

# Facts & Figures

**2018/19**

NEW ZEALAND PLANTATION  
FOREST INDUSTRY





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# Minister's Foreword

## Creating a sustainable forestry sector

Forestry plays a key role in many of the Government's priority areas. It is why last year I launched Te Uru Rākau – a dedicated business unit for forestry.

My goals for the forestry sector – which I have tasked Te Uru Rākau with – are:

- creating one vision for all New Zealanders through the One Billion Trees planting programme, including supporting landowners to diversify income and increase productivity through improved land-use
- enabling Māori to reach their forestry-related economic and cultural development aspirations
- supporting sector and regional productivity increases to capture full market value
- building a strong, stable and reliable labour market which enables safe and rewarding lifetime careers in forestry
- developing better environment and climate change outcomes for New Zealand
- ensuring a stable investment environment enabling greater investment confidence in the forestry sector
- maintaining a stronger domestic market for wood products and security of supply for wood processors
- facilitating the transition to a low carbon economy through the replacement of petroleum-based products with wood-based products and the enablement of carbon farming.

I am focused on building a productive, high value, sustainable and inclusive economy. Fittingly, Te Uru Rākau means standing up together, and I'm looking forward to working with you to achieve our goals.

Producing accurate facts and figures can only strengthen our ability to tap into one of our most successful primary sectors – worth nearly \$7 billion of exports a year.

Together, we can enable the industry to diversify, innovate and grow.

**Hon Shane Jones**  
Forestry Minister



## SECTION 1

# New Zealand Planted Forestry Highlights



## New Zealand Planted Forestry Highlights

**1,725,476 ha** is the estimated net stocked plantation forest area at 1 April 2018. This is an increase in the plantation forest area of 19,047 ha from 1 April 2017.

1

ANOTHER RECORD HARVEST OF

**37 million m<sup>3</sup>**

WAS ACHIEVED IN THE YEAR ENDED MARCH 2019 AS MORE TREES MATURED AND PRICES REMAINED HIGH.

2

OWNERS OF SMALLER FORESTS ARE CURRENTLY HARVESTING **40%** OF THE TOTAL HARVEST.

3

**\$6.93 billion**

was the export value to June 2019, comprising \$3.85b of logs and \$3.08m of other forest products.

4

**\$3.55 billion**

was the total contribution of the forest industry to New Zealand's GDP; \$1.39b from forestry and logging and \$2.16b from downstream activity.

5

Source **Box 1** NEFD 2018  
Source **Box 2** SOPI June 2019  
Source **Box 3** SOPI September 2019  
Source **Box 4** SOPI September 2019  
Source **Box 5** NZIER March 2017

## New Zealand Planted Forestry in Summary

Area and standing volume statistics	As at 1 April 2016	As at 1 April 2017 <sup>2</sup>	As at 1 April 2018
<b>Forest area</b>			
Net stocked area (ha)	1,704,747	1,706,429	<b>1,725,476</b>
<b>Growth characteristics</b>			
Standing volume (000 m <sup>3</sup> )	455,519	472,715	<b>491,462</b>
Average standing volume (m <sup>3</sup> /ha)	267	277	<b>285</b>
Area-weighted average age (years)	17.08	17.39	<b>17.63</b>
<b>Area by species</b>			
Radiata pine (ha)	1,532,734	1,535,510	<b>1,551,985</b>
Douglas-fir (ha)	104,173	103,726	<b>104,992</b>
Cypress species (ha)	10,140	9,855	<b>9,965</b>
Other softwoods (ha)	22,743	22,539	<b>23,415</b>
Eucalypts (ha)	23,182	22,307	<b>22,777</b>
Other hardwoods (ha)	11,775	12,492	<b>12,343</b>
<b>Planting statistics</b>			
	Year ended 31 Dec 2015	Year ended 31 Dec 2016	Year ended 31 Dec 2017
<b>New planting</b>			
Total estimated new planting (ha)	3,000	2,500	<b>6,000</b>
Restocking	39,948	40,610	<b>36,616</b>
Harvested area awaiting restocking <sup>1</sup>	50,491	48,470	<b>50,072</b>
<b>Harvesting statistics<sup>3</sup></b>			
	Year ended 31 Mar 2016	Year ended 31 Mar 2017	Year ended 31 Mar 2018
<b>Harvesting</b>			
Area clear felled – all species (ha)	45,342	44,770	<b>46,895</b>
Volume clear felled – all species (000 m <sup>3</sup> )	25,008	24,512	<b>26,566</b>
Volume production thinned – all species (000 m <sup>3</sup> )	419	328	<b>269</b>
Total volume removed – all species	25,427	24,840	<b>26,835</b>
Average clear fell yield – all species (m <sup>3</sup> /ha)	552	555	<b>572</b>
Area-weighted average clear fell age for radiata pine (years)	29.1	28.4	<b>28.7</b>
Estimated planted forest roundwood removal (000m <sup>3</sup> ) <sup>5</sup>	29,068	30,650	<b>36,085</b>

### Notes

<sup>1</sup> In this report, the area of harvested land that was recorded as awaiting a land use decision has been reported in the area awaiting restocking.

<sup>2</sup> The 2017 survey only sought data from owners with 1,000 hectares of forest or more. These estimates have been rated up based on the 2016 NEFD results for owners with less than 1,000 hectares of forest.

<sup>3</sup> All volumes are reported as recovered volumes inside bark.

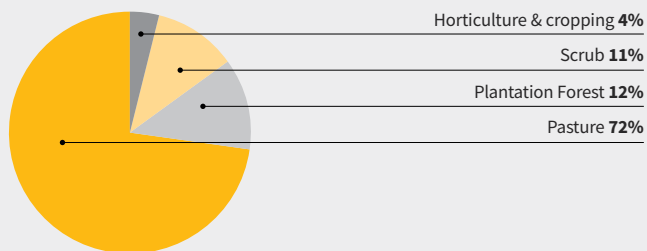
<sup>4</sup> These estimates are based on data collected in the 2018 NEFD survey and may differ from the roundwood removals estimate as published in the Annual log and roundwood removal statistics, Ministry for Primary Industries. This is due to the estimate from that source being an indirect estimate that uses conversion factors for each forestry product to estimate the total roundwood input that would be required to produce total forest product outputs.

<sup>5</sup> Estimate from the Annual log and roundwood removal statistics.

Source **National Exotic Forest Description** NEFD 2018

## Land Use and Returns

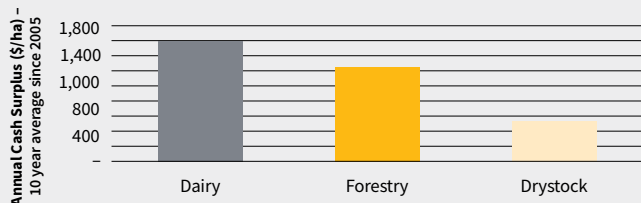
### Share of Rural Land by Land Use 2015<sup>1,2</sup>



### Export Value Comparisons<sup>3,4,5</sup>

Export product category	million ha 2016 <sup>†</sup>	Year to June 2019 exports billion \$ <sup>*</sup>	Per ha/yr \$
Horticulture	0.19	6.1	32,158
Dairy	2.6	18.1	6,969
Forestry	1.7	6.9	4,077
Meat & wool	8.5	10.2	844

### Annual Cash Surplus<sup>6</sup>



#### Notes

- Estimates of forestry only include plantation forests. Natural forests, excluded from these estimates, make up approximately 29% of New Zealand's land area.
- The total area of rural land decreased between 1990 and 2015 by about 3.5 million hectares, or in percentage terms by about 20%. This is a result of rural land being converted to non-rural uses. Rural land includes all farm land and plantation forests.
- These land use/export return figures do not take into account the different land class ratios used for the four listed industry categories, nor the shift of product across categories, such as beef from dairy cows.
- Neither charges nor payments under the Emissions Trading Scheme are calculated into these figures.
- These are export figures alone and do not reflect the different domestic consumption levels across the primary sector. Nor do they reflect different ROI levels.
- Dairy and Forestry is 10 year averages since 2005. Drystock is for East Coast hill country. Beef & Lamb NZ data.

**Source** Share of Rural Land by Uses 2015 Productivity Commission October 2018  
**Source** Export Value Comparisons<sup>†</sup> MfE/Stats 'Our Land 2018', <sup>\*</sup>SOPI September 2019  
**Source** Annual Cash Surplus Scion Nov 2015

## Comparative Export Earnings and Predictions

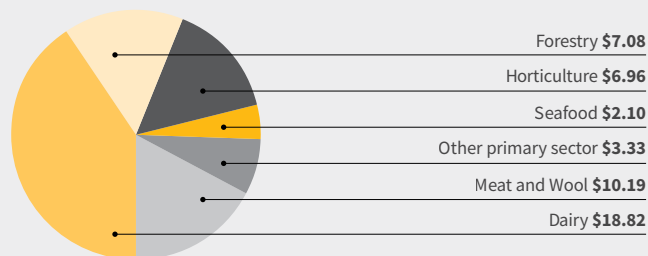
MPI anticipates that the value of forest product exports will reach

**\$7 billion** in 2022.

1

### MPI Predictions for Primary Industry Sector Export Values 2023

(\$ billions)



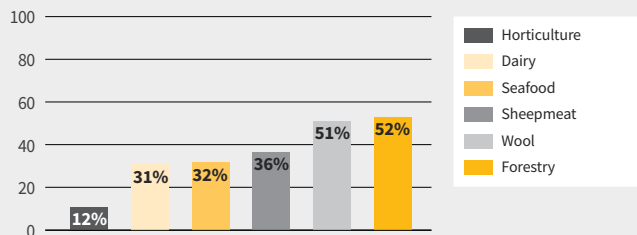
### MPI Predictions for Primary Industry In-sector Export Values 2023

(\$ billions)

Export	Billions \$
Whole Milk Powder	\$6.26
Logs	\$3.92
Butter, Anhydrous Milk Fat & Cream	\$3.87
Sheepmeat	\$3.71
Beef	\$3.25
Processed Forest Products	\$3.16
Kiwifruit	\$2.79
Cheese	\$2.06
Wine	\$1.89

### Proportion of exports to China by primary sector

(% percentage)



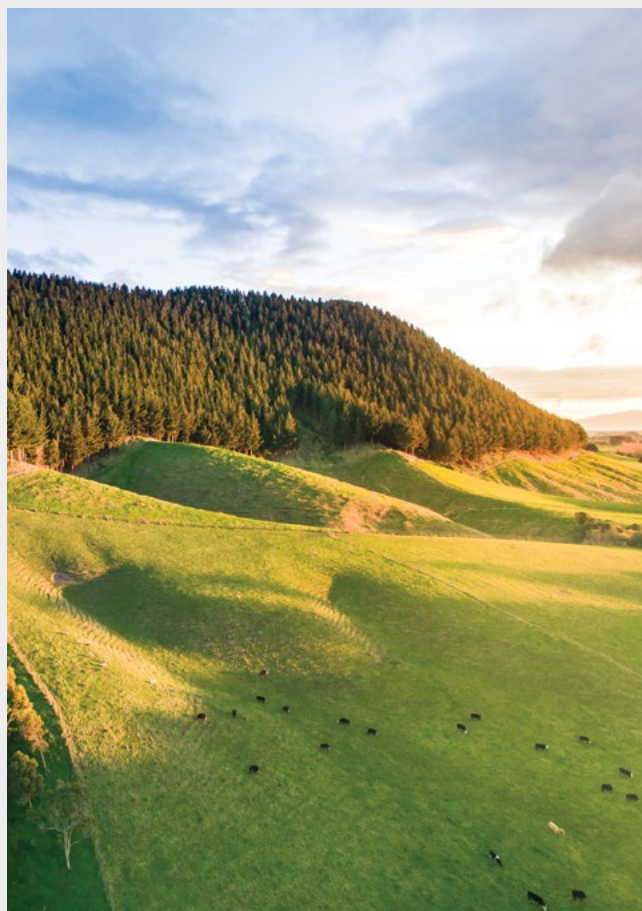
**Source** Box 1 SOPI Mar 2019

**Source** MPI predictions for Primary Industry Sector Export Values 2023 SOPI June 2019

**Source** Proportion of exports to China by primary sector SOPI Sep 2019

## Contribution of the Main Plant Species to New Zealand GDP

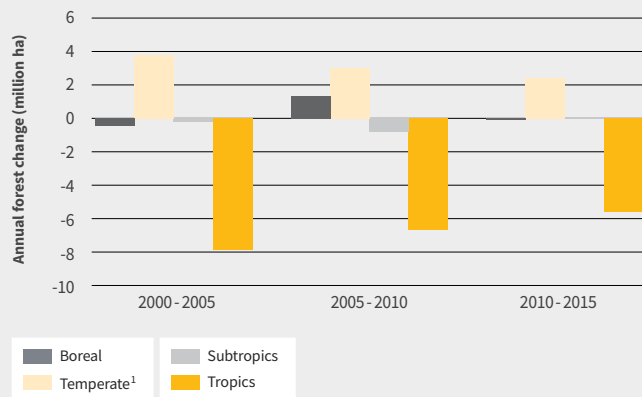
Plant	Total impact on GDP in 2012	Ranking #
Ryegrass	\$14,537,000,000	1
<i>Pinus radiata</i>	\$4,454,000,000	2
Clover	\$2,334,000,000	3
Kiwifruit	\$807,000,000	4
Douglas-fir	\$200,000,000	12
Eucalyptus	\$41,000,000	23
Cypress	\$17,000,000	32



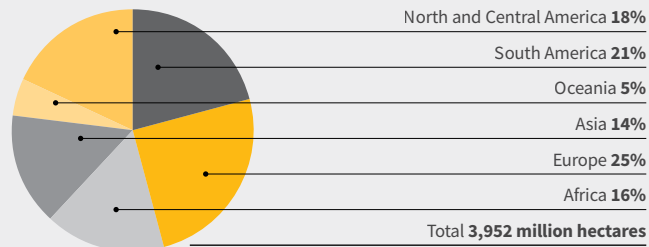
Source Contribution of the Main Plant Species to New Zealand GDP NZIER July 2016

## Global Forests

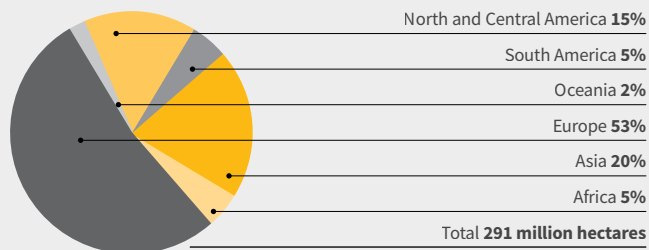
### Net Annual Average Forest Area Change, by Climatic Domain (million ha per year)



### Global Forest Areas



### Global Planted Forest Areas



#### Notes

<sup>1</sup> New Zealand = Temperate. The next FAO Forest Report is due in 2020.

