greater WELLINGTON
REGIONAL COUNCIL

Report **PE-06.558**
Date 16 November 2006
File MF/02/04/01

Committee **Utility Services**
Author **Barry Leonard, Manager, Forestry**

Plantation Forestry Annual Report and Proposals

1. Purpose

To advise Councillors of the results of the Plantation Forestry activities in the year ended 30 June 2006 and the activities proposed for the financial year commencing 1 July 2007.

2. Significance of the decision

The matters for decision in this report **do not** trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the *Local Government Act 2002*.

3. Exclusion of the public

Grounds for exclusion of the public under section 7(2)(h) of the *Local Government Official Information and Meetings Act 1987* are:

> *That the public conduct of the whole or relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist, i.e.; to allow the carrying out of, without prejudice or disadvantage, commercial activities.*

4. Background

This is the seventh "annual report" on the activities of the Plantation Forestry Department. The report summarises the activities of the previous year, highlighting any variances from planned activities. It also outlines and seeks approval for those activities proposed for the next financial year.

5. Review of operations - year ended 30 June 2006

5.1 Harvesting

When the year commenced we were scrambling to complete the harvest of the

eastern areas of the Reservoir Ridge and Clarkes Creek blocks. These were being harvested by hauler (Log 36) from Grattons, our neighbour to the south. When the harvest was arranged we had agreed to complete our operation before Grattons commenced their own harvest at the end of June. It turned out there was about a three week overlap that Dave Gratton agreed to and the harvest was completed without drama. This crew then moved to Green Knob which is the block in Valley View overlooking State Highway 2. There was some apprehension over the reaction to this block being harvested, given its location but in the event only two calls were received. One related to the horn used by the hauler operator to communicate with the loggers in the cutover. When advised that the use of the horn was a safety matter this caller accepted the need to continue using it and the operator tried to muffle the horn without compromising its effectiveness. The second call was from an ex-employee who wanted the area left to regenerate but unfortunately by the time he called the area had been replanted.

The Tuckey ground based crew (Log 6) was harvesting at Martins in Pakuratahi West and the Marrayatt crew (Log 4) at Longspur in Valley View. Unfortunately the Martins block became too wet to continue and that crew moved to Clarkes Creek to complete the northern sector of the block. Log 4 was used to road-line in the blocks lying west of Valley View road running down to the Whakatikei River and to clearfell isolated areas adjacent to the road.

In October the decision was taken that it would not be prudent to continue to avoid the stands with pruned trees while we waited for the pruned market to improve, as we ran the risk of all remaining mature stands being pruned. Accordingly we moved Log 36 the hauler crew into the Hukinga to clearfell 2 blocks which, according to the records contained pruned trees. It transpired that the proportion of pruned was lower than anticipated and we were able to dispose of it at a satisfactory price. This crew remained in the Hukinga until April 2006 and the only difficulty was with the hill on the access road between the 9 and 8 km. This hill had not created any problems during the previous harvest but at that time cartage had been carried out by another company which predominately operated American trucks. The present operator ran a mixture of Mitsubishi and American trucks and the Mitsubishi trucks struggled on the hill in anything but totally wet or totally dry conditions. Many of these vehicles required to be towed and we were lucky that Log 6 the ground based crew was working in Valley View at the time and was able to use their skidder to tow the vehicles.

Log 6, and Log 4 up until they departed in November, logged the heads of the blocks lying west of Valley View and south of Airstrip Drive. These were all carried out as ground based harvests. Log 6 in the past included an "Ecohauler" (a lightweight cable hauler) and could thus work as both a hauler crew or a ground based crew. Shortly after Christmas the Ecohauler was sold, so this option was no longer available. To compensate for this, the crew developed a different harvesting strategy, which expanded the terrain they could access as a ground based crew. This involves using an additional digger working in the cutover to de-limb and marshal the logs which are then towed to the log making skid by skidder. In practice this has resulted in

higher production levels than using the hauler. However, there will be areas where the ground is too steep for this methodology.

