



**NEW ZEALAND FOREST INDUSTRY**

# **FACTS & FIGURES**

**2005/2006**

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# LEADING SKILL DEVELOPMENT



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## NZ Plantation Forestry In Summary

Area & standing volume statistics	April 2003	April 2004
<b>Net stocked forest area (ha)</b>		
Total estimated area	1,827,000	1,822,000
<b>Growth characteristics</b>		
Standing volume (000m <sup>3</sup> )	398,000	398,000
Average standing volume (m <sup>3</sup> /ha)	218	219
Area-weighted average age (years)	13.7	13.7
<b>Area by species (ha)</b>		
Radiata pine	1,630,000	1,626,000
Douglas-fir	109,000	112,000
Other exotic softwoods	33,000	33,000
All exotic hardwoods	55,000	51,000
<b>Radiata pine area by tending regime (ha)</b>		
Pruned with production thinning	274,000	256,000
Pruned without production thinning	818,000	798,000
Unpruned with production thinning	62,000	40,000
Unpruned without production thinning	476,000	532,000
<b>Planting &amp; harvesting statistics</b>		
	<b>Year Ended</b>	<b>Year Ended</b>
	<b>31 December 2003</b>	<b>31 December 2004</b>
<b>New planting (ha)</b>		
Total estimated new planting	22,100	19,000
Restocking	39,600	38,200
Harvested area awaiting restocking	49,500	54,600
<b>Harvesting</b>		
	<b>31 March 2003</b>	<b>31 March 2004</b>
Area clear felled (ha)	49,000	40,800
Volume clear felled (TRVIB <sup>1</sup> , 000m <sup>3</sup> )	22,206	18,550
Volume production thinned (TRVIB, 000m <sup>3</sup> )	772	826
Total volume removed (TRVIB, 000m <sup>3</sup> )	22,978	19,376
Average clear fell yield (m <sup>3</sup> /ha)	454	455
Area-weighted average clear fell age for radiata pine (years)	27.3	27.6
Estimated planted forest roundwood removals based upon main products recovered (000m <sup>3</sup> ) <sup>2</sup>	22,410	20,856

Notes:

<sup>1</sup> TRVIB is an abbreviation for Total Recoverable Volume Inside Bark.

<sup>2</sup> This is an estimate based upon the application of product recovery conversion factors to the main products made from the forest harvest.

Source: NEFD 2004

*Unless stated, all information contained in this booklet has been sourced from the New Zealand Ministry of Agriculture and Forestry.*

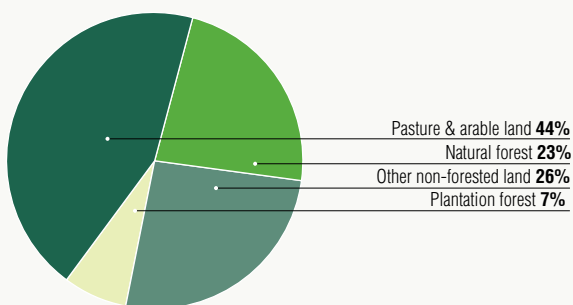
## NZ Economic Indicators – 2004/05

Population	4,093,000
GDP \$ billion	122.9
GDP per capita \$	30,184
Exports \$ million	29,725
Forest products exports total \$ billion	3.3
Total overseas debt \$ billion	123.204
Annual percentage change in GDP	4.2%
Inflation (as measured by annual percentage change in CPI)	2.8%
Forestry sector contribution to GDP	3.1%

Source: Statistics New Zealand

## New Zealand Land Use

(Total area of New Zealand 26.9 million hectares)



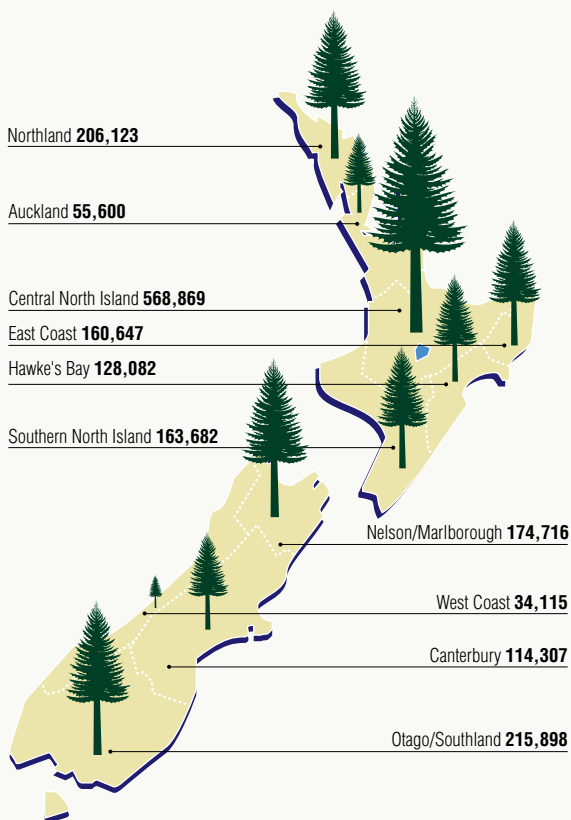
	Hectares (millions)	% of total
Pasture & arable land	11.8	44%
Natural forest	6.2	23%
Other non-forested land	7.1	26%
Plantation forest	1.8	7%

Notes:

Total area is measured at mean high tide mark on 21 September 2001

## Where The Plantation Forests Are

(Hectares – round figures)



**Total 1.8 million hectares**

Source: NEFD 2004

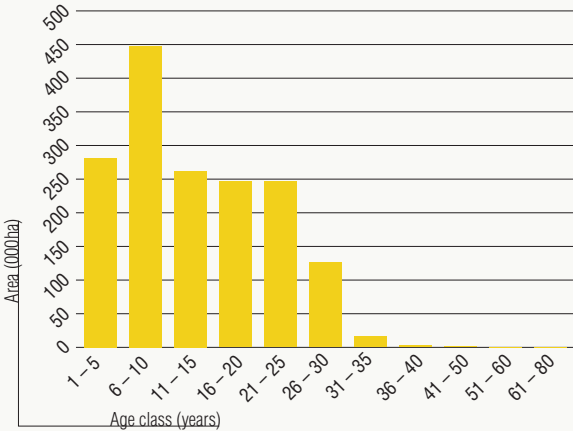
## Plantation Forest Area By Species

(As at 1 April 2004)

