

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

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# Forestry Fatalities 2013 to 2023

Total Forestry Fatalities	2013 to 2023 <b>51</b>
The likelihood a manual tree faller will be killed at work compared to an average worker	<b>300x</b>

## Introduction:

In the 10 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.

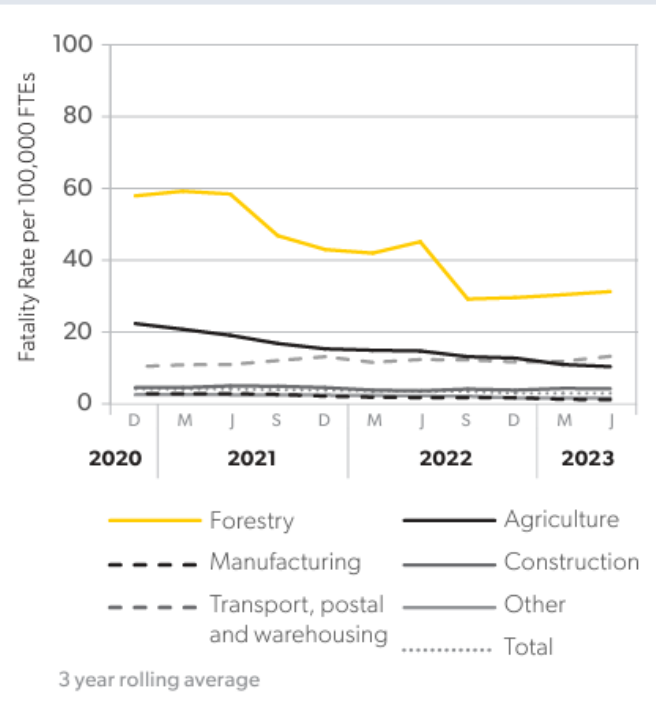
*Kua hinga tōku hoa, he mamae kei tōku ngākau.*

- My friend has fallen, there is pain in my heart.

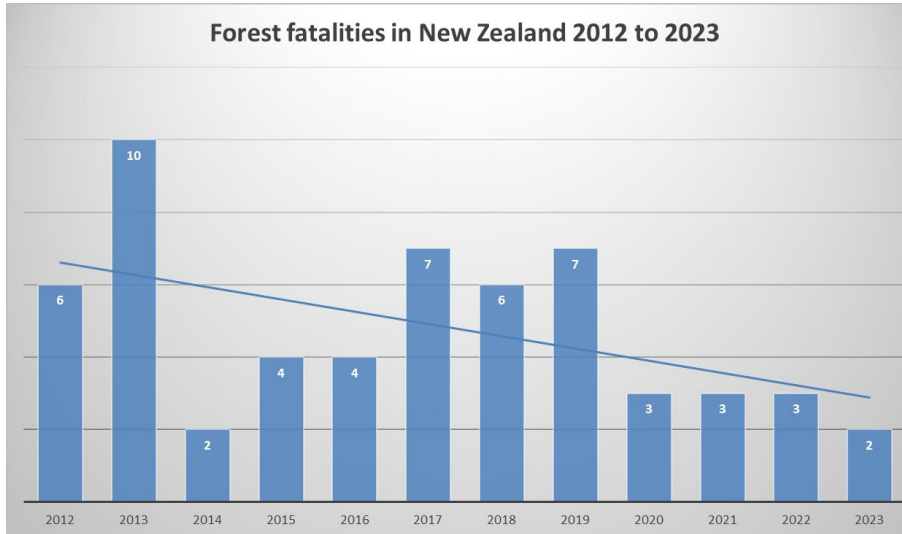
# Forestry Fatalities Overview 2013 to 2023

