



Australian Government

AHCARB601 Examine and assess trees

Release: 2

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Modification History

RELEASE	COMMENTS
Release 2	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 2.0.
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 1.0.

Application

This unit of competency describes the skills and knowledge required to examine and assess tree health, age, taxonomy, risk, amenity value and significance and compile a tree assessment report.

This unit applies to individuals with broad theoretical and technical knowledge of a specific area or a broad field of work and learning and cognitive, technical and communication skills to demonstrate autonomy, judgement and defined responsibility in undertaking complex work within broad parameters to provide specialist advice and functions.

The role involves the self-directed application of knowledge with substantial depth in areas such as tree identification, pathology and diagnostics, tree assessment and valuation techniques, tree risk assessment and reporting methods.

Licensing, legislative, regulatory, or certification requirements apply to this unit in some states & territories at the time of publication, and may differ according to jurisdiction. Specific determination should be sought through the relevant State or Territory. Works involving this unit of competency may be subject to local tree protection and preservation laws, and the relevant content of applicable Australian Standards.

Pre-requisite Unit

AHCARB403 Perform a ground-based tree defect evaluation*

*AHCARB302 Inspect trees for access and work***

AHCARB313 Identify trees

Unit Sector

Arboriculture (ARB)

Elements and Performance Criteria

Element	Performance criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine tree survey program requirements	1.1 Identify scope of survey in accordance with client needs 1.2 Determine client's risk threshold 1.3 Determine and document procedures for data capture 1.4 Identify, source and record all current data research relevant to survey requirements 1.5 Check equipment for assessing trees and prepare for use 1.6 Select, check and use personal protective equipment
2. Determine the tree dimensions and structure	2.1 Plot tree location on a device, drawing or plan of the site 2.2 Determine and record tree dimensions and structure 2.3 Measure tree height, spread and diameter-at-breast height (DBH) 2.4 Examine and record form of tree 2.5 Assess tree for asymmetry of canopy 2.6 Assess if tree has a lean and calculate the lean 2.7 Assess how form of crown relates to or is responsive to surrounding trees and structures 2.8 Determine the potential impact of wind loading of the tree
3. Record tree taxonomic features	3.1 Inspect tree and record fruit type and characteristics 3.2 Describe leaf morphology for shape, colour and size 3.3 Examine and record buds, branchlets, branches and bark 3.4 Inspect for and describe trichomes on lamina, petiole and branchlets 3.5 Describe and record floral characteristics of structure of inflorescence, location of the flower, flower colour, details of the flower parts present, absent or modified
4. Assess tree health issues	4.1 Examine and record the canopy density and distribution 4.2 Assess recorded leaf colour and size against a healthy specimen 4.3 Assess for the presence of epicormic shoots 4.4 Assess for dead tips or excessive numbers of dead branches 4.5 Examine roots, root crown, stem, branches and canopy for signs of biotic and abiotic disease 4.6 Evaluate and describe symptoms presenting on tree 4.7 Determine how presence of disease might be affecting tree 4.8 Recognise and record wounds to the tree 4.9 Consider size, location and cause of wounds

Element	Performance criteria
5. Assess age of trees and tree parts	5.1 Determine if species is uninodal or multinodal 5.2 Record the dimensions of the tree 5.3 Examine tree for evidence of growth increments including bud scars, sympodial growth and flush marks 5.4 Estimate average annual increase in diameter of sample of xylem stained as required 5.5 Research historic images of tree or trees of same species in similar environments 5.6 Provide a reasoned estimate of age of tree, tree part or wound
6. Assess trees for significance	6.1 Assess tree for indicators of habitat use 6.2 Assess tree for ecological significance 6.3 Assess tree for cultural significance 6.4 Assess tree for historical significance
7. Assess amenity value of trees	7.1 Evaluate amenity tree valuation methods 7.2 Consider strengths and weaknesses of each method 7.3 Determine amenity tree valuation method to be used 7.4 Collect and collate appropriate unit values and data 7.5 Calculate and record the amenity value of individual trees
8. Inspect and assess trees	8.1 Assess trees to determine their structure and stability 8.2 Give consideration to the tree's age, health, condition, habitat, wind loading, distribution of foliage, wound size and the potential impacts of proposed recommendations 8.3 Use testing equipment, where required, to detect decay, disease and scope of tree problems 8.4 Evaluate visual indications and causes of disease and record results
9. Carry out risk assessment	9.1 Use visual tree assessment (VTA) to identify hazards associated with the tree 9.2 Use basic diagnostic tools to confirm the presence and extent of hazards 9.3 Determine level of risk 9.4 Give consideration to qualification and quantification of tree risk 9.5 Compare the risk level against commonly published levels of risk from non-arboricultural activities and items 9.6 Determine controls required to mitigate risks in accordance with the client's pre-determined threshold 9.7 Document risk controls and recommendations for monitoring and review of risks
10. Compile a tree	10.1 Document diagnosis of tree problems with reference to the

