

**TWENTY-YEAR PLAN REPORT
FOR TREE FARM LICENCE 44**

MANAGEMENT PLAN NO. 4

*Weyerhaeuser Company Limited
B.C. Coastal Group
Nanaimo Woodlands*

Prepared by:

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Version 2

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1.0 Introduction

An analysis of timber supply has been completed as a component of Management Plan (MP) No. 4 for Weyerhaeuser Company Limited, Nanaimo Woodlands Tree Farm Licence (TFL) 44. The analysis evaluates how current management, including allowance for management of non-timber resources, affects the supply of harvestable timber over a 250-year period including a Twenty-Year Plan on initial harvest levels. The results of the Twenty-Year Plan indicate that the harvest levels from the base case of the timber supply analysis can be met.

As laid out in the MoF guidelines for the preparation of the Twenty-Year Plan (TYP), the plan sets out a hypothetical sequence of harvesting over a period of at least twenty years. The TYP utilizes spatial constraints with little or no field information, to test the spatial feasibility of a harvest level that conforms to current standards and practices as defined for the Base Case in the Timber Supply Analysis Information Package (June 2002, Version 2). As such, it will be subjected to all of the zone-level spatial constraints incorporated into the long-term analysis.

In addition, it must demonstrate both a spatial distribution and size distribution of harvest blocks which adhere to prevailing operational regulations within the district(s), *and/or* which represent a forest structural pattern than is consistent with long-term patch size distribution requirements defined within the forest-level biodiversity guidelines.

The mapped TYP will be designed to identify:

- The timber harvesting landbase;
- All proposed harvested areas by 5-year period, color-themed by harvest method;
- Existing road access within the timber harvesting landbase;
- Main additional proposed access roads required over the 20-year period;
- Any blocks which are currently part of the existing 5-year forest development plan; and
- The spatial positioning of all scheduled blocks relative to current resource management constraint zones such as VQOs and riparian management zones.

The TYP analysis will be prepared with these objectives in mind. It is not designed to be an operational plan, but a test of timber availability given the current structural characteristics and spatial distribution of components of the resource, and the structural and spatial management objectives associated with current management and operational practices.

2.0 Methodology

In general, the methodology will employ the existing 5-year development plan blocks as a starting point. The balance of the net timber harvesting landbase will then be subdivided into “pseudo-blocks”, employing GIS features that would be expected to define logical block boundaries. The combination of the planned blocks and the “pseudo-blocks” generated in the GIS environment will then be used to test the 20-year plan of alternative timber supply scenarios, using Timberline’s CASH6 timber supply model.

This model is a simulation tool, which can be used to model the forest cover and seral stage requirements defined by the Forest Practices Code and related current operational guidelines, using similar functionality to that employed by the Ministry of Forests FSSIM timber supply model. In addition, CASH6 has full spatial

functionality, enabling the explicit allowance for cut block adjacency, and permitting the user to specify maximum opening size requirements and long-term patch size distribution objectives. In the model, adjacent blocks are aggregated together if the resulting aggregated components do not exceed the maximum opening criteria for the management zone, and if such aggregation will improve the patch size distribution relative to the specified objectives.

2.1 GIS Data Preparation Steps

The entire timber harvesting landbase will be subdivided into forest development plan blocks and “pseudo-blocks” in the GIS environment. At this point, however, no harvest schedule will be assigned. Numerous spatial themes will be overlaid, and the resultant polygons will form pseudo-blocks. The rationale for this approach is that, at some point, any and all of these feature boundaries could conceivably define a limit to harvesting, and therefore, would define harvest block boundaries.

2.1.1 Net Harvestable Landbase Extent

This will be based on the netdown criteria identified in Timber Supply Analysis Information Package. Partial netdown areas will be separated from fully accessible areas.

2.1.2 Forest Development Plan Blocks

Blocks from the approved forest development plan (FDP) will be used as a starting point in the harvest scheduling assignments.

2.1.3 Age Class Definition

Forest cover data will be generalised to define age-class polygons based on the following age categories: 0-20, 21-40, 41-60, 61-80, 81-100, 101-120, 121-140, 141-225, 226-250, 251+.

2.1.4 Resource Emphasis Areas (REA)

All spatially defined constraint zones will be included. The purpose of this is to ensure that blocks do not cross the boundaries of constraint zones.

In summary, the following GIS coverages will be overlaid in order to define blocks for the Twenty-Year Plan analysis.

- Landscape units;
- BEC/NDT;
- Visual Quality Objective zones;
- Recreation zones;
- Wildlife habitat zones;
- Harvestable landbase classification;
- Age class distribution;
- Forest Development Plan blocks;
- Riparian management zones;
- Community watersheds;



- Avalanche zones;
- Coastal watershed assessments;
- Stewardship zones;
- Economic operability; and
- Terrain and slope mapping.

2.1.5 Within Block Stand Conditions Definition

The block is the basic unit of harvesting in CASH6. However, blocks can contain varying stand conditions, each with its own pattern of growth and regeneration. Growth and yield characteristics, as described in the Information Package, are defined at the forest cover polygon level. Capturing the within-block stand detail is accomplished by overlaying the pseudo-block layer onto the forest cover.

2.1.6 Small Resultant Polygon Elimination

Predictably, when constructing a block resultant with abundant Arc/Info™ GIS overlays a large number of undersized polygons result. Undersized polygons significantly reduce the efficacy of the analysis by increasing the number of blocks to be processed and creating blocks that are, in effect, operationally infeasible. To reduce the complexity of the dataset, and perhaps more importantly, move towards more favourable block size distributions these areas are targeted, eliminated and merged into adjacent polygons. An undersized polygon (stand area < 2.5 hectares) is considered a candidate for eliminating if:

- It does not share a legal boundary, or legislated reserve;
- It does not define a break between the harvestable and non harvestable landbase;
- It does not define a break between age classes; and
- It is not a forest development plan block.

The boundaries of the above features are considered to be hard lines and, for the purposes of these analyses, exist in perpetuity. Other boundaries are generally interpreted, and therefore, are considered soft lines. Polygon elimination is permitted across soft line boundaries only.

Elimination is a polygonal based function, and therefore, it does not assess area to perimeter ratios of resultant pseudo-blocks. Consequently, there are no attempts to “square-up” pseudo-blocks during the elimination process. Upon completion of the elimination process, these “pseudo-block” boundaries are permanent¹.

3.0 Twenty-Year Harvest Schedule Development

Using CASH6, a 20-year schedule was developed based on achieving the proposed annual harvest level for a period of 20 years. An allowance was made for non-recoverable losses (NRLs) in the 20-year plan analysis, in order to be consistent with the aspatial analysis. However, in reality harvest blocks would exclude these areas.

¹ For analysis purposes, these pseudo-blocks constitute the harvest block and become the atomic unit administered in the CASH6 timber supply model

3.1.1 Forest Cover Rules

The analysis incorporated all of the constraint zone forest cover requirements as described in the "Timber Supply Analysis Information Package, June 2002, Version 2".