	Hectares (thousands)	% of total
Radiata pine	1,626	89.2
Douglas-fir	112	6.2
Other exotic softwoods	33	1.8
All exotic hardwoods	51	2.8
<b>Total</b>	<b>1,822</b>	<b>100</b>

## Net Stocked Area Of Radiata Pine

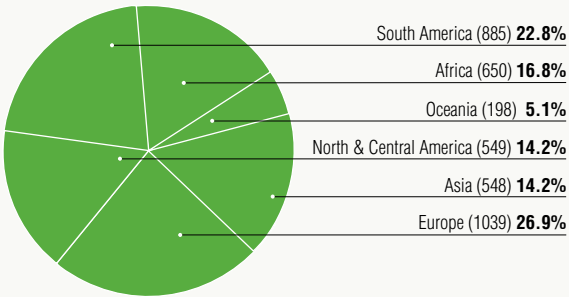
(By age class at 1 April 2004)



Source: NEFD 2004

## Global Forest Areas By Main Regions (2000)

(Millions hectares)



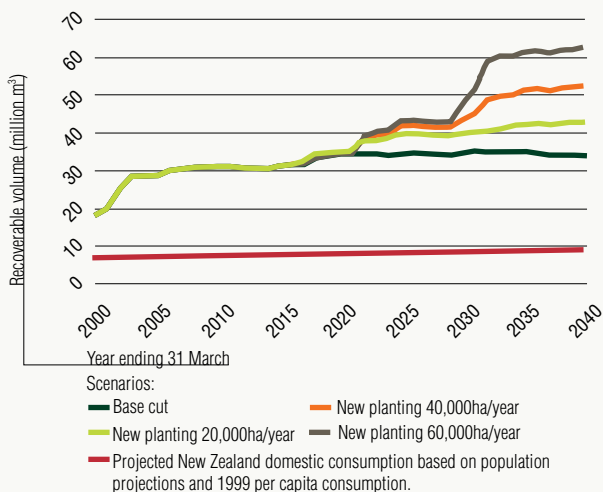
2000: total area = 3869 million ha

Source: FAO State of World Forests 2005

### Did you know that:

New Zealand's forest industry supplies 1.1% of world and 8.8% of Asia Pacific's forest products trade. All from just 0.05% of the world's forest resource and an annual harvest area equivalent to 0.0009% of global forest cover. The reason – highly productive, sustainably managed plantation forests.

## Wood Availability Forecast



## New Zealand Planted Forest Ownership

As at 1 October 2005

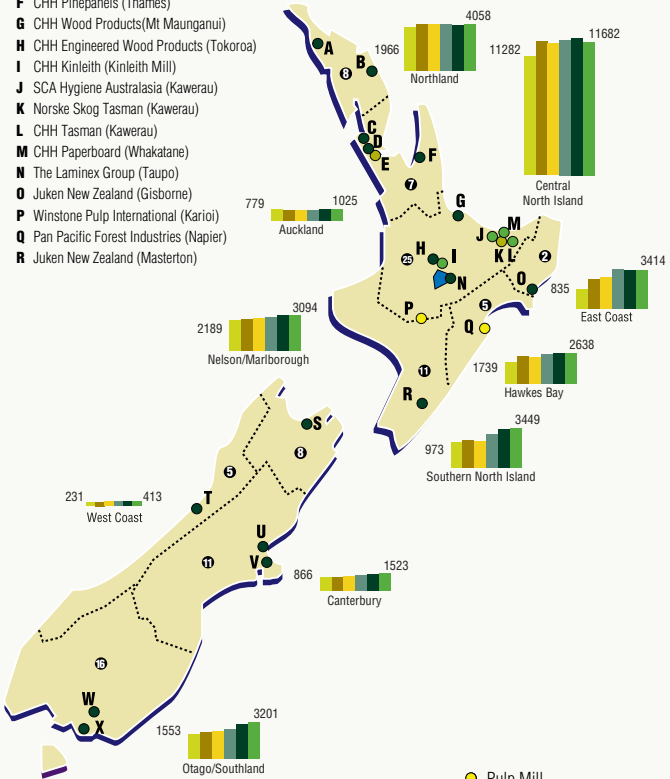
Owner/Manager	Planted Area (ha) – round figures	% of Total
Carter Holt Harvey	221,000	12.1
Kaingaroa Timberlands	165,000	9.1
Rayonier-Deutsche Asset Management	143,000	7.8
Hancock Natural Resource Group	107,000	5.9
Ernslaw One	86,000	4.7
Weyerhaeuser New Zealand	64,000	3.5
Juken New Zealand	55,000	3.0
Crown Forestry	42,000	2.3
Pan Pac Forest Products	32,000	1.8
Blakely Pacific	28,000	1.5
Timberlands West Coast	27,000	1.5
Hikurangi Forest Farms	27,000	1.5
Global Forest Partners <sup>1</sup>	27,000	1.5
Wenita Forest Products	25,000	1.4
Roger Dickie New Zealand	24,000	1.3
Forest Enterprises	22,000	1.2
Evergreen Forests/James Fielding Funds Management	21,000	1.2
Winstone Pulp International	17,000	0.9
City Forests	15,000	0.8
Selwyn Plantation Board	13,000	0.7
GSL Capital	11,000	0.6
Other (Includes Farm Forestry)	663,000	36.4
<b>Total</b>	<b>1,822,000</b>	<b>100</b>

1. In addition to the 27,000 hectares of forest Global Forest Partners have full ownership of they have financial interests in a range of New Zealand forestry investments including joint venture interests in Mangakahia Forest with CHH and the forests managed by Weyerhaeuser NZ Inc in the Nelson region.

