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Minister's Foreword



Welcome to the Forest Owners Association's *Facts and Figures* for 2022/23.

I am incredibly proud to be the Minister of a sector that is so instrumental in supporting our economic growth, regional development, and environmental sustainability. We are entering a new era where forestry will play a key role in our transition to a thriving economy based on high value products and low emissions. The Government's investment of \$384 million as part of Budget 2022 is a strong demonstration of Ministers' confidence in our forests to drive this change.

I am committed to the Government continuing to work with forest owners, the wider sector, and Te Uru Rākau - New Zealand Forest Service to boost productivity and value from our forests, enhance sustainability, create jobs, and support innovation. Through industry transformation and the development of the bioeconomy, we are creating the programmes and pathways for forest owners, processors and companies to produce and manufacture high value products, create and adopt new technologies, and gain access to new and diverse markets. I am, as I always have been, a strong advocate for increasing opportunities for onshore wood processing and generating jobs for New Zealand people and local communities.

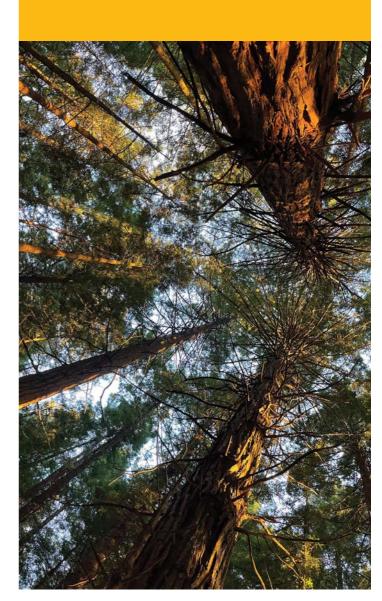
The Budget also provided investment for utilising our diverse forest estate to meet New Zealand's climate change goals and emission reduction targets by 2050. This included maximising forestry's contribution to providing long-term carbon sinks and ensuring we have the right balance of forests, including planting native trees.

Forest owners and businesses are continuing to manage a challenging operating environment, including from COVID-19 and disruption and constraints across supply chains and ports. We aren't out of the woods yet, but I am confident that the sector will continue to display resilience and strength to not only withstand these challenges but emerge stronger and more dynamic for the future. The past few years have truly proven our primary sector to be the engine room of our nation and the most innovative parts of our economy.

I know we are up for the challenge, and will continue to build on our successes, do things differently, and add value from our forests to the economy, environment, people, and New Zealand's global brand.

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

Planted Forestry Highlights



New Zealand Planted Forestry Highlights

1,739,971 ha is the estimated net stocked plantation forest area at 1 April 2021. This is an increase in the plantation forest area of 23,396 ha from 1 April 2020.



The value of all forestry exports to December 2021 was \$6.53 billion. Of this, \$3.85 billion was logs.



Source Boxes 1 & 2 NEFD 2021, MPI Source Boxes 3 & 4 SOPI June 2022, MPI

New Zealand Planted Forestry in Summary

Area and standing volume statistics	As at 1 April	As at 1 April	As at 1 April
	2019	2020r ⁷	2021p
Forest area			
Net stocked area (ha)	1,696,604	1,716,575	1,739,971
Harvested area awaiting restocking (ha)	49,194	50,030	45,487
Total forest area	1,745,798	1,766,605	1,785,458
Growth characteristics			
Standing volume (000 m³)	494,635	512,403	531,395
Average standing volume (m³/ha)	292	299	305
Area-weighted average age (years)	17.9	18	18
Area by species ²			
Radiata pine (ha)	1,525,711	1,545,102	1,571,574
Douglas-fir (ha)	103,430	102,236	97,584
Cypress species (ha)	9,825	10,034	9,970
Other softwoods (ha)	23,381	24,619	24,027
Eucalypts (ha)	21,777	21,757	21,950
Other hardwoods (ha)	12,481	12,827	14,866
Radiata pine area by tending regime			
Pruned with production thinning (ha)	140,318	138,754	136,898
Pruned without production thinning (ha)	547,042	537,733	520,952
Unpruned with production thinning (ha)	50,733	52,931	58,121
Unpruned without production thinning (ha)	787,617	815,684	855,602
Planting statistics	Year ended 31 December 2018	Year ended 31 December 2019	Year ended 31 December 2020
New planting ³			
Total estimated new planting (ha)	7,000	19,000	34,000
Restocking (ha)	40,171	42,179	42,907
Harvesting statistics	Year ended 31 March 2019	Year ended 31 March 2020	Year ended 31 March 2021
Harvesting			
Estimated planted forest roundwood removal (000m³) ⁶	36,404	34,440	34,383
Average harvest age – radiata pine (years)	28.7	29.1	25.4

Notes

Source National Exotic Forest Description NEFD 2021, MPI

² Individual entries may not add to totals due to rounding.

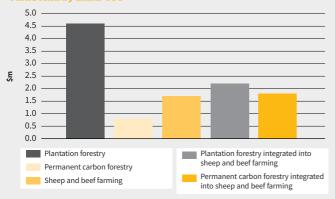
³ The forestry statistics released in this report, and in particular, new planting estimates, may differ from those produced in the Agricultural Production Survey by Statistics New Zealand. These surveys use different survey frames and designs.

⁶ Estimate from the annual roundwood removal statistics.

⁷ The net stocked area for 2020 has been revised following updated returns from respondents and corrections of data issues.

Land Use and Returns

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



Export Value Calculations 1,2,3

Export product category	Million ha 2019*	Year to June 2021 exports million \$	Export dollar per ha/yr
Horticulture	0.1	6,720	67,200
Dairy	2.1	21,610	10,290
Forestry	1.6	6,250	3,906
Meat and wool	8.9	12,220	1,373
All pastoral farms	11	33,830	3,075



Notes

- ${f 1}$ 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.
 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.

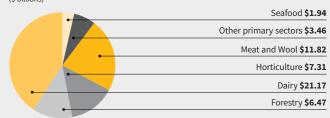
Source Annual total value chain impact per 1,000 hectares – Value-Add by Land-Use Economic Impacts of Forestry In New Zealand, PwC 2020

Source Export Value Calculations MPI

Forestry and the Primary Sector



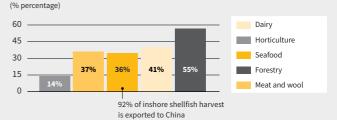
MPI Prediction for Primary Industry Sector Export Values 2023 (\$ billions)



MPI Prediction for Primary Industry In-sector Export Values 2023 (\$ billions)

Export	Billions \$
Whole milk powder	\$7.50
Logs	\$3.55
Butter, anhydrous milk fat & cream	\$3.09
Lamb	\$3.54
Beef & veal	\$4.21
All other forestry products	\$2.92
Kiwifruit	\$2.75
Cheese	\$2.23
Wine	\$1.90

Proportion of Exports to China by Primary Sector 2021



Source MPI, SOPI June 2022

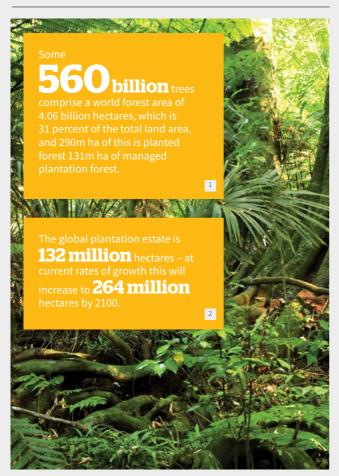
Global Forests



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.

