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| Title | Fell trees in a commercial forest harvesting operation | | |
| Level | 3 | Credits | 15 |

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| Purpose | <p>This unit standard is designed for people who work as a tree feller on a day-to-day basis in a commercial harvesting operation.</p> <p>People credited with this unit standard are able to: prepare for felling trees with a chainsaw; assess the site around the trees to be felled; assess the trees to be felled; prepare the work area and escape route; fell trees using a chainsaw; retreat and observe falling trees; demonstrate tree driving by felling one tree onto another; and demonstrate knowledge of advanced tree felling techniques.</p> |
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| Classification | Forestry > Tree Felling |
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| Available grade | Achieved |
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| Prerequisites | Unit 17763, <i>Demonstrate knowledge of tree felling</i> ; and Unit 23411, <i>Operate a chainsaw and carry out basic chainsaw maintenance in a commercial forestry situation</i> ; or demonstrate equivalent knowledge and skills. |
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Guidance Information

- 1 Legislation relevant to this unit standard includes the: Health and Safety at Work (HSW) Act 2015, Resource Management Act 1991; the Resource Management (National Environmental Standards for Plantation Forestry) Amendment Regulations 2018; and the Heritage New Zealand Pouhere Taonga Act 2014, and any subsequent amendments.
- 2 References
New Zealand Forest Owners Association, *Forest Practice Guides (2019)*, and any subsequent amendments, available from <http://www.nzfoa.org.nz>
Approved Code of Practice (ACOP) for Safety and Health in Forestry Operations, December 2012, available from <http://www.worksafe.govt.nz>.
- 3 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.
Job prescription refers to any written instructions for the operation and may include maps, harvest plans or cut plans.

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

4 Assessment information

This unit standard must be assessed on-job.

All activities and performance criteria must meet the requirements of worksite procedures and accepted industry practice.

Sufficient trees must be felled to demonstrate consistent, methodical, efficient, and safe felling.

5 Competencies covered by this unit standard

Tree fallers completing this unit standard will have the skills and knowledge to manage most situations experienced on a day-to-day basis within a commercial harvesting operation. However, they will require assistance when they encounter situations that require more advanced techniques.

Outcomes and performance criteria

Outcome 1

Prepare for felling trees with a chainsaw.

Performance criteria

1.1 PPE complies with minimum requirements.

Range safety helmet, earmuffs, safety trousers or chaps, safety boots, high visibility clothing, eye protection.

1.2 Equipment and accessories required for tree felling are confirmed as available and checked for condition.

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

1.3 The felling plan for the block to be felled is explained.

Range felling direction, extraction plan, boundaries, opening up the block.

1.4 Generic felling hazards associated with the block are described.

1.5 Environmental considerations for the block are described in accordance with the job prescription.

- 1.6 Signage requirements for the felling operations are explained.
- 1.7 Communication requirements for felling are explained in accordance with the accepted forestry industry practice and worksite procedures.
- Range call in times, documentation.
- 1.8 The process to follow when a felling situation is beyond the skill set of the feller is described.

Outcome 2

Assess the site around the trees to be felled.

Performance criteria

- 2.1 Hazards within a minimum of two tree lengths of tree(s) to be felled are identified and the associated risks are controlled.
- Range hazards may include but are not limited to – people, machines, operating ropes, other operations, weather and environmental conditions, ground conditions, terrain features, overhead lines, roads, railways, public access ways, buildings, equipment, fences.
- 2.2 The reason for on-going hazard identification is explained.
- 2.3 Factors that may change hazards or introduce new hazards and risks are explained.
- Range weather, terrain, hindrance, fatigue.
- 2.4 The plan for the next ten trees to be felled is explained.
- Range order of felling, techniques to be used, assistance required, hazards, special requirements.
- 2.5 The process used to determine the two tree length zone around the trees to be felled is explained.

Outcome 3

Assess the trees to be felled.

Performance criteria

- 3.1 Factors in the immediate vicinity of the trees that may impact on felling are assessed.
- Range may include but is not limited to – weather, terrain, hindrance, ground conditions, overhead hazards.

3.2 The trees are assessed and felling is planned.

Range may include but is not limited to – lean, crown weight, branching, malformation, multi leaders, rot, intertwined branches, assistance required.

Outcome 4

Prepare the work area and escape route.

Performance criteria

4.1 The tree and work area are prepared for felling.

Range removal of low branches, clearing work area.

4.2 The escape route is established and prepared.

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

Outcome 5

Fell trees using a chainsaw.

Performance criteria

5.1 The conventional scarf method is demonstrated.

Range cut sequence, direction, angle and depth of top cut, horizontal bottom cut, cuts meet cleanly.

5.2 Wing cuts are used where appropriate to minimise side slabbing.

5.3 The back-cut is correctly positioned and progressed.

Range horizontal, the level of the bottom cut of the scarf, hingewood, back-cut step, tree head movement.

5.4 The use of alternative back cut techniques and wedges to fell trees against the lean is demonstrated.

Range quarter cut or split level cut;
scarf depth, size and number of wedges, bark trimming, wedge placement, wedge setting, wedge driving;
one each of – back leaning, side leaning.

5.5 The bore and release back-cut technique is demonstrated.

Outcome 6

Retreat and observe the falling trees.

Performance criteria

6.1 Retreat and observation procedures are followed.

Range looking up, use of the escape route, overhead hazards, equipment.

Outcome 7

Demonstrate tree driving by felling one tree onto another.

Performance criteria

7.1 The requirements relating to tree driving are described.

7.2 Hazards and associated risks specific to tree driving are explained.

7.3 A one onto one tree drive is demonstrated.

Range driver tree selection, tree and work area preparation, escape routes, sequence of cuts, wedge use, communication process.

7.4 Management after an unsuccessful drive is explained.

Outcome 8

Demonstrate knowledge of advanced tree felling techniques.

Performance criteria

8.1 The process for felling difficult trees is described.

Range multiple leaders, spars, hung up trees.

8.2 The process for felling on steep terrain is described.

Range across slope, uphill, contour cutting.

8.3 The options for managing a tree that has sat back during felling are explained.

Range fall forward using new set of cuts, fall backwards, drive, machine assist.

8.4 The process for felling a tree that has sat backwards is described.

Range cut position, cut sequence, escape route location.

8.5 The additional considerations for felling species other than radiata pine are explained.

Range Douglas fir, eucalyptus, native species;
a minimum of two alternative species is required.

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| Planned review date | 31 December 2028 |
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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 | 23 July 2020 | N/A |
| Rollover | 3 | 26 April 2024 | N/A |

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| Consent and Moderation Requirements (CMR) reference | 0173 |
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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 if you wish to suggest changes to the content of this unit standard.