In February Log 6 returned to Pakuratahi West to complete the Martins blocks. This was achieved by May and the crew moved into the Glider Club block. This block was not included in the harvest plan for this year but after inspection it was felt that the western section of the block was unlikely to improve over the 18 months until it was scheduled for harvest, whereas the additional time would result in improved volumes in the Valley View blocks. Unfortunately ground conditions again deteriorated, with the onset of winter, and only half the allocated area was harvested.

Log 36 completed the harvest at Hukinga in May and moved to Dick's Yard in Puketiro.

Log 4 returned in May and was engaged to harvest a remnant area around Ladle Bend in Pakuratahi East.

Total production for the year is detailed in table 1.

Table 1 – Total production for 2005/6

Logging Income – All Sources – 2005/6 [Year End] $								
	Mill/Port Price	Cartage	Harvest Costs	Comm.	Accounting Adjustment	Net Return	M3	Average $/t B4 Roads
July	422,348	62,393	178,497	30,513	170	**151,114**	6,734	**22.44**
August	316,360	45,170	138,047	23,051	1	**110,093**	5,145	**21.40**
September	336,290	50,981	151,743	25,342	-1,167	**107,056**	5,807	**18.44**
1st Quarter	**1,074,998**	**158,545**	**468,288**	**78,907**	**-996**	**368,263**	**17,686**	**20.82**
October	400,209	67,088	161,918	24,970	2,470	**148,705**	6,918	**21.49**
November	332,099	54,182	136,029	20,235	-7	**121,646**	5,454	**22.30**
December	289,382	47,064	119,479	17,785	4,087	**109,141**	4,820	**22.64**
2nd Quarter	**1,021,690**	**168,334**	**417,426**	**62,990**	**6,550**	**379,491**	**17,193**	**22.07**
January	137,462	21,045	58,920	8,118	-5,577	**43,802**	2,302	**19.03**
February **	406,499	63,164	182,597	24,034	4,128	**140,832**	6,578	**21.41**
March	371,304	54,280	155,789	21,145	-3,756	**136,334**	5,781	**23.58**
3rd Quarter	**915,265**	**138,489**	**397,307**	**53,297**	**-5,204**	**320,968**	**14,661**	**21.89**
April	263,531	36,529	105,470	14,245	24	**107,311**	3,772	**28.45**
May	367,973	55,432	146,040	20,934	-2,546	**143,021**	5,769	**24.79**
June	368,860	61,046	167,654	21,391	-276	**118,492**	5,885	**20.13**
4th Quarter	**1,000,365**	**153,008**	**419,165**	**56,570**	**-2,798**	**368,824**	**15,426**	**23.91**
Total	**4,012,318**	**618,374**	**1,702,185**	**251,764**	**-2,448**	**1,437,546**	**64,966**	**22.13**

** Rayonier moved to calendar month end accounting periods. This month consisted of six weeks.

The grade outturn for the year by block is detailed in table 2.