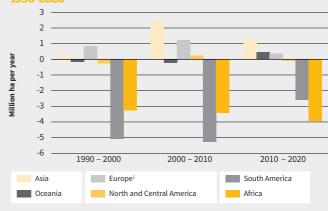
Deforestation, forest degradation and land use change contribute about 12% of the world's greenhouse gas emissions.



urce World Bank

Source Box 1 FAO Global Forest Resources Assessment 2020
Source Box 2 Potsdam Institute of Climate Research Report

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

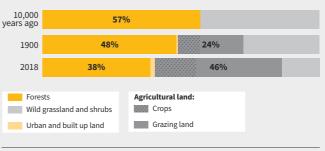


Naturally Regenerating versus Managed Planted Forests

(% of global forest area)



Reduction in Global Forests 8,000 BC to 2018



Notes

¹ 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 Reduction in Global Forests 8,000 BC to 2018 OurWorldinData.org



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

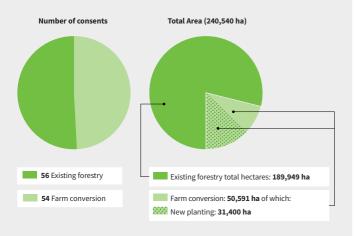
Overseas Investment Office Consents Granted Under the Special Forestry Test: Existing Forestry & Conversion Investments 1 October 2018 – 30 April 2022

There have been **110** one-off consents granted under Overseas Investment Act, using the Special Forestry Test, since October 2018 through to 30 Apr 2022.

The **total area** consented was **240,539** hectares. Of this, **90,667** hectares were transferred from a New Zealand owner to an overseas owner.

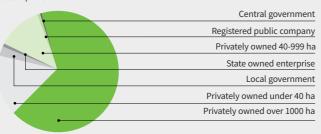
50,591 hectares was consented for conversion of which approximately **31,400** hectares is to be planted in production forest.

Further information: www.linz.govt.nz/overseas-investment



Forest Ownership 1,2,3,4,5,6

As at 1 April 2021



NZ Plantation Forest Ownership -Underlying Land Status

As at 31 December 2021

Firm/Entity Underlying Land Status (Productive area (ha))					
	Freehold		Leasehold		
		Crown	Māori Inc.	Other	
Kaingaroa Timberlands Limited	1,402		186,161		187,563
Manulife Investment Management Forest Management (NZ) Ltd	82,460	7,952	57,203	19,228	166,843
Rayonier Matariki Forests	57,281	27,192	17,981	17,342	119,796
Ernslaw One	60,846	23,671	7,305	1,937	93,759
OneFortyOne	22,637		39,628	298	62,563
Summit Forests NZ Limited	4,697	18,229	26,195	1,626	50,747
Tasman Pine Forests Ltd	25,306		9,044	2,249	36,599
Pan Pac Forest Products	5,328	817	28,604	439	35,188
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)		1,504	18,741	9,016	29,261
Forest Enterprises	28,133	2,008		557	30,698
Ngai Tahu Forestry	35,253				35,253
Wenita	9,833			23,369	33,202
Port Blakely Ltd	28,036			1,840	29,876
Aratu Forests Ltd	31,783		2,130	1,100	35,013
Roger Dickie NZ	31,157				31,157
Lake Taupo Forest Trust	24,830		1,007	3,233	29,070
Lake Rotoaira Forest Trust	7,717		431	1,385	9,533
China Forestry Group Corporation	14,803	6,853		7,649	29,305
City Forests	22,713			1,393	24,106
Totals	537,781	102,819	401,105	93,880	1,135,585

P11 Notes

- ¹ The area of forest owned or managed by major forest owners can be found on page 13 (see the New Zealand Forest Owners Association website for more information).
- ² 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.
- 6 "Central Government" forests are predominantly Crown-owned forests on Maori lease-hold land. These forests are managed by Crown Forestry.

Source Forest Ownership NEFD 2021

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 2021

Source NZ Plantation Forest Ownership - Underlying Land Status FOA

Commercial Planted Forest Ownership and Management

Firm/Entity	Forest Management Productive Are		
	(TIMO)	Property Management	
Kaingaroa Timberlands Limited		187,563	
Manulife Investment Management Forest Management (NZ) Ltd		166,843	
P F Olsen Ltd		140,000	
Rayonier New Zealand Ltd		119,796	
Ernslaw One	78,225	15,534	
OneFortyOne		62,563	
Summit Forests NZ Limited		50,748	
Tasman Pine Forests Ltd		36,559	
Pan Pac Forest Products		35,188	
Juken New Zealand		32,299	
Forest Enterprises	18,720	11,977	
Port Blakely Ltd		29,876	
Aratu Forests Ltd		28,817	
Crown Forestry (MPI)1		29,261	
Roger Dickie NZ	31,157		
Forest Management NZ Ltd		30,035	
Ngai Tahu Forestry		28,101	
Wenita		28,191	
City Forests		24,106	
Global Forest Partners LP	16,622		
Forest 360		20,430	
NZ Forest Managers Ltd		44,611	
Totals	144,724	1,122,498	

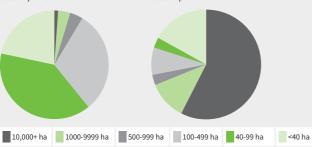
Number of Forest Owners by National Size Class





Forest Area by Forest Owner National Size Class

As at 1 April 2021



Notes see page 14

13

Environmental Certification

Company	Environmental Ce	rtification Body
	FSC (ha)	PEFC (ha)
Rayonier New Zealand Ltd	158,107	158,107
PanPac Forest Products Ltd	46,420	
NZ Forest Managers Ltd	44,611	
Wenita Forest Products Ltd	33,201	
Aratu Forests Ltd	35,013	35,013
Juken New Zealand Ltd	32,299	
PF Olsen Ltd	16,091	
Summit Forests NZ Limited	28,951	
Kaingaroa Timberlands Limited	187,563	187,563
Port Blakely Ltd	37,314	
Southland Plantation Forest Company of New Zealand	13,926	
M&R Forestland Management Ltd	20,974	
China Forestry Group Corporation	7,620	
Tasman Pine Forests Ltd	36,559	
Ngai Tahu Forestry	45,828	
Forest Enterprises	13,281	
City Forests Ltd	24,106	
Ernslaw One Ltd	93,759	
Manulife Investment Management Forest Management (NZ) Ltd	166,843	166,843
Craigpine Timber Ltd	2,266	
OneFortyOne	79,610	
Total	1,124,342	547,526

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.

 $^{\mathbf{1}}$ 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 2021

Source Forest Area by Forest Owner National Size Class NEFD 2021

¹ Crown Forestry forests are managed under an FSC licence held by NZ Forest Managers

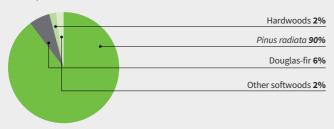
n.b. Productive Area = Net Stocked Area + Area Awaiting Restocking Total Certified Area = Total Forest Area as recorded on FSC certificate

Source Environmental Certification FOA

Planted Forests by Species

Species Distribution

As at 1 April 2021



Approximate Harvest Age Over the Past Five Years

Species	Harvest Age
Pinus radiata	28.7 years
Douglas-fir	40.4 years
Cypress	31.7 years
Eucalypts	22.3 years

Pinus radiata makes up 90 production forest area in New Zealand. The proportion of

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, Tōtara, Silver Pine (Manoao), Robinia, Puriri

Species Distribution MPI

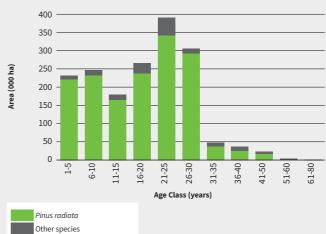
Approximate Harvest Age Over the Past Five Years MP

