


Curriculum document					
Occupational Code	Qualification Title	NQF Level			
	ECO-RANGER	4			
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Development Quality Partner					
Assessment Quality Partner					
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SECTION 1: CURRICULUM SUMMARY

QUALIFICATION DETAILS

Qualification Title: Eco-Ranger

Occupational Code:

Quality Assuring Body: Quality Council for Trades and Occupations (QCTO)

Sub Framework: Occupational Qualifications Sub-Framework

Field: Field 12 – Agriculture & Nature conservation

Subfield: Nature Conservation

NQF Level: 4

Credits: 60 Credits

Originator/Development Quality Partner (DQP):

Originating Provider/Assessment Quality Partner (AQP): Directorate for Assessments (DHET)

Qualification Type: Skills Program

RATIONALE

The Nature Conservation Sector in South Africa has in recent years underwent various changes caused by changing environment under which they operate and these have come with a shift on the skills needs for their workforce. Owing to the ongoing 21st century environmental problems which include environmental degradation caused mainly by anthropogenic activities, poaching of protected animals and overuse of natural resources, the need for a workforce that is armed with relevant competencies has become greater.

Eco-ranger as an emerging occupation takes occupational tasks from field rangers and has in the main, both biodiversity conservation and monitoring as main responsibilities. Unlike field ranger

that is about protection of wildlife inside the protected areas, the Eco-ranger responsibilities further encompasses both plant and animal species as important components in the ecosystem in and outside protected areas.

The skills program is part of plans to create formal programs for CET Colleges across the country. Besides this, the program offers its learners an opportunity to get onto a route towards being biodiversity monitors as it provides theoretical and practical grounding enough for them to find jobs within the Environmental sector. The program further contains outcomes that will enable learners to establish own businesses within biodiversity conservation sector.

Learners entering this program are a combination of new entrants in the conservation sector and old individuals who have been performing jobs at lower levels but have acquired enough competencies to move to next levels of responsibilities. The latter type of learners includes individuals that work as assistants in protected areas with various manual jobs.

This program is a response to various changes that have taken place within the broader environmental conservation sector in South Africa. These changes are mostly characterised and caused by needs for greater efforts in adapting and mitigating effects of climate change and they come with requisites of new knowledge and skills. Various government and civic society led initiatives have led to a need to create new generation of Eco-rangers who will help in monitoring bio-diversity and contribute towards protection of the wildlife.

PURPOSE

The purpose of this qualification is to prepare learners to use knowledge of biodiversity monitoring, processes, concepts, systems, living and non-living organisms within ecology and wildlife conservation context to perform tasks that are aimed at contributing to effective conservation of biodiversity and protection of natural resources, plants and animal species in and outside the protected areas.

A qualified learner will be able to:

- Apply knowledge of principles, processes, systems, organisms and concepts relevant to ecology and wildlife conservation with a purpose to perform biodiversity monitoring tasks
- Use relevant tools, equipment and material to perform biodiversity monitoring related activities with a purpose of enhancing environmental conditions

SECTION 2: SKILLS PROGRAM PROFILE

Skills program profile

Purpose

The purpose of this qualification is to prepare learners to use knowledge of biodiversity monitoring, processes, concepts, systems, living and non-living organisms within ecology and wildlife conservation context to perform tasks that are aimed at contributing to effective conservation of biodiversity and protection of natural resources, plants and animal species in and outside the protected areas.

Occupational tasks

- Biodiversity monitoring
- Control of invasive alien species
- Contribute to protection of wildlife
- Assist in data collection for field surveys on biodiversity, habitat and natural resources status
- Map areas and species needing special attention using GIS software
- Monitor natural resources and catchment areas
- Perform self-protection and Health * safety related tasks within biodiversity monitoring context

RULES OF COMBINATION

This qualification is made up of the following compulsory Knowledge and Application Modules:

KNOWLEDGE MODULES

Total number of credits for Knowledge Modules: 36 credits

60%

APPLICATION MODULES

Total number of credits for Application Modules: 24 credits

40%

Skills development provider accreditation requirements

The community Training Colleges and other Skills Development Providers will need to comply with the QCTO accreditation requirements as per the QCTO policy.

