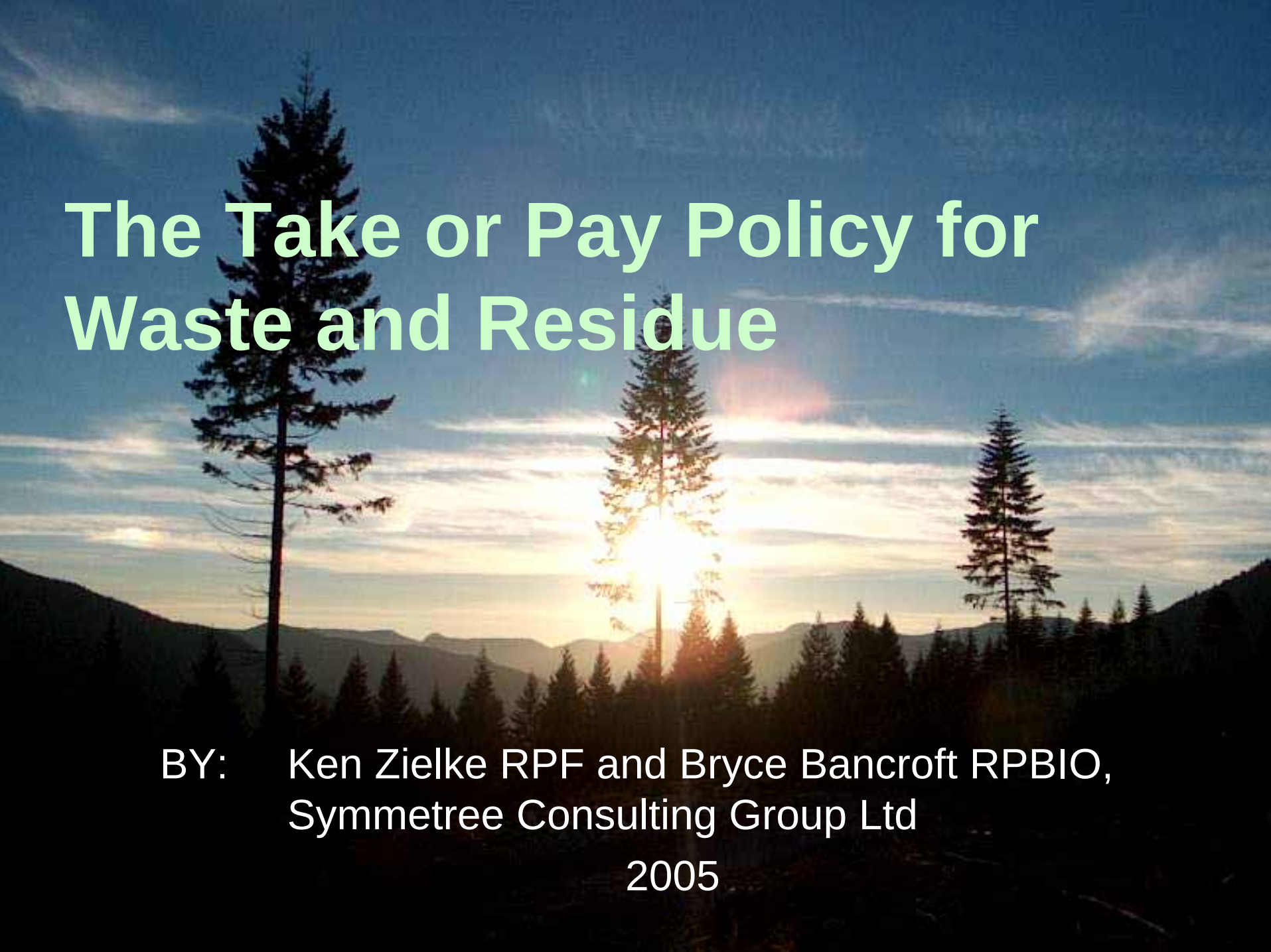




The Take or Pay Policy for Waste and Residue

BY: Ken Zielke RPF and Bryce Bancroft RPBIO,
Symmetree Consulting Group Ltd

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Philosophy and Leave tree considerations