Box 1 NEFD 2021

Net Stocked Area by Age Classes

Forest Area by Age Class and Species

As at 1 April 2021







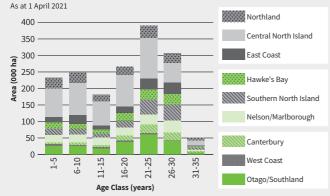
Source Forest Area by Age Class and Species NEFD 2021

Planted Forest Area by Regions

Area Planted in all Species by Territorial Authority

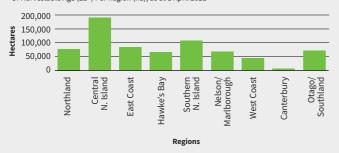
Region	Estimated Total Forest Area (HA)						
	2019	2020	2021	%			
Northland	185,943	188,586	194,023	11%			
Central North Island	562,792	564,448	560,001	32%			
East Coast	155,617	155,359	157,295	9%			
Hawke's Bay	131,733	131,994	139,558	8%			
Southern North Island	159,690	167,718	176,250	10%			
Nelson/Marlborough	165,077	164,639	167,920	10%			
Canterbury	94,782	96,721	95,278	5%			
West Coast	30,401	30,157	30,285	2%			
Otago/Southland	210,569	216,953	219,361	13%			
Total	1,696,604	1,716,575	1,739,971	100%			

Forest Area by Age Class and Wood Supply Region



Forest Area Planted in Pinus Radiata by Wood Supply Region

Of Harvestable Age (21+) Per Region (ha), as at 1 April 2021



Source Area Planted in all Species by Territorial Authority & Forest Area by Age Class and Wood Supply Region NEFD 2021

Source Forest Area Planted in *Pinus Radiata* by Wood Supply Region NEFD 2021

Notes This doesn't include the South Waikato District, New Plymouth District, South

This doesn't include the South Waikato District, New Plymouth District, South Taranaki District, Horowhenua District, Kaikoura District, Selwyn District, Waitaki District, Dunedin City as figures were unavailable

Planted Forest Age and Volume



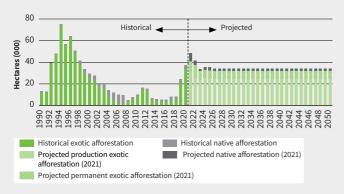




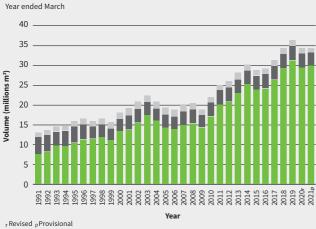
Source NEFD 2021

Forest Planting, Harvest and Deforestation

Projections for Afforestation to 2050



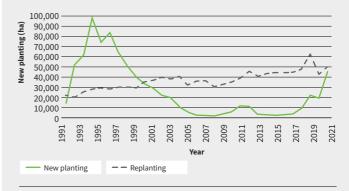
Plantation Forest Harvest





Tource Projections for Afforestation to 2050 Ministry for the Environment Fource Plantation Forest Harvest MPI

Estimated Area of New Planting and Replanting



95,000 ha of Plantation Forest was Planted in 2021, Comprising 50,000 ha of REPLANTING AND 45,000 ha of NEW Planting.

Tree Stock Sales from 2014 to 2021 (millions)

	2014	2015	2016	2017	2018	2019	2020	2021 ^r
Pinus radiata	47.2	45.8	49.3	48	56.6	84	88.4	91.8
Other	3.6	3.7	3.4	3.3	3.3	4.8	3.5	4.7
Total	50.8	49.5	52.7	51.3	59.9	88.8	91.9	96.5

Estimated Percentages of Total Area of Radiata Pine Planting by Categories

	2014	2015	2016	2017	2018	2019	2020	2021 ^p
Open pollinated seedlings	36	31	28	25	30	47	36	54
Control pollinated seedlings, cuttings/clones	64	69	72	75	70	53	64	46

r Revised pProvisional

Source Estimated Area of New Planting and Replanting MPI

Source Box 1 MPI

Source Tree Stock Sales from 2014 to 2021 Tree Stock Sales, MPI

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

Forest Management Trends

Radiata Pine by Tending Regime

As at 1 April 2021

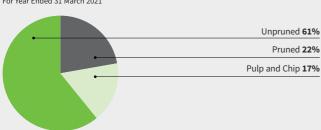


	2019 ^r Hectares	2020 ^p Hectares	2021 ^p Hectares
Pruned with production thinning	140,318	138,754	136,899
Pruned without production thinning	547,042	537,733	520,952
Unpruned with production thinning	50,733	52,931	58,121
Unpruned without production thinning	787,617	815,685	855,603

The area under an unpruned management regime is now about 61% of the *Pinus radiata* forest estate. The area of production thinned radiata forest is decreasing, now to about 22%.

Pinus Radiata Harvest Volume by Log Type

For Year Ended 31 March 2021



Source Radiata Pine by Tending Regime MPI

Source Box 1 MP

Source Pinus Radiata Harvest Volume by Log Type MPI

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%	•
	Total		36 m	2.3 m³	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	J	0 m	0.00 m³	0%	_
	Stump		0.2 m	0.01 m ³	0%	•
	Total		35 m	1.61 m³	100%	

22

Source Direct Sawlog Regime & Structural Regime Scion

rRevised pProvisional



Reporting a Suspected Pest/Disease

Nun moth (Lymantria monachal)



Asian Spongy Moth (Lymantria dispar asiatica (formerly Asian Gypsy Moth))



How are you protecting your Forest?

We are fortunate that our forests are free of a large number of pests and diseases that are having significant impacts elsewhere in the world and we would like to keep it that way.

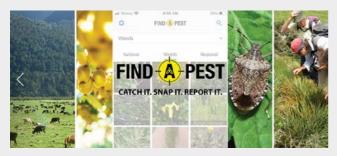
The earlier we detect them the greater the likelihood that we can successfully control or eradicate them.

If you see anything out of the ordinary or believe that you have found something that shouldn't be here, take a photo and if possible, collect a sample and call Biosecurity New Zealand's Exotic Pest and Disease Hotline on **0800 80 99 66** or report online:

https://report.mpi.govt.nz/pest.

A specialist investigator will contact you and get any detail and advise you on what might be required (i.e. photos, samples, or site visits). Alternatively, you can submit a photo using the Find-a-Pest app (https://www.findapest.nz/). These are then screened before either being sent on to the iNaturalist site for ID or redirected to MPI if they considered to be new to New Zealand. Find-a-Pest is ideal if you are just not sure what you are looking at and want to get an ID relatively quickly with little fuss.

Remember good quality, close up photos of the pest and any plant damage are really useful.



Source Nun moth https://www.inaturalist.org/observations/35245189
Source Asian Spongy Moth https://commons.wikimedia.org/wiki/File:Lymantria_dispar_MHNT_Chenille_portrait.jpg. Muséum de Toulouse, CC BY-SA 4.0 https://creativecommons.org/licenses/by-sa/4.0, via Wikimedia Commons

SECTION 3

Export and Production



Top Export DestinationsFor Year Ended March 2021

1 Most exports for category

3 Third most exports for category



1. China (People's Republic of) \$NZ 3,855,967,878

Logs 3,468,491,780 Panels 9,180,164

2 Paper & Paperboard 40,400,391 Pulp 255,820,240

3 Sawn Timber & Sleepers 77,258,939 Other Forestry Products 4,816,364

O 2. Australia \$NZ 574,852,186

Logs 2.434.533 Panels 45,991,167 Paper & Paperboard 195,436,006 Pulp 73,684,327

Sawn Timber & Sleepers 128,982,790 Other Forestry Products 128,323,363

O 3. South Korea \$NZ 419,927,699

2 Logs 281 852 872 396,438 Panels Paper & Paperboard 13,831,483 2 Pulp 89.072.276 Sawn Timber & Sleepers 34,168,296

Other Forestry Products 606,334

O 4. Japan \$NZ 360,231,252

3 Logs 51.238.715 183,544,055 Panels Paper & Paperboard 23,492,376 Sawn Timber & Sleepers 28,896,526 Other Forestry Products 72,541,928