2. Based on the total net stocked area reported in the NEFD Report 2005

# Location Of Major Forest Industries and Expected Woodflows by Wood Supply Region

- A** Juken New Zealand (Kaitia)
- B** CHH Futurebuild (Whangarei)
- C** The Laminex Group (Kumeu)
- D** Plycoselect (Penrose)
- E** CHH Paperboard (Penrose)
- F** CHH Pinepanels (Thames)
- G** CHH Wood Products (Mt Maunganui)
- H** CHH Engineered Wood Products (Tokoroa)
- I** CHH Kinleith (Kinleith Mill)
- J** SCA Hygiene Australasia (Kawerau)
- K** Norske Skog Tasman (Kawerau)
- L** CHH Tasman (Kawerau)
- M** CHH Paperboard (Whakatane)
- N** The Laminex Group (Taupo)
- O** Juken New Zealand (Gisborne)
- P** Winstone Pulp International (Karioi)
- Q** Pan Pacific Forest Industries (Napier)
- R** Juken New Zealand (Masterton)



- S** Nelson Pine Industries (Richmond)
- T** International Panel & Lumber (Greymouth)
- U** CHH Pinepanels (Rangiora)
- V** Gunn's New Zealand Pty (Christchurch)
- W** Rayonier New Zealand MDF (Mataura)
- X** Southland Veneers (Invercargill)

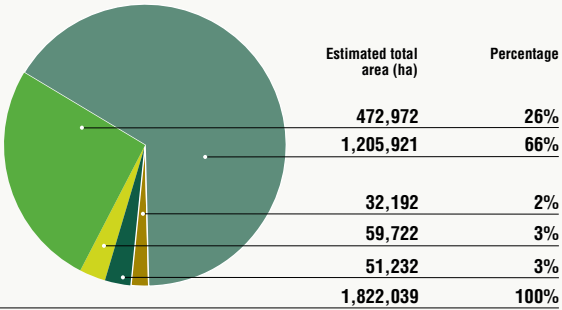


- Pulp Mill
- Paper Mill
- Pulp & Paper
- Panel Board Mill
- Ⓜ Number of sawmills producing 5000m³ or more of sawn timber in the year ended 31/3/04



## Plantation Forest Ownership

(Net stocked planted production forest area at 1 April 2004)



### Ownership category<sup>1</sup>

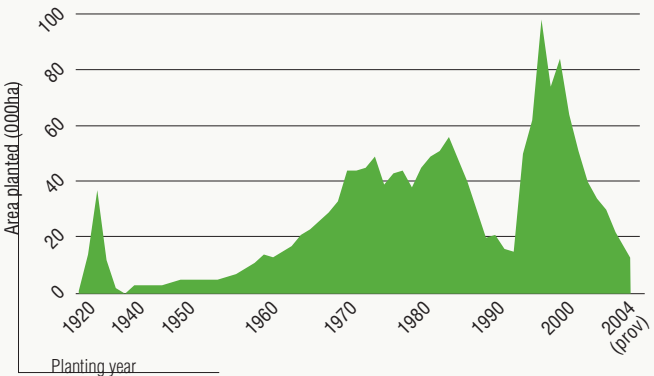
- Registered public companies
- Registered private companies<sup>2</sup>
- State owned enterprises
- Central Government<sup>3</sup>
- Local government bodies

Note:

- Ownership is based solely on the ownership of the forest irrespective of the ownership of the land.
- "Privately owned" includes all privately owned forests. The legal entities included in this category are private companies, partnerships, individuals and trusts, which include Maori trusts and incorporations.
- "Central Government" forests are predominantly Crown owned forests on Maori lease hold land. These forests are managed by the Ministry of Agriculture and Forestry.
- Note that significant changes in forest ownership occurred during 2003 resulting in large areas of forest previously owned by public companies now being privately owned.

## Rates Of New Planting

(In addition to restocking)

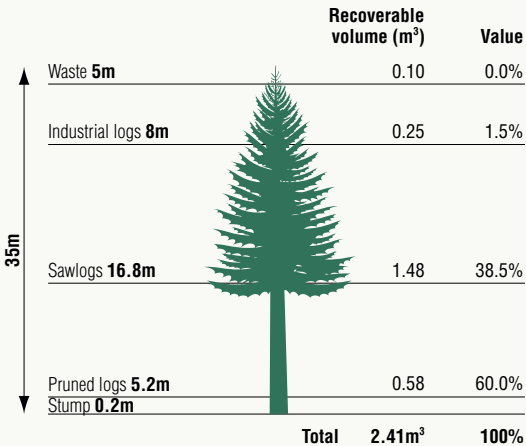


## Plantation Forest Harvest



## Typical Log Out-turn

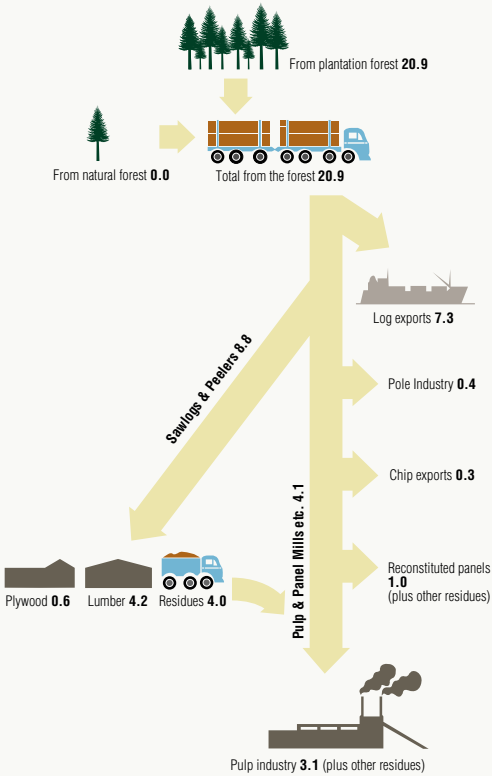
(Radiata pine age 27 from direct sawlog regime)



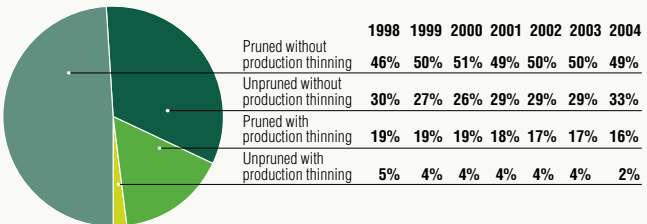
Source: NZFOA

# Log Flow In The New Zealand Forestry Industry

(Volumes in millions m<sup>3</sup> roundwood equivalent. Year ended 31 March 2004).

