

**Modification history**

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 6.0.

FWPHAW3XXX	Harvest trees manually (advanced)
<b>Application</b>	<p>This unit of competency describes the knowledge and skills required to assess harvest sites and trees to be harvested and to plan and safely harvest trees using a chainsaw as part of a commercial forestry operation.</p> <p>This unit covers the felling procedures for trees with a level of complexity that requires significant tree assessment and advanced practical felling skills.</p> <p>Individuals competent in this unit should be able to effectively fell trees of any size, species and condition, including those with significant defects and characteristics that cause excessive felling complexity, that are deemed safe to fell.</p> <p>Trees typical to the scope of this unit may have the following characteristics:</p> <ul style="list-style-type: none"> <li>• lean and weight distribution which adds significant complexity yet can be assessed and adapted to site requirements</li> <li>• large trees with a diameter up to 2.5 times the chainsaw guide length bar</li> <li>• substantial lean</li> <li>• lean in a direction away from the fall zone; or side-leaning to the available fall zone</li> <li>• damage or defect that requires complex felling techniques</li> <li>• multi legged, hollow butts, culls, stags</li> <li>• species prone to free splitting and adverse reactions during falling</li> <li>• single or complex multi stems</li> <li>• diameter of tree greater than chainsaw bar length</li> <li>• terrain, slope and an environment that can add significant complexity to the operation</li> </ul> <p>The unit applies to individuals who fell iadvanced trees as part of commercial forestry operations.</p> <p>All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.</p> <p>No licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	FWPHAR2207 Trim and cut harvested trees or equivalent
<b>Unit Sector</b>	Harvesting and Haulage

<b>Elements</b>	<b>Performance Criteria</b>
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for felling	1.1 Review work order or instruction to determine job requirements and, where required, seek clarification from appropriate personnel 1.2 Review workplace health and safety procedures, including the use of personal protective equipment, operation and maintenance of chainsaws, equipment lock-out and safe manual handling techniques 1.3 Identify, assess and take actions to mitigate risks and hazards associated with felling trees 1.4 Identify and adhere to workplace environmental protection measures according to harvesting plan and relevant legislation and regulations 1.5 Consult and maintain communication with team members and other appropriate personnel to ensure that work is coordinated effectively with others in the workplace 1.6 Obtain tools and equipment needed for the work and check for correct operation and safety 1.7 Sharpen and adjust chainsaw or change components according to manufacturer recommendations 1.8 Identify product quality requirements 1.9 Plan tree harvesting activities according to work order or instruction and environmental conditions
2. Visually assess harvest site	2.1 Assess location and stability of harvest site for conditions likely to affect harvesting activities 2.2 Identify and assess environmental conditions according to harvest plan 2.3 Identify trees to be felled according to harvest plan 2.4 Identify log extraction method and requirements 2.5 Determine harvesting requirements and plan tree felling sequence and general falling directions 2.6 Assess factors affecting harvesting requirements and detect and control specific forest or site risks and hazards
3. Visually assess tree and plan felling	3.1 Visually assess tree for felling characteristics 3.2 Confirm tree is safe to fell 3.3 Assess and check required falling direction and possible deviation 3.4 Select cutting pattern to optimise time, value recovery and manageable removal of sections 3.5 Plan sequence of cuts to fell tree according to standard felling procedures and log quality requirements 3.6 Identify suitable escape routes and clear of growth and other obstacles according to environmental care principles and workplace procedures 3.7 Assess limitations of own skills in safely felling trees, identify trees considered outside own skill level and seek assistance from appropriate personnel where required 3.8 Note and monitor location and activity of other personnel in the work area and modify activity where required
4. Fell trees	4.1 Fell individual trees using selected cutting and directional falling techniques according to current Australian Standards and industry codes of practice 4.2 Adjust cutting and directional falling techniques in response to movement and condition of tree 4.3 Use planned escape route when tree starts to fall and monitor the fall of the tree until all movement has stopped 4.4 Delay movement back into the felling area until all tree material, including from adjacent tree crowns, has fallen, or is stable enough to allow safe access back into the felling area 4.5 Identify and implement procedures for removal of trees that are hung-up if safe to do so 4.6 Fell trees to meet production levels, log extraction methods and site requirements 4.7 Dispose of waste materials in line with environmental and operational requirements

