
ARBORICULTURE
Plant trees and shrubs

level:	2
credit:	4
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	People credited with this unit standard are able to: prepare for planting; prepare hole and fill; prepare plant for planting; and plant the plant in its final site.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA and industry.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none">1 The requirements of the Health and Safety in Employment Act 1992 and its subsequent amendments must be complied with in completing this unit standard.2 The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; and Guide for Safety with Underground Services; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service, or website: www.dol.govt.nz.3 <i>Workplace procedures</i> refer to oral or written instructions to staff on procedures for the worksite and equipment.

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Elements and Performance Criteria

element 1

Prepare for planting.

performance criteria

- 1.1 Plants are inspected before planting to ensure suitability for purpose.
- 1.2 Site is checked to ensure that underground services will not be at risk from planting or root growth.
- 1.3 Planting position conforms with plan specifications.

Range: enables access, allows development of plant growth characteristics.

element 2

Prepare hole and fill.

Range: hole prepared manually and/or mechanically using hand held equipment.

performance criteria

- 2.1 Hole shape and size are such that root system is accommodated without distortion.
- 2.2 Soil on edges of hole and soil for fill is in friable condition with sides of the hole not glazed.
- 2.3 Drainage is installed if needed to keep planting hole clear of free water.
- 2.4 Soil amendments are applied according to site requirements and to manufacturer's recommendations.

Range: may include sand, peat, water retentive polymers, fertiliser.

- 2.5 Aeration and irrigation systems are installed according to site specifications.

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element 3

Prepare plant for planting.

Range: may include but is not limited to – container grown, containerised and bare root trees or shrubs.

performance criteria

3.1 Shoots are inspected and treated for irregularities that could affect plant growth.

Range: broken, damaged and diseased shoots are pruned or plant rejected.

3.2 Roots are inspected and treated for irregularities that could affect plant growth.

Range: containers removed; root bound roots straightened or pruned, or plant rejected; broken, damaged, pest infested or diseased roots pruned, or plant rejected; roots watered if necessary.

element 4

Plant the plant in its final site.

Range: trees and shrubs planted manually.

performance criteria

4.1 Root placement allows natural growth pattern.

4.2 Root to soil contact is achieved with friable soil so that roots do not dry out.

4.3 Roots are moist and sufficient moisture is available within the rootzone to meet plant requirements.

4.4 Anchorage prevents excess root ball movement or plants falling over.

Range: may include – fill firmed, stakes used, guys used.

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Comments on this unit standard

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This unit standard is covered by AMAP 0032 which can be accessed at
<http://www.nzqa.govt.nz/site/framework/search.html>.

ARBORICULTURE
Maintain amenity trees and shrubs

level:	3
credit:	8
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	People credited with this unit standard are able to: control weeds and ground cover under amenity trees and shrubs; irrigate trees and shrubs; demonstrate knowledge of the application of fertilisers and soil amendments to trees and shrubs; inspect and maintain tree protection systems; identify and maintain formative pruning equipment; describe the principles and importance of pruning and training; formative prune young amenity trees and shrubs to prescribed form; and train young amenity trees and shrubs.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<p>1 Relevant reference material Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; and Guide for Safety with Underground Services are available from regional offices of the Department of Labour, Occupational Safety and Health Service, or website: www.dol.govt.nz.</p> <p>The <i>Standards</i> are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; and ANSI A300 - American National Standards for Tree Care Operations – available from website: http://www.isa-arbor.com.</p>

ARBORICULTURE
Maintain amenity trees and shrubs

- 2 *Workplace procedures* refer to oral or written instructions to staff on procedures for the worksite and equipment.
- 3 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.

Elements and Performance Criteria

element 1

Control weeds and ground cover under amenity trees and shrubs.

performance criteria

- 1.1 Weed control and ground cover options are compared in terms of their advantages and disadvantages for particular situations.

Range: mulches, plants, agrichemicals, cultivation.
- 1.2 Mulches and weed mats are applied and maintained so that weed growth is controlled.
- 1.3 Swards under amenity trees and shrubs are controlled according to client specifications and workplace procedures.

Range: agrichemicals, mowing.
- 1.4 Ground cover plants are selected and spacing recommended to optimise canopy under amenity trees and shrubs.
- 1.5 Tree surrounds are selected and installed for protection of trees and shrubs and retention of mulch.

Range: evidence is required for one of – edgemasta, tree shelter, tree cage, grill, raised pavers, timber enclosure.

element 2

Irrigate trees and shrubs.

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performance criteria

2.1 Newly planted trees and shrubs are hand watered so that soil within the enclosure is brought to field capacity.

2.2 Manual and automatic irrigation systems are described in terms of their features, functions, and maintenance requirements.

Range: trickle, moveable sprinkler, fixed sprinkler including pop up types, soak hose, automatic timed and sensory system.

element 3

Demonstrate knowledge of the application of fertilisers and soil amendments to trees and shrubs.

performance criteria

3.1 Fertilisers and soil amendments are described in terms of their suitability for application to trees and shrubs.

Range: evidence is required for a minimum of five materials; descriptions include time of application, and manufacturer's recommendations for rates and methods of application.

element 4

Inspect and maintain tree protection systems.

performance criteria

4.1 Stakes and ties are inspected, replaced and removed as required according to workplace procedures.

4.2 Tree and shrub guards and surrounds are inspected, repaired, replaced and removed as required according to workplace procedures.

Range: grates, guards, wind cloth, surrounds.

element 5

Identify and maintain formative pruning equipment.