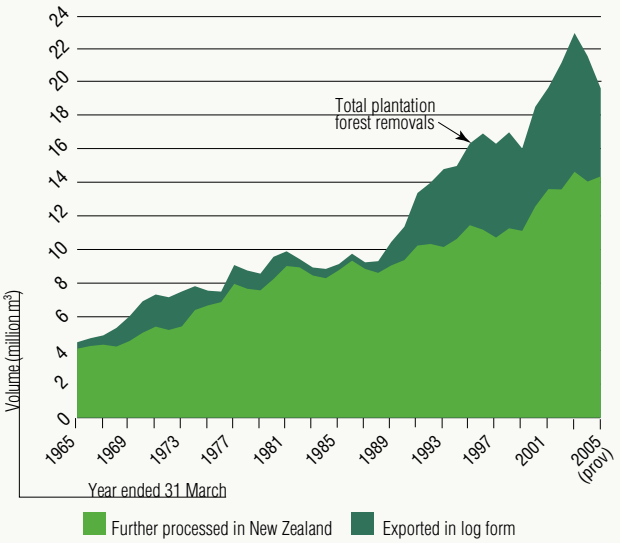


## Forest Management Trends – Radiata Pine

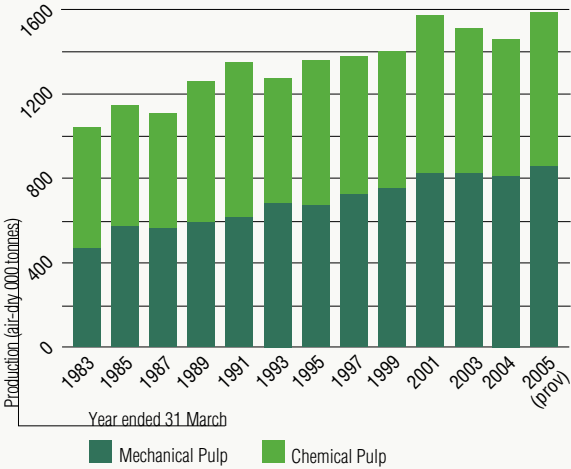


Source: NEFD April 2004

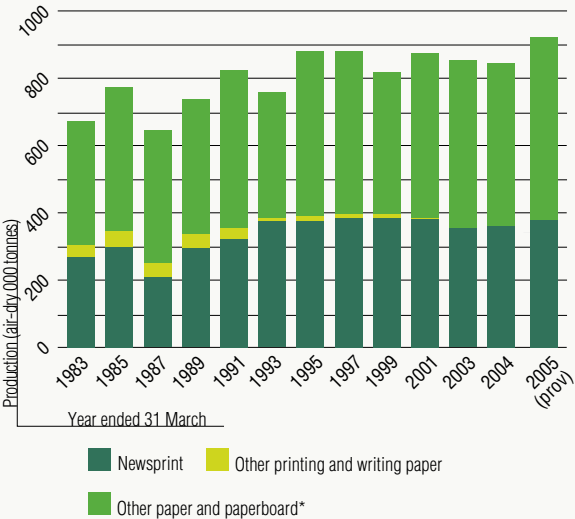
## Where The Log Harvest Goes



## Wood Pulp Production

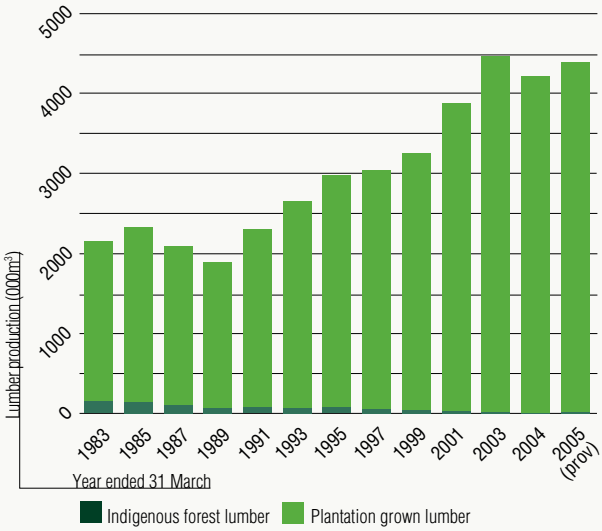


## Paper And Paperboard Production

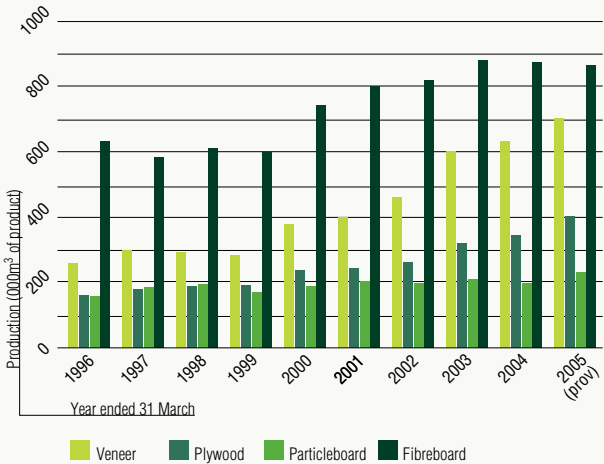


\* All other paper and paperboard includes household and sanitary papers, packaging paper & paperboard.  
 NB. Other printing and writing paper no longer produced in New Zealand.

## Lumber Production



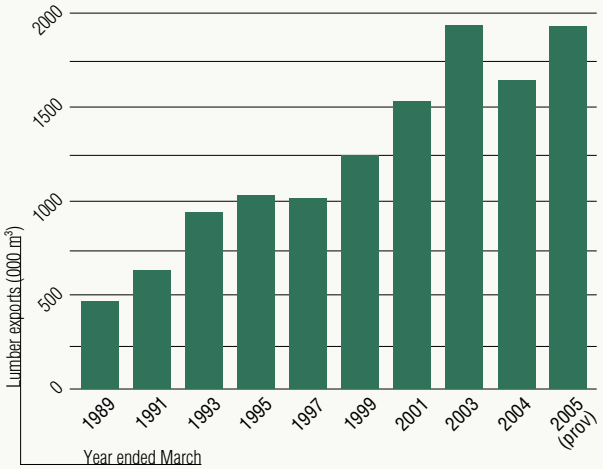
## Panel Products Production



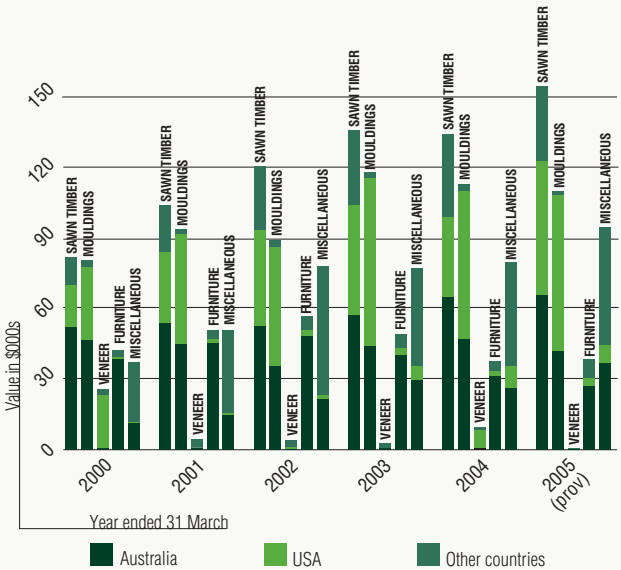
**Note:** Plywood includes laminated veneer lumber  
 Fibreboard includes MDF, hardboard, triboard & softboard.

