Year)		
Alberni East	Franklin	241	236	98	2 335	2 222	95
Alberni West	Contract	6	2	34	113	93	83
	Company	15	15	100	533	528	99
	Total	21	17	81	646	621	96
Clayoquot	Alberni West (part)				136	134	99
	Clayoquot	45	42	93	199	178	89
	Total	45	42	93	335	312	93
Total		307	295	96	3 316	3 155	95

APPENDIX I - Table 9

TFL 44 Restocking Statement to December 31, 1997
(Hectares)

Reconciliation of Denuded Lands	Backlog	TFL 20/21 M&WP #1 - 5	TFL 44 M&WP #1	TFL 44 M&WP #2							Total	Grand Total
				1991	1992	1993	1994	1995	1996	1997		
DENUDATION HISTORY												
- Logging	20 860	82 501	20 258	2 741	2 329	1 670	2 177	1 833	1 891	1 360	14 001	137 620
- Fire		1 420	250		18						18	1 688
- Other		196										196
Total Denuded	20 860	84 117	20 508	2 741	2 347	1 670	2 177	1 833	1 891	1 360	14 019	139 504
RESTOCKING RECONCILIATION												
- Total at previous year end			423	66	260	396	592	898	2 033		4 245	4 668
- Add total denuded current year										1 310	1 310	1 310
- Regeneration failures			250	51	42	41	64	26	24	13	261	511
- Adjustments ⁽¹⁾			106	6	50	84	71	60	- 191	37	117	223
Total AAR for Reclassification			779	123	352	521	727	984	1 866	1 360	5 933	6 712
RESTOCKING CLASSIFICATION FOR 1997												
-Non-productive⁽²⁾			- 2	- 1						179	178	176
- Stocked ⁽³⁾												
. Planted			308	100	289	390	565	640	528	24	2 536	2 844
. Seeded												
. Natural			59	1	30	6	2	1			40	99
Total stocked			367	101	319	396	567	641	528	24	2 576	2 943
Total Awaiting Restocking			414	23	33	125	160	343	1 338	1 157	3 179	3 593
Total Classified During 1997			779	123	352	521	727	984	1 866	1 360	5 933	6 712
AAR as of December 31, 1997			414	23	33	125	160	343	1 338	1 157	3 179	3 593
Net Change from 1996			- 9	- 43	- 227	- 271	- 432	- 555	- 695	1 157	-1 066	-1 075

(1) Adjustments due to area remeasurements, correction of denuded data, etc.

(2) Reclassification of Non-productive areas (roads, rock, swamp, etc.)

(3) Does not include "fill" planting (i.e., intensification of stocking).

Appendix I - Table 10

TFL 44 Stand Tending - 1997
(hectares)

Working Circle	Tenure	Brushing/ Weeding	Spacing	Fertilize	Plant + Fertilize	Pruning	Total Hectares
Alberni East	Private	48			258		306
	Crown	755	30		446	12	1 243
	Total	803	30		704	12	1 549
Alberni West	Private	113			140		253
	Crown	340	76	311	234	8	969
	Total	453	76	311	374	8	1 222
Clayoquot	Private			1			1
	Crown	75	61	342	2	64	544
	Total	75	61	343	2	64	545
Total	Private	161		1	398		560
	Crown	1 170	167	653	682	84	2 756
	Total	1 331	167	654	1 080	84	3 316

Appendix I - Table 11

TFL 44 Erosion Control Seeding - 1997
(Hectares)

Working Circle	Tenure	Hydro Seeding	Dry Seeding	Total Hectares
Alberni East	Private	29		29
	Crown	170	83	253
	Total	199	83	282
Alberni West	Private			
	Crown		12	12
	Total		12	12
Clayoquot	Private			
	Crown	4	54	58
	Total	4	54	58
Total	Private	29		29
	Crown	174	149	323
	Total	203	149	352

APPENDIX I - Table 12
TFL 44 Miscellaneous Stand Surveys and Assessments - 1997
 (hectares)

