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

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# Forestry Fatalities 2013 to 2023

# 2013 to<br/>2023TotalForestryFatalities51

### 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, a considerable cohort of manual tree fallers put themselves in harm's way to harvest trees for mills around New Zealand and the worldwide export market.

### Purpose

This report will analyse tree-falling fatalities so the industry can identify ways to make safety improvements for those who continue to harvest manually.

### 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.

The likelihood a manual tree faller will be killed at work compared to an average worker





## Forestry Fatalities Overview 2013 to 2023

#### **Fatalities**









### Commentary

Fatalities in New Zealand forestry peaked in 2013 but have been declining in terms of the per 100k worker rate and the per 10m<sup>3</sup> of the harvest.

This is attributed to an industry shift to mechanisation over the past decade.



# 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

# Fatality rate selected industries 2015 to 2022, per 100,000 workers



# 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 Free 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 13	Inexperienced 2		Unknown 9
Tree fallers working on windthrow trees		Performing a tree drive			Old man pine, Macrocarpa or Eucalyptus		Likely breach of the ACOP	
3					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		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%				



# 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.