3.1.2 Cut Block Adjacency

Blocks are considered adjacent if they touch at any point on their perimeters. A block cannot be harvested as long as any adjacent block is below green-up age (10 years).

3.1.3 Harvest Priorities

The following harvest block priorities were assigned in descending order of importance:

5 year development plan block > oldest non-plan block

No block, **including a forest development plan block**, can be harvested if doing so will violate forest cover objectives. With the exception of 5-year development plan blocks, all stands within a block must be above minimum harvest age before the block can be harvested. In the case of 5-year development plan blocks, it is assumed that they have been assessed operationally and meet minimum volume and piece size requirements regardless of stand age.

3.2 Twenty-Year Schedule Mapping

Once the schedule was developed within the CASH6 environment, the results were returned to the GIS environment for mapping at the TFL level. The 20-year harvest projection was included in the digital presentation of resource themes.

This format provides a most flexible and useful framework for reviewing the harvest schedule. The user can select the scale and the desired combination of themes for viewing. For example, the projected harvest blocks and operability (or wildlife areas etc.) may be compared at any scale.

4.0 Results – Alberni East and Alberni West Working Circles

The results are presented in this Section as tabular summaries depicting:

- Volume and area summaries of the harvest by landscape unit, for each of the four harvest periods;
- Volume and area summaries by operability class, for each of the four harvest periods;
- Volume and area summaries by quality and type of timber, for each of the four harvest periods; and
- Volume and area harvest summaries by resource emphasis area (REA), as well as forest cover status by seral zone.

Tables 4.1 and 4.2 provide summaries of the harvest by landscape unit, for each of the four harvest periods with each period 5 years in length. While the target harvest is 1,675,000 cubic meters per year in the first period, or 8,375,000 cubic meters for the period, actual harvest levels may differ by a small amount, as CASH6 harvests blocks as discrete units.

Table 4.1. Harvested volume (cubic metres per period) by landscape unit

Landscape Unit	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Ash	112,821	506,475	281,561	397,261	1,298,118
BSIs	7,037	0	976	0	8,013
Cameron	235,900	103,801	122,683	127,284	589,669
Caycuse	155,007	490,210	141,447	438,296	1,224,960
China	200,380	238,812	249,379	232,570	921,141
Corrigan	1,448,620	543,014	1,198,897	665,671	3,856,201
Cous	298,752	361,101	218,316	341,150	1,219,319
Effingham	78,531	24,194	63,004	27,882	193,611
Great Central	231,957	672,995	476,258	308,345	1,689,554
Henderson	245,485	769,319	148,559	671,185	1,834,548
Klanawa	1,921,710	686,389	1,759,740	867,143	5,234,982
Little Qualicum	36,035	8,066	14,913	3,256	62,269
Nahmint	205,507	404,430	331,934	325,725	1,267,596
Nitinat	443,589	1,368,834	371,087	1,078,458	3,261,968
Puntledge	9,200	1,870	15,859	9,163	36,092
Rosewall	5,465	49,092	11,031	35,902	101,491
Sarita	1,616,783	920,554	1,474,862	1,304,929	5,317,128
Somass	235,635	291,420	219,058	303,311	1,049,423
Sproat Lake	711,783	420,577	562,153	459,842	2,154,355
Upper Kennedy	7,797	356	386	270	8,810
Walbran	167,005	263,492	212,898	177,358	820,753
Total / Period	8,375,000	8,125,000	7,875,000	7,775,000	32,150,000
Total / Year	1,675,000	1,625,000	1,575,000	1,555,000	

Table 4.2. Harvested area (hectares) by landscape unit

Landscape Unit	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Ash	185	726	395	564	1,870
BSIs	9	0	2	0	11
Cameron	342	149	198	226	915
Caycuse	206	607	191	551	1,556
China	319	350	392	338	1,399
Corrigan	2,260	897	1,780	1,000	5,937
Cous	424	540	337	533	1,834
Effingham	108	31	87	41	268
Great Central	363	1,072	762	499	2,696
Henderson	349	1,087	205	953	2,593
Klanawa	2,456	1,025	2,398	1,228	7,107
Little Qualicum	63	13	23	4	103
Nahmint	287	565	466	449	1,766
Nitinat	569	1,808	475	1,397	4,248
Puntledge	15	3	25	17	61
Rosewall	12	76	21	53	162
Sarita	2,128	1,548	2,101	2,016	7,793
Somass	425	450	356	427	1,658
Sproat Lake	1,077	641	854	699	3,270
Upper Kennedy	10	1	0	1	11
Walbran	209	319	259	224	1,011
Total / Period	11,815	11,907	11,328	11,219	46,270
Total / Year	2,363	2,381	2,266	2,244	

Tables 4.3 and 4.4 provide a summary of the harvest by operability type and economic operability, for each of the four harvest periods with each period 5 years in length.

Table 4.3. Harvested volume (cubic metres per period) by operability class and economic operability

Operability Class	Economic Operability	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Conventional	Economic	6,974,197	6,681,705	6,725,684	6,760,555	27,142,141
	Marg Ec	168,981	281,379	139,110	203,665	793,135
Subtotal		7,143,178	6,963,084	6,864,794	6,964,220	27,935,276
Non Conventional	Economic	1,139,450	1,012,036	914,738	717,120	3,783,343
	Marg Ec	92,372	149,880	95,468	93,661	431,382
Subtotal		1,231,822	1,161,916	1,010,206	810,781	4,214,725
Total		8,375,000	8,125,000	7,875,000	7,775,001	32,150,000

**Table 4.4. Harvested area (hectares) by operability class and economic operability**

Operability Class	Economic Operability	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Conventional	Economic	9,704	9,561	9,584	9,571	38,421
	Marg Ec	420	696	344	502	1,962
Subtotal		10,124	10,258	9,928	10,074	40,384
Non Conventional	Economic	1,464	1,283	1,166	918	4,832
	Marg Ec	227	366	234	227	1,055
Subtotal		1,691	1,649	1,400	1,146	5,886
Total		11,815	11,907	11,328	11,219	46,270

Tables 4.5 and 4.6 provide a summary of the harvest by species type and site index class, for each of the four harvest periods with each period 5 years in length.

Table 4.5. Harvested volume (cubic metres per period) by species association and site index class

Species Association	Site Index Class	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Douglas-fir	G	527,916	432,087	575,763	430,529	1,966,295
	H	639,904	837,702	980,370	1,182,219	3,640,195
	M	172,852	191,362	161,933	136,967	663,114
	P	72,225	94,512	54,233	69,580	290,551
Subtotal		1,412,897	1,555,664	1,772,298	1,819,294	6,560,154
Hemlock	G	3,058,918	2,713,505	2,750,525	2,347,467	10,870,415
	H	858,698	1,271,535	813,386	1,287,627	4,231,246
	M	2,140,849	1,577,704	1,771,307	1,410,205	6,900,065
	P	903,639	1,006,591	767,484	910,407	3,588,121
Subtotal		6,962,103	6,569,335	6,102,702	5,955,706	25,589,846
Total		8,375,000	8,125,000	7,875,000	7,775,000	32,150,000

Table 4.6. Harvested area (hectares) by species association and site index class

Species Association	Site Index Class	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Douglas-fir	G	1,007	811	1,089	782	3,689
	H	963	1,343	1,393	1,729	5,427
	M	340	327	321	262	1,250
	P	142	181	107	134	564
Subtotal		2,452	2,662	2,909	2,907	10,931
Hemlock	G	4,056	3,752	3,696	3,242	14,745
	H	1,081	1,782	1,094	1,710	5,666
	M	2,937	2,241	2,535	2,019	9,731
	P	1,289	1,470	1,094	1,343	5,196
Subtotal		9,363	9,245	8,419	8,313	35,339
Total		11,815	11,907	11,328	11,219	46,270

Tables 4.7 and 4.8 provide volume and area summaries by REA over the Alberni East and West Working Circles. It should be noted that, as REA boundaries often overlap, the harvest figures for different REAs are not necessarily additive.

