



WORKPLACE HEALTH AND SAFETY STRATEGY  
FOR NEW ZEALAND TO 2015

# Forestry Sector Action Plan 2010–2013



PLA11086 AUG 11





This Action Plan has been prepared by the Department of Labour in partnership with the Accident Compensation Corporation and the Forest Owners Association.

## ⇒ About the Department of Labour

The Department of Labour provides information and investigates problems to do with employment and workplace health and safety. We can help employers and employees with:

- › employment conditions
- › minimum legal requirements
- › problem resolution
- › health and safety
- › ways to work better
- › labour market information

## ⇒ More information

[www.dol.govt.nz](http://www.dol.govt.nz)

0800 20 90 20

Information, examples and answers to your questions about the topics covered here can be found on our website [www.dol.govt.nz](http://www.dol.govt.nz) or by calling us free on 0800 20 90 20.

ISBN 978-0-478-36079-0

August 2011



# Contents

<b>1. National Action Agenda to reduce New Zealand’s work toll.....</b>	<b>1</b>
<b>2. Focusing on reducing the work toll in Forestry: tree felling and breaking out.....</b>	<b>2</b>
A multi-faceted approach to intervention .....	2
Working in partnership .....	2
<b>3. Forestry Sector Initiatives for 2010–2013.....</b>	<b>3</b>
Growing safety leadership .....	3
Developing capability.....	4
Building knowledge.....	5
Supporting a robust health and safety system.....	6
<b>4. Monitoring.....</b>	<b>8</b>
<b>Appendix 1 – Sector overview .....</b>	<b>9</b>
<b>Appendix 2 – Fatalities .....</b>	<b>12</b>
<b>Appendix 3 – Non fatal injuries and accidents .....</b>	<b>16</b>
<b>Appendix 4 – Impact on the sector .....</b>	<b>21</b>
<b>Appendix 5 – Other projects and initiatives.....</b>	<b>23</b>
<b>Appendix 6 – Contributing research .....</b>	<b>25</b>
<b>List of Figures</b>	
Figure 1: ACC claims for fatal work-related injuries, averaged 2003–2008 .....	12
Figure 2: Fatalities recorded by the Department of Labour 1995–2008 .....	13
Figure 3: Causes of Fatalities 1988 to 2005 .....	14
Figure 4: Department of Labour serious harm notifications, averaged 2003–2010 .....	16
Figure 5: Serious harm notifications per 1,000 FTEs 2003–2010 .....	17
Figure 6: Serious harm events by task.....	18
Figure 7: Top ten causes of serious harm notification in forestry 2003–2010 .....	19
Figure 8: Types of injury 2006–2009 .....	20
Figure 9: Accidents resulting in lost time injuries 2005–2010 .....	21
Figure 10: Lost time, total injury and severity rates 2006–2008.....	22
<b>List of Tables</b>	
Table 1: Labour productivity by industry.....	10
Table 2: Sector fatality data for the period 2005–2010 .....	13
Table 3: Causes of felling fatalities .....	15
Table 4: Causes of breaking out fatalities .....	15
Table 5: ACC cost of forest industry entitlement claims .....	22



## Forestry Sector Action Plan

This Action Plan sets out specific actions to reduce the toll of work-related injury and fatality ('the work toll') in the forestry sector. It has a particular focus on health and safety systems and processes for the tasks of tree felling and breaking out.

It has been prepared by the Department of Labour in partnership with the Accident Compensation Corporation and the New Zealand Forest Owners Association's Health, Safety and Training Committee. It is closely aligned to the Forest Owners Association Strategic Safety Plan and provides a purposeful rallying point for government agencies and the forestry sector.



# 1. National Action Agenda to reduce New Zealand's work toll

A National Action Agenda for workplace health and safety, released in March 2011, sets a new direction for action over the next 3 years under the Workplace Health and Safety Strategy for New Zealand to 2015.

The Action Agenda signals a narrower and deeper focus by concentrating on priority sectors and setting specific actions that will result in a reduction in the work toll. The Action Agenda is focusing on areas where a measurable and marked difference can be made over the next 3 years. Each Sector Action Plan is being developed in partnership with key stakeholders in New Zealand's health and safety system.

## THE FIVE PRIORITY SECTORS ARE:

- CONSTRUCTION
- AGRICULTURE
- FORESTRY
- MANUFACTURING
- FISHING

## NATIONAL AND SECTOR-LEVEL ACTIONS WILL BE DELIVERED UNDER FOUR ACTION AREAS:

1. Growing safety leadership
2. Developing capability
3. Building knowledge
4. Supporting a robust health and safety system



## 2. Focusing on reducing the work toll in Forestry: tree felling and breaking out

Activity occurs at all stages of the forestry supply chain from tasks such as the planting of the trees, tree maintenance, and felling, trimming, and log removal, through to the transport of the logs to ports or manufacturers and timber processors.

Tree felling and breaking out activities in particular make a significant contribution to the work toll in forestry.

- › The forestry sector has the highest rate of fatal injury across the five priority sectors.
- › 55% of forestry fatalities recorded by the Department of Labour (the Department) between 1988 and 2005 were attributed to the tasks of tree felling or breaking out<sup>1</sup>.
- › Sector and Department of Labour data identifies the tasks of tree felling and breaking out as the main tasks contributing to serious harm accidents<sup>2</sup>.
- › Injury severity rates have increased from an average of approximately 10 days per lost time injury in 2006 to approximately 16 days in 2008<sup>3</sup>. This has an economic impact on the sector, business and the worker.
- › Between July 2008 and June 2010, ACC forestry sector entitlement claims<sup>4</sup> reduced by 13% to 318. Over the same period log harvest volumes have increased by 10%. While significant progress has been made these claims still cost over \$2.3 million<sup>5</sup>.

### A multi-faceted approach to intervention

International and local research<sup>6</sup> indicates a multi-faceted approach is the most effective course of action to change behaviour and reduce the work toll.

This Sector Action Plan is a way of developing and designing targeted interventions for recurring health and safety problems. It is a mechanism to engage, involve and focus key stakeholders on specific issues.

### Working in partnership

The Department and ACC have worked with forestry stakeholders to identify and agree on the priority issues. Feedback and input was sought from employees, contractors, Māori, and businesses through key sector stakeholders.

This action plan's focus on tree felling and breaking out complements work already underway within the forestry sector. It supports activities already identified in the New Zealand Forest Owners Association's (NZFOA) Strategic Safety Plan which focuses on safety culture and leadership and safety simplification.



## 3. Forestry Sector Initiatives for 2010–2013

The following initiatives will contribute to reducing the forestry work toll.

A number of these initiatives are underway, having been developed within the NZFOA's strategic safety plan. New initiatives to support our future tree felling and breaking out focus will also be developed.

### Growing Safety Leadership

#### ■ Building national sector engagement

This initiative aims to establish strong and effective working relationships between key forest stakeholders. Engagement will focus on; reducing breaking out and tree felling injuries and fatalities, using forestry networks; and promoting safe work design. The Department will identify how to engage on health and safety with:

- › New Zealand Forest Owners Association's Health, Safety and Training Committee
- › Forest Industries Training and Education Council (FITEC)
- › Forest Industry Contractors Association (FICA)
- › Log Transport Safety Council (LTSC)
- › NZ Farm Forestry Association (NZFFA)
- › Future Forest Research (FFR)
- › Business Leaders' Health and Safety Forum
- › Unions and health and safety representatives
- › Health and safety professional organisations
- › Relevant employer / trade associations
- › Training organisations
- › Other government agencies
- › Pacific people's representatives
- › Māori businesses and iwi leaders
- › Employees and employee organisations
- › Forestry workers.

This initiative will:

- › identify forestry sector stakeholders by June 2011 – *DoL*
- › develop a stakeholder map and relationship management plan by December 2011 – *DoL*
- › build strong and effective working relationships with key forest sector stakeholders by December 2013 – *DoL*
- › secure key sector stakeholders' commitment to reducing the work toll via the Partners in Action Pledge by December 2012 – *DoL and Sector stakeholders*<sup>7</sup>
- › promote the Partners in Action Pledge to members by December 2012 – *Sector stakeholders*.



### ■ Promoting the Partners in Action Pledge (the Pledge)

The purpose of the Pledge is to promote and seek forest stakeholder commitment to work toward zero harm and to acknowledge the key role stakeholders play in reducing the forestry work toll.

This initiative will:

- › establish the Pledge on the Department's website by June 2011 – *DoL*
- › secure key sector stakeholders' commitment to the Pledge by December 2012 – *DoL*
- › see stakeholders put a link to the Pledge on their respective websites by December 2013 – *DoL and Sector stakeholders*
- › promote the Pledge to the sector via the forestry supply chain by December 2012 – *DoL and Sector Stakeholders*
- › publish good safety leadership case studies annually that will be accessible via the Department website from December 2012 – *DoL and FOA*.

### ■ Carrying out the Forest Owners Association's Strategic Safety Plan 2009–2011

The safety plan has three project areas:

- › Safety culture and leadership
- › Rationalisation and clarification of work standards (simplification) and
- › Fair and clear enforcement of approved codes of practice and guidance.

