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Ministry for Primary Industries  
Manatū Ahu Matua



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# 2014 FACTS & FIGURES

New Zealand Plantation  
Forest Industry





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# Minister's Foreword



Forestry makes an important contribution to New Zealand's economy as the third largest export earner making up 3.2 percent of GDP. Together, forestry and its supporting services employ more than 18,000 people. Sustainably managed plantation forests also provide environmental benefits through

sequestering carbon and delivering ecosystem services such as improving air and water quality.

The annual harvest in 2014 was 30 million cubic metres and moving into the next decade, this has the potential to increase by more than 40 percent. The forest plantings established in the 1990s are now maturing which means that there will be sufficient supply available to meet future domestic demand and boost forestry exports. There are also opportunities to increase the value of exports through further processing and manufacturing within New Zealand.

As a Minister with responsibility for forestry, I have had many opportunities to see the innovation and expertise within the sector, from our world leading research in radiata pine to grow better trees, to the new technologies enabling safer harvesting on steeper land, and the development of high quality engineered timber products. Together these initiatives can help the industry move towards the Wood Council of New Zealand's (Woodco's) target of \$12 billion in forest and wood product exports by 2022.

This publication provides a useful summary of key information about New Zealand's plantation forests. I hope that it will be of value to all those within the industry and government who have an interest in growing and supporting the forestry sector. I look forward to continuing to assist the forestry industry reach its full potential.

A handwritten signature in black ink that reads "Jo Goodhew".

Hon Jo Goodhew  
Associate Minister for Primary Industries

## FORESTRY & NEW ZEALAND: AN OVERVIEW

Photo by Phil Taylor, Blakely Pacific Ltd

# 1,746,500 HA

The estimated net stocked plantation forest area increased by 18,000 hectares from 2013 figures, although the average standing volume dropped by 13 m<sup>3</sup>/ha to 283m<sup>3</sup>/ha.



# 46,001

Hectares were harvested in 2014.

# 6,910

The estimated number of workers in the forestry and logging sector.

# 107

The estimated number of serious harm incidents in 2014.



## New Zealand Economic Indicators

As at 31 December 2014

	31 Dec 14
Population	4,513,000
GDP \$ Billion	214.6
GDP per capita \$	47,570
Exports \$ Billion	48.3
Forest products exports total \$ Billion	4.8
Total overseas debt \$ Billion	153.9
Annual percentage change GDP (as at 31 March 14)	2.5%
Inflation (as measured by annual percentage change in CPI)	0.80%
<b>Forestry sector contribution to GDP</b>	<b>3.20%</b>

### Note:

- GDP in 2009/2010 prices

Source: Statistics NZ

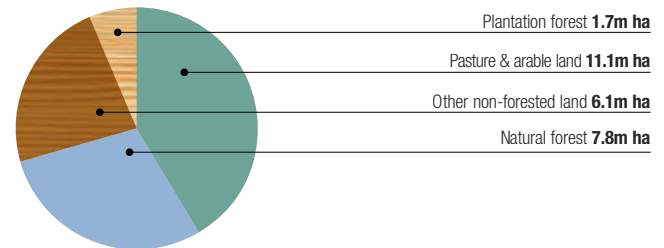
# 3<sup>RD</sup> HIGHEST

Forestry was the 3<sup>rd</sup> highest industry contributor to GDP after meat and wool, and dairy.

Based on figures from June 2013 – June 2014. Situation and Outlook for Primary Industries 2014 – mid year update December 2014.

## New Zealand Land Use

As at June 2014



### Note:

- In some cases 2013 is the most recently available data
- This figure now comes from a different source which includes regenerating natural forest as well as established natural forest
- Plantation forest excludes harvest area awaiting replanting

Source: MPI and Statistics NZ

# New Zealand Planted Forestry in Summary

Area and standing volume statistics	1 April '12	1 April '13	1 April '14
<b>Net stocked forest area (ha)</b>			
Total estimated area	1,719,500	1,728,500	<b>1,746,500</b>
<b>Growth characteristics</b>			
Standing volume (000 m <sup>3</sup> )	488,437	512,137	<b>493,723</b>
Average standing volume (m <sup>3</sup> /ha)	284	296	<b>283</b>
Area-weighted average age (years)	16.4	16.8	<b>16.8</b>
<b>Area by species (ha)</b>			
Radiata pine	1,543,000	1,553,700	<b>1,572,200</b>
Douglas-fir	108,000	106,500	<b>105,200</b>
Cypress species	10,000	10,100	<b>9,900</b>
Other exotic softwoods	24,000	23,600	<b>23,000</b>
Eucalyptus species	23,000	22,000	<b>23,800</b>
Other exotic hardwoods	13,000	12,600	<b>12,400</b>
<b>Planting statistics</b>			
	Year ended 31 Dec '11	Year ended 31 Dec '12	Year ended 31 Dec '13
<b>New planting (ha)</b>			
Total estimated new planting	12,000	11,500	<b>3,500</b>
Restocking	39,300	45,154	<b>40,867</b>
Harvested area awaiting restocking	60,500	51,869	<b>44,642</b>
<b>Harvesting statistics</b>			
	Year ended 31 Mar '12	Year ended 31 Mar '13	Year ended 31 Mar '14
<b>Harvesting (ha)</b>			
Area clear felled (ha)	44,100	50,342	<b>46,001</b>
Volume clear felled (TRVIB,000 m <sup>3</sup> )	23,312	26,296	<b>23,437</b>
Volume production thinned (TRVIB,000 m <sup>3</sup> )	90	307	<b>244</b>
Total volume removed (TRVIB,000 m <sup>3</sup> )	23,402	26,603	<b>23,681</b>
Average clear fell yield (m <sup>3</sup> /ha)	529	530	<b>519</b>
Area-weighted average clear fell age for radiata pine (years)	28.6	27.7	<b>28.9</b>
Estimated planted forest roundwood removal (000m <sup>3</sup> )	25,971	28,030	<b>30,212</b>

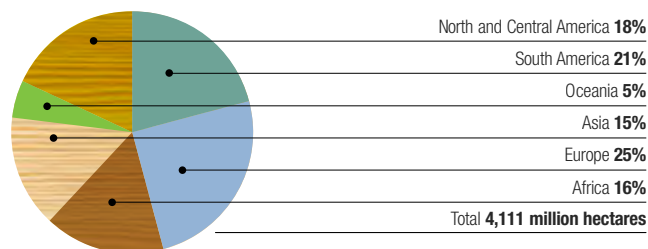
## Notes:

- TRVIB is an abbreviation for Total Recoverable Volume Inside Bark.
- <sup>1</sup> This is an indirect estimate based on the application of conversion factors to the various forestry products.

Source: NEFD 2010, NEFD 2011, NEFD 2014

# Global Forest Coverage

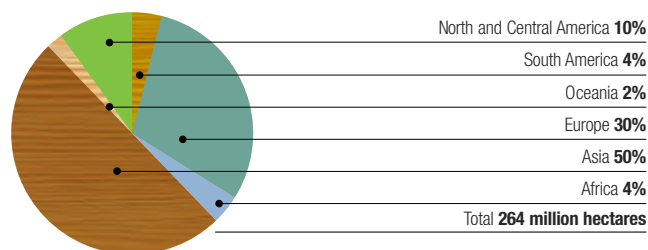
## Global Forest Areas



# 4B

There is an estimated 4 billion hectares of forest globally. 36% of this is considered primary forest, 57% is forest that has naturally regenerated and approximately 7% is planted.

## Global Planted Forest Areas



# -5.2M

Between 2000 and 2010 there was a net change in global forest area of approximately -5.2 million hectares, with around 13 million hectares being converted to other uses.

Source: FAO Global Forest Resources Assessment 2010

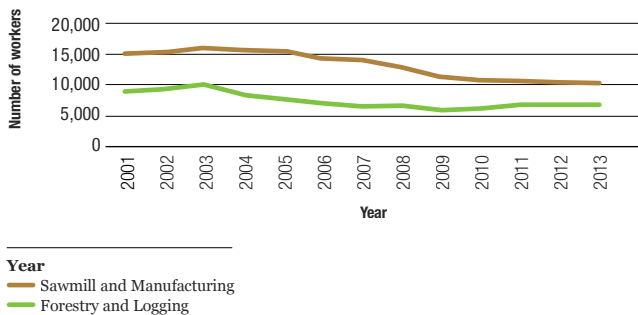
# Industry Employment

Year	2011	2012	2013
Forestry	720	740	730
Logging	3,920	3,960	3,970
Services to Forestry	2,280	2,310	2,210
<b>Forestry and Logging</b>	<b>6,920</b>	<b>7,010</b>	<b>6,910</b>
Log Sawmilling	5,420	5,130	5,020
Wood Chipping	25	30	25
Timber Resawing and Dressing	1,780	1,740	1,800
Plywood and Veneer Manufacturing	1,210	1,230	1,220
Fabricated Wood Manufacture	800	800	760
Pulp, Paper and Paperboard Manufacturing	1,780	1,860	1,760
<b>Sawmill and Manufacturing</b>	<b>11,015</b>	<b>10,790</b>	<b>10,585</b>
<b>Total Forestry and First Stage Processing</b>	<b>17,935</b>	<b>17,800</b>	<b>17,495</b>

## Notes:

- Employee count is a head-count of all salary and wage earners for the February reference month. Previous releases in this series described "Persons engaged" (total number of full-time employees and working proprietors (ie number of persons working 30 hours or more per week plus half the number of persons working part-time), and so the data is not strictly comparable with previous releases in this series.

