

<b>Title</b>	<b>Plan and fell trees using advanced techniques in a commercial forest harvesting operation</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>25</b>

<b>Purpose</b>	<p>This unit standard is intended for professional tree fellers in a commercial harvesting operation. They will have the skills, knowledge and experience to be able to work in a wide range of situations that require advanced techniques.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of the relationship between clear felling and downstream operations; demonstrate knowledge of health and safety requirements for felling trees in a commercial forest harvesting operation; prepare to fell trees in a commercial forest harvesting operation; assess the area to be felled and plan the felling; assess individual trees to be felled and plan felling according to requirements; prepare work area and escape route; fell trees using wedges and alternative back-cutting techniques; demonstrate knowledge of and complete tree driving; demonstrate knowledge of advanced tree felling techniques; and assess and manage individual windthrown trees within the stand.</p>
----------------	---

<b>Classification</b>	Forestry > Tree Felling
-----------------------	-------------------------

<b>Available grade</b>	Achieved
------------------------	----------

<b>Prerequisites</b>	Unit 28560, <i>Fell trees in a commercial forest harvesting operation</i> , or demonstrate equivalent knowledge and skills.
----------------------	---

## Guidance Information

- 1 Legislation relevant to this unit standard includes the Health and Safety at Work (HSW) Act 2015; the Resource Management (National Environmental Standards for Plantation Forestry) Amendment Regulations 2018; and any subsequent amendments.
- 2 References  
*Approved Code of Practice (ACOP) for Safety and Health in Forestry Operations*, December 2012, available from <https://worksafe.govt.nz/>.  
 New Zealand Forest Owners Association, *Forest Practice Guides* (2019), and any subsequent amendments, available from <https://www.nzfoa.org.nz>.

3 Sufficient trees must be felled to demonstrate consistent, methodical, efficient, and safe felling. This may require multiple assessment visits.

4 Definitions

*Accepted industry practice* refers to approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.

*Forest Harvesting* refers to the felling and extraction of stems, landing ops, log making and loading.

*PPE* refers to personal protective equipment and may include but is not limited to high-visibility, protective clothing, gloves, face and eye protection, safety helmet, footwear, hearing protection, and safety devices.

*Worksite procedures* refer to documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, quality assurance procedures, housekeeping standards, procedures to comply with legislative and local body requirements.

5 Assessment information

This unit standard must be assessed on-job. Fellers completing this unit standard will have the skills, knowledge and experience to plan and manage the majority of situations experienced on a day-to-day basis within a commercial harvesting operation. They will be able to consistently and confidently assess situations and apply a range of advanced felling techniques to safely fell trees at a level of productivity appropriate to the operation they work in.

All activities and evidence must meet worksite procedures and accepted industry practice.

---

## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of the relationship between clear felling and downstream operations.

### Performance criteria

- 1.1 The impact of the felling pattern on the extraction process is explained.
- 1.2 The need for consistent wood-flow to the landing and the importance of coordination between felling and extraction activities is described.
- 1.3 Impact of the tree felling quality on contract security and recoverable volume is explained.
- 1.4 The impact of felling practices on the quality and value of the butt log is described.
- 1.5 The advantages of butt pulling are described.

## Outcome 2

Demonstrate knowledge of health and safety requirements for felling trees in a commercial forest harvesting operation.

### Performance criteria

2.1 PPE is worn.

2.2 The hazards and associated risks within a minimum of two tree lengths of tree(s) to be felled are identified, assessed and risk controls are explained.

Range includes but is not limited to – people, machines, operating ropes, other operations, weather and environmental conditions, ground conditions, terrain features.

2.3 The reason for on-going hazard and risk identification is explained.

2.4 Factors that may change hazards or introduce new hazards or risks are described.

Range weather, terrain, hindrance, fatigue.

## Outcome 3

Prepare to fell trees in a commercial forest harvesting operation.

### Performance criteria

3.1 Demonstrate accessibility of felling equipment and accessories required for tree felling.

Range chainsaw suited to the operation, fuel and oil containers, wedges and other felling aids, files and maintenance tools, fire extinguisher, radio, first aid equipment, hydration.

3.2 Communication requirements for felling are explained.

Range call in times, documentation.

3.3 The process to manage an emergency is described.

Range communication, first aid, assistance.

## Outcome 4

Assess the area to be felled and plan the felling.

