

## MONITOR NATURAL RESOURCES

ISCED UNIT CODE: 0521 451 14A

TVET CDACC UNIT CODE: ENV/CU/ENT/CR/05/5/MA

### UNIT DESCRIPTION

This unit covers the competencies required to monitor natural resources; it involves carrying out environmental landscaping techniques, carrying out environmental trail management, maintaining forestry resources, performing wildlife management, performing range land management and performing water resource stewardship.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace functions	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i>
1. Carry out environmental landscaping techniques	1.1 <b><i>Designated landscaping areas</i></b> are mapped as per work procedures. 1.2 <b><i>Landscaping tools</i></b> are assembled as per work requirements 1.3 <b><i>Landscaping</i></b> is carried out as per integrated national land use guidelines, 2011 1.4 Landscaped areas are maintained as per work requirement
1. Carry out environmental trail management	2.1 Environmental sensitive <b><i>ecosystems</i></b> are mapped as per work requirements 2.2 Ecological trails areas are mapped as per work requirements. 2.3 Ecological trails are created as per work procedures 2.4 Ecological trails are maintained as per the work requirements.
3. Maintain forestry resources	3.1 <b><i>Forest resources</i></b> are applied as per Forest conservation and management Act, 2016. 3.2 <b><i>Data collection tools</i></b> are assembled as per work requirements 3.3 <b><i>Forest resources inventory</i></b> is carried out as per work requirements 3.4 Forest resources inventory recommendations are implemented as per work procedures 3.5 Forest resources are monitored as per forest Act 2016

4. Perform wildlife management	<p>4.1 Wildlife resources are mapped as per the Wildlife (conservation and management) Act, 2013</p> <p>4.2 <b>Wildlife Inventory</b> is carried out as per management planning guidelines 2016</p> <p>4.3 <b>Wildlife Inventory recommendations</b> are carried out as per work procedures</p> <p>4.4 <b>Wildlife resources</b> are monitored as per work procedures</p>
5. perform range land management	<p>5.1 Rangeland resources are mapped as per rangeland management strategy 2021-2031</p> <p>5.2 <b>Data collection tools</b> are assembled as per work requirements</p> <p>5.3 <b>Rangeland Inventory resources</b> are carried out as per work procedures</p> <p>5.4 <b>Rangeland inventory recommendations</b> are implemented as per work procedures</p> <p>5.5 Rangeland resources are monitored as per work procedures</p>
6. Perform water resource stewardship	<p>6.1 Water resources are mapped as per Water Act, 2016</p> <p>6.2 Water resources are monitored as per water Act 2016</p> <p>6.3 Water quality is sampled as per EMCA (water quality) regulations, 2006</p> <p>6.4 Water resource conservation is implemented as per Water Act, 2016</p> <p>6.5 Water conservation awareness is created as per Water Act, 2016</p>

## RANGE

This section provides a work environment and conditions to which the performance criteria apply. It allows for a different work environment and situations that will affect performance.

Variable	Range
1. Designated landscaping areas includes but not limited to:	<ul style="list-style-type: none"> <li>• Parks and arboretums</li> <li>• Recreational areas</li> <li>• Road reserves</li> <li>• Riparian areas</li> <li>• River banks</li> <li>• Private spaces</li> <li>• Public spaces</li> <li>• Water catchment areas</li> <li>• Ecotourism sites</li> <li>• Gardens</li> </ul>
2. Landscaping tools includes but not limited to:	<ul style="list-style-type: none"> <li>• Shovel</li> <li>• Rakes</li> <li>• Pruning Shear</li> </ul>