Had a “Remove or Pay” approach in the past

- To encourage utilization of the Crown timber resource



Recently moved to a “Take or Pay” approach

- To move to a more market based approach to valuation
- Licencee can extract any log of value
- BUT – what they leave (of value) they pay for
- **Includes any standing trees not designated as reserves for specific objectives**



Philosophy and Leave tree considerations

↑ Ministry Home

Ministry Policy Manual Home

Ministry Policy Manual

Ministry of Forests

Volume 1 - Resource Management
Chapter 13 - Revenue: Scaling and Cruising

Policy 13.6 - Waste Assessments

Effective Date: 15-June-04

Responsible Branch: [Revenue Branch](#)

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Policy

Merchantable Crown timber, whether standing or felled, that is not reserved from cutting and remains on site upon the completion of primary logging of each cut block or at the expiry of the agreement or cutting permit is waste. The ministry will issue waste bills charging for this waste.

What is the process?

The Cruise estimates a netdown of merch volume from standing timber

Cruised Net Volume = 29867 m³

Cruise compilation

STAND SUMMARY REPORT									
STAND INFORMATION					STAND ANALYSIS				
STAND NO.	STAND NAME	AREA (ha)	AGE (yr)	DBH (cm)	HT (m)	BA (m ²)	CV (m ³)	SV (m ³)	TV (m ³)
1	STAND 1	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
2	STAND 2	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
3	STAND 3	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
4	STAND 4	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
5	STAND 5	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
6	STAND 6	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
7	STAND 7	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
8	STAND 8	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
9	STAND 9	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
10	STAND 10	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
11	STAND 11	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
12	STAND 12	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
13	STAND 13	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
14	STAND 14	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
15	STAND 15	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
16	STAND 16	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
17	STAND 17	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
18	STAND 18	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
19	STAND 19	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
20	STAND 20	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
21	STAND 21	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
22	STAND 22	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
23	STAND 23	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
24	STAND 24	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
25	STAND 25	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
26	STAND 26	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
27	STAND 27	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
28	STAND 28	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
29	STAND 29	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
30	STAND 30	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
31	STAND 31	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
32	STAND 32	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
33	STAND 33	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
34	STAND 34	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
35	STAND 35	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
36	STAND 36	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
37	STAND 37	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
38	STAND 38	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
39	STAND 39	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
40	STAND 40	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
41	STAND 41	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
42	STAND 42	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
43	STAND 43	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
44	STAND 44	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
45	STAND 45	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
46	STAND 46	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
47	STAND 47	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
48	STAND 48	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
49	STAND 49	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
50	STAND 50	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
51	STAND 51	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
52	STAND 52	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
53	STAND 53	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
54	STAND 54	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
55	STAND 55	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
56	STAND 56	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
57	STAND 57	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
58	STAND 58	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
59	STAND 59	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
60	STAND 60	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
61	STAND 61	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
62	STAND 62	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
63	STAND 63	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
64	STAND 64	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
65	STAND 65	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
66	STAND 66	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
67	STAND 67	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
68	STAND 68	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
69	STAND 69	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
70	STAND 70	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
71	STAND 71	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
72	STAND 72	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
73	STAND 73	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
74	STAND 74	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
75	STAND 75	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
76	STAND 76	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
77	STAND 77	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
78	STAND 78	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
79	STAND 79	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
80	STAND 80	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
81	STAND 81	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
82	STAND 82	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
83	STAND 83	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
84	STAND 84	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
85	STAND 85	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
86	STAND 86	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
87	STAND 87	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
88	STAND 88	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
89	STAND 89	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
90	STAND 90	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
91	STAND 91	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
92	STAND 92	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
93	STAND 93	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
94	STAND 94	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
95	STAND 95	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
96	STAND 96	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
97	STAND 97	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
98	STAND 98	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
99	STAND 99	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0
100	STAND 100	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0



Factored Net Volume to Harvest = 28670 m³

- Difference = 1197 m³
(4% retention – dispersed.)



How was the estimate of netdown accomplished?