Source Net Annual Average Forest Area Change FAO State of the World's Forests 2016

Source Global Forest Areas & Planted Forest Areas FAO Global Forest Resources Assessment 2015

**46%** of the estimated 53.4 million hectares of worldwide plantation forest estate is made up of *Pinus spp.*, with Eucalypts the next largest at 26%.

1

THE WORLD LOST  
**12 million**  
HECTARES OF TROPICAL  
TREE COVER IN 2018 -  
THE EQUIVALENT OF  
30 FOOTBALL PITCHES  
A MINUTE - ACCORDING  
TO MONITORING SERVICE  
GLOBAL FOREST WATCH

2

The Global Forest Resources Assessment (FRA), coordinated by the UN Food and Agriculture Organisation, found that the world's forest area decreased from 31.6 percent of the global land area to 30.6 percent between 1990 and 2015, but that the pace of loss has slowed in recent years.

3

Acting as carbon sinks, (world) trees and forests absorb the equivalent of roughly 2 billion tonnes of carbon dioxide each year. However, deforestation is the second-leading cause of climate change after burning fossil fuels and accounts for nearly 20 percent of all greenhouse gas emissions — more than the world's entire transport sector.

4

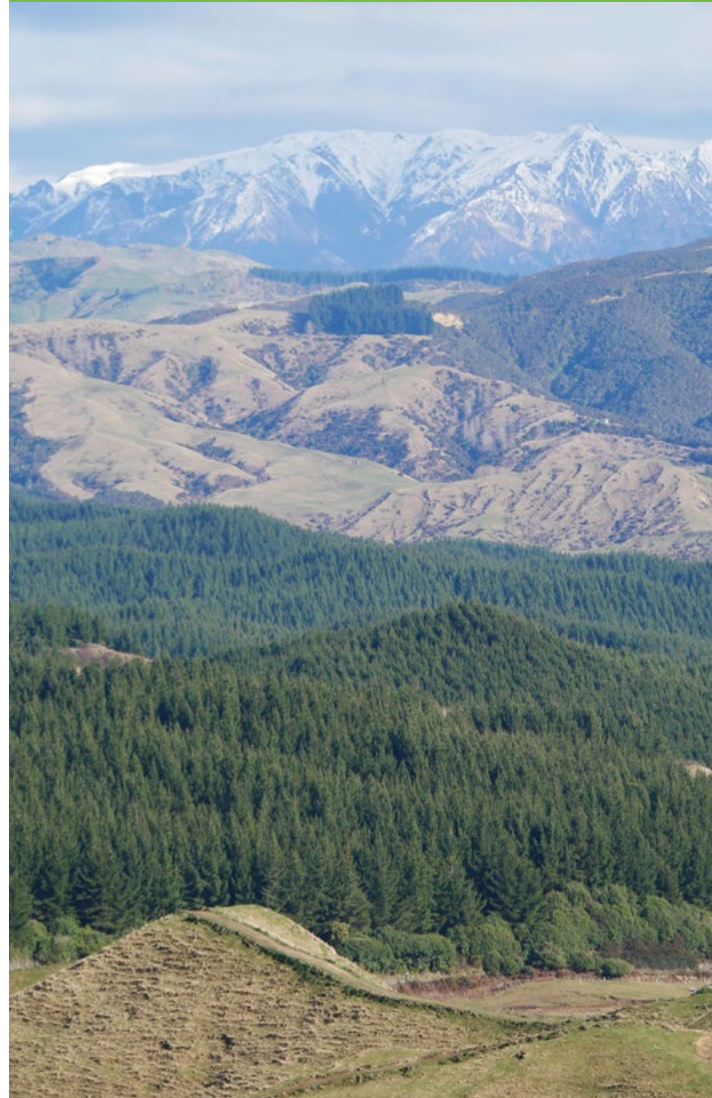
Source **Box 1** FSC Strategic Review on the Future of Forest Plantations 2012

Source **Box 2** FAO Global Forest Resource Assessment 2010

Source **Box 3 & 4** FAO

## SECTION 2

# New Zealand Planted Forestry



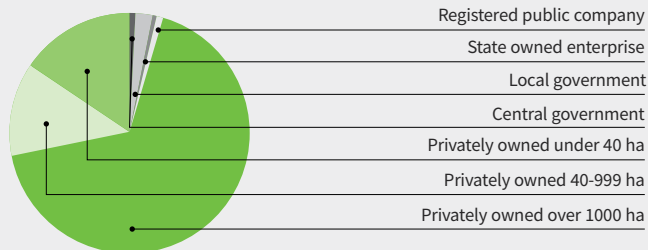
## Planted Forest Mix and Ownership

The trees in **90%** of all New Zealand planted forests are *Pinus radiata*, with most of the other species growing in the South Island.

1

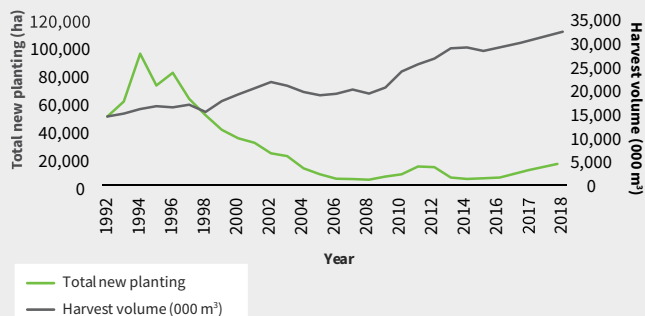
### Planted Forest Ownership<sup>1,2,3,4,5</sup>

As at 1 April 2018



### Forestry Plantings and Harvest Volumes

Year ended December 1992–2018



#### Notes

- Ownership is based solely on the ownership of the forest irrespective of the ownership of the land.
- Figure represents percentage of net stocked planted production forest area by ownership type.
- Significant changes in forest ownership have occurred since 2003, resulting in large areas of forest previously owned by public companies now being privately owned.
- The legal entities included in the "Privately owned" category are private companies, partnerships, individuals and trusts, which includes Maori trusts and incorporations.
- "Central Government" forests are predominantly Crown-owned forests on Maori lease-hold land. These forests are managed by Te Uru Rākau.

Source **Box 1 & Planted Forest Ownership** NEFD 2018

Source **Forestry Plantings and Harvest Volumes** Statistics NZ & MPI

## NZ Plantation Forest Ownership – Underlying Land Status

As at 31 December 2018

Firm/Entity	Underlying Land Status (Productive area (ha))				Total
	Freehold	Crown	Māori Inc.	Leasehold Other	
Hancock Natural Resource Group	85,246	9,549	66,682	31,185	192,662
Kaingaroa Timberlands	1,393		182,734		184,127
Rayonier/Matariki Forests	54,707	29,372	15,227	19,185	118,491
Ernstlaw One Limited	59,442	41,862	7,705	2,046	111,055
Global Forest Partners LP	51,935		39,724	708	92,367
Pan Pac Forest Products	4,811	12,527	18,045	83	35,466
Juken New Zealand	9,907	14,593	6,675	1,124	32,299
Tasman Pine Forests	31,200				31,200
Wenita Forest Products Ltd	8,730			19,551	28,281
Hikurangi Forest Farms	25,570		2,218	296	28,084
Nāi Tahu Forestry	27,480				27,480
Roger Dickie NZ	26,576				26,576
Port Blakely	23,986			1,233	25,219
Summit Forests NZ Ltd	1,319	19,255	2,947	1,101	24,622
Lake Taupō Forest Trust	21,239		1,007	873	23,119
China Forestry Group Corporation	13,246	6,280	2,108	439	22,073
Forest Enterprises	19,890				19,890
The Rohatyn Group	17,551		1,423		18,974
City Forests	16,304			981	17,285
Crown Forestry (MPI) <sup>1,2</sup>	1,522		10,605		12,127
<b>Totals</b>	<b>502,054</b>	<b>133,438</b>	<b>357,100</b>	<b>78,805</b>	<b>1,071,397</b>

#### Notes

- Total Prod area is as at 31 December 2018
- Crown land includes land leased under a Crown Forest License
  - Crown land includes unlicensed Crown forest land as well as Crown-owned Freehold land purchased by Timberlands West Coast in the 1990s and transferred to the Crown in January 2009

Source **FOA**



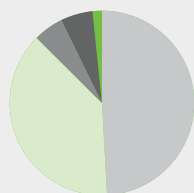
# Commercial Planted Forest Ownership and Management

As at 31 December 2018

Firm/Entity	Forest Management Productive Area (ha)	
	(TIMO)	Property Management
Hancock Forest Management (NZ) Ltd		186,284
Hancock Natural Resource Group	186,284	
Kaingaroa Timberlands		184,910
Rayonier New Zealand Ltd		116,778
Global Forest Partners LP	12,342	
One Forty One Plantations		77,428
Ernslaw One		111,379
Juken New Zealand		32,299
Tasman Pine Forests		36,803
Pan Pac Forest Products		36,099
China Forestry Group Corporation		21,981
The Rohatyn Group	7,209	
Aratu Forests Ltd	-	28,084
Wenita		27,390
Roger Dickie NZ	26,576	-
Forest Management NZ Ltd		26,576
Port Blakely Ltd		27,852
N̄gai Tahu Forestry		25,741
Forest Enterprises	19,738	19,738
City Forests		17,285
PF Olsen Ltd	1,250	105,383
NZ Forest Managers <sup>1</sup>	3,871	54,368
Summit Forests NZ Limited		36,221
<b>Totals</b>	<b>257,270</b>	<b>1,172,599</b>

## Number of Forest Owners by National Size Class

As at 1 April 2018<sup>1</sup>



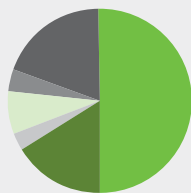
■ 10,000+ ha   
 ■ 500-999 ha   
 ■ 40-99 ha  
■ 1000-9999 ha   
 ■ 100-499 ha   
 ■ < 40 ha\*

Source NEFD 2018

\*The number of forest owners for areas less than 40ha is not shown

## Forest Area by Forest Owner National Size Class

As at 1 April 2018<sup>1</sup>



■ 10,000+ ha   
 ■ 500-999 ha   
 ■ 40-99 ha  
■ 1000-9999 ha   
 ■ 100-499 ha   
 ■ < 40 ha\*

Company	Environmental Certification	
	FSC (ha)	PEFC (ha)
Rayonier New Zealand Ltd	157,311	157,311
PanPac Forest Products Ltd	45,663	
NZ Forest Managers Ltd <sup>1</sup>	59,123	
Wenita Forest Products Ltd	32,100	
Aratu Forests Ltd	28,636	29,005
Juken New Zealand Ltd	32,299	
PF Olsen Ltd	9,130	
RMS FGI		5,164
Summit Forests NZ Limited	30,538	
The Rohatyn Group	3,774	
Kaingaroa Timberlands Limited	184,910	184,910
Port Blakely Ltd	33,880	
Crown Forestry, MPI <sup>1</sup>	-	-
Southland Plantation Forest Company of New Zealand	10,544	
China Forestry Group Corporation	20,416	
N̄gai Tahu Forestry	45,847	
City Forests Ltd	21,541	
Ernslaw One Ltd (North Island)	79,192	
Ernslaw One Ltd South Island)	23,096	
Tasman Pine Forests	36,803	
Hancock Forest Management (NZ) Ltd	<b>186,284</b>	<b>154,760</b>
One Forty One Plantations	77,428	
<b>Total Certified Productive Plantation Area (ha)</b>	<b>1,118,515</b>	<b>531,150</b>
Lyndsay & Dixon Ltd (Naturally regenerated indigenous)	11,916	
<b>Total Certified Productive Forest Area (ha)</b>	<b>1,130,431</b>	<b>531,150</b>

### P13 Notes:

This table is designed to identify who manages NZ forests. Within "management" there are 2 main categories:

**Timberland Investment Management (commonly referred to as a TIMO).**

These organisations do not own any forest. The forests are owned by retail investors or institutional funds.

**Property Management**

Planning and managing field operations, mapping and maintaining records.

Some entities carry out both functions within the same organisation,

<sup>1</sup>Includes areas managed by NZFM for Crown Forestry and Lake Taupo Forest Trust

### P14 Notes:

Source **Commercial Planted Forest Ownership and Management** FOA

Source **Number of Forest Owners by National Size Class** NEFD 2018

<sup>1</sup> Crown Forestry forests are managed under an FSC licence held by NZ Forest Managers.

n.b. Productive Area = Net Stocked Area + Area Awaiting Restocking

Total Certified Area = Total Forest Area as recorded on FSC certificate

Source **Environmental Certification** FOA

Source **Forest Area by Forest Owner National Class Size** NEFD 2018

# Planted Forests by Location

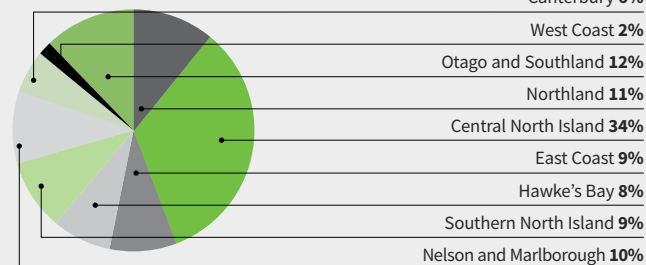
## Area Planted in all Species by Territorial Authority,<sup>1,2</sup>

By Age Class as at 1 April 2018

Region	Estimated Total Forest Area (HA)		
	2016	2017	2018
Northland	185,939	186,868	<b>187,489</b>
Central North Island	567,781	567,478	<b>584,241</b>
East Coast	156,099	154,149	<b>156,556</b>
Hawke's Bay	133,746	134,391	<b>133,710</b>
Southern North Island	159,977	161,432	<b>161,623</b>
Nelson/Marlborough	166,798	166,230	<b>166,981</b>
West Coast	31,422	31,375	<b>29,840</b>
Canterbury	96,860	95,763	<b>95,735</b>
Otago/Southland	206,126	208,744	<b>209,302</b>
<b>Total</b>	<b>1,704,747</b>	<b>1,706,429</b>	<b>1,725,476</b>

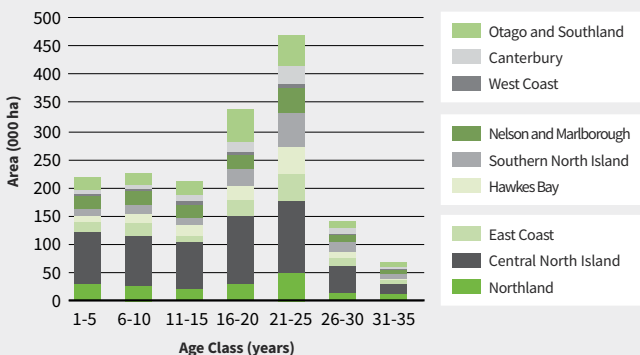
## Plantation Forests

As at 1 April 2018



## Forest Area by Age Class and Wood Supply Region

As at 1 April 2018



### Notes

<sup>1</sup> Net stocked planted production forest area.