## Fatalities

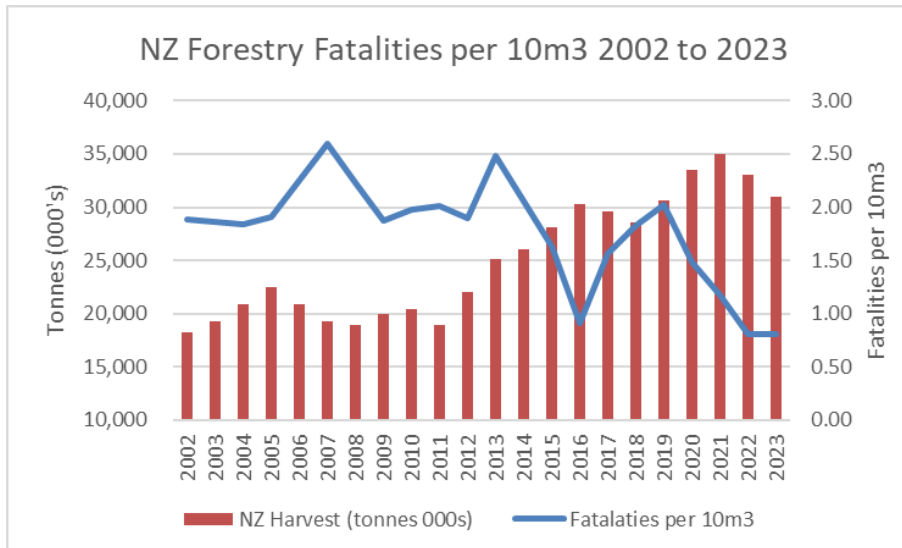
### Rate of fatalities per 100,000 FTEs



### Forest fatalities in New Zealand 2012 to 2023



### NZ Forestry Fatalities per 10m3 2002 to 2023



## 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.