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Range: secateurs, pole loppers, loppers, pruning saw.

performance criteria

- 5.1 Pruning equipment is identified in terms of its suitability for a given task.
- 5.2 Equipment is cleaned, sharpened, repaired and oiled according to manufacturers' directions and workplace procedures.

element 6

Describe the principles and importance of pruning and training.

performance criteria

- 6.1 The reasons for tree training and tree responses to training are described to show how final tree shape will be achieved.

Range: espalier, hedging, multistem, pleaching, pollarding, single leader.
- 6.2 The reasons for pruning and tree responses to pruning are described to show how final tree shape will be achieved.

Range: reasons – air circulation, health, light filtration, safety, statutory clearances view.
- 6.3 Pruning is described in terms of the principle of maintaining a natural balance.
- 6.4 Natural target pruning is described in terms of using cut positions that promote desired plant responses.

element 7

Formative prune young amenity trees and shrubs to prescribed form.

performance criteria

- 7.1 Shape and structure are produced according to the British Standard.
- 7.2 Dead and diseased wood is removed according to the standard and workplace procedures.
- 7.3 Pruning meets client specifications.

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element 8

Train young amenity trees and shrubs.

performance criteria

8.1 Trees are selected and trained into specified form without damage and according to workplace procedures.

Range: espalier, hedging, multistem, pleaching, pollarding, single leader.

8.2 Root development is optimised through staking or support system.

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ARBORICULTURE
Prune young amenity trees and shrubs

level:	3
credit:	4
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	People credited with this unit standard are able to identify the form and features to be emphasised in the tree, and prune young amenity trees and shrubs under 10 metres.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none"> 1 Relevant reference material The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Approved Code of Practice for power-operated elevating work platforms; and Guide for Safety with Underground Services; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz. 2 The <i>Standards</i> are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; and ANSI A300 - American National Standards for Tree Care Operations; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements; both are available from website: http://www.isa-arbor.com.

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Prune young amenity trees and shrubs

- 3 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.
- 4 A *young* tree or shrub is recently established and may need outside assistance to develop and become fully established.
- 5 *Workplace procedures* refer to oral or written instructions to staff on procedures for the worksite and equipment.

Elements and Performance Criteria

element 1

Identify the form and features to be emphasised in the tree.

performance criteria

- 1.1 The tree form to be produced is identified from the range.

Range: may include but not limited to – columnar, conical, decurrent, diffuse, excurrent, fastigate, horizontal, irregular, weeping.
- 1.2 How trees can be enhanced by pruning is explained in terms of their features.

Range: features include but are not limited to – arrangement of limbs, bole or trunk, flowering, future safety, health, shape, silhouette.
- 1.3 Floral, vegetative and mixed buds are identified and distinguished from each other.

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Prune young amenity trees and shrubs

element 2

Prune young amenity trees and shrubs under 10 metres.

Range: trees less than 10 metres without a clear bole, requiring no chainsaw use above ground.

performance criteria

- 2.1 Working techniques and progression are agreed with ground staff according to the Codes of Practice and workplace procedures.
- 2.2 The tree is climbed in accordance with the requirements of the Codes of Practice and the workplace procedures.
- 2.3 Branches are removed safely and without damage as per Codes of Practice, Standards, and workplace procedures.

Range: includes but not limited to – crown lifting, reduction, thinning, deadwooding, cleaning out, formative pruning, crown restoration; shape and structure, flowering and appearance suit tree species, situation, and client requirements; pests, diseases, disorders and damage not naturally controlled or treated by other methods are pruned out.
- 2.4 Site is left clean and tidy in accordance with contract specifications.

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Prune young amenity trees and shrubs

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ARBORICULTURE
Transplant amenity trees and shrubs
manually

level:	3
credit:	4
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	People credited with this unit standard are able to: identify trees and shrubs and situations suitable for transplanting; prepare transplanting hole for trees and shrubs; and transplant trees and shrubs manually.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<p>1 Relevant reference material The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; and Guide for Safety with Underground Services; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz.</p> <p>The <i>Standards</i> are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; ANSI A300 - American National Standards for Tree Care Operations; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements – both available from website: http://www.isa-arbor.com</p>

ARBORICULTURE
Transplant amenity trees and shrubs
manually

- 2 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.
- 3 Definitions
Manually means that such specialist lifting equipment as lifting frames, cranes, and tree spades are not used. *Workplace procedures* refer to oral or written instructions to staff on procedures for the worksite and equipment.

Elements and Performance Criteria

element 1

Identify trees and shrubs and situations suitable for transplanting.

performance criteria

- 1.1 Trees and shrubs are assessed in terms of their suitability for transplanting.

Range: merit of plant, requirements of client, tolerance of trees to disturbance.
- 1.2 Transplanting is described in terms of critical success factors.

Range: includes but is not limited to – access (including clearance from underground utility services), contour, soil characteristics, site requirements and characteristics.
- 1.3 Hazards involved in the work are identified and hazard control procedures and plans enable work to be completed in accordance with Health and Safety legislation and workplace procedures.

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Transplant amenity trees and shrubs
manually

element 2

Prepare transplanting hole for trees and shrubs.

performance criteria

- 2.1 Required root ball size is calculated so that transplant shock will be minimised.
- 2.2 Hole and fill are prepared to suit root ball size and according to the Guide for Safety with Underground Services.
- 2.3 Instructions, if required, are provided for the machine operator to prepare new plant site in the planned position and of a size suitable to the plant.

element 3

Transplant trees and shrubs manually.

performance criteria

- 3.1 Plant is prepared for transplanting in accordance with workplace procedures and client requirements.