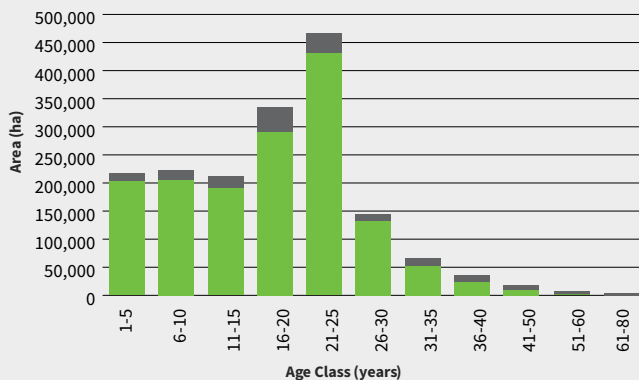
<sup>2</sup> Individual entries may not add to totals due to rounding.

Source: Area Planted in all Species by Territorial Authority, Plantation Forests & Forest Area by Age Class and Wood Supply Region NEFD 2018

# Net Stocked Area of *Pinus radiata*

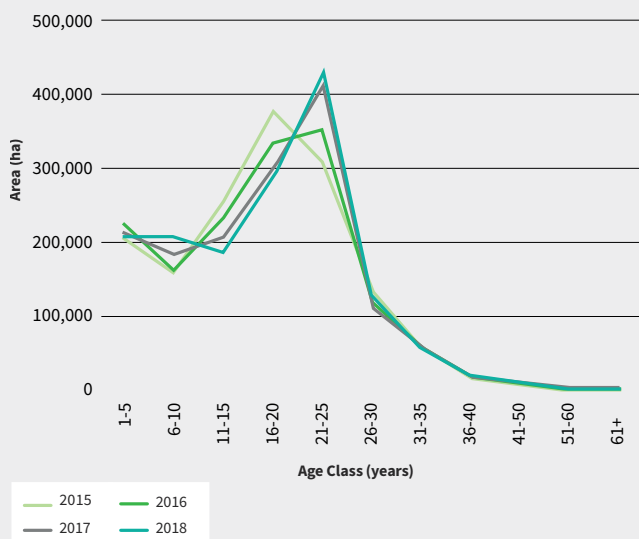
## Forest Area 2018 by 5 Yearly Age Class

By Age Class as at 1 April 2018



## Age Class 2018 Over Time

By Age Class as at 1 April 2018

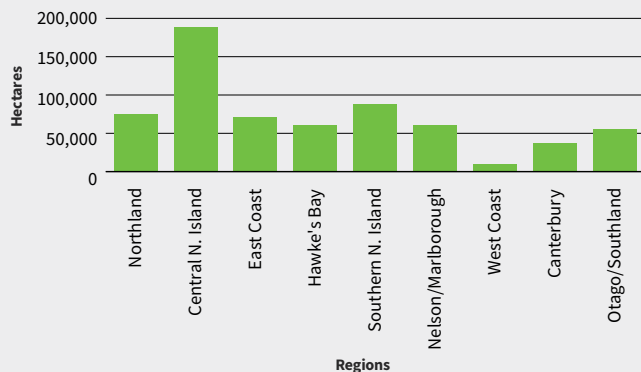


Source: Forest Area by Annual Age Class & Age Class Over Time NEFD 2018

## Harvestable *Pinus radiata*

### Forest Area Planted in *Pinus Radiata* by Territorial Authority

Of Harvestable Age (21+) Per Region (ha), as at 1 April 2018



The total planted forest standing volume in April 2018 was

**491 million m<sup>3</sup>,**

an increase of 19 million m<sup>3</sup> from 2017.

The average age of plantation trees was

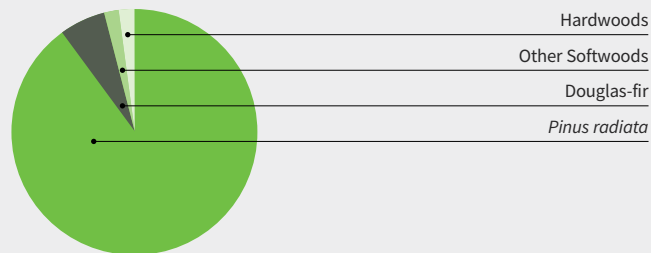
**17.63 years** in April 2018, a marginal increase (88 days) from 17.39 years in 2017, indicating the 1990s peak planting is more than offsetting the increased harvesting and new planting rates.

Source NEFD 2018

## Plantation Species (ha)

### Species Distribution

As at 1 April 2018



### Minor Plantation Species

Other pines; *P. nigra*, *P. muricata*, *P. ponderosa*

Other softwoods; *Redwoods*, *Larch*, *Cryptomeria*, *Cypress*

Indigenous species; *Kauri*, *Tōtara*

Other hardwoods; *Poplars*, *Acacia*, *Willows*, *Black Walnut*, *Paulownia*, *Oaks*

Non-durable eucalypts; *E. obliqua*, *E. fastigata*, *E. regnans*, *E. nitens*, *E. saligna*, *E. botryoides*, *E. pilularis*, *E. muelleriana*,

Durable eucalypts; *E. globoidea*, *E. bosistoana*, *E. quadrangulata*.

### Approximate Harvest Age Over the Past Five Years

Species	Harvest Age
<i>Pinus radiata</i>	29 years
Douglas-fir	40 years
Cypress	34 years
Eucalypts	21 years

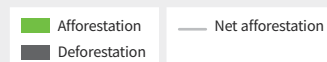
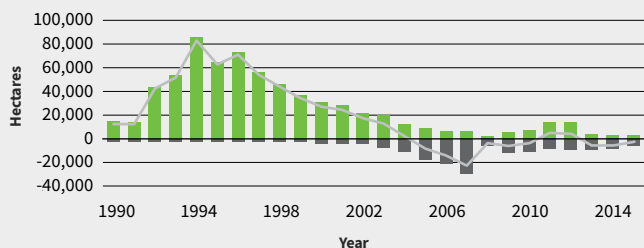


Source Species Distribution NEFD 2018

Source Approximate Harvest Age Over the Past Five Years SOPI June 2017

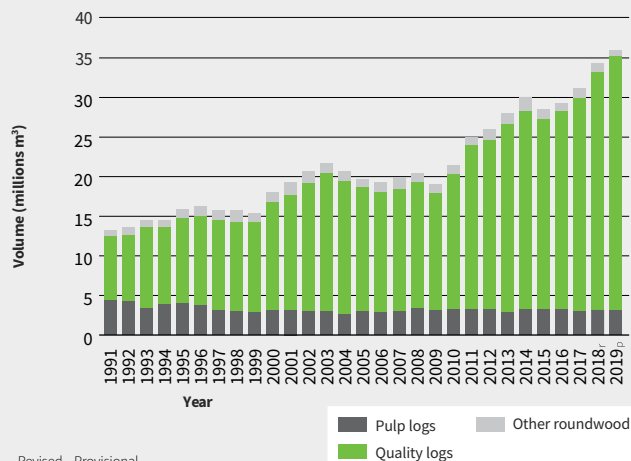
## New Forest Planting and Deforestation

### Afforestation and Deforestation in New Zealand, 1990-2015



## Plantation Forest Harvest

for Year Ended 31 Dec



<sub>r</sub>Revised <sub>p</sub>Provisional

HARVEST VOLUMES WILL FALL BY **5%** IN THE YEAR TO JUNE 2020 AND EXPORT VOLUMES BY **9.2%**

Source Afforestation and Deforestation in New Zealand, 1990-2015 Productivity Commission 2017  
 Source Plantation Forest Harvest MPI  
 Source Box 1 SOPI September 2019

## Forest Planting

### Tree Stock Sales from 2011 to 2018

	Tree Stock Sales in Millions							
	2011	2012	2013	2014	2015	2016	2017	2018
<i>Pinus radiata</i>	58.9	64.6	48.5	47.2	45.8	49.3	48.0	56.6
Other	8.7	7.9	5.7	3.0	3.8	3.4	3.4	3.3
<b>Total</b>	<b>67.6</b>	<b>72.5</b>	<b>54.1<sup>1</sup></b>	<b>50.8</b>	<b>49.5<sup>1</sup></b>	<b>52.7</b>	<b>51.3</b>	<b>59.9</b>

<sub>p</sub>Provisional

### Estimated Percentages of Total Radiata Pine Planting by Categories

	Percentages of Total Radiata Pine Planting by Categories							
	2011	2012	2013	2014	2015	2016	2017	2018 <sup>p</sup>
Open pollinated seedlings	49	48	38	36	31	28	25	30
Control pollinated seedlings, cuttings/ clones	51	52	62	64	69	72	75	70

<sub>p</sub>Provisional

IN 2018, AFFORESTATION WAS 9,100 HECTARES, INCLUDING 2,200 UNDER MPI FORESTRY SCHEMES. REPLANTING TOTALLED

# 47,900 hectares.



#### Notes

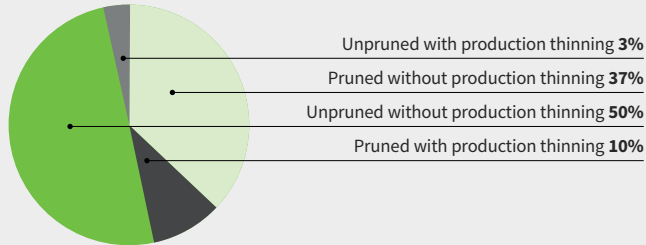
<sup>1</sup> Individual entries do not add up to totals due to rounding to the nearest 100 000

Source Tree Stock Sales from 2011 - 2018 Provisional estimates of tree stock sales and forest planting in 2018, MPI

# Forest Management Trends

## Radiata Pine by Tending Regime

As at 1 April 2018



	2016 Hectares <sup>1</sup>	2017 Hectares <sup>1</sup>	2018 Hectares <sup>2</sup>
Pruned with production thinning	158,197	154,427	<b>148,191</b>
Pruned without production thinning	619,747	595,958	<b>576,195</b>
Unpruned with production thinning	39,675	53,844	<b>51,716</b>
Unpruned without production thinning	715,116	731,282	<b>775,884</b>

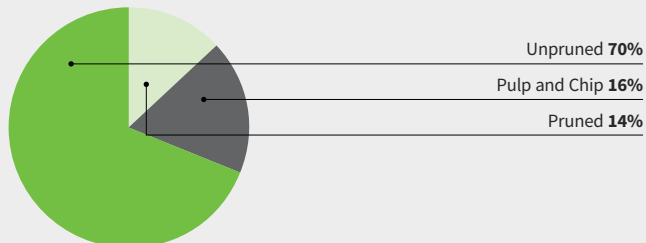
The area under an unpruned management regime continues

to grow, to now about **53%** of the *Pinus radiata* forest estate. The area of production thinned radiata forest is also decreasing, now to about 13%.

1

## Pinus Radiata Harvest Volume by Log Type

For year end 31 March



Source *Pinus Radiata* by Tending Regime & Radiata Pine Harvest Volume by Log Type NEFD 2018

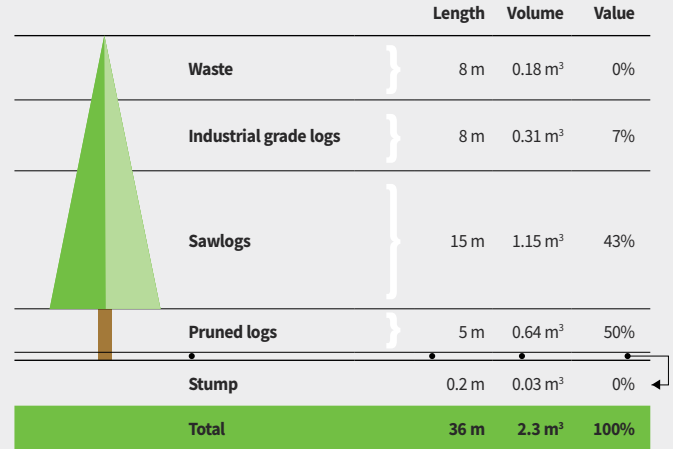
Source Box 1 MPI

Source *Pinus Radiata* Harvest Volume by Log Type NEFD 2018

# Typical Log Out-turn

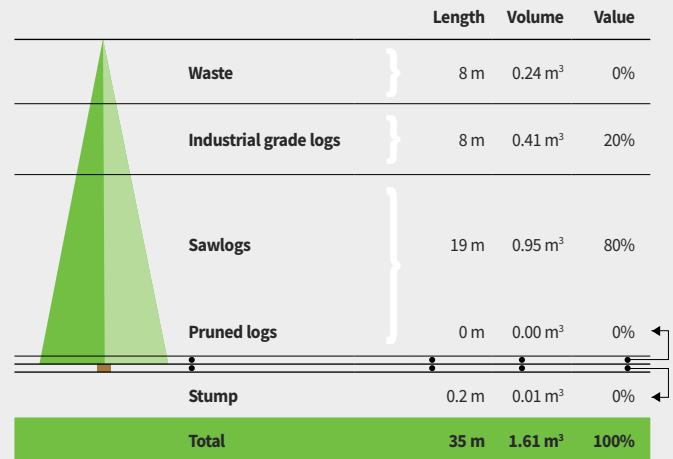
## Direct Sawlog Regime

Pruned and thinned. Final Crop Stocking 228 stems per hectare.



## Structural Regime

Thinned. Final Crop Stocking 487 stems per hectare.



