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Contents

3 4 5 6 7
• • • • •
111 12 13 14 15 16 17 18 19 21 22 23 25
0000
27 29 30 31 32 33 34 35 36 37 41
• • • •
44 45 46
49 50 51 53 54 55 56 57 58 59 60 61 63

Minister's Foreword



I have been involved in forestry for more than 20 years so to be appointed as Minister of Forestry is the realisation of a long-held ambition. The timing is particularly rewarding as we are in the middle of an era of change and growth for the forestry and wood processing sector. The release of this annual Facts and Figures document is a timely contribution to the process. In order to plan and make good quality decisions we need accurate information, and I am pleased to see this contribution from the Forest Owners Association.

Forestry exports are expected to increase 8.1 percent to \$6.0 billion for the year ending June 2021 due to strong demand for logs from China and robust demand for sawn timber from the US. Importantly, the World Bank has projected that the global demand for wood fibre will quadruple by 2050.

While our exports are strong, I also want to increase opportunities for more wood processing onshore, creating mills and wood processing plants in New Zealand and generating more jobs for Kiwis and supporting rural communities.

With more onshore wood processing we can use wood processing plants to create high-tech, high-value wood products and by-products to diversify the income streams of New Zealand's foresters.

It means creating biofuels, and biochemicals to support New Zealand's move away from fossil fuels and create a more sustainable future. We have an opportunity to replace products such as concrete, steel and petrol with products made from wood grown and processed in New Zealand. To achieve this, we need to maximise the use of our current forests and ensure we are working with the primary sector to plant the right tree in the right place.

Already the majority of ETS planting is on land classes 6, 7, 8 which are not considered productive farm land We want to continue to work to plant highly erodible areas in trees to shore-up our land and maximise the economic and environmental benefits of planting.

To reflect the need for enhanced planning and advice that can support the forestry and wood processing sector to achieve all of these gains, I have recently announced a greater role for a public forestry service. The new name, Te Uru Rākau – New Zealand Forest Service, signals a more hands-on role for the forestry service, with specialists and advisors working alongside the sector.

This name encompasses and emphasises the commitment we are making to our country's forestry and wood processing sectors, and to the high level of service, advice and management provided by *Te Uru Rākau – New Zealand Forest Service*. I am committed to providing a higher level of advice and service to the forestry sector, landowners, iwi, Councils and others to help New Zealand take advantage of these exciting times for forestry.

This partnership in forestry will play a key role in maintaining the momentum for the economic recovery across our wider primary sector, and sets a strong foundation for the future.

Hon Stuart Nash Minister of Forests **SECTION 1**

Planted Forestry Highlights



New Zealand Planted Forestry Highlights

1.665m ha is the estimated net stocked plantation forest area at 1 April 2020. This is a decrease in the plantation forest area of 31,347 ha from 1 April 2019.



The value of all forestry exports to December 2020 was

\$5.65

billion. Of this, \$3.07 billion of export revenue for the year was logs.

MPI expects the value of forest exports to increase 12.8% to

\$6.25

billion for the year ending June 2021 due to strong demand for logs from China and robust demand for sawn timber from the US.

| Source | Box 1 MP| | Source | Box 2 MP| | Source | Box 3 MP| | Source | Box 4 MP| |

New Zealand Planted Forestry in Summary

Area and standing volume statistics	As at 1 April 2018r ⁶	As at 1 April 2019	As at 1 April 2020
Forest area			
Net stocked area (ha)	1,704,494	1,696,584	1,665,237
Harvested area awaiting restocking (ha) ¹	50,072	51,609	45,192
Total forest area	1,754,566	1,748,193	1,710,429
Growth characteristics			
Standing volume (000 m³)	482,511	494,618	501,116
Average standing volume (m³/ha)	283	292	301
Area-weighted average age (years)	17.63	17.91	18.25
Area by species ²			
Radiata pine (ha)	1,532,444	1,525,711	1,494,429
Douglas-fir (ha)	104,258	103,410	98,380
Cypress species (ha)	9,928	9,825	9,987
Other softwoods (ha)	23,378	23,381	24,295
Eucalypts (ha)	22,148	21,777	21,485
Other hardwoods (ha)	12,339	12,481	12,662
Radiata pine area by tending regime			
Pruned with production thinning (ha)	145,859	140,318	138,754
Pruned without production thinning (ha)	574,564	547,042	530,346
Unpruned with production thinning (ha)	51,664	50,733	52,931
Unpruned without production thinning (ha)	760,358	787,617	772,398
Planting statistics	Year ended 31 Dec 2017	Year ended 31 Dec 2018	Year ended 31 Dec 2019
New planting ³			
Total estimated new planting (ha)	6,000	7,000	19,000
Restocking (ha)	36,616	41,073	41,207
Harvesting statistics ⁴	Year ended 31 Mar 2018	Year ended 31 Mar 2019	Year ended 31 Mar 2020
Harvesting			
Estimated planted forest roundwood removal (000m³) ⁵	34,442	36,404	34,465
Average harvest age – radiata pine (years)	28.7	29.1	29.5

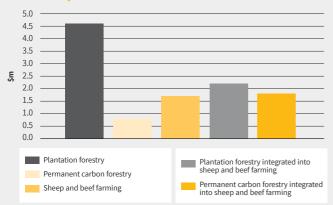
Notes

- 1 The area of harvested land that was recorded as awaiting a land use decision has been reported in the area awaiting restocking.
- Individual entries may not add to totals due to rounding.
- ³ These forestry statistics, and in particular, new planting estimates, may differ from those produced in the Agricultural Production Survey by Statistics New Zealand. These surveys use different survey frames and designs.
- Agricultural Production Survey by Statistics New Zealand. These survey
 All standing and harvest volumes are reported as recoverable volumes.
- Estimate from the annual roundwood removal statistics.
- The net stocked area for 2018 has been revised following updated returns from respondents and corrections of data increase.

Source National Exotic Forest Description NEFD 2020

Land Use and Returns

Annual Total Value Chain Impact per 1,000 hectares - Value-Add by Land-Use



Export Value Comparisons^{1,2,3}

Export product category	Million ha 2019*	Year to March 2021 exports million \$	Export dollar per ha/yr
Horticulture	0.1	6,735	50,749
Dairy	2.2	18,932	8,522
Forestry	1.6	5,907	3,697
Meat & Wool	8.9	10,220	1,148
All Pastural Farms	11.1	29,152	2,622



Notes

- $^{\mathbf{1}} \text{ These export return figures do not take into account the different land class ratios used for the four listed} \\$
- 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.
- ³ 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.

Source Annual total value chain impact per 1,000 hectares - Value-Add by Land-Use Economic Impacts of Forestry In New Zealand, PwC 2020

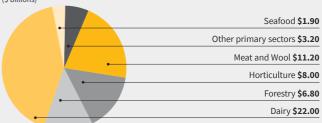
Source Export Value Comparisons *MfE/Stats 'Our Land 2021'. MPI

Forestry and the Primary Sector

MPI anticipates the value of forest product exports will reach \$6.52 billion

in the year to June 2023, out of total food and fibre export returns of \$50.29 billion.

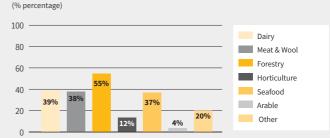
MPI Prediction for Primary Industry Sector Export Values 2022 (\$ billions)



MPI Prediction for Primary Industry In-sector Export Values 2022 (\$ billions)

Export	Billions \$
Whole Milk Powder	\$7.28
Logs	\$3.33
Butter, Anhydrous Milk Fat & Cream	\$2.75
Lamb	\$3.02
Beef & Veal	\$3.46
Processed Forest Products	\$2.82

Proportion of Exports to China by Primary Sector 2021



Source Box 1 SOPI June 2021

iource MPI Prediction for Primary Industry Sector Export Values 2022 SOPI June 2021
iource MPI Predictions for Primary Industry In-sector Export Values 2022 SOPI March 2020

Source Proportion of Exports to China by Primary Sector 2021 SOPI March 2021

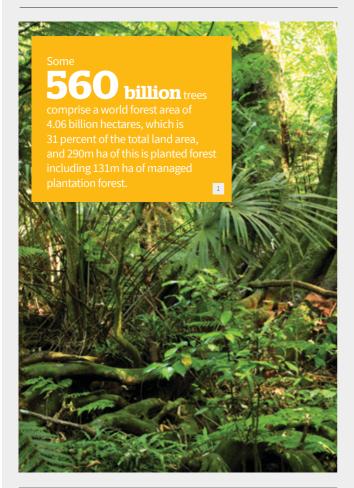
Global Forests



Global forests produce more than 5,000 types of wood-based products, and generate an annual gross value add of just over US\$ 600 billion, about 1% of global GDP.

About 350 million people who live within or close to dense forests depend on them for their subsistence and income.

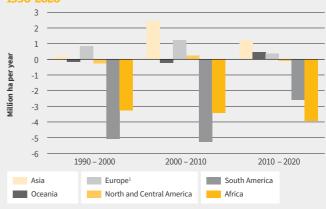
Deforestation, forest degradation and land use change contribute about 12% of the world's greenhouse gas emissions.