<b>Elements</b>	<b>Performance Criteria</b>
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
5. Maintain chainsaw and cutting attachments	5.1 Follow workplace health and safety procedures and manufacturer instructions to lock out equipment 5.2 Inspect chainsaw on completion of cutting activities 5.3 Identify damage to chainsaw and cutting attachments and tag for repair, service or replacement according to workplace requirements and manufacturer recommendations 5.4 Remove, clean, adjust or replace chain and other components according to workplace requirements and manufacturer recommendations 5.5 Maintain chainsaw and cutting attachments according to workplace and manufacturer requirements

<b>Foundation Skills</b>	
<i>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.</i>	
<b>Skill</b>	<b>Description</b>
Reading	<ul style="list-style-type: none"> <li>Read workplace documentation and correctly identify work requirements</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Complete accurate basic records for tree felling process, equipment faults and maintenance requirements</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>Select and use appropriate spoken communication strategies with work colleagues and other personnel on site when felling trees</li> <li>Interpret hand signals with other operators to ensure safe tree felling</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Complete routine calculations and report on size, length, diameter of felled trees</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
FWPHAR3221 Harvest trees manually (advanced)	FWPHAR3221 Harvest trees manually (advanced)		
<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>		

<b>TITLE</b>	<b>Assessment requirements for FWPHAR3XXX Harvest trees manually (advanced)</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has:</p> <ul style="list-style-type: none"> <li>assessed, planned and conducted the felling of six advanced trees, which optimises time, value recovery and manageable removal of sections, following a work order or instruction, workplace policy and procedures and current workplace health and safety legislation and regulations. In completing this work, the individual must demonstrate that, for each tree, the falling technique was consistent with current Australian Standards and industry codes of practice applicable to tree felling operations. inspected and carried out routine maintenance on one chainsaw and its cutting attachments on one occasion according to manufacturer requirements.</li> </ul>	

<b>Knowledge Evidence</b>	
<p>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:</p> <ul style="list-style-type: none"> <li>Australian Standards and codes of practice applicable to tree felling operations</li> <li>workplace health and safety requirements including: <ul style="list-style-type: none"> <li>personal protective equipment (PPE) and clothing</li> <li>safety equipment</li> <li>first aid equipment</li> <li>firefighting equipment</li> <li>hazard and risk control procedures</li> <li>fatigue management procedures</li> <li>appropriate signage</li> <li>elimination of hazardous materials and substances procedures</li> <li>safe forest practices, including required actions relating to fire</li> <li>techniques for manual handling, including shifting, lifting and carrying</li> </ul> </li> <li>State/ Territory Forest Codes of Practice</li> <li>optimisation in tree felling operations <ul style="list-style-type: none"> <li>time</li> <li>value recovery</li> <li>manageable removal of sections</li> </ul> </li> <li>types and purposes of cuts to fell trees, including scarf cutting and back cutting using different methods to provide hinge-wood and wedges to maintain control of tree</li> <li>typical tree defects and how these affect tree felling activities: <ul style="list-style-type: none"> <li>shakes</li> <li>insect defects</li> <li>knots and resin pockets</li> <li>pipe</li> <li>drysides</li> <li>biomechanical defects including: splits, hazard beams and heartwood rot</li> </ul> </li> <li>Identifying trees: <ul style="list-style-type: none"> <li>that contain hazards and are deemed unsafe to fell</li> <li>considered outside own skill level</li> <li>trees where cuts made may lead to loss of control of tree in felling</li> </ul> </li> <li>hazards and related risks and the impact on felling trees of: <ul style="list-style-type: none"> <li>uneven and unstable terrain</li> <li>unsafe trees</li> <li>fires</li> <li>overhead and underground services</li> <li>excavations</li> <li>traffic</li> <li>structures</li> </ul> </li> </ul>	

