

### Forestry Data review 2024

John Lowe Project Manager, FISC 021 164 8036 December 2024





- Overview
- What the forest industry can expect in 2025
- Industry high-level health and safety data
- Regional Variances in forestry health and safety performance
- Māori ACC Claims Data
- Data analysis of all recorded manual tree-falling fatalities from 2013 to 2023
- Enforcement data WorkSafe as regulator
- Conclusion





### Overview



#### Introduction:

In the 11 years to 2023, too many New Zealanders have left home to work on a commercial forestry site and not made it home to their families at the end of the day. While increased use of mechanisation has reduced the risks to forestry workers, fatalities continue to occur at rates higher than in other comparable industries.

#### Purpose

The likelihood a forestry worker will be killed at work compared to an average NZ worker



This report is designed to capture all the sources of forestry related health and safety data and present it to the industry as a foundation for health and safety decisions.

#### In memoriam

Behind every data point is a person who loved and was loved.

*Kua hinga tōku hoa, he mamae kei tōku ngākau.* - My friend has fallen, there is pain in my heart.



### What the forest industry can expect in 2025\*



We can't change the past, but we can change the future

\* Based on the averages of the 5 years 2019 to 2023



Industry high level health and safety data



TOGETHER TOWARDS ZERO

### Industry lead health and safety statistics: Fatalities 1969 to 2023



Forestry has always been recognised as a high-risk occupation.

Against a backdrop of increasing harvests over the past 50 years forestry has continued to take the lives of some of those who work in the industry.

### Industry lead health and safety statistics: Fatality rate 1969 to 2023



The annual NZ harvest was below 10 million tonnes up until the mid 1980's. It has increased to above 25 mil tonnes annually since 2012 and been over 35 million tonnes 3 times since 2019.

The decreasing fatality rate reflects this increasing harvesting activity.



### Industry lead health and safety statistics: Fatalities and WAFW\*



Serious harm is measured in fatalities and ACC week away from work data.

ACC WAFW data is currently not being provided by WorkSafe after a restructuring of their Data and Insights team. We haven't secured this data directly from ACC.

Stats NZ publish a consolidated yearly dataset but rounds up to the nearest 100 which limits its usefulness for forestry.

\*Week away from work



### Forestry Fatalities Overview 2013 to 2023



Another way of tracking the trend in forestry fatalities is to compare it to the forestry workforce.

Workers numbers are estimated by both ACC and WorkSafe but both estimates have their limitations.



2015 to 2023

### British Columbia vs New Zealand benchmarking



the same fatality rate as BC BC fatalities have been adjusted

to match the definition of a NZ fatality (ie. Removed firefighting, train, aviation, commuting to work and Log Transport fatalities).

2015 to 2023	NZ	BC
atalities	39	25
Harvest	294 mil tns	537 mil tns



### NZ Long-term Forestry Fatality Rate by Ownership Structure



The New Zealand Government ran the NZ Forest Service as a Government department up until 1987 when it was corporatised and became Forestry Corporation.

Forestry Corp forests were sold in tranches in the early 1990's. Forestry Corporation was sold in 1996 to Fletchers for \$2.026 billion (\$3.81 billion inflation adjusted).

"Correlation does not imply causation" probably best describes this graph, given the other changes to the industry over this time frame.







### The scale of forestry harm: ACC Claim Costs

# Total Costs of Forestry ACC Claims 2017 to 2023



Total forestry ACC claims costs will include the following:

**Funeral grant**: A one-off payment of up to \$7,793.13 to help with funeral and memorial costs. This amount is tax-free and can be used for a range of expenses.

**Survivor's grants** A one-off payment of \$7,531.49 to the deceased's spouse or partner, and \$3,765.76 to each child under 18 or other dependents.

