

FOREST OWNERS ASSOCIATION INC.

New Zealand Forest Owners Association

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The most comprehensive on-line source of information on New Zealand's forestry and wood products industries

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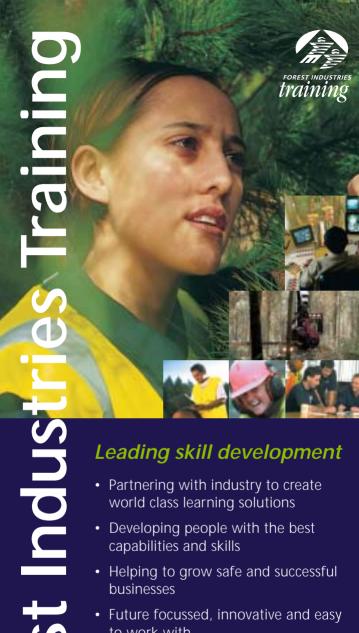
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NZ Plantation Forestry In Summary

Area & standing volume statistics	April 2001	April 2002
Net stocked forest area (ha)		
Total estimated area	1,799,000	1,814,000
Growth characteristics		
Standing volume (000m³)	382,000	390,000
Average standing volume (m³/ha)	212	215
Area-weighted average age (years)	13.4	13.6
Area by species (ha)		
Radiata pine	1,608,000	1,622,000
Douglas-fir	103,000	104,000
Other exotic softwoods	34,000	34,000
All exotic hardwoods	54,000	54,000
Radiata pine area by tending regime (ha)		
Pruned with production thinning	285,000	276,000
Pruned without production thinning	789,000	810,000
Unpruned with production thinning	65,000	63,000
Unpruned without production thinning	469,000	473,000
Shipranea Walloat production tilling	107,000	170,000
	Year Ended	Year Ended
Planting & harvesting statistics	31 March 2001	31 March 2002
New planting (ha)		
Total estimated new planting	33,600	30,100
Restocking	35,700	35,800
Harvested area awaiting restocking	41,400r	41,600
Harvesting		
Area clear felled (ha)	38,000	42,000
Volume clear felled (TRVIB¹, 000m³)	18,319	19,355
Volume production thinned (TRVIB, 000m³)	702	771
Total volume removed (TRVIB, 000m³)	19,021	20,126
Average clear fell yield (m³/ha)	482	465
Area-weighted average clear fell age for radiata pine (v		27.4
Estimated planted forest roundwood removal (000m³)²	<u> </u>	20,880

Notes:

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

¹TRVIB is an abbreviation for Total Recoverable Volume Inside Bark.

² This is an indirect estimate based on the application of conversion factors to the various forestry products. Source: NEFD 2002

r = revised

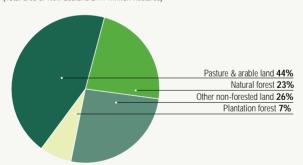
NZ Economic Indicators - 2002/03

Population	4,009,000
GDP \$ million	113,509
GDP per capita	28,686
Exports \$ million	29,242
Forest products exports total \$ million	3,546
Total overseas debt \$ billion	101.6
Annual percentage change in GDP	+ 4.3%
Inflation (as measured by annual percentage change in CPI)	+ 1.5%
Forestry sector contribution to GDP	4.0%

Source: Statistics New Zealand

New Zealand Land Use

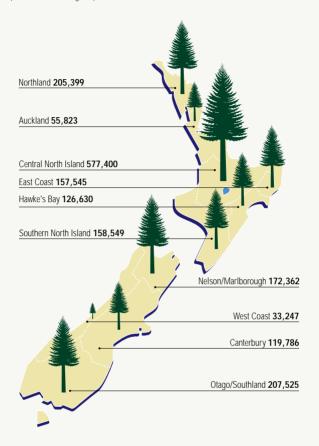
(Total area of New Zealand 27.1 million hectares)



	Hectares (millions)	% of total
Pasture & arable land	12.1	44%
Natural forest	6.2	23%
Other non-forested land	7.0	26%
Plantation forest	1.8	7%

Where The Plantation Forests Are

(Hectares - round figures)



