

Title	Use advanced felling techniques in arboriculture, and describe methods to handle windthrown trees		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: demonstrate knowledge of advanced felling techniques; directionally fell trees using advanced felling techniques; and describe methods to handle windthrown trees and safety requirements.
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Classification	Horticulture > Arboriculture
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Available grade	Achieved
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Guidance Information

- 1 Legislation, standards, and references relevant to this unit standard include but are not limited to:
 - Resource Management Act 1991;
 - Health and Safety at Work Act 2015;
 - BS 3998:2010, *Tree work. Recommendations*, available from www.britishstandard.org.uk;
 - ANSI A300, *Standards for Tree Care Operations* (Parts 1 – 7) and their subsequent amendments, available from www.isa-arbor.com;
 - WorkSafe New Zealand, *Approved Code of Practice Safety and Health in Arboriculture* (2012), available from www.worksafe.govt.nz/worksafe;
 - WorkSafe New Zealand, *Approved Code of Practice for Safety and Health in Tree Work Part 2: Maintenance of trees around power lines* (1996), available from www.worksafe.govt.nz/worksafe;
 - WorkSafe New Zealand, *Approved Code of Practice (ACOP) for safety and health in forest operations* (2012), available from www.worksafe.govt.nz/worksafe;
 - New Zealand Arboricultural Association Inc. (NZ Arb), *Good Practice Guide (GPG) for Safety Requirements in New Zealand Arboricultural Operations* (2017), available from www.nzarb.org.nz; and any subsequent amendments.
- 2 Definition
Workplace procedures – the policies and procedures on safety and operation set down by the employer or organisation. Procedures should reflect industry best practice, the GPG, equipment manufacturer’s requirements, and current legislation.
- 3 Candidates must hold a current first aid certificate before undertaking tree felling.

4 For the purposes of assessment:

- evidence for Outcome 2 must be presented in accordance with workplace procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of advanced felling techniques.

Performance criteria

- 1.1 Describe situations requiring advanced felling techniques in terms of the safety requirements.
- Range situations include – windthrown, unstable trees; double and multi leadered trees; forward, back, and side leaning trees; trees structurally weakened by decay; close proximity of trees to structures or other materials to be preserved.
- 1.2 Describe advanced felling techniques in terms of the uses of different felling cuts.
- Range cuts – split level back cuts, bore and release cuts, wing cuts; uses – back and forward leaning trees, small trees using wedges, wind damaged trees, decayed trees.
- 1.3 Describe the use of wedges in terms of their purposes, and the techniques for using them.
- Range purposes – hold tree upright, assist directional felling, alter tree balance and weight distribution, keep saw cuts open; techniques – set a wedge in a back cut, drive a wedge using two wedges, set a third wedge under one of the two others to get extra lift.
- 1.4 Describe felling sequences for side, backward, and forward leaning trees.
- 1.5 Describe techniques for advanced felling in terms of scarfing, back cutting, bore and release cutting, bore cutting a scarf, low and high release cuts on forward leaning trees and double leaders.

Outcome 2

Directionally fell trees using advanced felling techniques.

Performance criteria

- 2.1 Fell side leaning trees in intended direction using wedges and variation of hingewood depth methods.

- 2.2 Fell back leaning trees and small trees using wedges and split-level back cut method.
- 2.3 Fell forward leaning trees using bore and release method.
- 2.4 Fell stems of double or multi leader trees or decayed trees, or trees with a diameter greater than twice the guide bar length.

Outcome 3

Describe methods to handle windthrown trees, and safety requirements.

Performance criteria

- 3.1 Describe and identify hazards specific to unstable windthrown trees on job.
- Range hazards include but are not limited to – partial or complete stem breakage, shatter, tension, weakened, leaning and fallen trees, hung up trees, direction of the damaging wind, topography.
- 3.2 Describe treatment of other hazards in terms of operational requirements.
- Range felling a hung-up tree, limbing, trimming, upturned root plates, tension.
- 3.3 Describe safety requirements.
- Range protective clothing, felling aids, chainsaw suitability, workplace set-up, escape routes, stance, communication, assessment of work area, planning and prioritising.
- 3.4 Demonstrate awareness of hazards while working.
- 3.5 Describe compression and tension woods and identify chainsaw cuts appropriate to each situation.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 January 2000	31 December 2019
Revision	2	24 February 2006	31 December 2019
Review	3	11 December 2009	31 December 2019
Review	4	26 April 2018	31 December 2023
Review	5	25 March 2021	N/A

Consent and Moderation Requirements (CMR) reference	0032
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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 the Primary ITO standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.