The Site Plan informs the Cruise for leave trees



Cruise compilation											
Tree ID	DBH	HT	Form	Species	Class	Code	Lat	Long	Alt	Area	Vol
1	10.0	15.0	1	SP	1	1	48.1234	-123.4567	1000	100.0	100.0
2	12.0	18.0	2	SP	2	2	48.1234	-123.4567	1000	144.0	144.0
3	14.0	20.0	3	SP	3	3	48.1234	-123.4567	1000	196.0	196.0
4	16.0	22.0	4	SP	4	4	48.1234	-123.4567	1000	256.0	256.0
5	18.0	24.0	5	SP	5	5	48.1234	-123.4567	1000	324.0	324.0
6	20.0	26.0	6	SP	6	6	48.1234	-123.4567	1000	400.0	400.0
7	22.0	28.0	7	SP	7	7	48.1234	-123.4567	1000	484.0	484.0
8	24.0	30.0	8	SP	8	8	48.1234	-123.4567	1000	576.0	576.0
9	26.0	32.0	9	SP	9	9	48.1234	-123.4567	1000	676.0	676.0
10	28.0	34.0	10	SP	10	10	48.1234	-123.4567	1000	784.0	784.0
11	30.0	36.0	11	SP	11	11	48.1234	-123.4567	1000	900.0	900.0
12	32.0	38.0	12	SP	12	12	48.1234	-123.4567	1000	1024.0	1024.0
13	34.0	40.0	13	SP	13	13	48.1234	-123.4567	1000	1156.0	1156.0
14	36.0	42.0	14	SP	14	14	48.1234	-123.4567	1000	1296.0	1296.0
15	38.0	44.0	15	SP	15	15	48.1234	-123.4567	1000	1444.0	1444.0
16	40.0	46.0	16	SP	16	16	48.1234	-123.4567	1000	1600.0	1600.0
17	42.0	48.0	17	SP	17	17	48.1234	-123.4567	1000	1764.0	1764.0
18	44.0	50.0	18	SP	18	18	48.1234	-123.4567	1000	1936.0	1936.0
19	46.0	52.0	19	SP	19	19	48.1234	-123.4567	1000	2116.0	2116.0
20	48.0	54.0	20	SP	20	20	48.1234	-123.4567	1000	2304.0	2304.0
21	50.0	56.0	21	SP	21	21	48.1234	-123.4567	1000	2500.0	2500.0
22	52.0	58.0	22	SP	22	22	48.1234	-123.4567	1000	2704.0	2704.0
23	54.0	60.0	23	SP	23	23	48.1234	-123.4567	1000	2916.0	2916.0
24	56.0	62.0	24	SP	24	24	48.1234	-123.4567	1000	3136.0	3136.0
25	58.0	64.0	25	SP	25	25	48.1234	-123.4567	1000	3364.0	3364.0
26	60.0	66.0	26	SP	26	26	48.1234	-123.4567	1000	3600.0	3600.0
27	62.0	68.0	27	SP	27	27	48.1234	-123.4567	1000	3844.0	3844.0
28	64.0	70.0	28	SP	28	28	48.1234	-123.4567	1000	4096.0	4096.0
29	66.0	72.0	29	SP	29	29	48.1234	-123.4567	1000	4356.0	4356.0
30	68.0	74.0	30	SP	30	30	48.1234	-123.4567	1000	4624.0	4624.0
31	70.0	76.0	31	SP	31	31	48.1234	-123.4567	1000	4900.0	4900.0
32	72.0	78.0	32	SP	32	32	48.1234	-123.4567	1000	5184.0	5184.0
33	74.0	80.0	33	SP	33	33	48.1234	-123.4567	1000	5476.0	5476.0
34	76.0	82.0	34	SP	34	34	48.1234	-123.4567	1000	5776.0	5776.0
35	78.0	84.0	35	SP	35	35	48.1234	-123.4567	1000	6084.0	6084.0
36	80.0	86.0	36	SP	36	36	48.1234	-123.4567	1000	6400.0	6400.0
37	82.0	88.0	37	SP	37	37	48.1234	-123.4567	1000	6724.0	6724.0
38	84.0	90.0	38	SP	38	38	48.1234	-123.4567	1000	7056.0	7056.0
39	86.0	92.0	39	SP	39	39	48.1234	-123.4567	1000	7396.0	7396.0
40	88.0	94.0	40	SP	40	40	48.1234	-123.4567	1000	7744.0	7744.0
41	90.0	96.0	41	SP	41	41	48.1234	-123.4567	1000	8100.0	8100.0
42	92.0	98.0	42	SP	42	42	48.1234	-123.4567	1000	8464.0	8464.0
43	94.0	100.0	43	SP	43	43	48.1234	-123.4567	1000	8836.0	8836.0
44	96.0	102.0	44	SP	44	44	48.1234	-123.4567	1000	9216.0	9216.0
45	98.0	104.0	45	SP	45	45	48.1234	-123.4567	1000	9604.0	9604.0
46	100.0	106.0	46	SP	46	46	48.1234	-123.4567	1000	10000.0	10000.0
47	102.0	108.0	47	SP	47	47	48.1234	-123.4567	1000	10404.0	10404.0
48	104.0	110.0	48	SP	48	48	48.1234	-123.4567	1000	10816.0	10816.0
49	106.0	112.0	49	SP	49	49	48.1234	-123.4567	1000	11244.0	11244.0
50	108.0	114.0	50	SP	50	50	48.1234	-123.4567	1000	11688.0	11688.0
51	110.0	116.0	51	SP	51	51	48.1234	-123.4567	1000	12148.0	12148.0