**Weekly compensation** Payments to the deceased's spouse or partner and children, based on what the deceased earnings:

- **Spouse or partner**: 60% of what the deceased would have earned, paid for five years or until the children turn 18
- Children: 20% of what the deceased would have earned, paid until the children turn 18 or 21 if they're studying

Weekly compensation to people who are injured and unable to work after a week, up to 80% of their preinjury income

Medical costs of any work related injury



### Forestry ACC Claims

Forestry ACC Claims 2017 to 2023



Average cost of each	2017 to 2023
Forestry ACC Claim	\$11,000

ACC workplace claims have fallen from 17% of the forestry workforce to 10% since 2017. Many of these claims will be for the treatment of small medical claims.

The average cost of a claim will be skewed heavily to the high costs of fatalities and serious harm.



### Forestry ACC Claims – industry comparison of all claims



Statistics New Zealand has a dataset called **Injury statistics** – **work-related claims** that allows for comparisons between industries.

It is heavily rounded and doesn't exactly match the forestry data FISC receives directly from ACC.

Forestry ACC Claims for workrelated injuries as a % of the industry workforce have dropped close to the NZ Workforce average. Forestry is also now lower than comparable industries.



### Forestry ACC Claims – industry comparison of serious harm claims



ACC – Serious harm claims

These are the number of forestry fatalities and week away from claims to ACC

Forestry ACC Claims for work-related injuries as a % of the industry workforce are close to the NZ Workforce average. Forestry is also lower than comparable industries



### Forestry ACC Claims – industry comparison of fatalities



ACC – Fatality rate per 100,000 workers (annualised, not 3 yr rolling average).

The standard measure of comparing industry fatalities is per 100,000 workers.

As fishing and forestry have small workforces (~6 to 9k, respectively), any industry fatalities drive a higher rate.

While ACC all claims and serious harm claims have fallen, the fatalities that occur in forestry and fisheries are at a significantly higher than rate than other industries.

### Industry lead health and safety statistics: ACC Levy Reductions



ACC employer levies pay for work related ACC claims of forestry workers. These will include fatality costs (funeral, spousal support at 60% of the deceased salary for 5 years, or 80% until the youngest child turns 18), medical expenses, and 80% of Salary where a claim is for longer than 5 days off work.

ACC sets levies on a 3 year cycle. Adjusted for inflation, the levy rate per \$100 of income has fallen almost 50% since 2017 due to falling claims.



### NZ Forestry Fatalities :: Woodlot and Corporate



#### Woodlots

A perception exists that forestry harm occurs primarily in "woodlots", while "corporate" foresters' offer a safer workplace. Data suggests this is not correct.

The definition of "woodlot" is important for this metric. Where a forest manager of scale has appointed a contractor to a smaller block or syndicate land, this has been categorised as a "Corporate".

Industry status	2013 to 2023	%
Corporate Forest Owner	17	34%
Corporate Forest Manager	15	30%
Woodlot / Small Scale Forest Operation	18	36%
	50	100%
Industry status	2013 to 2023	
Corporate Forest Owners and Managers	32	64%
Woodlot / Small Scale Forestry	18	36%

**Note:** There were 51 fatalities between 2013 and 2023, but we weren't able to determine the industry status of one of these from the information available.



Regional variances in forestry health and safety performance





### Regional variances in forestry health and safety performance

Figure 2: Wood Supply Regions and Territorial Authorities in New Zealand



#### **Regional ACC claims by region**

The Central North Island has the lowest incidence of ACC Claims to the harvest, while the West Coast and the Southern North Island have the highest. The health and safety performance of CNI masks a poorer performance in other regions, particularly the Southern North Island.