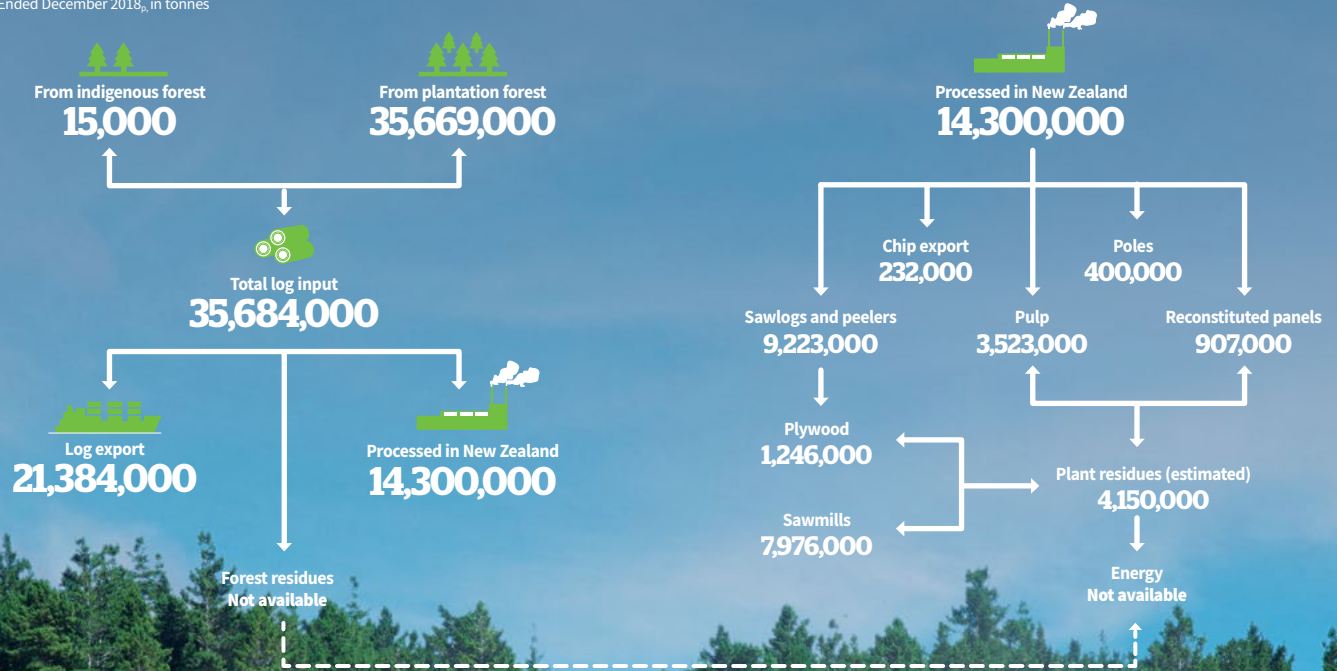
### Notes

Average site (Site Index 29 m, 300 Index 23 m<sup>3</sup>/ha/yr). Clearfelled at 28 years.

Source **Direct Sawlog Regime & Structural Regime** Scion

# Log Flow in the New Zealand Forestry Industry

Year Ended December 2018, in tonnes



THE INDIGENOUS  
TREE HARVEST NOW  
REPRESENTS LESS THAN  
**0.05%** OF THE TOTAL

Notes

p Provisional

Source Log Flow in the New Zealand Forestry Industry MPI

## Reporting a Suspected Pest/Disease

### *Eucalyptus Nitens* with Myrtle Rust Infection



Photo credit: CSIRO

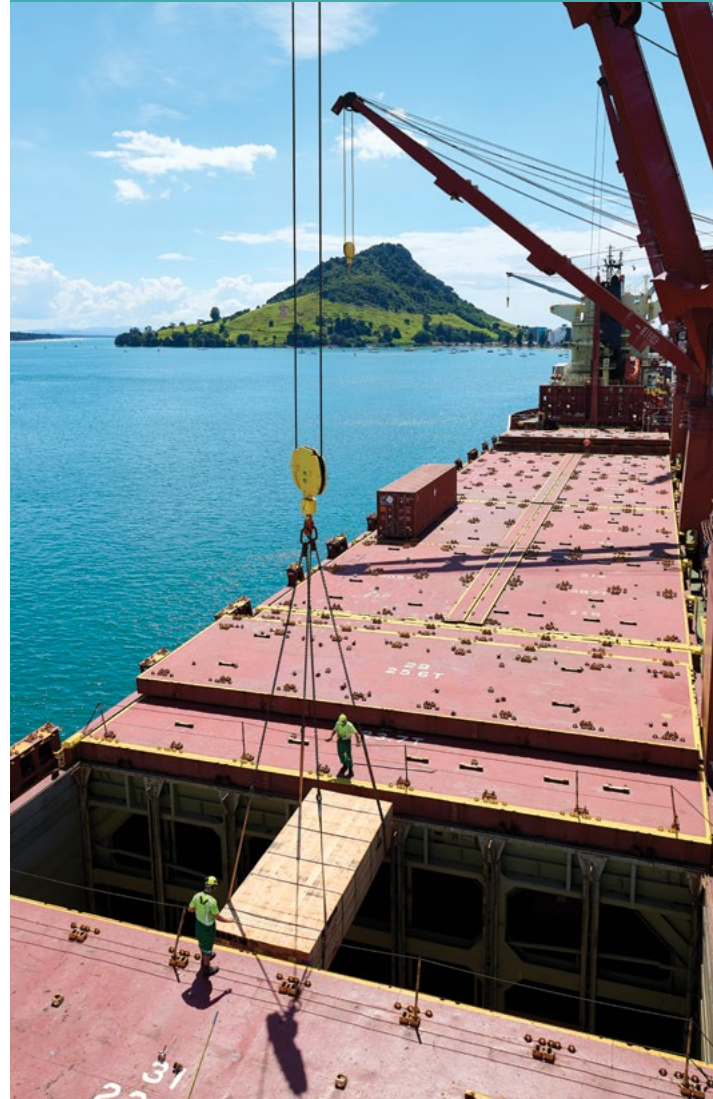
**Don't go down in history as the person who noticed something but didn't tell. Keep our forests free of new pests and diseases.**

Myrtle rust arrived in New Zealand from Australia in mid-2017. The rust infects members of the myrtle family, which includes eucalypts, feijoas and guavas as well as native plants such as pōhutakawa, rata and mānuka. MPI has been attempting to control the disease to prevent it becoming established in New Zealand.

If you believe you've found something that shouldn't be here, phone MPI's hotline on **0800 80 99 66**. They will arrange for whatever photos, samples and site visits are necessary. Or, email to: **Info@mpi.govt.nz**, with 'Reporting a suspected pest/disease' in the subject line, and make sure to include contact name, phone number and location of the discovery. Photos of the pest and plant damage would also be useful.

## SECTION 3

# Export and Production



# Top Export Destinations\*

For Year Ended Mar 2019



## 1. China (People's Republic of) \$NZ 3,445,393,297

All other	13,283,708
Logs and poles	2,935,911,360
Panel products	25,171,331
Paper and Paperboard	49,005,340
Sawn timber/sleepers	144,816,389
Wood pulp	277,205,169

## 2. Australia \$NZ 673,908,968

All other	153,500,783
Logs and poles	2,718,569
Panel products	106,299,179
Paper and Paperboard	190,719,141
Sawn timber/sleepers	123,240,180
Wood pulp	97,431,116

## 7. Indonesia \$NZ 179,041,650

All other	12,823,464
Panel products	16,095,005
Paper and Paperboard	12,632,302
Sawn timber/sleepers	42,813,916
Wood pulp	94,676,963

## 8. Thailand \$NZ 153,431,540

All other	6,948,747
Logs and poles	1,632,546
Panel products	1,072,544
Paper and Paperboard	58,541,717
Sawn timber/sleepers	38,755,464
Wood pulp	46,480,522

## 3. Republic of Korea \$NZ 460,256,414

All other	1,057,914
Logs and poles	324,869,541
Panel products	3,190,087
Paper and Paperboard	21,195,576
Sawn timber/sleepers	39,346,677
Wood pulp	70,596,619

## 4. Japan \$NZ 415,389,411

All other	68,217,849
Logs and poles	59,589,703
Panel products	210,241,397
Paper and Paperboard	400,525
Sawn timber/sleepers	31,204,108
Wood pulp	45,735,829

## 9. Hong Kong \$NZ 117,728,040

All other	1,109,861
Logs and poles	97,913,241
Panel products	1,300,637
Paper and Paperboard	16,253,814
Sawn timber/sleepers	901,407
Wood pulp	249,080

## 10. Taiwan \$NZ 118,102,023

All other	101,961
Logs and poles	27,595,898
Panel products	11,634,747
Paper and Paperboard	11,578,251
Sawn timber/sleepers	39,269,608
Wood pulp	27,921,558

## 5. India \$NZ 316,692,063

All other	1,576,286
Logs and poles	236,648,807
Panel products	3,321,031
Paper and Paperboard	7,722,277
Sawn timber/sleepers	4,719,203
Wood pulp	62,704,459

## 6. United States \$NZ 253,932,511

All other	13,695,037
Logs and poles	54,000
Panel products	25,772,948
Paper and Paperboard	5,059,695
Sawn timber/sleepers	208,467,426
Wood pulp	883,405

## 11. Viet Nam \$NZ 109,656,637

All other	2,788,576
Logs and poles	2,324,450
Panel products	21,686,384
Paper and Paperboard	10,798,062
Sawn timber/sleepers	60,027,556
Wood pulp	12,031,609

## 12. Other \$NZ 588,319,277

All other	46,135,179
Logs and poles	41,571,757
Panel products	78,685,770
Paper and Paperboard	111,539,593
Sawn timber/sleepers	206,111,760
Wood pulp	104,275,218

Source Top Export Destinations Stats NZ YE March 2019



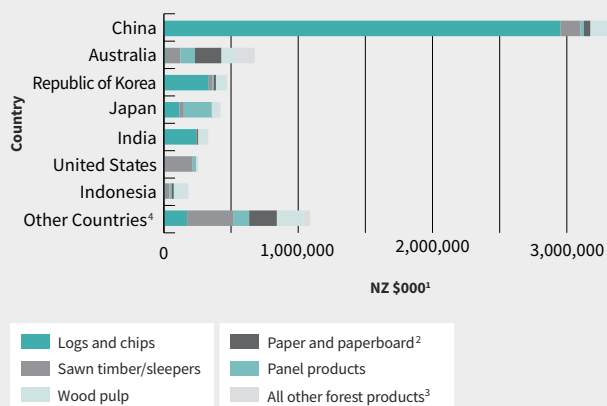
## Export Value by Destination and Product<sup>1</sup>

for Year Ended 31 March 2019

### Total Export Value by Main Countries of Destination

Country of Destination	Total Export Value (NZD\$)		
	2017	2018	2019
China	2,276,834,724	2,904,761,827	3,445,393,297
Australia	723,624,489	743,463,783	673,908,968
Republic of Korea	483,178,648	512,342,963	460,256,414
Japan	426,053,047	435,952,082	415,389,411
India	302,734,068	305,572,552	316,692,063
United States	250,531,140	247,517,855	253,932,511
Indonesia	158,708,145	194,227,433	179,041,650
Thailand	82,056,261	119,496,436	153,431,540
Taiwan	87,214,989	91,846,072	118,102,023
Viet Nam	86,920,838	89,565,874	109,656,637
Philippines	91,350,975	82,132,685	101,581,149
Malaysia	55,107,264	85,841,045	108,219,728
Hong Kong	26,119,730	47,062,150	117,728,040
Singapore	43,387,213	56,525,465	34,892,722
Netherlands	36,835,695	34,370,258	40,471,192
All other destinations	254,023,332	268,962,253	303,154,486
<b>Total</b>	<b>5,384,680,558</b>	<b>6,219,640,733</b>	<b>6,831,851,831</b>

### Exports of Forestry Products by Main Countries of Destination



#### Notes

<sup>1</sup> Values are NZ\$ f.o.b. and may include items, e.g. some plywood items, for which no quantities are given.

<sup>2</sup> Paper and paperboard includes Newsprint for June 2011 yr.

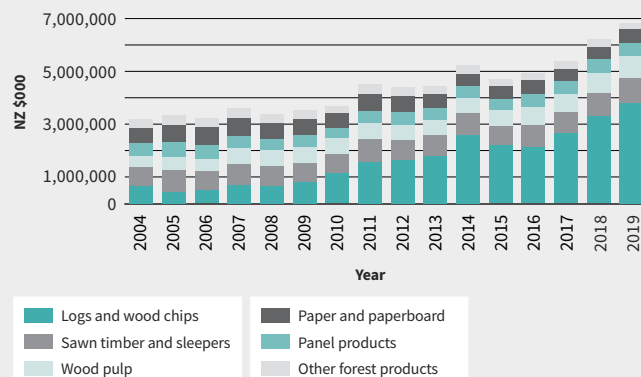
<sup>3</sup> All other forestry products include chips, mouldings, manufactures of paper and paperboard, furniture and miscellaneous forestry products.

<sup>4</sup> Other countries are all other countries to which New Zealand has exported forest products during the year.

Source MPI

## Major Forest Product Export Earners<sup>1,2</sup>

for Year Ended March



FORESTRY EXPORTS FOR THE YEAR ENDED JUNE 2020 ARE EXPECTED TO DROP 16.2% TO

**\$5.8 billion**

1



2

#### Notes

<sup>1</sup> Paper and paperboard includes Newsprint data, therefore differs from Statistics NZ data

<sup>2</sup> Excludes re-exports. Newsprint data 12 months ending June 2010.

Source Major Export Earners Stats NZ and FOA

Source Box 1 & 2 SOPI September 2019

# Production and Exports of Selected Forestry Products

for Year Ended 31 Dec 2017

140,298	482,759	Veneer (m <sup>3</sup> )
28,751	362,092	Plywood <sup>1</sup> (m <sup>3</sup> )
603,736	798,791	Fibreboard (m <sup>3</sup> )
420,133	565,649	Other paper & paperboard (tonnes)
899,463	1,440,274	Wood pulp (tonnes)
1,922,941	4,410,530	Sawn timber (000m <sup>3</sup> )
22,064,319	36,404,461	Logs (000m <sup>3</sup> )
265,990	Not available	Wood chips (BDU)

Quantity exported<sup>2</sup>  
Total production



## Notes

<sup>1</sup> Plywood includes laminated veneer lumber.

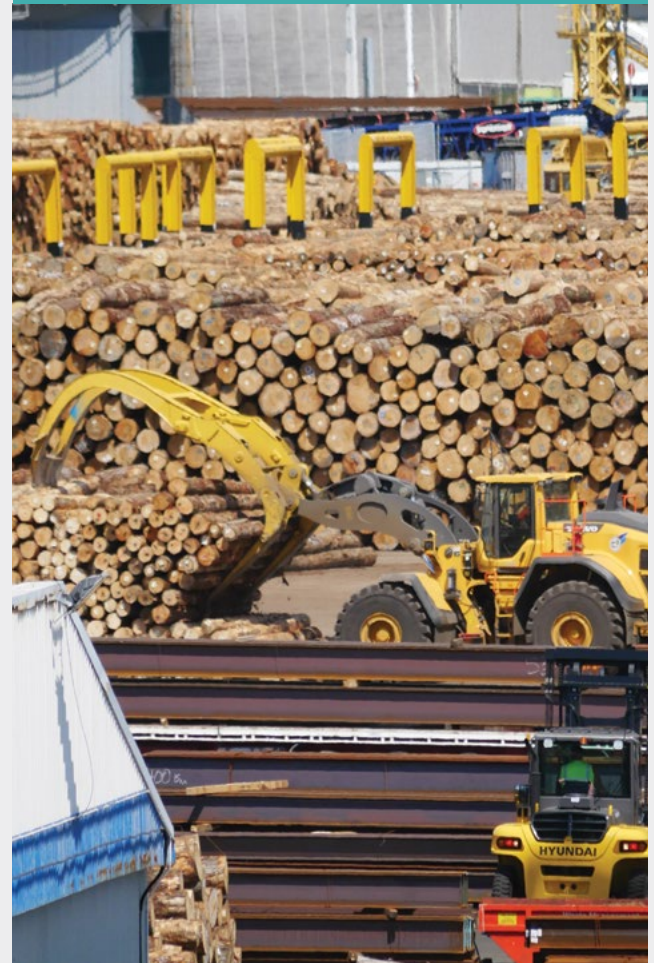
<sup>2</sup> Exports excluded re-exports.