5. United States \$NZ 299,167,392

Logs 3 Panels 34,495,181 Paper & Paperboard 4,147,316

Sawn Timber & Sleepers 250,189,781 Other Forestry Products 10,335,114

6. Indonesia \$NZ 163,695,712

Logs 87,947 Panels 18,017,243 Paper & Paperboard 9,783,211 71.408.205 Sawn Timber & Sleepers 25,586,048 3 Other Forestry Products 38,813,058

O 7. Taiwan \$NZ 130,690,093

Logs 39,740,291 Panels 10,348,556 Paper & Paperboard 6,777,234 Pulp 25,737,303 Sawn Timber & Sleepers 47,810,273 Other Forestry Products 276,436

8. India \$NZ 125,818,708

Logs 28.834.622 4,181,556 Paper & Paperboard 9,180,163 Pulp 74.838.198 Sawn Timber & Sleepers 4,656,583 Other Forestry Products 4,127,586

O 9. Thailand \$NZ 121,438,371

Logs 220,650 Panels 331 407 Paper & Paperboard 35,352,037 49,969,955 Sawn Timber & Sleepers 33,468,346 Other Forestry Products 2,095,976

0 10. Viet Nam \$NZ 87,334,799

Logs 410,009 Panels 24.058.119 9,635,046 Paper & Paperboard 1,021,808 Sawn Timber & Sleepers 51,501,291 Other Forestry Products 708,526

11. Philippines \$NZ 79,662,849

Logs Panels 32.096.264 Paper & Paperboard 16,226,229 Pulp 12,783,438 Sawn Timber & Sleepers 18,236,700 Other Forestry Products 320,218

12. Other \$NZ 470,496,545

Logs 110,284,975 Panels 23.410.262 Paper & Paperboard 97,897,291 57,533,722 Sawn Timber & Sleepers 239,208,246 Other Forestry Products 26,493,303

28

Source Top Export Destinations MPI

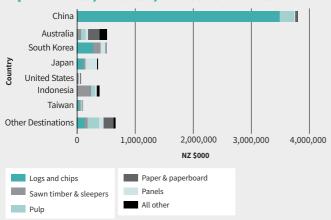
Export Value by Destination and **Product**¹

For year ended 31 December 2021

Total Export Value by Main Countries of Destination

Country of	To	otal Export Value (I	NZD\$)
Country of Destination	2019	2020	2021
China	3,272,196,860	2,970,924,832	3,855,967,878
Australia	575,135,608	517,511,076	574,852,180
South Korea	393,451,527	366,642,239	419,927,699
Japan	408,747,127	335,915,675	360,231,252
United States	251,542,925	289,508,420	299,167,392
Indonesia	145,667,501	121,032,028	163,695,712
Taiwan	86,952,920	85,782,725	130,690,093
India	326,496,242	157,503,630	125,818,708
Hong Kong	76,584,662	139,516,603	116,320,972
Thailand	136,462,037	123,395,238	121,438,371
Viet Nam	102,149,621	115,650,908	87,334,799
Malaysia	76,055,802	62,588,486	84,526,797
Philippines	97,682,329	65,977,809	79,662,849
Netherlands	44,302,035	37,597,690	54,229,141
Saudi Arabia	60,637,234	52,699,453	42,128,025
All Other Destinations	250,070,037	206,637,605	257,818,407
Grand Total	6,304,134,467	5,648,884,417	6,784,811,177

Exports of Forestry Products by Main Countries of Destination



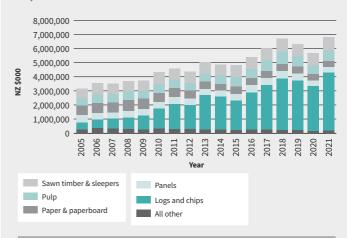
Notes

- ¹ 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 202





Forestry Product Export Values

For year ended June



Notos

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

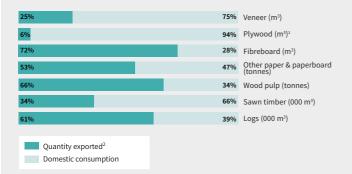
Source Major Export Earners Stats NZ and FOA

Source MPI

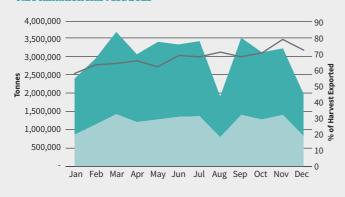
Source Forestry Product Export Values MPI

Production and Exports of Selected Forestry Products

For Year Ended 31 December 2021



NZ Plantation Harvest: 2021





Export

% Exported as logs

and original logs further processed

Notes

¹ Plywood includes laminated veneer lumber

² Exports excluded re-exports

³ Domestic consumption unavailable

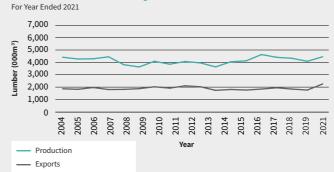
Source Production and Exports of Selected Forestry Products MPI, Statistics NZ and FOA NZ Plantation Harvest 2021 FGLT

Source Box 1 MPI

Domestic

New Zealand Lumber and Log Production and Exports



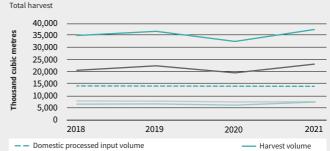


Forestry Export Revenue, 2019-23 (\$NZ million)

For Year Ended 30 June

		Actual		Forecast		
Year to 30 June	2019	2020	2021	2022	2023	
Logs	3,806	2,877	3,854	3,810	3,920	
Sawn timber & sleepers	936	809	910	1,010	1,000	
Pulp	812	646	663	760	750	
Paper & paperboard	491	492	438	430	410	
Panels	514	438	389	400	440	
Chips	67	56	61	60	70	
Other forest products ¹	257	222	215	250	260	
Total	6,883	5,539	6,531	6,250	6,470	
Y/Y % change	+7.9%	-19.5%	+8.1%	+2.7%	+2%	

Log and Processed Timber Production and Export



Notes

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

Source Lumber Production and New Zealand Lumber Exports MPI

Estimated domestic processed consumption input volume

Source Forestry Export Revenue, 2018-23 MPI

Source Log and Processed Timber Production and Export FOA

Estimated processed exported input volume

Log export volume

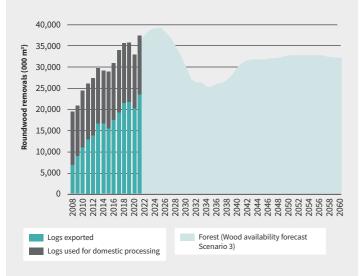
New Zealand Logs

Export and Domestic Log Value



Volume of Logs used in Domestic Processing versus Exported

For Year Ended December



ource Export and Domestic Log Prices MP

Source Volume of Logs used in Domestic Processing versus Exported MPI

Forestry and Wood Draft Industry Transformation Plan August 2022

BY 2030
THE
INDUSTRY
WILL INCREASE;

LOGS PROCESSED EACH YEAR

†25%

(UP FROM 14.2 MILLION M³ TODAY)

USE OF TIMBER IN CONSTRUCTION EACH YEAR BY

†25%

(UP FROM 1.4 MILLION M³ TODAY)

THE SPECIES RANGE BY REDUCING YEARLY PLANTING OF PINUS RADIATA FROM 96% TO

180%

BY 2040 THE INDUSTRY WILL INCREASE;

