



Australian Government

AHCECR503 Design an ecological restoration project

Release: 1

AHCECR503 Design an ecological restoration project

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 skills and knowledge required to prepare a design for an ecological restoration project in conservation or for ecosystem management.

The unit applies to individuals who work in conservation and ecosystem management and who analyse information and exercise judgement to complete a range of skilled design, development and project management activities, demonstrating a deep knowledge in technical areas within conservation and ecosystem management. They have accountability for the work of others and analyse, design and communicate solutions to complex problems.

No licensing, legislative or certification requirements are known to 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. Develop an ecological restoration project design brief	1.1 Identify client and key stakeholders for the project 1.2 Consult with client and key stakeholders to establish purpose, scope, cultural considerations and budget of design 1.3 Develop and confirm measurable ecological targets, goals and objectives for project 1.4 Respond to design brief and agree on extent, scope and scale of

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	project 1.5 Prepare project budget with the client 1.6 Obtain or prepare a site base plan 1.7 Identify legislative and regulatory implications for restoration work for site 1.8 Review existing site data and information before site visit
2. Undertake a site analysis	2.1 Identify the ecosystem and respective reference ecosystem for the project according to current industry standards 2.2 Specify and document reference ecosystem's attributes according to current industry standards 2.3 Inspect project site in preparation for design work 2.4 Quantify, and indicate on base plan, elements and features of site biological condition of attributes and threats 2.5 Record biophysical components of the site in base plan and site report 2.6 Assess ecosystem recovery prospects and record limiting factors 2.7 Determine options for ecological restoration interventions 2.8 Assess and record the impact of surrounding ecosystem, land and hydrology on site 2.9 Assess physical and cultural constraints on restoration work
3. Develop a concept design for the ecological restoration project	3.1 Discuss options and approaches to achieve ecological aims and goals with client 3.2 Prepare concept design and site maps illustrating location of project work zones 3.3 Specify restoration approaches and treatments for each work zone 3.4 Obtain agreement from stakeholders/supervisor on options and approaches for works 3.5 Present concept design with supporting documentation for the proposed actions
4. Design an adaptive management monitoring and reporting program for the project	4.1 Determine performance indicators for each project goal and objective 4.2 Determine methods to measure attainment of project indicators

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.3 Determine monitoring intervals for project 4.4 Determine communication procedures for conveying progress to stakeholders 4.5 Determine the milestones and timelines for project reporting to stakeholders
5. Produce a final design for the ecological restoration project	5.1 Draft a detailed plan according to design brief and concept design 5.2 Develop specifications for materials identified in design brief 5.3 Specify standard and responsibilities of labour contracted for works 5.4 Apply construction and engineering principles to design work identified in design brief 5.5 Complete design documentation according to design brief and 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	Organise, assess and critique data and information, including legislation and regulations, for incorporation in design
Writing	Select conventions and stylistic devices to express precise meaning in design briefs and supporting design documents
Oral communication	Establish and maintain complex and effective communications when negotiating and agreeing on design brief and options for design
Numeracy	Interpret financial information and costs, and perform calculations to translate estimates of operational costs and budget development for inclusion in ecological restoration designs and plans

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCECR503 Design an ecological restoration project	AHCNAR503 Design a natural area restoration project	Changed unit code to reflect unit sector Title change Changes to Application, Added Elements and Performance Criteria for clarity and current industry practice Updated Performance Evidence, Knowledge Evidence and Assessment Conditions	Not equivalent

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 AHCECR503 Design an ecological restoration project

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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, on at least one occasion, designed an ecological restoration project according to client brief and workplace and legislative requirements.

There must also be evidence that the individual has:

- established project scope, including:
 - purpose
 - scope
 - extent/scale
 - costs
 - benefits
 - timelines
- conducted an onsite analysis and assessment to determine ecosystem functions and processes, degradation and potential for regeneration
- determined constraints and threatening processes
- identified targets and goals for the ecosystem attributes and indicators that the targets and goals are being attained
- prepared a base plan incorporating the following:
 - landforms
 - hydrology
 - substrates
 - fauna
 - flora
 - habitat
 - presence of threats

- determined options for ecological restoration treatments and incorporated into a concept design
- negotiated the design brief and agreement on options and final design with client
- produced a final design with supporting documentation, including:
 - schedule of works
 - costings
 - planning
 - monitoring
 - annotated plans, maps, drawings or other images
 - specifications
 - quality and standards of materials and work
 - labour and contractor requirements and their responsibilities and qualifications
- used remote sensing, electronic mapping tools and professional graphic formats to present concept design.

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:

- design process
- ecosystem biota, abiotic elements, functions and processes
- ecological restoration theory, principles and standards
- adaptive management principles and practices
- natural regeneration potential and limits
- effective assisted regeneration and reconstruction principles and practices
- landscape level ecosystem processes and connectivity requirements of species
- remote sensing, electronic mapping, graphical presentation and basic drafting techniques
- recognition of species and a range of ecological communities
- biophysical components of site, including:
 - atmosphere – climatic conditions
 - hydrosphere conditions – water, rain
 - lithosphere – geology, soils
 - biosphere – flora, fauna, fungi
- costing projects and developing and managing budgets
- calculations of materials, labour, machinery and equipment
- environmental implications of restoration works
- legislative requirements for ecological restoration works
- industry and workplace standards.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated on an ecological site requiring restoration or in an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - computers for research and development of plans and documents
- specifications:
 - workplace policies and procedures for design development and documentation
 - legislation, regulations and codes of practice for revegetation works
- relationships:
 - client
 - stakeholders.

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

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