There are resources that are critical for successful implementation of this program and the Skills Development Provider needs to ensure their availability prior to commencement of training. These resources are as follows:

- Fully equipped classroom
- Facilitator who is a subject matter expert in Biodiversity conservation
- Access to protected areas and rangelands or provisions that the access will be given when needed.

Resources requirements list

There are resources that are critical for successful implementation of this program and the Skills Development Provider needs to ensure their availability prior to commencement of training. These resources are as follows:

- Fully equipped classroom
- Facilitator who is a subject matter expert on Bio-diversity conservation and as an eco-ranger or a field ranger with knowledge of GIS
- Access to a park with dangerous, non-dangerous animals, different animal species, wetlands and catchment areas.
- Access to communal lands with livestock
- Two way radio-communication systems
- Arch GIS of similar

LEARNING ASSUMED TO BE IN PLACE

- NQF Level 3 with Maths or Mathematical literacy.
 - Or

- Or Minimum of 2 years of experience in a wild life conservation sector

SECTION 3: CURRICULUM COMPONENT SPECIFICATIONS

SECTION 3A: KNOWLEDGE MODULE SPECIFICATIONS

- 955081-000-01-00-km-01, ecological principles & ecosystems resilience, L3, 2 Cr
- 955081-000-01-00-KM-02 wildlife conservation, L4, 3 Cr
- 955081-000-01-00-KM-03 nature conservation law and enforcement,L4,3Cr
- 955081-000-01-00-KM-04 self-protection and survival measures , L4, 5Cr
- 955081-000-01-00-KM-05 bio-diversity monitoring, L4, 16 Cr
- 955081-000-01-00-KM-06 catchment areas and natural resources management,L4, 2 Cr
- 955081-000-01-00-KM-07 geographical information systems for conservation ,L4, 8 Cr
- 955081-000-01-00-KM-08 two way radio-communication systems, L3, 1Cr
- 95955081-000-01-00-km-01, ecological principles & ecosystems resilience, L3, 2 Cr

1 955081-000-01-00-km-01, ecological principles & ecosystems resilience, L3, 2 Cr

1.1 Purpose the module

The purpose of this module is to provide a learner with an opportunity to apply knowledge of ecological principles in relations to conservation of biological diversity. The contact time for this module should at least be 2 days.

The Learning will enable the learners to understand:

- Ecology , conservation biology, its evolution and principles:30%
- Ecosystems: 30%
- Ecosystems resilience: 30%
- Climate change , ecology and ecosystems :10%

1.2 Guidelines for topics

Ecology, conservation ecology, its evolution and principles: 30%

Topic elements to be covered include:

- Ecology
- Evolution of ecology
- Indigenous principles of ecology

Associated Assessment criteria

- History of ecology is explained
- Importance of ecology is explained
- Indigenous principles of ecology are explained

Ecosystems

Topic elements to be covered include:

- Ecosystems and its complexities
- Biological diversity and Ecosystems

EXIT LEVEL OUTCOMES

Apply knowledge of ecological principles in relations to conservation of biological diversity

ASSOCIATED ASSESSMENT CRITERIA

- ECO-SYSTEMS ARE LISTED AND EXPLAINED WITH EXAMPLES
- Biological diversity is explained in relation to eco-systems and Environmental conservation

1.1 PURPOSE OF THE MODULE

The purpose of this module is to provide a learner with an opportunity to apply knowledge of African wildlife with a purpose of identification and understanding their behaviour. The contact time for this module should at least be 3 days.

The Learning will enable the learners to understand:

- A variety of African wildlife
- Characteristics, behaviour and role of specific African wildlife in biodiversity conservation

Guidelines for topics

Wildlife conservation

Topic elements to be covered include:

- African wildlife: 20%
- Characteristics, behaviour and role of specific African wildlife in biodiversity conservation:20%
- Human & wildlife interactions:10%
- Animal tracking, trapping and movements:20%
- RED Data animal species:20%

Associated Assessment criteria

- African wildlife (mammals, birds, reptiles, amphibians, fish, arthropods) and their characteristics is recognised with examples and their adaptability
- Behavioural characteristics of African wildlife within a context of conservation ecology is identified and explained in relation to handling wildlife animals
- Threats posed by human beings to wildlife and its impact into wildlife conservation are identified and explained.
- Animal tracking, trapping and movements is explained with processes and tools applicable to each species