VALUE ADDED YEARLY EXPORTS FROM \$2.5 BILLION TO

\$3.1 billion

BY 2050 THE INDUSTRY WILL HAVE PROVIDED;

14 million m³

INNOVATIVE CONSTRUCTION MATERIAL

16.4 million m³

COAL REPLACEMENT MATERIAL

49.3 million m³

OIL FUEL REPLACEMENT MATERIAI

Anticipated additional export sector returns in 2030



Notos

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

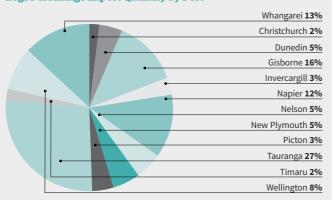
Log Exports by Port

Log Export Quantity and Export Value by Port

For Year Ended December 2021

Port of Loading	Export Quantity (m³)	Export value (\$NZ)
Auckland	91,524	19,998,101
Christchurch	493,745	89,358,483
Dunedin	972,550	156,534,513
Gisborne	2,881,097	520,398,307
Invercargill	730,045	153,946,352
Napier	2,809,508	502,737,202
Nelson	1,176,544	170,390,399
New Plymouth	1,168,379	193,617,699
Picton	934,355	143,681,470
Tauranga	6,090,840	1,114,968,225
Timaru	529,590	79,581,143
Wellington	1,863,417	301,840,769
Whangarei	2,907,087	536,543,731
Total	22,648,682	3,983,596,394

Logs Percentage Export Quantity by Port¹





Notes

1 Ports with <1% not included.

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 December 2021

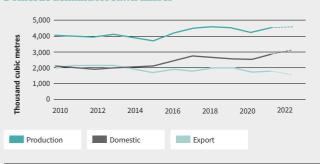
Sawn Timber Export Quantity and Export Value by Port

NZ Port	Export Quantity	Export value (\$NZ)
Auckland	86,048	55,815,517
Christchurch	67,322	36,316,097
Dunedin	97,320	44,485,918
Gisborne	32,308	7,338,275
Invercargill	24,256	9,907,568
Napier	320,439	154,144,203
Nelson	70,382	42,310,090
New Plymouth	50	9,698
Tauranga	832,661	585,236,178
Wellington	2,987	4,100,428
Whangarei	990	299,847
Total	1,534,763	939,963,819

Sawn Timber Export Quantity by Port



Domestic demand for sawn timber



Source Sawn Timber Export Quantity and Export Value by Port MPI Source Sawn Timber Percentage Export Quantity by Port MPI

Source Domestic demand for sawn timber MPI. SOPI

Forest Processing Industry 2021

Jpdated March 2021			
Northland		Max Birt Sawmill (Ohinewai)	(S)
BBS Timbers Ltd, Whangarei CHH Woodproducts, LVL (Marsden Point)		Oji Fibre Solutions, Penrose Pallet Supplies Co Ltd, Manukau	(PTP)
Colville Sawmill Company		Papakura Timber Processors	(S)
Croft Poles Ltd (Whangarei) ETC 2006 Ltd, Marsden Point	(S)	Ltd, Papakura Timberlab Solutions Ltd	
Juken New Zealand Ltd Northland Mill (Kaitaia)	(S)	(Auckland) Topuni Timber Ltd, Kaiwaka	
Juken New Zealand Ltd Triboard Mill (Kaitaia)		TTT Products Ltd, Tuakau G J Weck and Sons Limited,	(PO)
Kaihu Valley Sawmill, Mamaranui	(S)	Papakura	
Kiwi Timber Protection Ltd, Whangarei	(MW)	Central North Island	
Mac Direct Ltd, Patumahoe Marusumi Whangarei Ltd (Marsden Point)	(S)	Alkieman Custom Jointing Ltd, Tokoroa Central Wood Recyclers	
Mt Pokaka Timber Products (Kerikeri)	(S)	Limited CHH Woodproducts Kawerau	(S)
North Sawn Lumber (Marsden Point) Northpine Sawmill (Waipu)	(S)	Sawmill (Kawerau) CHH Woodproducts, Plywood (Tokoroa)	(P)
Rosvall Sawmill (Whangarei)	(S)	Claymark Profiles, Rotorua	
Timpack Industries Ltd, Auckland	(MW)	Claymark Rotorua Sawmill Ltd (Rotorua)	(S)
TTT Products (Tuakau)		Claymark Sawmills (Katikati)	(S)
Waipapa Pine (Whangarei)	(S)	Donnelly Sawmills (Rotorua) Hautapu Pine Products Limited, Taihape	(S) (PO)
O Auckland		Hume Pine (Rotorua)	
Abodo Wood Ltd, Auckland		Kiwi Lumber (Putaruru)	(S)
Anderson & O'Leary Ltd		KLC (Rotorua)	
(Pinepac), Whenuapai Big Tuff Timber Products		Laminated Beams Ltd (Papamoa)	
Limited, Puhinui		Laminex Group (Taupo)	
Central Frame and Truss, Auckland		Les O'Leary Limited, Tokoroa Lockwood Group (Rotorua)	(S)
Claymark Ltd, Henderson	(MW)	Lumbercorp N.Z. Ltd Huntly	
Claymark Ltd, Thames	(S)	LumberOne Ltd (Tauranga)	
Cypress Sawmill, Waitoki Herman Pacific Ltd, Silverdale	(S) (S)	McAlpines (Rotorua)	(S)
Max Birt Sawmills (Pokeno)	(S)	North Sawn Lumber Ltd, Ruakaka	
Jenkin Timber (Auckland)	, ,	Oji Fibre Solutions Kinleith Mill (Tokoroa)	(PP)
JSC Timber, Kumeu Kopine, Thames	(MW)	Oji FS Tasman Ltd (Kawerau)	(PP)

Otorohanga Timber Company (Otorohanga)		O Hawke's Bay
OTC Timber Co Ltd, Otorohanga		Napier Pine (N
Pedersen Kawerau Limited	(PP)	Pan Pac Fores (Napier)
Pedersen Kinleith Limited Permapine (Reporoa)	(PP)	Ruahine Timb Limited, Ormo
Pacific Pine Industries (Putaruru)	(S)	The Pallet Cor Napier
Pine Sawmills (Rotorua) Pukepine Sawmills (1998) Ltd, Te Puke	(S)	Tumu Timbers
Pure Pine Mouldings (Te Puke)		Southern No
Red Stag Timber (Rotorua)	(S)	(New Plymout
R.H. Tregoweth Ltd, Te Kuiti	(S)	Davis Sawmill
SCA Hygiene Australasia (Kawerau)	(PP)	(Featherston) Eastown Timb
Sequal Lumber (Kawerau)	(S)	(Whanganui)
Tauriko Sawmill & Timber Supplies, Tauranga		Juken New Ze (Masterton)
Tenon Manufacturing Ltd	(S)	Kaimata Sawr
(Taupo)	(84141)	Kiwi Lumber (
Timpack Industries Ltd, Mount Maunganui	(MW)	Kiwi Lumber (Lumber Proce
Waitete Sawmills Ltd, Te Kuiti Whakatane Mill Ltd	(PP)	Mangorei Plus Plymouth
(Whakatane)		Mitchpine Ltd
Winstone Pulp International (Ohakune)	(S, PP)	Pukeko Sawm
WJ Mouldings Ltd (Tauranga)		Taranakipine,
WPI Tangiwai Sawmill & Pulpmill, Karioi	(S, PP)	Taranakipine I Plymouth)
r arprint, ranoi		Taranaki Sawr
-		Techlam (Levi
East Coast		Ticehurst Timl Ltd, Carterton