By December 2011 the outcomes / outputs of this strategic plan will:

- › develop a safety culture and coaching resource – *FOA*
- › deliver breaking out behavioural standards – *FOA*
- › improve access to best practice guides that include reviewed to include approved code of practice requirements – *FOA*
- › provide guidance and examples to ensure contractors, forest owners and workers have a clear understanding of health and safety enforcement options and consequences – *FOA*
- › explore recognition options, so that forestry businesses with a high level of health and safety compliance are rewarded through government agency programmes – *ACC*.

## Developing Capability

### ■ Delivering effective training for tree felling and breaking out

FITEC will work with key forestry sector stakeholders, including New Zealand Qualification Agency (NZQA), to increase the availability and uptake of recognised training and education. The aim is to improve health and safety practises relating to the tasks of tree felling and breaking out. The initiative will also consider how to include businesses not aligned with sector organisations so they are aware of and can participate in training and education.

This initiative will:

- › increase registrations for forestry related health and safety training through FITEC to between 4500 and 5000 per annum by December 2013 – *FITEC*
- › review relevant unit standards to ensure compliance by December 2011 – *FITEC*.

### ■ Trialling a breaking out certification process

ACC and Nelson Forests Ltd is trialling a breaking out certification process with Nelson Forests, Blakely Pacific and PF Olsen crews. The trial will be testing a tool developed to measure compliance with approved codes of practice and training achievement.





This initiative will:

- › provide data and learning to inform future initiatives by December 2012 – *ACC and Nelson Forests Limited*
- › promote 100 percent of crews involved in the trial to be compliant with the approved codes of practice and other guidance material by December 2012 – *Nelson Forests Limited*.

### ■ **Providing accessible information for small businesses**

The aim is for small businesses in forestry to become better enabled to manage their health and safety risks. For example, that they are aware of the key actions they need to take, they know where to access advice and they are able to comply with their health and safety obligations even if they are not formally aligned with sector organisations.

This initiative will:

- › update the Department's website with reviewed and updated forestry guidance by December 2011 – *DoL*
- › promote the updated guidance through key forest sector stakeholders by December 2012 – *DoL and Sector stakeholders*
- › collaborate with the forestry sector to create tools and resources, e.g. a forestry Infozone web tool, fact sheets and case studies, by December 2013 – *DoL and FOA*.

## **Building Knowledge**

### ■ **Establishing clear safety standards for safe tree felling and breaking out**

This initiative aims to continually review and improve the content of health and safety standards, guidance, tools and information so that accurate and understandable guidance is readily available and accessible to businesses and workers in the forestry sector.

This initiative will:

- › build strong and effective working relationships with key forest sector stakeholders best placed to participate in developing and promoting guidance to the sector by December 2013 – *DoL*
- › review and publish forestry guidance by December 2011 – *DoL and Sector stakeholders*
- › provide the sector with a clear understanding of enforcement options and consequences by December 2011 – *DoL and Sector stakeholders*
- › align FITEC and other training and guidance materials to ensure they are current and consistent with sector standards by December 2011 – *FITEC and associated sector stakeholders*.

### ■ **Sharpening our data collection and dissemination**

This project seeks to expand and integrate data sources to improve the quality of forestry data and to enable forestry stakeholders to adjust and better target intervention strategies. This will provide the opportunity to analyse the specific problems and trends within the forestry sector.

This initiative will:

- › build strong and effective working relationships with key forest sector stakeholders to improve the quality of forestry data and inform future interventions by December 2013 – *DoL and FOA*
- › develop information about health and safety in the forestry sector including summaries of fatal and serious harm injuries as a result of tree felling and breaking out annually from December 2011 – *DoL and FOA*
- › publish health and safety statistics for the forestry sector annually from December 2012 – *DoL and FOA*.



### ■ **Reviewing the Incident Reporting Information System (IRIS)**

In 2005, the NZFOA launched IRIS. The objectives of IRIS are to facilitate injury prevention analysis, to promote safety improvement initiatives and monitor their effectiveness in terms of incident rates. IRIS also allows the industry and individual companies to confidentially, quickly and effectively benchmark their health and safety performance against industry averages and other sectors. This information has been successfully used to refine and reinforce safe work practices in the industry.

This initiative will:

- › review IRIS accident data to identify annual comparisons by activity, operation and task to enable identification of annual trends annually by December 2013 – *FOA*
- › disseminate the analysis using the forestry supply chain annually by December 2013 – *FOA*.

## **Supporting a robust health and safety system**

### ■ **Delivering effective and efficient interventions**

This initiative aims to stimulate a reduction in injuries across all activities, including tree felling and breaking out. Interventions will include:

- › Safe Start breakfasts
- › 'Growing our Safety Culture' assessments
- › the breaking out / certification process
- › health monitoring and audits
- › the Department's education and enforcement programme for tree felling and breaking out.

This initiative will:

- › build strong and effective working relationships with key forest sector stakeholders best placed to participate in developing and promoting safe tree felling and breaking out practice by December 2013 – *DoL, ACC and Sector stakeholders*
- › develop a framework to research, evaluate and monitor safe tree felling and breaking out by December 2012 – *DoL and FOA*
- › deliver the first phase of a harm reduction project focusing on tree felling and breaking out by December 2012 – *DoL*
- › review harm reduction project data to determine the interventions for phase two by December 2012 – *DoL*
- › deliver the second phase of the harm reduction project focusing on tree felling and breaking out by December 2013 – *DoL*
- › review the data from both phases of the harm reduction project to inform future interventions by December 2013 – *DoL*
- › monitor employee health and conduct health and safety audits annually by December 2013 – *Sector stakeholders*
- › use results from monitoring and audits to inform future interventions by December 2013 – *Sector stakeholders*.



### ■ **Delivering the Department of Labour's education and enforcement programme for tree felling and breaking out**

The Department's aim is to reduce the injury and fatality rates relating to the tasks of tree felling and breaking out. A steering group has been established to focus specifically on best practice safe health and safety processes and procedures for the tasks of tree felling and breaking out.

This initiative will:

- › build strong and effective working relationships with key forest sector stakeholders best placed to participate in the development and promotion of safe tree felling and breaking out practice by December 2013 – *DoL*
- › conduct face to face interactions with at least 100 forestry operators and their employees to identify areas of improvement, assist in establishing best practice, and provide information and best practice guidance by December 2012 – *DoL*
- › deliver the second phase of the harm reduction project focusing on tree felling and breaking out by December 2013 – *DoL*
- › review the data from both phases of the harm reduction project to inform future interventions by December 2013 – *DoL*.

### ■ **Review and update approved code of practice (acop), best practice guide (bpg) and standard setting projects**

These projects aim to review and update key guidance and codes of practice for the forestry sector. As part of these projects the approved codes of practice for forestry operations (which now includes rivers and heli-logging), and tree work and arboriculture are being reviewed and edited in conjunction with key sector stakeholders. The approved codes of practice and the best practice guide will be consistent.

This initiative will:

- › review and update key forestry guidance and codes by December 2011 – *DoL and Sector stakeholders*
- › promote the guidance and codes to ensure forestry businesses and workers have access to the guidance by December 2011 – *DoL and Sector stakeholders*
- › promote the guidance and codes to ensure forestry businesses and workers understand their obligations and enforcement consequences by December 2013 – *DoL and Sector stakeholders*.



## 4. Monitoring

The Department will continue to work closely with the Statistics New Zealand Injury Information Manager to ensure that the injury information collected by all agencies is increasingly presented in ways that tell a more joined-up story of how New Zealand is progressing. The Department will ensure access for interested stakeholders to better quality information on the state of health and safety in New Zealand. The Department will undertake activity performance monitoring through:

- › Sector Action Plan actions being completed on schedule
- › effective sector leadership groups
- › better access to more reliable health and safety data.

The Department will undertake outcome monitoring by ensuring that all activity programmes include indicators and measures of success, using the broad framework of:

- › immediate measures of response to activity
- › intermediate measures of changed awareness and/or practice in workplaces.

The Department will report annually on progress against high-level indicators for health and safety from June 2011 in an annual State of Health and Safety Report.

This Sector Action Plan will be reviewed and updated in 2014.



## Appendix 1

# Sector overview

### ■ 1.1 Characteristics

Forestry is New Zealand's third largest export earner (NZ\$3.9 billion) and contributes around 2.9% of Gross Domestic Product (GDP). Over the past year, around 23.5 million cubic metres of timber was harvested, an increase of 18% over the previous year and largely driven by the large increase in demand for logs from China. The potential wood availability from the existing estate will exceed 37 million cubic metres (NZ\$14 billion) a year by 2025 – almost 60% more than current harvest levels<sup>8</sup>.

Today New Zealand is amongst the top 20 global wood suppliers; by 2025 it will be one of the top five. 98% of New Zealand's commercial wood needs are met from sustainably managed plantation forests<sup>9</sup>.