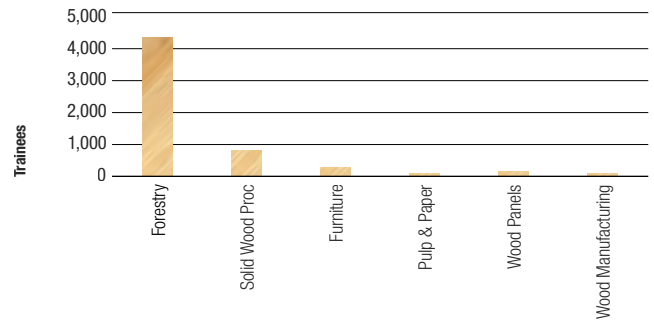
## Workforce



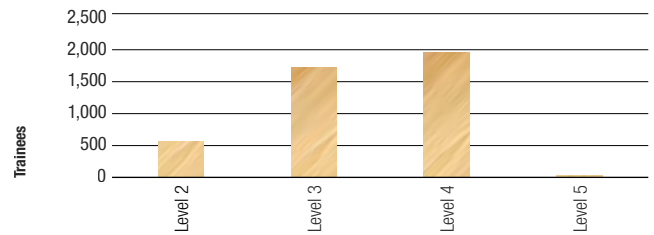
Source: Statistics NZ

# Industry Training

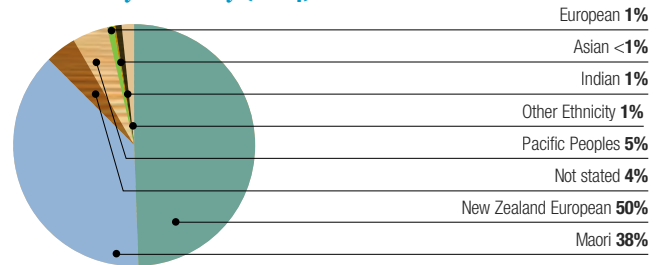
## Trainee Count (2014)



## Forestry Trainee Count (2014)



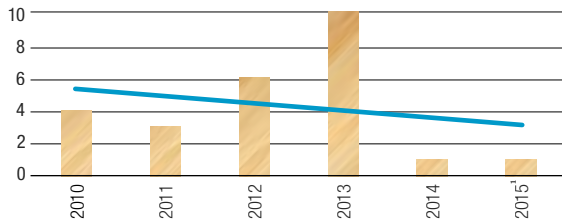
## Trainees by Ethnicity (2014)



Source: Competenz

# Health and Safety

## Fatal notifications



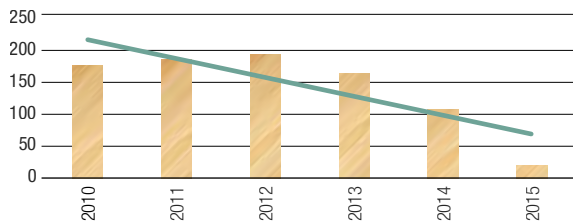
Fatal notifications  
Trend (Fatal notifications)

<sup>1</sup> This figure only up to May 2015

# 2.4%

of the New Zealand forestry workforce  
(1 worker out of 40) was involved in an accident  
resulting in serious harm or death in 2013.

## Serious harm notifications



Serious harm notifications  
Trend (Serious harm notifications)

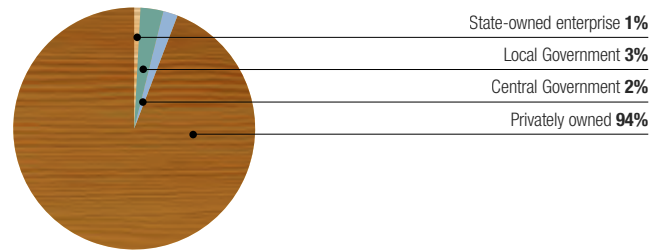
<sup>1</sup> This figure only up to May 2015

# PLANTATION FORESTRY

# Plantation Ownership



## Planted Forest Ownership – New Zealand

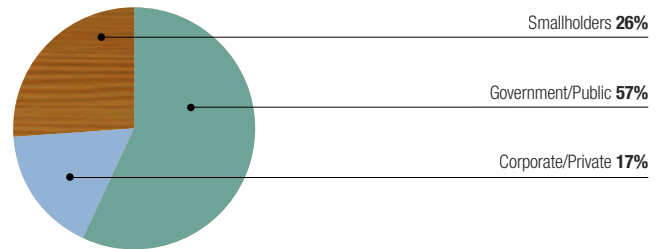


Source: NEFD 2014

**Note:**

- Ownership is based solely on the ownership of the forest irrespective of the ownership of the land.
- Net stocked planted production forest area.
- 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.
- “Privately owned” includes all privately owned forests. The legal entities included in this category are private companies, partnerships, individuals and trusts, which include Māori trusts and incorporations.
- “Central Government” forests are predominantly Crown owned forests on Māori lease hold land. These forests are managed by the Ministry for Primary Industries.

## Planted Forest Ownership – International



Source: Planted Forests in Sustainable Management – A statement of principles FAO, 2010



# Commercial Planted Forest Ownership and Management

Forest Owner/Manager	Net stocked forest area (ha)		
	As at 1 April 2011 (As published 2012/2013)	As at 1 April 2012 (As published 2012/2013)	As at 31 December 2014
Hancock Natural Resource Group	235,000	235,000	225,000
Kaingaroa Timberlands	175,000	174,000	175,000
Rayonier/Matariki Forests	124,000	129,000	123,000
PF Olsen Ltd	66,000	71,000	109,182
Global Forest Partners LP	91,000	84,000	84,960
Ernslaw One <sup>1</sup>	109,000	109,000	113,159
Crown Forestry (MPI) <sup>2</sup>	47,000	46,000	19,000
Juken New Zealand	60,000	31,000	32,100
Pan Pac Forest Products	34,000	34,000	35,200
GMO Renewable Resources	21,000	26,000	19,000
Hikurangi Forest Farms	25,000	25,000	25,000
Wenita <sup>2</sup>	25,000	25,000	27,570
Roger Dickie NZ <sup>3</sup>	24,000	26,000	26,576
Blakely Pacific	23,000	23,000	23,222
Forest Enterprises	21,000	21,000	21,000
City Forests	16,000	16,000	16,300
Lake Taupo Forest Trust <sup>4</sup>	15,000	16,000	17,795
Summit Forests NZ Ltd	-	-	23,700
Others (under 10,000 ha) <sup>5</sup>	608,000	629,000	629,556
<b>Total Plantation Forest Area</b>	<b>1,719,000</b>	<b>1,720,000</b>	<b>1,746,320</b>

## Note:

<sup>1</sup> Includes forests owned by Timbergrow Ltd but managed by Ernslaw One Ltd

<sup>2</sup> GMO Renewable Resources is a shareholder in Wenita

<sup>3</sup> Roger Dickie NZ Forests are managed by Forest Management NZ LTD

<sup>4</sup> Lake Taupo Forest Trust is managed by New Zealand Forest Managers

<sup>5</sup> Estimated numbers only

Source: FOA

# Ownership of Forest Land

As at 31 December 2014

Firm/Entity	Underlying Land Status (Productive area (ha))				Total
	Freehold	Leasehold		Total	
		Crown	Māori Inc.		
Hancock Natural Resource Group	106,094	25,003	64,180	42,878	238,155
Kaingaroa Timberlands	1,394	-	180,856	11	182,261
Rayonier/Matariki Forests	54,764	35,398	27,945	5,029	123,136
PF Olsen Ltd	92,182	-	2,000	15,000	109,182
Global Forest Partners LP	26,397	6,555	55,065	628	88,646
Ernslaw One <sup>1</sup>	58,060	27,791	19,731	7,578	113,159
Crown Forestry (MPI) <sup>2</sup>	1,542	-	14,071	3,603	19,216
Juken New Zealand	8,573	15,660	7,086	2,907	34,226
Pan Pac Forest Products	4,221	15,917	15,122	-	35,260
GMO Renewable Resources	16,700	-	1,800	-	18,500
Hikurangi Forest Farms	25,570	-	2,218	296	28,084
Wenita	5,228	-	-	22,337	27,565
Roger Dickie NZ	26,576	-	-	-	26,576
Blakely Pacific	22,491	-	-	731	23,222
Forest Enterprises	20,666	-	-	-	20,666
City Forests	15,246	-	-	1,080	16,326
Lake Taupo Forest Trust <sup>3</sup>	18,812	-	-	-	18,812
Summit Forests NZ Ltd	466	19,255	2,947	1,101	23,769
<b>Totals</b>	<b>504,983</b>	<b>145,579</b>	<b>393,021</b>	<b>103,178</b>	<b>1,146,760</b>

## Note:

<sup>1</sup> Includes forests owned by Timbergrow Ltd but managed by Ernslaw One Ltd

<sup>2</sup> Crown land includes land leased under Crown Forest Licence

<sup>3</sup> Lake Taupo Forest Trust is managed by New Zealand Forest Managers



Source: FOA

# Plantation Forest Management Statistics

As at 31 December 2014

Firm/Entity	Forest Management (ha)	
	TIMO	Property Mgmt
Hancock Forest Management (NZ) Ltd	237,823	199,258
Kaingaroa Timberlands	-	-
Rayonier/Matariki Forests	-	123,136
Global Forest Partners LP	22,887	65,759
Emslaw One	-	113,159
Crown Forestry (MPI)	-	-
Juken New Zealand	-	34,225
Pan Pac Forest Products	-	35,260
GMO Renewable Resources	18,500	-
Hikurangi Forest Farms	-	-
Wenita	-	27,565
Roger Dickie NZ	26,576	-
Forest Management NZ Ltd	-	26,576
Blakely Pacific	-	23,222
Forest Enterprises	20,666	-
City Forests	-	16,326
Lake Taupo Forest Trust	-	-
P F Olsen Ltd	2,720	149,685
Summit Forests NZ Ltd	-	-
<b>Totals</b>	<b>329,172</b>	<b>814,170</b>

## Note:

Within "management" there are 2 main categories:

1. Timberland Investment Management Organisation (commonly referred to as a TIMO)  
These organisations do not own any forest. The forests are owned by retail investors or institutional funds.
2. Property Management  
– Planning and managing field operations, mapping and maintaining records.  
Some entities carry out both functions within the same organisation, others carry out both for some parts of a forest estate and not others.