- Various ways of approaching wildlife animals are identified and explained within the context of conservation
- The concept of RED Data animal species is explained (threatened animals, endangered animals, protected animals and near extinct animals) with applicable legislations and regulations
- Actions that are taken in order to protect wildlife animals under threat are identified and explained with examples of threats and their levels.
- Various stakeholders involved in actions to protect wildlife animals under threat are identified and explained with their programs
- Authorities of various stakeholders are identified and explained with applicable legislations and regulations
- illegal activities are listed and explained within a wildlife conservation context
- dangers posed by these activities to wildlife are explained with examples
- Activities that must be taken to counter illegal activities in wildlife conservation are listed and explained with applicable legislations.

Knowledge 955081-000-01-00-KM-03 Nature conservation law and enforcement, L2,
3 cr

Purpose of the Knowledge Modules

The focus of the learning in this module is on providing the learner an opportunity to demonstrate an understanding of nature conservation laws and enforcement. The learning contact time, which is the time that reflects the required duration of enrolment for this module, is at least 2 days.

The learning will enable learners to apply knowledge of conservation legislations, regulation, provincial ordinances and by-laws for the purpose of biodiversity conservation laws enforcement.

Legislation: 20%

Regulations: 20%

Provincial ordinances: 20%

By-laws:20%

Enforcement procedures: 20%

Guidelines for topics:

Topic elements to be covered include:

Conservation legislations

Relevant regulations

Provincial ordinances

By-laws

Enforcement procedures

Associated assessment criteria

- Conservation laws, regulations, provincial ordinances and by laws relevant to eco-rangers are identified and explained in relation to required actions to ensure compliance
- Enforcement procedures are identified and explained in relation to ensuring protection of wildlife

Knowledge 955081-000-01-00-KM-04 Self-Protection and survival measures, L2,2Cr

Purpose of the knowledge modules

The focus of this module is on providing learners with an opportunity to demonstrate understanding of self-protection and survival techniques during emergency situations within a wildlife context. The contact time for this module should at least be over period of three two days.

The learning will enable learners to understand:

- Signs of an emergency situation
- Situations under which emergencies can occur
- Procedures to follow during emergencies
- Survival techniques

Guidelines for topics

Topic elements to be covered include:

- Signs of an emergency situation: 10%
- Situations under which emergencies can occur:20%
- Procedures to follow during emergencies: 40%
- Survival techniques:30%

Associated assessment criteria

- Circumstances under which emergencies can occur are listed together with preventative measures that can be taken.
- Priority survival skills are identified and explained within emergencies and rescue context.

Knowledge 955081-000-01-00-KM-05 Bio-diversity monitoring, L4, 16 Cr

Purpose of the knowledge modules

The focus of this module is on providing learners with an opportunity to demonstrate understanding of bio-diversity monitoring within environmental conservation context. The contact time for this module should at least be over period of three 16 days.

The learning will enable learners to understand:

- BIODIVERSITY MONITORING IMPORTANCE AND PRINCIPLES
- Biodiversity assessments
- Biodiversity monitoring actions
- Invasive alien species, their characteristics, negative impacts and control measures

Guidelines for topics

Topic elements to be covered include:

- BIODIVERSITY MONITORING IMPORTANCE AND PRINCIPLES :20%
- Biodiversity assessments: 30%
- Biodiversity monitoring actions:20%
- Invasive alien species, their characteristics, negative impacts and control measures:30%

Associated assessment criteria

- Principles and importance of biodiversity monitoring is recognised and explained in relation to conservation including all aspects of the environment
- Steps to be taken in order to ensure proper monitoring (counting species, determining locality of species, reporting changes, basic ecological data collection) of diversity are listed and explained.
- Steps to be taken in order to identify and locate potential pollutants are listed and explained within environmental conservation context
- corrective steps to remove potential pollutants in wildlife & plants habitat and catchment areas are listed and explained
- Common invasive alien species are listed and explained in relations to their negative effects on the biodiversity
- Steps necessary for control and eradication of invasive alien species are listed and explained

Knowledge 955081-000-01-00-KM-06 Catchment areas and natural resources management, L4, 10Cr

Purpose of the knowledge modules

The focus of this module is on proving learners with an opportunity to demonstrate understanding of catchment systems and natural resources in relation to their role in biodiversity conservation.

