



Australian Government

AHCECR311 Implement ecosystem reconstruction works

Release: 1

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Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 6.0.

Application

This unit of competency describes the specialist skills and knowledge required to implement terrestrial or aquatic ecosystem reconstruction works on an ecological restoration site following a plan or brief.

The unit applies to individuals engaged in conservation and land and water management programs and who work under general supervision, exercising limited autonomy with some accountability for their own work. They undertake defined activities and work in a structured context to current industry standards.

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

Pre-requisite Unit

Nil

Unit Sector

Ecological Restoration (ECR)

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. Determine scope of ecosystem reconstruction works	1.1 Determine boundaries between ecosystem reconstruction area and assisted regeneration area according to project brief 1.2 Identify potential for habitat corridors or linkages with adjoining properties from project brief 1.3 Identify reference model for reconstruction area according to project brief and anticipated climate change

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 Identify and document potential threats to ecosystem reconstruction works 1.5 Identify timing and method of ecosystem reconstruction work
2. Prepare for ecosystem reconstruction works	2.1 Select, check and prepare tools, equipment and materials according to project brief and biosecurity requirements 2.2 Identify species for ecosystem reconstruction works from project brief 2.3 Obtain and store biological materials for reconstruction works 2.4 Identify and ensure required permits have been obtained for reconstruction works 2.5 Coordinate work team for reconstruction works 2.6 Organise and coordinate site activities for work team for reconstruction works 2.7 Identify hazards, assess risks and implement controls according to workplace health and safety procedures
3. Prepare ecosystem reconstruction site	3.1 Identify hazards, assess risks and document controls according to environmental and biosecurity procedures 3.2 Select and apply treatments according to environmental and biosecurity risk controls 3.3 Identify desirable and undesirable organisms and contamination, and select methods for control 3.4 Treat undesirable organisms and contamination according to selected controls 3.5 Undertake site and substrate pre-treatments 3.6 Install protective measures according to identified environmental risk controls
4. Undertake ecosystem reconstruction works	4.1 Select, check and use personal protective equipment according to workplace health and safety procedures 4.2 Inspect biological materials for quality, and discard defective materials 4.3 Pre-treat plants, seeds or other propagules according to project brief 4.4 Reintroduce biota according to current industry standards and project brief

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.5 Apply techniques for protecting, securing or anchoring reintroduced biota 4.6 Maintain records and reports according to workplace procedures
5. Maintain ecosystem reconstruction site	5.1 Monitor growth of plants, seeds or other propagules for health and performance 5.2 Maintain site according to ecosystem reconstruction project brief 5.3 Undertake remedial action and protection according to species requirements 5.4 Clean, maintain and store tools and equipment 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 project briefs and other documentation and consolidate information for implementing reconstruction works
Writing	Accurately record and complete organisational records and reports using standard industry terminology

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCECR311 Implement ecosystem reconstruction works	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=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCECR311 Implement ecosystem reconstruction works

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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 performed ecological restoration works for at least two different ecological environments.

There must also be evidence that the individual has:

- recognised boundaries between assisted regeneration areas and reconstruction areas at a restoration site
- identified potential linkages for habitat area and connectivity from project brief
- identified species for an ecosystem reconstruction site from project brief
- conducted a site hazard identification and risk control assessment
- recognised and treated undesirable species for ecosystem restoration site
- prepared site for ecosystem reconstruction works
- prepared site substrates for reconstruction activities
- carried out reintroduction ecosystem reconstruction works according to current industry standards using at least two of following methods:
 - replanting nursery stock
 - direct seeding or introduced propagules
 - translocation
- protected the restored area with guards, barriers or other techniques
- used, cleaned, maintained and stored machinery and equipment according to manufacturer instructions
- complied with workplace health and safety, biosecurity and environmentally sustainable work practices.

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:

- recognition and common names of native flora, fauna and other key biota of specific restoration areas
- ecological principles, including:
 - recognition of basic ecosystem elements and functions
 - recognition of ecological communities
 - interactions between flora, fauna and other biota and the impact of these on restoration objectives and outcomes
 - importance of biodiversity in an ecological community
 - the role of habitats to reinstating functional ecosystems
 - connectivity principles for expanding area and effective linkages
 - substrates in different ecological environments and their preparation, including terrestrial and aquatic environments
 - physiology of growth of desirable and non-desirable organisms
- ecological restoration principles, including:
 - recognising levels of resilience and recovery potential of species requiring reconstruction intervention for a range of levels and types of degradation
 - role of reference models, including different models for difference zones within the one site
 - impact of potential climate change on reference ecosystems and effect on reconstruction works
 - setting restoration goals and identifying indicators of recovery outcomes
 - the importance and value of genetic integrity and diversity in selecting the provenance of propagules, including under climate change
 - configuration of species with respect to potential for successful breeding and recruitment
 - factors affecting the timing and method of reintroduction
- a range of biological reintroduction techniques, including:
 - reintroduced nursery stock
 - hand seeding, broadcast sowing and mechanical seeding
 - transplanted stock from natural areas
- a range of sector-appropriate tools, equipment and machinery
- concepts and methods for establishment of biota on reconstruction sites, including:
 - species requirement for water on reconstruction site (hydrological requirements)
 - physiology of desirable organisms propagation and growth
 - nutrient requirements and materials and methods for amelioration for site species
 - techniques for protecting, securing or anchoring reintroduced organisms
 - techniques for providing water for reintroduced organisms
- pests and diseases and the principal control strategies for their prevention and control on reconstruction sites, including:
 - methods for minimising the transfer of undesirable organisms (biosecurity)
 - methods for biological, cultural, mechanical and chemical pest control

- safety requirements when handling and using hazardous materials.

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 the field as specified in the Performance Evidence
- resources, equipment and materials:
 - tools and equipment required for ecological reconstruction works
 - live biota for reconstruction works
 - materials required for treatments
- specifications:
 - specific workplace procedures and processes for reconstruction works
 - manufacturer operating instructions for specific equipment and machinery
 - workplace instructions and project brief.

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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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>