Source: NZPMA

## New Zealand Lumber Exports



## Exports of Forestry Products from New Zealand By Country ("Value Added").



## Top Export Destinations

Year ended March 2005 (provisional - values in NZ\$ f.o.b.)

### India

**\$33,363,000**

Logs	71%
Sawn timber	-
Wood pulp	7%
Paper & Paperboard	13%
Panel products	4%
All other	5%

### China

**\$338,111,000**

Logs	18%
Sawn timber	17%
Wood pulp	40%
Paper & Paperboard	12%
Panel products	11%
All other	2%

### Hong Kong

**\$39,701,000**

Logs	-
Sawn timber	11%
Wood pulp	6%
Paper & Paperboard	74%
Panel products	4%
All other	5%

### Thailand

**\$35,904,000**

Logs	1%
Sawn timber	37%
Wood pulp	29%
Paper & Paperboard	16%
Panel products	2%
All other	15%

### Malaysia

**\$38,718,000**

Logs	-
Sawn timber	10%
Wood pulp	26%
Paper & Paperboard	57%
Panel products	4%
All other	3%

### Vietnam

**\$32,744,000**

Logs	1%
Sawn timber	64%
Wood pulp	8%
Paper & Paperboard	2%
Panel products	13%
All other	12%

### Indonesia

**\$77,439,000**

Logs	-
Sawn timber	10%
Wood pulp	56%
Paper & Paperboard	3%
Panel products	20%
All other	11%



### Korea

**\$295,036,000**

Logs	67%
Sawn timber	4%
Wood pulp	20%
Paper & Paperboard	6%
Panel products	3%
All other	-

### Japan

**\$628,019,000**

Logs	17%
Sawn timber	8%
Wood pulp	15%
Paper & Paperboard	-
Panel products	52%
All other	8%

### Other Countries

**\$206,184,000**

Logs	5%
Sawn timber	29%
Wood pulp	4%
Paper & Paperboard	23%
Panel products	9%
All other	30%

### Taiwan

**\$69,016,000**

Logs	10%
Sawn timber	40%
Wood pulp	36%
Paper & Paperboard	4%
Panel products	8%
All other	2%

### USA

**\$469,926,000**

Logs	-
Sawn timber	67%
Wood pulp	1%
Paper & Paperboard	3%
Panel products	10%
All other	19%

### Philippines

**\$98,069,000**

Logs	2%
Sawn timber	16%
Wood pulp	3%
Paper & Paperboard	31%
Panel products	43%
All other	5%

### Australia

**\$891,125,000**

Logs	-
Sawn timber	25%
Wood pulp	11%
Paper & Paperboard	33%
Panel products	8%
All other	23%

## Production And Exports Of Selected Forestry Products

(Year ended 31 March 2005 – provisional)

	Total production	Directly exported	Percentage exported	Export Value (NZ \$ m f.o.b.)
Logs (000m <sup>3</sup> )	19,215	5,127	26.7	411
Lumber (000m <sup>3</sup> )	4,342	1,847	42.5	809
Fibreboard (m <sup>3</sup> )	866,100	669,135	77.3	236
Particleboard (m <sup>3</sup> )	229,874	113,065	49.2	71
Plywood (m <sup>3</sup> )	403,479	140,143	34.7	181
Chemical pulp (tonnes)	727,886	435,664	59.9	320
Mechanical pulp (tonnes)	858,624	403,775	47.0	171
Newsprint (tonnes)	379,627	282,155	74.3	233
Other paper & paperboard (tonnes)	540,014	343,227	63.6	273

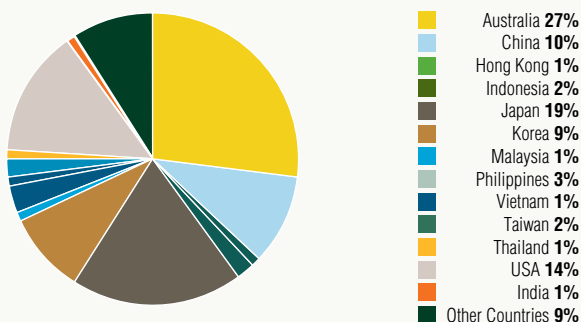
## Value of Exports By Product And Destination

(Year ended 31 March 2005 – provisional. Values in NZ\$000 f.o.b.)

Country of Destination	Logs & poles	Lumber	Wood pulp	Paper & paperboard	Panel products	All other forestry products	All forestry products
Australia	9	224,749	97,577	291,877	69,027	207,886	891,125
Japan	107,762	47,467	92,141	174	324,654	55,821	628,019
USA	63	316,945	1,998	12,811	47,202	90,907	469,926
China	60,833	56,394	134,705	40,655	37,103	8,421	338,111
Korea, Republic	199,292	10,582	57,972	17,169	9,459	562	295,036
Philippines	1,767	16,139	3,273	30,122	42,388	4,380	98,069
Indonesia	0	7,621	43,679	2,105	15,797	8,237	77,439
Taiwan	6,994	27,283	24,803	3,066	5,792	1,078	69,016
Hong Kong	0	4,255	2,355	29,370	1,447	2,274	39,701
Malaysia	0	3,755	10,108	21,998	1,552	1,305	38,718
Thailand	327	13,117	10,403	5,899	882	5,276	35,904
India	23,707	17	2,324	4,210	1,175	1,930	33,363
Vietnam	319	21,019	2,498	565	4,341	4,002	32,744
Fiji	-	150	-	10,657	2,327	14,273	27,407
French Polynesia	43	14,709	-	2,716	766	2,807	21,041
United Arab Emirates	8,973	2,633	-	120	1,642	4,850	18,218
New Caledonia	148	6,995	-	4,200	1,142	1,480	13,965
Other countries	674	35,270	7,525	29,039	11,750	41,295	125,553
<b>Total</b>	<b>410,911</b>	<b>809,100</b>	<b>491,361</b>	<b>506,753</b>	<b>578,446</b>	<b>456,784</b>	<b>3,253,355</b>