Source World Bank

Source Box 1 FAO Global Forest Resources Assessment 2020

Annual Forest Area Net Change, by Decade and Region, 1990-2020

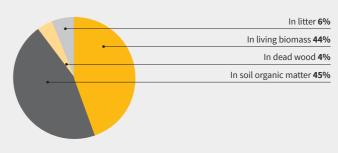


Naturally Regenerating versus Managed Planted Forests

(% of global forest area)



World Proportion of Carbon Stock in Forest Carbon Pools



Notes

According to the regional breakdown used in FRA 2020, Europe includes the Russian Federation.

Source Annual Forest Area Net Change, by Decade and Region 1990-2020 FAO Global Forest Resources Assessment 2020

Source Naturally Regenerating versus Planted Forests FAO Global Forest Resources Assessment 2020
Source World Proportion of Carbon Stock in Forest Carbon Pools FAO Global Forest Resources

Assessment 2020

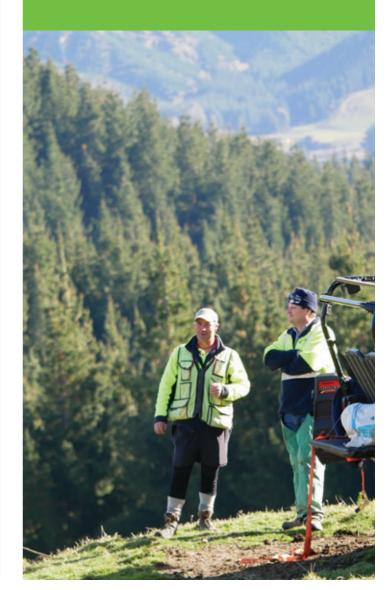


World forests' carbon fell from 668 gigatonnes in 1990 to **662 gigatonnes** in 2020.

The forest area designated for soil and water protection has increased from 200m ha in 1990 to 399 m ha in 2020.

SECTION 2

New Zealand Planted Forestry



Planted Forest Mix and Ownership

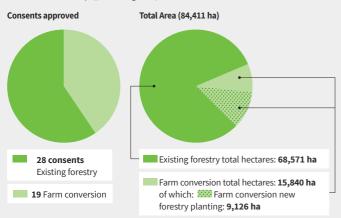
Overseas Investment Office Consents Granted Under the Special Forestry Test: Existing Forestry & Conversion Investments

1 July 2019 - 31 December 2020

In 2018, the Special Forestry Test was introduced under the Overseas Investment Act 2005 as a more straightforward consent pathway for certain types of conventional forestry investments. It cannot be used for investments in permanent forestry.

Between 1 July 2019 and 31 December 2020, 47 one-off consents under the Special Forestry Test were granted by the Overseas Investment Office. Of those, 19 investments related to the conversion from farm land into forestry, and covered 15,840 hectares. The Overseas Investment Office expects that of the 15,840 hectares, approximately 9,126 hectares will be new planting. The remainder of the land may not be planted for a number of reasons, including that some of the land may be unsuitable for planting, already have existing forestry or indigenous vegetation on it, or be subdivided and sold.

All applications granted by the Overseas Investment Office come with strict conditions of consent which consent holders must comply with. Further information: https://www.linz.govt.nz/overseas-investment



Planted Forest Ownership 1,2,3,4,5

As at 1 April 2020



Notes see page 12

NZ Plantation Forest Ownership -Underlying Land Status

As at 31 December 2020

Firm/Entity Underlying Land Status (Productive area (ha))						
	Freehold			Leasehold	Total	
		Crown	Māori Inc.	Other		
Kaingaroa Timberlands Limited	1,398		184,867		186,265	
Hancock Natural Resource Group	82,723	8,763	59,286	20,002	170,775	
Rayonier Matariki Forests	56,786	27,193	18,236	17,499	119,714	
Ernslaw One	59,947	40,257	7,442	1,981	109,627	
NZ Carbon Farming Group Ltd	46,452			43,155	89,607	
OneFortyOne	22,697		39,682	567	62,946	
Summit Forests NZ Limited	4,737	3,021	27,743	3,541	39,042	
Tasman Pine Forests Ltd	25,306		9,044	2,249	36,599	
Pan Pac Forest Products	5,356	818	28,738	417	35,329	
Global Forest Partners LP	33,659			95	33,754	
Juken New Zealand	9,907	14,593	6,675	1,124	32,299	
Crown Forestry (MPI)	1,541		18,487	9,003	29,031	
Forest Enterprises	28,655	2,008		627	31,290	
Ngai Tahu Forestry	32,431				32,431	
Wenita	5,815			23,369	29,184	
Port Blakely Ltd	27,231			1,845	29,076	
Aratu Forests Ltd	31,783		2,130	1,100	35,013	
Roger Dickie NZ	29,073				29,073	
Lake Taupo Forest Trust	23,498		1,007	3,142	27,647	
Lake Rotoaira Forest Trust	7,676		431	1,347	9,454	
China Forestry Group Corporation	14,138	6,294	617	5,938	26,987	
City Forests	22,338			1,393	23,731	
P F Olsen Ltd				5,164	5,164	
The Rohatyn Group	966				966	
Totals	574,113	102,947	404,385	143,558	1,225,004	

P11 Note

- ¹ Ownership is based solely on the ownership of the forest irrespective of the ownership of the land.
- ² Net stocked planted production forest area.

- 4 "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.
- 5 "Central government" forests are predominantly Crown-owned forests on M\u00e3ori lease hold land. These forests are managed by the Ministry for Primary Industries.

Source Planted Forest Ownership NEFD 2020

Source Consents Granted Under the Special Forestry Test: Existing Forestry & Conversion Investments Overseas Investment Office

P12 Notes

Total Prod area is as at 31 December 2020

Source NZ Plantation Forest Ownership - Underlying Land Status FOA

³ Significant changes in forest ownership occurred in 2003, resulting in large areas of forest previously owned by public companies now being privately owned.

Commercial Planted Forest Ownership and Management

As at 31 December 2020

Firm/Entity	Forest Management Productive		
	(TIMO)	Property Management	
Kaingaroa Timberlands Limited		186,266	
Hancock Forest Management (NZ) Ltd		170,775	
Hancock Natural Resource Group	170,775		
P F Olsen Ltd	1,250	105,383	
Rayonier New Zealand Ltd		119,714	
Ernslaw One	94,991	14,636	
OneFortyOne		62,946	
Summit Forests NZ Limited		39,041	
Tasman Pine Forests Ltd		36,559	
Pan Pac Forest Products		35,329	
Juken New Zealand		32,299	
Forest Enterprises	19,351	11,939	
Port Blakely Ltd		29,076	
Aratu Forests Ltd		28,817	
Crown Forestry (MPI) ¹		29,031	
Roger Dickie NZ	29,073		
Forest Management NZ Ltd		30,035	
Ngai Tahu Forestry		26,126	
Wenita		25,015	
City Forests		23,731	
NZ Carbon Farming Group Ltd		89,607	
Global Forest Partners LP	15,461		
The Rohatyn Group	966		
Totals	331,867	1,096,325	

Number of Forest Owners by National Size Class





Forest Area by Forest Owner National Size Class





Notes see page 14

13

Environmental Certification

As at 31 December 2020

Company	Environmental C	ertification Body
	FSC (ha)	PEFC (ha)
Rayonier New Zealand Ltd	157,827	157,827
PanPac Forest Products Ltd	46,073	
NZ Forest Managers Ltd¹	59,122	
Wenita Forest Products Ltd	29,182	-
Aratu Forests Ltd	35,013	35,013
Juken New Zealand Ltd	32,299	
PF Olsen Ltd	9,130	
Summit Forests NZ Limited	30,618	
The Rohatyn Group	966	
Kaingaroa Timberlands Limited	186,266	186,266
Port Blakely Ltd	37,370	
Southland Plantation Forest Company of New Zealand	13,907	
M&R Forestland Management Ltd	12,061	
China Forestry Group Corporation	20,050	
Tasman Pine Forests Ltd	36,559	
Ngai Tahu Forestry	45,828	
Forest Enterprises	18,066	
City Forests Ltd	23,731	
Ernslaw One Ltd	103,102	
Hancock Forest Management (NZ) Ltd	170,775	170,775
Craigpine Timber Ltd	2,266	
RMS FGI		5,164
OneFortyOne	79,935	
Total	1,150,146	555,045

P13 Notes:

This table is designed to identify who manages NZ forests.

Within "management" there are 2 main categories:

1) 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.

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.

 $^{\mathbf{1}}\text{All forests are managed by Crown Forestry, though day to day supervision is contracted to a range of forest}$ management companies.

Source Commercial Planted Forest Ownership and Management FOA Source Number of Forest Owners by National Size Class NEFD 2020

Source Forest Area by Forest Owner National Size Class MPI P14 Notes:

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

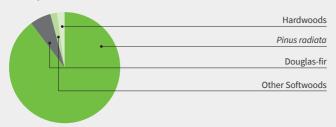
¹Crown Forestry forests are managed under an FSC licence held by NZ Forest Managers n.b. Productive Area = Net Stocked Area + Area Awaiting Restocking

Source Environmental Certification FOA

Planted Forests by Species

Species Distribution

As at 1 April 2020



Approximate Harvest Age Over the Past Five Years

Species	Harvest Age
Pinus radiata	29.3 years
Douglas-fir	41.4 years
Cypress	29.5 years
Eucalypts	21.7 years

Some **87%** of the trees in New Zealand plantation forests are *Pinus radiata*. Douglas fir is next with 7%. Hardwoods constitute 3% of the forest trees.