The contact time for this module should at least be over period of three 10 days.

The learning will enable learners to understand:

- Role of catchment systems in biodiversity conservation
- Assessment of catchment systems
- Catchment systems improvements
- Importance of natural resources in biodiversity conservation
- Rehabilitation and restoration of natural resources

Guidelines for topics

Topic elements to be covered include:

- Role of catchment systems in biodiversity conservation :20%
- Assessment of catchment systems: 20%

- Catchment systems improvements: 20%
- Importance of natural resources in biodiversity conservation: 20%
- Rehabilitation and restoration of natural resources : 20%

Associated assessment criteria

- Conservation concepts relevant to improvement of catchment systems are explained in relation to their importance.
- indicators for identification of catchment systems that require attention are listed and explained within specific geographical areas
- conditions necessary for maintaining healthy catchment systems are listed and explained
- actions necessary for improvement of catchment systems are explained with examples applicable to a given geographical location
- the importance of natural resources is explained within biodiversity conservation context
- types of natural resources that are critical for biodiversity conservation are listed and explained within given geographical area
- various ways that can be used to rehabilitate natural resources are listed and explained with examples

Knowledge 955081-000-01-00-KM-09 Navigation and communications, L4, 18 Cr

Purpose of the knowledge modules

The focus of this module is on providing learners with an opportunity to demonstrate understanding of navigation systems and two way radio communications within the wildlife conservation context. The contact time for this module should at least be over period of three 18 days.

The learning will enable learners to:

- Identify and explain navigation systems & applications applicable in conservation
- Explain geographical information system and its uses in conservation
- Explain ways of using maps, global positioning system for locating of species, habitats, natural resources and navigating directions within conservation
- Identify and explain two way radio communication systems, its components, uses and functioning

Guidelines for topics

Topic elements to be covered include:

- Geographical information systems :60%

- Two way radio communication systems:40%

Associated assessment criteria

- Geographical information systems is explained with its importance and uses in conservation
- Components and uses of Geographical information systems are identified and explained
- Ways of operating geographical information systems and its components are identified and explained
- Two way radio communication is explained with its components
- Ways of operating a two way radio system in conservation are identified and explained

Knowledge 955081-000-01-00-KM-09 Eco-tourism and bio-diversity, L4, 8 Cr

Purpose of the knowledge modules

The focus of this module is on providing learners with an opportunity to demonstrate understanding of eco-tourism as a way towards improving biodiversity within a South African context. The contact time for this module should at least be over a period of eight days.

The learning will enable learners to understand:

- consumptive and non-consumptive forms of tourism
- Role of non-consumptive form of tourism to biodiversity conservation
- Components of eco-tourism within the safari industry
- Eco-tourism business concepts and principles

Guidelines for topics

Topic elements to be covered include:

- consumptive and non-consumptive forms of tourism: 20%
- Role of non-consumptive form of tourism to biodiversity conservation : 20%
- Components of eco-tourism within the safari industry : 20%
- Eco-tourism business concepts and principles : 20%

Associated assessment criteria

- Differences between consumptive and non-consumptive forms of tourism are listed and explained
- The importance of non-consumptive tourism within biodiversity context is explained
- components of eco-tourism within the safari industry are listed and described
- Business management concepts & principles necessary for the success of eco-tourism business are listed and explained

SECTION 4 APPLICATION MODULES SPECIFICATIONS

Practical 955081-000-01-00-AM-01 Wildlife patrols,

Purpose of Application modules

The focus of this module is on providing a learner with an opportunity to practice and understand tools and equipment for conducting different types of wildlife patrols in an operational area. Application activities should take place in a real work environment. The contact time of this module is at least five days.