## Export Destinations of Forestry Products

(Year ended 31 March 2005 – provisional)



## Forestry Exports Summary

(Year ended 31 March 2005 – provisional)

Forestry Product:	2003		2004		2005 (prov)	
	Qty	Value (\$mil)	Qty	Value (\$mil)	Qty	Value (\$mil)
Logs and poles (000,000m <sup>3</sup> )	8	745	7	624	5	411
Wood chips (BDU 000m <sup>3</sup> )	387	65	313	43	199	29
Sawn timber (000,000m <sup>3</sup> )	2	920	2	683	2	809
Chemical pulp (000 tonnes)	405	340	386	282	436	320
Mechanical (000 tonnes)	366	151	330	144	404	171
Newsprint (000 tonnes)	219	263	196	218	282	233
Other paper and paperboard (000 tonnes)	300	269	262	193	343	273
Fibreboard (000m <sup>3</sup> )	677	284	671	223	669	236
Plywood (000m <sup>3</sup> )	103	145	106	151	140	181
Veneer (000m <sup>3</sup> )	93	55	130	70	135	91
Particleboard (000m <sup>3</sup> )	94	59	103	64	113	71
Manufactures of paper and paperboard	-	125	-	129	-	116
Continuously shaped wood	-	120	-	115	-	116
Wooden furniture and furniture parts	-	50	-	38	-	39
Miscellaneous forestry	-	121	-	142	-	157
<b>All forestry products</b>	-	<b>3,710</b>	-	<b>3,119</b>	-	<b>3,253</b>
Total NZ produce exports	-	29,168	-	27,504	-	29,725
<b>Forestry exports as % of total exports</b>		<b>12.7%</b>		<b>11.3%</b>		<b>10.9%</b>

Note: Source: INFOS database, Statistics New Zealand. Table prepared by Forestry Statistics Section, Ministry of Agriculture and Forestry.

1. Values are NZ\$ free on board (f.o.b.) and may include items for which no quantities are given.

2. Other paper and paperboard includes all other paper and paperboard exported but not manufactures of paper and paperboard.

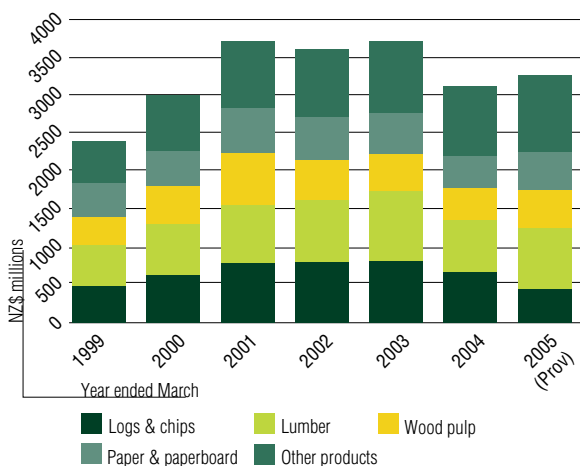
3. Miscellaneous forestry products includes wood manufactures, cork and cork manufactures, waste paper and prefabricated wooden buildings.

4. Because of rounding, figures in this table do not always sum to the stated totals.

- Not available.

r = revised.

## Major Export Earners



## Wood Processing Investment

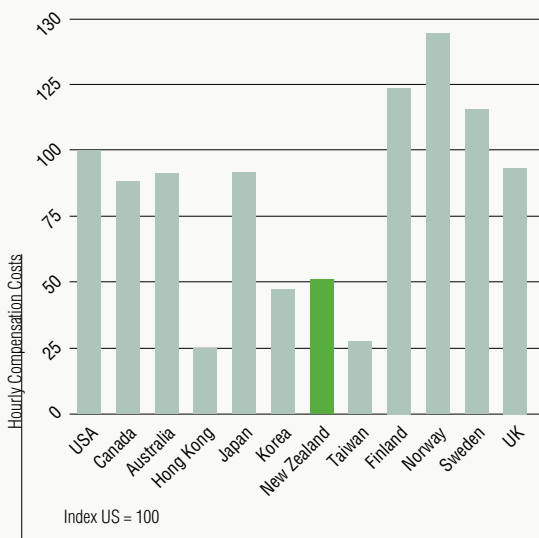
(Publicly announced as at January 2005, values in NZ\$million)

	Solid Wood Processing			Residue Processing			Total
	New Plant	Plant Upgrades	Total	New Plant	Plant Upgrades	Total	
1988	11.0	0.0	11.0	0.0	0.0	0.0	11.0
1989	0.0	21.0	21.0	0.0	230.0	230.0	251.0
1990	20.0	0.0	20.0	8.0	50.0	58.0	78.0
1991	0.0	0.0	0.0	0.0	304.6	304.6	304.6
1992	42.0	14.7	56.7	0.0	0.0	0.0	56.7
1993	41.5	41.6	83.1	1.1	8.8	9.9	93.0
1994	49.0	67.2	116.2	0.0	152.0	152.0	268.2
1995	2.0	49.8	51.8	0.0	0.0	0.0	51.8
1996	1.0	4.0	5.0	10.0	58.0	68.0	73.0
1997	13.0	25.4	38.4	120.0	265.0	385.0	423.4
1998	65.4	56.3	121.7	0.0	313.0	313.0	434.7
1999	3.9	4.0	7.9	10.0	0.0	10.0	17.9
2000	0.0	49.0	49.0	4.0	10.0	14.0	63.0
2001	2.0	14.4	16.4	0.0	4.0	4.0	20.4
2002	216.5	83.5	300	0.0	7.7	7.7	307.7
2003	12.0	5.0	17.0	0.0	18.5	15.5	35.5
2004	30.0	2.5	32.5	0.0	32.0	32.0	94.5
2005-09	380.0	249.0	629.0	0.0	78.0	78.0	707.0

Note: This summary is not comprehensive. It covers major, publicly announced, one-off investment intentions greater than NZ\$1 million. Actual investments will depend on a number of circumstances.