Source: FOA

# FSC Certified Forest Owner/ Manager Cluster Group

Company	Productive Area (ha)		
	2011 (As at 1 July)	2012 (As at 31 Dec)	2014 (As at 31 Dec)
Hancock Forest Management Ltd	222,720	204,858	197,466
Timberlands Ltd	187,544	183,467	183,804
Rayonier NZ	125,867	126,594	123,136
Emslaw One Ltd	102,107	103,398	113,159
Nelson Forests Limited	65,253	62,567	65,759
PF Olsen Ltd	63,110	46,543	46,245
Juken New Zealand Ltd	61,703	32,214	32,100
Summit Northern Plantation Ltd	-	28,993	23,769
Pan Pac Forest Products Ltd	33,597	35,040	34,795
NZ Forest Managers Ltd	33,509	33,878	35,308
Crown Forestry, MPI (West Coast)	29,733	23,954	-
Hikurangi Forest Farms Ltd	28,605	28,905	26,606
Wenita Forest Products Ltd	25,460	25,180	27,565
Blakely Pacific Ltd	22,385	22,919	23,380
City Forests Ltd	15,997	16,114	16,300
Southland Plantation Forest Company of New Zealand	9,900	10,507	10,500
Craigpine	3,371	3,371	3,964
Ngai Tahu Forest Estates Ltd	-	-	22,080
<b>Total FSC Plantation Productive Area (ha)</b>	<b>1,030,861</b>	<b>988,502</b>	<b>985,936</b>
<b>Total NZ Productive Plantation Area (ha)</b>	<b>1,773,700</b>	<b>1,780,000</b>	<b>1,746,500</b>
<b>% Plantation Forest FSC Certified (ha)</b>	<b>58%</b>	<b>56%</b>	<b>56%</b>
Lindsay and Dixon (naturally regenerated indigenous)	11,719	11,719	11,916
<b>Total FSC Certification</b>	<b>1,042,580</b>	<b>1,000,221</b>	<b>997,852</b>

## Note:

- Productive Area = Net Stocked Area + Area Awaiting Restocking
- Total Certified Area = Total Forest Area as recorded on FSC certificate

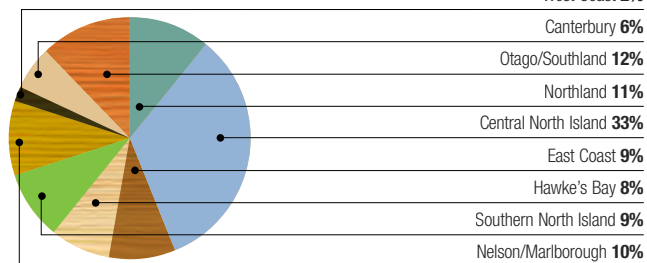
Source: FOA

# Plantation Forests by Location 2014

As at 1 April 2014

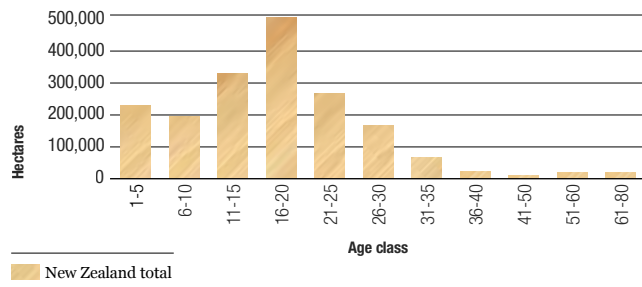
	2012 Hectares	2013 Hectares	2014 Hectares
Northland	202,559	201,196	191,512
Central North Island	552,097	553,956	587,104
East Coast	154,289	156,136	156,432
Hawke's Bay	129,586	131,735	133,324
Southern North Island	166,076	165,811	162,779
Nelson/Marlborough	168,585	170,171	168,421
West Coast	32,466	32,351	31,775
Canterbury	110,055	111,981	108,371
Otago/Southland	203,788	205,163	206,885
<b>Total</b>	<b>1,719,501</b>	<b>1,728,500</b>	<b>1,746,603</b>

## Plantation Forests 2014

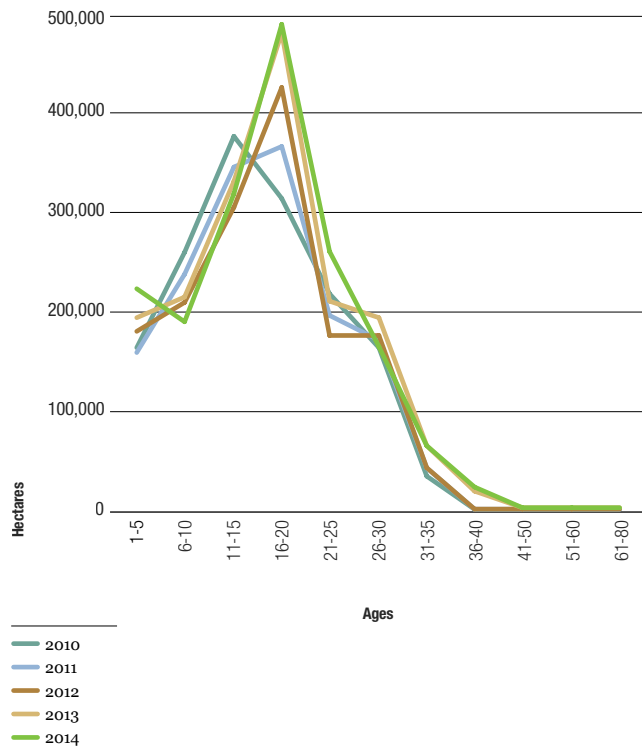


# Net Stocked Area of Radiata Pine

## By age class at 1 April 2014

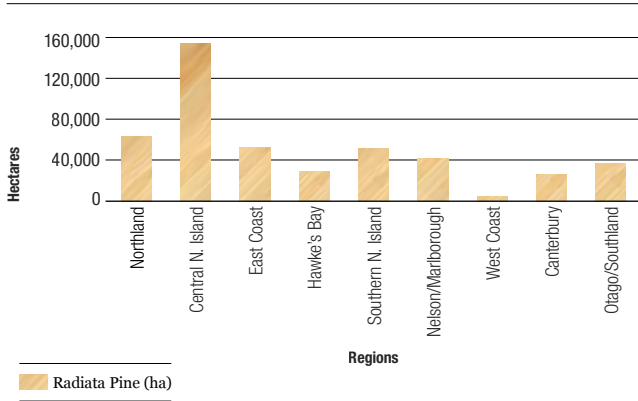


## Age class over time



# Planted Radiata Pine

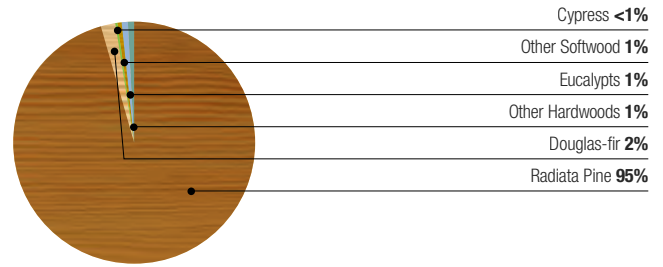
of Harvestable Age (21+) Per Region (Ha)



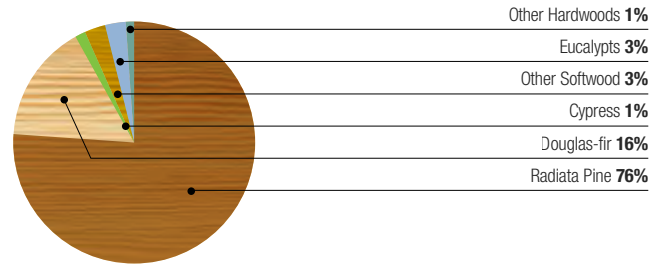
# Plantation Species (Ha)

As at April 2014

## North Island



## South Island



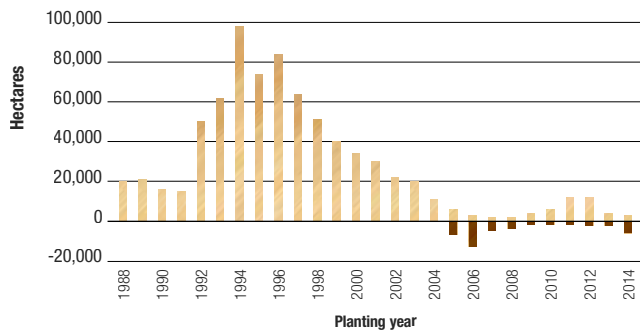
# 46%

*Pinus* spp. makes up approximately 46% of the estimated 53.4 million hectares of planted production forest worldwide, with Eucalypts the next largest at 26%.