Minor Plantation Species

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

Other softwoods; Redwoods, Larch, Cryptomeria, Cypress

Indigenous species; Kauri, Tōtara, Black Beech (Tawairauriki)

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

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

Durable eucalypts; E. globoidea, E.bosistoana, E.quadrangulata, E. pilularis, E. muelleriana.

Most durable species include; *E. microcorys*, *E. cladocalyx*, Tötara, Silver Pine (Manoao), Robinia, Puriri

Source Species Distribution NEFD 2020

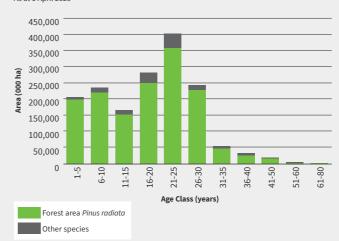
Source Approximate Harvest Age Over the Past Five Years MP

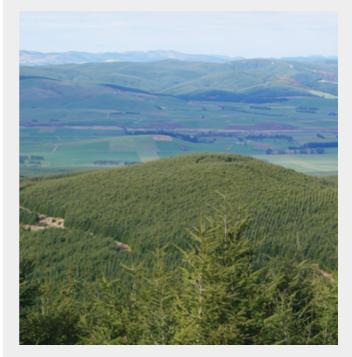
irce Box 1 NEFD 2020

Net Stocked Area by Age Classes

Forest Area by 5 Yearly Age Class

As at 1 April 2020





16

Source Forest Area by 5 Yearly Age Class NEFD 2020

Planted Forest Area by Regions

Area Planted in all Species by Territorial Authority

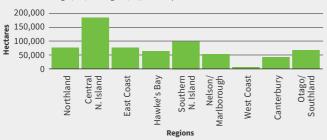
Region	Estimated Total Forest Area (HA)						
	2018	2019	2020	%			
Northland	187,489	185,943	188,586	11%			
Central North Island	567,478	562,792	564,448	34%			
East Coast	156,556	155,617	155,359	9%			
Hawke's Bay	133,710	131,733	131,994	8%			
Southern North Island	161,623	159,690	167,718	10%			
Nelson/Marlborough	166,981	165,077	109,301	7%			
West Coast	29,840	30,401	30,157	2%			
Canterbury	95,735	94,782	96,721	6%			
Otago/Southland	209,302	210,549	216,953	13%			
Total	1,704,494	1,696,584	1,661,237	100%			

Forest Area by Age Class and Wood Supply Region



Forest Area Planted in Pinus Radiata by Territorial Authority

Of Harvestable Age (21+) Per Region (ha), as at 1 April 2020



Area Planted in all Species by Territorial Authority & Forest Area by Age Class and Wood Supply Region NEFD 2020

Forest Area Planted in Pinus Radiata by Territorial Authority NEFD 2020 Source

Planted Forest Age and Volume



The average age of plantation trees was .3 years in April 2020, a increase from 17.9

Age Class Over Time



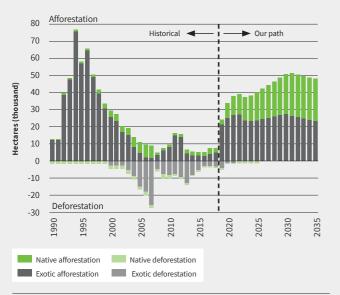
Source Box 1 NEFD 2020

Source Box 2 NEFD 2020

Source Age Class Over Time NEFD 2020

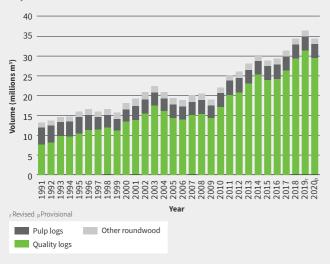
Forest Planting, Harvest and Deforestation

Afforestation and deforestation by year in the demonstration path¹



Plantation Forest Harvest

for year ended March



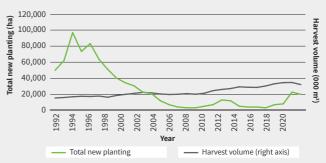
Notes

Exotic afforestation/deforestation areas include non-production exotics

Source Afforestation and deforestation by year in our path Climate Change Commission Plantation Forest Harvest MPI

Forest Plantings and Harvest Volumes

Year ended December 1992-2020



90,000 ha of Plantation Forest was Planted in 2019, Comprising 70,799 ha of REPLANTING AND 19,201 HA OF NEW PLANTING.

Tree Stock Sales from 2013 to 20201

Tree Stock Sales from 2013 to 2020 (millions)								
	2013	2014	2015	2016	2017	2018	2019	2020 ^p
Pinus radiata	48.5	47.2	45.8	49.3	48	56.6	84	88.4
Other	5.6	3.6	3.7	3.4	3.3	3.3	4.8	3.5
Total	54.1	50.8	49.5	52.7	51.3	59.9	88.8	91.9

Estimated Percentages of Total Area of Radiata Pine Planting by Categories

Estimated Percentages of Total Area of Radiata Pine Planting by Categories								
	2013	2014	2015	2016	2017	2018	2019	2020 ^p
Open pollinated seedlings	38	36	31	28	25	30	47	36
Control pollinated seedlings, cuttings/ clones	62	64	69	72	75	70	53	64

Notes

¹ MPI expect 2020 seedling planting to be nearly 100,000 seedlings

² Individual entries do not add up to totals due to rounding to the nearest 100,000

Source Plantation Forests and Harvest Volume NEFD 2020

Source Box 1 MPI

urce Tree Stock Sales from 2013 to 2020 Tree Stock Sales, MPI

rce Estimated Percentages of Total Area of Radiata Pine Planting by Categories Tree Stock

19

Forest Management Trends

Radiata Pine by Tending Regime

As at 1 April 2020



	2018 ^r Hectares	2019 ^p Hectares	2020 ^p Hectares
Pruned with production thinning	145,859	140,318	138,754
Pruned without production thinning	574,564	547,042	530,346
Unpruned with production thinning	51,664	50,733	52,931
Unpruned without production thinning	760,358	787,617	772,398

rRevised p Provisional

The area under an unpruned management regime continues to grow, to now about **51%** of the *Pinus radiata* forest estate. A year ago the rate was reported at 55%.

Pinus Radiata Harvest Volume by Log Type

For Year Ended 31 March 2020



Source Radiata Pine by Tending Regime MPI

Source Box 1 MPI

Source Pinus Radiata Harvest Volume by Log Type NEFD 2020

Typical Log Out-turn

Direct Sawlog Regime

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

			Length	Volume	Value	
	Waste	}	8 m	0.18 m ³	0%	
	Industrial grade logs	}	8 m	0.31 m ³	7%	
	Sawlogs		15 m	1.15 m³	43%	
	Pruned logs	}	5 m	0.64 m³	50%	
	Stump		0.2 m	0.03 m ³	0%	4
	Total		36 m	2.3 m ³	100%	

Structural Regime

Thinned. Final Crop Stocking 487 stems per hectare.

		Length	Volume	Value
	Waste	8 m	0.24 m ³	0%
	Industrial grade logs	8 m	0.41 m ³	20%
	Sawlogs	19 m	0.95 m³	80%
	Pruned logs	0 m	0.00 m³	0%
	Stump	0.2 m	0.01 m ³	0% 4
	Total	35 m	1.61 m³	100%

22

Source Direct Sawlog Regime & Structural Regime Scion

Log Flow in the New Zealand **Forestry Industry** Processed in New Zealand From indigenous forest From plantation forest 32,899,000 10.000 12,826,000 Chip export 200.000 400.000 Total log input **32,909,000** Sawlogs and peelers Pulp **Reconstituted panels** 8,168,000 3,275,000 773,000 Log export **20,083,000** Processed in New Zealand 961,000 12,826,000 Plant residues (estimated) 3,676,000 Sawmills 7,207,000 **Forest residues** Not available THE INDIGENOUS REPRESENTS LESS THAN **0.03%** of the total. Source Log Flow in the New Zealand Forestry Industry MPI

Reporting a Suspected Pest/Disease

Sirex Woodwasp



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.

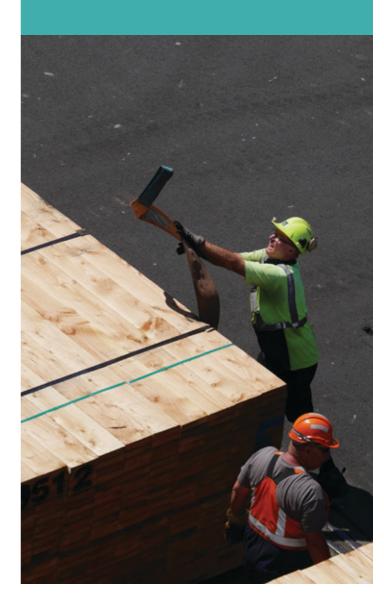
Infestations of the sirex woodwasp, accidently imported into New Zealand more than a 100 years ago, causes pine trees to rot and India assesses it as a phytosanitary concern.