Table 4.7. Harvested volume (cubic meters) by REA

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	2,961	6,598	2,257	55	11,870
Vqo-PR	375,749	97,652	759,788	99,479	1,332,668
Vqo-M	184,089	64,534	540,326	39,597	828,546
CWS	1,185,483	750,856	921,920	801,437	3,659,695
CWAP	574,649	427,709	379,652	388,394	1,770,404
Avalanche	1,819	0	1,187	0	3,007
IRM	6,554,734	7,019,991	5,714,181	6,719,236	26,008,143

Table 4.8. Harvested area (hectares) by REA

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	5	10	3	0	18
Vqo-PR	537	150	1,043	147	1,877
Vqo-M	278	86	730	50	1,144
CWS	1,766	1,128	1,415	1,227	5,536
CWAP	800	578	553	599	2,530
Avalanche	2	0	1	0	3
IRM	9,039	10,186	8,123	9,513	36,861

Sections 4.1 through 4.20 provide volume and area summaries by REA for each landscape unit. They include volume and area harvest summaries by REA, as well as seral stage status by BEC/NDT. It should be noted that, as REA boundaries often overlap, the harvest figures for different REAs are not necessarily additive.

4.1 Landscape Unit – Ash

Table 4.9. Harvested volume (cubic meters) – Ash

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	1,585	799	1,306	1,218	4,908
CWAP					
Avalanche					
IRM	112,365	510,741	283,071	400,016	1,306,193

Table 4.10. Harvested area (hectares) – Ash

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	2.2	1.2	2.0	1.9	7.3
CWAP					
Avalanche					
IRM	182.6	724.7	393.1	562.3	1862.7

Table 4.11. Biodiversity and old-growth seral stage status – Ash

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 1	2	I	9.0 > 250	189	404	331	370	275
CWH mm 2	2	I	9.0 > 250	220	756	647	607	380
CWH xm 2	2	I	9.0 > 250	955	368	496	496	496
MH mm 1	1	I	19.0 > 250	170	428	423	404	299

4.2 Landscape Unit – Barkley Sound Islands

Table 4.12. Harvested volume (cubic meters) – Barkley Sound Islands

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	3,865				3,865
Vqo-PR					
Vqo-M					
CWS					
CWAP					
Avalanche	3,242		986		4,228
IRM					

Table 4.13. Harvested area (hectares) – Barkley Sound Islands

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	4.7				4.7
Vqo-PR					
Vqo-M					
CWS					
CWAP					
Avalanche	3.9	0	1.9	0	5.8
IRM					

Table 4.14. Biodiversity and old-growth seral stage status – Barkley Sound Islands

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vh 1	1	L	4.35 > 250	6	27	27	25	25

4.3 Landscape Unit – Cameron

Table 4.15. Harvested volume (cubic meters) – Cameron

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R			31,011	4,510	47,127
Vqo-PR	11,606				
Vqo-M					
CWS	237,614	97,461	123,257	118,167	576,499
CWAP	230,406	88,231	118,723	123,005	560,365
Avalanche					
IRM		7,378	221	5,551	13,150

Table 4.16. Harvested area (hectares) – Cameron

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R			48.1	5.8	71.1
Vqo-PR	17.2				
Vqo-M					
CWS	341.0	138.3	197.2	206.2	882.7
CWAP	332.1	126.2	190.1	216.5	864.9
Avalanche					
IRM		10.8	0.3	9.3	20.4

Table 4.17. Biodiversity and old-growth seral stage status – Cameron

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 2	2	I	9.0 > 250	332	390	411	364	352
CWH xm 2	2	I	9.0 > 250	150	314	291	282	261
MH mm 1	1	I	19.0 > 250	304	319	368	335	319

4.4 Landscape Unit – Caycuse

Table 4.18. Harvested volume (cubic meters) – Caycuse

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R			1,100		1,200
Vqo-PR	100				
Vqo-M					
CWS	49		3,499	4,027	7,575
CWAP	45,747	37,029	53,919	15,040	151,735
Avalanche					
IRM	110,661	458,084	84,345	423,612	1,076,702

Table 4.19. Harvested area (hectares) – Caycuse

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R			1.4		1.5
Vqo-PR	0.1				
Vqo-M					
CWS	0.1		6.9	8.0	15
CWAP	53.4	43.4	65.6	18.9	181.3
Avalanche					
IRM	152.8	563.7	117.3	524.5	1358.3

Table 4.20. Biodiversity and old-growth seral stage status – Caycuse

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 1	2	I	9.0 > 250	30	0	0	0	0
CWH vm 1	1	I	13.0 > 250	485	1,398	1,120	1,069	704
CWH vm 2	1	I	13.0 > 250	142	469	393	370	289
CWH xm 2	2	I	9.0 > 250	50	26	26	28	28

4.5 Landscape Unit – China

Table 4.21. Harvested volume (cubic meters) – China

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	17,992	6,302	33,622	12,125	70,041
Vqo-M	11,723		8,750	1,936	22,409
CWS	159,408	181,741	165,857	171,779	678,785
CWAP	1,714	1,704		80	3,498
Avalanche					
IRM	20,334	59,349	44,030	58,874	182,587

Table 4.22. Harvested area (hectares) – China

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	35.2	14.5	55.7	25.4	130.8
Vqo-M	22.2		14.2	2.6	39
CWS	232.7	266.2	252.9	245.8	997.6
CWAP	3.7	3.0		0.1	6.8
Avalanche					
IRM	37.6	83.4	70.0	85.8	276.8

Table 4.23. Biodiversity and old-growth seral stage status – China

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 2	2	I	9.0 > 250	199	396	327	282	269
CWH xm 2	2	I	9.0 > 250	381	437	412	412	412
MH mm 1	1	I	19.0 > 250	202	314	274	258	241

4.6 Landscape Unit – Corrigan

Table 4.24. Harvested volume (cubic meters) – Corrigan

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	33,444	1,064	12,672	10,226	57,406
Vqo-M	38,337	771	57,539	2,071	98,718
CWS		6,683	4,120	353	11,156
CWAP					
Avalanche	224		536		760
IRM	1,391,101	539,926	1,136,019	659,678	3,726,724