Total 1.8 million hectares

Source: NEFD 2002

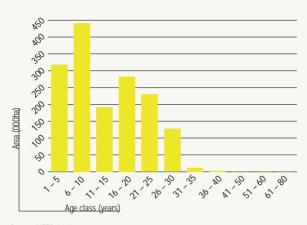
Plantation Forest Area By Species

(As at 1 April 2002)

	Hectares (thousands)	% of total
Radiata pine	1,622	89.4
Douglas-fir	104	5.7
Other exotic softwoods	34	1.9
All exotic hardwoods	54	3.0
Total	1,814	100

Net Stocked Area Of Radiata Pine

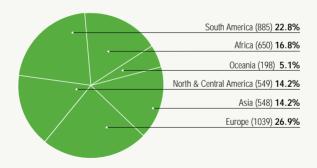
(By age class at 1 April 2002)



Source: NEFD 2002

Global Forest Areas By Main Regions (2000)

(Millions hectares)

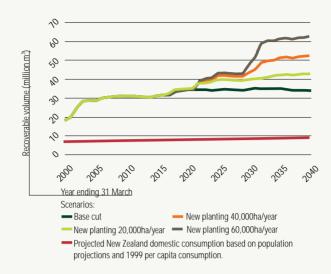


2000: total area = 3869 million ha Source: FAO State of World Forests 2000

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



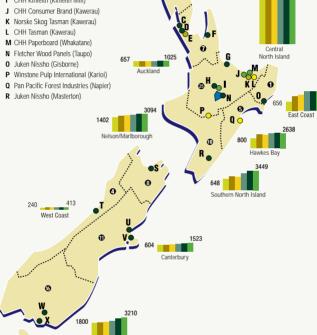
Major Plantation Forest Ownership

Owner/Manager	Planted Area (ha) - round figures
Carter Holt Harvey	315,000
Central North Island Forest (In receivership)	165,000
Fletcher Challenge Forests	108,000
Weyerhaeuser New Zealand	64,000
Juken Nissho	57,000
Ernslaw One	54,000
Rayonier New Zealand	51,000
Crown Forestry	44,000
Pan Pac Forest Products	31,000
Timberlands West Coast	29,000
Blakely Pacific	28,000
Hikurangi Forest Farms	27,000
Wenita Forest Products	25,000
Roger Dickie New Zealand	24,000
Forest Enterprises	21,000
Evergreen Forests	21,000
Winstone Pulp International	17,000
City Forests	15,000
GSL Capital	11,000
Other (Includes Farm Forestry)	707,000
Total	1,814,000

(Sources: NZFOA Total area NEFD 2002)

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

- A Juken Nissho (Kaitaia)
- B CHH Futurebuild (Whangarei)
- C Fletcher Wood Panels (Kumeu)
- D Fletcher Wood Panels (Penrose)
- E CHH Paperboard (Penrose)
- F CHH Pinepanels (Thames)
- G Fletcher Challenge Forests Plywood (Mt Maunganui)
- H CHH Engineered Wood Products (Tokoroa)
- I CHH Kinleith (Kinleith Mill)



- S Nelson Pine Industries (Richmond)
- T International Panel & Lumber (Greymouth)

Otago/Southland

- U CHH Pinepanels (Rangiora)
- V Gunn's New Zealand Pty (Christchurch)
- **W** Rayonier New Zealand MDF (Mataura)
- X Southland Veneers (Invercargill)

Pulp MillPaper Mill

4058

10317

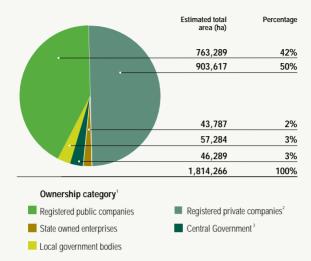
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- Pulp & Paper
- Panel Board Mill
- Number of sawmills producing 5000m³ or more of sawn timber in the year ended 31/3/02 (prov)

per annum (000m²)

Plantation Forest Ownership

(Net stocked planted production forest area at 1 April 2002)

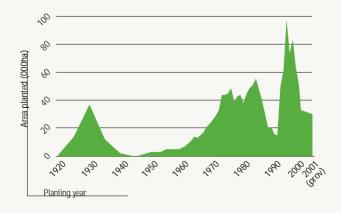


Note:

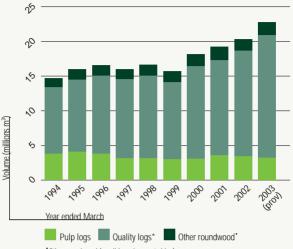
- 1. Ownership is based solely on the ownership of the forest irrespective of the ownership of the land.
- "Privately owned" includes all privately owned forests. The legal entities included in this category are private companies, partnerships, individuals and trusts, which include Maori trusts and incorporations.
- "Central Government" forests are predominantly Crown owned forests on Maori lease hold land. These forests are managed by the Ministry of Agriculture and Forestry.

Rates Of New Planting

(In addition to restocking)



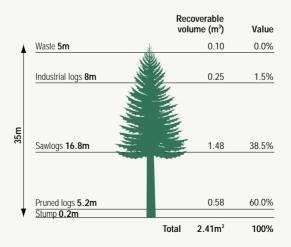
Plantation Forest Harvest



^{*}Other roundwood (small logs & export chips)

Typical Log Out-turn

(Radiata pine age 27 from direct sawlog regime)

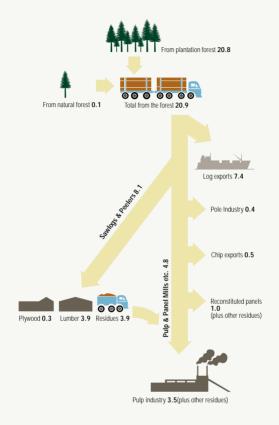


Source: NZFOA

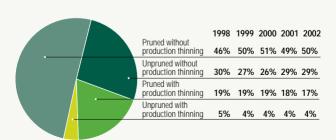
^{*}Quality logs (saw logs, peeler logs, export logs)

Log Flow In The New Zealand Forestry Industry

(Volumes in millions m³ roundwood equivalent. Year ended 31 March 2002).

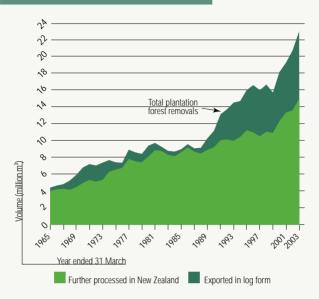


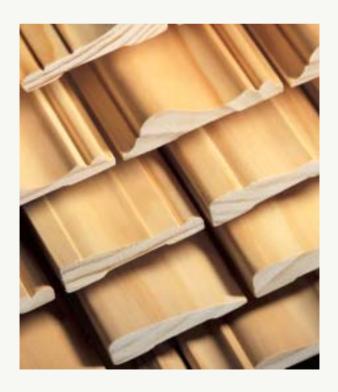
Forest Management Trends - Radiata Pine



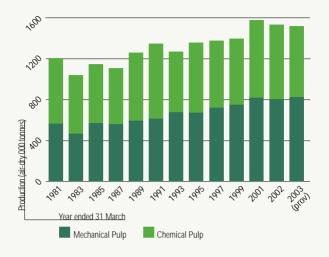
Source: NEFD April 2002

Where The Log Harvest Goes

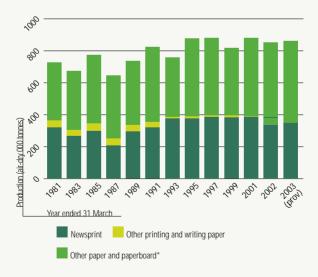




Wood Pulp Production



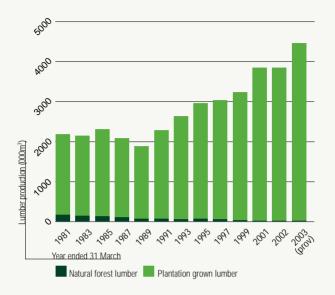
Paper And Paperboard Production



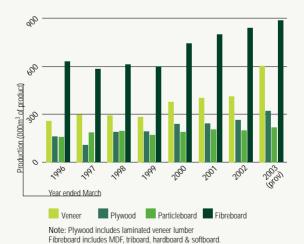
^{*} All other paper and paperboard includes household and sanitary papers, packaging paper & paperboard.