In June 2004 the forestry sector employed 8,620 people, the largest concentrations of employment being in the Waikato, Bay of Plenty and Gisborne/Hawkes Bay regions<sup>10</sup>. By June 2009 the number of employees decreased by 30% to approximately 6000.<sup>11</sup> The reduction has been attributed to reduced silviculture activity (planting, thinning and pruning) and increased mechanisation of harvesting. Due to increased wood demand it is estimated that the sector will employ approximately 9,000 people by 2014<sup>12</sup>.

The forestry workforce is mostly male (approximately 85% as at 2006 census) and has a higher than average proportion of Māori workers – 32.6% compared to the average for all industries of 12.2%<sup>13</sup>.

As at June 2009, 16% of the employees in forestry were aged 18–24 years. The proportion of workers over the age of 55 was 11.9%, lower than the average for all industries of 18.4%<sup>14</sup>.

Forestry work is labour-intensive, and over 50% of the workforce report that they work more than 40 hours a week. Over 9% of forestry workers worked more than 60 hours a week (all industry average 6.9%)<sup>15</sup>.

A quarter of the forestry workforce is self-employed<sup>16</sup>. 62% of employees in forestry are employed by a small to medium enterprise (<20 employees).<sup>17</sup> Nearly 45% of workers change jobs within 12 months<sup>18</sup>. The proportion of workers with no qualifications is nearly 15% higher than the average for all industries at 34.7%<sup>19</sup>. High turnover of staff and low levels of literacy and numeracy may be contributing factors to sector injuries and fatalities.

FITEC's focus is on improving education in the forestry sector. It has worked in conjunction with the Horticultural and Agricultural ITOs to launch the New Zealand Trades Academy. The Academy provides opportunities for senior secondary students to experience working in the primary industries. It combines senior secondary classroom study with on the job learning and the National Certificate credits count towards NCEA.

As at December 2010 52% (4,630) of FITEC trainees and apprentices were forestry workers, the majority being from the Waikato, Bay of Plenty and Gisborne/Hawkes Bay regions. Just over half of the trainees and apprentices were European, 32% Māori and 5% Pasifika<sup>20</sup>. FITEC are expecting 1510 forestry graduates in 2011.

Labour productivity in the forestry sector has increased at an average of 3.8% per annum between 1978 and 2009. The greatest productivity growth occurring between 2006 and 2009 (see Table 1). This growth is attributed to increased investment in capital<sup>21</sup> such as technology and machinery. This may explain the downward trend of fatalities that occurred during the same period that log harvests have increased (see figure 2).



**Table 1: Labour productivity by industry<sup>22</sup>.**

**Average annual percentage change (Year ended 31 March)**

	1978 – 2009	1996 – 2009	2006 – 2009
<b>Industry</b>	<b>Percent</b>		
Agriculture	4.1	3.3	1.5
Forestry and Fishing	3.8	2.8	4.7
Mining	1.7	1.0	-0.2
Manufacturing	1.6	1.2	-1.9
Electricity, gas and water supply	3.6	1.0	-3.1
Construction	0.3	-0.4	-3.3
Wholesale trade	0.5	1.4	-0.1
Retail trade	0.9	2.1	1.2
Accommodation, cafes, and restaurants	-1.2	-0.5	-1.4
Transport and storage	3.4	0.8	-0.02
Communication services	9.0	6.6	3.3
Finance and insurance	3.5	5.1	3.8
Property services*	...	3.4	4.5
Business services*	...	-0.4	-1.2
Cultural and recreational services*	...	-2.2	-1.4
Personal and other community services*	...	1.7	-2.1
<b>Measured sector</b>	<b>2</b>	<b>1.5</b>	<b>0</b>
*Data available only from 1996 Symbol ... not applicable			



## ■ 1.2 Key stakeholders

The forestry sector is highly organised with about 8 large players in the market. These large players control the activities of the contracting market and set the standard for health and safety within industry. All 8 companies are represented on the NZFOA's Health, Safety and Training committee. The committee is very active and their achievements include an injury database for the sector, a safety culture project, a simplification of compliance project, a comprehensive long term health and safety strategy for the sector, and industry leadership on the detection of drugs and alcohol in the workplace.

1.2.1 *New Zealand Forest Owners Association* represents the owners of New Zealand's commercial plantation forests. It was set up in 1926 and is now one of the country's most influential primary sector organisations. Its members own or manage more than 80 per cent of the country's 1.79 million hectares of plantation forests.

1.2.2 *New Zealand Farm Forestry Association* represents the interests of the small tree grower with 3000 members in 29 branches throughout New Zealand.

1.2.3 *Forest Industry Contractors Association* was formed in 2002 by a nationwide group of forestry contractors, with the support of the NZFOA. The association exists to promote business growth and efficiency for the benefit of New Zealand's forestry contracting industry. They produce a weekly e-newsletter called WoodWeek which is full of global and national industry news as well as the latest jobs, tenders, equipment for sale and new safety alerts.

1.2.4 *Forest Industries Training and Education Council* is the sector's Industry Training Organisation. Its responsibilities include designing national qualifications and setting (and quality assuring) national standards. Using these national qualifications, FITEC works with individual companies to develop training plans for their employees, and then arranges the delivery of the training and assessment to achieve them. In addition, FITEC provides leadership within the industry on matters relating to skill and training needs which currently includes developing a careers information service and launching a Trades Academy. In 2009, there were 5100 workers actively training within the forestry sector, of whom 1230 completed national qualifications and 320 completed Limited Credit Programmes.

1.2.5 *Scion* is a Crown Research Institute dedicated to research covering the entire forestry value chain and related areas of biomaterials science. It has a human factors group operating under the brand COHFE (Centre for Human Factors and Ergonomics). For over 10 years, Scion has provided ergonomics research, teaching and consultancy services for the forestry sector.



## Appendix 2

# Fatalities

Over the past decade the forestry sector has put significant effort into reducing fatalities and serious injury. Despite this effort, injuries, fatalities, and social costs are still unacceptably high. The sector's challenge is to reinvigorate injury prevention and continue the drive towards zero harm and fatalities.

Between 2003 and 2008, the forestry sector had the highest rate of fatal work-related injuries. The rate of ACC claims for the forestry sector was almost six times the rate for all sectors (see figure 1).

**Figure 1: ACC claims for fatal work-related injuries, averaged 2003–8<sup>23</sup>**

Note: forestry and logging figures include farm forestry.