52	112.0	118.0	52	SP	52	52	48.1234	-123.4567	1000	12624.0	12624.0
53	114.0	120.0	53	SP	53	53	48.1234	-123.4567	1000	13116.0	13116.0
54	116.0	122.0	54	SP	54	54	48.1234	-123.4567	1000	13624.0	13624.0
55	118.0	124.0	55	SP	55	55	48.1234	-123.4567	1000	14148.0	14148.0
56	120.0	126.0	56	SP	56	56	48.1234	-123.4567	1000	14688.0	14688.0
57	122.0	128.0	57	SP	57	57	48.1234	-123.4567	1000	15244.0	15244.0
58	124.0	130.0	58	SP	58	58	48.1234	-123.4567	1000	15816.0	15816.0
59	126.0	132.0	59	SP	59	59	48.1234	-123.4567	1000	16404.0	16404.0
60	128.0	134.0	60	SP	60	60	48.1234	-123.4567	1000	17008.0	17008.0
61	130.0	136.0	61	SP	61	61	48.1234	-123.4567	1000	17628.0	17628.0
62	132.0	138.0	62	SP	62	62	48.1234	-123.4567	1000	18264.0	18264.0
63	134.0	140.0	63	SP	63	63	48.1234	-123.4567	1000	18916.0	18916.0
64	136.0	142.0	64	SP	64	64	48.1234	-123.4567	1000	19584.0	19584.0
65	138.0	144.0	65	SP	65	65	48.1234	-123.4567	1000	20268.0	20268.0
66	140.0	146.0	66	SP	66	66	48.1234	-123.4567	1000	20968.0	20968.0
67	142.0	148.0	67	SP	67	67	48.1234	-123.4567	1000	21684.0	21684.0
68	144.0	150.0	68	SP	68	68	48.1234	-123.4567	1000	22416.0	22416.0
69	146.0	152.0	69	SP	69	69	48.1234	-123.4567	1000	23164.0	23164.0
70	148.0	154.0	70	SP	70	70	48.1234	-123.4567	1000	23928.0	23928.0
71	150.0	156.0	71	SP	71	71	48.1234	-123.4567	1000	24708.0	24708.0
72	152.0	158.0	72	SP	72	72	48.1234	-123.4567	1000	25504.0	25504.0
73	154.0	160.0	73	SP	73	73	48.1234	-123.4567	1000	26316.0	26316.0
74	156.0	162.0	74	SP	74	74	48.1234	-123.4567	1000	27144.0	27144.0
75	158.0	164.0	75	SP	75	75	48.1234	-123.4567	1000	27988.0	27988.0
76	160.0	166.0	76	SP	76	76	48.1234	-123.4567	1000	28848.0	28848.0
77	162.0	168.0	77	SP	77	77	48.1234	-123.4567	1000	29724.0	29724.0
78	164.0	170.0	78	SP	78	78	48.1234	-123.4567	1000	30616.0	30616.0
79	166.0	172.0	79	SP	79	79	48.1234	-123.4567	1000	31524.0	31524.0
80	168.0	174.0	80	SP	80	80	48.1234	-123.4567	1000	32448.0	32448.0
81	170.0	176.0	81	SP	81	81	48.1234	-123.4567	1000	33388.0	33388.0
82	172.0	178.0	82	SP	82	82	48.1234	-123.4567	1000	34344.0	34344.0
83	174.0	180.0	83	SP	83	83	48.1234	-123.4567	1000	35316.0	35316.0
84	176.0	182.0	84	SP	84	84	48.1234	-123.4567	1000	36304.0	36304.0
85	178.0	184.0	85	SP	85	85	48.1234	-123.4567	1000	37308.0	37308.0
86	180.0	186.0	86	SP	86	86	48.1234	-123.4567	1000	38328.0	38328.0
87	182.0	188.0	87	SP	87	87	48.1234	-123.4567	1000	39364.0	39364.0
88	184.0	190.0	88	SP	88	88	48.1234	-123.4567	1000	40416.0	40416.0
89	186.0	192.0	89	SP	89	89	48.1234	-123.4567	1000	41484.0	41484.0
90	188.0	194.0	90	SP	90	90	48.1234	-123.4567	1000	42568.0	42568.0
91	190.0	196.0	91	SP	91	91	48.1234	-123.4567	1000	43668.0	43668.0
92	192.0	198.0	92	SP	92	92	48.1234	-123.4567	1000	44784.0	44784.0
93	194.0	200.0	93	SP	93	93	48.1234	-123.4567	1000	45916.0	45916.0
94	196.0	202.0	94	SP	94	94	48.1234	-123.4567	1000	47064.0	47064.0
95	198.0	204.0	95	SP	95	95	48.1234	-123.4567	1000	48228.0	48228.0
96	200.0	206.0	96	SP	96	96	48.1234	-123.4567	1000	49408.0	49408.0
97	202.0	208.0	97	SP	97	97	48.1234	-123.4567	1000	50604.0	50604.0
98	204.0	210.0	98	SP	98	98	48.1234	-123.4567	1000	51816.0	51816.0
99	206.0	212.0	99	SP	99	99	48.1234	-123.4567	1000	53044.0	53044.0
100	208.0	214.0	100	SP	100	100	48.1234	-123.4567	1000	54288.0	54288.0