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 March 2021



1. China (People's Republic of) \$NZ 2,970,924,832

Logs 2.814.948.385 Panels 13,090,193

44,110,112 3 Paper & Paperboard 3 Sawn Timber & Sleepers 106,719,483 268.319.319

Pulp All other 5,645,105

2. Australia \$NZ 517,511,076

Logs 2.463.445 2 Panels 60,125,587 171,233,958 Paper & Paperboard

Sawn Timber & Sleepers 118,896,516 Pulp 58.885.232 110,297,323

All other

O 7. India \$NZ 157,503,630

Logs 67.635.451 Panels 4,524,600 5,919,415 Paper & Paperboard Sawn Timber & Sleepers 3,266,941 Pulp 45.730.981 All other 2,607,519

8. Indonesia \$NZ 121,032,028

Logs 165.889 Panels 15,166,116 4,997,006 Paper & Paperboard Sawn Timber & Sleepers 21,788,215 3 Pulp 59,225,837 3 All other 23,614,280

O 3. South Korea \$NZ 366,642,239

267,605,410 2 Logs Panels 2.589.105 17.351.850 Paper & Paperboard Sawn Timber & Sleepers 21,189,525 2 Pulp 61,495,482

412.495

O 4. Japan \$NZ 335,915,675

45,047,565 Logs 163,507,533 Paper & Paperboard 459,173 Sawn Timber & Sleepers 25,004,190 24,610,732 Pulp 2 All other 68 912 165

O 9. Thailand \$NZ 123,395,238

120,676 Logs Panels 351.527 2 Paper & Paperboard 61.936.307 Sawn Timber & Sleepers 24,215,559 Pulp 29,858,440 All other 1.609.476

0 10. Viet Nam \$NZ 115,650,908

Logs Panels 28.337.411 Paper & Paperboard Sawn Timber & Sleepers 66,223,574 Pulp All other 1,928,073

5. United States \$NZ 289,508,420

All other

Logs 22,719 33,611,823 2.595.616 Paper & Paperboard 1 Sawn Timber & Sleepers 238,750,734 Pulp 36 All other 11,672,728

O 6. Hong Kong \$NZ 139,516,603

3 Logs 149,191,673 798,654 Paper & Paperboard 10.382.777 Sawn Timber & Sleepers 97,944 863,287 All other 635,819

O 11. Taiwan \$NZ 85,782,725

Logs 24,288,252 7,293,397 Paper & Paperboard 5.774.816 Sawn Timber & Sleepers 29,244,573 Pulp 16,126,044 All other 653,212

12. Other \$NZ 425,501,043

Logs 2,907,919 Panels 56,100,444 Paper & Paperboard 110.458.763 Sawn Timber & Sleepers 175,550,883 Pulp 42,888,561 All other 30,368,785

Source Top Export Destinations Stats NZ 27 28

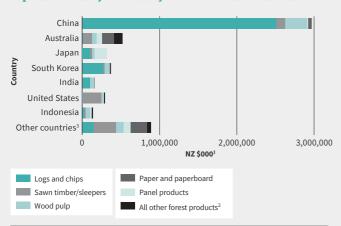
Export Value by Destination and Product¹

For year ended 31 December 2020

Total Export Value by Main Countries of Destination

	Total Export Value (NZD\$)				
Country of Destination	2018	2019	2020		
China	3,243,381,444	3,272,196,860	2,970,924,832		
Australia	702,372,063	575,135,608	517,511,076		
Japan	420,419,941	408,747,127	335,915,675		
South Korea	483,049,227	393,451,527	366,642,239		
India	295,897,508	326,496,242	157,503,630		
United States	255,765,110	251,542,925	289,508,420		
Indonesia	187,562,854	145,667,501	121,032,028		
Thailand	150,684,735	136,462,037	123,395,238		
Vietnam	107,505,637	102,149,621	115,650,908		
Philippines	101,289,775	97,682,329	65,977,809		
Taiwan	116,727,809	86,952,920	85,782,725		
Hong Kong	110,757,104	76,584,662	139,516,603		
Malaysia	114,623,264	76,055,802	62,588,486		
Saudi Arabia	48,870,040	60,637,234	52,699,453		
Netherlands	39,662,510	44,302,035	37,597,690		
All other destinations	319,864,048	250,070,037	206,637,605		
Total	6,698,433,069	6,304,134,467	5,648,884,417		

Exports of Forestry Products by Main Countries of Destination



Notes

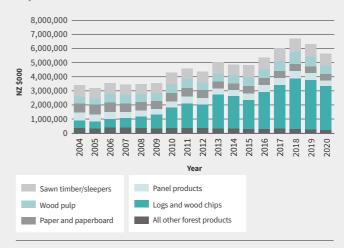
- Values are NZ\$ f.o.b. and may include items, e.g. some plywood items, for which no quantities are given.
 All other forestry products include chips, mouldings, manufactures of paper and paperboard, furniture
- and miscellaneous forestry products.

 ³ Other countries are all other countries to which New Zealand has exported forest products during the year.

Source Top Export Value by Main Countries of Destination MPI
Source Exports of Forestry Products by Main Countries of Destination MPI

Major Forest Product Export Earners¹

For year ended December 2020





Log and Wood Export Values



Notes

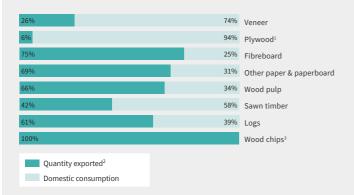
¹ Paper and paperboard includes Newsprint data, therefore differs from Statistics NZ data

Source Major Export Earners Stats NZ and FOA

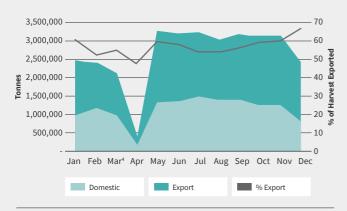
Source Log and Wood Export Values Westpac Economic Bulletin 2020

Production and Exports of Selected Forestry Products

For Year Ended 31 December 2020



NZ Plantation Harvest: 2020



MPI expects log exports to increase in value by \$180 million, in the year to June 2022 from the \$3,610 million in 2021, while other forest export returns remain static.

Notes

¹ Plywood includes laminated veneer lumber

² Exports excluded re-exports

Domestic consumption unavailable
 NZ Covid lockdown 23 March – 13 May 2020

·

Source Production and Exports of Selected Forestry Products MPI, Statistics NZ and FOA Source NZ Plantation Harvest 2020 FGLT

Source Box 1 SOPI June 2021

New Zealand Lumber and Log Production and Exports

Lumber Production and New Zealand Lumber Exports



Lumber productionNew Zealand lumber exports

Forestry Export Revenue, 2018-22 (\$NZ million)

For Year Ended June

		Actual Forecast			
Year to 30 June	2018	2019	2020	2021	2022
Logs	3,337	3,806	2,877	3,230	3,330
Sawn timber & sleepers	890	936	809	930	950
Pulp	828	812	646	630	630
Paper & paperboard	491	491	492	460	440
Panels	501	514	438	460	500
Chips	56	67	56	50	60
Other forest products ¹	281	257	222	240	240
Total	6,382	6,883	5,539	5,990	6,150
Y/Y % change	+16.4%	+7.9%	-19.5%	+8.1%	+2.7%

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

Notes

¹ Other forest products include: structural or moulded wood, furniture and prefabricated buildings

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

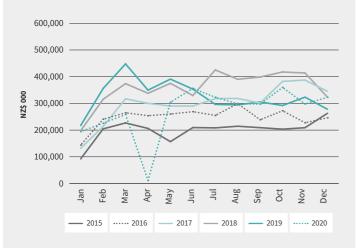
Source Forestry Export Revenue, 2018-22 SOPI

Source Box 1 FOA, Meat Industry Association and Dairy NZ

New Zealand Logs

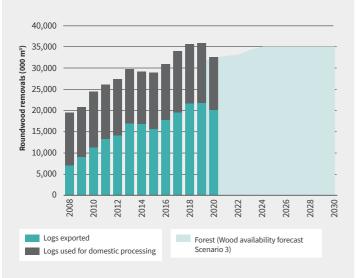
Export and Domestic Log Value

For Year Ended December



Volume of Logs used in Domestic Processing versus Exported

For Year Ended December

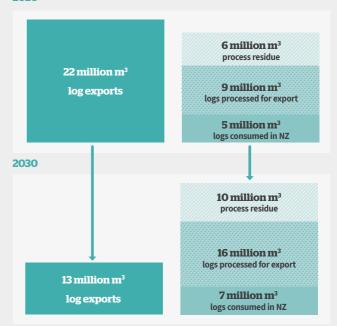


rce Export and Domestic Log Prices MPI

Source Volume of Logs used in Domestic Processing versus Exported Stats NZ and MPI