Table 2 – Grade outturn for 2005/6

Grade		Pakuratahi East	Pakuratahi West	Pakuratahi West	Valley View	Valley View	Valley View	Valley View	Valley View	Hukinga	Puketiro	Total Tonnes
		Ladle Bend	Glider	Martins	Green Knob	Beech Spur	RR/CC	Longspur	Upper Longspur	Signis	Dick's Yard	
51	Pruned	15.31	0	0	0	0	223.66	0	0	351.92	269.67	860.56
52N7	7.3 S grade	72.44	145.86	563.00	206.98	0	0	0	0	106.18	0	1,094.46
52N2	S grade	508.45	440.59	3,976.63	1,984.55	592.98	440.34	460.16	1,822.43	5,083.02	73.00	15,792.15
53K/C	Export s/log	84.23	469.61	1,965.07	1,054.97	290.16	71.38	105.84	1,394.46	2,195.36	169.55	7,800.63
53N	Dom s/log	87.20	260.24	303.89	837.65	13.46	307.22	143.6	389.69	247.01	305.3	2,895.26
54	Post and poles	0	0	350.66	59.88	0	0	0	0	0	0	410.54
57K/C	Export s/log	12.4	229.06	1,154.56	944.66	196.24	117.12	101.04	1,033.29	1,477.64	177.92	5,443.93
57N	Dom s/log	87.21	351.91	2,922.38	1,015.28	193.17	377.71	88.18	1,093.41	2,447.78	287.65	8,738.68
58K/C/I	Export rough	81.35	509.15	1,861.47	1,718.70	207.54	187.09	147.68	2,338.50	2,342.51	725.29	10,119.28
58N	Dom rough	0		614.18	30.93	28.81	58.24	0	651.76	106.15	0	1,460.07
59K/C/I	Export pulp	13.49	429.07	1,515.85	175.45	0	0	0	503.34	959.10	454.11	4,050.41
59N1	Dom pulp	0	61.75	578.16	953.27	201.93	15.36	29.22	804.63	1,396.36	237.91	4,278.59
59N2	O/s pulp	0	0	0	30.37	39.74	0	0	153.27	102.09	0	325.47
FW	Firewood	59.24	0	27.70	328.64	29.29	331.57	0	596.97	292.26	0	1,665.67
		1,021.32	2,871.24	15,833.55	9,341.33	1,793.32	2,029.69	1,075.72	10,781.75	17,107.38	3,110.4	64,965.7

Generally as part of each annual report we advise on actual production against the forest inventories (Marvl). The comparisons are only relevant where the whole of a block has been **harvested** within the reporting period, as the Marvl is the average of all the plots and individual areas within the block could vary greatly from the average. This year, when there are only a few completed blocks, it is more relevant to consider the total tonnes harvested against the overall average as Marvled.

The grade outturn compared with the predicted outturn is detailed in table 3.

Table 3 – Grade outturn compared with predicted outturn

2005/06 - All Blocks				
Grade	**Marvl**	**Actual**	**Difference**	**Difference**
	Tonnes	Tonnes	Tonnes	%
51	2,460.67	860.56	-1,600.11	-65.03
52	16,922.65	16,886.61	-36.04	-0.21
53	9,870.87	10,695.89	825.02	8.63
54	0	410.54	410.54	NA
57	15,805.65	14,182.61	-1,623.04	-10.27
58	2,782.40	11,609.35	8,826.95	317.24
59	17,123.48	10,320.14	-6,803.34	-39.73
Total	64,965.72	64,965.70		

Discussion of variations:

- 51 Pruned and part pruned / Actual -1600

  The pruned outturn from Dick's Yard is well down on the average because of the harvesting so far being centred on Road 9 and the higher ground, whereas the highest proportion of pruned logs are in the valleys sheltered from the wind. The two Hukinga blocks produced less pruned than predicted, in the main because of the logs being short pruned (i.e., less than 6.1 M) and difficulty at the time finding markets. These logs otherwise went into the 52 grades and, while the gross price was less, so was the cart distance.

- 52 Sawlog / Actual -36.17

  A good estimate.

- 53 Sawlog / Actual +825.05

  As there was a general shortage of 52 grade logs during most of the year - in part because mills that traditionally sawed pruned logs changed to sawlog to maintain the business - many mills began cutting a lower grade sawlog to make up volumes. While this has occurred for short periods in the past, it is seldom sustained for as long as it has this year.

- 54 Posts

  There was only a total of 410 tonnes sold as posts. This would be less than the anticipated margin of error within a Marvl inventory. Post sale tends to be opportunistic, as the nearest outlet is Koputaroa, which buys very limited quantities and the next nearest is New Plymouth or Taihape. Cartage for this distance makes the sale marginal at best.