Source **Production and Exports of Selected Forestry Products** MPI, Statistics NZ and FOA

Source **Box 1** SOPI March 2019

Source **Box 2** SOPI September 2019

## The number one NZ forest markets;

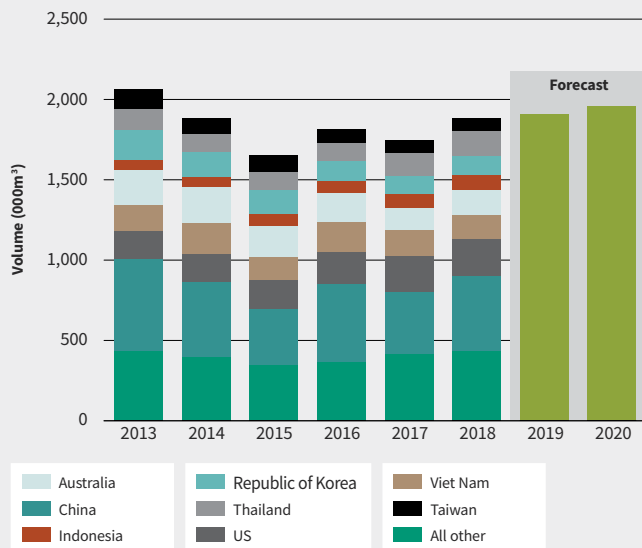


Source **SOPI** September 2019

# Exports of Forest Products

## Sawn Timber Export Volume by Destination 2013-20

for Year Ended June



## Forestry Export Revenue, 2016-20 (\$NZ million)

for Year Ended June

Year to 30 June	Actual			Forecast	
	2017	2018	2019	2020	2021
Logs	2,687	3,337	3,853	2,790	3,330
Sawn timber & sleepers	830	890	937	940	960
Pulp	651	828	813	740	720
Paper & paperboard	488	490	490	480	450
Panels	476	501	514	530	540
Chips	59	56	67	70	70
Other forest products <sup>1</sup>	290	281	257	270	270
<b>Total</b>	<b>5,482</b>	<b>6,382</b>	<b>6,931</b>	<b>5,810</b>	<b>6,350</b>
<b>Y/Y % change</b>	<b>+6.7%</b>	<b>+16.4%</b>	<b>+8.6%</b>	<b>-16.2%</b>	<b>+9.3%</b>

About 16% of New Zealand's timber production is consumed in New Zealand, compared with 15% for meat and 5% for dairy production

1

### Notes

<sup>1</sup> Other forest products include: structural or moulded wood, furniture and prefabricated buildings

Source **Sawn Timber Export Volume by Destination 2013-20** Stats NZ and MPI

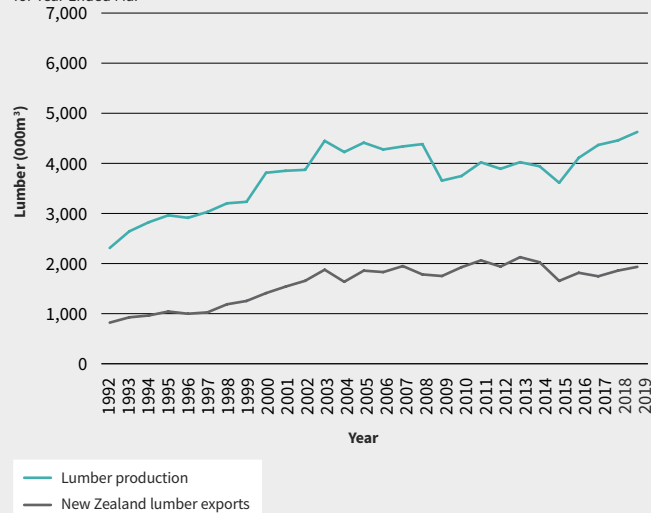
Source **Forestry Export Revenue, 2016-20** SOPI September 2019

Source **Box 1** MPI, Meat Industry Association and Dairy Companies Association

# Lumber and Log Production and Exports

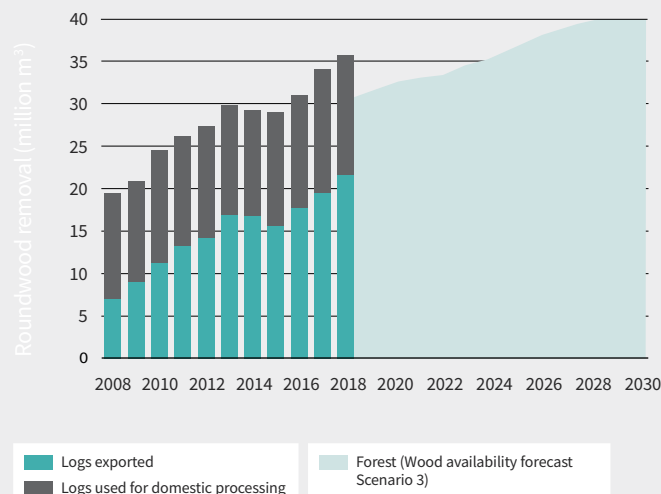
## Lumber Production and New Zealand Lumber Exports

for Year Ended Mar



## Volume of Logs used in Domestic Processing versus Exported 2008-2030

for Year Ended Dec



Source **Lumber Production and New Zealand Lumber Exports** Stats NZ and MPI

Source **Volume of Logs used in Domestic Processing versus Exported 2008-2030** Stats NZ and MPI

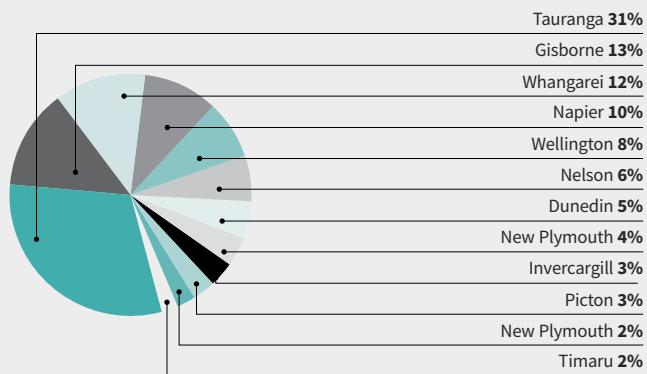
# Log Exports

## Log Export Quantity and Export Value by Port<sup>1</sup>

For Year Ended March 2019

Port of Loading	Export Quantity (m <sup>3</sup> )	Export value (\$NZ)
Auckland	42,856	8,380,248
Christchurch	478,160	90,723,458
Dunedin	1,098,413	178,760,646
Gisborne	2,899,305	489,849,993
Invercargill	718,731	131,601,481
Napier	2,226,602	387,226,415
New Plymouth	869,063	153,957,151
Nelson	1,376,655	212,133,872
Picton	658,660	101,369,144
Timaru	548,662	91,598,876
Tauranga	6,791,188	1,143,675,802
Wellington	1,679,533	280,127,578
Whangarei	2,676,490	461,425,208
<b>Total</b>	<b>22,064,319</b>	<b>3,730,829,872</b>

## Logs Percentage Export Quantity by Port



### Notes

<sup>1</sup> Ports with <1% not included.

Source Log Exports by Port MPI

Source Logs Percentage Export Quantity by Port MPI

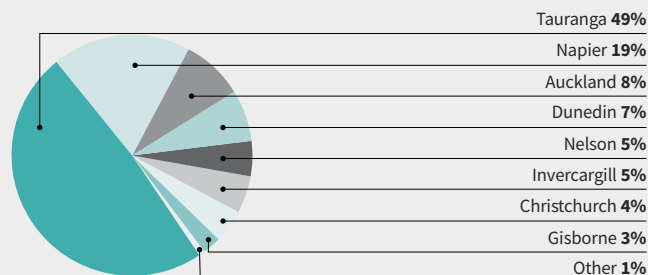
# Sawn Timber Export by Port

For Year Ended March 2019

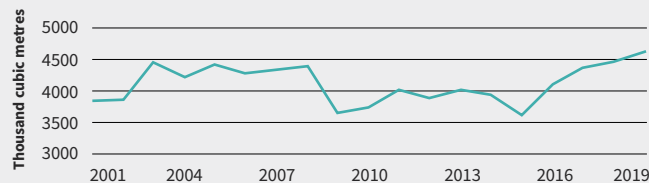
## Sawn Timber Export Quantity and Export Value by Port

Port of Loading	Export Quantity (m <sup>3</sup> )	Export value (\$NZ)
Auckland	162,025	90,856,571
Christchurch	83,521	37,373,756
Dunedin	133,212	48,514,242
Gisborne	48,350	11,461,840
Invercargill	92,937	35,508,300
Napier	357,119	147,702,730
Nelson	93,393	41,870,986
Picton	863	214,628
Timaru	62	20,614
Tauranga	936,883	517,438,248
Wellington	3,959	5,107,975
Whangarei	10,618	3,603,804
<b>Total</b>	<b>1,922,941</b>	<b>939,673,694</b>

## Sawn Timber Percentage Export Quantity by Port



## Sawn Timber Production to March 2001-19

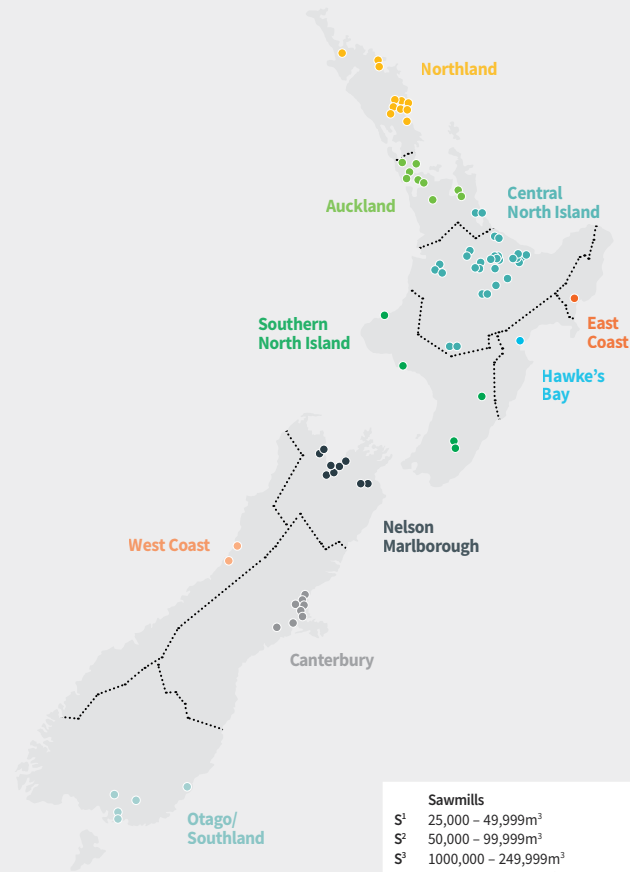


Source Sawn Timber Production to March 2000-18 MPI

Source Sawn Timber Percentage Export Quantity by Port MPI

Source Sawn Timber Production to June 2001-19 SOPI

# Forest Products Industry Map 2018



Sawmills	
S <sup>1</sup>	25,000 – 49,999m <sup>3</sup>
S <sup>2</sup>	50,000 – 99,999m <sup>3</sup>
S <sup>3</sup>	100,000 – 249,999m <sup>3</sup>
S <sup>4</sup>	250,000 – 499,999m <sup>3</sup>
S <sup>5</sup>	>500,000m <sup>3</sup>

Processing Plants	
F	Fibreboard (MDF & Hardboard)
P	Particleboard (Incl Strandboard)
PL	Plywood
PP	Pulp and Paper
V	Veneer/LVL/CLT
PTP	Paper/Tissue/Paperboard
CEF	Chip Export Facilities <sup>1</sup>
MW	Manufactured Wood Products <sup>2</sup>

**Notes**  
<sup>1</sup> >50,000 BDU per annum.  
<sup>2</sup> >20,000m<sup>3</sup> production per annum.

**Source** Forest Products Industry Map Australia & New Zealand Forest Products Industry Map 2018

## Northland

Juken New Zealand Ltd Triboard Mill, Kaitaia	F
Juken New Zealand Ltd Northland Mill, Kaitaia	V
Waipapa Pine Limited, Kerikeri	S <sup>1</sup>
Mount Pokaka Timber Products Ltd, Kerikeri	S <sup>1</sup>
Rosvall Sawmill Ltd, Whangarei	S <sup>1</sup>
CHH Woodproducts NZ LVL, Marsden Point	V
CHH Woodproducts NZ Sawmill, Whangarei	S <sup>4</sup>
North Sawn Lumber Ltd, Ruakaka	MW
Marusumi Whangarei Co Ltd, Marsden Point	CEF
BBS Timbers Ltd, Whangarei	MW
Kiwi Timber Protection Ltd, Whangarei	MW
North Pine Ltd, Waipu	S <sup>1</sup>

## Auckland

Herman Pacific Ltd, Silverdale	MW
JSC Timber, Kumeu	MW
Anderson & O'Leary Ltd, Whenuapai	S <sup>1</sup>
Claymark Ltd, Henderson	MW
Timberlab Solutions Ltd, Auckland	MW
Oji Fibre Solutions, Penrose	PTP
Max Birt Sawmills Ltd, Pokeno	S <sup>3</sup>
Claymark Ltd, Thames	S <sup>2</sup>
Oji Fibre Solutions, Kopu	P