The learner will be required to:

- Use tools and equipment for conducting different types of wildlife patrols in an operational area.
- Adhere to wildlife patrols procedures while conducting patrols

GUIDELINES FOR APPLICATION MODULES

Practical 955081-000-01-00-AM-01 Wildlife patrols, L4, 5Cr

Scope of application skills

Given the current procedures, tools and equipment for wildlife patrols within a South African context, the learner must be able to:

- Conduct wildlife patrols using appropriate tools and equipment
- Adhere to the procedure of conducting wildlife patrols

Applied knowledge

- Principles and procedures of wildlife patrols

- Equipment, tools and materials of wildlife patrols

Associated assessment criteria

- Equipment and tools suitable for the purpose of patrols in a selected area are selected and prepared.
- Patrols in a selected area are conducted using correct tools, equipment and material
- Correct procedures are followed during patrols with deviations undertaken where necessary

**APPLICATION 955081-000-01-00-AM-02 INVASIVE ALIEN SPECIES
CONTROL, L4,2 CR**

Purpose of Application modules

The focus of this module is on proving a learner with an opportunity to practice and understand tools, equipment and methods to implement an approved alien species control program in a specific area. Application activities should take place in a real work environment. The contact time of this module is at least five days.

The learner will be required to :

- Derive activities from an approved invasive species control program
- Select, plan and prepare appropriate tools, equipment and materials for controlling invasive alien species
- Adhere to IAS control procedures

Applied knowledge

- Analysis and interpretation of an invasive alien species control program
- Tools, equipment and materials for IAS
- IAS principles and procedures

Associated Assessment criteria

- Appropriate tools and equipment are selected and prepared in order to implement invasive alien plants (IAS) control program

- IAS control principles and procedures to perform control activities relevant to a specific species are adhered to
- IAS activities are performed in line with principles and procedures

GUIDELINES FOR APPLICATION MODULES

Application 955081-000-01-00-AM-03 Conservation data collection, L4,3 Cr

Scope of application skills

Given an approved data collection program, the learner must be able to :

- Identify and collect appropriate data on the state of biodiversity , species habitat and natural resources in a given area
- Select, plan and prepare appropriate tools, materials and equipment for data collection
- Submit data to responsible supervisors in a specific area

Applied knowledge

- Biodiversity indicators
- Purpose and importance of data collection biodiversity monitoring, species habitat and natural resources management
- Critical data
- Data types and sources
- Data collection methods
- Tools, equipment and systems in data collection
- Reporting of primary data

Associated assessment criteria

- Tools & equipment for surveys and data collection are selected following a relevant criteria
- Tools and equipment for surveys and data collection in a specific area are prepared following applicable procedure.
- Specimens, samples and data for the purpose of various investigations pertaining to monitoring of biodiversity are collected.

- Surveys are conducted using appropriate tools and equipment as part of biodiversity monitoring
- Necessary procedures to report results of surveys and data collection to relevant personnel are followed.

Practical 955081-000-01-00-AM-01 GIS and two way radio communication

, L4, 18Cr

Scope of application skills

Purpose of the application skills module

The focus of this application module is to provide learners with an opportunity to operate applicable GIS software, GPS and two way radio communication equipment to track locate species, habitats and natural resources. This application module should take place in a simulated or real work environment. The learning contact time from commencement of the program should at least be 18 days including all assessments.

Given the a GIS software manual and two radio communication systems manual the learner must be able to :

- Locate species
- Locate species habitat
- Locate natural resources and communicate conditions to specialists where applicable
- Use two way radio devices

Applied Knowledge

- GIS
- Two way radio communication systems

Associated assessment criteria

- GIS software is utilised for locating species, species habitat and natural resources in a given location
- Two way radio devices are utilised for effective communication in an operation

Scope of application skills

Given the wild life safety and emergency principles and procedures the learner must be able to :

- Follow appropriate steps in responding to an emergency
- Follow appropriate steps in maintaining self-safety and that of wildlife
- Adhere to the safety and emergency principles during emergency situations
- Use appropriate tools, equipment and materials in handling emergencies

Applied Knowledge

- Safety in the wildlife
- Responding to emergencies during conservation activities
- Communications during emergencies
- Tools, equipment and materials during emergency
- Tools, equipment for safety maintenance

Associated assessment criteria

- Follow necessary steps to prepare for emergency situations
- Safety during emergency situations is maintained using appropriate tools and equipment in line with the type of an emergency

EXIT LEVEL OUTCOMES AND ASSESSMENT CRITERIA FOR THE SKILLS PROGRAM

KNOWLEDGE MODULES

The purpose of knowledge modules is to provide learners with theoretical underpinnings that are necessary for effective performance of occupational tasks. This module should take at least a total of 36 days with assessments and practicals included.