- 57 Small sawlogs / Actual -1,623

  The greatest proportion of this grade goes to Kiwi Lumber in Masterton, with the balance being exported. Kiwi has a maximum diameter of 48 cm compared to 90 cm for most other domestic sawmills. This grade has a maximum knot size of 10 cm and, as Marvls are not repeated each year and the computer program which "grows on" the data cannot move logs between grades, there will be logs that move from 57 grade to 58 grade because of knot size.

- 58 Rough sawlog / Actual +8,826

  Much of this product was sold to India rather than the traditional Korean market. A difference in specification allowed quantities of logs, which in the past would have been sold as pulp, to be included in this grade.

- 59 Pulp and Firewood / Actual -6,803

  As set out above, significant volumes of this wood was "promoted" to 58 grade for India.

When estimates are prepared using the Marvl system, it is usual to use a simplified grade range or dictionary. This is normally made up of about eight grades, whereas in "real life" there may be three times that number of options, and the marketing companies are always "tweaking" grade parameters either to avoid an increase in price (the buyer may elect to accept a larger knot or shorter log rather than a price increase) or for "niche" markets.

5.2 Replanting

During the 2005/6 planting season a total of 199,285 trees were planted at a stocking of 1,500 stems per hectare (spha), which equated to 132.86 ha planted. All trees were GF 17/19. The areas replanted were in the Glider Club and Martins in Pakuratahi West, Maire Creek in Pakuratahi East, Upper Longspur and Parry's Bush at Valley View, parts of Dick's Yard in Puketiro and Blocks 9, 10 and 13/04 in Hukinga.

We have traditionally purchased GF17 (growth factor) seedlings and accepted GF19 as an alternative. This allows us to plant at a higher tree density, avoid the need to undertake weed control and still leaves ample suitable trees from which to select the final stocking. There is increasing agitation from nurseries to abandon both these grades in favour of controlled pollinated stock. Advice from our contractor is that controlled pollinated stock offers no perceptible

improvement on our current purchases and comes with a higher cost. It is to be hoped that the combined purchase of both the contractor and Council will prove sufficient for the nursery to continue to produce our favoured GF17 plants.

5.3 Silviculture

The 2004/5 silviculture programme was rolled over into the 2005/6 year after it was discovered that growth rates were insufficient to permit the silviculture to go ahead as planned without the risk of excessive mortality.

As at 30 June 2006 the following tasks carried over from the 2004/5 programme had been completed:

Pakuratahi West	7.01	Thin to 350 spha	19.0 ha
Pakuratahi West	9.01	Thin to 350 spha	20.5 ha
Pakuratahi West	8.01	Thin to 350 spha**	18.5 ha
Hukinga	9/05	Low Prune	0.2 ha
Hukinga	15/02	High Prune and thin to 350 spha	0.2 ha
Hukinga	11/02	High Prune and thin to 350spha	0.5 ha

** Not completed.

Carried over into the New Year was:

Pakuratahi West	8.01	Thin to 350 spha	4.1 ha
Pakuratahi West	8.02	Thin to 350 spha	11.0 ha

This carryover was caused by a combination of contractor staff shortages and Council using the Contractor to assist with roading work.

Expenditure for the 2005/6 year was $21,487 out of a budget of $70,587. The significant difference between these figures arises from the deferred blocks above and 7 blocks in Pakuratahi which, despite an additional year, failed to make sufficient growth to allow the planned low pruning. Likely expenditure in the 2006/7 year is $ 52,139.85 to treat 117.3 ha plus $5,134 carried over.

5.4 Forest health

The annual forest health survey was carried out by Target Pest during April 2006 at a cost of $4,157. This sum included the physical survey and a diagnostic levy to Forest Research Institute of 15.8 cents per hectare and a Forest Owners' Association research levy and administration costs of 38 cents per hectare. As with previous years, the survey was first conducted by air, followed by specific investigation on land of any problems identified and a "drive by" inspection at the rate of 20 m per hectare observing health on the basis of foliage colour and consistency. Inspection plots are carried out at random locations at 0.5 percent intensity. The actual inspection was 75.5 km "drive through" and 15 plots both in excess of the specification, which called for 58 km "drive through" and 11 plots.