Range: may include but not limited to – wrenching, pruning, root pruning, regulation of transpiration.
- 3.2 Root ball is extracted in accordance with workplace procedures, the standards, and with minimal damage to roots.
- 3.3 Root ball is wrapped to protect roots.
- 3.4 Plant is transported to new site with minimal moisture loss or root disturbance.
- 3.5 Plant is positioned in hole so that the plant will be where planned, and at the planned orientation and depth.
- 3.6 Hole is filled and support is provided if required in accordance with workplace procedures.

Range: may include but is not limited to – soil firming, staking, guying.

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Transplant amenity trees and shrubs
manually

3.7 Plant is given initial maintenance as appropriate to the species, situation, and client requirements.

Range: may include but is not limited to – fertilising, mulching, protection, watering.

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ARBORICULTURE
Diagnose amenity tree health problems

level:	4
credit:	8
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	People credited with this unit standard are able to: describe the natural responses of trees to pests, disease causing organisms and disorder causing factors; identify common and important diseases of amenity trees and select control measures; identify common and important pests of amenity trees and select control measures; identify common and important disorders of amenity trees and correction methods; describe systems for data collection on tree health problems; describe quarantine and the Biosecurity Act as pest and disease control methods for amenity trees; and identify common non disease causing fungi associated with trees.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none">1 No single publication is an absolute authority on common names for diseases of trees. <i>An Illustrated Guide To Fungi On Wood In New Zealand</i>, I A Hood, Auckland University Press, 1992 is a useful guide.2 <i>Standard Names For Common Insects Of New Zealand, Bulletin 4</i>, The Entomological Society of New Zealand Inc, 1977 is available through the library system.

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Diagnose amenity tree health problems

- 3 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, Biosecurity Act 1993, and their subsequent amendments.

Elements and Performance Criteria

element 1

Describe the natural responses of trees to pests, disease causing organisms and disorder causing factors.

performance criteria

- 1.1 Normal wound reaction in trees is described in terms of immediate and long term responses to damage caused by any agency.
- 1.2 Natural tree responses to stress caused by any agency are described in terms of immediate and long term responses.

element 2

Identify common and important diseases of amenity trees and select control measures.

Range: evidence is required for a minimum of ten of – algal and fungal leaf spots, *Armillaria*, cabbage tree decline (MLO), *Chondrostereum purpureum*, *Coryneum cardinale*, *Dothistroma pini*, *Erwinia amylovora*, *Ganoderma* sp, *Polyporus* sp, butt rots, *Gnomonia platani*, *Junghuhnia vincta*, *Marssonina* sp, *Melampsora* sp, *Monochaetia unicornis*, *Nectria galligena*, *Ophistromi ulmi*, pepper tree decline, *Phytophthora*, *Pseudomonas* spp, *Rigidoporous lineatus*, *Seridium* spp, *Uromycladium* rusts of Acacia, *Verticillium*.

performance criteria

- 2.1 A methodical inspection of infected plants and their environment allows signs and/or symptoms to be recognised so that the common name is given.
- 2.2 Common signs and/or symptoms of the disease are described so that diagnosis can be made.

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Diagnose amenity tree health problems

- 2.3 The life cycle of the disease is described in terms of vulnerable points allowing control.
- 2.4 Control measures are identified that will give both immediate and long term protection.
- 2.5 A programme is described that will minimise disease-caused loss of value of plants.
- Range: control, containment, elimination, sanitation.

element 3

Identify common and important pests of amenity trees and select control measures.

Range: evidence must include 12 of the following, of which ten must be invertebrates – aphids, beetles and bark beetles, borers, caterpillars, cicadas, grass grub, gum emperor moth, leafminers, mites, pear and cherry slug, psyllids, sawfly, *scolytus* sp, hares, rabbits, possums, grazing animals, sirex wasp.

performance criteria

- 3.1 A methodical inspection of affected plants allows the pest or signs of its presence to be recognised so that the common name is given.
- 3.2 Common signs and/or symptoms of the pest are described so that diagnosis can be made.
- 3.3 The pest's life cycle is described in terms of vulnerable points that allow economic control.
- 3.4 Control measures are identified that will give both immediate and long term protection.
- 3.5 A programme is described that will minimise pest-caused loss of value of plants.

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Diagnose amenity tree health problems

element 4

Identify common and important disorders of amenity trees and correction methods.

Range: evidence must include 12 of the following, of which at least six must be physiological disorders – animal damage, bark wounds, chemical damage, co-dominant leaders, drought, flush pruning cuts, frost, gas leakage, graft incompatibility, hail damage, high voltage electricity, included bark, machinery damage, nutrient deficiencies, nutrient toxicity, over thinning, poor form, root disturbance, saline winds, soil compaction, sunburn, waterlogged soil, water pockets, wind.

performance criteria

- 4.1 The cause of the disorder is identified on inspection.
- 4.2 Correction methods are described to minimise damage occurring to plants from the disorder.
- 4.3 Investigation and evaluation allows a correction programme to be described that will minimise damage to plants occurring from specific disorders in specific situations.
- Range: may include but is not limited to – increment boring, soil testing, foliage sampling, electronic and mechanical decay detectors (shigometers, fractometers, resistographs) appropriate cabling systems.
- 4.4 Hazards involved in the work are identified, and hazard control procedures and plans enable work to be completed in accordance with the legislation.

element 5

Describe systems for data collection on tree health problems.

performance criteria

- 5.1 Data collection systems are described in terms of tree health problems.
- Range: The International Society of Arboriculture data collection system, and one other system.