Working Circle	Operation	Pre-log Prescript	Post-log Prescript	Stand Maintenance Prescript	Post Treatment Evaluation	Pre-Treat. Mechanical Site Prep	Free Growing	Green-up Surveys	Total Area Assessed
Alberni East	Franklin	1 150	3 151	10 356	99	2 535	756	2 099	20 146
Alberni West	Contract	385	532	1 460			180		2 557
	Company	448	256		180		791		1 675
	Total	833	788	1 460	180		971		4 232
Clayoquot	Alberni West (part)			11			216		227
	Clayoquot		2 122	8			30		2 160
	Total		2 122	19			246		2 387
Total		1 983	6 061	11 835	279	2 535	1 973	2 099	26 765

APPENDIX I - Table 13

TFL 44 Free Growing Status Report for Openings Requiring MoF Approval ⁽¹⁾
 As of December 31, 1997

Working Circle	Operation	Openings Not Free Growing				
		Number of Openings	Treatment Required (ha)	FG Survey Pending (ha)	Declared FG ⁽²⁾ (ha)	Total (ha)
Alberni East	Franklin	363	8,428	4165	17	12,610
Alberni West		160	646	3707	16	4,369
Clayoquot		161	1952	1962	12	3,926
Total		684	11,026	9,834	45	20,905

Notes:

- ⁽¹⁾ Only openings/cut blocks with a date of felling on or after October 1, 1987 or negotiated with the MoF, where felling spanned the cut-off date.
- ⁽²⁾ Partial FG openings.

APPENDIX I - Table 14

TFL 44 Funding Credits - 1997

Working Circle	Operation	Source	Activity/Description	\$	Ha
Alberni East	Franklin	Industry Outstanding	Brushing and Weeding	673,186	735
		Industry Outstanding	Assessments	53,430	1 483
		FRBC	Planting	69,341	46
		FRBC	Grass Seeding	81,776	24
		FRBC	Road Deactivation	409,674	19
		FRBC	Assessments & Supervision	272,322	N/A
		Total			1,559,729
Alberni West	Contract	Industry Outstanding	Brushing and Weeding	160,952	257
		FRBC	Planting	19,285	11
		FRBC	Grass Seeding	12,716	35
		FRBC	Road Deactivation	390,206	35
		FRBC	Spacing	397,370	209
		FRBC	Pruning	132,642	51
		FRBC	Assessments	35,477	935
		FRBC	SMP's and Spacing Layout	111,178	518
		Total			1,259,826
	Company	FRBC	Watershed Restoration	168,211	11
		FRBC	Preliminary Assessments	9,113	283
		FRBC	Block Layout	12,750	146
		FRBC	SMPs	4,621	146
		FRBC	Spacing	207,680	76
		FRBC	Pruning	36,227	8
		FRBC	Brushing and Weeding	25,080	33
		Total			463,682
Total			1,723,508	2 754	
Clayoquot	Clayoquot and Alberni West	FRBC	Watershed Restoration	283,825	7
		FRBC	Preliminary Assessments	2,512	78
		FRBC	Block Layout	6,826	78
		FRBC	SMPs	2,474	78
		FRBC	Spacing	96,800	55
		FRBC	Pruning	57,883	24
		Total			450,320
Total			3,733,557	5 381	

APPENDIX II - Table 1

MacMillan Bloedel Cone Collection - 1997

Species	Cone Collection (hectolitres)		
	MB Orchards	Wild Collections	Total
Cw	1.3	3.5	4.8
Df		1.9	1.9
PI		0.1	0.1
Hw	7.4		7.4
Sx		1.8	1.8
Yc	2.9		2.9
Total	11.6	7.3	18.9

7-Apr-00

APPENDIX II - Table 2

MacMillan Bloedel Seed Inventory - 1997

Species	MacMillan Bloedel Seed Inventory ⁽¹⁾				
	Seed Orchard Seed (gm)	Seed Orchard Control Cross (gm)	Wild Seed (gm)	Total Seed (gm)	Approx. Seedlings (000's)
Ba	4 574		407 607	412 181	1 783
Bg			35 069	35 069	414
Bn			53 972	53 972	267
Cw	2 612		22 958	25 570	4 071
Fd	59 282	10 407	28 136	97 825	3 123
Hm			573	573	83
Hw			45 963	45 963	8 854
Lw			617	617	24
Plc			3 136	3 136	427
Pli			40	40	6
Pw			2 409	2 409	44
Py			755	755	3
Ss	9 715		3 580	13 295	2 111
Sx			977	977	110
Sxs			611	611	34
Yc			35 127	35 127	985
Total	76 183	10 407	641 530	728 120	22 339

⁽¹⁾ Does not include seed from 1997 collections.
Wild seed from all seed zones are included.