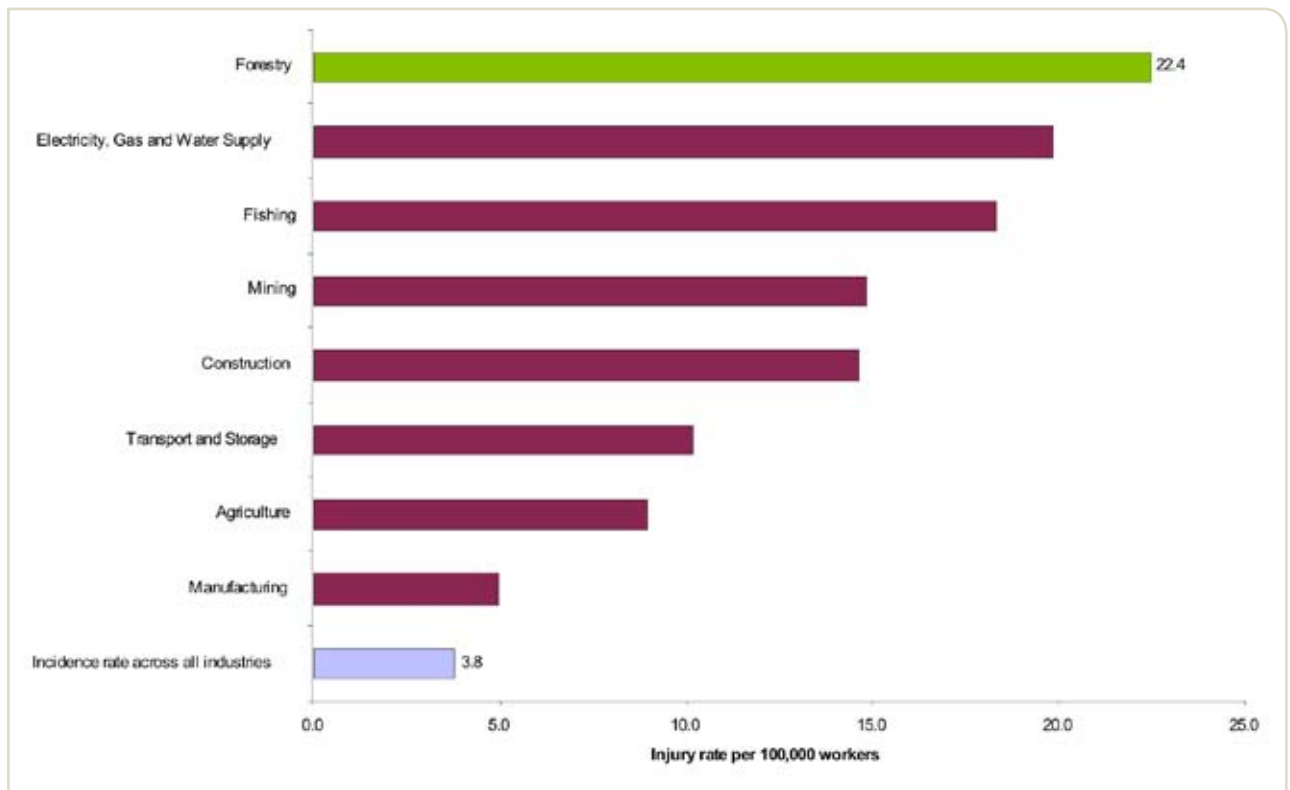
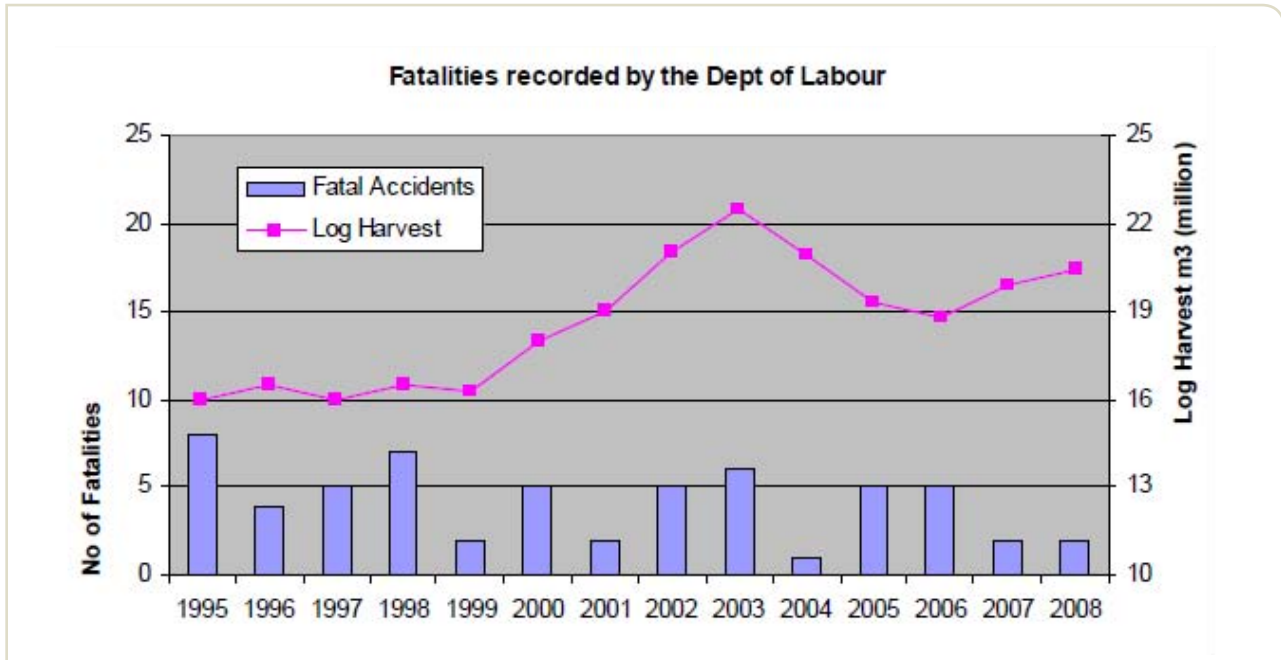






Figure 2: Fatalities recorded by the Department of Labour 1995–2008<sup>24</sup>



Data sources: Analysis of Fatal Logging Accidents 1988 to 2005 – FICA Report October 2006 – Dept of Labour statistics (2008, 6 months to Dec) – NZ Forest Industry Facts & Figures 2007/08 (NB: Fatality data was analysed on the basis of a July to June year (for instance July 2003 to June 2004 was reported as 2003 data)).

Between 2005 and 2010 the industry wide injury database run by the Forest Owners Association (IRIS) recorded 18 fatalities. Tree felling and breaking out contributed 39% of these fatalities (see table 2).

Table 2: Sector fatality data for the period 2005 – 2010<sup>25</sup>

Year	Breaking Out	Tree Felling	Year Total
2005			0
2006	1	1	2
2007			0
2008		1	1
2009	1	2	3
2010	1		1
	3	4	7

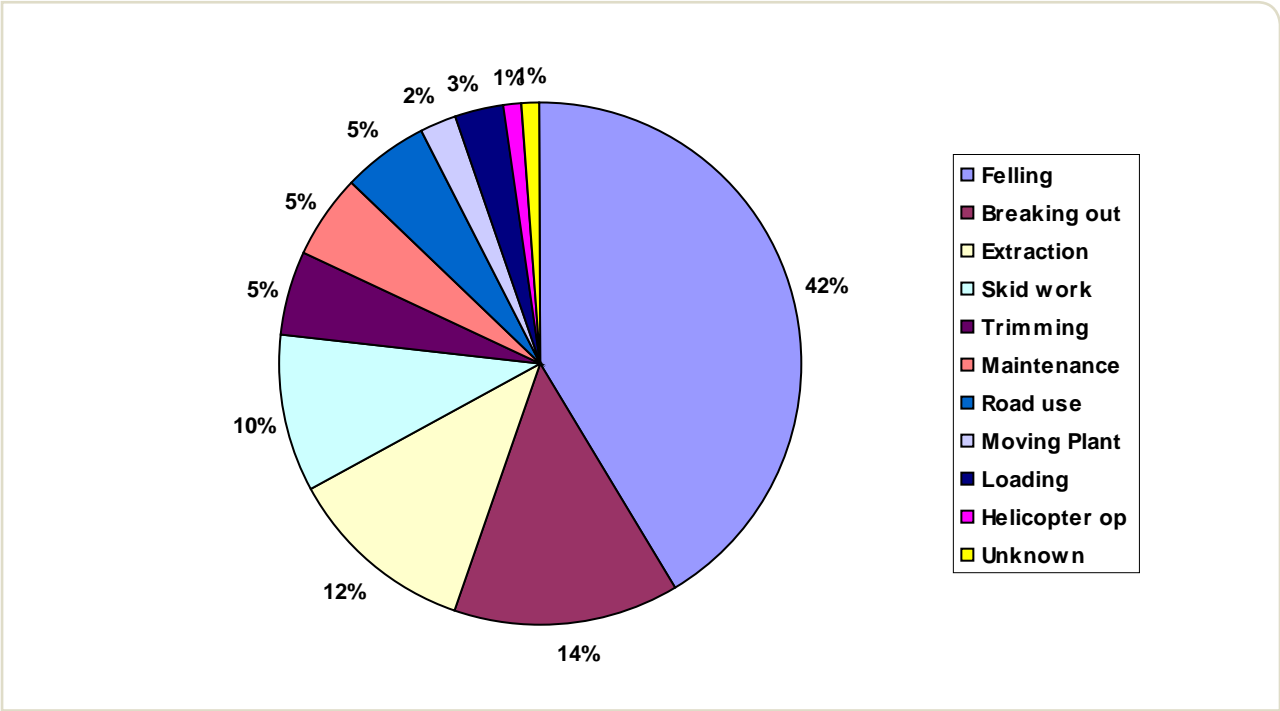
Department of Labour data, although recorded differently and for a different purpose, confirms the forestry sector’s findings that tree felling for processing or through clearing is one of the leading causes of forestry and logging fatalities.

Of the 35 forestry related fatalities the Department recorded between 2003 and 2010, 18 (51%) were related to tree felling and 2 (16%) were related to vegetation. The remaining 15 were each from other non-focus area tasks, e.g. log transporting.

The Forest Industry Contractors Association (FICA) did some analysis of fatal logging accidents between 1988 and 2005. The findings show that 55% of work related forestry fatalities occurred while tree felling or breaking out (see figure 3).

Of particular concern is the 12% of fatal accidents relating to extraction as there is a shortage of experienced haulers and there are a large number of steep terrain woodlots that will require harvesting over the next 10 years.

**Figure 3: Causes of Fatalities 1988 to 2005<sup>26</sup>**



Further analysis of the causes of both tree felling and breaking out fatalities showed that 16 (41%) of the tree felling fatalities were identified as being caused by hang up or being hit by a tree or spar (see table 3). Six (46%) of the breaking out fatalities were found to be caused by being hit by either a stem during extraction or rope during lineshift (see table 4).