The survey did not identify and new insect or fungal infestations within the

forest but did locate an Australian leaf miner, which had not previously been identified this far south.

In summary, their findings were:

Main pathogens found

Armillaria - Native root rot fungus that can infect trees of all ages

> *Armillaria induced tree failures and root damage was relatively infrequent, generally only the odd tree affected in the odd compartment. Incidences here are considerably lower than other areas of the country such as the central Bay of Plenty for example. The highest incidences would be in the second rotation stands in the eastern side of Pakuratahi forest.*

Dothistroma pïni - A very common needle blight in both New Zealand and overseas.

> *The disease caused by infections of the foliage by D .pini is extremely common. Pinus radiata is moderately susceptible, though infection levels in this region are usually low – moderate. Pinus nigra on the other hand is highly susceptible and the disease has a significant impact upon this host in most regions of NZ. None of the Pinus radiata stands were at levels where chemical intervention is economically warranted.*

Physiological needle blight - Is similar in appearance to *D .pini* but affects an older age group.

> Identified within Drapers, Puketiro Forest.
>
> *In essence it would appear that this disorder is due to high moisture coupled to mild temperatures. In the laboratory the waxy needle epidermis of needles has proven to dissolve and become infected with saprophytes and endophytes (such as species of Strasseria and Cyclaneusma minus).*
>
> There is no treatment for this disorder and the recommendation is to continue to fund research.

Sphaeropsis sapinea - Also known as Diplodia, it is primarily a wound pathogen that has gained access to the trees through existing bark damage.

> Not considered significant. No action required.

Hylastes ater - black pine bark beetle. Damages inner bark of recently felled logs and can attack the root collar of newly planted seedlings.

> Identified in Harris South Puketiro and Green Knob Valley View. In both cases at least half of the infestation occurred after the seedling had died of other causes. Overall a very minimal infestation.

No further action required.

Eucalypt insects

> *As a rule Eucalypt species often carry a large variety of insect and fungal organisms. The Eucalypts in these forests are no exception. For some time we have monitored the southwards spread of Acrocercops laciniella or the blackbutt leaf miner. It was far from a surprise to find this organism lightly affecting the E. fraxinodes in valley View. Given the level of damage and its monitored arrival in areas that were surveyed in more northern areas it's likely that the insect has been present for some time. As this is the first record of this insect in this region Ensis in accordance with the Biosecurity Act 1993 have informed MAF.*

Main nutrient disorders found:

> *These forests have a long history of Phosphorous and nitrogen deficiency. In some stands particularly in the eastern forests phosphorous deficiency symptoms were easily located. In many stands its obviously resulting in growth limitations e.g. Cpt* [Compartment] *10 Pakuratahi. Needle fusing and /or chlorotic trees are also common on the bony ridges e.g. Valley View. In Puketiro Cpt8 trees looked like they might be low in Nitrogen, Phosphorous and perhaps Boron.*

The recommendation was to sample second rotation trees at four years. We have a policy of undertaking foliage analysis where stands have a history of nutrient deficiency such as Pakuratahi. We applied fertiliser in September last, including Compartment 10 referred to above. We have carried out more foliage analysis in April this year and propose further fertiliser applications next spring. It is interesting that, as part of the analysis of the latest samples, ENSIS recommended only applying fertiliser after pruning was completed. Generally Puketiro, especially the western end where Compartment 8 is located, is considered one of the more fertile areas of the estate. We will undertake foliage analysis in this block next February with a view to including it the next spring fertiliser application should it be necessary.

During a mapping trip to Compartment 8 in Puketiro in November 2005 I came across a tree that appeared to have been covered in soap flakes (see photo on page 10).