## Central North Island

Claymark Ltd, Katikati	S <sup>2</sup>
Claymark Ltd, Katikati	MW
Pure Pine Mouldings, Te Puke	MW
Pukepine Sawmills (1998) Ltd, Te Puke	S <sup>2</sup>
Kiwi Lumber (Putaruru) Ltd, Putaruru	S <sup>1</sup>
Pacific Pine Industries Ltd, Putaruru	S <sup>1</sup>
CHH Woodproducts NZ Plywood, Kinleith	PL
Alkieman Custom Jointing Ltd, Tokoroa	MW
Oji Fibre Solutions, Kinleith	PP
Claymark Ltd, Rotorua	S <sup>2</sup>
Claymark Ltd, Rotorua	MW
Claymark Profiles, Rotorua	MW
McAlpines Rotorua Ltd, Rotorua	S <sup>1</sup>
Hume Pine NZ Ltd, Rotorua	MW
Red Stag Timber, Waipa	S <sup>2</sup>
Red Stag Timber, Waipa	MW
CHH Woodproducts NZ Sawmill, Kawerau	S <sup>4</sup>
Sequal Lumber, Kawerau	S <sup>1</sup>
Asaleo Care, Kawerau	PTP
Oji Fibre Solutions, Kawerau	PP
Norske Skog Tasman Ltd, Kawerau	PP
Whakatane Mill Ltd, Whakatane	PTP
KLC Ltd, Kaingaroa	MW
Donelley Sawmillers Ltd, Reporoa	S <sup>1</sup>
Laminex NZ, Taupō	P
Tenon Clearwood, Taupō	S <sup>1</sup>
Tenon Clearwood, Taupō	MW
OTC Timber Co Ltd, Otorohanga	MW
Waitete Sawmills Ltd, Te Kuiti	S <sup>1</sup>
R.H. Tregoweth Ltd, Te Kuiti	S <sup>1</sup>
WPI Tangiwai Sawmill, Ohakune	S <sup>1</sup>
WPI Karioi Pulpmill, Ohakune	PP

## East Coast

Juken New Zealand Ltd Gisborne Mill, Gisborne	S <sup>1</sup>
Juken New Zealand Ltd Gisborne Mill, Gisborne	V

## Hawke's Bay

Pan Pac Forest Products Ltd, Napier	S <sup>4</sup>
Pan Pac Forest Products Ltd, Napier	PP

## Southern North Island

Taranakipine, New Plymouth	S <sup>2</sup>
Taranakipine, New Plymouth	MW
Waverley Sawmills Ltd, Waverley	S <sup>1</sup>
Kiwi Lumber (Dannevirke) Ltd, Dannevirke	S <sup>1</sup>
Juken New Zealand Ltd, Wairarapa Mill	S <sup>1</sup>
Juken New Zealand Ltd, Wairarapa Mill	V
Juken New Zealand Ltd, Wairarapa Mill	MW
Kiwi Lumber (Masterton) Ltd, Masterton	S <sup>2</sup>

## Nelson Marlborough

Timberlink New Zealand Ltd, Blenheim	S <sup>2</sup>
Timberlink New Zealand Ltd, Blenheim	MW
Nelson Forests Ltd, Kaituna Sawmill, Renwick	S <sup>2</sup>
XLam NZ Ltd, Nelson	V
Eurocell Woodproducts, Nelson	S <sup>2</sup>
Eurocell Woodproducts, Nelson	MW
Nelson Pine Industries Ltd, Richmond	V
Nelson Pine Industries Ltd, Richmond	F
Southpine (Nelson) Ltd, Nelson	S <sup>2</sup>
CHH Woodproducts NZ Sawmill, Nelson	MW
MLC Group, Motueka	MW
Prowood Ltd, Motueka	MW

## West Coast

International Panel & Lumber (West Coast) Ltd, Greymouth	PL
Westco Lumber Ltd, Hokitika	S <sup>1</sup>

## Canterbury

Daiken NZ Ltd, Rangiora	F
McAlpines Timber Ltd, Rangiora	S <sup>1</sup>
Stoneyhurst Timbers Ltd, Belfast	S <sup>1</sup>
Belfast Timber Processing Ltd, Belfast	MW
McVicar Timber Group Ltd, Christchurch	S <sup>1</sup>
Southern Pine Products Ltd, Christchurch	MW
SRS New Zealand Ltd, Rolleston	S <sup>1</sup>
Niagara, Ashburton	MW

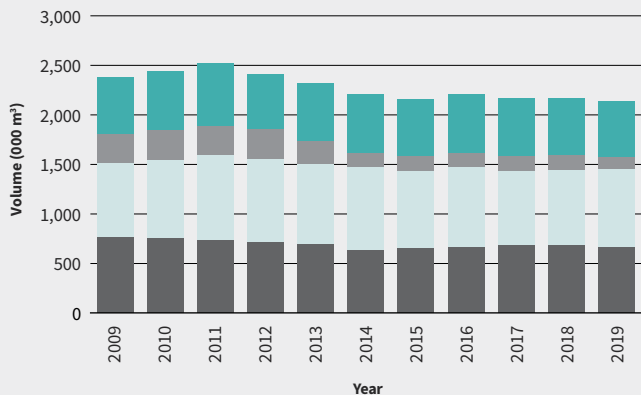
## Otago/Southland

Pan Pac Forest Products (Otago) Ltd, Milburn	S <sup>1</sup>
Dongwha New Zealand, Mataura	F
Niagara Sawmilling Co. Ltd, Invercargill	S <sup>1</sup>
Niagara Sawmilling Co. Ltd, Invercargill	MW
Southwood Export Ltd, Awarua	CEF
Craigpine Timber Ltd, Winton	S <sup>1</sup>

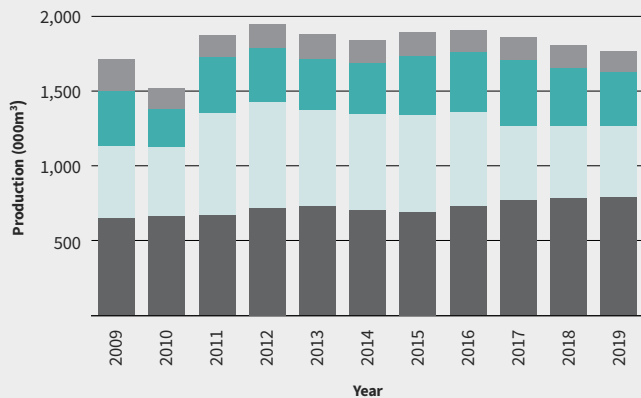
# Paper, Pulp and Panel Products Production

for Year Ended March

## Paper and Pulp Production



## Panel Products Production



**Notes**  
<sup>1</sup> Mechanical Pulp is those export items in HS item grouping 4701.  
<sup>2</sup> Chemical Pulp is those export items in HS groupings 4702, 4703, 4704 and 4705.  
<sup>3</sup> All other paper and paperboard includes printing and writing paper, other paper and paperboard.  
<sup>4</sup> Fibreboard includes MDF, hardboard & softboard.  
<sup>5</sup> Plywood includes laminated veneer lumber.

**Source** Paper, Pulp and Panel Products Production MPI

## SECTION 4

# Health, Safety and Training



# TOGETHER TOWARDS ZERO



The Forest Industry Safety Council is a pan-industry initiative to reduce and ultimately eliminate deaths and serious injuries in New Zealand plantation forestry, by;

- Improving leadership of safety
- Providing easy-to-use forest safety resources through [ppp.nz/ark](http://ppp.nz/ark) website
- Sharing better information on what's causing injuries
- Getting companies and workers more competent
- Helping the sector adapt to the Health and Safety at Work Act 2015.

**FOREST  
INDUSTRY  
SAFETY  
COUNCIL**

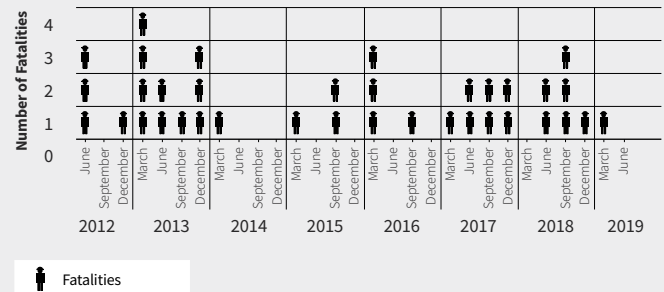
[www.fisc.org.nz](http://www.fisc.org.nz)



**safetree™**  
You are the key

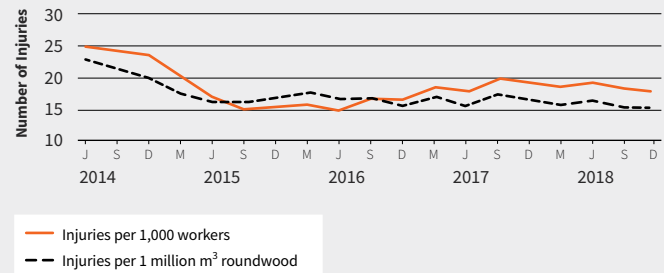
## Health and Safety in the Forest Industry

### Fatalities



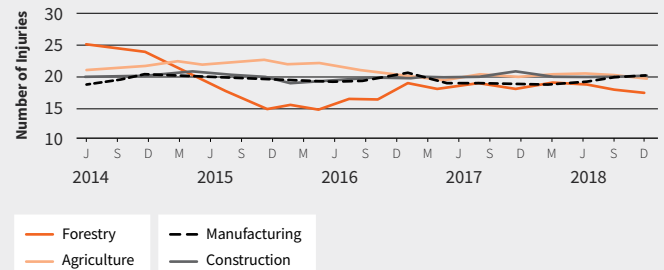
### Severe Injuries<sup>1</sup>

Rate of injuries to workers resulting in more than a week off work



### How Do We Compare?<sup>2</sup>

Rate of injuries to workers resulting in more than a week off work



#### Notes

<sup>1</sup> Rolling average last four quarters.

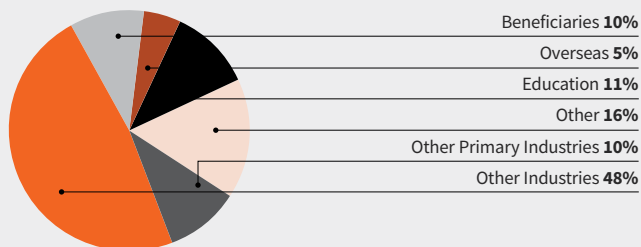
<sup>2</sup> Rolling average last four quarters per 1,000 workers.

Source WorkSafe/MPI/FISC.

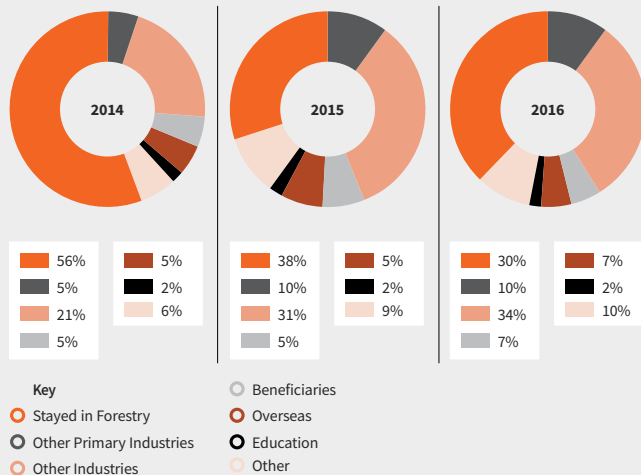
Injury data in this dashboard is based on ACC claims where someone receives a period of weekly compensation within a quarter. This data lags by 6 months due to claim processing time.

# Forestry New Entrant Snapshot

## Where did they come from (2013)?



## Where did they go to (2013-2016)?



## Forest and Meat/Wool Workforces

	2003	2012	2016
<b>Forestry area</b>	1.83m ha	1.72m ha	1.70m ha
<b>Workers in-forest</b>	11,100	8,300	7,500
<b>Workers per 1000 ha</b>	6.1	4.8	4.4
<b>Meat and Wool area</b>	10.6m ha	9.1m ha	8.5m ha
<b>Workers on-land</b>	42,390	33,350	30,890
<b>Workers per 1000 ha</b>	4.0	3.5	3.6

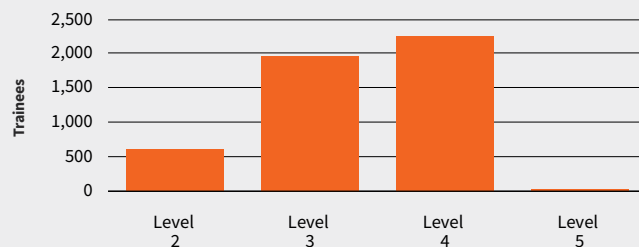
Source Forestry New Entrant Snapshot MPI  
Source Stats NZ

# Industry Training 2018

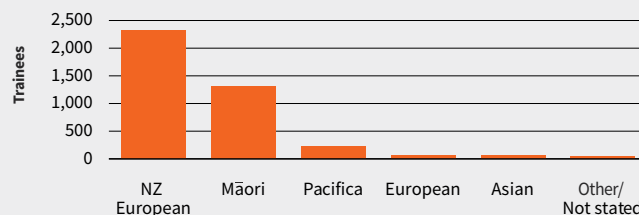
## Trainee Count



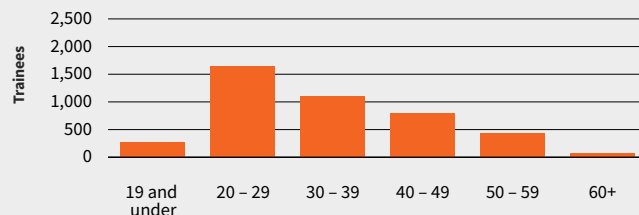
## Trainee by Qualification Level



## Trainees by Ethnicity



## Trainees by Age



Source Industry Training 2018 MPI





## New forestry apprenticeships

- » Choose Manual Operations or Mechanised Processing
- » Flexible programmes to suit your business
- » Two years “fees free” for eligible learners
- » Training complete in 2-3 years
- » Designed by industry, for industry.

Talk to us today about your training needs.

0800 526 1800  
[competenz.org.nz](http://competenz.org.nz)

**Competenz**   
Grow your people

## SECTION 5

# Supplementary Information



## A Forestry Roadmap

**Vision for 2050:** Forestry will be New Zealand's number 1 primary sector and exemplify the best plantation forest management in the world.

### 01

Tree growth and forest production efficiency will have both doubled.

### 02

Our increasingly diverse forests will provide valuable products tailored to our customers' needs.

### 03

People will be attracted to work in forestry because they will be safe, valued and welltrained.

### 04

Expanding commercial plantation forestry will have been the prime means of achieving New Zealand's net zero carbon goal by 2050, while providing other substantial environmental and social benefits.

### 05

Our licence to operate will have widespread support.