- The SP often specifies a leave tree range - where management objectives can still be attained.
- Need to allow flexibility for harvesting logistics
- The Cruise can only use one number – midpoint of range?
- IS A BEST GUESS AT STANDING VOLUME

Waste Assessment

Licensees – use a licensed wasted assessor

Sample:

- Individual cutblock or several (aggregate reporting unit)
- Three potential subsamples:
 - Accumulated waste – landings & roadside
 - Dispersed
 - Standing trees



Waste Assessment – Standing Leave Trees

Ocular Estimates often used

- ALL Leave trees estimated by volume class (based on ht and dbh)
- Assessor may roughly stratify by grade
- **Clumps** – may estimate ave volume & size
- **Final standing volume tally** – compared to cruise netdown factor



Waste Report Submitted to District

If Ocular volume estimate > than Cruise estimate

- The excess volume is reported as waste
- Generally reported in the lowest possible grade tallied.
- Billing by grade – 12 month ave. stumpage rates.
 - Pertaining to the timber mark
 - Grade X and better on Coast

A full measured survey can be requested – by licensee or District



Concerns...

LICENCEES:

1. Is there a problem linking a reasonable netdown back to the Site Plan?
2. Does the potential for a waste billing adversely impact leave tree prescriptions?
3. Other Concerns?

MINISTRY STAFF:

1. Any concerns?