NB. Other printing and writing paper no longer produced in New Zealand.

Lumber Production

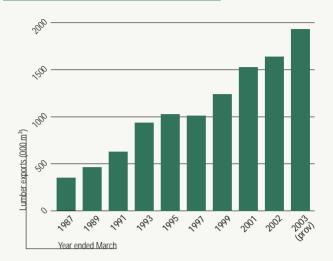


Panel Products Production

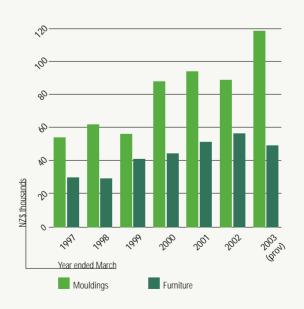


Source: NZPMA

New Zealand Lumber Exports



Mouldings & Furniture Exports



Top Export Destinations

Year ended March 2003 (provisional - values in NZ\$ f.o.b.)



Korea

\$460,748,000

Logs 77%
Sawn timber 2%
Wood pulp 14%
Paper & Paperboard 3%
Panel products 4%
All other ---

Japa

\$699,021,000

 Logs
 24%

 Sawn timber
 11%

 Wood pulp
 15%

 Paper & Paperboard

 Panel products
 37%

 All other
 13%

Other Countries

\$147,501,000

 Logs
 6%

 Sawn timber
 23%

 Wood pulp
 5%

 Paper & Paperboard
 29%

 Panel products
 8%

 All other
 29%

Taiwan

\$86,148,000

 Logs
 13%

 Sawn timber
 40%

 Wood pulp
 29%

 Paper & Paperboard
 5%

 Panel products
 10%

 All other
 3%

USA

\$575,395,000

 Logs
 1%

 Sawn timber
 71%

 Wood pulp
 2%

 Paper & Paperboard
 1%

 Panel products
 9%

 All other
 16%

Philippines

\$121,515,000

 Logs
 16%

 Sawn timber
 13%

 Wood pulp
 3%

 Paper & Paperboard
 32%

 Panel products
 34%

 All other
 2%

Australia

\$946,859,000



Production And Exports Of Selected Forestry Products

(Year ended 31 March 2003 - provisional)

	Total production	Directly exported	Percentage exported	Export Value (NZ \$ m f.o.b.)
Logs (000m³)	23,136	8,081	34.9	744
Lumber (000m³)	4,502	1,865	41.4	920
Fibreboard (m³)	885,780	677,305	76.5	284
Particleboard (m³)	214,155	89,278	41.7	55
Plywood (m³)	327,970	102,870	31.4	145
Chemical pulp (tonnes)	684,187	405,024	59.2	340
Mechanical pulp (tonnes)	828,855	366,186	44.2	151
Newsprint (tonnes)	355,569	216,334	60.8	242
Other paper & paperboard (tonnes)	499,124	299,730	60.1	269

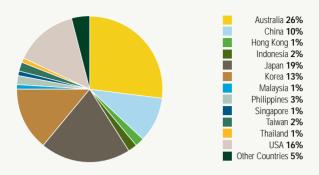
Exports By Product And Destination

(Year ended 31 March 2003 – provisional. Values in NZ\$000 f.o.b.)

Country of Destination	Logs & poles	Lumber	Wood pulp	Paper & paper- board	Panel products	All other forestry products	All forestry products
Australia	128	248,737	110,783	283,741	81,521	221,949	946,859
Japan	169,227	75,042	101,335	1,847	259,432	92,138	699,021
USA	4,109	410,228	13,542	4,324	49,722	93,470	575,395
Korea, Republic	353,692	12,082	63,024	14,693	16,934	323	460,748
China	130,221	46,512	89,151	63,845	44,413	2,155	376,297
Philippines	19,321	16,110	3,309	38,991	41,866	1,918	121,515
Taiwan	11,010	34,945	25,257	3,972	8,395	2,569	86,148
Indonesia	2,766	8,830	39,797	4,532	13,715	7,244	76,884
Hong Kong	11,128	16,498	-	13,209	5,126	3,468	49,429
Malaysia	1,719	2,465	16,196	16,778	2,652	5,328	45,138
Thailand	4,674	11,668	10,587	5,300	66	359	32,654
Singapore	-	3,429	10,694	11,421	2,438	2,357	30,339
India	27,421	89	11	5,290	834	216	33,861
Vietnam	24	13,761	2,008	924	2,403	506	19,626
Fiji	-	138	36	11,223	1,770	6,434	19,601
French Polynesia	16	1,127	-	3,240	983	6,195	11,561
New Caledonia	302	3,831	-	3,483	689	1,947	10,252
Other countries	8,453	14,473	5,457	23,953	5,980	28,145	86,461
Total	744,211	919,965	491,187	510,766	538,939	476,721	3,681,789