Source A Forestry Roadmap for Aotearoa New Zealand Forest Owners Association 2020 – 2050

## Forest Growers Levy Trust

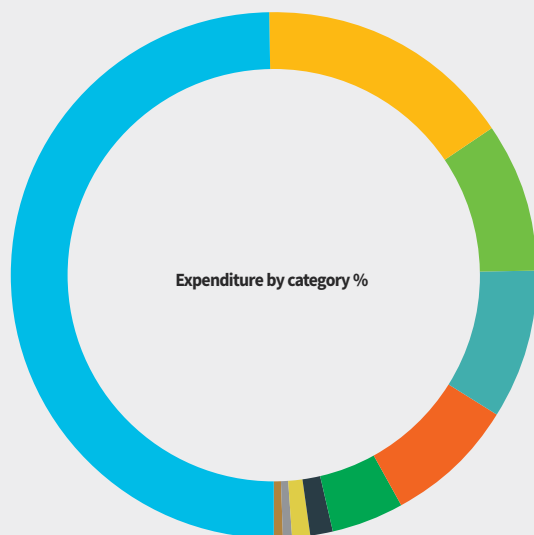


The 2014 to 2019 Harvested Wood Material Levy Order is expiring and has been replaced by a confirmed new levy order which will run to 2025, based on a 89.1% affirmative vote of levy payers. The rate for the first year of the new levy continues at 27 cents per tonne of harvested log. The levy generated in the year to the end of June 2019 was \$5,461,078. The levy income is invested in industry good projects 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 2018 Annual Report, can be found at [www.fglt.org.nz](http://www.fglt.org.nz).



Source Expenditure by Category FGLT

## How the FGL is Invested



### 49.9% Research, Science and Technology

The large research programme is focussed on improving the profitability and sustainability of forest growers large and small. It covers research on raising the productivity of Radiata pine through better site and stand management, understanding and responding to needle diseases such as red needle cast (RNC), developing technologies to battle insect and pest incursions in urban areas and finding longer term solutions to the wilding conifer problem in parts of New Zealand. Licence to operate issues were addressed with projects to identify the sources of sedimentation and the effectiveness of riparian margins. The programme also has a focus on other commercial species to give land owners greater confidence to grow these species. Reducing the cost and improving the safety of harvesting on steep land continued during the year along with a big effort to further develop remote sensing technologies such as LIDAR to improve forest management.

### 15.8% Operational Costs (incl. Administration)

Represent Levy collection and database maintenance costs, business compliance costs and all direct costs associated with supporting FGLT secretariat and the planning, management and delivery of the annual Work Programme.

### 9.3% Forest Biosecurity

National forest biosecurity surveillance of high-risk sites and administration costs for a Biosecurity Manager, and work with other sectors to ensure plants from nurseries are disease free. Recent initiatives include contributions to an app-based general surveillance tool and research on forest hygiene.

### 9.0% Promotion

NZ Wood/Love our Forests in periodical magazines, television commercials and radio. Ten episodes of 'Forest Call' on Face TV. Publications, external memberships, sponsorships and career promotion. Publication of Facts & Figures with MPI. Assistance in production of the Forest Roadmap. Stakeholder and public opinion surveys.

### 8.2% Health and Safety

This is the joint industry contribution to major health, safety and training issues identified by the Forest Industry Safety Council. Major initiatives include worker certification for high risk tasks, contractor certification and the Safety Culture programme. Includes publication of the Best Practice Guides for Treefelling and Breaking Out, and input to the A/NZ Standard on Oral Fluid testing.

### 4.4% Training and Careers

Consults on and develops an industry view on plantation forestry standards, qualifications and training needs. Works with FISC, FICA and Competenz (the industry's ITO) as well as funders and training providers to ensure standards and training solutions are delivering on those needs. The committee promotes forestry careers, both directly through development and maintenance of the portal "Forestrycareers.nz", and by working with and through other agencies. Financial support is provided to a number of training providers to help with resource development and training delivery. Supported providers include the University of Canterbury, the Primary Industry Capability Alliance, development of the Future Foresters network and a number of front line training provider initiatives.

### 1.4% Forest Resources and Environment

Developing policies on forest growing and environment issues, including forest certification, climate change, water allocation and the RMA. Projects include maintaining the rare species website, developing a series of Forest Practice Guides, and environmental fact sheets.

### 1.1% Transportation

An annual contribution to the pan-industry Log Truck Safety Council (LTSC), research into the effect of electronic road user charges and the Road Safety in Schools (Share the Roads) programme. The individual projects into GIS mapping, Options for Roading report, and Transport Calculator have been combined into a single Rural Roads Programme – a tool for forest owners and councils to determine options for public road requirements at harvest time. The Road Engineering Manual has been updated and log truck training videos funded in partnership with the LTSC.

### 0.5% Fire

Comprises a contribution to the Fire and Emergency New Zealand national fire prevention campaign, development of a set of Fire Management Guidelines for forest owners and funding assistance for the Scion Rural Fire Hazard programme cost included in Research. A resource for smaller forest owners is under development.

### 0.5% Small and Medium Forest Enterprises

This is a forum for owners and managers of small scale forests. It includes field days, publications, website, workshops and newsletters. Work on ensuring small scale forest owners have access to accurate market information at harvest, and to explore the benefits of forest aggregation for small scale owners.

## Sector Agreements

### Plantation Forestry Rural Fire Control Charter 2017

FOA and FFA signed a charter with Fire and Emergency New Zealand for the integration period as Fire and Emergency moves to become a fully unified, national organisation.

### Forest Government Industry Agreement for Biosecurity 2015

The FOA has signed a Government Industry Agreement to protect New Zealand forests from introduced pests, weeds and diseases through sharing of costs and decision making. The Forest Biosecurity Surveillance programme began on 1 July 2016, covering all commercial plantations. PineNet is a forest industry network to respond to a major incursion.

### Forest Industry Safety Council 2015

The FOA is participating in FISC as the pan-industry Health and Safety initiative. FISC has an independent cross sector board. FISC's mission is to reduce the rate of serious injury and fatalities in plantation forests, with an ultimate goal of eliminating them.

### Log Transport Safety Accord 2008

An agreement between FOA/FFA, the Road Transport Forum New Zealand and the Log Transport Safety Council to reduce the incidence of log truck accidents on roads.

### Eliminating Illegal Forest Products 2008

The FOA, WPMA and Pine Manufacturers Association joined NGOs in calling on the New Zealand government, importers, processors, retailers, New Zealand forest and plantation managers and processors of forest and plantation products, to strongly oppose the importation and use of illegally harvested and traded forest products in New Zealand.

### New Zealand Climate Change Accord 2007

An agreement between FOA/FFA, the Timber Design Society and eight NGOs acknowledging the contribution of indigenous and plantation forests to mitigate climate change, which also provides a renewable, reusable and recyclable resource.

The Accord endorses the principle of polluter pays to cover all greenhouse gases with all sectors taking responsibility and with time bound targets.

### New Zealand Forest Accord 1991 and 2007

The Forest Accord is between forest and timber groups and 10 NGOs to agree on; defining areas unsuitable for forestry, maintaining existing natural forest, recognition of commercial forestry as essential, indigenous forest extraction only on a sustainable basis and new forests not disturbing natural indigenous vegetation.

## NZ Wood

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)

# New Zealand's Greenhouse Gas Inventory

## The Carbon Cycle

Planting trees begins a cycle that continuously removes, releases and re-absorbs 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.

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

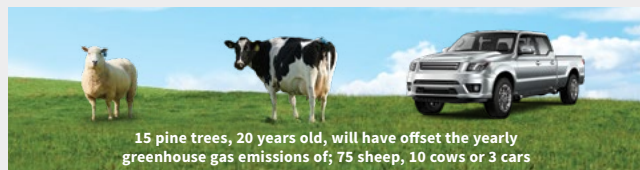
In 2017, New Zealand's total gross emissions were 80.8 million tonnes of carbon dioxide (Mt CO<sub>2</sub>-e). In 1990, gross emissions were 65.8 Mt CO<sub>2</sub>-e.

In 2017, 24.2 Mt CO<sub>2</sub>-e was removed from the atmosphere by the forestry sector, compared with 31.5 Mt CO<sub>2</sub>-e in 1990. Forestry sector removals in 2017 reduced total gross emissions to 56.9 Mt CO<sub>2</sub>-e net or a 30% offset.

Agriculture continued to be the largest contributor to New Zealand's Greenhouse Gas Emissions, with 48.1% of the total at 38.9% Mt CO<sub>2</sub>-e, compared with energy at 40.7%.

## Total CH<sub>4</sub> and N<sub>2</sub>O emissions in 2017 attributable to dairy cattle, beef cattle, sheep and deer<sup>1</sup>

	Total emissions (million tonnes CO <sub>2</sub> -e)	2017 Population (millions)	Emissions per animal (tonnes CO <sub>2</sub> -e)
Sheep	10.29	27.53	0.37
Deer	0.61	0.84	0.73
Beef	6.56	3.62	1.81
Dairy	18.20	6.53	2.79



### Notes

<sup>1</sup> Based on figures from the Agricultural Inventory Model, used in New Zealand's Greenhouse Gas Inventory 1990-2017 report published by MfE

Source MfE and FOA

# Forests Removing Carbon

## 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.

The amount of carbon removed by New Zealand's forests is therefore dependent on the coverage of forestland, the age and species of the trees and the rate of harvest. Exotic forest biomass carbon was 283 million tonnes in 2015. This was an increase of 150 million tonnes, or 114 percent, since 1990.

If carbon in the exotic forest soil is included, the total forest biomass carbon volume increased to 451 million tonnes in the same period, an increase of 189 million tonnes, or 72 percent.



Source 1990 to 2015 National Greenhouse Gas Inventory

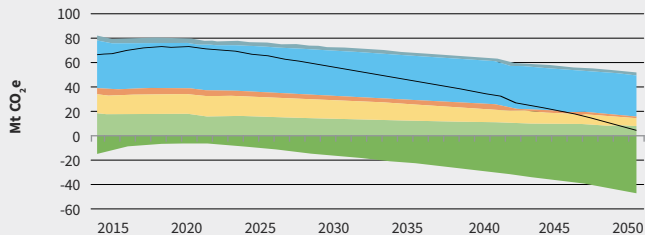
# Forestry the solution in Carbon Zero pathways

The Productivity Commission has presented three pathways to achieve a carbon neutral economy by 2050. All pathways rely on new forest planting.

The pathways are; Policy Driven, Disruptive Decarbonisation (e.g. artificial meat widespread in the market) and Stabilising Decarbonisation (e.g. methane vaccine for cows becomes available).

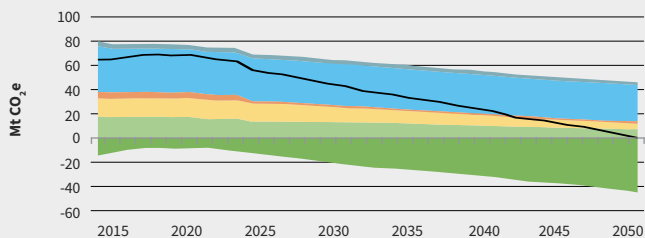
## Policy Driven

2.8 m ha new forest (1.9 m ha exotic, 0.9 m ha indigenous)  
45 MtCO<sub>2</sub>e forest carbon sequestration



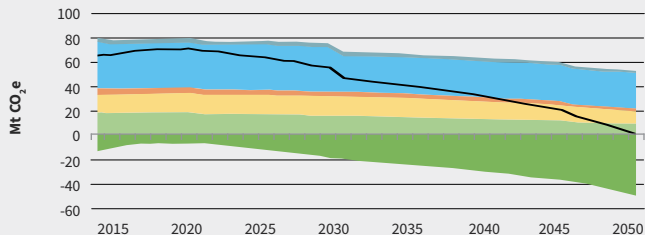
## Disruptive Decarbonisation

2.1 m ha of new exotic forest  
45 MtCO<sub>2</sub>e forest carbon sequestration



## Stabilising Decarbonisation

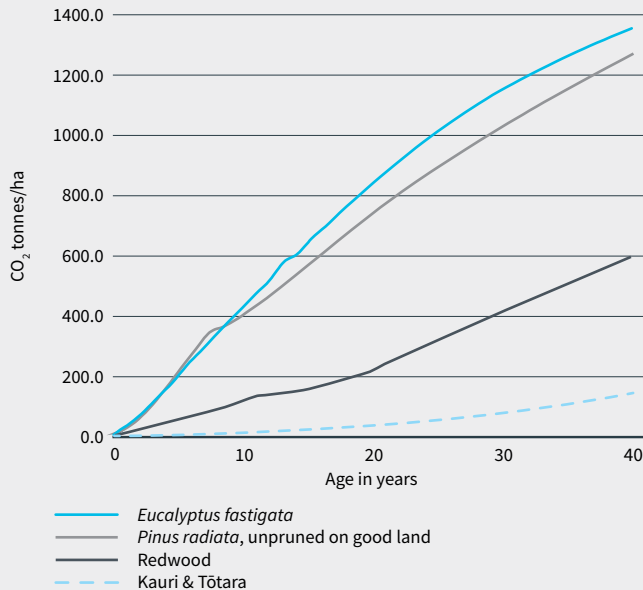
2.3 m ha new exotic forest  
50 MtCO<sub>2</sub>e forest carbon sequestration



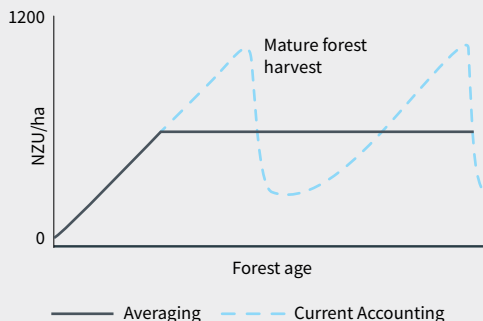
Source Productivity Commission Low-emissions economy, Final report, August 2018

# Carbon Sequestration

## Total CO<sub>2</sub> Sequestration Comparison for Radiata and Other Tree Species



## Carbon accounting practices

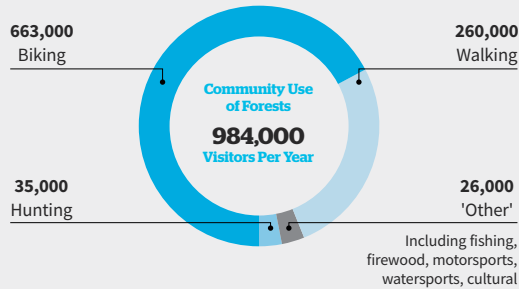


'Averaging' is planned to be introduced into the Emissions Trading Scheme as optional for new registrations for forests post 1989, until 31 December 2020 when it will become compulsory for new registrations.