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Diagnose amenity tree health problems

element 6

Describe quarantine and the Biosecurity Act as pest and disease control methods for amenity trees.

performance criteria

- 6.1 The quarantine system and Biosecurity Act 1993 in New Zealand are described in terms of how they affect the movement of plant material into and around New Zealand.
- 6.2 Tree pests and diseases are identified in terms of those for which quarantine is of particular importance.
- Range: may include but is not limited to – Asian and American gypsy moth, cherry wilt, chestnut blight, dogwood blight, Dutch elm disease, oak wilt disease, viruses.

element 7

Identify common non disease causing fungi associated with trees.

performance criteria

- 7.1 Fungi and host associations are identified and described in terms of their beneficial effects.
- Range: decay fungi, mycorrhiza, sooty mould.
- 7.2 Measures are described to encourage naturally occurring beneficial fungi.

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Diagnose amenity tree health problems

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ARBORICULTURE
Manage the development, conservation,
and the use of woodlots

level:	5
credit:	6
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	People credited with this unit standard are be able to: define the scope and application of woodlots; identify suitable woodlot sites and plan for their use; and implement woodlot development.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none">1 Case studies may be used as the basis of this unit standard.2 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, Resource Management Act 1991, Local Government Act 2002, and their subsequent amendments.

ARBORICULTURE
Manage the development, conservation,
and the use of woodlots

Elements and Performance Criteria

element 1

Define the scope and application of woodlots.

performance criteria

1.1 Woodlots are described in terms of their characteristics.

Range: characteristics must include but are not limited to – high value, landscape benefits, long life cycle, potential sustainability, selective harvesting.

1.2 Woodlots are described in terms of their functions.

Range: may include but is not limited to – coppice block, continuous production, economic return, firewood, landscape benefits, noise protection, protection for delicate and slow growing species, screening, shelterbelt, tree crops for stock feed, windbreaks.

element 2

Identify suitable woodlot sites and plan for their use.

performance criteria

2.1 Duration of access to site is determined to identify type of woodlot development to be planned.

Range: short-term, medium term, long-term.

2.2 Cost-benefit of investment in a woodlot is determined through evaluation of contributing factors.

Range: contributing factors – site life, site cost, establishment costs, range of products possible, available markets for products, management and operational costs, amenity and landscape values.

2.3 Growing and production cycle is determined by duration of site availability.

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Manage the development, conservation,
and the use of woodlots

- 2.4 Species and planting plans are specified from trees identified as suitable for site conditions and design needs.
- 2.5 Planning determines sustainable yield and selective or rotational harvesting procedures.
- 2.6 Land management requirements are incorporated in final plan.
- Range: approvals and consents, stabilisation, access, planting, tree care, harvest.

element 3

Implement woodlot development.

performance criteria

- 3.1 Development meets requirements of permits and consents.
- 3.2 Planting methods adopted meet tree establishment needs and planting specification requirements.
- 3.3 Tree management procedures adopted foster tree health, usable timber development, and aesthetic potential of the woodlot.
- 3.4 Harvest and post-harvest practices adopted conform with legislation.

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ARBORICULTURE
Manage the development, conservation,
and the use of woodlots

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This unit standard is covered by AMAP 0032 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.

ARBORICULTURE
Plan and manage complex tree work

level:	5
credit:	5
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for experienced arborists who manage large arboricultural projects. People credited with this unit standard are able to: assess tree work required; develop a plan for completion of the required work; and manage completion of the work.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<p>1 Relevant reference material The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Approved Code of Practice for power-operated elevating work platforms; Approved Code of Practice for cranes and lifting appliances; and Guide for Safety with Underground Services; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz.</p>

ARBORICULTURE

Plan and manage complex tree work

The *Standards* are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; ANSI A300 - American National Standards for Tree Care Operations; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements – both available from website: <http://www.isa-arbor.com>.

- 2 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.
- 3 Definitions
Workplace procedures refer to oral or written instructions to staff on procedures for the worksite and equipment.
Complex tree work is that which requires: diagnosis of work to be completed; advanced level climbing and roping skills; and uses heavy lifting and transporting equipment.

Elements and Performance Criteria

element 1

Assess tree work required.

performance criteria

- 1.1 Climbing techniques are used in accordance with workplace procedures so that the tree can be examined to determine its current condition.

Range: includes but is not limited to – stability, structural soundness, internal decay.
- 1.2 Procedures used to document required work enable a specification to be developed for work to be done.

ARBORICULTURE
Plan and manage complex tree work

element 2

Develop a plan for completion of the required work.

performance criteria

- 2.1 Elements of work to be done are planned in sequence in accordance with workplace procedures.
- 2.2 Resources are arranged to allow the work to be completed.
- Range: may include but is not limited to – permits, labour, lifting and transport equipment, climbing and roping gear, cutting equipment, stump grinders, brush wood chippers, site safety equipment.
- 2.3 Provision of specialist services is arranged where required in accordance with workplace procedures.
- 2.4 Site is assessed for hazards and a plan to deal with any identified is developed according to workplace procedures.

element 3

Manage completion of the work.

performance criteria

- 3.1 Workers are given instructions, and their understanding of requirements and procedures is confirmed.
- 3.2 Procedures adopted ensure workers conform with the standards, Codes of Practice and workplace procedures.
- 3.3 Authorities responsible for public services and safety are involved in the management of the project.
- Range: may include – police, utility companies, local authorities, Occupational Safety and Health Service.
- 3.4 Work is completed in accordance with the specification, and the site left in a safe condition to allow other work to proceed without disruption.