Export Destinations of Forestry Products

(Year ended 31 March 2003 - provisional)



Forestry Exports Summary

(Year ended 31 March 2003 - provisional)

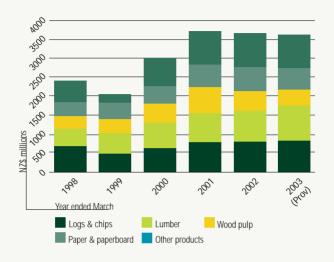
Forestry Product:	Qty	2001 Value (\$mil)	Qty	2002 Value (\$mil)	2003 Qty	(prov) Value (\$mil)
1 (000 000 3)	,	71/	7	71.4	0	744
Logs and poles (000,000m³)	6	716	7	714	8	744
Wood chips (BDU 000m ³)	334	66	386	77	385	64
Sawn timber (000,000m³)	2	774	2	826	2	920
Chemical pulp (000 tonnes)	418	522	436	376	405	340
Mechanical (000 tonnes)	321	154	359	145	366	151
Newsprint (000 tonnes)	245	307	203	255	216	242
Other paper and paperboard (000 tonnes)	242	289	295	313	300	269
Fibreboard (000m³)	618	296	632	292	677	284
Plywood (000m³)	94	130	103	146	103	145
Veneer (000m³)	26	18	37	15	93	55
Particleboard (000m³)	106	65	96	62	89	55
Manufactures of paper and paperboard	-	122	-	117	-	122
Continuously shaped wood	-	96	-	90	-	120
Wooden furniture and furniture parts	-	52	-	57	-	50
Miscellaneous forestry	-	95	-	124	-	121
All forestry products	-	3,701	-	3,609	-	3,682
Total NZ produce exports	-	29,480	-	31,527	-	29,121
Forestry exports as % of total exports		12.6%		11.4%		12.6%

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



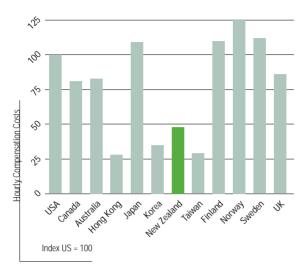
Wood Processing Investment

(Publicly announced as at January 2003, values in NZ\$million)

	New	d Wood Pro Plant	cessing Total	Residue Processing New Plant Total			Total
	Plant	Upgrades		Plant	Upgrades		
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	64.4	66.4	0.0	4.0	4.0	70.4
2002	84.5	32.5	117	0.0	7.7	7.7	124.7
2003-09	400.6	45.0	445.6	0.0	0.0	0.0	445.6

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.

International Labour Cost Comparisons 1999



Source: US Bureau Labor Statistics, June 2001

Employment In Forestry And Processing Activities

	Persons engaged as at Mid-February				
	1999	2000	2001	2002	
Forestry	1,990r	1,780r	1,580r	1,560	
Logging	3,630r	3,990r	4,690r	4,920	
Services to forestry	2,660r	3,330r	3,630r	3,900	
Total forestry & logging	8,280r	9,100r	9,900r	10,380	
Log sawmilling	6,180r	7,030r	7,190r	7,360	
Wood chipping	110r	140r	30r	35	
Timber resawing & dressing	1,210r	1,380r	1,440r	1,610	
Plywood & veneer manufacturing	1,680r	1,970r	1,980r	2,170	
Fabricated wood manufacture	730r	820r	960r	880	
Total sawmills, planing & other wood mills	9,910r	11,340r	11,600r	12,055	
Total pulp, paper &					
paperboard manufacturing	3,090r	2,890r	2,440	2,780	
Total forestry & first stage processing	21,280r	23,330r	23,940r	25,215	