	<ul style="list-style-type: none"> <li>• Lawn mower</li> <li>• Grass trimmer</li> <li>• Hedge trimmer</li> <li>• Leaf blower</li> <li>• Lawn aerator</li> <li>• Wheelbarrow</li> <li>• Laser levels</li> <li>• Slope meters</li> <li>• Inclinometer</li> </ul>
3. Landscaping includes but not limited to:	<ul style="list-style-type: none"> <li>• Artificial landscaping</li> <li>• Nature based landscaping</li> </ul>
4. Sensitive ecosystems includes but not limited to:	<ul style="list-style-type: none"> <li>• National Parks/Reserves and arboretums</li> <li>• Islands</li> <li>• Riparian areas</li> <li>• River banks</li> <li>• Water catchment areas</li> <li>• Ecotourism sites</li> <li>• Gardens</li> <li>• Lakes</li> <li>• Rivers</li> </ul>
5. Forest resources includes but not limited to	<ul style="list-style-type: none"> <li>• Trees</li> <li>• Shrubs</li> <li>• Grass</li> <li>• Animals</li> <li>• Water</li> <li>• Timber/wood</li> <li>• Fruits</li> <li>• Herbs</li> <li>• Soil</li> </ul>
6. Data collection tools includes but not limited to:	<ul style="list-style-type: none"> <li>• Structured Questionnaires</li> <li>• Interviews</li> <li>• Observation checklists</li> <li>• Focused discussion groups</li> <li>• Media reports</li> <li>• Photographic recorder</li> <li>• GPS devices</li> </ul>
7. Forest resources inventory includes but not limited to:	<ul style="list-style-type: none"> <li>• Plant morphology</li> <li>• Animal morphology</li> <li>• Invasive species</li> <li>• Native species</li> <li>• Endangered species</li> <li>• Water catchment</li> </ul>

	<ul style="list-style-type: none"> <li>• Soil</li> </ul>
8. Forest resources inventory recommendations includes but not limited to:	<ul style="list-style-type: none"> <li>• Species enrichment</li> <li>• Ecosystem protection</li> <li>• Surveillance</li> </ul>
9. Wildlife Inventory includes but not limited to:	<ul style="list-style-type: none"> <li>• Fauna species</li> <li>• Flora species</li> <li>• Water catchment areas</li> </ul>
10. Wildlife Inventory recommendations includes but not limited to:	<ul style="list-style-type: none"> <li>• Species enrichment</li> <li>• Ecosystem protection</li> <li>• Surveillance</li> </ul>
11. Wildlife resources include but not limited to:	<ul style="list-style-type: none"> <li>• Trees</li> <li>• Shrubs</li> <li>• Grass</li> <li>• Wild animals</li> <li>• Water</li> <li>• Fruits</li> <li>• Herbs</li> <li>• Soil</li> <li>• Birds</li> </ul>
12. Rangeland Inventory resources includes but not limited to:	<ul style="list-style-type: none"> <li>• Trees</li> <li>• Shrubs</li> <li>• Grass</li> <li>• Animals</li> <li>• Birds</li> <li>• Water</li> <li>• Timber/wood</li> <li>• Fruits</li> <li>• Herbs</li> <li>• Soil</li> </ul>
13. Rangeland inventory recommendations includes but not limited to:	<ul style="list-style-type: none"> <li>• Species enrichment</li> <li>• Ecosystem protection and conservation</li> <li>• Surveillance</li> </ul>

## REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency.

### Required knowledge

The individual needs to demonstrate knowledge of:

- Data collection
- Forest resources

- Wildlife resources
- Rangeland resources
- Natural resource inventories
- Ecosystem Protection
- Species Enrichment
- Plant and Animal morphology
- Environmental resources
- Budgeting

### Required skills

The individual needs to demonstrate the following skills:

- Monitoring and evaluation
- Reporting
- Measurement skills
- Sampling
- Record keeping
- Planning and organizing
- Leadership skills
- Management skills
- Basic analytical skills
- Interpersonal skills

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### EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Carried out <b>landscaping</b> as per integrated national land use guidelines, 2011</p> <p>1.2 Mapped environmental sensitive <b>ecosystems</b> as per work requirements</p> <p>1.3 Created ecological trails as per work procedures.</p> <p>1.4 Carried forest <b>resources inventory</b> out as per work requirements</p> <p>1.5 Implemented forest <b>resources inventory recommendations</b> as per work procedures</p> <p>1.6 Carried <b>rangeland Inventory resources</b> out as per work procedures</p> <p>1.7 Implemented <b>rangeland inventory recommendations</b> as per work procedures</p>
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	1.8 Sampled water quality as per EMCA (water quality) regulations, 2006
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Appropriately simulated environment where assessment can take place</p> <p>2.2 Access to relevant work environment</p> <p>2.3 Resources relevant to the proposed activity or tasks</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Practical demonstrations</p> <p>3.2 Oral questioning</p> <p>3.3 Written assessment</p> <p>3.4 Portfolio of Evidence</p> <p>3.5 Interview</p> <p>3.6 Third party report</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 Workplace</p> <p>4.2 Simulated work environment</p>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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