FSC Strategic Review on the Future of Forest Plantations 2012

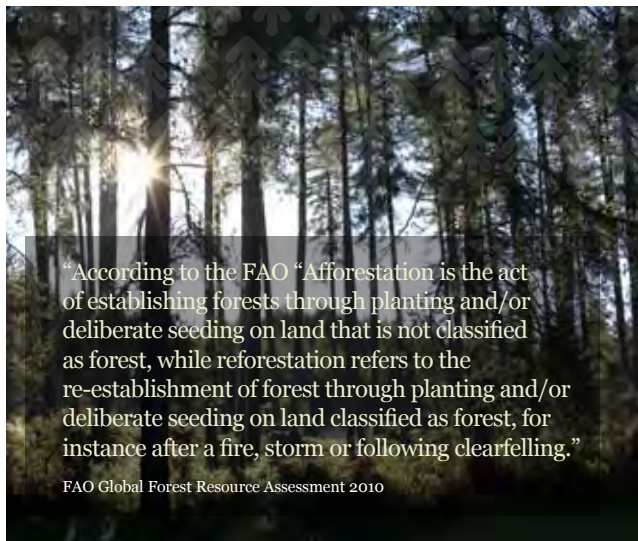
# New Forest Planting (1987) and Deforestation (since 2005)

Year to 31 March 2014



**Note:**

- These estimates do not include immature forest cleared for other land uses
- 2011 Deforestation figure: [www.maf.govt.nz/news-resources/statistics-forecasting/statistical-publications/national-exotic-forest-description](http://www.maf.govt.nz/news-resources/statistics-forecasting/statistical-publications/national-exotic-forest-description)

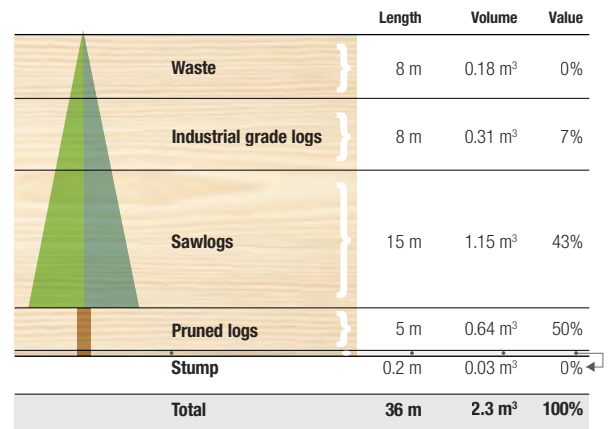


Source: NEFD 2014

# Typical Log Out-turn

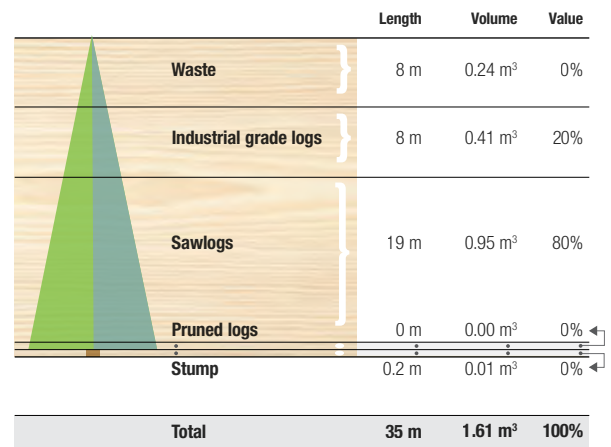
## Direct Sawlog Regime

Pruned and thinned to waste. Final Crop Stocking 228 spha.



## Structural Regime

No pruning. Thinned to waste. Final Crop Stocking 487 spha.



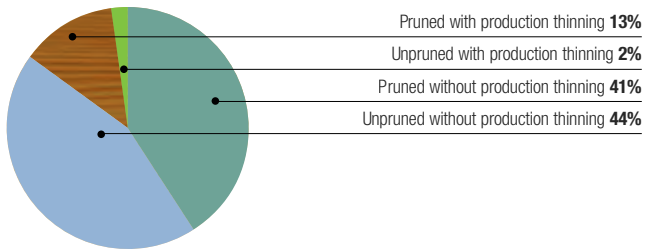
**Notes:**

- SPHA = stems per hectare
- Average site (Site Index 29 m, 300 Index 23 m<sup>3</sup>/ha/yr). Clearfelled at 28 years

Source: Scion

# Forest Management Trends

## Radiata Pine 2014



	%	2012 Hectares	%	2013 Hectares	%	2014 Hectares
Pruned without production thinning	45%	692,000	44%	687,200	41%	651,000
Unpruned without production thinning	39%	603,000	40%	622,300	44%	689,800
Pruned with production thinning	13%	207,000	13%	203,300	13%	196,300
Unpruned with production thinning	3%	41,000	3%	40,800	2%	35,100

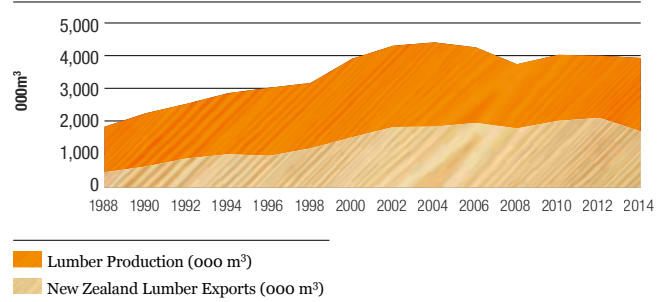
# 4%

There is an increasing trend of 'unpruned without production thinning' being adopted throughout the industry with a 4% increase in this practice since 2013. Additionally, there was a corresponding decrease of 3% in 'pruned without production thinning' practices.

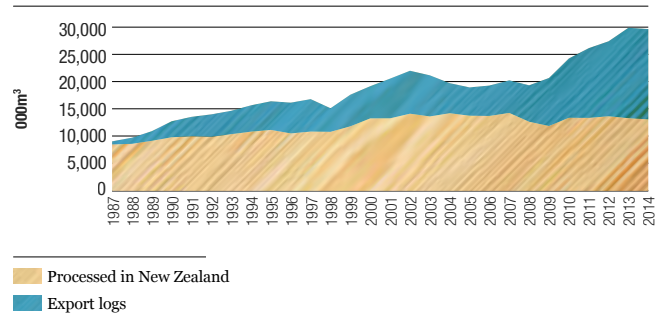
# PRODUCTION & EXPORT

Photo by Phil Taylor, Blakely Pacific Ltd

# Lumber Production and Exports to December 2014



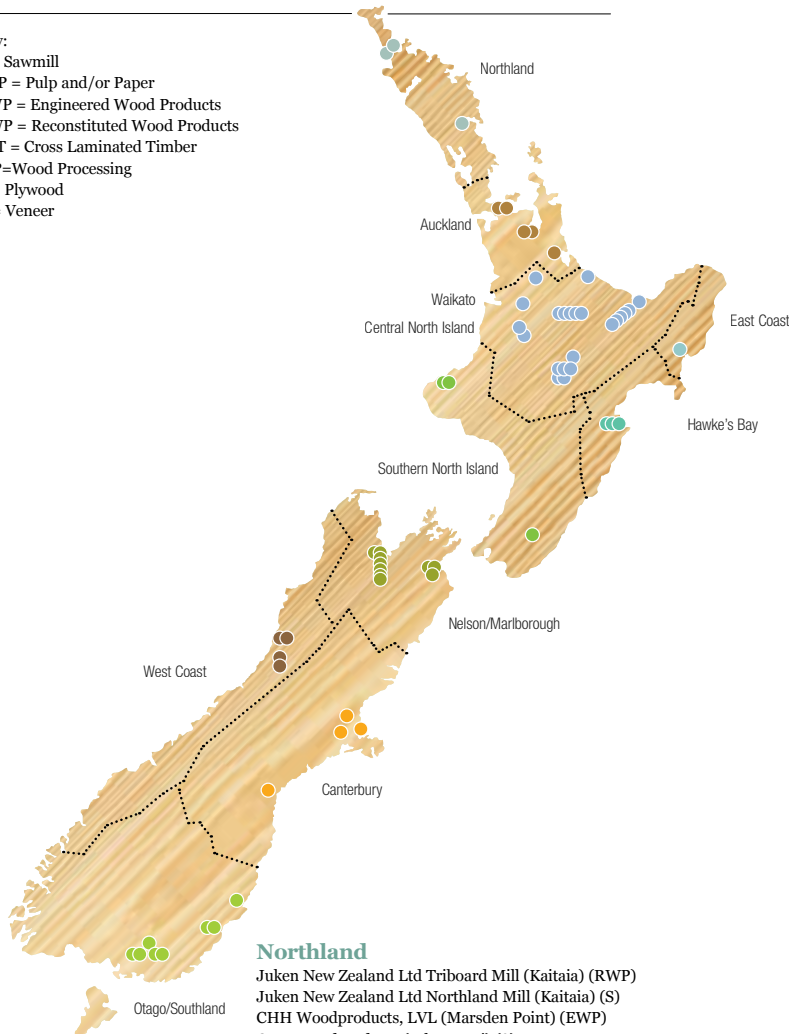
# Domestic vs International Consumption (Logs) 2014



Source: MPI

# Location of Major Wood Processors By Region 2014

Key:  
 S = Sawmill  
 P&P = Pulp and/or Paper  
 EWP = Engineered Wood Products  
 RWP = Reconstituted Wood Products  
 CLT = Cross Laminated Timber  
 WP=Wood Processing  
 P = Plywood  
 V = Veneer



## Northland

Juken New Zealand Ltd Triboard Mill (Kaitaia) (RWP)  
 Juken New Zealand Ltd Northland Mill (Kaitaia) (S)  
 CHH Woodproducts, LVL (Marsden Point) (EWP)  
 CHH Woodproducts (Whangarei) (S)  
 Rosvall Sawmill (Whangarei) (S)  
 Northpine Sawmill (Bream Bay) (S)

## Auckland

Thames Timber Ltd (Thames) (S)  
 Jenkin Timber (Auckland) (WP)  
 Goodwood Industries (Auckland) (WP)  
 Timberlab Solutions Ltd (Auckland) (WP)  
 Kopine (RWP)

## Bay of Plenty

Claymark Sawmills (Katikati) (S)  
 Pukepine Sawmills (Te Puke) (S)  
 Whakatane Mill Ltd (Whakatane) (P&P)  
 Solid Timber Buildings Ltd (Tauranga) (WP)