I contacted the forest health expert who at the time was only in cellphone contact in a marginal area. My description and his response over a marginal cellphone link failed to identify the organism, thus leading to the beginnings of mild panic (was it new?) before it was identified as *Pineus laevis*, pine woolly aphid. The condition attracts other insects which feed off it and in time destroy it without ongoing damage to the tree.

5.5 Forest access

There has been relatively little road construction required this year, with nearly all harvesting being adjacent to established roads. That is not to suggest that it has been a free ride!

With logging out of the Hukinga involving a 12.5 km cart and a river crossing and that out of Dick's Yard an 18.5 km cart, there has been an ongoing need for maintenance on the roads. Access roads were upgraded into Beech Spur, Long Spur, Upper Long Spur and Dick's Yard, generally for about 500 m each. Although last time we logged out of the Hukinga we had no problems with the road, this time we encountered a bout of Mitsubishi trucks stalling on the hill between the 9 km and 8 km. It was not possible to reconstruct the hill as we needed to continue using it, so the only solution was to use a tractor mounted spreader bar to remove any corrugations as soon as they appeared. The road was fine when it was really wet or really dry but impassable to Mitsubishis when it was in between.

We have yet to gain access from the two MOT blocks to Paekakariki Hill Road and further discussions on options will take place in the next few months. A new option has evolved as a consequence of the option for wind turbines in this area. The access road for the wind turbine infrastructure can double as a logging road. Time will tell if this comes to pass.

Elsewhere in the forest estate only the Maungakotukutuku block remains without 4WD access or better.

6. The current year

6.1 Harvesting

The pruned market remains depressed on the back of the strong New Zealand dollar but, while the prices are poor, at least some mills are buying. With

harvesting being concentrated on structural stands for the last couple of years, we were reaching a point where we ran the risk of having harvested all our structural stands. To avoid this we moved a logging crew into Dick's Yard in Puketiro in June in the knowledge that the block contained pruned logs.

Up until September the crew logged mainly high ground and produced very few pruned logs. In September they set up hauler to log the main valley and are now producing around 9 loads per week. It is keeping Rayonier on their toes finding homes for it.

Since June there have been regular but small increases in domestic sawlog prices and demand still seems to be exceeding supply (or at least production capacity). Mills are still purchasing less favoured grades to make up volume and maintain mill production.

Export prices have fluctuated because of shipping costs, which remain above $US40/tonne and the revived dollar. In Korea buyers are paying $US109/tonne, which is top dollar. It is unfortunate that we do not get to share the price.

The escalating fuel price has added to harvest and cartage costs and the recent falls will not take effect until after the review based on 30 September.

In order to operate a summer and winter programme, the tentative blocks to be harvested this year are:

- Martins 6/01, Pakuratahi – completed
- Glider Club, Pakuratahi – 6 ha western side of block
- Dick's Yard – 50 ha commenced June
- Blow Fly, Puketiro (only if Dick's Yard is completed over summer)
- Valley View 5/03
- Longspur and Beech Spur, Valley View
- Valley View 4/01 - commence next winter
- Miscellaneous remnant blocks as opportunity offers.

It may also be possible to harvest a proportion of the MOT blocks.

6.2 2005-2009 Harvest Contract

This Contract continues to operate satisfactorily from a harvest perspective, with two full production crews undertaking the main harvest and a smaller crew tidying up remnant stands. On this basis it is hoped to achieve 70,000 tonnes in the current year.

The only problem with the Contract is the provision of transport. The efficient operation of the harvest crews is being compromised by the lack of transport. This is particularly so when the skid becomes full and when the crews are waiting to clear a skid before moving to a new site.

Transport provision is subcontracted to Rotorua Forest Haulage and the most disappointing aspect of this arrangement is that there are no minimum service specifications in the Contract. All we can do is to complain through Rayonier.

This Contract is up for review in February 2007 and I am assured any new contract will include minimum service levels.

7. Proposals for the 2007/8 year

7.1 Harvesting

On the assumption that markets return to "normal", harvesting for the 2007/8 year will be centred on the following blocks.