Napier Pine (Napier) (S) Pan Pac Forest Products Ltd (S, PP) (Napier) Ruahine Timber 2017 (PO) Limited, Ormondville The Pallet Company Ltd, Napier Tumu Timbers (Hastings) Southern North Island Clelands Timber Products Ltd (S) (New Plymouth) Davis Sawmilling Co (S) (Featherston) Eastown Timber Products Ltd (S) (Whanganui) Juken New Zealand (S/PP) (Masterton) Kaimata Sawmills, Inglewood (S) Kiwi Lumber (Dannevirke) (S) Kiwi Lumber (Masterton) (S) Lumber Processors, Pahiatua (S) Mangorei Plus, New (S, PO) Plymouth Mitchpine Ltd (Levin) (S) Pukeko Sawmills, Lepperton (S) Taranakipine, Bell Block (S) Taranakipine Ltd (New Plymouth) Taranaki Sawmills Ltd Techlam (Levin) Ticehurst Timber Processors Ltd, Carterton Timpack Industries Ltd, New (MW) Plymouth Value Timber Supplies Ltd, Inglewood W Crighton & Son Ltd (Levin) (S)

East Coast Lumber (Wairoa)

(S)

East Coast Lumber Ltd
Juken New Zealand, Gisborne Mill
Kiwi Lumber (Gisborne) Limited, Gisborne
Wood Engineering Technology Ltd

(S)

,		
	CHH Wood Products, Nelson Sawmill (Eves Valley)	(S)
	D&E Taylor Timbers Ltd,	
	Eurocell Wood Products (Nelson)	

O Nelson/Marlborough

Goldpine Ltd (Richmond)

Forest Processing Industry 2021 Continued

Canterbury

Niagara Sawmilling Ashburton

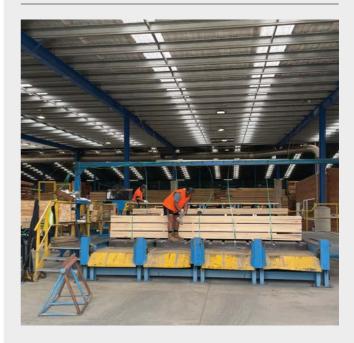
Halswell Timber Limited (Nelson) Heagney Bros Ltd, Blenheim Motueka Lumber Co	(S)	Philip Wareing Ltd, Methven Point Lumber Ltd, Washdyke Southern Pine Products Ltd (Christchurch)	(PO)
(Motueka) Nelson Forests Ltd (Renwick)	(S)	SRS New Zealand Ltd (Rolleston)	(S)
Nelson Pine Industries (Richmond)	(PP)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

Oji Fibre Solutions (NZ) Tasman		Steve Murphy Limited, Kaiapoi	
Plankville Ltd, Richmond Prowood Ltd (Motueka) Southpine Ltd (Nelson) Southwood NZ Limited, Motueka	(S) (S) (S)	Stoneyhurst Timbers Ltd (Christchurch) Sutherland & Co Ltd, Kaiapoi Temuka Timber & Firewood, Temuka	(S
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

Canterbury		O Wast Coast	
Adams Sawmilling Co Ltd,	(S)	West Coast	(DD)
Ashburton		International Panel and Lumber Ltd (Greymouth)	(PP)
Ashley Industrial Services Lt Oxford	d, (S)	NZ Sustainable Forest	(S)
Belfast Timber (Christchurch	1)	Products Ltd (Reefton)	ν-,
Bennetts Sawmill Limited, Oxford	(S)	Southern Pine Products Ltd (Stillwater) (Greymouth)	(S)
Brindle Sawmills Ltd (Christchurch)	(S)	Stillwater Lumber Ltd, Stillwater	(S, WP)
Canterbury Roundwood 200 Ltd, Rangiora	6 (MW)	Westco Lumber Ltd (Hokitika) Westimber Limited, Ngahere	(S) (S)
Canterbury Woodchip Supplies Limited, Arundel	(CEF)		
Daiken (Rangiora)	(MW, PP)	Otago Southland	
Fraemohs Industries (Kaiapoi)		Beven West Sawmilling Ltd, Invercargill	(S)
John Fairweather Specialty Timber Solutions, Sefton	(S)	Craigpine Timber Ltd (Winton)	(S)
Loburn Sawmill Limited, Loburn	(MW)	Daiken Southland Ltd (Mataura)	
Lumberworx Ltd (Christchurch)	(MW)	Findlater Sawmilling Ltd, Winton	
McAlpines (Rangiora)	(S)	Gorton Timber Co Ltd, Milton	
McVicar Timber Group Ltd, Christchurch	(S)	Hewvan Enterprises Ltd, Palmerson	
Mitchell Bros Sawmillers Ltd Darfield	, (S)	Hollows Timber Co Ltd, Balclutha	

Lindsay & Dixon (Tuatapere)

Ngahere Sawmilling Co (Gore)	(S)	Sawmills	
Niagara Sawmilling Co Ltd (Invercargill/Ashburton) Otago Lumber (Gore)	(S) (S)	Processing Plants Fibreboard (MDF & Hardboard)	F
Pan Pac Otago (Mosgiel and Milton)	(S)	Particleboard (Incl Strandboard)	Р
Pankhurst Sawmilling (2015) Ltd, Riverton	(S)	Plywood Poles	PL PO
Pooles Timber Ltd t/a Great Southern, Invercargill	(S)	Pulp and Paper Veneer/LVL/CLT	PP V
Southwood Exports (Awaura)	(=)	Paper/Tissue/Paperboard	PTP
Stuart Timber Co Ltd (Tapanui)	(S)	Chip Export Facilities Manufactured Wood	CEF MW
Timpack Industries Ltd, Dunedin	(MW)	Products	
Truss Tech (Cromwell) Young Brothers (2016), Mosgiel	(PO)		

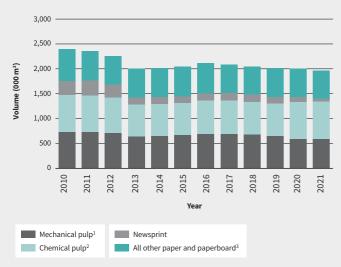


39 40

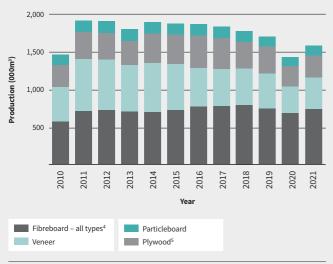
(S)

Paper, Pulp and Panel Products Production

Paper and Pulp Production 2010-2021



Panel Products Production 2010-2021



Notes

- ¹ 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



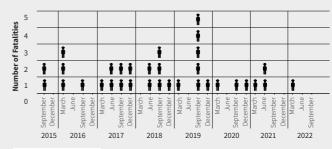
TOGETHER TOWARDS ZERO



www.fisc.org.nz

Health and Safety in the Forest Industry 2015-2022

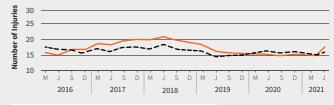
Fatalities as at May 2022



Fatality

Severe Injuries¹

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

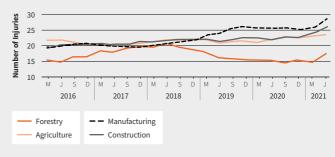


Injuries per 1,000 workers

- 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.
- $^{\mathbf{2}}$ 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.

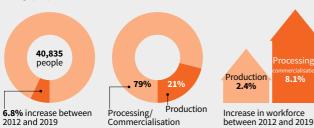
Source Fatalities WorkSafe/MPI/FISC
Source Severe Injuries WorkSafe/MPI/FI

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

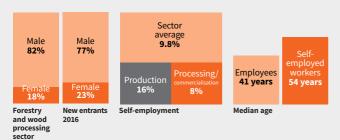
Forestry Workforce

Workforce count

The forestry and wood processing workforce makes up 11.1 percent of the food and fibre workforce. The sector is significantly more male dominated than other sectors, with men making up 82 percent of workers.