APPENDIX II - Table 3

Planting Stock Inventory and Sowing Request
December 31, 1997

Species	Planting Stock Inventory plus Request		
	000s of Trees		
	Spring 1998	Fall 1998 / Spring 1999	Total
Ba	211	199	410
Bg	6	4	10
Bn	39	33	72
Cw	1 910	2 046	3 956
Dg	16	4	20
Dr	5		5
Fd	1 440	2 019	3 459
Hm	43	75	118
Hw	1 937	2 396	4 333
Plc	129	54	183
Pli	7		7
Pw	9	61	70
Ss	541	804	1 345
Sx	41	25	66
Yc	474	925	1 399
Total	6 808	8 645	15 453

APPENDIX I - Table 1

TFL 44 Volume Harvested in 1997
Based on Cut Control Letter Issued by Vancouver Forest Region
Volumes (m³)

Working Circle	Tenure	Ha	Fir	Pine	Cedar	Cypress	Spruce	Hemlock	Balsam	Decid	Total Billed	Residue	Total Cut Control
Alberni East	Private	1					76	238	20		334		334
	TL	497	34853	1574	203,532	2,274	782	210,381	74,656	33	528,085	26877	554,962
	Crown	453	7,401	2587	176,635	8,769	1473	209,396	76,030	28	482,319	27,771	510,090
	Total	951	42,254	4,161	380,167	11,043	2,331	420,015	150,706	61	1,010,738	54,648	1,065,386
			4.2%	0.4%	37.6%	1.1%	0.2%	41.6%	14.9%	0.0%	100.0%		
Alberni West	Private	25	21096	93	906	793	2	6824	1979	101	31,794	676	32,470
	TL	54	5842	84	1,700	384		13,537	8,228	7	29,782	4129	33,911
	Crown	310	13299	1671	34,939	23,220	1	80,459	59,648	37	213,274	15,381	228,655
	Total	389	40,237	1,848	37,545	24,397	3	100,820	69,855	145	274,850	20,186	295,036
			14.6%	0.7%	13.7%	8.9%	0.0%	36.7%	25.4%	0.1%	100.0%		
Clayoquot	Private										0		0
	TL		166	1	1,742	25		12	28		1,974		1,974
	Crown	16	36	12	10,479	1,720		2,594	1,708		16,549	1,764	18,313
	Total	16	202	13	12,221	1,745	0	2,606	1,736	0	18,523	1,764	20,287
			1.1%	0.1%	66.0%	9.4%	0.0%	14.1%	9.4%	0.0%	100.0%		
Ucluelet	Private		11	1	830			29			871		871
	TL										0		0
	Crown	8	25	215	6,164	405	58	879	81	1	7,828		7,828
	Total	8	36	216	6,994	405	58	908	81	1	8,699	0	8,699
			0%	2.5%	80.4%	4.7%	0.7%	10.4%	0.9%	0.0%	100.0%		
Total	Private	26	21,107	94	1,736	793	78	7,091	1,999	101	32,999	676	33,675
	TL	551	40,861	1,659	206,974	2,683	782	223,930	82,912	40	559,841	31,006	590,847
	Crown	787	20,761	4,485	228,217	34,114	1,532	293,328	137,467	66	719,970	44,916	764,886
	Total	1,364	82,729	6,238	436,927	37,590	2,392	524,349	222,378	207	1,312,810	76,598	1,389,408
			6.3%	0.5%	33.3%	2.9%	0.2%	39.9%	16.9%	0.0%	100.0%		