ARBORICULTURE

Plan and manage complex tree work

Comments on this unit standard

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<http://www.hortito.org.nz> if you wish to suggest changes to the content of this unit standard.

Please Note

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<http://www.nzqa.govt.nz/site/framework/search.html>.

ARBORICULTURE
Use climbing equipment for
arboriculture

level:	3
credit:	3
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for trainees and arborists wanting to extend their skills in climbing. People credited with this unit standard are able to demonstrate knowledge of lines and other climbing equipment, and use knots and lines for aerial arboriculture work.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none">1 The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; and Part Two: Maintenance of trees around power lines; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz.2 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.3 <i>Workplace procedures</i> refer to oral or written instructions to staff on procedures for the worksite and equipment.

ARBORICULTURE
Use climbing equipment for
arboriculture

Elements and Performance Criteria

element 1

Demonstrate knowledge of lines and other climbing equipment.

Range: lines – natural fibre and synthetic lines, climbing lines, lowering lines, throwing lines, lanyards, prussic loops;
other equipment – safety harness, ascending/descending equipment, micro pulley, tool strop, snaps, karabiners, throwing balls, gigris shunts, gaffs, spikes.

performance criteria

- 1.1 The qualities and features of lines and other equipment are explained in terms of their uses and according to workplace procedures and/or manufacturer's recommendations.
- 1.2 The care and maintenance, and checking for faults or defects of lines and other climbing equipment are explained and demonstrated in accordance with workplace procedures.

element 2

Use knots and lines for aerial arboriculture work.

performance criteria

- 2.1 Knots are tied and their uses explained in accordance with the Codes of Practice and workplace procedures.

Range: evidence is required of seven of – reef knot, bowline, running bowline, round turn and two half hitches, double sheet bend, clove hitch, figure eight, prussic, timber hitch, Blake's hitch, slip knot.
- 2.2 Knots and lines are used according to workplace procedures.

Range: evidence is required of at least three knots being used in practical applications.

ARBORICULTURE
Use climbing equipment for
arboriculture

Comments on this unit standard

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This unit standard is covered by AMAP 0032 which can be accessed at
<http://www.nzqa.govt.nz/site/framework/search.html>.

ARBORICULTURE
Fell and limb trees under supervision

level:	3
credit:	10
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for people wishing to train to use chainsaws to fell trees in an arboriculture situation. People credited with this unit standard are able to: demonstrate knowledge of safety requirements for felling and limbing trees; use a chainsaw to make felling cuts; assess felling areas and trees to be felled; fell trees under supervision; and delimb felled trees.
entry information:	Prerequisites: Unit 6917, <i>Operate a chainsaw</i> ; Unit 6916 <i>Demonstrate knowledge of the Approved Code of Practice relating to chainsaw use</i> ; or demonstrate equivalent knowledge and skills.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	1 Relevant reference material The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Safety Code for Forest Operations: Part 3 – Logging; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz .

ARBORICULTURE

Fell and limb trees under supervision

The *Standards* are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; ANSI A300 - American National Standards for Tree Care Operations; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements – both available from website: <http://www.isa-arbor.com>.

- 2 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.
- 3 *Workplace procedures* refer to oral or written instructions to staff on procedures for the worksite and equipment.
- 4 *Under supervision* – supervision of candidates carried out by a trained arborist.

Elements and Performance Criteria

element 1

Demonstrate knowledge of safety requirements for felling and limbing trees.

Range: according to the Codes of Practice and workplace procedures.

performance criteria

- 1.1 Safety rules for approaching a felling area are described in terms of notification and approach precautions.
- 1.2 Preparation for felling is described in terms of supervision, safety, escape routes, overhead hazards, observer zone.

ARBORICULTURE
Fell and limb trees under supervision

- 1.3 Tree felling is described in terms of potential hazards and action to take to manage such hazards.
- Range: potential hazards include – chainsaw use, tree movement, wind and ground conditions, obstacles and other trees, site size and configuration, direction of fall, proximity of other people, inexperience of feller, overhead hazards, hazards specific to situation.
- 1.4 Tree felling work is described in terms of protective clothing and first aid requirements for those engaged in tree felling.
- 1.5 Equipment and felling aids are described in terms of their safe usage.
- 1.6 Conventional scarf is described in terms of configuration and sequence, and possible consequences of overcut and shallow scarves are explained.
- 1.7 Delimiting is described in terms of potential hazards and action to take to manage such hazards.
- Range: potential hazards include – kickback, tree movement, slope, weather and ground conditions, undergrowth, branches and/or stem under tension or compression stress, debris, log size, overhead hazards, hazards specific to situation.
- 1.8 Delimiting is described in terms of saw position, operator's body position, and sequence for single, double, and multi leader trees.

element 2

Use a chainsaw to make felling cuts.

Range: cuts may be demonstrated on stumps or poles over 20 cm diameter.

performance criteria

- 2.1 Chainsaw is maintained according to manufacturer's directions and is suitable for task.
- 2.2 Protective clothing, equipment and felling aids are assembled and used in accordance with the Codes of Practice.