NZ ACC New Claims to Harvest - 2021 to 2023						
	% of total harvest *	% ACC New Claims	+/-			
West Coast	0.4%	2%				
Southern North Island	10.5%	20%				
East Coast	7.6%	11%				
Northland	10.6%	15%				
Canterbury	4.5%	5%				
Otago / Southland	8.6%	10%				
Nelson / Marlborough	9.4%	8%	++			
Hawkes Bay	10.4%	9%	++			
Central North Island	37.8%	20%	+++			
Total	100%	100%				



### Regional variances in forestry health and safety performance

Forestry Regional Health and Safety Performance 2016 to 2023								
	% Harvest*	% Fatalities	% ACC WAFW/Serious Harm (Days)	% ACC New Claims	% ACC Costs			
Northland	10.6%	8.6%	16.1%	15.3%	13.8%			
Central North Island	37.8%	20.0%	22.3%	21.3%	25.8%			
East Coast	7.6%	17.1%	8.5%	11.5%	8.4%			
Hawkes Bay	10.4%	11.4%	6.3%	8.7%	8.7%			
Southern North Island	10.5%	28.6%	16.6%	18.8%	15.8%			
Nelson / Marlborough	9.4%	8.6%	8.9%	8.1%	7.3%			
West Coast	0.4%	0.0%	1.3%	1.1%	0.9%			
Canterbury	4.5%	2.9%	6.5%	5.3%	6.1%			
Otago / Southland	8.6%	2.9%	10.6%	9.7%	8.2%			
Unknown	0.2%	0.0%	2.9%	0.0%	4.9%			
	100%	100%	100%	100%	100%			
* 2021 to 2023								

#### **Regional Health and Safety Differences**

While the comparison to the harvest is a useful proxy for forestry activity in a region, it won't include silviculture work even though the injuries of this work will be part of the ACC claims costs.



### Regional breakdown of serious harm and injuries



The split in ACC Claims between regions does not show significant changes over time.



### Regional variances in forestry health and safety performance

#### Tonnes of Wood Harvested per ACC New Claim 2021 to 2023 CENTRAL NORTH ISLAND 57305 % ACC Claims HAWKES BAY 35622 less than % Harvest NELSON / MARLBOROUGH 35521 30415 INDUSTRY AVERAGE OTAGO / SOUTHLAND 26172 CANTERBURY 25772 % ACC Claims NORTHLAND 22231 higher than % Harvest EAST COAST 20655 SOUTHERN NORTH ISLAND 15815 WEST COAST 6613 0 10000 20000 30000 40000 50000 60000 70000 Forestry Harvest (tonnes)

Tonnes harvested per ACC Claim

30,415

**Regional ACC claims by region** 

For every ACC claim in the Central North Island, 57000 tonnes are harvested. This contrasts with the West Coast, where only 6600 tonnes are harvested per claim.



### Size of the prize :: If the industry was as safe as the CNI

The safest forestry region is the Central North Island	If the rest of the country had the sam claims rate a the Central North Island	f he as eve d:	s ms ry year	<b>510</b> -47%	A In co sa	nnual ndustry ost avings	\$5.6 <sup>mil</sup>	Regions to target	Southern North Island + Northland
	ACC Claims	Costs of	Harvest	per Harvest	2021 to	o Claims at CN	I Claims Saved	Savings from	Annual Avg
	2021 to 2023	claims*	ACC Cla	im 202	3**	rate	(2021 to 2023)	reduced claims*	<b>Cost Saving</b>
Southern North Island	655	\$7,205,000	15,815	5 10,359	9,022	181	-474	-\$5,216,537	-\$1,738,846
Northland	474	\$5,214,000	22,231	10,537	7,293	184	-290	-\$3,191,317	-\$1,063,772
East Coast	365	\$4,015,000	20,655	5 7,539	,048	132	-233	-\$2,567,845	-\$855,948
Otago / Southland	324	\$3,564,000	26,172	2 8,479	,715	148	-176	-\$1,936,279	-\$645,426
Hawkes Bay	290	\$3,190,000	35,622	2 10,330	),459	180	-110	-\$1,207,020	-\$402,340
Nelson / Marlborough	262	\$2,882,000	35,521	1 9,306	,504	162	-100	-\$1,095,573	-\$365,191
Canterbury	173	\$1,903,000	25,772	2 4,458	,533	78	-95	-\$1,047,164	-\$349,055
West Coast	59	\$649 <i>,</i> 000	6,613	390,2	181	7	-52	-\$574,103	-\$191,368
Central North Island	652	\$7,172,000	57,305	5 37,362	2,988	652	0	\$0	\$0
	3254	\$35,794,000		98,763	8,744	1723	-1531	-\$16,835,838	-\$5,611,946
* Avg cost of an ACC Claim	is calculated by the t	otal cost of ACC Cla	aims / Total A	CC Claim 2019 to 2	2023. \$11	1k.			
** Tonnes									