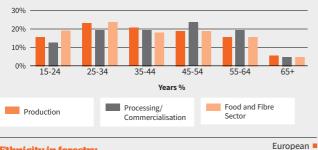


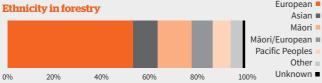
Demographics



Age profile

The processing/commercialisation workforce has an older profile than the production and food and fibre sectors workforce. Workers aged 55 years and over comprise 24 percent of the workforce.





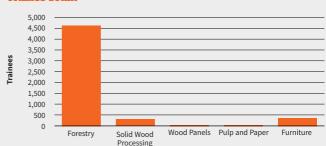
Source Food and fibre workforce: Snapshot MPI

Industry Training 2021

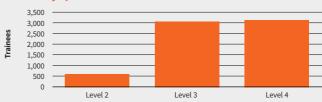
25 students completed their degrees at the University of Canterbury School of Forestry in 2021 – **15** with the Bachelor of Forestry Science and **10** with Bachelor of Engineering (Honours) (Forest Engineering).

1

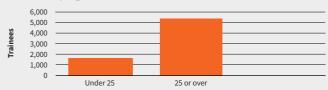
Trainee Count



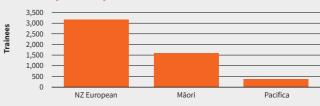
Trainee by Qualification Level



Trainees by Age



Trainees by Ethnicity



Source Box 1 University of Canterbury

Source Industry Training 2021-2022 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



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

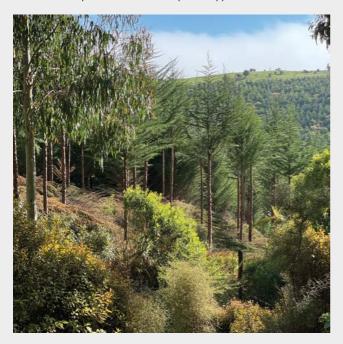
People will be attracted to work in forestry because they will be safe, valued and well trained.

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.





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 present rate is 33 cents per tonne of harvested log.

The Levy generated in 2021 was \$11,717,060, which was an increase of 35% on 2020, the year of Covid lockdown disruptions.

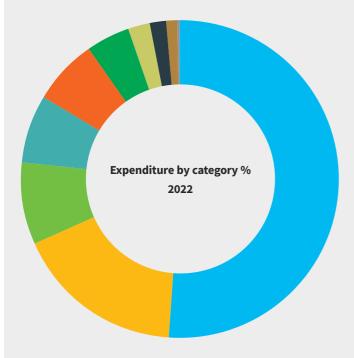
The Levy investment, through a yearly industry good Work Programme, is made by a seven-person board with an independent chair and representation of both larger and smaller scale foresters.

https://fglt.org.nz/



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

How the FGL is Invested



O 51.3% Research, Science and Technology

Research across the value chain, including specific Pinus radiata research, diseases, forest fire behaviour, wilding conifer control, propagation, automation, safety, environment and timber processing.

O 17.1% 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.

8.4% Forest Biosecurity

Surveillance of high-risk sites including field activities and diagnostic identification of samples. Find-A-Pest app with co-investment by MPI and other stakeholders, and development of a Plant Production Biosecurity Scheme.

O 6.7% Promotions

'Love our Forests' campaign and, with MPI, the 'Wood – Our Low Carbon Future' promotion, with print, television, social media, fieldays and highway billboards.

○ 7.0% Health and Safety

This is the industry commitment to support the work of the Forest Industry Safety Council (FISC) to drive down the number of forest accidents. Work has included a major review of the Certified Contractor Scheme.

O 4.3% Training and Careers

The Training and Careers Committee is a forum of owners, contractors, training providers and government.

O 2.2% Forest Resources and Environment

This Committee works on forest growing and environment issues, including Forest Stewardship Council certification, biodiversity and freshwater management and climate change.

O 1.8% Transport

This Committee works closely with the Log Transport Safety Council and represents forest growers' interests to local and central government.

○ 1.0% Small and Medium Forest Enterprises

SME delivers on the particular interests of small scale foresters who are now responsible for 40% of the harvest. An upgraded Forest Address Database lists more than 16,000 owner entries on which a mid-term report on the current levy programe has been distributed.

O 0.2% Fire

Contributes to Fire and Emergency NZ's fire season awareness campaign and works with Fire and Emergency NZ 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 2020, New Zealand's total gross emissions were 78.8 million tonnes of carbon dioxide (Mt $\rm CO_2$ -e). In 1990, gross emissions were 65.2 Mt $\rm CO_2$ -e. In 2020, 23.3 Mt $\rm CO_2$ -e was removed from the atmosphere by the forestry sector, compared with 21.2 Mt $\rm CO_2$ -e in 1990. Forestry sector carbon removals in 2020 reduced total emissions to 55.5 Mt $\rm CO_2$ -e net or a 29.6% offset.

Agriculture continued to be the largest contributor to New Zealand's Greenhouse Gas Emissions, with 50% of the total at 39.4 Mt $\rm CO_2$ -e, compared with energy at 40%.

	Total emissions (million tonnes CO ₂ -e)	2018-20 Population (millions)	Emissions per each (tonnes CO ₂ -e)
Sheep	-10.6	23.6	-0.5
Deer	-0.9	0.7	-1.3
Beef	-7.6	3.7	-2.1
Dairy	-17.7	6.0	-3.0
Cars	-17.5	3.8+	-4.7*
Planta pines	tion -21	1,099	-0.019



Notes

 $^{f 1}$ Based on figures from the Agricultural Inventory Model, used in New Zealand's Greenhouse Gas Inventory 1990-2017 report published by MfE

+ Motor Industry Association

Source MfE, FOA

Stock numbers from SOPI June 2022, Emissions, MfE, including New Zealand Greenhouse Gas Inventory 1999 – 2020

Forests Removing Carbon

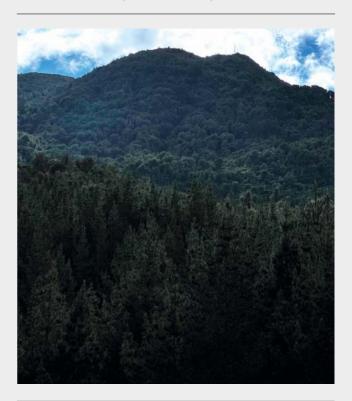
How is carbon removed from the atmosphere by New Zealand's forests?

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. Ås 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.



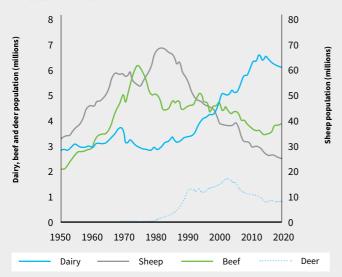
Source 1990 to 2015 National Greenhouse Gas Inventory

Methane emissions by livestock in New Zealand between 1950 and 2021

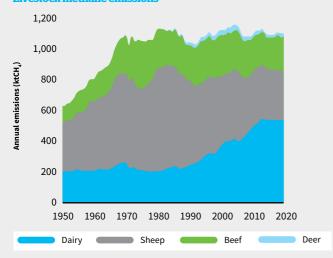
Livestock numbers and livestock methane emissions between 1950 and 2021.

The charts begin in 1950 because this is the first year that disaggregated statistics for dairy cattle and beef cattle are available.