ARBORICULTURE
Fell and limb trees under supervision

- 2.3 Purposes and method for scarfing and backcutting using the conventional method are described in terms of scarf, backcut, holding wood and backcut step.
- 2.4 Scarves and backcuts are made ready for felling using a chainsaw according to the Codes of Practice.
- 2.5 Chainsaw use is safe and controlled in accordance with the Codes of Practice, and wedges are used according to workplace procedures.

element 3

Assess felling areas and trees to be felled.

performance criteria

- 3.1 Felling areas are assessed and described in terms of factors affecting felling direction and safety.

Range: site, contour and conditions, tree conditions, weather, other trees, adjacent operations and structures, environmental factors, safety of observers and other workers, signs, boundaries.
- 3.2 Trees are individually assessed for hazards to the tree feller and others, and action is taken to eliminate or manage risk according to workplace procedures.

Range: disturbed ground, dead limbs, rot or hollow core, overhead hazards, obstructions, escape routes, observers, roads, degree of slope, wind and other weather conditions.
- 3.3 Trees are individually assessed for lean and weight distribution so that felling direction can be stated.
- 3.4 Escape routes and work areas are prepared in accordance with the Codes of Practice.
- 3.5 Trees assessed as 'beyond feller's capabilities' are identified.

ARBORICULTURE
Fell and limb trees under supervision

element 4

Fell trees under supervision.

Range: tree will be reasonably straight forward to fell with a diameter less than the length of the guide bar.

performance criteria

- 4.1 Chainsaw and wedges used meet the task requirements.
- Range: chainsaw condition, bar length, cc rating, wedge size, number of wedges.
- 4.2 Personal safety and the safety of others is managed according to the Codes of Practice and workplace procedures.
- Range: hazards, protective clothing, felling signs, observers.
- 4.3 Trees are directionally felled as directed using conventional scarf and backcut, in accordance with the Codes of Practice and workplace procedures.
- 4.4 Chainsaw is handled to ensure that it is not jammed or damaged in felling process.
- 4.5 Scarfs are regular and not overcut and backcuts are horizontal.
- 4.6 Safe observation points and escape routes are used in accordance with the Codes of Practice.
- 4.7 Trees felled and on the ground are made safe so that the site can be left in a safe condition.

element 5

Delimb felled trees.

performance criteria

- 5.1 Felled trees are assessed and made safe according to workplace procedures.
- 5.2 Trees are delimbed and prepared by removing slovens and delimiting flush with the stem according to the Codes of Practice and workplace procedures.

ARBORICULTURE
Fell and limb trees under supervision

5.3 Work practice and hazard identification are in accordance with the Codes of Practice and workplace procedures.

Range: identifying and working in safe zones, use of judgement and timing in using safe areas, consideration for others in the workplace.

Comments on this unit standard

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ARBORICULTURE
Use advanced felling techniques in
arboriculture

level:	4
credit:	10
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for people wishing to extend their tree felling skills in an arboriculture situation. People credited with this unit standard are able to: demonstrate knowledge of advanced felling techniques; directionally fell trees using advanced techniques; demonstrate specific advanced felling techniques; and handle windthrown trees.
entry information:	Prerequisite: Unit 17257, <i>Fell and limb trees under supervision</i> , or demonstrate equivalent knowledge and skills.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	1 Relevant reference material The <i>Codes of Practice are</i> Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Safety Code for Forest Operations: Part 3 – Logging; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz .

ARBORICULTURE
Use advanced felling techniques in
arboriculture

The *Standards* are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; ANSI A300 - American National Standards for Tree Care Operations; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements – both available from website: <http://www.isa-arbor.com>.

- 2 Legislation relevant to this unit standard includes – the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.
- 3 *Workplace procedures* refer to oral or written instructions to staff on procedures for the worksite and equipment.

Elements and Performance Criteria

element 1

Demonstrate knowledge of advanced felling techniques.

performance criteria

- 1.1 Situations requiring advanced felling techniques are described in terms of the safety requirements for those techniques.

Range: situations to include – windthrow, 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.

ARBORICULTURE
Use advanced felling techniques in
arboriculture

- 1.2 Advanced felling techniques are described in terms of the uses of different felling cuts.
- Range: cuts – split level backcuts, bore and release cuts, wing cuts;
uses – back and forward leaning trees, small trees using wedges, wind damaged trees, decayed trees.
- 1.3 The use of wedges is described in terms of their purposes and techniques for using them.
- Range: purposes – hold tree upright, assist directional felling, alter tree balance and weight distribution, keep saw cuts open;
techniques – setting a wedge in a backcut, driving a wedge using two wedges, setting a third wedge under one of the two others to get extra lift.
- 1.4 Felling sequences are described for side, backward, and forward leaning trees.
- 1.5 Techniques for advanced felling are explained in terms of scarfing, backcutting, bore and release cutting, bore cutting a scarf, low and high release cuts on forward leaning trees, double leaders.

element 2

Directionally fell trees using advanced felling techniques.

performance criteria

- 2.1 Side leaning trees are felled in intended direction using wedges and variation of hingewood depth methods according to Codes of Practice and workplace procedures.
- 2.2 Back leaning trees and small trees are felled using wedges and split level backcut method according to Codes of Practice and workplace procedures.
- 2.3 Forward leaning trees are felled using bore and release method according to Codes of Practice and workplace procedures.
- 2.4 Stems of double and multi leader trees, and decayed trees are felled according to Codes of Practice and workplace procedures.