Table 4.25. Harvested area (hectares) – Corrigan

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	44.0	1.8	17.1	15.3	78.2
Vqo-M	58.9	1.2	77.6	2.6	140.3
CWS		8.8	6.7	0.4	15.9
CWAP					
Avalanche	0.3		0.6		0.9
IRM	2,156.9	885.0	1,677.6	981.8	5,701.3

Table 4.26. Biodiversity and old-growth seral stage status – Corrigan

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 2	2	I	9.0 > 250	306	502	630	410	349
CWH vm 1	1	I	13.0 > 250	1,129	1,143	1,222	1,227	1,227
CWH vm 2	1	I	13.0 > 250	251	1,001	1,009	890	902
CWH xm 2	2	I	9.0 > 250	563	623	640	611	611
MH mm 1	1	I	19.0 > 250	148	416	429	365	338

4.7 Landscape Unit – Cous

Table 4.27. Harvested volume (cubic meters) – Cous

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	4,626	15,523	17,820	4,961	42,930
Vqo-M		1,293	2,014		3,307
CWS		2,551		309	2,860
CWAP	158,587	161,685	107,704	154,386	582,362
Avalanche					
IRM	138,527	185,267	95,225	185,228	604,247

Table 4.28. Harvested area (hectares) – Cous

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	6.4	21.3	23.5	7.4	58.6
Vqo-M		1.7	2.4		4.1
CWS		5.5		0.7	6.2
CWAP	210.3	211.6	156.5	234.9	813.3
Avalanche					
IRM	207.0	302.5	157.1	290.5	957.1

Table 4.29. Biodiversity and old-growth seral stage status – Cous

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 1	2	L	3.0 > 250	158	475	448	381	323
CWH mm 2	2	L	3.0 > 250	42	260	281	221	150
CWH vm 2	1	L	4.35 > 250	103	786	759	722	713
CWH xm 2	2	L	3.0 > 250	104	405	410	401	384

4.8 Landscape Unit – Effingham

Table 4.30. Harvested volume (cubic meters) – Effingham

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	9,767	12,222	12,921	929	35,839
Vqo-M					
CWS					
CWAP					
Avalanche					
IRM	69,550	12,214	50,713	27,232	159,709

Table 4.31. Harvested area (hectares) – Effingham

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	13.8	16.4	16.4	1.4	48
Vqo-M					
CWS					
CWAP					
Avalanche					
IRM	94.0	14.9	71.0	39.7	219.6

Table 4.32. Biodiversity and old-growth seral stage status – Effingham

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vm 1	1	I	13.0 > 250	181	457	478	402	388
CWH vm 2	1	I	13.0 > 250	51	114	129	125	127

4.9 Landscape Unit – Great Central

Table 4.33. Harvested volume (cubic meters) – Great Central

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R		4,294			4,294
Vqo-PR	20,963	14,624	65,734	6,730	108,051
Vqo-M	51,153	12,196	254,640	2,370	320,359
CWS	3,291	3,832	82	2,725	9,930
CWAP					
Avalanche	1,346		651		1,997
IRM	157,522	644,778	159,912	299,603	1,261,815

Table 4.34. Harvested area (hectares) – Great Central

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R		5.7			5.7
Vqo-PR	36.1	29.7	110.5	10.0	186.3
Vqo-M	93.5	19.0	356.5	3.2	472.2
CWS	5.3	8.9	0.1	5.9	20.2
CWAP					
Avalanche	1.6		0.8		2.4
IRM	226.5	1,008.3	293.7	480.3	2,008.8

Table 4.35. Biodiversity and old-growth seral stage status – Great Central

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 1	2	I	9.0 > 250	263	672	662	675	650
CWH mm 2	2	I	9.0 > 250	426	2,285	2,156	1,946	1,878
CWH xm 1	2	I	9.0 > 250	103	130	110	110	110
CWH xm 2	2	I	9.0 > 250	830	900	953	900	900
MH mm 1	1	I	19.0 > 250	193	757	655	622	571

4.10 Landscape Unit – Henderson

Table 4.36. Harvested volume (cubic meters) – Henderson

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	492				492
Vqo-PR	32,299	6,850	66,408	10,847	116,404
Vqo-M					
CWS					
CWAP					
Avalanche					
IRM	215,149	770,162	83,637	667,049	1,735,997

Table 4.37. Harvested area (hectares) – Henderson

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	0.6				0.6
Vqo-PR	53.1	9.8	88.4	14.8	166.1
Vqo-M					
CWS					
CWAP					
Avalanche					
IRM	294.9	1,077.0	116.8	938.0	2,426.7

Table 4.38. Biodiversity and old-growth seral stage status – Henderson

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vm 1	1	L	4.35 > 250	505	4,171	3,578	3,531	2,887
CWH vm 2	1	L	4.35 > 250	106	1,548	1,472	1,510	1,317

4.11 Landscape Unit – Klanawa

Table 4.39. Harvested volume (cubic meters) – Klanawa

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	1,053	2,303	2,257	55	5,668
Vqo-PR	2,919	7,406	44,606	1,858	56,789
Vqo-M	3,409		48,391		51,800
CWS					
CWAP					
Avalanche					
IRM	1,933,546	683,543	1,682,084	873,901	5,173,074

Table 4.40. Harvested area (hectares) – Klanawa

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	2.2	4.0	3.5	0.1	9.8
Vqo-PR	3.5	10.0	56.9	2.5	72.9
Vqo-M	4.5		62.5		67
CWS					
CWAP					
Avalanche					
IRM	2,445.8	1,011.4	2,274.8	1,225.1	6,957.1

Table 4.41. Biodiversity and old-growth seral stage status – Klanawa

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vm 1	1	I	13.0 > 250	2,655	6,230	6,173	4,500	3,981
CWH vm 2	1	I	13.0 > 250	174	653	688	571	525

4.12 Landscape Unit – Little Qualicum

Table 4.42. Harvested volume (cubic meters) – Little Qualicum

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	36,396	8,147	15,062	3,288	62,893
CWAP	36,396	8,147	15,062	3,288	62,893
Avalanche					
IRM					

Table 4.43. Harvested area (hectares) – Little Qualicum

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	63.0	12.5	23.4	4.4	103.3
CWAP	63.0	12.5	23.4	4.4	103.3
Avalanche					
IRM					

Table 4.44. Biodiversity and old-growth seral stage status – Little Qualicum

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
MH mm 1	1	I	19.0 > 250	70	89	95	81	76

4.13 Landscape Unit – Nahmint

Table 4.45. Harvested volume (cubic meters) – Nahmint

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	42,398	12,112	80,879	8,237	143,626
Vqo-M	15,477	41,180	45,094		101,751
CWS	5,986	920	13	15	6,934
CWAP	55,040	65,378	39,653	48,442	208,513
Avalanche					
IRM	98,508	289,816	171,941	272,303	832,568

Table 4.46. Harvested area (hectares) – Nahmint

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	56.4	19.4	108.5	12.4	196.7
Vqo-M	20.0	52.9	60.5		133.4
CWS	8.2	1.1	0.01	0.01	9.32
CWAP	78.9	97.3	61.6	68.1	305.9
Avalanche					
IRM	135.9	395.7	238.1	368.0	1137.7