## Waikato

Moore Levesque and Morriss Ltd (Cambridge) (WP)  
 Otorohanga Timber Company (Otorohanga) (WP)  
 Kiwi Lumber (Putaruru) (S)

## Central North Island

CHH Woodproducts, Plywood (Tokoroa) (P)  
 CHH Kinleith (Tokoroa) (P&P)  
 Claymark Rotorua Sawmill Ltd (Rotorua) (S)  
 Pedersen Holdings (Rotorua) (S)  
 Lockwood Group (Rotorua) (WP)  
 Hume Pine (Rotorua) (WP)  
 Verda (Rotorua) (WP)  
 CHH Woodproducts Kawerau Sawmill (Kawerau) (S)  
 Sequel Lumber (Kawerau) (S)  
 SCA Hygiene Australasia (Kawerau) (P&P)  
 CHH Tasman Ltd (Kawerau) (P&P)  
 Norske Skog Tasman Ltd (Kawerau) (P&P)  
 Laminex Group (Taupo) (RWP)  
 Tenon Ltd (Taupo) (S)  
 Winstone International (Ohakune) (S) (P&P)  
 McAlpines (Rotorua) (S)

## East Coast

Juken New Zealand, Gisborne Mill (LVL)

## Hawke's Bay

Pan Pac Forest Products Ltd (Napier) (S)  
 Kanuka Engineered Wood Products Ltd (Hastings) (EWP)  
 East Coast Lumber (Wairoa) (S)

## Southern North Island

Taranakipine Ltd (New Plymouth) (S/WP)  
 Juken New Zealand (Masterton) (EWP)  
 Kiwi Lumber (Masterton) (S)  
 Kiwi Lumber (Dannevirke) (S)  
 Clelands Timber Products Ltd (New Plymouth) (WP)

## Nelson/Marlborough

Waimea Sawmillers Ltd (Nelson) (S)  
 Nelson Pine Industries (Richmond) (LVL)  
 Southpine Ltd (Nelson) (S)  
 Flight Timbers (Blenheim)  
 CHH Wood Products, Nelson Sawmill (Eves Valley) (S)  
 Hunter Laminates Nelson Ltd (Nelson) (WP)  
 Nelson Forests Limited (Renwick) (S)  
 XLAM (Nelson) (CLT)

## Canterbury

Daiken (Rangiora) (RWP)  
 SRS New Zealand Limited (Rolleston) (S/WP)  
 Starwood Products Ltd (Timaru) (WP)  
 Southern Pine Products (Christchurch) (WP)  
 McAlpines (Rangiora) (WP)  
 Westco Lagan Limited (Christchurch) (WP)

## West Coast

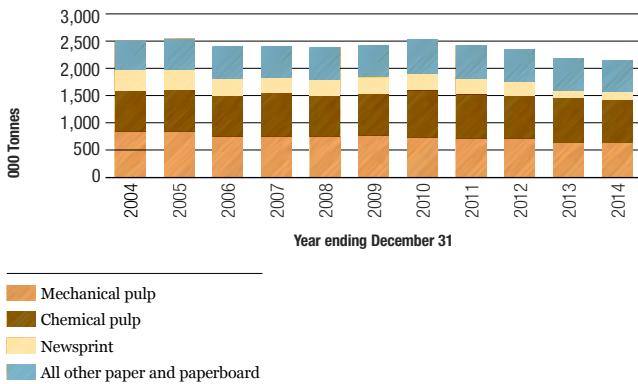
International Panel and Lumber Ltd (Greymouth) (PW)  
 Stillwater Lumber Limited (Greymouth) (S)  
 Westco Lagan Limited (Hokitika) (S)

## Otago/Southland

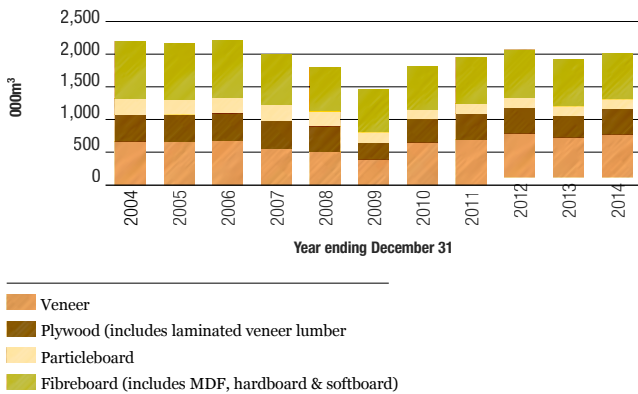
Dongwha Patinna NZ Ltd (Mataura) (RWP)  
 Southland Veneers (Invercargill) (V)  
 Niagara Sawmilling Co Ltd (Invercargill/Ashburton) (S/WP)  
 Pan Pac Otago (Mosgiel and Milton) (S)  
 Craiggpine Timber Ltd (Winton) (S)  
 Stuart Timber Co Ltd (Tapanui) (S)



## Paper and Pulp Production

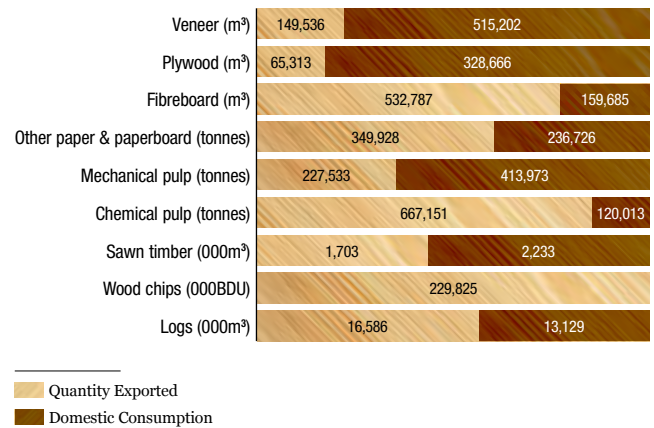


## Panel Products Production



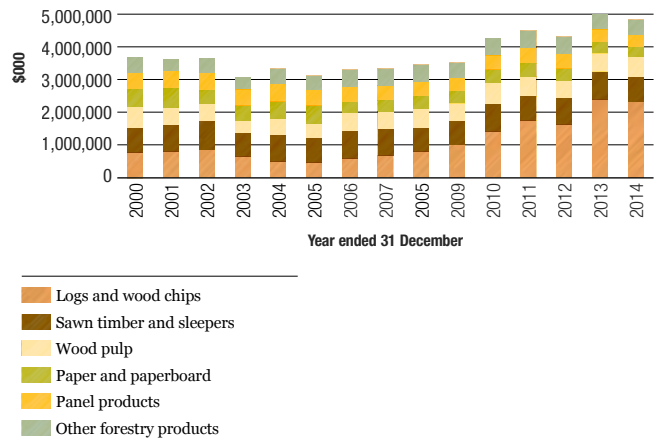
Source: MPI

## Production and Exports of Selected Forestry Products



Source: MPI, Statistics NZ

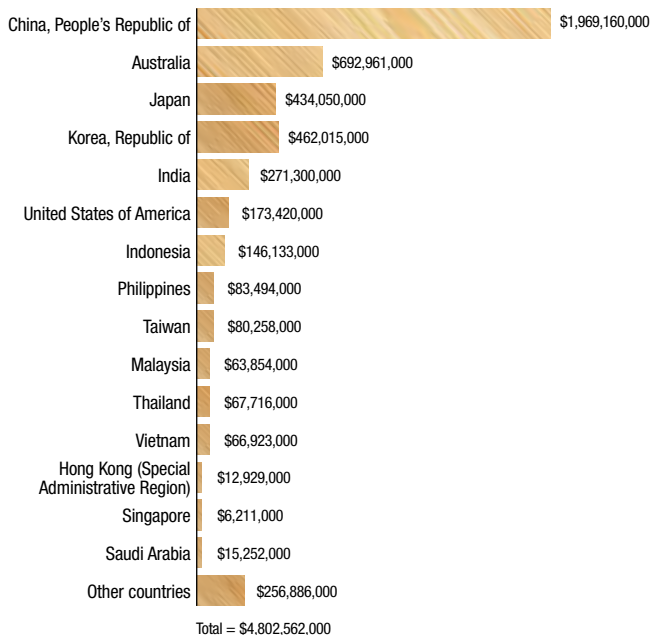
## Major Export Earners



Note:  
Excludes re-exports  
Source: Statistics NZ and MPI

# Exports of Forestry Products from New Zealand

For Year Ended in December 2014



**Note:** Data is provisional and does not include newsprint



# 1.40%

The value of exported forest products decreased by approximately \$177,419,000 on 2013 with the value of products to China decreasing by 1.40%. Increases of export value to India and Australia were noted in 2014, along with exports to 'other countries'.

