Modification history

|  |  |
| --- | --- |
| Release | Comments |
| Release 1 | This version released with FWP Forest and Wood Products Training Package Version 8.0. |

| FWPCOT5XXX | Assess hazard and health of fire damaged or fire affected trees |
| --- | --- |
| Application | This unit of competency describes the skills and knowledge required to assess the health and risks associated with fire affected or fire damaged trees and to make recommendations on tree treatment as part of bushfire containment, recovery and prescribed burning operations.  The unit applies to those whose work involves the assessment and treatment of fire affected or fire damaged trees as part of bushfire containment, recovery and prescribed burning operations.  No occupational licensing, legislative or certification requirements apply to this unit at the time of publication. |
| Prerequisite Unit | [AHCARB513 Examine and assess trees](https://training.gov.au/Training/Details/AHCARB513)  [AHCARB408 Perform a ground-based tree defect evaluation](https://training.gov.au/Training/Details/AHCARB408) |
| Unit Sector | Common Technical (COT) |

| Elements | Performance Criteria |
| --- | --- |
| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Prepare to undertake assessment of fire damaged or fire affected trees | 1.1 Determine job requirements from work plan or instruction and, where required, seek clarification from appropriate personnel  1.2 Follow environmental and safety procedures, including use of personal protective equipment, hazard and risk control measures for the work task  1.3 Assess and maintain up to date information on topography and weather conditions in areas where tree assessments are to be conducted  1.4 Confirm chain of command and communication protocols that apply in bushfire containment and recovery operations |
| 2. Conduct hazard assessment of fire damaged or fire affected trees | 2.1 Locate tree to be assessed and determine its position in relation to site topography and other hazards at the site  2.2 Assess extent of fire damage to crown, trunk and root visually  2.3 Identify structural and physiological defects in hazardous tree  2.4 Assess external factors that may cause damaged or fire affected tree or its limbs and branches to fall  2.5 Determine risk posed by fire damaged or fire affected tree according to workplace procedures  2.6 Identify tree hazard class of tree  2.7 Determine appropriate risk control measures to mitigate tree hazard, as required |
| 3. Conduct assessment of health and values of fire damaged or fire affected trees | 3.1 Estimate the temperature of the fire and soil  3.2 Determine impact of soil temperature on tree root and sap function  3.3 Assess solid components of tree and determine whether there is adequate wood present to sustain the tree  3.4 Assess post-fire survivability of tree based on its species, fire damage and estimated age and dimensions  3.5 Assess ecological, cultural and economic value of tree |
| 4. Assess options for treatment of fire damaged or fire affected trees | 4.1 Determine treatment options for assessed tree taking into account tree hazard, health and value assessment  4.2 Mark assessed tree for treatment  4.3 Record position of tree using Global Positioning System (GPS)  4.4 Record and report outcomes of tree assessment including proposed treatment to appropriate personnel |

| Foundation Skills  This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria. | |
| --- | --- |
| Skill | Description |
| Reading | * Read complex workplace documentation on post-bushfire survival indicators for different tree species |
| Oral Communication | * Use appropriate vocabulary including technical language directly relevant to role |

|  |  |  |  |
| --- | --- | --- | --- |
| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| FWPCOT5XXX Assess hazard and health of fire damaged or fire affected trees | Not applicable | The unit has been created to address a skill or task required by industry that is not covered by an existing unit. | New unit |

|  |  |
| --- | --- |
| Links | Companion Volumes, including Implementation Guides, are available at VETNet:  https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47 |

| TITLE | Assessment requirements for FWPCOT5XXX Assess hazard and health of fire damaged or fire affected trees |
| --- | --- |
| Performance Evidence | |
| An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.  There must be evidence that the individual has assessed the hazard, health and value status of two fire damaged or fire affected trees, each of which must be a different species located in a different area.  In performing each of these activities, the individual has:   * complied with safety and environmental requirements, including use of personal protective equipment * identified risks posed by fire damaged or fire affected tree * identified tree hazard class and determined appropriate risk control measures * assessed post-fire survivability of fire damaged or fire affected tree taking into the account the impact of soil temperature on tree root and sap function * assessed ecological, cultural and economic value of fire damaged or fire affected tree * determined treatment options for fire damaged or fire affected tree * reported on assessment and treatment options for fire damaged or fire affected tree. | |

| Knowledge Evidence |
| --- |
| An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of   * safe work procedures as they apply to bushfire containment and recovery operations * workplace hazards and associated risks and controls in bushfire containment, recovery and controlled burning operations, including those associated with fire affected and fire damaged trees * effects of fire on trees including: * first order effects including foliage and bud necrosis, cambium and phloem necrosis, xcylem hydraulic impairments, fine root necrosis * second order effects including photosynthesis and carbohydrate supply limitations, water uptake and transport restrictions, biotic attacks * external factors that increase potential tree hazard including: * wind exposure * drought * stress and insect infestation * excessive drainage problems from land management operations * exposure to vibration from heavy plant or machinery * other hazards at the site that increase potential tree hazard including: * gas supplies * water supplies * powerlines (above and below ground) * adjacent buildings * features of adjacent trees * terrain features * characteristics of hazardous trees including: * reduction of more than half of wood at any cross section of the trunk or major limb * dead and/or decaying tree or major branches * suspected loose or broken branches * evidence of longitudinal cracking * evidence of roots lifting or disturbed root system * significant lean with indicators of failure * techniques for assessing fire damage to trees including: * crown damage * trunk damage * root damage * techniques for assessing post fire survivability and tree health including: * signs and symptoms of disease * methods of detecting decay and structural defects in trees * use of basic diagnostic tools * testing equipment to detect decay, disease and scope of tree problems * factors affecting the likelihood of tree failure * use of diagnostic tools * factors affecting tree damage and mortality including: * heat including temperature and duration * tree morphology including size, bark thickness, branch and bud size, root system * site characteristics * interval between successive fires * techniques for identifying culturally significant trees, including Aboriginal scarred trees * tree valuation methods * tree hazard classes associated with danger posed by fire damaged or fire affected trees * tree marking system * risk control measures associated with tree hazards classification, including treatment options: * no action required * removal * pruning and trimming * conservation and follow up assessment * salvage * techniques for recording position of trees using Global Positioning System (GPS) * methods, timeframes and costs of determining options for mitigating levels of risks associated with fire damaged and fire affected trees * reporting procedures associated with tree hazard, health and valuation assessment. |

| Assessment Conditions |
| --- |
| Assessment of the skills in this unit of competency must take place under the following conditions:   * physical conditions: * skills must be demonstrated in a work environment or an environment that accurately represents workplace conditions * resources, equipment and materials: * fire damaged or fire affected trees * communications systems relevant to work activity * equipment and materials relevant to work activity * personal protective equipment relevant to work activity * GPS for recording position of trees * specifications: * workplace health, safety and environmental policies and procedures relevant to work activity * workplace documentation for recording information relevant to work activity.   Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards. |

|  |  |
| --- | --- |
| Links | Companion Volume implementation guides are found in VETNet - <https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47> |