Table 4.47. Biodiversity and old-growth seral stage status – Nahmint

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vm 1	1	H	19.0 > 250	1,677	3,393	3,562	3,393	3,321
CWH vm 2	1	H	19.0 > 250	818	2,637	2,473	2,414	2,403
MH mm 1	1	H	28.0 > 250	313	919	919	910	918

4.14 Landscape Unit – Nitinat

Table 4.48. Harvested volume (cubic meters) – Nitinat

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	11,982	3,751	62,284	5,563	83,580
Vqo-M	19,789	7,746	31,905	9,895	69,335
CWS	3	5,059		46	5,108
CWAP	551		1,327		1,878
Avalanche					
IRM	415,703	1,365,966	279,283	1,073,739	3,134,691

Table 4.49. Harvested area (hectares) – Nitinat

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	15.3	4.8	78.0	7.4	105.5
Vqo-M	24.5	9.5	39.9	12.1	86
CWS	0.01	6.2		0.1	6.31
CWAP	0.7		1.7		2.4
Avalanche					
IRM	528.2	1,787.1	355.6	1,377.0	4,047.9

Table 4.50. Biodiversity and old-growth seral stage status – Nitinat

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 1	2	I	9.0 > 250	18	8	28	27	20
CWH mm 2	2	I	9.0 > 250	130	480	392	361	218
CWH vh 1	1	I	13.0 > 250	61	332	216	150	95
CWH vm 1	1	I	13.0 > 250	2,408	3,985	3,525	3,393	2,631
CWH vm 2	1	I	13.0 > 250	394	1,385	1,254	1,193	1,020
MH mm 1	1	I	19.0 > 250	93	291	184	176	101

4.15 Landscape Unit – Puntledge

Table 4.51. Harvested volume (cubic meters) – Puntledge

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	9,292	957	16,017	8,478	34,744
CWAP					
Avalanche					
IRM		931		777	1708

Table 4.52. Harvested area (hectares) – Puntledge

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	15.3	1.9	25.0	16.5	58.7
CWAP					
Avalanche					
IRM		1.4		1.0	2.4

Table 4.53. Biodiversity and old-growth seral stage status – Puntledge

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH xm 2	2	L	3.0 > 250	13	41	41	21	19

4.16 Landscape Unit – Rosewall

Table 4.54. Harvested volume (cubic meters) – Rosewall

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	57			676	733
CWAP					
Avalanche					
IRM	5,463	49,583	11,142	35,585	101,773

Table 4.55. Harvested area (hectares) – Rosewall

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	0.1			0.9	1
CWAP					
Avalanche					
IRM	11.9	75.9	21.5	52.1	161.4

Table 4.56. Biodiversity and old-growth seral stage status – Rosewall

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH xm 2	2	I	9.0 > 250	87	188	136	136	96

4.17 Landscape Unit – Sarita

Table 4.57. Harvested volume (cubic meters) – Sarita

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	1,416				1,416
Vqo-PR	84,001	728	162,738	4,547	252,014
Vqo-M	26,769	1,021	86,705	17,199	131,694
CWS	1,063	12,367	14,839	17,391	45,660
CWAP					
Avalanche					
IRM	1,519,701	915,643	1,225,329	1,278,842	4,939,515

Table 4.58. Harvested area (hectares) – Sarita

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	1.8				1.8
Vqo-PR	102.5	1.0	200.1	6.4	310
Vqo-M	32.4	1.4	109.2	22.2	165.2
CWS	1.4	23.9	24.8	24.8	74.9
CWAP					
Avalanche					
IRM	1,990.1	1,521.2	1,767.4	1,962.6	7,241.3

Table 4.59. Biodiversity and old-growth seral stage status – Sarita

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vh 1	1	L	4.35 > 250	131	647	628	523	453
CWH vm 1	1	L	4.35 > 250	1,128	4,936	5,241	4,170	3,907
CWH vm 2	1	L	4.35 > 250	91	763	861	697	684

4.18 Landscape Unit – Somass

Table 4.60. Harvested volume (cubic meters) – Somass

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	17,510	189	15,172	3,243	36,114
Vqo-M			530		530
CWS	11,826	7,291	11,539	10,289	40,945
CWAP	888	32			920
Avalanche					
IRM	208,593	286,854	194,008	292,812	982,267

Table 4.61. Harvested area (hectares) – Somass

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	25.7	0.4	20.4	4.5	51
Vqo-M			0.8		0.8
CWS	19.9	14.7	23.4	15.0	73
CWAP	1.3	0.01			1.31
Avalanche					
IRM	379.4	435.3	310.9	407.2	1532.8

Table 4.62. Biodiversity and old-growth seral stage status – Somass

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm	2	L	3.0 > 250	7	32	17	16	14
CWH xm 1	2	L	3.0 > 250	18	5	5	5	5
CWH xm 2	2	L	3.0 > 250	175	419	367	370	351

4.19 Landscape Unit – Sproat Lake

Table 4.63. Harvested volume (cubic meters) – Sproat Lake

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	81,899	11,874	152,821	20,055	266,649
Vqo-M	1,011		870		1,881
CWS	718,901	422,688	565,939	462,403	2,169,931
CWAP	45,321	42,855	43,264	40,111	171,551
Avalanche	249				249
IRM		1,610	1,100	1,116	3,826

Table 4.64. Harvested area (hectares) – Sproat Lake

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	122.2	15.2	217.7	27.7	382.8
Vqo-M	1.5		1.3		2.8
CWS	1,076.6	637.8	851.8	695.3	3,261.5
CWAP	56.5	57.0	53.7	50.9	218.1
Avalanche	0.3				0.3
IRM		2.2	1.4	2.3	5.9

Table 4.65. Biodiversity and old-growth seral stage status – Sproat Lake

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm 1	2	I	9.0 > 250	565	1,444	1,531	1,309	1,416
CWH mm 2	2	I	9.0 > 250	165	510	541	489	465
CWH vm 1	1	I	13.0 > 250	53	177	172	162	176
CWH vm 2	1	I	13.0 > 250	634	2,477	2,467	2,266	2,226
CWH xm 1	2	I	9.0 > 250	201	98	109	109	109
CWH xm 2	2	I	9.0 > 250	478	522	522	522	527
MH mm 1	1	I	19.0 > 250	231	963	922	920	909

4.20 Landscape Unit – Walbran

Table 4.66. Harvested volume (cubic meters) – Walbran

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	378	5,006		5,648	11,032
Vqo-M	16,420	328	3,889	6,126	26,763
CWS					
CWAP		22,647		4,040	26,687
Avalanche					
IRM	151,876	238,145	211,138	163,318	764,477

Table 4.67. Harvested area (hectares) – Walbran

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR	0.6	5.8		6.3	12.7
Vqo-M	20.7	0.4	4.9	7.4	33.4
CWS					
CWAP		27.1		4.9	32
Avalanche					
IRM	188.1	285.4	254.5	205.3	933.3

Table 4.68. Biodiversity and old-growth seral stage status – Walbran

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vm 1	1	I	13.0 > 250	403	1,352	1,249	1,069	914
CWH vm 2	1	I	13.0 > 250	152	701	644	608	569
MH mm 1	1	I	19.0 > 250	27	73	66	64	53

4.21 Discussion – Alberni East and West Working Circles

Overall, the results of the Twenty-Year Plan clearly indicate that the 20-year harvest target can be met with the prioritization of FDP blocks and adjacency green-up requirements. In addition, all forest cover constraints at both the REA and landscape unit levels were satisfied.