**Table 3: Causes of felling fatalities<sup>27</sup>**

Cause	Number	Percentage
Hang up / working in front of cut up tree	11	28%
Direction/Position (Description unclear)	9	23%
Hit by contacted tree/spar	5	13%
Retreat to incorrect position	4	10%
Hit by sailer	3	8%
Fell direction not anticipated	3	8%
Hit by tree felled by second party	2	5%
Driving tree	1	2%
	<b>39</b>	

**Table 4: Causes of breaking out fatalities<sup>28</sup>**

Cause	Number	Percentage
Hit by stem during extraction	3	23%
Hit by rope during lineshift	3	23%
Crushed by skidder	2	15%
Hit by stem during hook-on	1	8%
Flying debris	1	8%
Crushed by tail hold	1	8%
Falling weight	1	8%
Rock	1	8%

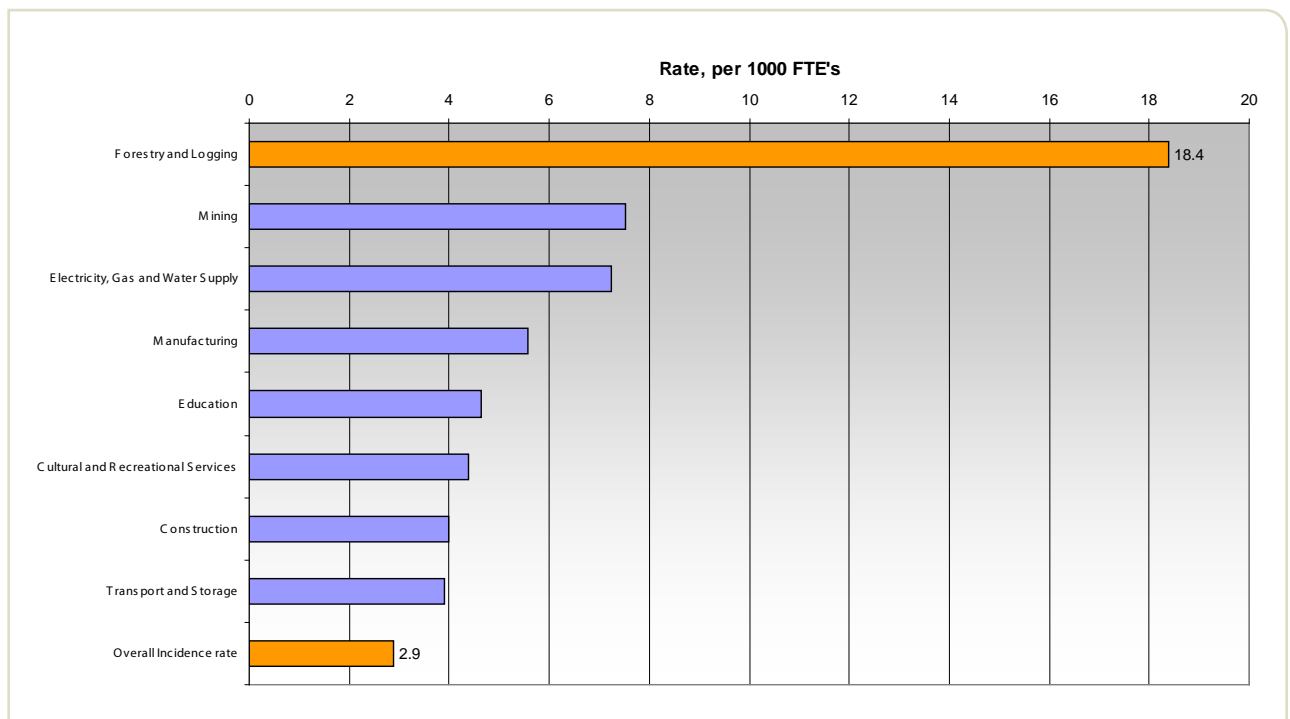
## Appendix 3

# Non fatal injuries and accidents

Between 2002 and 2008 forestry and logging had the highest rate of serious harm notifications, 18.4 per 1,000 FTEs per year. This was more than six times the rate for all sectors at 2.9 per 1,000 FTEs per year (see figure 4).

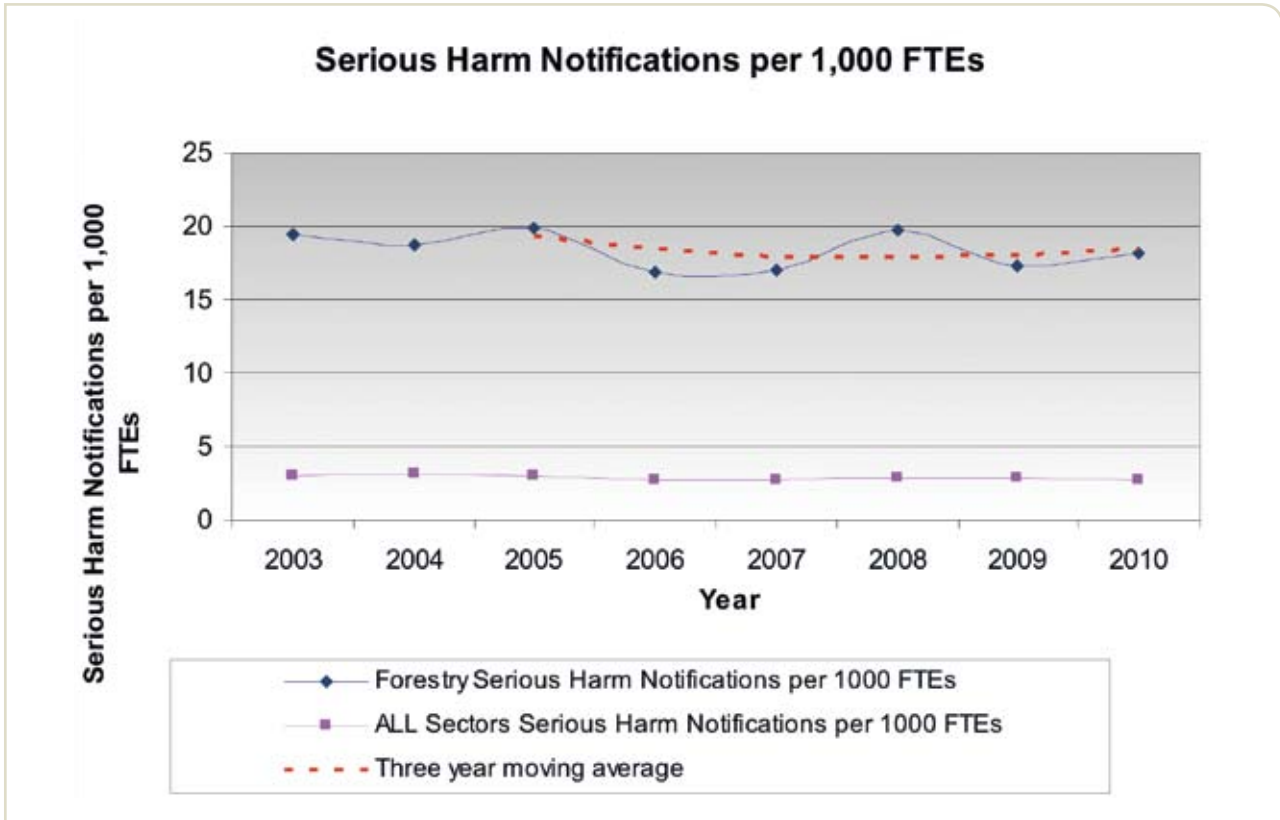
**Figure 4: Department of Labour serious harm notifications, averaged 2003–2010<sup>29</sup>**

Note: Forestry and logging figures include farm forestry.



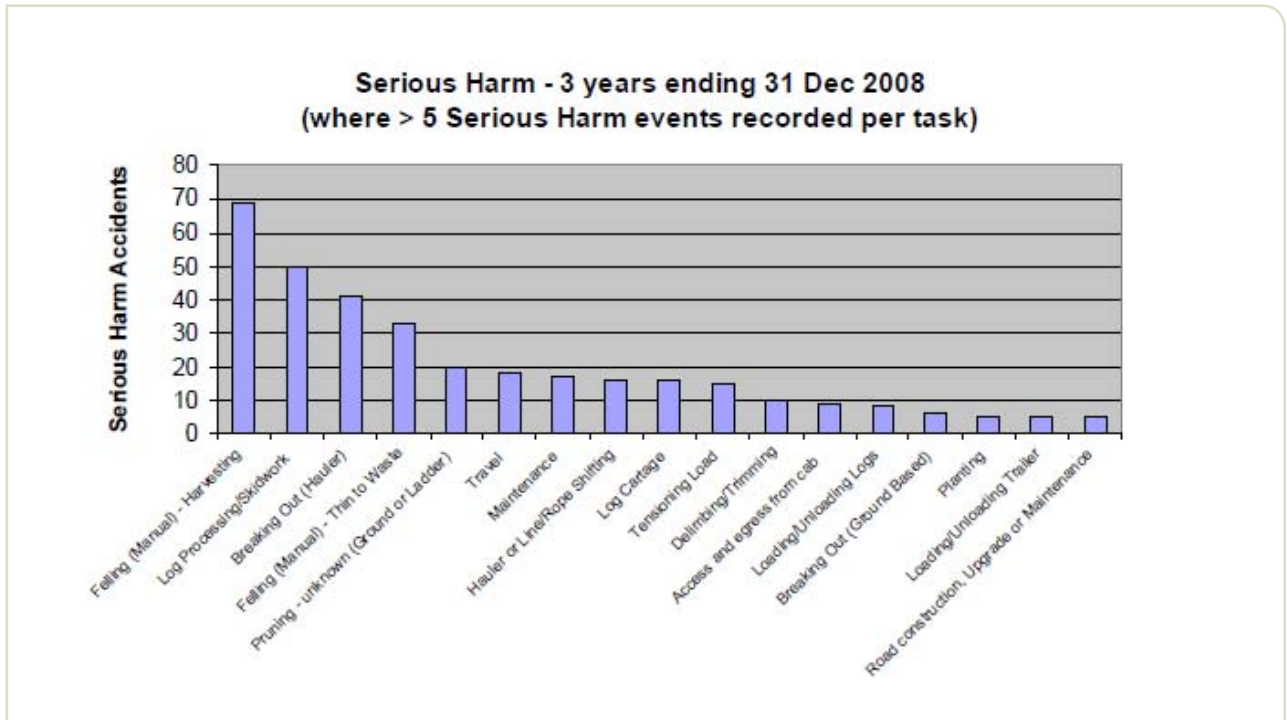
Serious harm accidents reported to the Department between 2003 and 2010 have been fairly consistent at the same time as the log harvest has been increasing. The 3 year moving average is trending to around 17 serious harm notifications per 1,000 FTEs, per year (see figure 5).