Livestock numbers



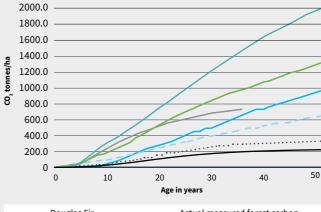
Livestock methane emissions



Source Parliamentary Commissioner for the Environment

Carbon Sequestration

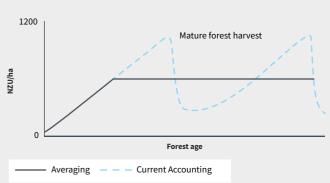
Default Yield Tables of ${ m CO}_2$ Storage for Radiata and Other Tree Species



Douglas Fir Actual measured forest carbon sequestration graphed by Dr Euan Radiata pine (Auckland region)
Exotic Softwood Indigenous Radiata pine

Actual measured forest carbon sequestration graphed by Dr Euan Mason, University of Canterbury.
Indigenous Radiata pine

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. 350,000 ha are currently registered in the ETS.

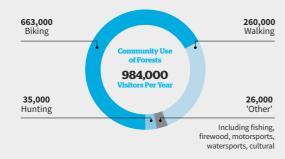
Source Default Yield Tables of CO₂ Storage for Radiata and Other Tree Species MPI Carbon accounting practices SOPI June 2019, ITP

All regions were averaged for radiata pine, and the native forest lookup table data points were taken directly from MPI's table.

ETS forest measurement approach averages of carbon actually sequestered. The data used were supplied by MPI and graphed by Dr Euan Mason of the University of Canterbury without any summaries or chanees.

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

Visitors



Area Certification Statistics



Area under certification 1,167,885 ha





Indigenous areas as part of working forest (weighted average)

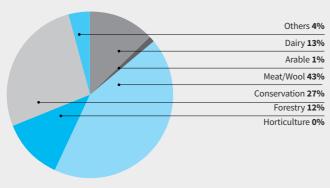




86 Special Areas managed by forest companies

Area Burnt by Land Use for the 2020/21 Season

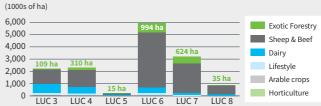
During the 2020/21 wildfire season, Meat/Wool land area was significantly impacted by wildfires (43% of the total area burnt across the country) followed by conservation land (27%).



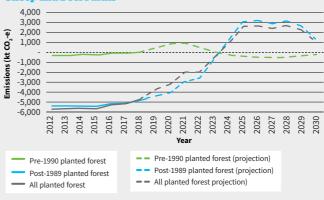
Source Area Burnt by Land Use for the 2020/21 Season Scion, Fire Emergency New Zealand

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 Capability to Ensure Best Yields and Lowest Environment Damage



Notes

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

Source Farms Online - Land Use by Land Use Capability MPI

ource 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.

Forestry Sector and Transpower MOU 2018:

FOA, FFA and FICA signed this working relationship MOU with Transpower to promote safety compliance, risk minimisation and works coordination where forestry is near Transpower's lines.

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 oxygen to carbon in carbon dioxide is 1-2.66.
- One unit mass of Nitrous oxide (N₂O) has 298 times the Global Warming Potential of a unit of Carbon dioxide (CO₂) over 100 years. Methane (CH₂) has 25 times the GWP of Carbon dioxide.

Abbreviations

AAU Assigned Amount Unit

CCC He Pou a Rangi Climate Change Commission

CER Certified Emissions Reduction
FRU 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

OIO Overseas Investment Office

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

Situation and Outlook for Filliary indi

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

 Rare Species
 www.rarespecies.nzfoa.org.nz

 Scion
 www.scionresearch.com

 Statistics NZ
 www.stats.govt.nz

 WPMA
 www.wpma.org.nz

WorkSafe NZ www.business.govt.nz/worksafe

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Prue Younger CEO

Mobile: 021 276 5484 Email: office@fica.org.nz

Bioenergy Association of NZ

Brian Cox

Executive Officer Mobile: 027 477 1048

Email: brian.cox@bioenergy.org.nz

Log Pricing Data

Log Type, Dec-14 Mar-15 Jun-15 Sep-15 Dec-15 Mar-16 Jun-16 Sep-16 Dec-16 Mar-17 Jun-171 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 Mar-21 Jun-21 Sep-21 Dec-21 Dec-21 Pricing Quarter Quarte Point, and Market

EXPORT

(NZ\$ per JAS m3 f.o.b)

Pruned	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	133 – 195 164 -	211 138 -	- 187 1	135 – 216	167 – 197	151 – 286	170 – 223	198 – 269	132 – 247	128 – 235
A Grade	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 1	111 – 161	125 – 141	135 – 156	150 – 178	172 – 196	134 - 180	112 - 135
J Grade	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
K Grade	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	109 - 137 132 -	149 112 -	- 138	98 – 149	111 – 133	126 – 145	141 – 166	162 – 189	127 – 173	102 – 128
Pulp	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	98 – 117 116 –	130 74 -	- 122	91 – 133	102 – 118	102 – 131	128 – 151	133 – 178	118 – 156	88 - 115
Average	153	147	116	128	123	148	165	152	161	165	166	169	159	166	166	164	167	176	166	136	150	134	151	148	152	164	182	164	129

DOMESTIC

(NZ\$ per tor	nne delive	red at mil	l)																										
P1	134 – 154	139 – 164	135 – 170	135 – 174	135 – 174	140 – 187	142 – 195	140 – 193	142 – 186	151 – 189	155 – 191	157 – 193	157 - 19	5 149 - 199	150 – 197	160 – 195	164 – 200	168 – 196	166 – 196	163 – 197	158 – 198	160 – 194	165 – 199	164 – 194	165 – 192	165 – 194	165 – 200	165 – 200	165 – 201
P2	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 – 19	0 97 – 191	126 – 194	143 – 195	128 – 195	132 – 194	125 – 195	114 – 191	128 – 191	129 – 192	149 – 194	115 – 197	125 – 198	130 – 197	128 – 187	150 – 202	145 – 199
S1	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 – 15	2 124 – 159	122 – 151	122 – 148	122 - 148	122 - 148	122 - 152	122 - 143	122 – 137	118 – 147	127 – 137	126 – 148	131 – 136	132 – 140	136 – 145	124 – 154	137 – 148
S2	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 - 14	4 115 - 141	120 - 141	123 - 143	120 - 143	122 - 144	110 – 147	115 – 142	120 – 132	117 – 132	110 – 130	117 – 125	117 – 135	117 – 134	126 – 147	113 – 148	99 – 139
L1 and L2	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 – 14	3 89 – 137	82 – 137	84 - 141	90 – 141	84 - 141	71 – 144	63 – 118	91 – 118	71 – 121	82 – 124	83 – 120	84 – 121	83 – 126	86 – 136	86 - 171	86 – 137
S3 and L3	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 - 13	4 109 – 136	109 – 129	88 – 130	111 - 133	104 - 132	96 – 135	84 – 124	88 - 113	82 – 117	100 – 139	93 – 112	102 - 119	99 – 120	97 – 132	72 – 142	72 – 124
Run of bush																													
Pulp	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 - 5	9 31 – 60	31 – 66	31 – 77	32 – 68	50 – 79	32 – 64	31 – 61	30 – 60	31 – 75	31 – 79	31 – 60	31 – 75	28 – 65	31 – 77	31 – 79	31 – 80
Average	102	108	99	99	102	110	114	111	111	111	126	136	134	4 134	135	133	135	136	136	127	125	126	129	124	127	131	135	139	133

Forest, Dairy, Wool and Coffee Prices

For Year at June



Source Log Pricing Data MPI

Source Forest, Dairy, Wool and Coffee Prices GDT Price Index (https://www.globaldairytrade.info/en/ product-results/), International Coffee Organisation (https://www.macrotrends.net/2535/coffeeprices-historical-chart-data), MPI, Westpac Economic Bulletin 2020, https://www.interest.co.nz/ Charts/Rural/wool-prices2

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¹ 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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