Source Thomas Paul et al, prepared for Ministry of Agriculture and Fisheries 2008  
Source Carbon accounting practices SOPI June 2019

# FSC certified plantation forests contribution to social, economic and environmental wellbeing

## Visitors



## Area Statistics



Area under certification  
**1,167,885 ha**



**920,589 ha**  
Area planted in forest



**23,069 ha**  
Area harvested in year to June 2019



**19%**  
Indigenous areas as part of working forest (weighted average)



**14,982,455**  
Tonnes of logs harvested in year to 2019



**9,315 ha**  
High conservation value areas protected



**\$1,368,000**  
Spent on enviro-management in year to July 2019

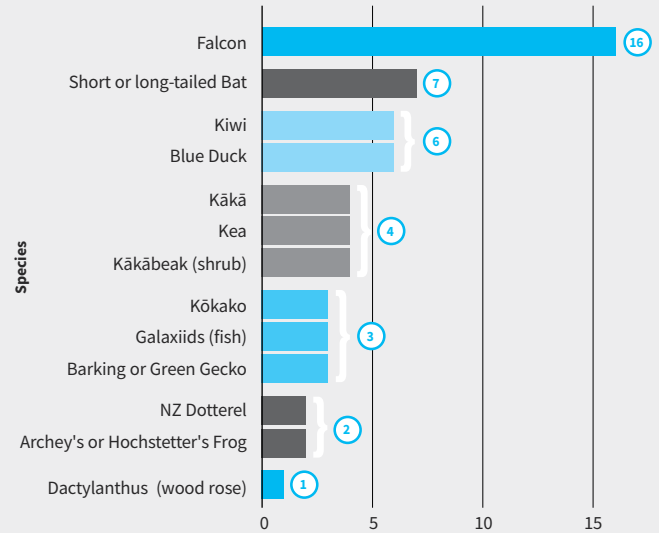


**86 Special Areas**  
managed by forest companies



# Species Biodiversity

## Species Found in FSC Forests



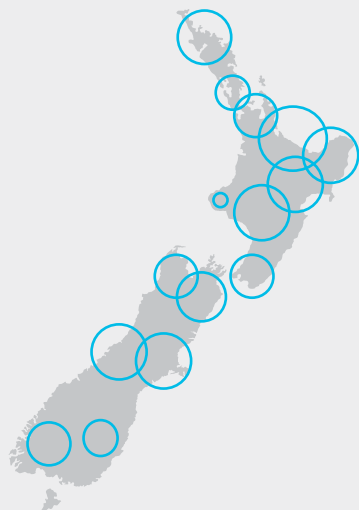
Number of FSC certified companies reported (out of a total of 19). Threatened and at risk species can be found in multiple forests owned by a single forest company.



## Regional Biodiversity

### Area of Native Vegetation Within FSC Certified Plantation Forests

Region	Hectares
Bay of Plenty	28,908
Northland	21,252
Waikato	18,654
Gisborne	13,717
Westcoast	13,399
Horizons	11,732
Hawkes Bay	10,383
Southland	8,531
Tasman	8,006
Otago	6,318
Canterbury	6,076
Marlborough	4,718
Greater Wellington	2,743
Auckland	2,668
Taranaki	1,025
Nelson	829



### Multiple-use

Plantation forests have multiple uses and functions and produce mainly wood fibre and logs for construction or other purposes. They also provide and support other goods.



Honey



Livestock grazing



Koura



Under canopy crops and food harvest



Rongoa/Māori medicine



Game

## Terms, Names and Sites

### Area and volume

- An average *Pinus radiata* tree yields 2.4 m<sup>3</sup> of wood at harvest.
- 1 hectare of 28 year-old *Pinus radiata* 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.
- A log truck and trailer carries approximately 30 tonnes of logs.
- A log ship contains approximately 30-35,000 tonnes of logs.

### Abbreviations

<b>FAO</b>	Food & Agriculture Organization of the United Nations
<b>FFA</b>	New Zealand Farm Forestry Association
<b>FGLT</b>	Forest Growers Levy Trust
<b>FIEA</b>	Forest Industry Engineering Association
<b>FISC</b>	Forest Industry Safety Council
<b>FOA</b>	New Zealand Forest Owners Association
<b>FSC</b>	Forest Stewardship Council
<b>MfE</b>	Ministry for the Environment
<b>MPI</b>	Ministry for Primary Industries
<b>NEFD</b>	National Exotic Forest Description
<b>NZIER</b>	New Zealand Institute of Economic Research
<b>PEFC</b>	Programme for the Endorsement of Forest Certification
<b>SOPI</b>	Situation and Outlook for Primary Industries
<b>Stats NZ</b>	Statistics New Zealand
<b>WPMA</b>	Wood Processors and Manufacturers Association

### Facts & Figures organisation sites

<b>Competenz</b>	<a href="http://www.competenz.org.nz">www.competenz.org.nz</a>
<b>FAO</b>	<a href="http://www.fao.org/forestry">www.fao.org/forestry</a>
<b>FFA</b>	<a href="http://www.nzffa.org.nz">www.nzffa.org.nz</a>
<b>FGLT</b>	<a href="http://www.fgl.t.org.nz">www.fgl.t.org.nz</a>
<b>FIEA</b>	<a href="http://www.fiea.org.nz">www.fiea.org.nz</a>
<b>FISC</b>	<a href="http://www.safetree.nz">www.safetree.nz</a>
<b>FOA</b>	<a href="http://www.nzfoa.org.nz">www.nzfoa.org.nz</a>
<b>FSC</b>	<a href="http://www.nz.fsc.org/en-nz">www.nz.fsc.org/en-nz</a>
<b>MfE</b>	<a href="http://www.mfe.govt.nz">www.mfe.govt.nz</a>
<b>MPI</b>	<a href="http://www.mpi.govt.nz">www.mpi.govt.nz</a>
<b>NZIER</b>	<a href="http://www.nzier.org.nz">www.nzier.org.nz</a>
<b>NZFOA</b>	<a href="http://www.nzfoa.org.nz">www.nzfoa.org.nz</a>
<b>NZ Forests Portal</b>	<a href="http://www.nzplantedforests.org">www.nzplantedforests.org</a>
<b>PEFC</b>	<a href="http://www.pefc.org">www.pefc.org</a>
<b>Scion</b>	<a href="http://www.scionresearch.com">www.scionresearch.com</a>
<b>Statistics NZ</b>	<a href="http://www.stats.govt.nz">www.stats.govt.nz</a>
<b>WPMA</b>	<a href="http://www.wpma.org.nz">www.wpma.org.nz</a>
<b>WorkSafe NZ</b>	<a href="http://www.business.govt.nz/worksafe">www.business.govt.nz/worksafe</a>



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# Log Pricing Data

Log Type, Pricing Point, and Market	Jun-12 Quarter	Sep-12 Quarter	Dec-12 Quarter	Mar-13 Quarter	Jun-13 Quarter	Sep-13 Quarter	Dec-13 Quarter	Mar-14 Quarter	Jun-14 Quarter	Sep-14 Quarter	Dec-14 Quarter	Mar-15 Quarter	Jun-15 Quarter	Sep-15 Quarter	Dec-15 Quarter	Mar-16 Quarter	Jun-16 Quarter	Sep-16 Quarter	Dec-16 Quarter	Mar-17 Quarter	Jun-17 <sup>1</sup> Quarter	Sep-17 Quarter	Dec-17 Quarter	Mar-18 Quarter	Jun-18 Quarter	Sep-18 Quarter	Dec-18 Quarter	Mar-19 Quarter	Jun-19 <sup>1</sup> Quarter		
<b>EXPORT</b> (NZ\$ per JAS m <sup>3</sup> f.o.b)																															
Pruned	154 - 163	153 - 166	144 - 190	168 - 192	169 - 209	177 - 201	181 - 206	171 - 198	158 - 190	146 - 187	165 - 236	186 - 199	121 - 199	189 - 211	121 - 228	220 - 230	204 - 236	184 - 207	180 - 225	185 - 214	152 - 213	177 - 217	184 - 222	176 - 222	175 - 234	153 - 236	166 - 228	169 - 237	182 - 221		
A Grade	110 - 122	116 - 118	103 - 125	128 - 138	136 - 153	143 - 162	137 - 169	142 - 165	104 - 142	110 - 140	127 - 169	134 - 150	81 - 133	90 - 133	81 - 141	119 - 166	146 - 169	138 - 162	141 - 173	150 - 180	145 - 182	151 - 180	144 - 168	147 - 172	154 - 175	145 - 172	150 - 172	158 - 183	151 - 172		
J Grade	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
K Grade	104 - 116	103 - 110	90 - 121	112 - 131	114 - 147	132 - 156	127 - 159	133 - 159	96 - 137	101 - 134	117 - 163	124 - 143	99 - 126	91 - 125	91 - 135	99 - 158	136 - 162	124 - 157	135 - 167	142 - 174	134 - 177	142 - 174	137 - 158	132 - 165	141 - 168	133 - 158	138 - 162	146 - 176	143 - 160		
Pulp	84 - 111	91 - 120	79 - 102	106 - 108	108 - 123	128 - 131	119 - 154	125 - 140	110 - 122	92 - 108	112 - 135	117 - 121	65 - 107	73 - 110	65 - 118	55 - 138	120 - 143	111 - 134	125 - 140	126 - 149	125 - 153	123 - 166	117 - 148	122 - 150	130 - 151	119 - 152	127 - 154	135 - 159	129 - 144		
<b>Average</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>147</b>	<b>116</b>	<b>128</b>	<b>123</b>	<b>148</b>	<b>165</b>	<b>152</b>	<b>161</b>	<b>165</b>	<b>166</b>	<b>169</b>	<b>159</b>	<b>166</b>	<b>166</b>	<b>164</b>	<b>167</b>	<b>176</b>	<b>166</b>		
<b>DOMESTIC</b> (NZ\$ per tonne delivered at mill)																															
P1	127 - 170	120 - 136	122 - 149	135 - 150	142 - 158	126 - 157	132 - 156	129 - 155	131 - 155	132 - 154	134 - 154	139 - 164	135 - 170	135 - 174	140 - 187	142 - 195	140 - 193	142 - 186	151 - 189	155 - 191	157 - 193	157 - 195	149 - 199	150 - 197	160 - 195	164 - 200	168 - 196	166 - 196			
P2	110 - 123	111 - 126	111 - 123	120 - 121	121 - 133	114 - 125	121 - 127	126 - 126	119 - 130	125 - 126	121 - 130	116 - 136	116 - 133	116 - 133	105 - 170	129 - 182	134 - 188	130 - 192	102 - 189	125 - 142	115 - 189	120 - 190	120 - 190	97 - 191	126 - 194	143 - 195	128 - 195	132 - 194	125 - 195		
S1	95 - 98	95 - 102	95 - 104	97 - 102	103 - 110	102 - 120	102 - 123	98 - 112	101 - 111	103 - 109	98 - 108	108 - 112	100 - 109	100 - 108	96 - 109	102 - 118	104 - 123	105 - 123	105 - 126	114 - 127	115 - 136	116 - 143	116 - 152	124 - 159	122 - 151	122 - 148	122 - 148	122 - 148	122 - 152		
S2	88 - 97	88 - 96	90 - 97	95 - 98	101 - 105	90 - 110	90 - 113	92 - 118	91 - 123	101 - 110	98 - 109	96 - 109	85 - 109	85 - 105	85 - 109	90 - 115	90 - 118	80 - 116	93 - 120	83 - 124	117 - 130	116 - 135	120 - 144	115 - 141	120 - 141	123 - 143	120 - 143	122 - 144	110 - 147		
L1 and L2	83 - 92	80 - 89	77 - 96	84 - 100	88 - 105	78 - 111	80 - 113	77 - 123	78 - 78	81 - 87	85 - 103	97 - 139	78 - 95	78 - 94	78 - 109	79 - 130	71 - 132	74 - 130	82 - 138	81 - 126	83 - 145	80 - 130	71 - 143	89 - 137	82 - 137	84 - 141	90 - 141	84 - 141	71 - 144		
S3 and L3	76 - 79	77 - 80	77 - 86	72 - 90	83 - 100	75 - 106	75 - 102	86 - 108	90 - 115	81 - 100	86 - 100	88 - 100	69 - 96	76 - 90	69 - 96	68 - 106	82 - 119	69 - 107	71 - 112	71 - 116	71 - 120	94 - 138	83 - 134	109 - 136	109 - 129	88 - 130	111 - 133	104 - 132	96 - 135		
Run of bush	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Pulp	46 - 51	47 - 49	48 - 53	46 - 50	46 - 51	47 - 54	46 - 54	44 - 55	46 - 55	45 - 55	49 - 54	50 - 55	31 - 54	31 - 55	31 - 55	31 - 59	44 - 59	31 - 61	40 - 52	40 - 61	31 - 56	31 - 59	30 - 59	31 - 60	31 - 66	31 - 77	32 - 68	50 - 79	32 - 64		
<b>Average</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>	<b>108</b>	<b>99</b>	<b>99</b>	<b>102</b>	<b>110</b>	<b>114</b>	<b>111</b>	<b>111</b>	<b>111</b>	<b>111</b>	<b>126</b>	<b>136</b>	<b>134</b>	<b>134</b>	<b>135</b>	<b>133</b>	<b>135</b>	<b>136</b>		

The photo on page 46 came from Phil Taylor, Port Blakely NZ Ltd.

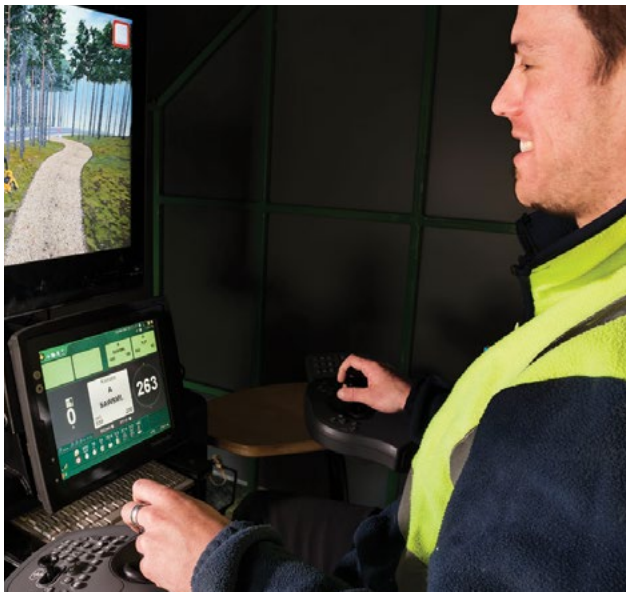
## Notes

<sup>1</sup> Weighted averages have been used from June 2017. Please take care when comparing with previous quarters.

\* Limited response – very small volume traded.

\*\* Data not available.

Source Log Pricing Data MPI



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