Figure 5: Serious harm notifications per 1,000 FTEs 2003–2010<sup>30</sup>



Between December 2005 and December 2008 the IRIS database identified tree felling, log processing / skid work and breaking out as the three main tasks being undertaken when serious harm accidents occurred (see figure 6).

Figure 6: Serious harm events by task<sup>31</sup>



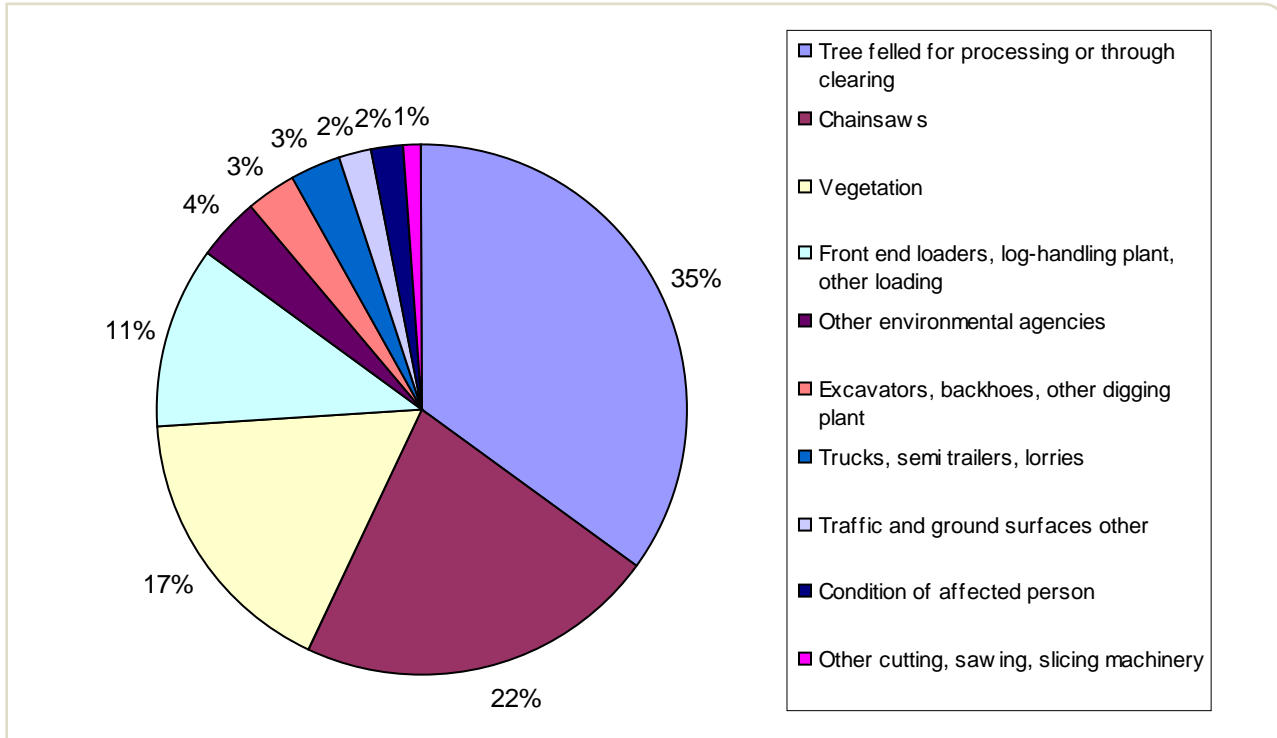
NOTE: tree felling and breaking out tasks are the focus for this Action Plan. This graph shows the range of tasks for which serious harm events were notified through the IRIS system.

Department of Labour data between 2005 and 2010 confirms the forestry sector's findings with 35% of the top 10 causes of serious harm accidents being attributed to tree felling for processing or through clearing (see figure 7).



**Figure 7: Top ten causes of serious harm notification in forestry 2003 – 2010<sup>32</sup>**

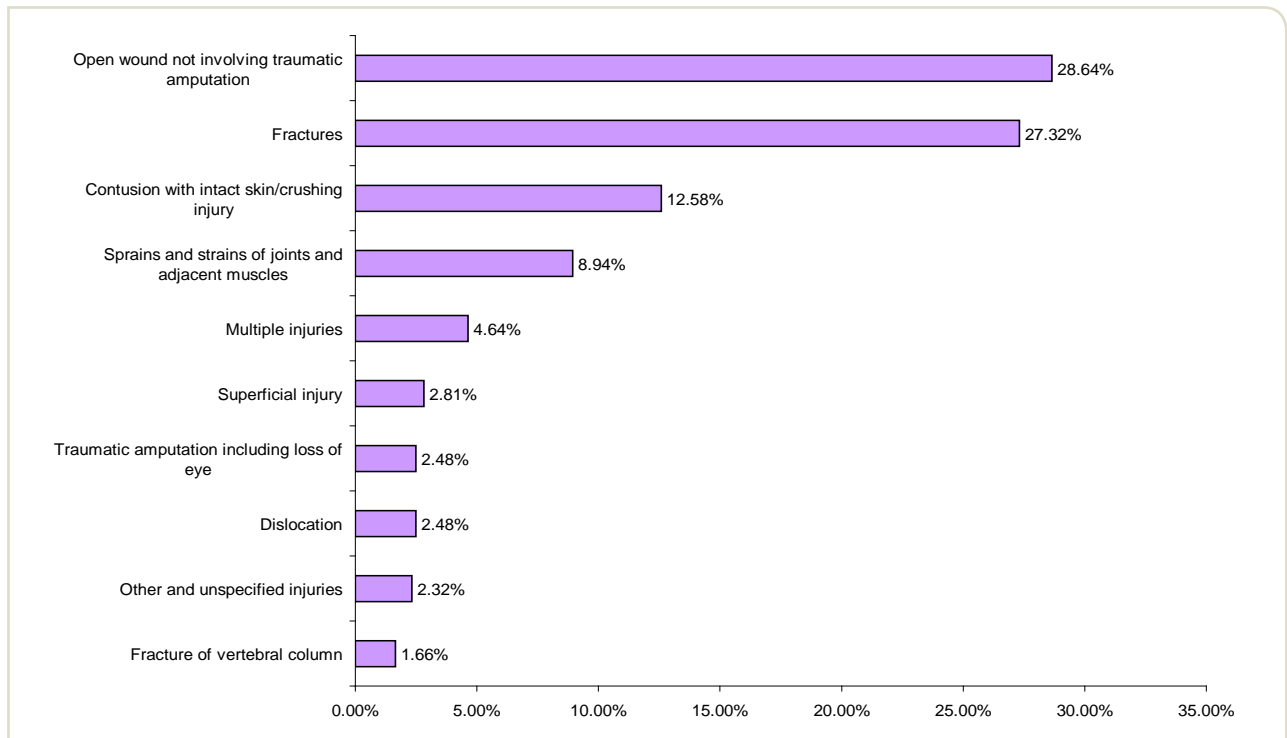
NOTE: Department of Labour information does not identify breaking out as its own category. Breaking out serious harm notifications will be included under other categories such as vegetation and chainsaws.



The Department has identified that nearly 70% of injuries sustained in forestry and logging between 2006 and 2009 resulted in open wounds, fractures or contusions (see figure 8).



Figure 8: Types of injury 2006 – 2009<sup>33</sup>



The Incident Severity 2008-2010 report<sup>34</sup> based on IRIS data supports the Department's task, cause and type of injury information and has revealed that injuries sustained while breaking out include:

- › crush and fracture injuries to the legs
- › sprain and dislocation injuries to the knee
- › shoulder sprain / strain injuries
- › a high proportion of fractures to a wide variety of body parts including the lower leg, thigh, wrist, back and shoulder
- › lacerations to the hands head and face.