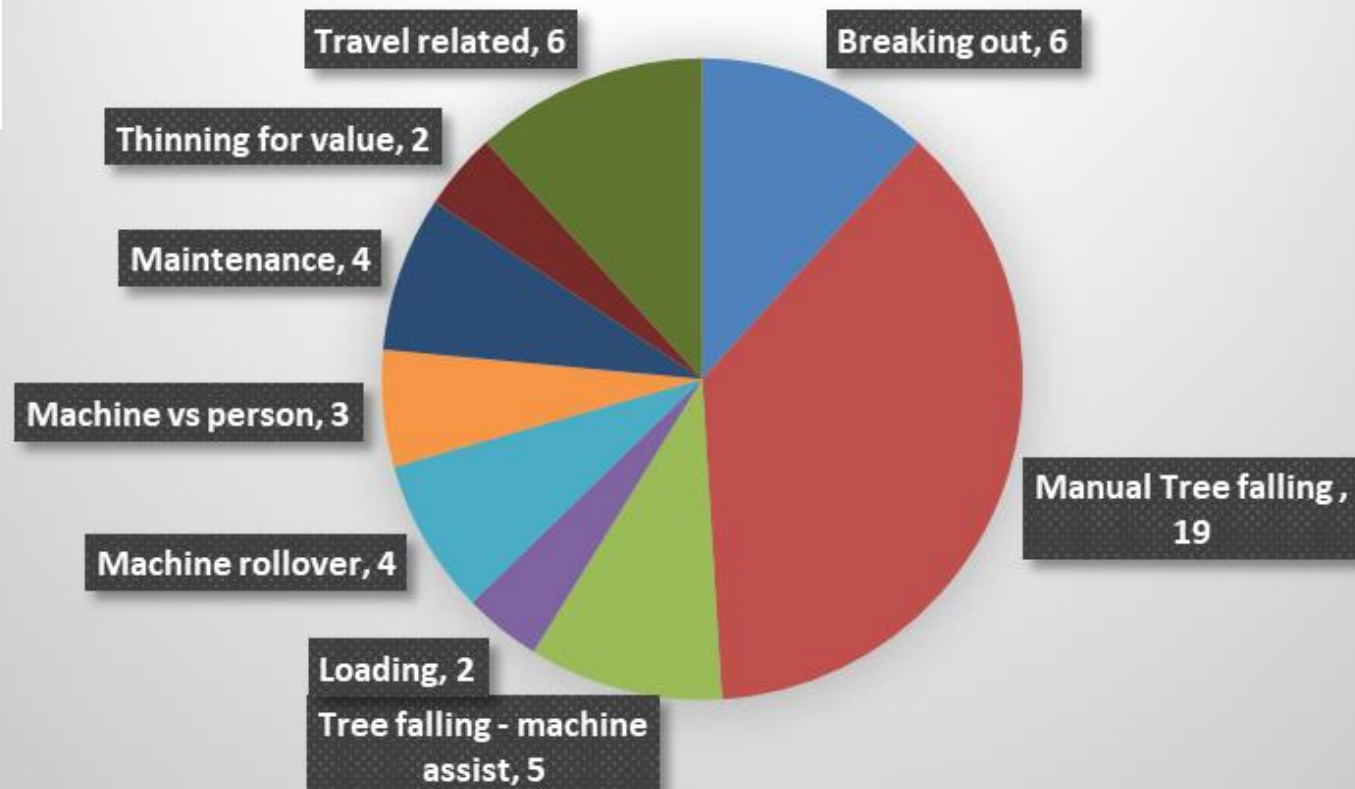
# Forestry Fatality Statistics

Total Tree  
Faller  
Fatalities

2013 to 2023

24

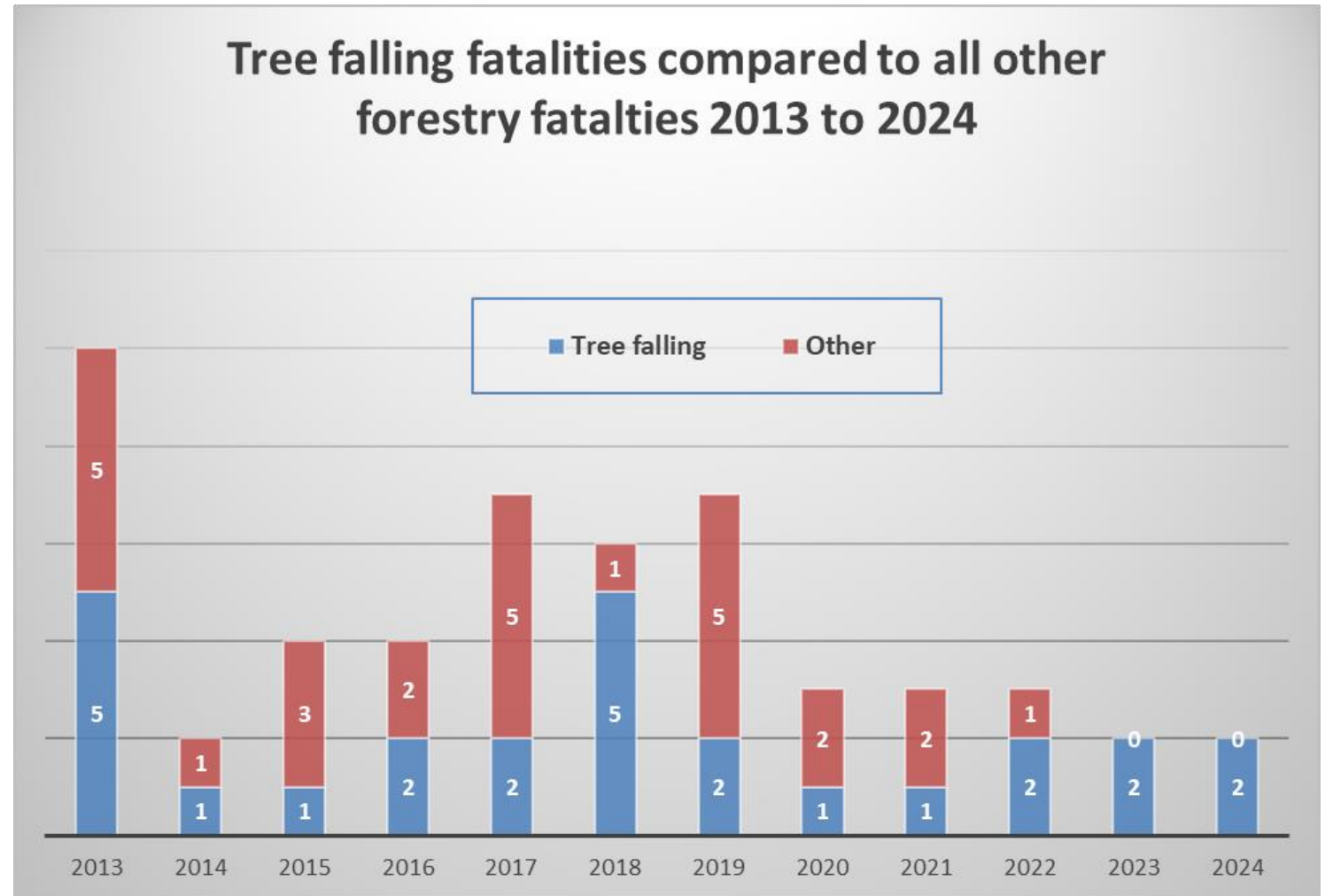
## Forestry fatalities by Task 2013 to 2023