The distribution of cutblock size harvested over the 20 years and the component of the harvest made up by Weyerhaeuser's 5-year FDP blocks is summarized in Table 4.69.

Table 4.69. Block size distribution of harvested blocks

Block Size	Contribution to Harvest (m ³ & %)		Total
	GIS Blocks	5-Year FDP Blocks	
< 2	6,856,872 (28)	1,614,186 (22)	8,471,058 (26)
2 – 5	6,817,438 (27)	2,008,138 (28)	8,825,575 (27)
5 – 10	6,511,598 (26)	2,037,691 (28)	8,549,289 (27)
10 – 40	4,367,442 (18)	1,606,087 (22)	5,973,529 (19)
40 - 90	330,549 (1)	0 (0)	330,549 (1)
Total	24,883,898	7,266,102	32,150,000

Approximately 49% of the blocks harvested in the first five years of the Twenty-Year Plan option are currently included in Weyerhaeuser's 5-year FDP. Typically, when preparing the 5-year FDP, approaches to reviewing old forest requirements do not replicate those approaches in the timber supply model, i.e. forest planners generally have more flexibility in selecting areas for harvest.

It is important to note, however, that the results of the Twenty-Year Plan option represent one of the many possible solutions for achieving the Base Case harvest targets.

The results of this scenario are not to be considered an operational plan. However, the results can assist planning staff with identifying candidate areas for harvesting and areas that may be restricted due to non-timber requirements.

Furthermore, as depicted in the above examples, there are a number of different harvest distributions that can be implemented on the ground while maintaining the Base Case harvest flow.

5.0 Results – Ucluelet Working Circle

The results are presented in this Section as tabular summaries depicting:

- Volume and area summaries of the harvest by landscape unit, for each of the four harvest periods;
- Volume and area summaries by operability class, for each of the four harvest periods;
- Volume and area summaries by quality and type of timber, for each of the four harvest periods; and
- Volume and area harvest summaries by resource emphasis area (REA), as well as forest cover status by seral zone.

Tables 5.1 and 5.2 provide summaries of the harvest by landscape unit, for each of the four harvest periods with each period 5 years in length. While the target harvest is 60,400 cubic meters per year, or 302,000 cubic meters for each 5-year period, actual harvest levels may differ by a small amount, as CASH6 harvests blocks as discrete units.

Table 5.1. Harvested volume (cubic metres per period) by landscape unit

Landscape Unit	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Kennedy Flats	13,553	492	128	12,726	26,899
Maggie	288,446	301,508	301,872	289,274	1,181,101
Total / Period	302,000	302,000	302,000	302,000	1,208,000
Total / Year	60,400	60,400	60,400	60,400	

Table 5.2. Harvested area (hectares) by landscape unit

Landscape Unit	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Kennedy Flats	22	0.8	0.3	22	45
Maggie	476	595	600	532	2,203
Total / Period	498	596	601	554	2,249
Total / Year	100	119	120	111	

Tables 5.3 and 5.4 provide a summary of the harvest by operability type and economic operability, for each of the four harvest periods with each period 5 years in length.

Table 5.3. Harvested volume (cubic metres per period) by operability class and economic operability

Operability Class	Economic Operability	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Conventional	Economic	284,608	216,031	213,828	244,938	959,404
	Marg Ec	13,745	82,161	82,408	48,153	226,468
Subtotal		298,353	298,192	296,236	293,091	1,185,872
Non Conventional	Economic	203	3,808	5,764	8,909	18,684
	Marg Ec	3,444	0	0	0	3,444
Subtotal		3,647	3,808	5,764	8,909	22,128
Total		302,000	302,000	302,000	302,000	1,208,000

Table 5.4. Harvested area (hectares) by operability class and economic operability

Operability Class	Economic Operability	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Conventional	Economic	448	361	361	407	1,576
	Marg Ec	39	230	230	134	632
Subtotal		488	590	591	540	2,209
Non Conventional	Economic	0	6	10	14	30
	Marg Ec	10	0	0	0	10
Subtotal		10	6	10	14	40
Total		498	596	601	554	2,249

Tables 5.5 and 5.6 provide a summary of the harvest by species type and site index class, for each of the four harvest periods with each period 5 years in length.

Table 5.5. Harvested volume (cubic metres per period) by species association and site index class

Species Association	Site Index Class	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Douglas-fir	H	0	0	26,857	38,420	65,278
	P	6,603	23,000	3,537	0	33,140
Subtotal		6,603	23,000	30,394	38,420	98,418
Hemlock	H	8,295	6,523	8,327	12,547	35,692
	G	12,768	15,170	12,030	26,403	66,371
	M	90,448	34,441	17,630	44,799	187,318
	P	183,887	222,866	233,619	179,831	820,202
Subtotal		295,397	279,000	271,606	263,580	1,109,583
Total		302,000	302,000	302,000	302,000	1,208,000

Table 5.6. Harvested area (hectares) by species association and site index class

Species Association	Site Index Class	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Douglas-fir	H	0	0	54	64	118
	P	17	48	11	0	76
Subtotal		17	48	64	64	193
Hemlock	H	16	31	20	38	104
	G	10	8	10	21	49
	M	131	50	25	75	281
	P	324	460	481	356	1,621
Subtotal		480	548	536	490	2,054
Total		498	596	601	554	2,248



Tables 5.7 and 5.8 provide volume and area summaries by REA. It should be noted that, as REA boundaries often overlap, the harvest figures for different REAs are not necessarily additive.

Table 5.7. Harvested volume (cubic meters) by REA

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	62,322	26,555	36,539	48,970	174,386
IRM	239,678	275,445	265,460	253,030	1,033,613

Table 5.8. Harvested area (hectares) by REA

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	107	50	77	89	324
IRM	391	546	523	465	1,924

Sections 5.1 through 5.2 provide volume and area summaries by REA for each landscape unit. They include volume and area harvest summaries by REA, as well as seral stage status by BEC/NDT. It should be noted that, as REA boundaries often overlap, the harvest figures for different REAs are not necessarily additive.