Primary causes of these injuries include being struck by objects (stems in the drag, dislodged stems, dislodged root balls or the swinging butt rigging and strops); slips and falls whilst moving on the cutover; and lifting and twisting actions while hooking up drags and moving blocks.

Tree fellers are sustaining:

- › sprain / strain related injuries to the back and shoulder
- › slip /trip incidents walking between tress and / or over the cut over
- › bruising injuries to the upper back and shoulder areas
- › fracture injuries to a wide range of body parts (back, chest, neck, thigh, knee and leg).

Primary causes of these injuries are being struck by dead spars, broken / dead heads and branches which had been dislodged by the felling of the main tree. In many cases the investigations identified that fellers had not cleared enough vegetation from around the tree being felled and / or looked up prior to felling the tree.





## Appendix 4

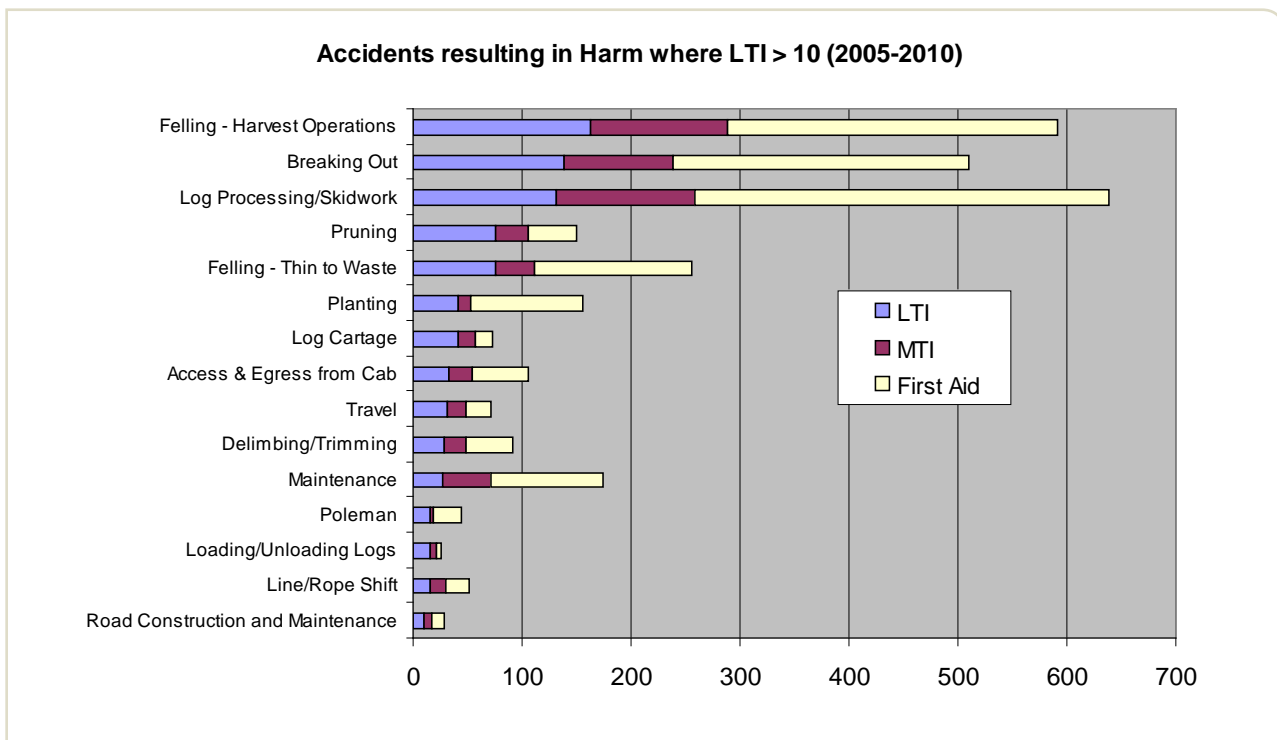
# Impact on the sector

FOA estimates that contractors represent over 95% of the accidents and fatality notifications they have recorded in the past year. These fatalities and accidents impact on the productivity and profitability of the business, the employee, their families and community, as well as the forestry sector as a whole. Public perceptions can also impact on the sector's ability to attract and retain staff which may be a contributing factor to the high rates of fatality and injury.

Between 2006 and 2010 the IRIS database recorded 1650 injuries, an average of 330 per year. Of these, 905 were injuries that resulted in time taken off work (including fatalities) and 745 required medical treatment (medical treatment injury – MTI).

Analysis of the sectors lost time injury (LTI) data from 2005–2010 has identified tree felling, breaking out and skid work as the three main contributors to lost time injury (see figure 9).

**Figure 9: Accidents resulting in lost time injuries 2005–2010<sup>35</sup>**

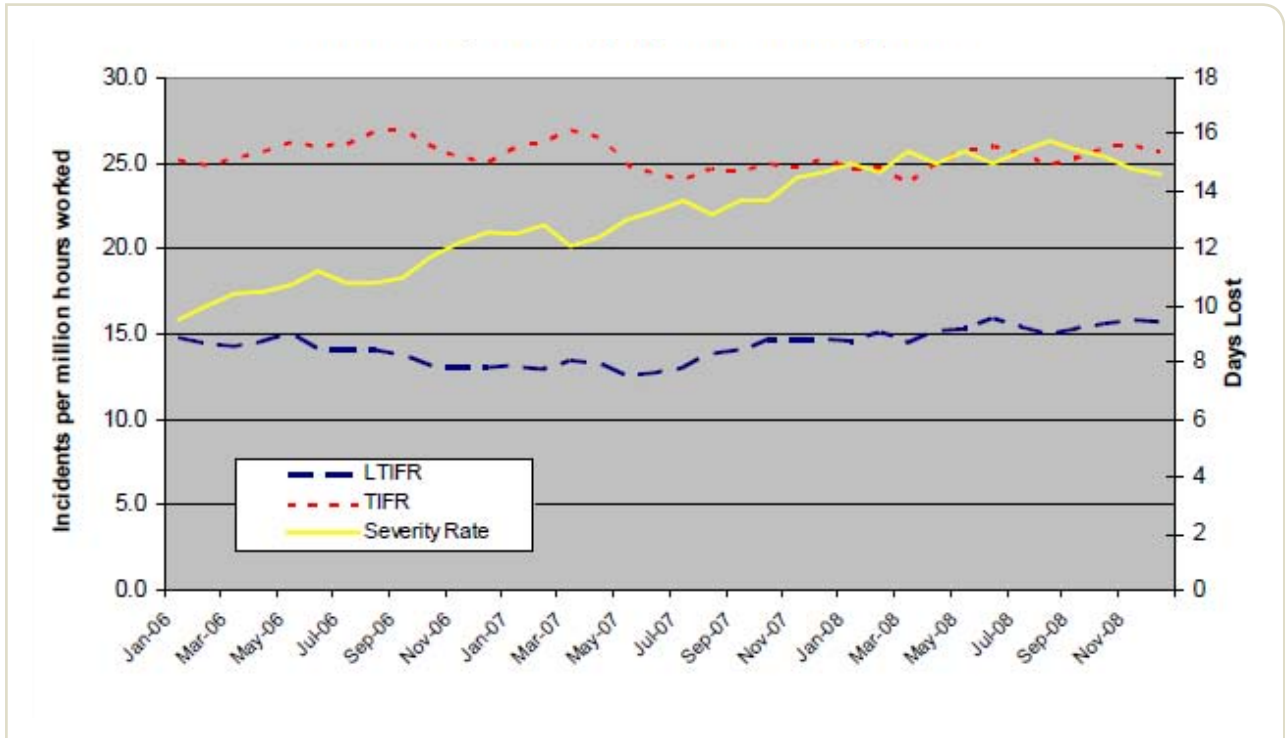


Lost time injury rates between 2006 and 2008 were relatively stable with approximately 16 LTIs per million hours worked. While total injury rates also remained stable the severity of injuries increased from an average of around 10 days to 16 days lost per injury (see figure 10).

905 lost time injuries at an average of 16 lost days per injury is a total of 14,480 days (an equivalent of nearly 40 years) lost between 2006 and 2010. This is unacceptably high and unsustainable for the sector.



Figure 10: Lost time, Total injury and Severity rates 2006–2008<sup>36</sup>



The severity of accidents not only impacts on the number of days off per injury, but the cost of treatment (see table 5). This has a direct impact on ACC levies.

Table 5: ACC cost of forestry industry entitlement claims<sup>37</sup>

Year (July to June)	Number of entitlement claims	Costs (million \$)
2006/07	329	\$1,847.824
2007/8	366	\$2,551.376
2008/9	336	\$2,752.922
2009/10	318	\$2,363.419
2010/11 (to January 2011)	173	

From July 2009 to June 2010 ACC received 318 entitlement claims from the forestry sector. These claims cost over \$2.3 million. For the year to January 2011 there have been 173 injury claims. This is 23 less than the same time last year and on track for less than 300 injuries per annum.