Source: MAF

## International Labour Cost Comparisons 2002



Source: US Bureau Labor Statistics, September 2003

## Employment In Forestry And Processing Activities

	Persons engaged as at Mid-February				
	2000	2001	2002	2003	2004
Forestry	1,010	980	970	1,050	1,060
Logging	3,130	4,100	4,240	4,740	4,010
Services to forestry	2,840	3,100	3,530	3,770	3,190
<b>Total forestry &amp; logging</b>	<b>6,980</b>	<b>8,180</b>	<b>8,740</b>	<b>9,560</b>	<b>8,260</b>
Log sawmilling	6,190	7,060	7,310	7,840	7,490
Wood chipping	140	30	30	35	12
Timber resawing & dressing	1,430	1,450	1,600	1,940	1,900
Plywood & veneer manufacturing	1,710	2,030	2,110	2,030	1,840
Fabricated wood manufacture	620	980	890	1,140	1,490
Total pulp, paper & paperboard manufacturing	1,630	3,180	21,990	2,470	2,410
<b>Total forestry &amp; first stage processing</b>	<b>18,700r</b>	<b>22,910</b>	<b>23,670</b>	<b>25,015</b>	<b>23,402</b>

Source: Statistics New Zealand

**Employment Multipliers:** It is estimated that for every full-time job created in forestry and wood processing between 2.2 and 5.8 other jobs are created outside the industry.

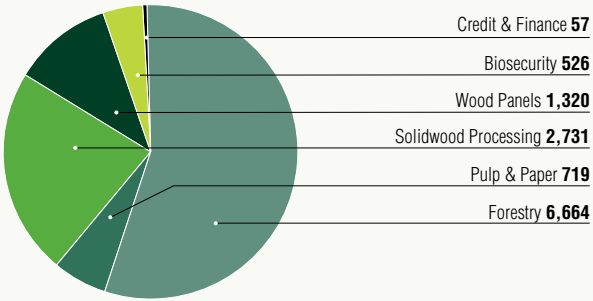
Note: Because of changing classification, employment in forestry and processing activities before 1995 is not directly comparable. Because of rounding, figures in this table do not always sum to the stated total.

r = revised

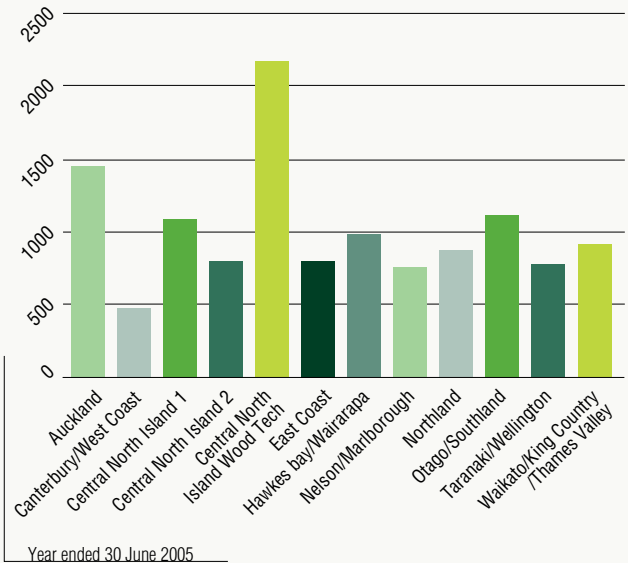
# FOREST INDUSTRIES TRAINING

As at June 2005. All material sourced from FITEC.

## Trainees By Sector

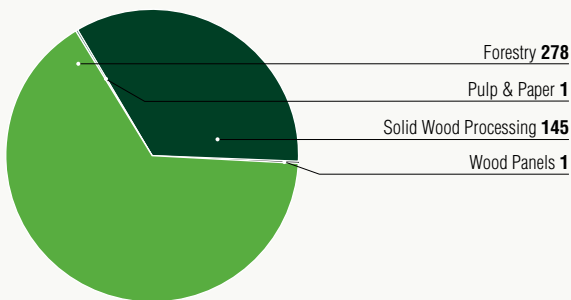


## Trainees By Region

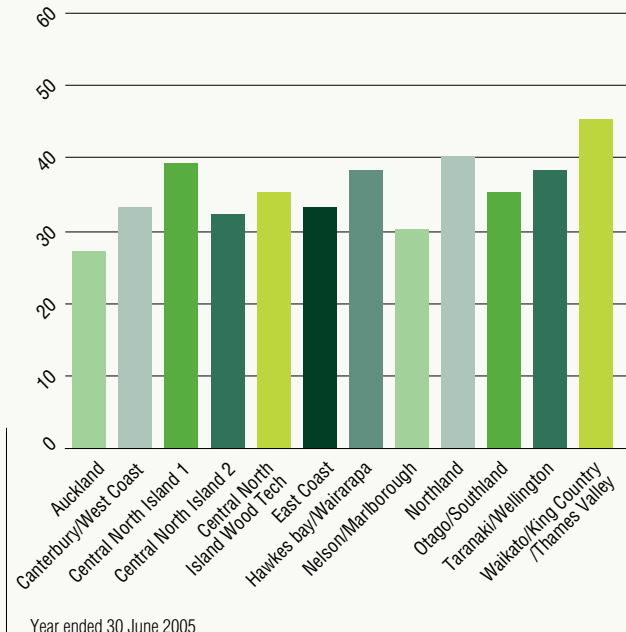


# STATISTICS

## Modern Apprentices By Sector



## Modern Apprentices By Region



## Vision 2025 - Development Milestones

2004	2025
\$5 billion outputs	> \$20 billion outputs
4% GDP	> 14% GDP
23,000 employed (100,000 indirectly)	60,000 employed (250,000 indirectly)
\$3.3 billion exports	> \$14 billion exports
3rd largest exporter	Largest exporter
Top 20 global suppliers	Top 5 global suppliers
1.8 million hectares	3.5 – 4 million hectares
21 million m <sup>3</sup> harvest	> 40 million m <sup>3</sup> harvest
\$100 million supporting technologies industry	\$1 billion supporting technologies industry

Source: NZFOA

## New Zealand Forest Accord 1991

The New Zealand Forest Accord is an agreement between conservation groups and most major plantation growers and users to:

- define areas unsuitable for forestry;
- acknowledge that existing natural forest should be maintained;
- recognise commercial forest as essential;
- ensure any use of wood from indigenous forest is on a sustainable, value-added basis;
- ensure new plantation forests will not disturb areas of natural indigenous vegetation.