Element	Performance criteria
assessment report	anatomy, physiology and pathology of the tree 10.2 Provide and record specific recommendations for remedial action for tree problems 10.3 Produce a tree assessment report that identifies hazardous trees, recommends appropriate remedial action, and determines appropriate risk controls 10.4 Prepare an expert witness statement if required 10.5 Deliver tree assessment report to client

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCARB601 Examine and assess trees Release 2	AHCARB601 Examine and assess trees Release 1	Minor typographical errors corrected.	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCARB601 Examine and assess trees

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Performance Evidence

The candidate must be observed inspecting and assessing a broad range of trees for identification, health, growth habit, structure, stability and indications of disease. The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts.

The candidate must provide evidence for and demonstrate:

- identifying the scope of survey
- determining the client's risk threshold
- documentation of the data capture procedures
- identifying, sourcing and recording all current data research relevant to survey requirements
- checking equipment for assessing trees and prepare for use
- selecting, checking and using personal protective equipment
- plotting tree locations on a device, drawing or plan of the site
- determining the tree dimensions and structure
- measuring the tree height, spread and diameter-at-breast height (DBH)
- examining and recording form of tree
- assessing tree for asymmetry of canopy
- assessing if tree has a lean and calculate the lean
- assessing how form of crown relates to or is responsive to surrounding trees and structures
- determining the potential impact of wind loading of the tree
- inspecting tree and record fruit type and characteristics
- describing leaf morphology for shape, colour and size
- examining and recording buds, branchlets, branches and bark
- inspecting for and describing trichomes on lamina, petiole and branchlets

- describing and recording floral characteristics of structure of inflorescence, location of the flower, flower colour, details of the flower parts present, absent or modified
- examining and record the canopy density and distribution
- assessing recorded leaf colour and size against a healthy specimen
- assessing for the presence of epicormic shoots
- assessing for dead tips or excessive numbers of dead branches
- examining roots, root crown, stem, branches and canopy for signs of biotic and abiotic disease
- evaluating and describing symptoms presenting on tree
- determining how presence of disease might be affecting tree
- recognising and recording wounds to the tree
- considering size, location and cause of wounds
- determining if species is uninodal or multinodal
- recording the dimensions of the tree
- examining tree for evidence of growth increments including bud scars, sympodial growth and flush marks
- estimating average annual increase in diameter of sample of xylem stained as required
- researching historic images of tree or trees of same species in similar environments
- providing a reasoned estimate of age of tree, tree part or wound
- assessing tree for indicators of habitat use
- assessing tree for ecological significance
- assessing tree for cultural significance
- assessing tree for historical significance
- evaluating various amenity tree valuation methods
- considering strengths and weaknesses of each method
- determining amenity tree valuation method to be used
- collecting and collating appropriate unit values and data
- calculating and recording the amenity value of individual trees
- assessing trees to determine their structure and stability
- consideration of the tree's age, condition, habitat, wind loading, distribution of foliage, wound size and the potential impacts of proposed recommendations
- using testing equipment to detect decay, disease and scope of tree problems
- evaluating visual indications of disease and health issues in trees
- use of visual tree assessment (VTA) method to identify hazards
- use of basic diagnostic tools to confirm the presence and extent of hazards
- determining level of risk
- giving consideration to qualification and quantification of tree risk
- comparing the risk level against commonly published levels of risk from non-arboricultural activities and items
- determining controls required to mitigate risks in accordance with the client's pre-determined threshold
- documenting risk controls and recommendations for monitoring and review of risks

- documenting diagnoses of tree problems with reference to the anatomy, physiology and pathology of the tree
- recording specific recommendations for remedial action for tree problems
- producing a tree assessment report that identifies a hazardous tree and contains recommendations for appropriate remedial actions and risk controls
- preparing an expert witness statement
- use of industry standard terminology to describe arboriculture and the work environment.