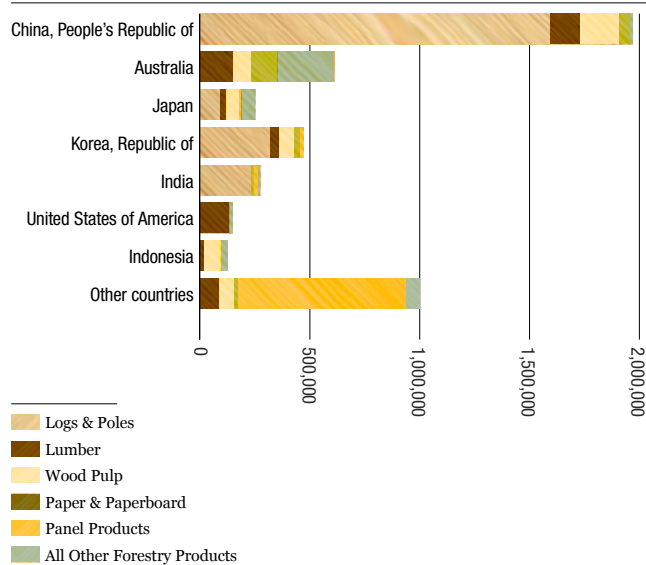
Photo by Phil Taylor, Blakely Pacific Ltd

Source: Statistics NZ

# Export Product Value by Destination 2014

For Year Ended in December 2014

Country of Destination	Total Export Value (NZD 000)		
	2012	2013	2014
China, People's Republic of	1,456,486	2,111,462	1,969,160
Australia	755,255	679,077	692,961
Japan	542,037	480,508	434,050
Korea, Republic of	396,259	488,067	462,015
India	187,730	219,384	271,300
United States of America	185,407	191,560	173,420
Indonesia	132,872	164,031	146,133
Philippines	102,651	82,644	83,494
Taiwan	85,705	92,564	80,258
Malaysia	79,207	68,330	63,854
Thailand	72,765	60,954	67,716
Vietnam	71,841	74,197	66,923
Hong Kong (Special Administrative Region)	14,129	13,464	12,929
Singapore	13,942	6,852	6,211
Saudi Arabia	28,125	18,597	15,252
Other countries	176,568	228,288	256,886
<b>Total</b>	<b>4,300,979</b>	<b>4,979,980</b>	<b>4,802,562</b>

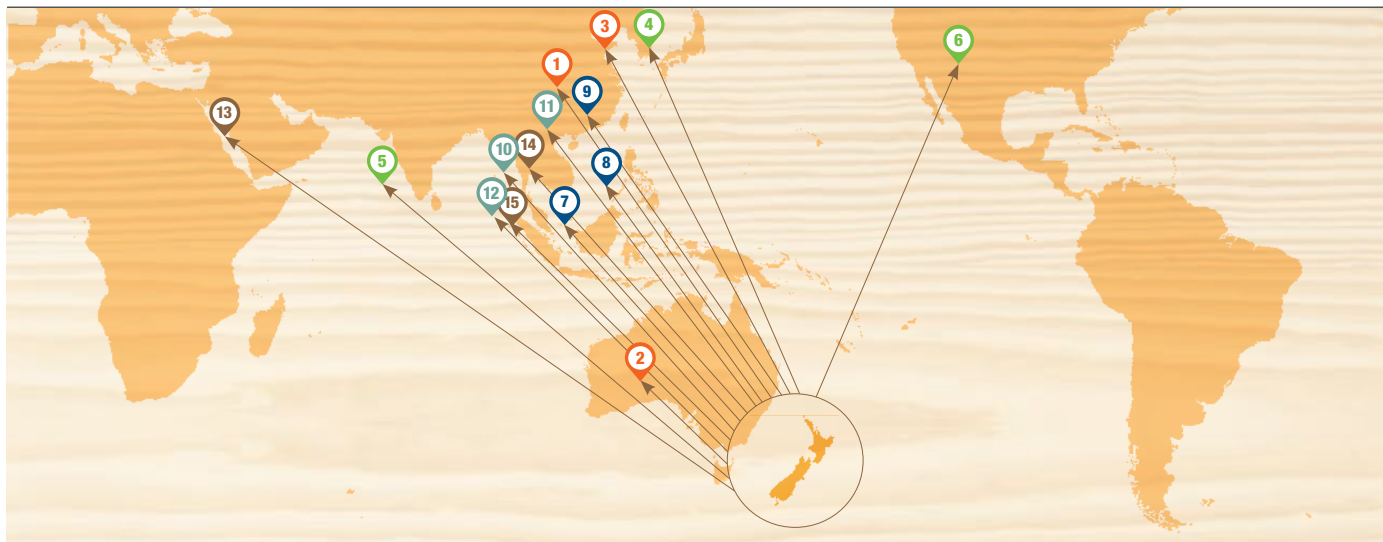


**Note:** Excludes re-exports. Newsprint data 12 months ending June 2010

Source: Statistics NZ

# Top Export Destinations

Exports of forestry products by main countries of destination for the year ended December 2014 by value (NZ\$000)



## China, People's Republic of

**SNZ1,969,160**

Logs & poles	80.54%
Sawn timber	6.50%
Wood pulp	9.15%
Paper & paperboard	2.29%
Panel products	0.93%
All other	0.58%



## Australia

**SNZ692,961**

Logs & poles	0.33%
Sawn timber	21.82%
Wood pulp	12.30%
Paper & paperboard	16.25%
Panel products	12.45%
All other	36.85%



## Korea, Republic of

**SNZ462,015**

Logs & poles	69.58%
Sawn timber	7.43%
Wood pulp	16.64%
Paper & paperboard	4.57%
Panel products	1.67%
All other	0.10%



## Japan

**SNZ434,048**

Logs & poles	21.58%
Sawn timber	6.31%
Wood pulp	13.96%
Paper & paperboard	0.11%
Panel products	43.93%
All other	14.11%



## India

**SNZ271,299**

Logs & poles	87.52%
Sawn timber	0.83%
Wood pulp	2.66%
Paper & paperboard	2.93%
Panel products	1.61%
All other	4.46%



## USA

**SNZ173,419**

Logs & poles	0.08%
Sawn timber	76.11%
Wood pulp	0.00%
Paper & paperboard	3.00%
Panel products	9.10%
All other	11.71%



## Indonesia

**SNZ146,134**

Logs & poles	0.15%
Sawn timber	13.76%
Wood pulp	50.40%
Paper & paperboard	1.08%
Panel products	11.94%
All other	22.68%



## Philippines

**SNZ83,493**

Logs & poles	0.00%
Sawn timber	22.10%
Wood pulp	6.50%
Paper & paperboard	35.43%
Panel products	33.52%
All other	2.45%



## Taiwan

**SNZ80,257**

Logs & poles	16.96%
Sawn timber	40.17%
Wood pulp	19.04%
Paper & paperboard	11.93%
Panel products	11.62%
All other	0.27%



## Thailand

**SNZ67,717**

Logs & poles	4.21%
Sawn timber	46.79%
Wood pulp	19.88%
Paper & paperboard	22.52%
Panel products	1.63%
All other	4.97%



## Vietnam

**SNZ66,922**

Logs & poles	6.62%
Sawn timber	75.59%
Wood pulp	4.37%
Paper & paperboard	7.21%
Panel products	4.42%
All other	1.80%



## Malaysia

**SNZ63,854**

Logs & poles	0.65%
Sawn timber	11.20%
Wood pulp	31.31%
Paper & paperboard	35.71%
Panel products	20.38%
All other	0.75%



## Saudi Arabia

**SNZ15,252**

Logs & poles	37.04%
Sawn timber	21.05%
Wood pulp	0.00%
Paper & paperboard	0.00%
Panel products	3.63%
All other	38.28%



## Hong Kong (SAR)

**SNZ12,929**

Logs & poles	24.60%
Sawn timber	6.06%
Wood pulp	0.00%
Paper & paperboard	56.94%
Panel products	1.24%
All other	11.16%



## Singapore

**SNZ6,211**

Logs & poles	4.62%
Sawn timber	51.18%
Wood pulp	0.00%
Paper & paperboard	22.98%
Panel products	7.94%
All other	13.28%

## Other countries

**SNZ 256,886**

Logs & poles	0.60%
Sawn timber	30.35%
Wood pulp	24.22%
Paper & paperboard	3.99%
Panel products	4.34%
All other	20.64%

## Note:

- Values are NZ\$000 f.o.b.
- Paper and paperboard includes newsprint for June 2011yr.
- All other forestry products include chips, mouldings, manufactures of paper and paperboard, furniture and miscellaneous forestry products.
- Other countries are all other countries to which New Zealand has exported forestry products during the year.

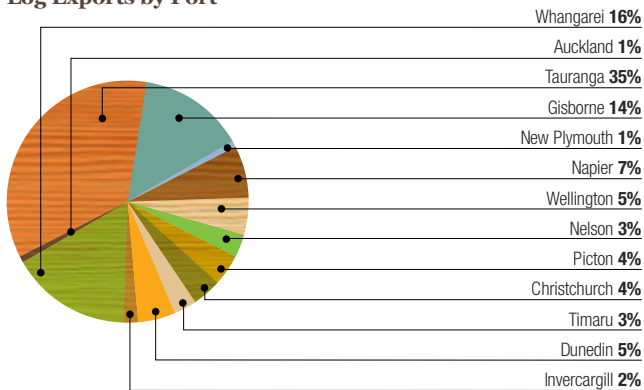
Source: Statistics NZ

# Exports by Port (2014)

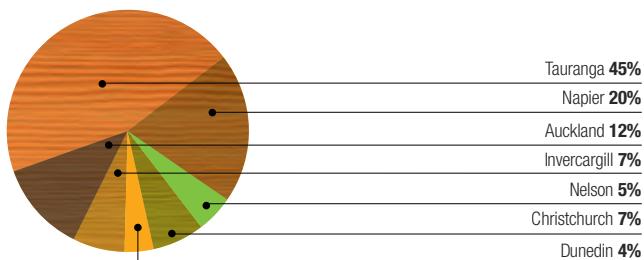
For Year Ended in December 2014

Port of Loading	Quantity m <sup>3</sup>		
	Sawn Timber	Logs	Total
Whangarei	3,501	2,588,534	2,592,035
Auckland	210,529	158,894	369,423
Tauranga	769,189	5,844,015	6,613,204
Gisborne	1,274	2,259,367	2,260,641
New Plymouth	-	231,615	231,615
Napier	340,827	1,118,670	1,459,497
Wellington	4,250	818,518	822,768
Nelson	88,712	585,030	673,742
Picton	1,624	642,921	644,545
Christchurch	110,136	676,730	786,866
Timaru	878	457,279	458,157
Dunedin	62,197	808,559	870,756
Invercargill	110,050	395,503	505,553
<b>Total</b>	<b>1,703,168</b>	<b>16,585,635</b>	<b>18,288,803</b>

## Log Exports by Port



## Sawn Timber Exports by Port



**Note:** Ports with <1% not included

**Source:** Statistics NZ

# SUPPLEMENTARY INFORMATION



# Sector Agreements and Initiatives

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## Members of the FOA are committed to the following agreements and initiatives:

### New Zealand Forest Accord 1991

The New Zealand Forest Accord 1991 was updated in 2007 to reaffirm the principles of the 1991 Accord and respond to the threat of climate change. It is an agreement between conservation groups and most major plantation growers and users to:

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

### New Zealand Climate Change Accord 2007

Acknowledging, inter alia:

- The environmental benefits delivered by indigenous and plantation forests
- That carbon sequestration by forests is a key mechanism to offset greenhouse gas emissions
- That policies must be consistent with the Polluter Pays Principle, be broad-based and cover all greenhouse gases in all sectors, should avoid net increases in greenhouse gases, should promote the retention and expansion of indigenous forests and the replanting and expansion of plantation forests; ensure all sectors are taking responsibility, be consistent with customary rights and the Treaty of Waitangi and acknowledge that wood is a renewable reusable and recyclable resource.