5.1 Landscape Unit – Kennedy Flats

Table 5.9. Harvested volume (cubic meters) – Kennedy Flats

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	10,350	443	128	7,613	18,534
IRM	3,203	49	0	5,112	8,365

Table 5.10. Harvested area (hectares) – Kennedy Flats

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	16	1	0	15	32
IRM	6	0	0	8	14

Table 5.11. Biodiversity and old-growth seral stage status – Kennedy Flats

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vh 1	1	High	19.0 > 250	4	7	6.2	6.2	6.2
CWH vm 1	1	High	19.0 > 250	31	34	34	34	34
CWH vm 2	1	High	19.0 > 250	6	7	7	7	7

5.2 Landscape Unit – Maggie

Table 5.12. Harvested volume (cubic meters) – Maggie

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	51,972	26,107	36,412	41,353	155,844
IRM	236,474	275,396	265,460	247,918	1,025,248

Table 5.13. Harvested area (hectares) – Maggie

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS	91	49	77	75	292
IRM	385	546	523	457	1,910

Table 5.14. Biodiversity and old-growth seral stage status – Maggie

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vh 1	1	Low	4.35 > 250	146	1,385	1,236	785	470
CWH vm 1	1	Low	4.35 > 250	247	716	615	545	510
CWH vm 2	1	Low	4.35 > 250	13	14	14	14	14

5.3 Discussion – Ucluelet Working Circle

Overall, the results of the Twenty-Year Plan clearly indicate that the 20-year harvest target, i.e. 60,400 cubic meters per year, can be met with the prioritization of FDP blocks and adjacency green-up requirements. In addition, all forest cover constraints at both the REA and landscape unit levels were satisfied.

There are no harvest blocks within the Ucluelet working circle that are currently included in Weyerhaeuser's 5-year FDP.

The results of this scenario are not to be considered an operational plan. However, the results can assist planning staff with identifying candidate areas for harvesting and areas that may be restricted due to non-timber requirements.

6.0 Results – Clayoquot Working Circle

Based on the aspatial base case analysis, the results are presented in this Section as tabular summaries depicting:

- Volume and area summaries of the harvest by landscape unit, for each of the four harvest periods;
- Volume and area summaries by operability class, for each of the four harvest periods;
- Volume and area summaries by quality and type of timber, for each of the four harvest periods;
- Volume and area harvest summaries by resource emphasis area (REA), as well as forest cover status by seral zone; and
- Volume and area harvest summaries by Clayoquot watershed basin.

Tables 6.1 and 6.2 provide summaries of the harvest by landscape unit, for each of the four harvest periods with each period 5 years in length. While the target harvest is 28,713 cubic meters per year, or 143,565 cubic meters for each 5-year period, actual harvest levels may differ by a small amount, as CASH6 harvests blocks as discrete units.

Table 6.1. Harvested volume (cubic metres per period) by landscape unit

Landscape Unit	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Kennedy Flats	704	0	9	0	713
Upper Kennedy	142,860	143,564	143,555	143,564	573,545
Total / Period	143,564	143,564	143,564	143,564	574,257
Total / Year	28,713	28,713	28,713	28,713	

Table 6.2. Harvested area (hectares) by landscape unit

Landscape Unit	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Kennedy Flats	1.6	0.0	0.0	0.0	1.6
Upper Kennedy	231.2	182.0	177.1	181.9	772.2
Total / Period	232.8	182.0	177.1	181.9	773.8
Total / Year	46.6	36.4	35.4	36.4	

Tables 6.3 and 6.4 provide a summary of the harvest by economic operability, for each of the four harvest periods with each period 5 years in length.

Table 6.3. Harvested volume (cubic metres per period) by economic operability

Economic Operability	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Economic	106,852	137,362	143,565	143,563	531,344
Marg Ec	36,713	6,202	0	0	42,915
Total	143,565	143,564	143,565	143,563	574,258

Table 6.4. Harvested area (hectares) by economic operability

Economic Operability	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Economic	135.6	164.5	177.2	182.0	659.3
Marg Ec	97.3	17.4	0.0	0.0	114.7
Total	232.9	181.9	177.2	182.0	774.0

Tables 6.5 and 6.6 provide a summary of the harvest by species type and site index class, for each of the four harvest periods with each period 5 years in length.

Table 6.5. Harvested volume (cubic metres per period) by species association and site index class

Species Association	Site Index Class	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Douglas-fir	H	1,732	1,879	0	0	3,611
	G	17,251	0	0	1,753	19,005
	M	17,451	6,202	0	0	23,653
	P	33,191	0	0	0	33,191
Subtotal		69,626	8,081	0	1,753	79,460
Hemlock	H	54,967	46,571	5,937	0	107,475
	G	18,893	88,912	137,629	31,575	277,009
	M	79	0	0	110,235	110,314
	P	0	0	0	0	0
Subtotal		73,940	135,483	143,565	141,810	494,798
Total		143,565	143,564	143,565	143,563	574,258

Table 6.6. Harvested area (hectares) by species association and site index class

Species Association	Site Index Class	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Douglas-fir	H	2.0	2.1	0.0	0.0	4.1
	G	26.5	0.0	0.0	2.7	29.2
	M	33.6	17.4	0.0	0.0	51.0
	P	85.5	0.0	0.0	0.0	85.5
Subtotal		147.6	19.5	0.0	2.7	169.8
Hemlock	H	61.8	52.3	6.7	0.0	120.8
	G	23.4	110.1	170.5	39.2	343.2
	M	0.1	0.0	0.0	140.1	140.2
	P	0.0	0.0	0.0	0.0	0.0
Subtotal		85.3	162.4	177.2	179.3	604.2
Total		232.9	181.9	177.2	182.0	774.0

Tables 6.7 and 6.8 provide volume and area summaries by REA over the Clayoquot Working Circle. It should be noted that, as REA boundaries often overlap, the harvest figures for different REAs are not necessarily additive.

Table 6.7. Harvested volume (cubic meters) by REA

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	447	6,768	1,200	313	8,728
Vqo-PR	8,818	22,701	0	6,803	38,322
Vqo-M	10,863	18,965	18,683	20,019	68,530
CWS	1,150	0	1,971	704	3,825
Clay-Basin	143,564	143,564	143,564	143,564	574,256
Avalanche	3,578	3,243	514	16,031	23,366
IRM	64	282	0	78	424

Table 6.8. Harvested area (hectares) by REA

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	0.7	9.6	1.4	0.4	12.1
Vqo-PR	13.8	32.2	0	8.7	54.7
Vqo-M	17	26.9	21.8	25.6	91.3
CWS	1.8	0	2.3	0.9	5.0
Clay-Basin	232.9	181.8	177.1	181.9	773.7
Avalanche	5.6	4.6	0.6	20.5	31.3
IRM	0.1	0.4	0	0.1	0.6



Sections 6.1 through 6.2 provide volume and area summaries by REA for each landscape unit. They include volume and area harvest summaries by REA, as well as seral stage status by BEC/NDT. It should be noted that, as REA boundaries often overlap, the harvest figures for different REAs are not necessarily additive.