EXIT LEVEL OUTCOME 1

Apply knowledge of ecological principles in relations to conservation of biological diversity

ASSOCIATED ASSESSMENT CRITERIA

- Brief history of Ecology is explained within the context of Conservation
- Importance of ecology in relation to conservation of biodiversity and restoration of the environment is explained
- Indigenous principles of conservation ecology are identified and explained with a clear link to current principles.
- Evolution of ecology principles in relation to current environmental problems is explained

EXIT LEVEL OUTCOME 2

Apply knowledge of conservation to restore ecological and resilience in ecosystems

ASSOCIATED ASSESSMENT CRITERIA

- Ecology related terms in relation to restoration of resilience in ecosystems are explained.
- Actions necessary for restoration of resilience in ecosystems are listed and explained

EXIT LEVEL OUTCOME 3

Apply knowledge of African wildlife with a purpose of identification and understanding their behaviour

ASSOCIATED ASSESSMENT CRITERIA

- African wildlife (mammals, birds, reptiles, amphibians, fish, arthropods) and their characteristics is recognised with examples and their adaptability
- Behavioural characteristics of African wildlife within a context of conservation ecology is identified and explained in relation to handling wildlife animals

EXIT LEVEL OUTCOME 4

Apply knowledge of human and wildlife interactions with a purpose of conservation

ASSOCIATED ASSESSMENT CRITERIA

- Threats posed by human beings to wildlife and its impact into wildlife conservation are identified and explained.

EXIT LEVEL OUTCOME 5

Apply knowledge of working with wildlife for purposes of conservation ecology

ASSOCIATED ASSESSMENT CRITERIA

- Animal track identification is explained with processes and tools applicable to each species
- Various ways of approaching wildlife animals are identified and explained within the context of conservation

EXIT LEVEL OUTCOME 6

Apply knowledge of conservation for the purpose of Monitoring various levels (critically, endangered, endangered and vulnerable) of endangered wild animals

ASSOCIATED ASSESSMENT CRITERIA

- conservation concept (threatened animals, endangered animals, protected animals and near extinct animals) relevant to the protection of threatened and protected species are recognised and explained
- Identify and recognise endangered wild animal species in relation to conservation ecology

EXIT LEVEL OUTCOME 7

Recognise and explain various actions taken to conserve threatened, endangered and near extinct animals.

ASSOCIATED ASSESSMENT CRITERIA

- Actions that are taken in order to protect wildlife animals under threat are identified and explained with examples of threats and their levels.
- Various stakeholders involved in actions to protect wildlife animals under threat are identified and explained with their programs
- Authorities of various stakeholders are identified and explained with applicable legislations and regulations

EXIT LEVEL OUTCOME 8

Recognise illegal activities and explain necessary actions that must be taken to counter it within applicable pieces of legislations

ASSOCIATED ASSESSMENT CRITERIA

- illegal activities are listed and explained within a wildlife conservation context
- dangers posed by these activities to wildlife are explained with examples
- Activities that must be taken to counter illegal activities in wildlife conservation are listed and explained with applicable legislations.

EXIT LEVEL OUTCOME 9

Recognise self-protection and survival measures that must be taken in case of emergency situations within nature conservation context.

ASSOCIATED ASSESSMENT CRITERIA

- Circumstances under which emergencies can occur are listed together with preventative measures that can be taken.
- Priority survival skills are identified and explained within emergencies and rescue context .