### Eliminating illegal forest products

On 14 August 2008 a statement was signed in which the signatories called on the New Zealand government, importers, processors, retailers, New Zealand forest and plantation managers and processors of forest and plantation products to support their call to strongly oppose the import and the use of illegally harvested and traded forest products in New Zealand. Trading in illegal products contributes to deforestation, biodiversity loss, poverty and other adverse social effects, and undermines the viability of legal forest products.

Prohibition of the import of these products will benefit New Zealand's legal forest products industries; assist in improving the producer countries' social, environmental, and economic well being; and show that New Zealand is responsibly addressing the problem. Illegal logging is not sustainable and thus eliminating illegal logging is an important step towards achieving sustainable forestry globally.

The organisations that signed the statement were: the Ecologic Foundation, Environment & Conservation Organisations of New Zealand (ECO), Greenpeace Aotearoa New Zealand, New Zealand Forest Owners Association, New Zealand Farm Forestry Association, New Zealand Pine Manufacturers Association, Royal Forest and Bird Protection Society, Sustainable Energy Forum, Wood Processors Association of New Zealand and WWF New Zealand.

### Log Transport Safety Accord

Log truck operators and forest owners on 7 August 2008 signed an updated Log Transport Safety Accord designed to further improve the safety of all road users. Since the Accord was first signed in 2001 there has been a 65% reduction in log truck crashes, and a 75% reduction in rollover crashes, during a time of rapid growth in the logging industry. The Accord has been updated with the aim of reducing the rollover crash rate even further.

### Principles for Commercial Plantation Forest Management in New Zealand

To promote understanding between the signatory parties with a view to New Zealand achieving environmental excellence in plantation forest management and participating as an effective advocate internationally for the sustainable management of plantation forests and the protection, preservation, and sustainable management of natural forests. These principles are complementary to the New Zealand Forest Accord (August 1991).

### Forest Industry Safety Council

FOA is participating in the pan-industry initiative to improve health and safety in forestry. This initiative will largely be run by the Forest Industry Safety Council (FISC) which is chaired and managed by neutral third parties. The mission of FISC is to reduce the rates of serious injuries and deaths in the New Zealand plantation forest sector, with an ultimate goal of eliminating serious injuries and deaths in the sector. The purpose of FISC is:

- To foster cultural change in the plantation forest industry to ensure that safety is treated in the industry as an overriding priority and a shared responsibility throughout the sector
- To promote a safety conscious plantation forest sector
- To promote the competence and confidence of the plantation forest industry workforce in relation to work safety
- To promote effective safety programmes within companies operating in the plantation forest sector.



Wood is the world's most renewable raw material. For this reason forests and the wood they provide are vital in the fight against climate change. As the effects of global warming impact on our environment, the use of renewable and sustainable building materials has never been so important.

The stages of the wood story – planting and renewal, growth, harvesting and use – are part of a renewable cycle that takes and stores carbon dioxide from the atmosphere, making wood a better-than-carbon-neutral building material.

**Wood is the only construction material which has absorbed CO<sub>2</sub> from the atmosphere when produced, not emitted more**

During its production, one tonne of:

- Concrete – has released 159 kilos of CO<sub>2</sub> into the atmosphere
- Steel – has released 1.24 tonnes of CO<sub>2</sub> into the atmosphere
- Aluminium – has released 9.3 tonnes of CO<sub>2</sub> into the atmosphere
- Wood, however, has absorbed a net 1.7 tonnes of CO<sub>2</sub> from the atmosphere, over and above the energy expended in growing, harvesting and processing.

**The more timber you use in a house, the more CO<sub>2</sub> you remove from the atmosphere**

- It takes around 20 trees to build an average house frame
- A steel house frame has added 4.5 tonnes of CO<sub>2</sub> to the atmosphere
- A wooden house frame has absorbed 9.5 tonnes of CO<sub>2</sub> from the atmosphere
- Choosing timber options for an average house can take around 20 tonnes net of CO<sub>2</sub> out of the atmosphere (saving the equivalent of 150 trips Auckland to Wellington, or 7.1 years of car use)
- Using alternative materials (concrete, steel, brick and aluminium) can add 24 tonnes net CO<sub>2</sub> to the atmosphere (costing the equivalent of 180 trips Auckland to Wellington, or 8.6 years of car use).

Using wood is something we can all do to help the environment. By demanding and using more sustainably produced wood, we can ensure that more trees will be planted and more carbon dioxide will be absorbed from the atmosphere.

The result is a better world for ourselves, our families and future generations. It's simple.

**Wood. Our most renewable raw material.**

[www.nzwood.co.nz](http://www.nzwood.co.nz)



The Harvested Wood Material levy came into effect on 1 January 2014 with a rate of 27 cents per tonne. The levy collected \$7,962,737 (ex GST) in its first year. The proceeds from the levy are overseen by the Forest Growers Levy Trust which has contracted the Forest Owners and Farm Forestry Associations to manage the annual work programme. The annual work programme consists of research and work which will benefit the industry as a whole. More information including the 2014 Annual Report, can be found at [www.fglt.org.nz](http://www.fglt.org.nz).

## Expenditure by Category

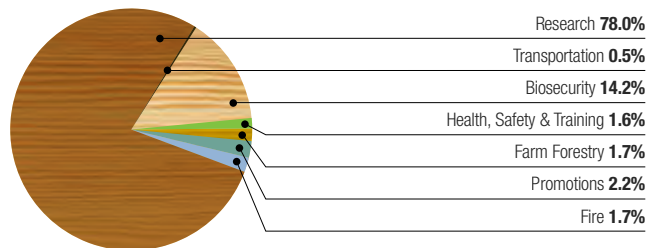


Photo by Phil Taylor, Blakely Pacific Ltd

Source: FGLT 2014 Annual Report

# NZ Forest Owners Strategic Plan

## The Strategic Action Plan provides a pathway to shape a strong forest and wood products sector for the future.

The New Zealand plantation forest and wood products industry is based on wholly renewable resources, producing 100% of its products from plantation forests and recycled waste fibre; is New Zealand's largest biomaterial recycler and has a very low carbon footprint. In the future it will be substantially independent of non-renewable energy inputs apart from transport fuel (and even this could be sourced from New Zealand wood in the long run). The industry already provides greenhouse gas offsets, reducing New Zealand's overall carbon footprint.

### Vision for the Plan

In the ten years to 2022 annual export earnings will more than double to \$12 billion from a New Zealand forest and wood products industry that is:

- delivering innovative wood-based solutions from a sustainable resource to meet our customers' needs
- manufacturing a range of high-value, fibre-based products, including new biochemical and biofuel value streams
- recognised as a world-leader in timber-engineered building solutions
- underpinned by forest growing as a valued and profitable land use
- recognised as a key New Zealand growth industry, delivering strong economic and environmental benefits
- connected and collaborative across the value chain, from end-product to seedling
- characterised by industry players that have pride in the wood products industry, with the sector regarded as a preferred career option for our brightest talent

Forest product export earnings for 2014 were \$4.8 billion. On the current path of development by 2022 export earnings will be \$6.1 billion. The Strategic Action Plan provides an alternative path targeting \$12 billion export earnings by 2022.



# Terms and Things

## Area and 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 2.4 m<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.
- A log truck and trailer contains approximately 30 tonnes of logs.
- A log ship contains approximately 30-35,000 tonnes of logs.



Photo by Phil Taylor, Blakely Pacific Ltd

# Carbon Emissions and Sequestration

## The Carbon Cycle

Planting trees begins a cycle that continuously removes, releases and reabsorbs greenhouse gases such as carbon dioxide. As trees grow, they absorb carbon dioxide through the process of photosynthesis.

The carbon dioxide absorbed by the growing forest remains stored within the wood products used throughout the lifetime of the building structure or product.

When a structure or product reaches the end of its lifetime, the carbon dioxide is released back into the atmosphere as the wood decays or is burnt as fuel.

Wood can be recycled to extend its lifetime and slow down the natural release of carbon dioxide back into the atmosphere. Once the carbon dioxide is released, it is available to be re-absorbed by growing trees.

When wood materials decay or are burnt as fuel they release carbon dioxide that was absorbed during the growth of the trees and are therefore carbon neutral.

## New Zealand's Greenhouse Gas Inventory – Key Points

In 2013, New Zealand's total emissions were 81.0 million tonnes of carbon dioxide (Mt CO<sub>2</sub>-e). Total emissions for New Zealand are now an estimated 14.2 Mt CO<sub>2</sub>-e higher than in 1990 where emissions totalled 66.7 Mt CO<sub>2</sub>-e.