<b>Knowledge Evidence</b>
<ul style="list-style-type: none"> <li>• hazardous materials</li> <li>• insects and animals</li> <li>• other personnel and machinery</li> <li>• methods used to remove trees that are hung up and procedures for removal</li> <li>• methods for assessing chain condition</li> <li>• cutting patterns used to optimise time to fell trees</li> <li>• environmental protection measures to follow when felling trees related to:               <ul style="list-style-type: none"> <li>• native vegetation</li> <li>• soil and water</li> <li>• heritage and archaeological artefacts</li> <li>• flora and fauna</li> <li>• geomorphologic features</li> <li>• landscape</li> <li>• external site pollution</li> <li>• recreational opportunities</li> <li>• regeneration opportunities</li> <li>• cleaning plant, tools and equipment</li> <li>• disposing of, recycling and reusing timber and other waste</li> </ul> </li> <li>• key features of the following environmental conditions and their effects on advanced tree felling and harvesting activities:               <ul style="list-style-type: none"> <li>• general forest lean</li> <li>• ground growth</li> <li>• ground hazards and obstacles</li> <li>• ground slope</li> <li>• gullies</li> <li>• presence and density of seed and habitat trees</li> <li>• water courses</li> <li>• wet and adverse weather conditions</li> <li>• wind speed and direction</li> </ul> </li> <li>• the types, safe use, operation and maintenance of chainsaws, including:               <ul style="list-style-type: none"> <li>• chainsaw</li> <li>• safety features of chainsaws including hand guard and chain brake</li> <li>• cutting attachments</li> <li>• safety signs</li> <li>• support tools</li> </ul> </li> <li>• components of a harvesting plan including an extraction plan, a traffic plan, environmental requirements, restricted areas, identified hazards and product volumes</li> <li>• log extraction methods including skidding, forwarding, using cable or shovel logging and following the harvest plan when felling trees</li> <li>• work order information regarding:               <ul style="list-style-type: none"> <li>• tree felling requirements</li> <li>• requirements for product quality</li> <li>• harvesting plan</li> </ul> </li> <li>• risk assessments for tree-felling including:               <ul style="list-style-type: none"> <li>• ground and environmental conditions likely to affect harvesting activities including ground stability, ground slope, forest lean and weather conditions</li> <li>• underground and overhead services</li> <li>• forest fire</li> <li>• position and movement of personnel working on the harvesting site</li> <li>• traffic management</li> <li>• safety signage warning of harvesting operations in the area.</li> </ul> </li> </ul>

<b>Assessment Conditions</b>
<p>Assessment of the skills in this unit of competency must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions</li> </ul>

<b>Assessment Conditions</b>	
<ul style="list-style-type: none"> <li>• skills must be demonstrated in a workplace location or an environment that accurately represents workplace conditions</li> <li>• resources, equipment and materials:                             <ul style="list-style-type: none"> <li>• chainsaw and accessories</li> <li>• suitable trees to fell</li> <li>• tools and equipment to fell trees</li> <li>• personal protective equipment required in tree felling operations</li> <li>• communication system</li> </ul> </li> <li>• specifications                             <ul style="list-style-type: none"> <li>• access to work order or instruction detailing tree felling operations to be carried out by operator</li> <li>• access to workplace policies and procedures which cover current Work Health and Safety Acts or Occupation Health and Safety Acts, regulations and related industry standards and codes of practice applicable to tree felling and chain saw operations</li> <li>• access to workplace policies and procedures which cover off on current Environment Protection Acts, regulations and related industry standards and codes of practice applicable to tree felling operations</li> <li>• access to workplace safety and environmental protection plans</li> <li>• access to site emergency procedure</li> <li>• access to workplace standard operating procedures or operator manual for chain saws.</li> </ul> </li> </ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>