# 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



# Manual Tree Fallers – Estimated Numbers

**FICA  
estimate to  
WorkSafe**

**167**  
FTE

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 Assessors who certify tree fallers were asked to estimate their numbers

**Safetree  
Certified  
Tree fallers**

**176**

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

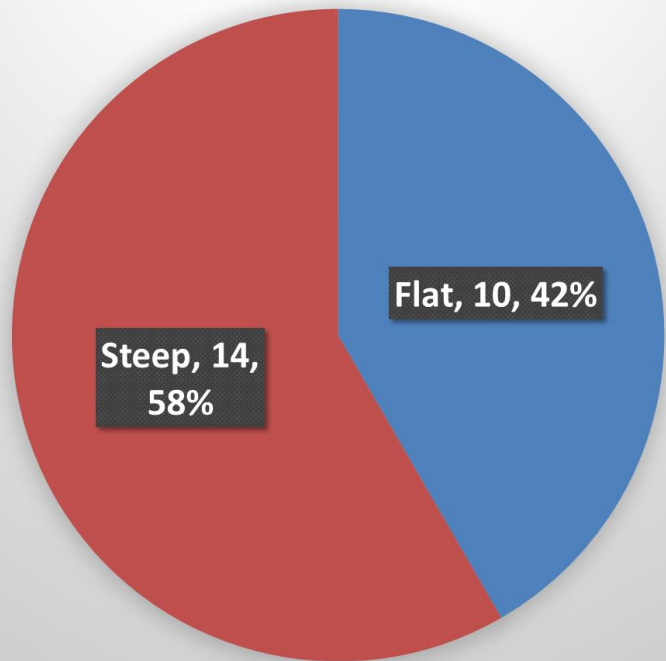
Taking Tree fallers as a smaller subset of forestry workers and converting them to a fatality rate per 100k workers highlights the nature of tree falling as a high-risk occupation, even amongst high-risk occupations.

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

Tree falling fatalities by terrain



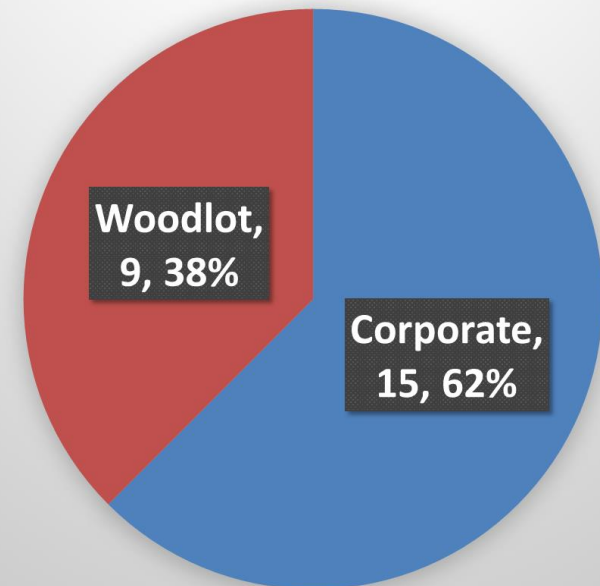
## Terrain

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 2013 to 2023 by forest ownership