26.8 Mt CO<sub>2</sub>-e (net) was removed through the land use, land use change and forestry sector (LULUCF), therefore bringing New Zealand's net emissions to 54.2 Mt CO<sub>2</sub>-e in 2013. It is estimated that forestry land was responsible for removing 33.7 Mt CO<sub>2</sub>-e (net) in 2013, an increase in removals of 3.5 Mt CO<sub>2</sub>-e since 1990.

Agriculture continued to be the biggest contributor to New Zealand's Greenhouse Gas emissions with 49% (39.2 Mt CO<sub>2</sub>-e) of all emissions coming from this sector, while the energy sector was responsible for 39% (31.7 Mt CO<sub>2</sub>-e). Both the waste and industrial processes and product use sectors contributed 6% of the emissions (5.1 Mt CO<sub>2</sub>-e).

New Zealand contributes approximately 0.15% of all global emissions, however this amounts to approximately 17.21Mt CO<sub>2</sub>-e per person, which ranks New Zealand highly amongst Annex 1 countries in terms of emissions per person.

Thanks to: MFE

Source: Snapshot April 2015 Info 735,  
New Zealand's Greenhouse Gas Inventory 1990-2013 (MFE)

## How is carbon removed from the atmosphere by New Zealand's forests?

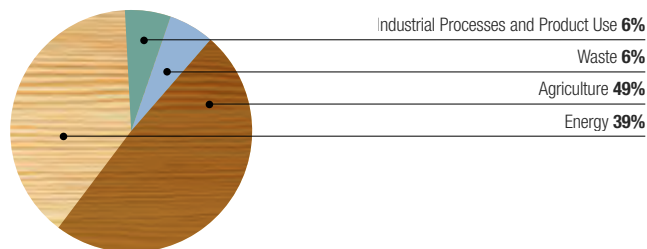
Forests act as carbon sinks – a type of reservoir that removes and stores more carbon from the atmosphere than it releases. Trees use carbon dioxide (CO<sub>2</sub>) as part of their 'breathing' cycle – taking in CO<sub>2</sub> and storing it within roots, trunks and branches – and releasing oxygen.

The amount of CO<sub>2</sub> a forest removes depends on the species grown and place in its growing cycle. A young forest will remove smaller amounts of CO<sub>2</sub> until the trees establish and enter a growing phase – this is when forests will remove the most carbon. As a forest ages and its growing process slows, it will revert to absorbing less carbon again.

At harvesting, the forest ceases to be a carbon sink but instead of releasing all the carbon it has stored, the harvested wood retains some of it. All wood products store carbon that will eventually be released, however the rate at which that carbon is released depends on the type of product and the type of treatment the wood has undergone. Studies are still being conducted into these release rates.

How much carbon removed by New Zealand's forests is therefore dependent on the coverage of forestland, the age of the trees and the rate of harvest. In 2013, the net amount of carbon removed by the LULUCF sector was 26.8 MtCO<sub>2</sub>-e. This number takes into account the approximately 8,500 hectares of forest that was lost in 2013.

## Emissions by Sector



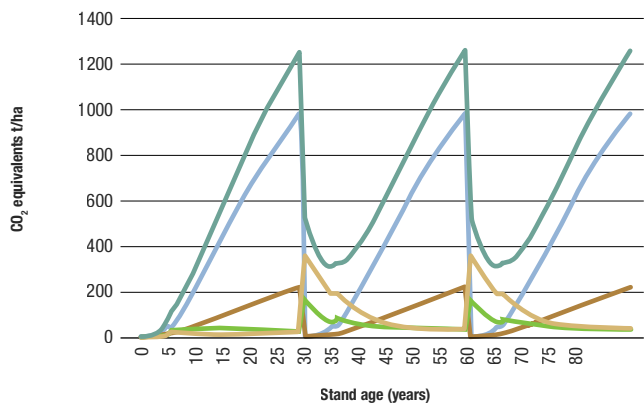
As at April 2015

Thanks to: MFE

Source: Snapshot April 2015 Info 735,  
New Zealand's Greenhouse Gas Inventory 1990-2013 (MFE)



## Carbon Yield: Multiple Rotations



- Total
- Above ground live biomass
- Below ground live biomass
- Dead woody litter
- Fine litter

### Note:

Growth Modelling region: Waikato Taupo, Latitude 37.8, Altitude 495 m  
300 Index 29.0 m<sup>3</sup>/ha/year, Site index 34.8 m

This is the classic sawtooth carbon sequestration graph for a plantation stand. It shows the sequestration and loss of carbon in the system over time. It records the gradual sequestration of carbon in the different layers (leaves, roots and litter) and the assumed release when the crop is harvested. Note the difference in release at harvesting time for the different layers, with a level of carbon being retained as sequestered, despite the crop being harvested.

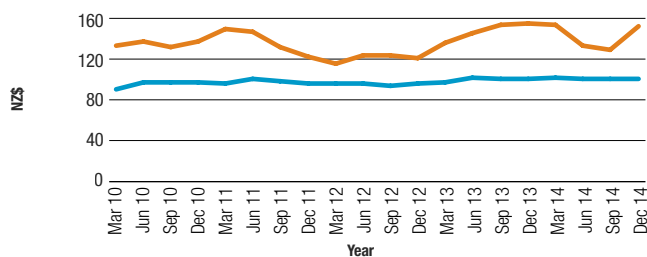
The graph is for an unpruned stand, harvested age 30, waste thinned at age 6 to 450 spha, then replanted after harvest.

The choice of harvest age is dependent upon the crop owner's principal stand objective (timber, carbon, etc).

Graph shows CO<sub>2</sub> equivalent (CO<sub>2</sub> tonnes = 44/12x Carbon tonnes).

Source: MPI

## Export & Domestic Log Pricing



- Export (NZ\$ per JAS m<sup>3</sup> f.o.b)
- Domestic (NZ\$ per tonne delivered at mill)



Photo by Phil Taylor, Blakely Pacific Ltd

Source: MPI

# Log Pricing Data

Log Type, Pricing Point and Market	Mar-09	Jun-09	Sep-09	Dec-09	Mar-10	Jun-10	Sep-10	Dec-10	Mar-11	Jun-11	Mar-12	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14
<b>EXPORT (NZ\$ per JAS m3 f.o.b)</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>	<b>Quarter</b>
Pruned-Japan, Korea	169-206	126-158	125-175	110-172	151-189	154-187	148-219	176-203	179-197	155-181	144-513	154-163	153-166	144-190	168-192	169-209	177-201	181-206	171-198	158-190	146-187	165-236
A Grade-Japan	95-131	95-106	91-104	82-103	129-156	127-144	118-121	114-136	132-144	133-148	110-117	110-122	116-118	103-125	128-138	136-153	143-162	137-169	142-165	104-142	110-140	127-169
J Grade-Japan	116	85	87	74	79	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
K Grade-Korea	86-116	85-102	81-99	74-110	98-137	115-140	109-118	106-130	130-148	125-145	94-109	104-116	103-110	90-121	112-131	114-147	132-156	127-159	133-159	96-137	101-134	117-163
Pulp	56-94	65-86	69-77	65-92	80-116	105-127	103-105	100-120	129-137	110-176	87-100	84-111	91-120	79-102	106-108	108-123	128-131	119-154	125-140	110-122	92-108	112-135
<b>All grades average per quarter</b>	<b>119</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>132</b>	<b>137</b>	<b>130</b>	<b>136</b>	<b>150</b>	<b>147</b>	<b>114</b>	<b>121</b>	<b>122</b>	<b>119</b>	<b>135</b>	<b>145</b>	<b>154</b>	<b>157</b>	<b>154</b>	<b>132</b>	<b>127</b>	<b>153</b>
<b>DOMESTIC (NZ\$ per tonne delivered at mill)</b>																						
P1	116-128	116-135	120-139	121-143	125-145	125-161	125-156	130-154	128-147	130-152	120-134	127-170	120-136	122-149	135-150	142-158	126-157	132-156	129-155	131-155	132-154	134-154
P2	95-107	93-107	93-111	94-114	98-117	104-131	108-127	109-132	110-127	122-130	110-127	110-123	111-126	111-123	120-121	121-133	114-125	121-127	126-126	119-130	125-126	121-130
S1	85-97	84-90	84-92	93-97	88-97	95-102	97-130	97-100	88-98	99-125	95-100	95-98	95-102	95-104	97-102	103-110	102-120	102-123	98-112	101-111	103-109	98-108
S2	75-88	77-87	80-85	82-87	88-91	94-103	89-101	92-102	92-103	86-105	88-100	88-97	88-96	90-97	95-98	101-107	90-110	90-113	92-118	91-123	101-110	98-109
L1 and L2	70-76	68-72	65-76	68-83	67-85	73-109	71-99	73-102	72-103	74-115	90-110	83-92	80-89	77-96	84-100	88-105	78-111	80-113	77-123	78-78	81-87	85-103
S3 and L3	64-69	64-67	64-75	67-74	72-77	75-84	81-94	80-86	82-92	81-92	66-81	76-79	77-80	77-86	92-90	83-100	75-106	75-102	86-108	90-115	81-100	86-100
Run of bush	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pulp	40-64	40-62	40-59	40-55	43-57	44-57	44-59	46-58	47-57	48-61	49-55	49-55	47-49	48-53	46-50	46-51	47-54	46-54	44-55	46-55	45-55	49-54
<b>All grades average per quarter</b>	<b>84</b>	<b>83</b>	<b>85</b>	<b>86</b>	<b>89</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>96</b>	<b>101</b>	<b>95</b>	<b>95</b>	<b>93</b>	<b>95</b>	<b>97</b>	<b>103</b>	<b>101</b>	<b>102</b>	<b>104</b>	<b>102</b>	<b>101</b>	<b>102</b>

## Notes:

- \* Limited response – very small volume traded
- .. Data not available

## 2014 Facts & Figures content details

### References

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### Special thanks

- Thanks to MPI, WPMA and MfE

### Disclaimer

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