### Size of the prize :: Regions move to the industry average





### Regional breakdown of serious harm and injuries



ACC Serious Harm / WAFW Payments By Region 2016 to 2023						
	ACC WAFW by Region	ACC New Claims by Region	Dif			
land	16%	15%	-1%			
al North Island	22%	21%	-1%			
Coast	8%	12%	3%			
		<b>A</b> -1				

East Coast	8%	12%	3%
Hawkes Bay	6%	9%	2%
Southern North Island	17%	19%	2%
Nelson / Marlborough	9%	8%	-1%
West Coast	1%	1%	0%
Canterbury	7%	5%	-1%
Otago / Southland	11%	10%	-1%
Unknown	3%	0%	
	100%	100%	



### Māori ACC Claims data



#### Māori and forestry

Māori are a key part of the forestry workforce, although the exact percentage isn't an available dataset. We have an MPI survey from 2019 that estimates 35%, while Nga Pou a Tane estimates 40%. There will be regional differences in these estimates.

ACC forestry claims by Māori mostly fall between the 35 to 40% workforce estimate, but the costs of those claims have been higher. This may be due to more serious harm events affecting Māori.

Since 2021, the % of claims by Māori has been falling, while the costs have been rising. This is not well understood and would need further research using ACC data not currently available.



Data analysis of all recorded manual tree-falling fatalities 2013 to 2023





### Forestry Fatality Statistics





### Manual Tree Falling Fatality Statistics

### 6 of the last 7 fatalities have been manual tree fallers

In the last 5 years, 8 of the last 13 fatalities have been manual tree fallers

### Tree falling fatalities compared to all other forestry fatalties 2013 to 2024





### Manual Tree Fallers – Estimated Numbers





A 30mil m<sup>3</sup> harvest per annum at 1.8 m<sup>3</sup> per tree gives 16.7m mil trees harvested annually. 85.6% harvested mechanically leaving 2.4 mil trees that need to be manually fallen annually. This is 10,000 trees per day. A production faller averages 60 trees per day, so we estimate 167 manual tree fallers operating in New Zealand. Safetree Assessors estimate

2-300

Safetree Certified Tree fallers

176

Safetree Assessors who certify tree fallers were asked to estimate their numbers Safetree Certified tree fallers will include some who are certified but not full-time production fallers. The annual recertification does mean Certified tree fallers often drop out of the scheme. 342 are currently certified or have been through a certification in the past 3 years.



### Manual Tree Falling Fatality Statistics



## Tree falling is one of the highest-risk occupations

Taking Tree fallers as a smaller subset of forestry workers and converting them to a fatality rate per 100k workers highlights the nature of tree falling as a high-risk occupation, even amongst high-risk occupations.

A Tree faller is around 300 times more likely to be killed at work than the rest of the New Zealand workforce.

The assumptions around the number of tree fallers working in New Zealand is important in estimating the fatality rate per 100k workers. We have assumed 535 fallers in 2013 dropping to 250 in 2023 as the use mechanised falling has increased.



### Tree Falling Fatalities



#### Terrain

The complexity around harvesting on steep land versus flat land is reflected in the majority of fatalities occurring on land noted as steep.

#### Woodlots

The definition of "woodlot" is important for this metric. Where a forest manager of scale has appointed a contractor to a smaller block or syndicate land, this has been categorised as a "Corporate".