Completion of:

Valley View 4/01	say 19.5 ha of 39.5 ha
Blow Fly	say 20 ha (assumes part completed in the current year)

Harvest of:

Kilometre	say 30 ha of 90 ha
Glider	14 ha from eastern section of block

Centre South (77.5 ha) in Puketiro is included in this Contract. It may be preferable to bring forward the harvest of this block should the wind farm proposal be successful.

Should the market prove suitable, the completion of MOT.

7.2 Replanting

7.2.1 General

It is recommended that the above areas be replanted in the winter following harvest. All blocks have produced reasonable trees to date with parts of the Blow Fly block producing exceptional pruned butts. In the past the main ridge has suffered from high wind run and thus produced very poor trees. Should the wind farm eventuate this issue will be overcome albeit with a consequential reduction in block size. Kilometre and Glider Club should both benefit from better genetics and current silvicultural practices. It is proposed that GF17/19 seedlings be used and these will be planted at 1,500 spha, with a target crop of 350 spha for pruned stands and between 400 spha and 500 spha for structural stands.

7.2.2 Environmental issues

There are no specific environmental issues with these blocks. In the first rotation crop trees were planted right up to the stream banks. When replanted standard riparian margins will be left to regenerate. We will continue our

present practice of regular monitoring of harvesting and replanting by an independent soil scientist.

Any issues that may arise will be dealt with in accordance with "best industry practice" and on advice from the Regional Council's Soil Conservator.

7.2.3 Heritage issues

The harvesting of the Rail Trail alignment has now been completed, except for the Glider Club blocks (2). These will exit the forest on the Glider Club road and, as such, should not impact on the Rail Trail operation. We still have to undertake an archaeological survey following the harvest at Ladle Bend.

There are no other heritage issues that we are aware of.

7.2.4 Recreational issues

We are not aware of any issues relating to the interface between commercial forestry operations and recreational activities. Any effect on recreational users is minimal, as only equipment maintenance is permitted on weekends unless special arrangements are made and this is the most popular period for recreational activities.

7.2.5 Suitability for replanting

Present returns confirm that these areas will produce enhanced volumes in the second rotation. In some cases non-merchantable trees on ridgelines will not be harvested but will be retained to provide shelter from the prevailing winds for the new crop. Returns in the vicinity of 550–600 m³ per hectare can be anticipated.

7.2.6 Financial

Attachments 4–6 set out the projected returns on a sample of each of the blocks that may be subject to replanting.

The net present values of the second rotation with sensitivities are:

Table 4 - Net Present Values

Forest Block	[$] 8%	[$] 9%	[$] 10%
Blow Fly	20,234	9,612	1,965
Dick's Yard	57,451	29,340	9,049
Glider Club	16,158	8,158	2,391
All blocks	93,842	47,110	13,405

Table 5 - Internal Rates of Return

Forest Block	Base Case	+10% Revenue	-10% Revenue
Blow Fly	10.32%	11.10%	9.38%
Dick's Yard	10.58%	11.35%	9.65%
Glider	10.54%	11.30%	9.62%

These figures set out the improved returns that can be anticipated from a well tended second rotation.

7.3 Silviculture

Subject to satisfactory growth, the following silviculture is programmed for the 2007/8 year:

Block	Year	Activity	ha
Whaka 2.01	1999	High prune	38
Whaka 3.01	2000	Medium prune	36.2
Pakuratahi - various	1998/9	Medium prune	103.3

Monitor growth factors and apply fertiliser if required.

Replanting as set out above.

8. Recommendations

That the Committee:

1. ***Receive** the report.*
2. ***Note** the content of the report.*
3. *Approve the replanting of the areas specified within this report in the winter following harvest.*

Report prepared by:

Barry Leonard
Manager, Forestry

Report approved by:

Murray Kennedy
Divisional Manager, Water Supply, Parks and Forests

Attachments:

1 Analysis of financial Returns