



Australian Government

FWPFOM5010 Apply principles of forest science to optimise forest management practices

Release: 1

FWPFOM5010 Apply principles of forest science to optimise forest management practices

Modification History

Release	Comments
Release 1	This version released with Forest and Wood Products Training Package Version 7.0.

Application

This unit of competency describes the skills and knowledge required to apply principles of forest science related to soil, water, landslide and nutrient management to optimise forest management practices.

The unit applies to individuals who undertake forester and forestry field officer job roles in the forest industry.

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.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Forest Operations Management (FOM)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assess forest soil quality	1.1 Identify the physical and chemical properties of major soil types 1.2 Identify the erodibility of different soil types 1.3 Access and interpret soil maps and online soil information services to determine the soil type for a given location

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.4 Determine the soil profile and horizons for a given site 1.5 Apply procedures for testing soil nutrients 1.6 Interpret soil sample results in terms of the implications for forest management 1.7 Identify strategies for maintaining and improving soil quality on sites where forest management activities are practiced
2. Assess impact of forestry on landslide hazards	2.1 Recognise different types and causes of landslides and other forms of mass movement 2.2 Identify the effects of forest operations on the occurrence of landslides 2.3 Identify strategies for mitigating landslide hazards on sites where forest management activities are practiced
3. Assess impact of forestry on water quality and quantity	3.1 Assess the impact of forestry operations on water yield and water quality 3.2 Assess the cumulative effects of harvesting within catchments on water runoff and erosion 3.3 Classify streams according to erosion risk, and establish prescriptions for their protection 3.4 Identify ways of protecting drainage depressions in order to prevent movement of sediment, nutrients and chemicals into watercourses 3.5 Determine site rehabilitation/revegetation processes for at-risk riparian zones
4. Assess the impact of nutrient management on commercial forestry	4.1 Identify types and sources of elements essential to plant growth 4.2 Identify the effects of nutrient deficiencies and disorders on the management of commercial forestry 4.3 Explain the impact of fertiliser applications in commercial forestry 4.4 Determine nutrient management requirements for a forest stand according to workplace procedures 4.5 Develop a prescription that sets out fertilising requirements for a forest stand according to workplace procedures

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	Interpret complex written, technical information in source documents related to optimising forest management practices
Writing	Design, develop and revise strategic documents appropriate to audience and context
Oral communication	Use active listening and questioning techniques to convey and clarify information
Numeracy	Analyse and compare complex statistical information related to soil, water and nutrient management

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPFOM5010 Apply principles of forest science to optimise forest management practices	Not applicable	The unit has been created to address a skill or task required by industry that is not covered by an existing unit	Newly created

Links

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

Assessment Requirements for FWPFOM5010 Apply principles of forest science to optimise forest management practices

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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 optimised at least one forest management practice through the use of forest science principles related to any of the following areas:

- soil quality and erosion control
- water quality and quantity
- landslide mitigation
- nutrient management.

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:

- physical and chemical properties of major soil types
- erodibility of different soil types
- human and natural factors impacting on soil mass movement
- techniques for interpreting soil maps, including the soil classification system
- techniques for constructing soil profiles
- procedures for testing soil nutrients and interpreting soil sample results
- strategies for maintaining and improving soil quality on forestry sites:
 - limit the area of compacted soils
 - maintain favourable conditions for forest growth
 - retain and enhance carbon storage to support soil ecologic functions
 - limit impacts of roads and landings
- different types and causes of landslides and other forms of mass movement
- effects of forest operations on the occurrence of landslides
- strategies for mitigating landslide hazards on sites where forest management activities are practiced

- impact of forestry operations on water yield and water quality
- cumulative effects of harvesting within catchments on water runoff and erosion
- techniques for classifying streams according to erosion risk
- ways of protecting drainage depressions
- rehabilitation/revegetation processes for at-risk riparian zones
- types and sources of elements essential to plant growth
- effects of nutrient deficiencies and disorders on the management of commercial forestry
- impact of fertiliser applications in commercial forestry
- nutrient management requirements.

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 forest work environment or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - a native forest or plantation stand
 - computing hardware and software for preparing reports and analysing data related to soil, water, landslide and nutrient management
 - stand data related to soil, water, landslide and nutrient management.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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