Transformation Scenarios for New Zealand Forest Industry

2020







Anticipated additional export sector returns in 2030



Notes

Both 2020 and 2030 harvests are assumed at 36mm³ of logs

Source A Transformation Scenario for New Zealand FOA

Source Anticipated additional export sector returns in 2030 Fit for a Better World – Background

analysis on export earnings in the primary sector

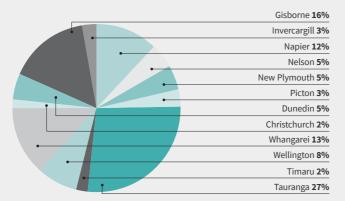
Log Exports by Port

Log Export Quantity and Export Value by Port

For Year Ended March 2020

Port of Loading	Export Quantity (m³)	Export value (\$NZ)
Auckland	52,418	9,626,480
Christchurch	326,745	56,160,131
Dunedin	987,881	136,565,210
Gisborne	3,136,799	495,605,271
Invercargill	539,753	92,860,850
Napier	2,409,210	373,033,182
Nelson	962,529	132,588,946
New Plymouth	921,746	146,804,870
Picton	682,607	97,873,027
Tauranga	5,428,984	822,457,858
Timaru	431,619	61,981,140
Wellington	1,547,357	233,665,714
Whangarei	2,655,225	414,231,156
Total	20,082,874	3,073,453,835

Logs Percentage Export Quantity by Port1





Notes

Source Log Export Quantity and Export Value by Port MPI Source Logs Percentage Export Quantity by Port MPI

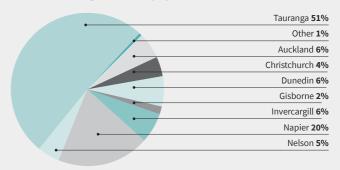
Sawn Timber Exports by Port

For Year Ended March 2020

Sawn Timber Export Quantity and Export Value by Port

Port of Loading	Export Quantity (m³)	Export value (\$NZ)
Auckland	100,239	64,095,684
Christchurch	69,498	29,652,286
Dunedin	108,898	38,948,753
Gisborne	31,468	6,757,798
Invercargill	105,786	36,193,020
Napier	336,867	127,326,726
Nelson	81,749	34,411,336
Tauranga	880,906	506,431,675
Timaru	366	222,973
Wellington	3,723	4,968,298
Whangarei	708	397,141
Total	1,720,208	849,405,690

Sawn Timber Export Quantity by Port



Sawn Timber Production 2001-2020



Source Sawn Timber Export Quantity and Export Value by Port MPI

Source Sawn Timber Percentage Export Quantity by Port MP

Source Sawn Timber Production to December 2020 MPI

Ports with <1% not included.

Forest Processing Industry 2021 Updated March 2021

○ Northland		Kopine, Thames	
BBS Timbers Ltd, Whangarei		Max Birt Sawmill (Ohinewai)	(S
CHH Woodproducts, LVL		Oji Fibre Solutions, Penrose	(PTP
(Marsden Point)		Pallet Supplies Co Ltd,	
Colville Sawmill Company		Manukau	
Croft Poles Ltd (Whangarei)	(S)	Papakura Timber Processors Ltd, Papakura	(S
ETC 2006 Ltd, Marsden Point		Timberlab Solutions Ltd	
Juken New Zealand Ltd Northland Mill (Kaitaia)	(S)	(Auckland)	
Juken New Zealand Ltd		Topuni Timber Ltd, Kaiwaka	
Triboard Mill (Kaitaia)		TTT Products Ltd, Tuakau	(PO
Kaihu Valley Sawmill, Mamaranui	(S¹)	G J Weck and Sons Limited, Papakura	
Kiwi Timber Protection Ltd, Whangarei	(MW)		
Mac Direct Ltd, Patumahoe	(S)	Central North Island	
Marusumi Whangarei Ltd (Marsden Point)	(-,	Alkieman Custom Jointing Ltd, Tokoroa	
Mt Pokaka Timber Products (Kerikeri)	(S)	Central Wood Recyclers Limited	
North Sawn Lumber (Marsden Point)		CHH Woodproducts Kawerau Sawmill (Kawerau)	(S)
Northpine Sawmill (Waipu)	(S)	CHH Woodproducts, Plywood	(P)
Rosvall Sawmill (Whangarei)	(S)	(Tokoroa)	
Timpack Industries Ltd,	(MW)	Claymark Profiles, Rotorua Claymark Rotorua Sawmill	(S
Auckland		Ltd (Rotorua)	(5)
TTT Products (Tuakau)	(6)	Claymark Sawmills (Katikati)	(S)
Waipapa Pine (Whangarei)	(S)	Donnelly Sawmills (Rotorua)	(S
O Auckland		Hautapu Pine Products Limited, Taihape	(PO
Abodo Wood Ltd, Auckland		Hume Pine (Rotorua)	
Anderson & O'Leary Ltd		Kiwi Lumber (Putaruru)	(S
(Pinepac), Whenuapai		KLC (Rotorua)	
Big Tuff Timber Products Limited, Puhinui		Laminated Beams Ltd (Papamoa)	
Central Frame and Truss,		Laminex Group (Taupo)	
Auckland		Les O'Leary Limited, Tokoroa	(S
Claymark Ltd, Henderson	(MW)	Lockwood Group (Rotorua)	
Claymark Ltd, Thames	(S ²)	Lumbercorp N.Z. Ltd Huntly	
Cypress Sawmill, Waitoki	(S)	LumberOne Ltd (Tauranga)	
Herman Pacific Ltd, Silverdale	(S)	McAlpines (Rotorua)	(S
Max Birt Sawmills (Pokeno)	(S)	North Sawn Lumber Ltd, Ruakaka	
Jenkin Timber (Auckland)	. ,		
JSC Timber, Kumeu	(MW)		

Oji Fibre Solutions Kinleith Mill (Tokoroa)	(PP)	O Hawke's Bay	
Oji FS Tasman Ltd (Kawerau)	(PP)	East Coast Lumber (Wairoa)	(S)
Otorohanga Timber	, ,	Napier Pine (Napier)	(S)
Company (Otorohanga)		Pan Pac Forest Products Ltd (Napier)	(S, PP)
OTC Timber Co Ltd,		Ruahine Timber 2017	(PO)
Otorohanga	(DD)	Limited, Ormondville	
Pedersen Kawerau Limited Pedersen Kinleith Limited		The Pallet Company Ltd,	
Permapine (Reporoa)	(FF)	Napier	
Pacific Pine Industries	(S)	Tumu Timbers (Hastings)	
(Putaruru)	(-/		
Pine Sawmills (Rotorua)	(S)	Southern North Island	
Pukepine Sawmills (1998) Ltd, Te Puke		Clelands Timber Products Ltd (New Plymouth)	(S)
Pure Pine Mouldings (Te Puke)		Davis Sawmilling Co (Featherston)	(S)
Red Stag Timber (Rotorua)	(S)	Eastown Timber Products Ltd	(S)
R.H. Tregoweth Ltd, Te Kuiti	٠,	(Whanganui) Juken New Zealand	(S/PP)
SCA Hygiene Australasia (Kawerau)	(PP)	(Masterton)	(3/PP)
Sequal Lumber (Kawerau)	(S)	Kaimata Sawmills, Inglewood	(S)
Tauriko Sawmill & Timber		Kiwi Lumber (Dannevirke)	(S)
Supplies, Tauranga	(6)	Kiwi Lumber (Masterton)	(S)
Tenon Manufacturing Ltd (Taupo)	(5)	Lumber Processors, Pahiatua	(S) (S, PO)
Timpack Industries Ltd,	(MW)	Mangorei Plus, New Plymouth	(3, PO)
Mount Maunganui		Mitchpine Ltd (Levin)	(S)
Waitete Sawmills Ltd, Te Kuiti		Pukeko Sawmills, Lepperton	(S)
Whakatane Mill Ltd	(PP)	Taranakipine, Bell Block	(S)
(Whakatane) Winstone Pulp International	(S, PP)	Taranakipine Ltd (New Plymouth)	
(Ohakune) WJ Mouldings Ltd (Tauranga)		Taranaki Sawmills Ltd	
WPI Tangiwai Sawmill &	(S, PP)	Techlam (Levin)	
Pulpmill, Karioi	(-,,	Ticehurst Timber Processors Ltd, Carterton	
○ East Coast		Timpack Industries Ltd, New Plymouth	(MW)
East Coast Lumber Ltd		Value Timber Supplies Ltd,	
Juken New Zealand,		Inglewood W. Crighton & Son Ltd (Lovin)	(S)
Gisborne Mill	rau) (PP) ed (PP) d (PP) (S) (S) (S) (S) (S) (S) (S)	W Crighton & Son Ltd (Levin)	(3)
Kiwi Lumber (Gisborne) Limited, Gisborne		O Noloon /Moulhouseh	
Wood Engineering	(S)	○ Nelson/Marlborough	

CHH Wood Products, Nelson

Sawmill (Eves Valley) D&E Taylor Timbers Ltd,

Eurocell Wood Products

Goldpine Ltd (Richmond)

Норе

(Nelson)

(S)

Wood Engineering

Technology Ltd

Notes
1 >50,000 BDU per annum.

² >20,000m³ production per annum.