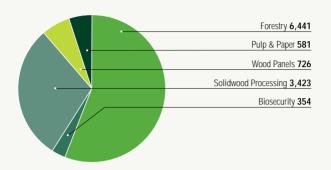
Source: Statistics New Zealand

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. "Some work units that prior to 2001 had been included in wood chipping, have been reclassified and are now included in log sawmilling. This means that a direct comparison between 2001 and previous years cannot be made for these categories.

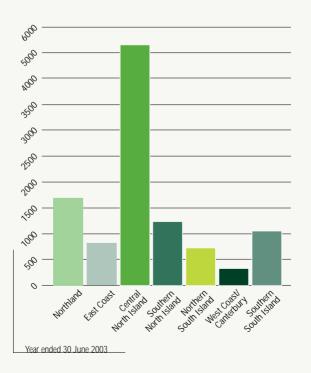
FOREST INDUSTRIES TRAINING

As at June 2003. All material sourced from Forest Industries Training.

Trainees By Sector

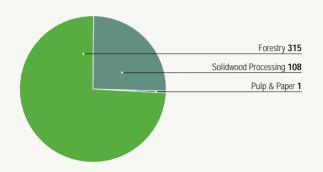


Trainees By Region

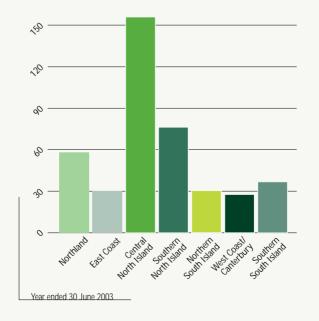


STATISTICS

Modern Apprentices By Sector



Modern Apprentices By Region



Vision 2025 - Development Milestones

2001	2025
\$5 billion outputs	> \$20 billion outputs
4% GDP	> 14% GDP
23,000 employed (100,000 indirectly)	60,000 employed (250,000 indirectly)
\$3.6 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
20 million m³ harvest	> 40 million m³ harvest
\$100 million supporting technologies industry	\$1 billion supporting technologies industry

Source: NZFIC

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 and 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 1.81 million ha plantation certified by FSC



Proportion of NZ's 20.8 million m³ annual harvest certified by FSC

NZ Timber Management Company Limited 3,100,000

Fletcher Challenge Forests 1,600,000

New Zealand Forest Managers 660,000

Wenita 380,000

Timberlands West Coast 260,000

Ernslaw One 210,650

Winstone Pulp International 210,000

City Forests, Dunedin 180,000

Pan-Pac Forest Products 80,000

Craigpine 17,000

Gowen Hills 2,750

(m3)

Non Certified Certified

Source: NZFIC June 2003

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)
Timberlands	1,062	13,025
Weyerhaeuser	659	6,999
Fletcher Challenge Forests	19,329	51,941
Wenita	1,033	1,907
Carter Holt Harvey Forests	159,869	38,201
Juken Nissho Limited	555	11,200

^{*}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 CO₂ (net of harvesting).
- If the present annual rate of new planting of 30,000 ha 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 CO₂ from the atmosphere or 50 million tonnes more than is required to meet our international obligations under the Protocol.
- The value of the 'surplus' carbon absorbed by our plantation forests is more than \$1,250,000,000

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 (m³) = 1metre x 1metre x 1metre (about three times the size of a household dishwasher).
- An average radiata pine tree yields 2.4m³ of wood at harvest.
- 1 hectare of 28 year-old radiata pine contains between 650 and 800 m³ of wood.
- 1 hectare grows up to 28 m³ of wood each year.
- NZ radiata pine plantations yield up to 30% more wood per hectare than they did 60 years ago.
- 1 hectare sequests approximately 25 tonnes CO₂ 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 m³ of wood one km (for 100 km that is \$15 - \$20 per m³).
- Harvesting costs begin around \$10 per m³ 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.