6.1 Landscape Unit – Kennedy Flats

Table 6.9. Harvested volume (cubic meters) – Kennedy Flats

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS					
Clay-Basin	354				354
Avalanche					
IRM	64	282	0	78	424

Table 6.10. Harvested area (hectares) – Kennedy Flats

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R					
Vqo-PR					
Vqo-M					
CWS					
Clay-Basin	0.9				0.9
Avalanche					
IRM	0.1	0.4	0.0	0.1	0.6

Table 6.11. Biodiversity and old-growth seral stage status – Kennedy Flats

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH vh 1	1	High	19.0 > 250	249	240	240	240	240
CWH vm 1	1	High	19.0 > 250	5	0	0	0	0
CWH vm 2	2	High	51.0 > 250	1.5	1.5	1.5	1.5	1.5

6.2 Landscape Unit – Upper Kennedy

Table 6.12. Harvested volume (cubic meters) – Upper Kennedy

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	447	6,768	1,200	313	8,728
Vqo-PR	8,818	22,701	0	6,803	38,322
Vqo-M	10,863	18,965	18,683	20,019	68,530
CWS	1,150	0	1,971	704	3,825
Clay-Basin	143,210	143,564	143,564	143,564	573,902
Avalanche	3,578	3,243	514	16,031	23,366
IRM					

Table 6.13. Harvested area (hectares) – Upper Kennedy

REA	Year				Total
	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Vqo-R	0.7	9.6	1.4	0.4	12.1
Vqo-PR	13.8	32.2	0	8.7	54.7
Vqo-M	17	26.9	21.8	25.6	91.3
CWS	1.8	0	2.3	0.9	5.0
Clay-Basin	232.0	181.8	177.1	181.9	772.8
Avalanche	5.6	4.6	0.6	20.5	31.3
IRM					

Table 6.14. Biodiversity and old-growth seral stage status – Upper Kennedy

BEC	NDT	BEO	Target (% > years)	Target Area (ha)	Status at Year of Simulation			
					Year 5	Year 10	Year 15	Year 20
CWH mm1	1	High	19.0 > 250	0.1	0.7	0.7	0.7	0.7
CWH vm1	1	High	19.0 > 250	785	2,080	2,170	2,170	2,574
CWH vm2	2	High	51.0 > 250	1,382	2,125	2,185	2,111	2,103
MH mm1	1	High	28.0 > 250	78	269	261	261	244

6.3 Watershed Basins – Clayoquot

Tables 6.15 and 6.16 provide volume and area summaries by watershed basin within the Clayoquot Working Circle.

Table 6.15. Harvested volume (cubic metres per period) by watershed basin

Location	Watershed Basin	Year				Total
		2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	
Lower Kennedy	2	0	0	0	0	0
	2.1	0	0	0	0	0
	3	0	0	0	0	0
	3.1	0	0	0	0	0
	4	0	0	0	0	0
	4.1	0	0	0	0	0
	4.2	0	0	0	0	0
	4.2.1	0	0	0	0	0
	4.3.6.8	354	0	0	0	354
	4.4	0	0	0	0	0
	4.5	0	0	0	0	0
	4.7	0	0	0	0	0
	200	0	0	0	0	0
Subtotal		354	0	0	0	354
Upper Kennedy	4.12	54,700	76,163	63,531	26,948	221,342
	4.12.6	780	4,474	15,362	25,750	46,367
	4.12.6.1	18,582	6,202	154	275	25,214
	4.12.6.2	79	590	17,169	526	18,364
	4.12.7	9,092	3,333	0	322	12,747
	4.12.7.1	32,347	33,747	28,948	486	95,527
	4.12.7.2	566	0	0	0	566
	4.12.8	0	2,654	8,014	0	10,668
	4.12.9	7,362	0	4,125	8,622	20,109
	4.12.10	0	0	5,504	0	5,504
	4.12.11	15,047	16,085	0	63,609	94,741
	4.12.11.1	1,573	0	0	14,337	15,910
	4.12.11.2	2,348	0	0	2,490	4,838
Unclassified	734	316	757	200	2,007	
Subtotal		143,210	143,564	143,564	143,564	573,903
Total		143,564	143,564	143,564	143,564	574,257

Table 6.16. Harvested area (hectares) by watershed basin

Location	Basin	Year											
		2001 - 2005			2006 - 2010			2011 - 2015			2016 - 2020		
		Target	Actual	Harv	Target	Actual	Harv	Target	Actual	Harv	Target	Actual	Harv
Lower Kennedy	2												
	2.1												
	3												
	3.1												
	4												
	4.1												
	4.2												
	4.2.1												
	4.3.6.8	1.0	0.9	0.9	1	0	0	1	0	0	1	0	0
	4.4												
	4.5												
	4.7												
200													
Subtotal		1	0.9	0.9	1	0	0	1	0	0	1	0	0
Upper Kennedy	4.12	206.0	89.4	89.4	206.0	105.5	104.7	206.0	70.3	66.6	206.0	49.2	42.7
	4.12.6	63.0	1.2	1.2	63.0	5.5	5.5	63.0	22.0	21.9	63.0	30.0	29.1
	4.12.6.1	34.2	34.2	34.2	34.2	17.5	17.4	34.2	0.2	0.2	34.2	0.4	0.4
	4.12.6.2	21.3	0.1	0.1	21.3	0.7	0.7	21.3	21.3	21.3	21.3	1.6	0.7
	4.12.7	24.3	10.5	10.5	24.3	4.3	4.1	24.3	0.4	0.0	24.3	0.8	0.4
	4.12.7.1	38.0	38.0	38.0	38.0	38.0	37.9	38.0	33.2	33.1	38.0	2.7	2.6
	4.12.7.2	3.9	0.6	0.6	3.9	0.0	0.0	3.9	0.0	0.0	3.9	0.0	0.0
	4.12.8	15.4	0.0	0.0	15.4	2.2	2.2	15.4	11.2	11.0	15.4	0.9	0.0
	4.12.9	28.9	18.6	18.6	28.9	1.2	0.0	28.9	6.3	5.1	28.9	12.4	11.0
	4.12.10	10.6	0.0	0.0	10.6	0.0	0.0	10.6	6.8	6.8	10.6	0.5	0.0
	4.12.11	81.9	28.0	28.0	81.9	9.5	9.1	81.9	11.9	10.9	81.9	80.4	79.3
	4.12.11.1	18.5	4.1	4.1	18.5	0.3	0.0	18.5	0.3	0.0	18.5	14.8	14.5
	4.12.11.2	9.3	6.2	6.2	9.3	0.4	0.0	9.3	0.4	0.0	9.3	0.7	0.3
	Unclassified	n/a	n/a	1.1	n/a	n/a	0.4	n/a	n/a	0.9	n/a	n/a	2.6
Subtotal		555.3	230.9	230.9	555.3	185.1	181.6	555.3	184.3	176.9	555.3	194.4	181.0
Total		556.3	231.8	231.8	556.3	185.1	181.6	556.3	184.3	176.9	556.3	194.4	181.0

6.4 Discussion – Clayoquot Working Circle

As stated in the Information Package (Version 2, June 2002) the tabulation of harvest by watershed basin is being used to meet the Twenty-Year Plan requirement (Table 6.15, Table 6.16). There is no spatial plan associated with this working circle. Weyerhaeuser felt that there would be no spatial difficulties at the reduced harvest levels associated with the implementation of the Clayoquot Sound Scientific Panel recommendations.