ARBORICULTURE
Use advanced felling techniques in
arboriculture

- 2.5 Trees of greater diameter than twice the guide bar length are felled according to Codes of Practice and workplace procedures.

element 3

Demonstrate specific advanced felling techniques.

performance criteria

- 3.1 Wedges are used to assist tree felling in desired direction in a timely manner according to Codes of Practice and workplace procedures.
- Range: assisting desired direction; gaining extra lift with two wedges, side by side; a third wedge under one of two other wedges.
- 3.2 Final felling cuts are made from safest position which has been determined after tree assessment.
- 3.3 Hingewood width is maintained by making cuts from both sides of trees.

element 4

Handle windthrown trees.

performance criteria

- 4.1 Hazards specific to unstable windthrown trees are described and identified 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.
- 4.2 Treatment of other hazards is described in terms of operational requirements.
- Range: means to deal with felling, butting and heading trees, limbing, trimming, upturned root plates, tension.

ARBORICULTURE
Use advanced felling techniques in
arboriculture

- 4.3 Safety requirements are established and met according to Codes of Practice and workplace procedures.
- Range: training, protective clothing, felling aids, chainsaw suitability, workface setup, escape routes, stance, communication, assessment of work area, work is planned and prioritised.
- 4.4 Trees are felled and headed and butted off using methods according to Codes of Practice and workplace procedures.
- 4.5 Compression and tension woods are identified and chainsaw cuts are used appropriate to each situation according to Codes of Practice and workplace procedures.
- 4.6 Awareness of hazards and safe work practice is demonstrated in terms of identifying and working in safe zones, use of judgement and timing in using safe areas, and consideration for others on or near the site.

Comments on this unit standard

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ARBORICULTURE
Use advanced felling techniques in
arboriculture

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ARBORICULTURE
Operate an elevated platform vehicle for
arboriculture

level:	4
credit:	4
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for people wishing to extend their range of skills in an arboriculture situation. People credited with this unit standard are able to site and prepare an elevated platform vehicle, and use an elevated platform vehicle.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<p>1 Relevant reference material The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Approved Code of Practice for power-operated elevating work platforms; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz.</p> <p>The <i>Standards</i> are British Standard for Treeworks: BS 3998:1989 – available from British Standards Institute, or website: www.standardsUK.com; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements – available from website: http://www.isa-arbor.com.</p>

ARBORICULTURE
Operate an elevated platform vehicle for
arboriculture

- 2 Legislation relevant to this unit standard includes – the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.
- 3 Definitions
Workplace procedures refer to oral or written instructions to staff on procedures for the worksite and equipment.
Elevated platform vehicles include trucks fitted with hydraulic and/or extending booms, and trailers similarly fitted. Power may be supplied from the truck's engine, or from a separate engine.

Elements and Performance Criteria

element 1

Site and prepare an elevated platform vehicle.

performance criteria

- 1.1 Vehicle is checked and serviced according to workplace procedures and/or manufacturer's instructions.
Range: to include inspection of all safety features.
- 1.2 Site is selected according to required functions, workplace procedures and/or manufacturer's instructions.
Range: to include ground stability and gradient, safe access, overhead obstacles.
- 1.3 The vehicle is stabilised according to the Codes of Practice, workplace procedures and/or manufacturer's instructions.
- 1.4 Signage is erected or other precautions to secure the site are taken in accordance with the Codes of Practice and workplace procedures.

ARBORICULTURE
Operate an elevated platform vehicle for
arboriculture

element 2

Use an elevated platform vehicle.

performance criteria

- 2.1 On site pre-use checks are carried out according to workplace procedures and/or manufacturer's instructions.
- 2.2 Vehicle is operated for arboriculture purposes according to Codes of Practice, workplace procedures and/or manufacturer's instructions.
- 2.3 Vehicle is converted to travelling format after the job is finished according to workplace procedures and/or manufacturer's instructions.
- 2.4 The site is left as specified in contract.

Comments on this unit standard

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ARBORICULTURE
**Carry out groundperson's duties in an
arboricultural situation**

level:	3
credit:	4
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for people wishing to extend their range of skills in an arboriculture situation. People credited with this unit standard are able to: secure a site for arboricultural work; support aerial crew members; and carry out general ground duties.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<p>1 Relevant reference material</p> <p>The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Approved Code of Practice for power-operated elevating work platforms; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service or website: www.dol.govt.nz.</p> <p>The <i>Standards</i> are British Standard for Treeworks: BS 3998:1989 and amendment 6549:1990 – available from British Standards Institute, or website: www.standardsUK.com; and ANSI Z133.1-2006 - American National Standard for Arboriculture Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush –</p>

ARBORICULTURE
**Carry out groundperson's duties in an
arboricultural situation**

Safety Requirements – available from website:
<http://www.isa-arbor.com>.

Working on the Road – A Handbook for Temporary
Traffic Control and Safety at Roadworks sites is
available from any office of Transit New Zealand.

- 2 Legislation relevant to this unit standard includes – the
Health and Safety in Employment Act 1992, Health and
Safety in Employment Regulations 1995, and their
subsequent amendments.
- 3 Definitions
A groundperson is someone who remains on the
ground while other members of an arboricultural team
are working above ground.
Workplace procedures refer to oral or written
instructions to staff on procedures for the worksite and
equipment.

Elements and Performance Criteria

element 1

Secure a site for arboricultural work.

performance criteria

- 1.1 Road signage, if required, meets Transit New Zealand's requirements.