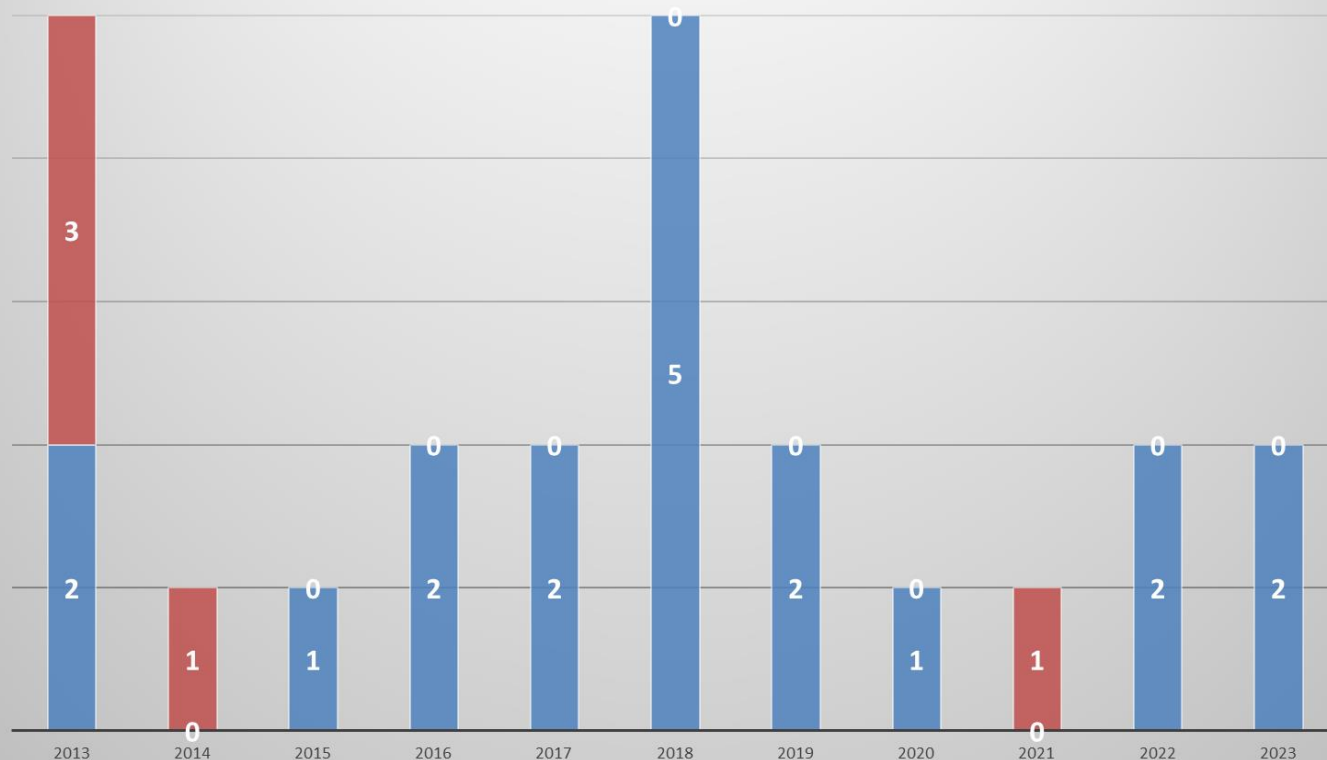




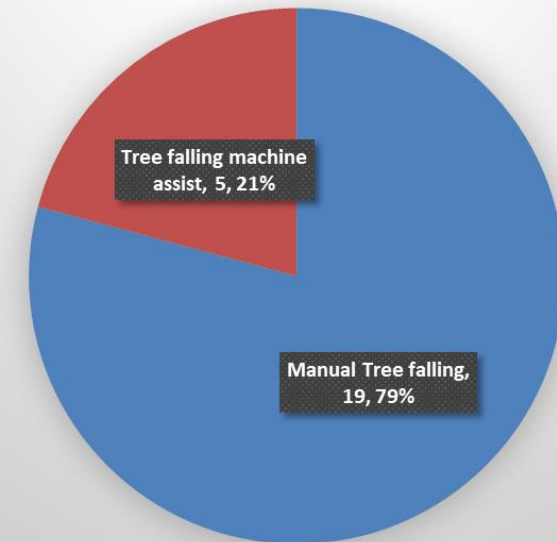
# Tree Falling Fatalities

## NZ Tree faller fatalities 2013 to 2023

■ Tree falling ■ Tree falling machine assist



## Tree falling fatalities 2013 to 2023



### Machine assist incidents

Comms failure – inside 2 tree lengths. Eucalyptus

No training – 6 days on the job. Dead pine

Comms failure, no PPE – inside 2 tree lengths. Pine

Intertwined branches on old Macrocarpa block.