### Tree Falling Fatalities

### Tree falling fatalities compared to all other forestry fatalties 2013 to 2024







### **Causes of Fatalities**

#### The seven key causes of harm





### Of the 23 Tree Falling Fatalities Between 2013 and 2023...

Age of the youngest	Median age	Average age	Age of the oldest		Experience of the tree faller			aller
21	41	43	66		Experienced Inexper 13 2		enced	Unknown 9
Tree fallers working on windthrow trees		Performing	Performing a tree drive		Old man pine, Macrocarpa or Eucalyptus		Likely breach of the ACOP	
3			7		6		14	
Tree fallers who were working alone		Working o	Working on steep land		Region with the most fatalities		Fallers who were Safetree Certified	
3		1	14		Southern North Island (10)		1	



### **ACOP Breaches**

**The Approved Code of Practice (ACOP)** is a statement of preferred work practices. A court may consider it when considering compliance with relevant sections of the Health and Safety at Work Act. If an employer can show compliance with all the matters it covers, a court may consider the employer has complied with the Act.







Tree falling fatalities – regional breakdown



## Tree Falling Fatalities by Region

	<b>Total fatalities</b>	% Fatalities	% of total harvest *	+/-	Last fatality
Northland	2	8%	10.6%	-	2017
Central North Island	5	20%	37.8%	-	2022
East Coast	3	12%	7.6%	+	2022
Hawkes Bay	3	12%	10.4%	+	2024
Southern North Island	9	36%	10.5%	+++	2023
Nelson / Marlborough	3	12%	9.4%	+	2018
West Coast	0	0%	0.4%	NA	Fatality free
Canterbury	0	0%	4.5%	NA	Fatality free
Otago / Southland	0	0%	8.6%	NA	Fatality free
Total	25	100%	100%		

#### NZ Forestry Tree falling Fatalities by region 2013 to 2024

NZ Forestry Tree falling Fatalities by region 2013 to 2018									
	Total fatalities % Fatalities % of total harvest * +/-								
Northland	2	13%	10.6%	-					
Central North Island	4	27%	37.8%	-					
East Coast	1	7%	7.6%	-					
Hawkes Bay	1	7%	10.4%	-					
Southern North Island	4	27%	10.5%	+++					
Nelson / Marlborough	3	20%	9.4%	++					
West Coast	0	0%	0.4%	Fatality free					
Canterbury	0	0%	4.5%	Fatality free					
Otago / Southland	0	0%	8.6%	Fatality free					
Total	15	100%	100%						

NZ Forestry Tree falling Fatalities by region 2019 to 2024								
	<b>Total fatalities</b>	% Fatalities	% of total harvest *	+/-				
Northland	0	0%	10.6%	Fatality free				
Central North Island	1	10%	37.8%	-				
East Coast	2	20%	7.6%	++				
Hawkes Bay	2	20%	10.4%	++				
Southern North Island	5	50%	10.5%	+++				
Nelson / Marlborough	0	0%	9.4%	Fatality free				
West Coast	0	0%	0.4%	Fatality free				
Canterbury	0	0%	4.5%	Fatality free				
Otago / Southland 0		0%	8.6%	Fatality free				
Total	10	100%	100%					

### Enforcement data – WorkSafe as regulator



TOGETHER TOWARDS ZERO



### WorkSafe enforcement function

% of 2013 to 2023 forestry fatalities not prosecuted **53%** 

Non-prosecutions may occur for the following reasons:

- Not sufficient evidence to warrant prosecution
- Victim was the Contractor
- Contractor followed industry best practice



WorkSafe is the responsible health and safety regulator for forestry. It was established in 2013 and works under the Health and Safety at Work Act 2015.

They are responsible for inspecting forestry operations, investigating incidents and prosecuting breaches of the HS and W Act.



### WorkSafe enforcement function



since 2013. 2 cases are ongoing.