EXIT LEVEL OUTCOME 10

Recognise and explain biodiversity monitoring for the purpose of conservation

ASSOCIATED ASSESSMENT CRITERIA

- Principles and importance of biodiversity monitoring is recognised and explained in relation to conservation including all aspects of the environment
- Steps to be taken in order to ensure proper monitoring (counting species, determining locality of species, reporting changes, basic ecological data collection) of diversity are listed and explained.
- Steps to be taken in order to identify and locate potential pollutants are listed and explained within environmental conservation context
- corrective steps to remove potential pollutants in wildlife & plants habitat and catchment areas are listed and explained
- Common invasive alien species are listed and explained in relations to their negative effects on the biodiversity
- Steps necessary for control and eradication of invasive alien species are listed and explained

EXIT LEVEL OUTCOME 11

Use conservation knowledge to improve conditions of catchment systems and natural resources

ASSOCIATED ASSESSMENT CRITERIA

- Conservation concepts relevant to improvement of catchment systems are explained in relation to their importance.
- indicators for identification of catchment systems that require attention are listed and explained within specific geographical areas
- conditions necessary for maintaining healthy catchment systems are listed and explained
- actions necessary for improvement of catchment systems are explained with examples applicable to a given geographical location
- the importance of natural resources is explained within biodiversity conservation context
- types of natural resources that are critical for biodiversity conservation are listed and explained within given geographical area
- various ways that can be used to rehabilitate natural resources are listed and explained with examples

EXIT LEVEL OUTCOME 12

Apply knowledge of basic geographical information systems to read and interpret maps in relation to wildlife conservation

ASSOCIATED ASSESSMENT CRITERIA

- GIS concepts necessary for map readings are listed and explained within nature conservation context
- The importance of maps in finding, orientating and navigating routes to specific destinations is explained

EXIT LEVEL OUTCOME 13

Apply knowledge of radio communication systems to communicate effectively in the conservation area

ASSOCIATED ASSESSMENT CRITERIA

- Relevant radio communications systems used in wildlife conservation are listed and described
- Procedures that must be followed for effective communication using common radio systems are listed and explained

EXIT LEVEL OUTCOME 14

Apply knowledge of eco-tourism in order to maintain biodiversity

ASSOCIATED ASSESSMENT CRITERIA

- Differences between consumptive and non-consumptive forms of tourism are listed and explained
- The importance of non-consumptive tourism within biodiversity context is explained
- components of eco-tourism within the safari industry are listed and described
- Business management concepts & principles necessary for the success of eco-tourism business are listed and explained

EXPERIENTIAL LEARNING MODULES

This module is aimed at providing the learner with an opportunity to practice processes, systems, equipment essential for bio-diversity monitoring. The practical modules should take place in a simulated or real work environment. The learning contract time, which is the time that reflects the required duration of enrolment for this module, is at least 34 days.

EXIT LEVEL OUTCOME 1

Use tools and equipment to conduct different types of wildlife patrols in an operational area

ASSOCIATED ASSESSMENT CRITERIA

- Equipment and tools suitable for the purpose of patrols in a selected area are selected and prepared.

- Patrols in a selected area are conducted using correct tools, equipment and material

EXIT LEVEL OUTCOME 3

Use tools and equipment to conduct field surveys and collect relevant data on biotic and abiotic factors for the purpose of biodiversity monitoring

ASSOCIATED ASSESSMENT CRITERIA

- Tools & equipment for surveys and data collection are selected following a relevant criteria
- Tools and equipment for surveys and data collection in a specific area are prepared following applicable procedure.
- Specimens, samples and data for the purpose of various investigations pertaining to monitoring of biodiversity are collected.
- Surveys are conducted using appropriate tools and equipment as part of biodiversity monitoring
- Necessary procedures to report results of surveys and data collection to relevant personnel are followed.

EXIT LEVEL OUTCOME 4

Implement an approved invasive alien species control program in a selected area

ASSOCIATED ASSESSMENT CRITERIA

- Appropriate tools and equipment are selected and prepared in order to implement invasive alien plants (IAS) control program
- IAS control procedures to perform control activities relevant to a specific species are adhered to

EXIT LEVEL OUTCOME 5

Handle emergency situations in a hostile environment within the context of wildlife conservation

ASSOCIATED ASSESSMENT CRITERIA

- Follow necessary steps to prepare for emergency situations
- Safety during emergency situations is maintained using appropriate tools and equipment in line with the type of an emergency

INTEGRATED ASSESSMENT:

Integrated Formative Assessment:

The skills development provider will use the curriculum to guide them on the stipulated internal assessment criteria and weighting. They will also apply the scope of practical skills and applied knowledge as stipulated by the internal assessment criteria. This formative assessment may lead to entrance into the integrated external summative assessment.