Poor felling technique

# Causes of Fatalities

## The seven key causes of harm



1. A faller working too close to other people or place



2. Broken limbs or top hitting the faller



3. Incorrect or poor felling technique



4. Felling dead trees



5. A faller struck from behind by an object or a tree

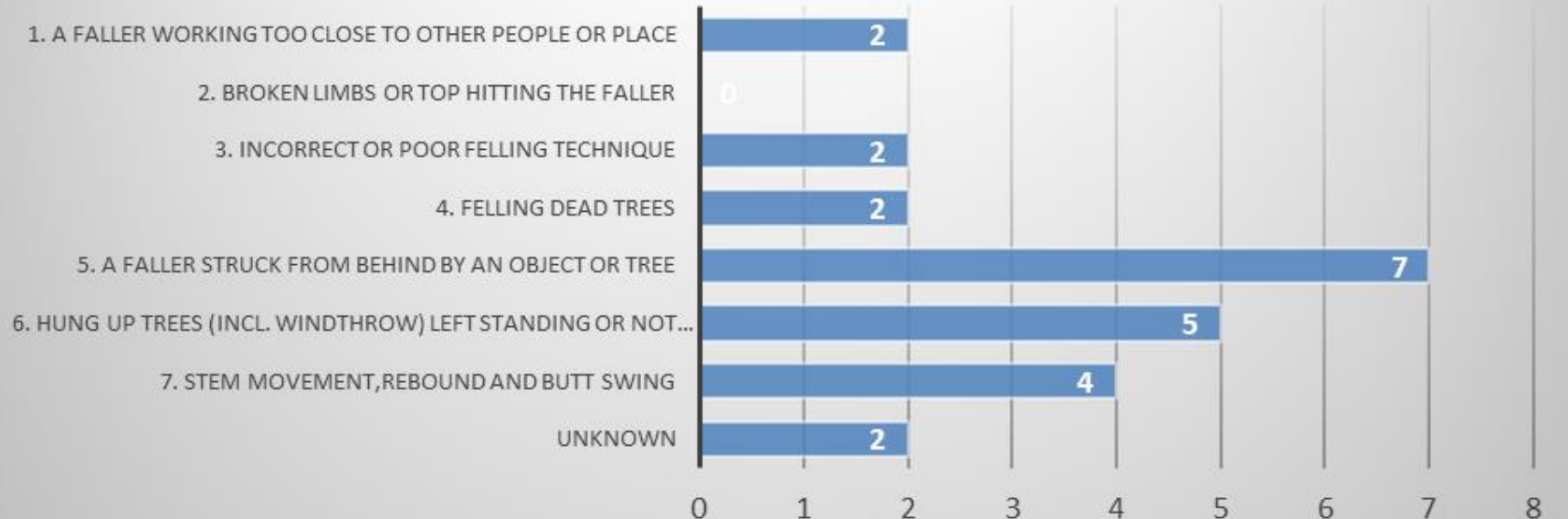


6. Hung up trees left standing or not felled using the correct methods



7. Stem movement/rebound and butt swing

## Tree falling fatalities grouped by "The Seven Key Causes of Harm"



# Of the 24 Free Falling Fatalities Between 2013 and 2013...

Age of the youngest	Median age	Average age	Age of the oldest
21	41	43	66

Experience of the tree faller		
Experienced 13	Inexperienced 2	Unknown 9

Tree fallers working on windthrow trees
3

Performing a tree drive
7

Old man pine, Macrocarpa or Eucalypt
6

Clear breach of the ACOP
14

Tree fallers who were working alone
3

Working on steep land
14

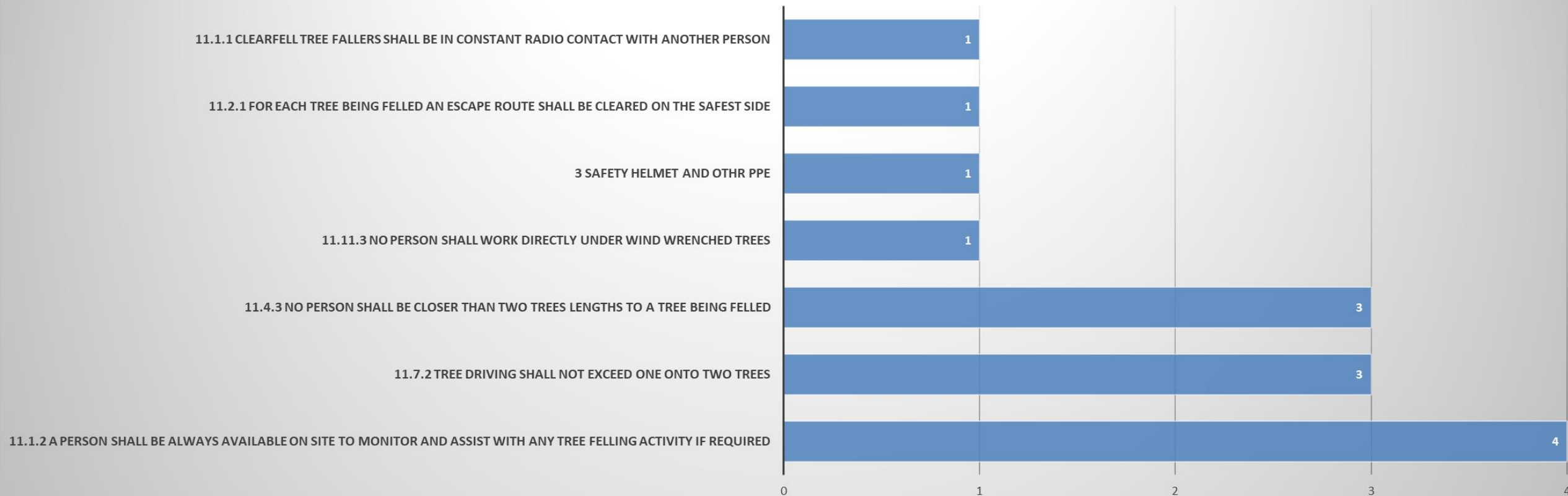
Region with the most fatalities
Southern North Island (10)

Fallers who were Safetree Certified
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.

## Likely ACOP breaches in 14 of the 24 fatalities between 2013 and 2023





## Tree falling fatalities – regional breakdown



# Tree Falling Fatalities by Region

NZ Tree falling Fatalities by region 2013 to 2024				