Forest Processing Industry 2021 Continued

Halswell Timber Limited		Philip Wareing Ltd, Methven	
(Nelson)		Point Lumber Ltd, Washdyke	(PO)
Heagney Bros Ltd, Blenheim		Southern Pine Products Ltd	
Motueka Lumber Co	(S)	(Christchurch)	
(Motueka)		SRS New Zealand Ltd	(S)
Nelson Forests Ltd (Renwick)	(S)	(Rolleston)	
Nelson Pine Industries (Richmond)	(PP)	Starwood Products Ltd (Timaru)	
Oji Fibre Solutions (NZ) Tasman		Steve Murphy Limited, Kaiapoi	
Plankville Ltd, Richmond	(S)	Stoneyhurst Timbers Ltd	(S)
Prowood Ltd (Motueka)	(S)	(Christchurch)	
Southpine Ltd (Nelson)	(S)	Sutherland & Co Ltd, Kaiapoi	
Southwood NZ Limited,	(S)	Temuka Timber & Firewood, Temuka	
Motueka			
Timberlink New Zealand Ltd, Blenheim		Timpack Industries Ltd, Timaru	
Timpack Industries Ltd, Nelson	(MW)	Triple Trees Ltd T/A Waitohi Timber, Temuka	
XLAM (Nelson)	(MW)	Westco Lumber Ltd (Christchurch)	(S)

_		
\odot	Canterbury	

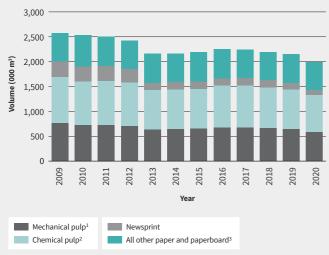
Canterbury		O Wash Coash	
Adams Sawmilling Co Ltd,	(S)	West Coast International Panel and	(PP)
Ashley Industrial Services	(S)	Lumber Ltd (Greymouth)	
Ltd, Oxford	(5)	NZ Sustainable Forest Products Ltd (Reefton)	(S)
Belfast Timber (Christchurch)		Southern Pine Products Ltd	(S)
Bennetts Sawmill Limited, Oxford	(S)	(Stillwater) (Greymouth)	
Brindle Sawmills Ltd (Christchurch)	(S)	Stillwater Lumber Ltd, Stillwater	(S, WP)
Canterbury Roundwood 2006	(MW)	Westco Lumber Ltd (Hokitika)	(S)
Ltd, Rangiora	()	Westimber Limited, Ngahere	(S)
Canterbury Woodchip	(CEF)		
Supplies Limited, Arundel		Oters Couthland	
Daiken (Rangiora)	(MW, PP)	Otago Southland	4-1
Fraemohs Industries (Kaiapoi)		Beven West Sawmilling Ltd, Invercargill	(S)
John Fairweather Specialty Timber Solutions, Sefton	(S)	Craigpine Timber Ltd (Winton)	(S)
Loburn Sawmill Limited,	(MW)	Daiken Southland Ltd (Mataura)	
Loburn	(MW)	Findlater Sawmilling Ltd,	
Lumberworx Ltd (Christchurch)	(MW)	Winton	
McAlpines (Rangiora)	(S)	Gorton Timber Co Ltd, Milton	
McVicar Timber Group Ltd,	(S)	Hewvan Enterprises Ltd,	
Christchurch	(0)	Palmerson	
Mitchell Bros Sawmillers Ltd, Darfield	(S)	Hollows Timber Co Ltd, Balclutha	
Niagara Sawmilling Ashburton		Lindsay & Dixon (Tuatapere)	(S)

Ngahere Sawmilling Co	(S)	Sawmills	
(Gore)		<25,000	S1
Niagara Sawmilling Co Ltd	(S)	25,000 - 49,999m ³	S1
(Invercargill/Ashburton)		50,000 - 99,999m ³	S^2
Otago Lumber (Gore)	(S)	1000,000 - 249,999m ³	S ³
Pan Pac Otago (Mosgiel and	(S)	250,000 - 499,999m³	S ⁴
Milton)		>500,000m ³	S ⁵
Pankhurst Sawmilling (2015)	(S)	Dun annium Dlamta	
Ltd, Riverton		Processing Plants	F
Pooles Timber Ltd t/a Great Southern, Invercargill	(S)	Fibreboard (MDF & Hardboard)	•
,		Particleboard (Incl	Р
Southwood Exports (Awaura)	(=)	Strandboard)	
Stuart Timber Co Ltd (Tapanui)	(S)	Plywood	PL
	(MW)	Poles	РО
Timpack Industries Ltd, Dunedin	(IVIVV)	Pulp and Paper	PP
Truss Tech (Cromwell)		Veneer/LVL/CLT	V
,	(00)		-
Young Brothers (2016),	(PO)	Paper/Tissue/Paperboard	PTP
Mosgiel		Chip Export Facilities ¹	CEF
		Manufactured Wood	MW
		Products ²	

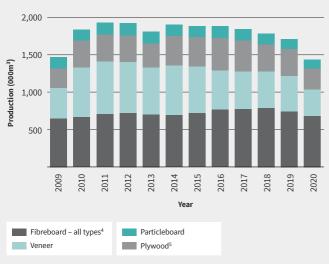


Paper, Pulp and Panel Products Production

Paper and Pulp Production 2009-2020



Panel Products Production

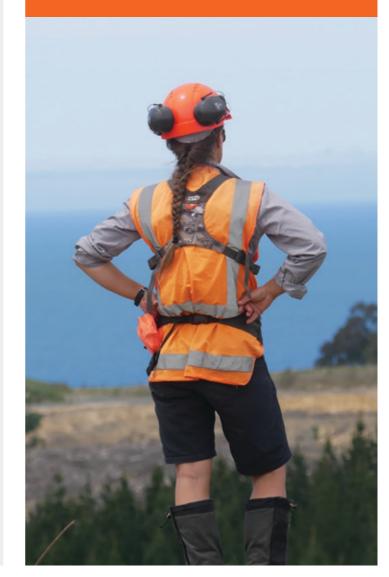


Notes

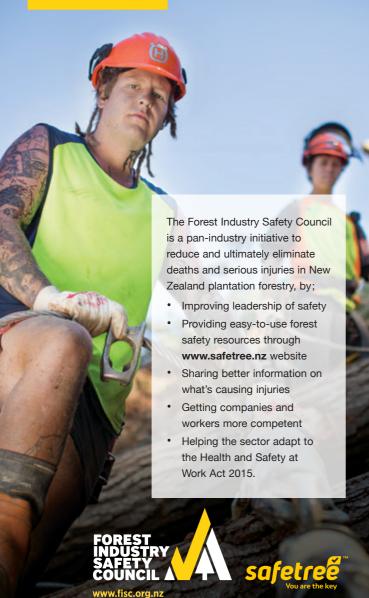
- Mechanical Pulp is those export items in HS item grouping 4701.
- ² Chemical Pulp is those export items in HS groupings 4702, 4703, 4704 and 4705.
- ³ All other paper and paperboard includes printing and writing paper, other paper and paperboard.
- ⁴ Fibreboard includes MDF, hardboard & softboard
-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

Source Paper and Pulp Production MPI Source Panel Products Production MPI **SECTION 4**

Health, Safety and Training

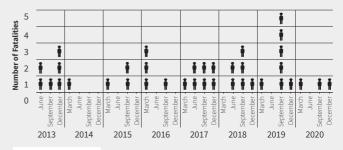


TOGETHER TOWARDS ZERO



Health and Safety in the Forest Industry 2013-2020

Fatalities



Fatality

Severe Injuries¹

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



Injuries per 1,000 workers

- Injuries per 1 million m3 roundwood harvested

How Do We Compare?²

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



Notes

- Rolling average last four quarters.
- ² Rolling average last four quarters per 1,000 workers.

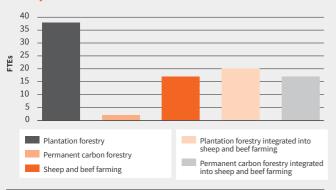
Injury data in this dashboard is based on ACC claims where someone receives a period of weekly compensation within a quarter. This data lags by 6 months due to claim processing time.

Source Fatalities WorkSafe/MPI/FISC
Source Severe Injuries WorkSafe/MPI/F

Source Severe Injuries WorkSafe/MPI/FISC Source How Do We Compare? WorkSafe/MPI/FISC

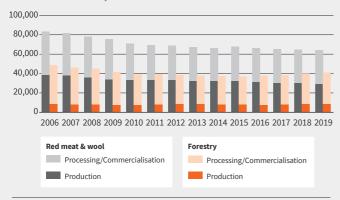
Forestry Workforce

Annual total value chain impact per 1,000 hectares - FTEs by land-use

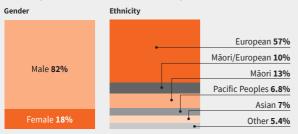


Employment Counts

Red meat & wool and Forestry industries 2006-2019



Forestry Sector Gender and Ethnicity 2019



Source Annual total value chain impact per 1,000 hectares – FTEs by land-use Economic Impacts of Forestry In New Zealand, PwC 2020

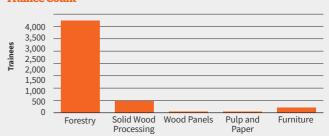
Source Employment Counts Human capability in the primary industries, MPI

Source Forestry Sector Gender and Ethnicity 2019 Human capability in the primary industries, MPI

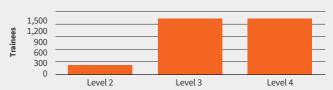
Industry Training 2020

22 students completed their degrees at the University of Canterbury School of Forestry in 2020 – **18** with a Bachelor of Forestry Science and **4** with a Bachelor of Engineering (Forest Engineering) degree.