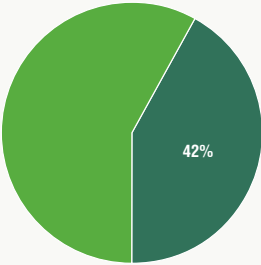
## Principles for Commercial Plantation Forest Management 1995

Environmental excellence in plantation forest management is the primary objective of these Principles. Signed by major plantation growers' associations, users and conservation groups, the parties agree that:

- inter-dependence of ecological, economic and social sustainability must be recognised;
- efficient and effective Principle implementation monitoring is required;
- rural land users should be treated equitably, based on the environmental effects of their activities;
- management practices must meet or improve on all statutory requirements and accepted best practices.



## Proportion of NZ's 1.82 million ha plantation certified by FSC



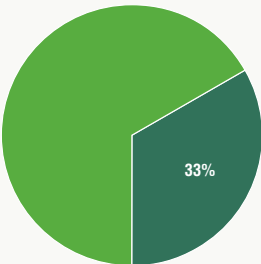
(ha)

Kaingaroa Timberlands	<b>180,000</b>
Ernslaw One	<b>68,793</b>
PF Olsen	<b>68,000</b>
Hancock Forest Management (NZ) Limited	<b>52,225</b>
Timberlands West Coast Ltd.	<b>51,025</b>
NZ Forest Managers Ltd.	<b>48,462</b>
Pan Pac Forest Products	<b>42,958</b>
Blakely Pacific	<b>28,000</b>
Wenita Forest Products	<b>29,720</b>
Evergreen Forests	<b>25,640</b>
Crown Forestry	<b>22,904</b>
City Forests	<b>18,457</b>
Selwyn Plantation Board	<b>13,448</b>
Southland Plantation Forest Company of NZ	<b>10,000</b>
Craigpine Timber Ltd.	<b>3,593</b>
Wrightson Forestry Services Group Scheme	<b>1,854</b>

Source: NZFOA June 2005

■ Non Certified ■ Certified

## Proportion of NZ's 21million m<sup>3</sup> annual harvest certified by FSC



(m<sup>3</sup>)

Kaingaroa Timberlands	<b>2,300,000</b>
P F Olsens	<b>1,349,449</b>
Crown Forestry	<b>761,000</b>
Pan Pac Forest Products	<b>207,955</b>
Wenita Forest Products	<b>346,800</b>
Evergreen Forests	<b>198,013</b>
Ernslaw One	<b>555,000</b>
City Forests	<b>165,136</b>
Selwyn Plantation Board	<b>175,429</b>
Blakely Pacific	<b>140,000</b>
Southland Plantation Forest Company of NZ	<b>31,000</b>

Source: NZFOA June 2005

■ Non Certified ■ Certified

## Recreational Use Of Plantation Forests

Commerce and recreation are compatible partners in New Zealand's planted forests and the majority of forest owners allow public access and recreational activities.

Some of the most popular forest pursuits are:

- bush walking and tramping
- mountain biking
- off-road vehicles
- visiting nature reserves and picnic areas
- hunting
- horseriding.



In the interests of conservation, fire prevention and safety, there are, however, certain areas that are restricted and require permits. Each company has specific guidelines in this respect and it is advisable to contact local offices/information centres before entering the forest.

Name	Permits (Numbers Issued)	Remnants* (Hectares)
Weyerhaeuser	797	6,514
Wenita	3,476	1,462
Carter Holt Harvey Forests	193,206	46,905
Juken New Zealand	579	44,416
PF Olsen	981	22,000
Kaingaroa Timberlands	10,000	7,194

\*Remnants - Unplanted areas retained to protect their natural vegetation.

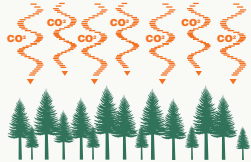
Note: Other companies and private forest owners provide access to public for a range of recreational activities.



## Carbon Sequestration In The Forest

- In 2000, New Zealand's plantation forests absorbed around 25 million tonnes of CO<sub>2</sub> (net of harvesting).
- If the present average new planting rate of more than 30,000 ha per year for the last 10 years is maintained, then it is estimated that over the period 2008 – 2012 (the first Commitment Period under the provisions of the Kyoto Protocol) NZ's plantation forests planted since the beginning of 1990 will remove more than 105 million tonnes of CO<sub>2</sub> from the atmosphere worth as much as \$2.5 billion in international carbon markets.

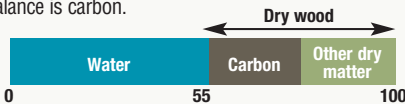
Source: NZ Ministry for the Environment/FOA



## Terms And Things

### Area & Volume

- A hectare (ha) = 100 x 100 metres (about the size of two rugby fields).
- A cubic metre (m<sup>3</sup>) = 1 metre x 1 metre x 1 metre (about three times the size of a household dishwasher).
- An average radiata pine tree yields 2.4m<sup>3</sup> of wood at harvest.
- 1 hectare of 28 year-old radiata pine contains between 650 and 800 m<sup>3</sup> of wood.
- 1 hectare grows up to 28 m<sup>3</sup> of wood each year.
- NZ radiata pine plantations yield up to 30% more wood per hectare than they did 60 years ago.
- 1 hectare sequesters approximately 25 tonnes CO<sub>2</sub> per year.
- A fresh log contains about 55% water; approximately 50% of the balance is carbon.



### Costs & Values

- It costs 15 - 20 cents to truck one m<sup>3</sup> of wood one km (for 100 km that is \$15 - \$20 per m<sup>3</sup>).
- Harvesting costs begin around \$10 per m<sup>3</sup> - increasing with steeper terrain, environmental sensitivities, smaller trees etc.
- Depending on market conditions, the average radiata pine tree when harvested is worth \$150 - \$200 to the grower.
- Value of wood being grown (added) each year in one hectare of forest is between \$1200 and \$2000.
- High quality pruned stands, well located to the market can sell for as much as \$50,000 per hectare net to the owner, while unpruned stands may net less than \$20,000 - particularly if logging and cartage costs are higher.

Note: Prices are indicative only.

with the compliments of:



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