Knowledge Evidence

The candidate must demonstrate knowledge of:

- risk thresholds
- data capture procedures
- survey requirements
- tree assessment equipment
- plotting methods on devices, drawings and plans
- tree morphology attributes: fruit type and characteristics, leaf morphology for shape, colour and size, trichomes on lamina, petiole and branchlets, floral characteristics of structure of inflorescence, location of the flower, flower colour, details of the flower parts present, absent or modified, buds, branchlets, branches and bark
- canopy density and distribution
- comparison of leaf colour and size against a healthy specimen
- epicormic shoots
- examination of roots, root crown, stem, branches and canopy for signs of biotic and abiotic disease
- disease symptoms
- effects of disease on tree
- tree dimensions and structure
- tree height, spread and diameter-at-breast height (DBH)
- form and morphology of tree
- symmetry and asymmetry of canopy
- calculation of tree lean
- relationship of form of crown to surrounding trees and structures
- responsiveness of form of crown to surrounding trees and structures
- determination the potential impact of wind loading of the tree
- tree wound recognition, size, location and cause
- uninodal and multinodal tree species
- growth increments including bud scars, sympodial growth and flush marks
- estimation average annual increase in tree diameter
- xylem staining
- research of historic images of tree or trees of same species in similar environments
- assessment of tree indicators of habitat use
- assessment of tree ecological significance

- assessment of tree cultural significance
- assessment of tree historical significance
- evaluation of methods of amenity tree valuation
- calculation of amenity tree value of individual trees
- tree structure and stability
- tree assessment attributes: tree's identification, age, health, condition, habitat, wind loading, distribution of foliage, wound size and the potential impacts of proposed recommendations
- testing equipment to detect decay, disease and scope of tree problems
- visual indications and symptoms of disease and health issues
- tree diseases
- visual tree assessment (VTA)
- methods of detecting decay and structural defects in trees
- causes of instability, decay, damage and stress in trees
- use of basic diagnostic tools
- identification and extent of tree hazards
- methods of determination of levels of risk
- quantification and qualification of tree risk
- commonly published levels of risk from non-arboricultural activities and items
- controls required to mitigate risks in accordance with the client's pre-determined threshold
- diagnoses of tree problems
- tree anatomy, physiology and pathology
- remedial action of tree problems
- production of a tree assessment report that identifies hazardous trees, recommends appropriate remedial action, and determines appropriate risk controls
- preparation of an expert witness statement.

Assessment Conditions

Assessment must be demonstrated consistently over time in a suitable range of contexts and have a productivity-based outcome. No single assessment event or report is sufficient to achieve competency in this unit.

Assessment may be conducted in a simulated or real work environment, however determination of competency requires the application of work practices under work conditions.

The mandatory equipment and materials used to gather evidence for assessment include:

- equipment:
 - computer
 - word processing software
 - internet connection
 - digital camera with macro
 - personal protective equipment (PPE)

- diagnostic tools including sounding hammer, trowel, probe, cordless drill
- cross-sectioned defects and diseases
- soil testing equipment
- basic digital dissection microscope 10 -100x
- compound microscope
- microtome, staining and slide mounting equipment
- slides and coverslips
- temporary/permanent mountant
- histochemical stains
- materials:
 - tree assessment report
 - tree profile and benefits form
 - disease profile form

Assessors must satisfy current standards for RTOs in the assessment of arboriculture units of competency.

Assessment must be conducted only by persons who have:

- arboriculture vocational competencies at least to the level being assessed
- current arboriculture industry skills directly relevant to the unit of competency being assessed

Links

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