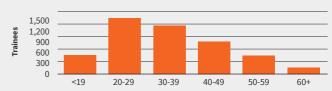
Trainee Count



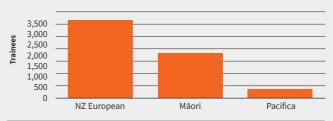
Trainee by Qualification Level



Trainees by Age



Trainees by Ethnicity



Source Box 1 University of Canterbury

Source Industry Training 2020 Competenz



Free forestry training*

Includes forestry apprenticeships, traineeships and micro-credentials

Employers of first or second-year apprentices may be eligible for wage subsidies

Micro-credentials are available in tree planting and the forestry environment

Flexible programmes to suit your business.

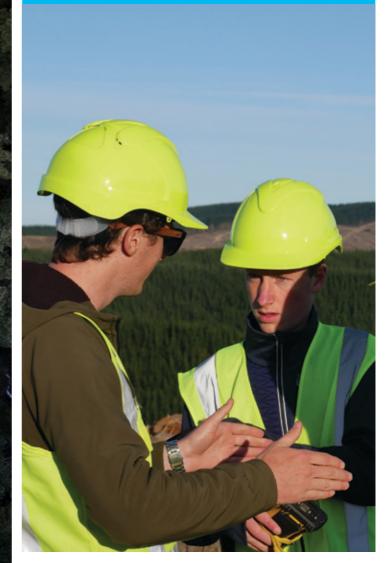
*Forestry qualifications are free from 01 July 2020 to 31 Dec 2022

Contact your account manager to talk about free training today

0800 526 1800 freetraining@competenz.org.nz competenz.org.nz

SECTION 5

Supplementary Information



Forestry Roadmap to 2050

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 well trained.

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.



Forest Growers Levy Trust Inc



The current Harvested Wood Material Levy Order runs from 2019 to 2025. It is the second six-year order for wood material under the Commodity Levies Act 1990 voted for by Levy payers during the period. The Levy is paid on logs delivered to mills and ports. The rate for 2020/21 is 33 cents per tonne of harvested log.

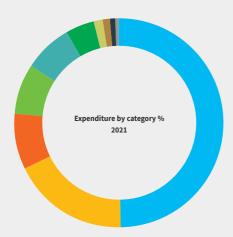
The Levy generated in 2020 was \$8,667,677, which was less than in 2019, mostly due to the covid lockdown disruption.

The Levy investment, through a yearly industry good Work Programme, is made by a seven-person board with an independent chair and representation of both larger and smaller scale foresters.

https://fglt.org.nz/



How the FGL is Invested



49.6% Research, Science and Technology

The large research programme is focussed on improving the profitability and sustainability of forest growers large and small and extends across the value chain from genetics to the harvesting supply chain. 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, finding longer term solutions to the wilding conifer problem in parts of New Zealand and better understanding of forest fire behaviour.

Two new programmes commenced during the year, one on improving the efficiency and cost effectiveness of vegetative plant propagation systems and the other on introducing new automation and robotics technology into the post-harvest supply chain with the aim of enhancing safety and attractiveness of forestry work.

Licence to operate issues were addressed with projects to reduce the incidence of tree breakage on steep land, and the development of harvesting equipment to remove harvesting slash from waterways on steep land. The programme also has a focus on other commercial tree species and overcoming some of the processing challenges to give land owners greater confidence to grow these species. A joint project with the Radiata Pine Breeding Company to assess growth performance of the latest improved genetics was also started during the year.

18% 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.

O 8.6% Promotions

NZ Wood/Love our Forests campaign in print, television, social media and highway billboards.

Publications, including Facts and Figures, external memberships, sponsorships. Close coordination with the Training and Careers committee for the maintenance of Careers and Training website and collateral material for Regional Wood Councils. Regional support of careers promotion. Public opinion surveys.

O 7.9% Forest Biosecurity

Forest biosecurity surveillance of high-risk sites including field activities and diagnostic identification of samples. Work has continued on the development and field trialling of a general surveillance app – Find-A-Pest – with co-investment by MPI and other stakeholders, and work continued alongside other sectors on the development of a Plant Production Biosecurity Scheme.

○ 7.3% Health and Safety

This is the industry commitment to support the work of the Forest Industry Safety Council (FISC). 2020 initiatives marked the reaching of 260 Certified Contractors and the launching of a major review of the Certified Contractor scheme to build on this success. Injury rates that require more than a week off work have reached all-time lows in 2020. The FGLT contribution to FISC supported ACC and WorkSafe health and safety initiative based funding worth a combined 5754k.

O 4.5% Training and Careers

The Training and Careers Committee serves small, medium and large plantation forest owners, as one forum including; FISC, FICA, the Forestry and Wood Processing Workforce Council, the Forestry Rove Advisory Group and Competenz, as well as government, funders and training providers.

The Committee oversees the Forestry Careers website – https://www.forestrycareers.nz/about-us/ and manages both Facebook and Instagram sites to promote forestry careers.

The Committee actively promotes forestry careers, both directly and by working with and through other agencies and develops and distributes resources to assist training and career providers.

Some training providers are also assisted directly, with FGLT funding and targeted resources, including support for the University of Canterbury School of Forestry, the Grow Me and Generation programmes and Tokomariro School forestry training.

Future Foresters are supported in providing professional development courses for their members and to represent the industry at career functions nationally.

1.3% Forest Resources and Environment

This Committee develops policies on forest growing and environment issues, including collective data on FSC certified forest companies' biodiversity management, climate change, freshwater management and carbon sequestration.

The Committee advises government on environmental matters. It provides guidance and management support on rare and endangered species in plantation forests.

A focus has been on representing industry views and informing industry on legislative changes, such as the NES-PF. the NES-IB and the RMA reforms.

O 1.1% Small and Medium Forest Enterprises

A major project for this Committee in 2020 was Stage One of the TreeFarmer web tool, a prototype geospatial web tool to improve small-scale forest growers' harvesting (SSFG), through raising the grower's awareness of the issues and decisions.

This Committee monitors industry initiatives being headed by other sectors of the industry relevant to the SSFG and helps communicate these initiatives to the SSFG.

O 0.9% Transport

This Committee works closely with the Log Transport Safety Council. The Committee developed, with SCION, a Log Transport Calculator to analyse the transport volumes at a regional or even individual road level. This is now used regularly regionally to calculate log traffic.

The Committee represents forest growers' interests at local and central government. Research into fatigue and other issues will make log transport safer and more productive.

A major initiative this year was the updating of the Log Transport Safety Accord.

O 0.45% Fire

The Levy helps fund the fire season awareness campaign conducted by Fire and Emergency New Zealand, along with promoting fire awareness through the established Love our Forests campaign. The committee also partners with FENZ throughout the year to support rural fire prevention and management.

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

In 2019, New Zealand's total gross emissions were 82.3 million tonnes of carbon dioxide (Mt CO,-e). In 1990, gross emissions were 65.8 Mt CO,-e.

In 2019, 27.6 Mt $\rm CO_2$ -e was removed from the atmosphere by the forestry sector, compared with 24.0 Mt $\rm CO_2$ -e in 1990. Forestry sector carbon removals in 2019 reduced total emissions to 54.7 Mt $\rm CO_2$ -e net or a 33.5% offset.

Agriculture continued to be the largest contributor to New Zealand's Greenhouse Gas Emissions, with 48.1% of the total at 39.6 Mt $\rm CO_2$ -e, compared with energy at 41.6%.

	Total emissions (million tonnes CO ₂ -e)	2018-20 Population (millions)	Emissions per each (tonnes CO ₂ -e)
Sheep	8.53	26.8	0.32
Deer	0.49	0.9	1.84
Beef	5.89	3.9	1.51
Dairy	14.01	6.3	2.22
Vehicles	16.5	3.8+	4.34*



Notes

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

*Automobile Association +Motor Industry Association

Source MfE, FOA

Source PCE, Primary sector bodies

Forests Removing Carbon

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

Forests act as carbon sinks – a reservoir which removes and stores more carbon from the atmosphere than it releases. Trees use carbon dioxide (CO_2) as part of their 'breathing' cycle – taking in CO_2 and storing it within roots, trunks and branches – and releasing oxygen.

A young forest will remove small amounts of CO₂ until the trees establish and 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.

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.

New Zealand has committed to reduce net greenhouse gas emissions to 30% below 2005 levels by 2030 and to zero by 2050.