	Total fatalities	% Fatalities	% of total harvest	+/-
Northland	3	12%	10.6%	-8.4%
Central North Island	4	15%	37.8%	59.2%
East Coast	3	12%	7.6%	-51.5%
Hawkes Bay	3	12%	10.4%	-10.5%
Southern North Island	10	38%	10.5%	-267.5%
Nelson / Marlborough	3	12%	9.4%	-22.7%
West Coast	0	0%	0.4%	Fatality free
Canterbury	0	0%	4.5%	Fatality free
Otago / Southland	0	0%	8.6%	Fatality free
<b>Total</b>	<b>26</b>	<b>100%</b>	<b>100%</b>	

\* Average of 2021, 2022 and 2023. Source: FGLT monthly production report.

NZ Tree falling Fatalities by region 2013 to 2018				
	Total fatalities	% Fatalities	% of harvest	+/-
Northland	1	7%	10.6%	37.4%
Central North Island	4	27%	37.8%	29.4%
East Coast	1	7%	7.6%	12.5%
Hawkes Bay	1	7%	10.4%	36.1%
Southern North Island	5	33%	10.5%	-218.5%
Nelson / Marlborough	3	20%	9.4%	-112.7%
West Coast	0	0%	0.4%	Fatality Free
Canterbury	0	0%	4.5%	Fatality Free
Otago / Southland	0	0%	8.6%	Fatality Free
<b>Total</b>	<b>15</b>	<b>100%</b>	<b>100%</b>	



NZ Tree Falling Fatalities by region 2019 to 2024				
	Total fatalities	% Fatalities	% of harvest	+/-
Northland	2	18%	10.6%	-70.8%
Central North Island	0	0%	37.8%	Fatality Free
East Coast	2	18%	7.6%	-138.7%
Hawkes Bay	2	18%	10.4%	-74.2%
Southern North Island	5	45%	10.5%	-334.3%
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
<b>Total</b>	<b>11</b>	<b>100%</b>	<b>100%</b>	

# 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.