## Appendix 5

# Other projects and initiatives

### ■ Experience rating

Since April 2011 ACC has applied an experience rating system of modifying a business's ACC work levy based on its claims history. Historically, the work levy has been based on injury rates across industry categories. A business has paid the same work levy as others operating in the same industry, despite differences in their safety record. Experience rating rewards those business owners with safer workplaces, and encourages a focus on improving workplace safety and making New Zealand businesses better places to work.

### ■ Drugs and alcohol – code of practice for eliminating drugs and alcohol from the workplace

In 2000 NZFOA developed and promoted a Drug and Alcohol Toolkit which was reviewed in 2008 and replaced by a code of practice. The code is a quality management program with three main elements: education, drug and alcohol testing of all workers in safety-sensitive positions and rehabilitation. Testing is undertaken by accredited agencies or individuals. Random testing results in recent years suggest that Government and industry needs to maintain a focus and allocate resources to manage what is both a social and workplace health and safety issue.

### ■ The Workplace Culture, Leadership and Forestry Project

The project was a year-long pilot run by the Department, ACC and PF Olsen, on behalf of the NZFOA resulting in the identification of twelve 'safely culture' elements applicable to New Zealand's forestry industry. These elements are: work pressure, continuous learning, resources, rewards, training and competency, worker involvement, investigating and reporting, relationships, risk taking, communication, management's leadership commitment for safety and safety systems and procedures. Business participation was high and the lessons about making health and safety part of every job, at every level, are now being fed through the sector.

### ■ 'Growing our Safety Culture' Project

ACC along with a number of forest companies<sup>38</sup>, are implementing a safety culture assessment programme in 2011. This builds on the WCLF project and involves field assessments, report generation, and the development of a plan of action to address improvement opportunities.

### ■ Farm forestry initiative

ACC and the NZ Farm Forestry Association are looking to improve safety within the farm forestry sector. The initiative includes development of a risk assessment tool, a set of behavioural standards, case studies and expert demonstrations at field days.

Health and safety in farm forestry is an emerging issue as a large number of small woodlots reach maturity in the next few years. Farmers may not be aware of their obligations under the Health and Safety in Employment Act and there may be temptation to award contracts to the cheapest bidder.

### ■ Safe start breakfasts

Breakfasts sponsored by ACC are being run around the country for forestry crews. 2500 people attended the breakfasts in January 2011.



### ■ **Top Spot Programme**

Originally developed within Carter Holt Harvey Forests and Matariki Forests the programme is designed to offer front line forestry crews the chance to demonstrate their health and safety expertise and be acknowledged and rewarded for best practice.

In signalling to the crews the importance placed on best practice by the forest owner, and by providing feedback and mentoring to crews, the programme seeks to encourage best practice by all crew members. Top individual performers are recognised with awards throughout the year and the top harvesting and silviculture crews receive trophies and team awards at 'Safe Start' breakfasts. As a programme, Top Spot was recognised in 2010 as a finalist in the Leadership Category of the Safeguard National Health and Safety Awards.



## Appendix 6

# Contributing research

### ■ Exploring incident causation and intervention needs for forest industry logging<sup>39</sup>

ACC directed research into exploring incident causation, through study of key incident types and collating findings to identify common themes or concerns, in order to establish intervention needs for the industry. Summary of key recommendations:

- › Improve communication between contractors and planners in developing harvest plans
- › Develop planning and planting strategies for felling access for the next crop of trees
- › Target methods to improve and isolate workers from machinery
- › Explore space restriction issues (especially relating to skid sites) and interacting requirements of plant, workers and those visiting site
- › Identify, evaluate and disseminate the range of practical initiatives by which industry manage poor site and working conditions.

### ■ Analysis of logging fatalities 1988–2005<sup>40</sup>

FICA commissioned accident trend report analysing the Department of Labour's fatal injury data from 1988 to 2005, referencing the Gaskin report (fatalities 1968–1987). The report found:

- › the four most common tasks undertaken at the time of a fatal accident were tree felling (41%) breaking out (14%), extraction (12%) and skid work (10%)
- › the most common causes of breaking out fatalities were being hit by stems during extraction (23%) and hit by rope during lineshifts (23%)
- › the most common cause of felling fatality was working in front of hung up trees (28%).

### ■ Incident severity 2008–2011 (IRIS Analysis Report)

Incident analysis on data uploaded to IRIS where lost time incident data spanning 2008 to 2010 was examined. The analysis was broken down into annual comparisons by activity, operation and task to enable the identification of annual trends. The analysis sought to identify specific tasks within operations that were recording particularly high severity rates not normally identified through the more traditional injury frequency analysis. The report is being reviewed by FOA's Health Safety and Training Committee and recommendations will be developed in June 2011.



## Appendix 7

# Glossary of acronyms

ACC – Accident Compensation Corporation

ACoP – Approved Code of Practice

BPG – Best Practice Guidelines

FFR – Future Forests Research

FICA – Forest Industry Contractors Association

FITEC – Forest Industry Training and Education Council

FOA – Forest Owners Association

FTEs – Full Time Equivalent Employees

IRIS – Incident Reporting Information System

ITO – Industry Training Organisation

LTI – Lost Time Injury

MTI – Medical Treatment Injury

NZFFA – New Zealand Farm Forestry Association



# Endnotes

1. FICA analysis of Fatal Logging Accidents 1988–2005
2. NZ Forest Owners Association Strategic Safety Plan 2009–2011 (IRIS data).
3. NZ Forest Owners Association Strategic Safety Plan 2009–2011 (page 11)
4. Claims for entitlements such as: rehabilitation, first week compensation, weekly compensation and lump sum compensation.
5. ACC update for the NZFOA meeting March 2011
6. What works in delivering improved health and safety outcomes A review of the existing evidence Prepared by the Institute for Employment Studies for the Health and Safety Executive 2008; HSC Paper HSC/03/145 Research into the effectiveness of interventions; Effective Occupational Health Interventions in Agriculture Summary Report Kirsten Lovelock and Colin Cryer On behalf of the Occupational Health in Agriculture Research Team Report No.5
7. See Appendix 1 for a list of key stakeholders
8. New Zealand Plantation Forest Industry Facts and Figures 2010/2011 foreword.
9. [http://www.insights.co.nz/at\\_glance\\_kft.aspx](http://www.insights.co.nz/at_glance_kft.aspx) from the Forest Owners Association website
10. Department of Labour Employment Estimates of Employment as quoted in the Department of Labour Sector Tool (pilot)
11. New Zealand Plantation Forest Industry Facts and Figures 2010/2011 page 32
12. Department of Labour – Likely areas of growth in employment opportunities Quarterly Report 5 October 2010
13. 2006 Census of Population and Dwellings as quoted in the Department of Labour Sector Tool (pilot)
14. 2006 Census of Population and Dwellings as quoted in the Department of Labour Sector Tool (pilot)
15. Department of Labour Employment Estimates and 2005/06 Input-Output Table as quoted in the Department of Labour Sector Tool (pilot)
16. Annual Linked Employer-Employee Data (LEED) as quoted in the Department of Labour Sector Tool (pilot)
17. Statistics New Zealand, Business Demography as quoted in the Department of Labour Sector Tool (pilot)
18. Unpublished Statistics New Zealand annual LEED data as quoted in the Department of Labour Sector Tool (pilot)
19. 2006 Census of Population and Dwellings as quoted in the Department of Labour Sector Tool (pilot)
20. New Zealand Plantation Forest Industry Facts and figures 2010/2011
21. Stats NZ, Industry Productivity Statistics 1978–2009, page 9
22. Stats NZ, Industry Productivity Statistics 1978–2009, page 3
23. ACC work-related injury data, as reported to Statistics New Zealand
24. The NZ Forest Owners Association Strategic Safety Plan 2009–2011
25. The NZ Forest Owners Association (IRIS)
26. FICA analysis of Fatal logging Accidents 1988–2005
27. FICA Analysis of Fatal Logging Accidents 1988–2005
28. FICA Analysis of Fatal Logging Accidents 1988–2005
29. Department of Labour Serious Harm Notifications 2003–2010
30. Department of Labour Serious Harm Notifications 2003–2010
31. The NZ Forest Owners Association Strategic Safety Plan 2009–2011 (Source IRIS)
32. Department of Labour Serious Harm Notifications 2003–2010
33. Department of Labour Injury Notifications 2006–2009
34. IRIS Analysis Report – Incident Severity 2008–2010 draft April 2011
35. The NZ Forest Owners Association (Source IRIS data 2005–2010)
36. The NZ Forest Owners Association Strategic Safety Plan (page 11)
37. ACC update for the NZFOA meeting March 2011
38. Rayonier, Ernslaw One and Blakely Pacific
39. Sophie Hide, Liz Ashby, Richard Parker and Brenda Baillie
40. Shane McMahon of Work Smart Forestry completed the work on behalf of FICA



## ⇒ More information

[www.dol.govt.nz](http://www.dol.govt.nz)

0800 20 90 20

Information, examples and answers to your questions about the topics covered here can be found on our website [www.dol.govt.nz](http://www.dol.govt.nz) or by calling us free on 0800 20 90 20.