Emissions Units Traded Volume and Price Changes

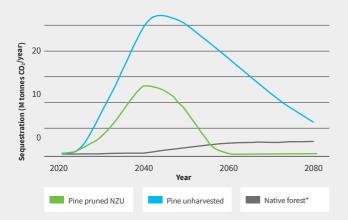


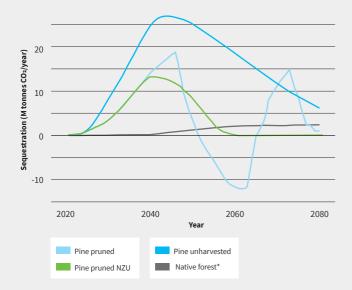
1990 to 2015 National Greenhouse Gas Inventor

Source Emissions Units Traded Volume and Price Changes MPI, Margules Groome

Forestry the Solution in Carbon Zero Pathways

CO₂ sequestration, Climate Change Commission projection outcomes to 2080 from an additional 380,000 ha of new exotic and 300,000 ha of indigenous planting by 2035





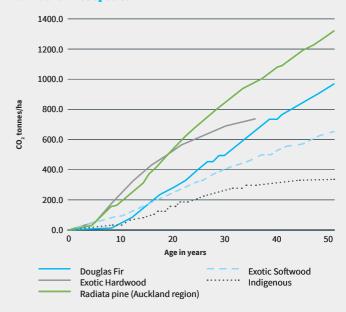
Notes

*Assuming current Ministry for Primary Industries "average" native forest carbon sequestration yield table. This table is highly likely to be revised with new data, as yields vary with site, species and management.

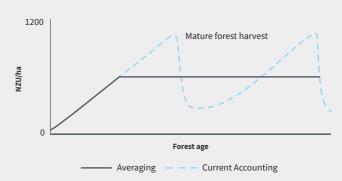
Source CO₂ sequestration, Climate Change Commission projection outcomes to 2080 Euan Mason, University of Canterbury, School of Forestry

Carbon Sequestration

Default Yield Tables of CO_2 Storage for Radiata and Other Tree Species



Carbon accounting practices

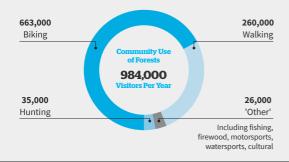


Forests first registered in the ETS between 1 January 2019 and 31 December 2022 will have the option to move to averaging in 2023. Forests registered before 1 January 2019 will remain on the stock change (current) approach.

Source Default Yield Tables of CO₂ Storage for Radiata and Other Tree Species MPI Source Carbon accounting practices SOPI June 2019

FSC Certified Plantation Forests Contribution to Social, Economic and Environmental Wellbeing

Visitors



Area Certification Statistics



Area under certification 1,167,885 ha





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



9,315 haHigh conservation value areas protected

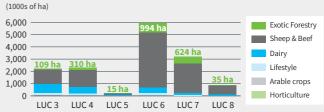


86 Special Areas managed by forest companies

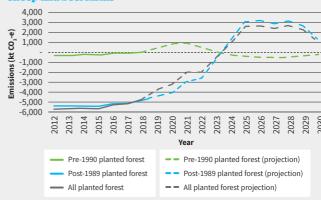


Forestry as a Land Use

Farms Online (15.9m ha) - Land Use by Land Use Capability¹



Net emissions and removals from vegetation and soils on sheep and beef farms



Sites within Target Range of Soil Quality Indicators by Land Use by Land Use to ensure best yields and lowest environment damage



Notes

¹ The highest Land Use Capability class is 1, with classes 1-4 capable of cultivation, to steep class 8 with little productive capacity.

Source Farms Online - Land Use by Land Use Capability MPI

irce Net emissions and removals from vegetation and soils on sheep and beef farms

MfE. March 2021

Source Sites within Target Range of Soil Quality Indicators by Land Use, 2014-18 Manaaki
Whenua – Landcare Research

Sector Agreements

Plantation Forestry Rural Fire Control Charter 2021

FOA, FFA, FENZ and Te Uru Rākau New Zealand Forest Service support a charter to encourage working together to develop and promote objectives and actions to improve wildfire management for NZ, and communicate these objectives to our respective members and personnel.

Log Transport Safety Accord 2008 and 2021

FOA, FFA, FISC, FICA, Road Transport Forum and Log Truck Safety Council agree to improve log truck safety for drivers and the pubic alike, on public and private roads. The parties support compliance with all regulations and codes of practice, recognise the importance of complying with speed limits, disincentivise overloading, back the LTSC Operator Certification Programme and driver training, reduce driver fatigue, promote mechanical improvements for both trucks and loading equipment, identify roading infrastructure priorities, contribute to accurate incident reporting, educate the public on safety awareness and produce a yearly Safety Improvement Plan.

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.

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.

Cooperation with Farmers 2013

The MOU with Federated Farmers, FOA and FFA is to manage relationships between forest owners/managers and their farming neighbours to promote co-operation and constructive neighbourly relations.

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.

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.

Terms, Names and Sites

Area and volume

- An average Pinus radiata tree yields 2.4 m³ of wood at harvest.
- 1 hectare of 28 year-old *Pinus radiata* contains between 650 and 800 m³ of wood.
- 1 hectare grows up to 28 m³ 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.
- By weight, the ratio of carbon to oxygen in carbon dioxide is 1-2.66.

Abbreviations

AAU Assigned Amount Unit

CCC He Pou a Rangi Climate Change Commission

CER Certified Emissions Reduction
ERU Emissions Reduction Unit

FAO Food & Agriculture Organization of the United Nations

FFA New Zealand Farm Forestry Association

FGLT Forest Growers Levy Trust

FICA Forest Industry Contractors Association
FIEA Forest Industry Engineering Association

FISC Forest Industry Safety Council

FOA New Zealand Forest Owners Association

FSC Forest Stewardship Council
MfE Ministry for the Environment
MPI Ministry for Primary Industries
NEFD National Exotic Forest Description

NZIER New Zealand Institute of Economic Research

NZU NZ Units

Overseas Investment Office

PEFC Programme for the Endorsement of Forest Certification
SOPI Situation and Outlook for Primary Industries

Stats NZ Statistics New Zealand

WPMA Wood Processors and Manufacturers Association

Facts & Figures organisation sites

Competenz www.competenz.org.nz FAO www.fao.org/forestry www.nzffa.org.nz FFA **FGLT** www.fglt.org.nz **FIEA** www.fiea.org.nz FISC www.safetree.nz www.nzfoa.org.nz **FOA FSC** www.nz.fsc.org/en-nz MfE www.mfe.govt.nz MPI www.mpi.govt.nz **NZIER** www.nzier.org.nz **NZFOA** www.nzfoa.org.nz **PEFC** www.pefc.org

Rare Specieswww.rarespecies.nzfoa.org.nzScionwww.scionresearch.comStatistics NZwww.stats.govt.nz

WPMA www.wpma.org.nz WorkSafe NZ www.business.govt.nz/worksafe

60

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61 62

Log Pricing Data

Log Type, Dec-13 Mar-14 Jun-14 Sep-14 Dec-14 Mar-15 Jun-15 Sep-15 Dec-15 Mar-16 Jun-16 Sep-16 Dec-16 Mar-17 Jun-17 Sep-17 Dec-17 Mar-18 Jun-18 Sep-18 Dec-18 Mar-19 Jun-19 Sep-19 Dec-19 Mar-20 Jun-20 Sep-20 Dec-20 Quarter Quarte Point, and Market EXPORT (NZ\$ per JAS m3 f.o.b) Pruned 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 - 222 175 - 234 153 - 236 166 - 228 169 - 237 182 - 221 133 - 195 164 - 211 138 - 187 135 - 216 167 - 197 151 - 286A Grade 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 | 121 - 141 | 144 - 156 | 120 - 146 | 111 - 161 | 125 - 141 | 135 - 156 J Grade K Grade 127 - 159 | 133 - 159 | 96 - 137 | 101 - 134 | 117 - 163 | 124 - 143 99 - 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59 30 - 60 31 - 75 Pulp 31 - 61 30 - 59 31 - 60 31 - 66 32 - 68 50 - 79 32 - 64 31 - 61 31 - 79 31 - 60 31 - 75

111

· · · · Domestic logs -

NZ\$ per tonne at mill

126

136

134

Dairy – Global Dairy

USS per 250kg

Trade Price Index

134

135

133

135

Strong Wool -

clean

N7cents per 0.5kg

136

136

127

Coffee - US\$ per

100 pounds

125

126

129

124

127

Forest, Dairy, Wool and Coffee Prices

111

111

Notes

Average

104

102

102

101

102

108

99

99

102

110

114

Export logs – NZ\$ per

JAS³ fo h

Source Log Pricing Data MPI

Source Forest, Dairy, Wool and Coffee Prices GDT Price Index, International Coffee Organisation, MPI, Westpac Economic Bulletin 2020

Disclaimer

Every effort has been made to ensure that the statistics and information found within this publication are accurate and fair. The Forest Owners Association provides no warrantly as to accuracy and shall not be liable to any person for any loss or damage for the use, directly or indirectly, of the information.

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Weighted averages have been used from June 2017. Please take care when comparing with previous quarters.

^{*} Limited response – very small volume traded.

[&]quot; Data not available.

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