**Performance criteria**

4.1 Site is assessed for felling.

Range may include but is not limited to – overhead hazards, vines, interlocked branches, predominant lean of the stand, size, condition and stability of trees to be felled, wind strength and direction, terrain.

4.2 Site felling plan is developed.

Range includes but is not limited to –felling direction and pattern, felling aids/assistance required, extraction plan, starting point, environmental issues, access in to and out of felling face, setting boundaries, risk control.

4.3 The opening up of a new block or setting to meet the requirements of the felling plan is demonstrated.

4.4 The felling sequence for the current setting or planned felling area is explained.

**Outcome 5**

Assess individual trees to be felled and plan felling according to requirements.

**Performance criteria**

5.1 Tree to be felled is assessed and tree characteristics that may impact on felling are described.

Range may include but is not limited to – overhead hazards, rotten spars, vines, interlocked branches, tree lean, weight distribution, size, condition and stability of tree to be felled, wind strength and direction.

5.2 A felling plan for the tree to be felled is explained.

Range felling direction, hazards in the line of the fall, hazards behind work area, appropriate felling technique, assistance required, location of the safer side and escape route.

**Outcome 6**

Prepare work area and escape route.

**Performance criteria**

6.1 Hazards in the intended line of the tree's fall are identified, assessed and risks controlled.

6.2 The tree and work area are prepared for felling.

Range removal of low branches, clearing work area.

6.3 The escape route is located and prepared.

Range may include but is not limited to – safer side, 45 degrees angle (or as close as practicable) to the rear of the fall direction, clearance, distance from stump.

### **Outcome 7**

Fell trees using wedges and alternative back-cutting techniques.

#### **Performance criteria**

7.1 Trees are felled using a range of industry recognised techniques.

7.2 Multiple wedges are used.

Range two wedges, three wedges, double lifting.

7.3 Stumps are kept as low as practicable within the requirements of safe and accurate tree felling.

7.4 Trees are directionally felled to avoid hazards and obstacles which may cause stem breakage, and to facilitate extraction.

### **Outcome 8**

Demonstrate knowledge of and complete tree driving.

#### **Performance criteria**

8.1 The requirements relating to tree driving are described.

8.2 The hazards and associated risks specific to tree driving are explained.

8.3 Complete a one onto one and a one onto two tree drive using safe techniques.

Range driver tree selection, tree and work area preparation, escape route, sequence of cuts, wedge use, notification.

8.4 Management after an unsuccessful drive is explained.

### **Outcome 9**

Demonstrate knowledge of advanced tree felling techniques.

**Performance criteria**

- 9.1 The process for felling difficult trees is described.  
Range multi leaders, hung up trees.
- 9.2 A spar is felled.
- 9.3 The use of alternative scarves is described.  
Range two of – Humboldt, vee, swedfor, bore the scarf.
- 9.4 The process for felling trees on steep terrain is described.  
Range across slope, uphill.
- 9.5 The process for felling a tree that has sat back during felling is described.
- 9.6 The process for felling tree species other than radiata is described.  
Range Douglas fir, eucalyptus, native species;  
a minimum of two alternative species is required.

**Outcome 10**

Assess and manage individual windthrown trees within the stand.

**Performance criteria**

- 10.1 The hazards and associated risks specific to individual windthrown trees are identified and controls established.  
Range uprooted trees, spars, broken tops, wind wrenched trees.
- 10.2 Options for dealing with windthrown trees that are unable to be safely felled manually are identified.
- 10.3 Individual windthrown trees are assessed for felling.
- 10.4 The area around the tree and escape route are cleared in preparation for felling.
- 10.5 Individual windthrown trees are felled.  
Range wind wrenched, broken top, hang-up.
- 10.6 Root plate is removed from an uprooted tree.  
Range tension and compression identified and managed, cut sequence, positioning.

<b>Replacement information</b>	This unit standard replaced unit standard 17765.
--------------------------------	--

<b>Planned review date</b>	31 December 2028
----------------------------	------------------

#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 March 2015	N/A
Review	2	25 June 2020	N/A
Rollover	3	26 April 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0173
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Muka Tangata - People, Food and Fibre Workforce Development Council [qualifications@mukatangata.nz](mailto:qualifications@mukatangata.nz) if you wish to suggest changes to the content of this unit standard.