### Fines and reparations imposed by the HS at W Act

Smallest	Median fine	Average fine	Largest	Size of fines are		
fine			fine	often lowered to	Average cost of the 5	
\$0	\$64,000	\$86 <i>,</i> 500	\$480,000	Contractor can pay	awards against Forest Managers	
					¢1721	
Smallest	Median	Average	Largest	Reparations are	<b>Ş</b> ΙΖ5Κ	
reparations	reparations	reparations	reparations	often covered by		
\$0	\$99,000	\$139,000	\$395,000	that survive a liquidation	Cases bought against small scale forestry owners	
•	est total Median of Average of Larger ard total award total award a		Largest total award	These are total costs	•	
Smallest total award				to a Contractor of	0	
\$11,250	\$136,000	\$225,000	\$599,000	reparations and fines imposed by the Court.		



### Contractor liquidations after a fatality in their crew.

A fatality is devastating for a crew on many levels. For the Contractor, the risk of liquidation after a fatality is 27% but rises to 48% if they are prosecuted by WorkSafe under the Health and Safety at Work Act.





### Length of time through the Justice System





### WorkSafe as a Regulator – cont.



WorkSafe forest visits by Inspectors were declining before Covid and were sharply reduced during.

# WorkSafe forest visits 2014 to 2023 (per million tonnes harvested)





### WorkSafe as a Regulator – cont.

#### Tracking WorkSafe visits to Forestry ACC Claims and Serious Harm Events 2017 to 2023



The fall in WorkSafe inspections from high levels in 2017/18 has not resulted in a corresponding increase in ACC claims or Serious harm events.



### WorkSafe as a Regulator – cont.

workSate Regional Forestry visits compared to Health and Satety indicators									
	WorkSafe Visits (2023/24)*	% Harvest**	Harvest tonnage per visit	% Fatalities ***	% ACC WAFW/Serious Harm (Days)	% ACC New Claims	% ACC Costs		
Northland	19.7%	9.3%	23,176	7%	16.1%	15.3%	13.8%		
Central North Island	17.7%	40.3%	112,071	21.8%	22.3%	21.3%	25.8%		
East Coast / Hawkes Bay	30.0%	17.8%	29,126	30.9%	14.8%	20.2%	17.1%		
Southern North Island /	15 204	19.3%	62,708	33%	25.5%	27.0%	23.1%		
Nelson Marlborough****	15.2%								
West Coast	0.0%	0.4%	126,000	0%	1.3%	1.1%	0.9%		
Canterbury	5.8%	3.9%	32,405	2%	6.5%	5.3%	6.1%		
Otago / Southland	11.5%	8.1%	34,671	5%	10.6%	9.7%	8.2%		
Unknown	0.0%	0.9%	NA	0.0%	2.9%	0.0%	4.9%		
* July 2023 to June 2024 yea	ar only								
** 2021 to 2023									
*** 2019 to 2024									
****	++++ Wark Cafe couldn't concrete CNU and Naleon Markersuch visite. As Naleon Markersuch have a better then industry overage of ACC Claims, combining the two will flatter CNU								

WorkSafe couldn't separate SNI and Nelson Marlborough visits. As Nelson Marlborough have a better than industry average of ACC Claims, combining the two will flatter SNI.

#### WorkSafe regional visits compared to harvest and ACC claims

WorkSafe visits data show that only the Southern North Island and the West Coast as the two regions underrepresented in terms of WorkSafe visits compared to the harvest or ACC claims. WorkSafe was not able to separate the East Coast / Hawkes Bay or Southern North Island / Nelson Marlborough in time constraints in place for this piece of work.



### Conclusion

- Mechanisation: the shift to mechanised harvesting systems has improved safety in forestry in New Zealand.
- However, manual tree falling is still 15% of the harvest
- Manual tree falling is likely to continue at around 15% of the harvest for the foreseeable future
- An industry level focus on the safety of manual tree fallers is important

Current Tree falling workstreams include:

- Reviewing the Tree falling BPG
- Reviewing the tree falling chapter of the Accepted Code of Practice (ACOP)
- Funding Safetree Worker Certification for tree fallers through funding received from ACC
- Benchmarking Safetree tree falling certification with the British Columbia falling Certification
- A review of machine assisted tree falling training is being funded through an Enforceable Undertaking issued by the District Court as part of court action against Farman Turkington Limited.