Range: includes inspection of all safety features.
- 1.2 People are excluded from the working and potential danger areas according to
the Codes of Practice and workplace procedures.

Range: includes expulsion of people who ignore barrier tapes or signage
and still impinge on exclusion area.

ARBORICULTURE
**Carry out groundperson's duties in an
arboricultural situation**

element 2

Support aerial crew members.

performance criteria

- 2.1 Communication methods and signals are agreed in accordance with the Safety Codes and workplace procedures.
- 2.2 General safety of climbers is maintained according to agreement with climbers, Codes of Practice, and workplace procedures.
- Range: includes but is not limited to – keeping a look out for hangers, dead wood and other hazards, advising on best anchor points.
- 2.3 Lines are maintained in accordance with the Safety Codes and workplace procedures.
- Range: includes but is not limited to – checks for defects, untangled, free of debris, lowering lines are passed or thrown up.
- 2.4 Chainsaws are serviced in accordance with the Safety Codes and workplace procedures, and so that no fuel or oil comes in contact with climbing lines.

element 3

Carry out general ground duties.

performance criteria

- 3.1 Log wood is stacked or cut into firewood, brushwood is stacked, butts all one way, ready to be chipped or otherwise disposed of.
- 3.2 The site is left safe and secure overnight if working longer than one day.
- 3.3 The site is swept or blown with a blower, cleaned and tidied so that site is left as specified in contract and in accordance with workplace procedures.

ARBORICULTURE
Carry out groundperson's duties in an
arboricultural situation

Comments on this unit standard

Please contact New Zealand Horticulture Industry Training Organisation
<http://www.hortito.org.nz> if you wish to suggest changes to the content of this unit standard.

Please Note

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Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0032 which can be accessed at
<http://www.nzqa.govt.nz/site/framework/search.html>.

ARBORICULTURE
Carry out an arboricultural tree
inspection

level:	4
credit:	5
final date for comment:	XXXX XXXX
expiry date:	XXXX XXXX
sub-field:	Horticulture
purpose:	This unit standard is for people wishing to extend their range of skills in an arboriculture situation. People credited with this unit standard are able to: assess trees for potential hazards and recommend appropriate action; assess trees for condition; assess trees for significance; and identify and specify tree maintenance requirements.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none">1 The <i>Codes of Practice</i> are Code of Practice for Safety and Health in Tree Work, Part One: Arboriculture; Part Two: Maintenance of trees around power lines; Approved Code of Practice for power-operated elevating work platforms; and are available from regional offices of the Department of Labour, Occupational Safety and Health Service, or website: www.dol.govt.nz.2 Legislation relevant to this unit standard includes the Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, and their subsequent amendments.3 <i>Workplace procedures</i> refer to oral or written instructions to staff on procedures for the worksite and equipment.

ARBORICULTURE
Carry out an arboricultural tree
inspection

- 4 All inspection and assessment procedures will be according to the Codes of Practice and workplace procedures.

Elements and Performance Criteria

element 1

Assess trees for potential hazards and recommend appropriate action.

performance criteria

- 1.1 Trees are assessed for size and the potential of trees or their parts to fail.
- Range: assessments include but are not limited to – form and age of trees, structural defects, functional strength of the timber, exposure of trees to external influences.
- 1.2 The area around trees is assessed for items that could become targets of tree failure, and the importance of those potential targets.
- Range: targets to include but not limited to – human activities, property, infrastructure, no target;
importance to include – intensity of use, value.
- 1.3 Actions are recommended that eliminate, isolate or minimise hazards to the identified potential targets.
- Range: actions may include but not limited to – tree removal, pruning, bracing, target removal, change of usage to area, no action.

ARBORICULTURE
Carry out an arboricultural tree
inspection

element 2

Assess trees for condition.

performance criteria

- 2.1 Tree vigour is determined from assessment of growth patterns.
- Range: to include – shoot and root extension, leaf size, timing and duration of tree growth periods.
- 2.2 Tree vitality is determined from assessment of vital signs.
- Range: vital signs include – quality of growth, colour and turgidity of foliage, turgidity and appearance of bark, resistance to or presence of pests and disease, density of canopy.
- 2.3 Comparison with trees in similar situations enables a balanced opinion to be formed.
- Range: comparisons include – species, climate, soil factors, previous treatments.

element 3

Assess trees for significance.

performance criteria

- 3.1 Trees are assessed in terms of their features.
- Range: features include – girth, top height, timber height, crown spread, shape, balance, trueness to type.
- 3.2 Assessment of trees' contribution to the landscape allows the value to owner, ecology and the community to be determined.
- Range: assessment includes – intended purpose (flowers, fruit, shade, foliage, texture, screening, habitat), visual catchment.

ARBORICULTURE
Carry out an arboricultural tree
inspection

3.3 Assessment of any negative impact of trees allows remedial measures to be recommended that ensure that property rights are respected.

Range: negative impacts may include – ownership, problems caused (including shade, dirt, shedding, obscured views); remedial measures may include pruning, removal.

element 4

Identify and specify tree maintenance requirements.

performance criteria

4.1 The measure or measures chosen maximise the trees' asset potential.

Range: measures include – removal, pruning, protection, no action.

4.2 A specification is prepared detailing the chosen measures in any format specified by workplace procedures.

Range: specifications may include – a letter, quotation, or report justifying action.

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ARBORICULTURE
Carry out an arboricultural tree
inspection

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