EXTERNAL INTERGRATED SUMMATIVE ASSESSMENT:

An external intergrated summative assessment, conducted through the QCTO accredited Skills development provider is required for the issueing of this Skills Program certificate. The external integrated summative assessment will focus on the exit level outcomes and associated assessment criteria. The duration will be determined by QCTO. This assessment will be designed by a Skilld Development Provider with approval of QCTO on all assessment items.

An intergrated summative assessment consist of theory and practicals. A set of theoretical assessment tasks must be completed on the first day of the integrated summative assessment. This can be in the form of a writeen examination which must happen on the day of assessment or writeen assignements that must be handed in also on first day but can be marked on the third day.

Candidates are expected to demonstrate competence on all two components of the assessment in order to complete the program. The candidate must achieve 50% pass on assignments or writeen examination and 70% on experiential learning tasks.

Separate set of practical assessment activities must be developed by a Skills Develoment Provider prior to commencement of training. Given the nature of these activities, its is important that they are done two weeks closer to intgrated summative assessment days and its evidence must be presented in the form of log books signed off by supervisors or mentors on the second day. This will contribute in assessment decisions . These can also be signed by a facilitator who is based at the Skills Development Provider in case where workplace was not utilised for experiential learning.

RECOGNITION OF PRIOR LEARNING (RPL)

RPL FOR ACCESS TO THE EXTERNAL INTEGRATED SUMMATIVE ASSESSMENT

Learners who are already performing occupational responsibilities in relation to the AAC's and ELO's of this program can be accepted for integrated summative assessments. Those who have passes similar modules in other qualifications registered on QCTO as occupational qualifications can be exempted through a process and criteria developed by skills development provider and approved by QCTO.

Accredited providers must apply the internal assessment criteria specified in the related curriculum document to establish and confirm prior learning. Accredited providers must confirm prior learning by issuing a statement of result or certifying a work experience record.

RPL for Access to the Qualification

Accredited providers may recognise prior learning against the relevant access requirements.

ARTICULATION

Horizontal

This qualification may horizontally articulate with the following qualification:

- Occupational Certificate: Park ranger
- Occupational Certificate: Field ranger

Vertical

This qualification may articulate vertically with the following qualifications:

- Occupational Certificate Conservation practitioner
- Occupational Certificate: Wildlife practitioner
- Occupational Certificate: Environmental officer (under a process of development)

NOTES

QUALIFYING FOR THE EXTERNAL INTEGRATED SUMMATIVE ASSESSMENT

In order to qualify for an external assessment, learners must provide proof of completion of all required modules by means of statements of results and work experience or experiential learning records.

Additional Legal or Physical Entry Requirements:

- Individuals intending to be part of this skills program must obtain medical fitness certificate from a recognised medical practitioner in South Africa

Criteria for the Accreditation of Providers:

This program was specifically developed to be offered by public community education and training colleges in South Africa. However it can be offered by any other Skills development Provider in line with accreditation requirements as set out on QCTO accreditation policy.

ASSESSMENT QUALITY PARTNER

None

MODULES LIST

COMPONENT	ID	MODULE TITLE	LEVEL	CREDITS
Knowledge	955081-000-01-00-KM-01	Ecological principles & Ecosystems resilience	2	3
Knowledge	955081-000-01-00-KM-02	Wildlife conservation	2	3
Knowledge	955081-000-01-00-KM-03	Nature conservation law and enforcement	2	3
Knowledge	955081-000-01-00-KM-04	Self-Protection and survival measures	2	5
Knowledge	955081-000-01-00-KM-05	Bio-diversity monitoring	2	16
Knowledge	955081-000-01-00-	Catchment areas and	2	10

	KM-06	natural resources management		
Knowledge	955081-000-01-00-KM-07	Geographical information systems for conservation	2	8
Knowledge	955081-000-01-00-KM-08	Two way radio-communication systems	3	10
Knowledge	955081-000-01-00-KM-09	Eco-tourism and bio-diversity	3	8
Practical	955081-000-01-00-AM-01	Wildlife patrols	2	5
Practical	955081-000-01-00-AM-02	Alien plants Control	2	2
Practical	955081-000-01-00-AM-03	Self protection	2	28