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		Issue No.	01
		Effective Date	04/02/2020

SECTION A: QUALIFICATION DETAILS													
<b>QUALIFICATION DEVELOPER (S)</b>		Botswana University of Agriculture and Natural Resources											
<b>TITLE</b>	Bachelor of Science in Wildlife Management										<b>NCQF LEVEL</b>	7	
<b>FIELD</b>	Natural, Mathematical and Life Sciences		<b>SUB-FIELD</b>		Wildlife Management					<b>CREDIT VALUE</b>	480		
New Qualification					<input checked="" type="checkbox"/>	Review of Existing Qualification							
<b>SUB-FRAMEWORK</b>		General Education		<input type="checkbox"/>	TVET		<input type="checkbox"/>	Higher Education		<input checked="" type="checkbox"/>			
<b>QUALIFICATION TYPE</b>	Certificate	I	II	III	IV	V	Diploma	Bachelor	<input checked="" type="checkbox"/>				
	Bachelor Honours		Post Graduate Certificate				Post Graduate Diploma						
	Masters				Doctorate/ PhD								
<b>RATIONALE AND PURPOSE OF THE QUALIFICATION</b>													
<p><b>RATIONALE:</b></p> <p>Botswana has large pristine natural landscapes comprising of large protected areas (e.g. Chobe National Park ≈ 10 500 km<sup>2</sup>, Central Kalahari Game Reserve ≈ 53 000km<sup>2</sup> and Moremi Game Reserve ≈ 3 800km<sup>2</sup>) and Wildlife Management Areas (WMAs). Protected areas alone, constitute at least 98 000 km<sup>2</sup> or 17 - 18% of total surface area of Botswana, and with WMAs together constitute approximately 37% of the total area. Although WMAs are meant to serve as buffer zones around protected areas, they are often multiple use zones that are not free of anthropogenic activity. Settlements, specifically cattle posts (livestock) and other forms of agriculture, are very characteristic of most WMAs in Botswana. In addition, Botswana has realised significant growth of game farming and ranching sector, allocating further, additional land to wildlife management. Wildlife also does occur in most communal areas and commercial ranches of Botswana, though at comparatively low densities and diversity..</p> <p>Apart from their intrinsic values, wildlife resources are the basis for various economic activity and livelihoods. The tourism industry of Botswana, which is recognised as one of the main sectors for economic growth and diversification, is largely</p>													

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based on wildlife resources. The rapid development of conservation for development programmes like Community Based Natural Resources Management (CBNRM) are also testimony to the close link between wildlife management and livelihoods. Therefore, good conservation should be at the forefront of wildlife resource management. The consumptive and non-consumptive utilization of these natural resources has the potential to make substantial contribution to the economic development of Botswana. Together with other stakeholders, the Department of Animal Science and Production is convinced that economic development based on sustainable use of wildlife resources would ensure a continued source of food, employment, wealth creation and foreign exchange to the nation of Botswana.

The countrywide needs assessment survey of 2004 established that a qualification in Wildlife Management was demanded by 78.6% of the 70 stakeholders. Fifty-five of the stakeholders indicated that in the next five years, they would require 95 graduates in Wildlife Management. The demand for such graduates is expected to grow with the development of the wildlife and eco-tourism Industry. The need for graduate professionals in this field stems from the increased role of wildlife and eco-tourism in the nations' economy. In addition, food security and poverty reduction are major issues of national concerns. This qualification can help train personnel that can enhance the conservation of wildlife and hence other natural resources, food production (e.g. game ranching & farming) and poverty alleviation in Botswana. The proposal to introduce a qualification in Wildlife Management follows the realization by the stakeholders that proper utilization of the nation's wildlife resources is a challenge, which requires trained and skilled manpower for sustainable utilisation.

A qualification in Wildlife Management is consistent with aspirations of the National Vision 2036. The objective of the qualification straddles three pillars of the Vision 2036; i.e. (a) *sustainable environment*, b) *human and social development*, and b) *sustainable economic development*, through improvement on technically capacity to support long-term conservation of wildlife/nature, capacity building and skills improvement of Botswana, and support of economic activity based on wildlife resources (e.g. Eco-tourism, game ranching and others) in that sequence. The qualification is also relevant and would support other national biodiversity conservation policies and initiatives; e.g. Botswana Biodiversity Strategy & Action Plan, Wildlife Conservation Policy 1986, Community Based Natural Resources Management Policy of 2007 and Poverty Eradication Policy/Initiatives, to mention a few. Finally, this proposed degree qualification is as well anticipated to enhance Botswana's implementation and achievement of commitments to multilateral environmental agreements (e.g. United Nations Convention on Biological Diversity and Southern Africa Development Community Environmental Protocols).

### **PURPOSE:**

The purpose of the Bachelor of Science in Wildlife Management qualification is to produce graduates who are able to demonstrate:

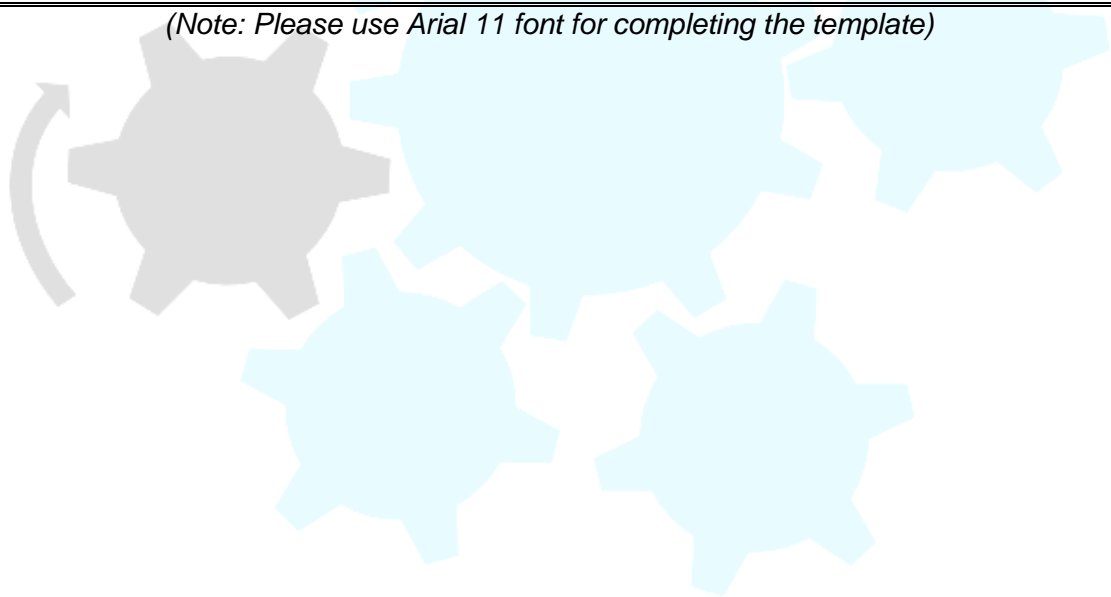
- Manage wildlife resources in an efficient and sustainable manner.
- Develop policies for wildlife management and conservation.
- Mitigate wildlife conservation problems.


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### **ENTRY REQUIREMENTS (including access and inclusion)**


1. Certificate IV, NCQF level 4 or (General Education or TVET) or equivalent with passes in Physics, Biology, Chemistry and Mathematics.
2. Applicants will also be considered for admission through Recognition of Prior Learning in accordance with the Education and Training Providers and National policies on Recognition of Prior Learning.

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<b>SECTION B QUALIFICATION SPECIFICATION</b>	
<b>GRADUATE PROFILE (LEARNING OUTCOMES)</b>	<b>ASSESSMENT CRITERIA</b>
<p><b>At the end of the learning program, graduates must or will</b></p> <p><b>Apply knowledge of fundamental concepts and principles in wildlife management for sustainability</b></p> 	<ol style="list-style-type: none"> <li>1.1. Participate in the formulation of plans for sustainable utilisation of wildlife/natural resources.</li> <li>1.2. Describe the various biological, morphological, physiological, behavioural characteristics, and geographical distribution of wildlife to various stakeholders.</li> <li>1.3. Articulate the value of wildlife resources, including, intrinsic value, utilitarian (consumptive and non-consumptive uses), aesthetic and recreational &amp; cultural values.</li> <li>1.4. Interpret and apply wildlife related legislations to ensure sustainable wildlife utilization and conservation.</li> <li>1.5. Manage wildlife estates and their habitats, including the mitigation against conservation threats, e.g. climate change, drought, wildlife diseases, illegal utilisation or poaching and fires to ensure overall sustainability.</li> <li>1.6. Train and supervise human resources to manage wildlife and wildlife management areas.</li> <li>1.7. Apply extension methods to facilitate co-management of wildlife resources with non-governmental organisations, donor agencies, local communities and others.</li> <li>1.8. Determine priorities in wildlife resource management and conservation to make recommendations to relevant stakeholders.</li> <li>1.9. Manage protected areas (parks, game reserves, sanctuaries and game ranches) and associated wildlife populations effectively.</li> </ol>


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<b>Demonstrate problem solving skills in tackling issues in the management of wildlife resources</b>	2.1. Identify problems that constrain sustainable wildlife resource utilisation. 2.2. Formulate effective strategies to address wildlife conservation issues. 2.3. Identify research problems constraining sustainable management, utilisation and conservation of wildlife resources. 2.4. Design and conduct experiments on identified research problems on wildlife resources.  Collect, collate and analyse data on wildlife resources.
<b>3. Demonstrate methods and tools primarily used in the management of natural resources</b>	3.1 Use appropriate methods, skills and equipment/tools (remote sensing, geographical information systems and information technology) in the management of wildlife resources.
<b>4. Communicate effectively, both orally and written, on scientific and technical information in wildlife management to a wide range of audiences.</b>	4.1. Write scientific reports and peer reviewed journal articles about wildlife management. 4.2. Disseminate scientific research findings about wildlife management to various stakeholders.
<b>Work effectively as an individual, in teams and in multidisciplinary environments.</b>	5.1. Work with little or no supervision. 5.2. Supervise other staff members as and when the need arises. 5.3. Demonstrate the ability to work autonomously.
<b>6. Learn independently and show potential for self-employability</b>	6.1. Engage in independent and life-long learning through well-developed learning skills.  6.2. Demonstrate the capacity for self-employment in the wildlife sector.


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SECTION C	QUALIFICATION STRUCTURE				
COMPONENT	TITLE	Credits Per Relevant NCQF Level			Total (Per Subject/ Course/ Module/ Units)
		Level [ 5 ]	Level [ 6 ]	Level [ 7 ]	
<b>FUNDAMENTAL COMPONENT</b> <i>Subjects/ Courses/ Modules/Units</i>	Computer Skills Fundamentals	24			<b>24</b>
	Communication and Academic Literacy Skills	16			<b>16</b>
	Mathematics		24		<b>24</b>
	General and Inorganic Chemistry		12		<b>12</b>
	Physics		24		<b>24</b>
	Biology of Cells		12		<b>12</b>
	Physical and Organic Chemistry		12		<b>12</b>
	Animal Anatomy and Physiology		12		<b>12</b>
	Introduction to Genetics	8			<b>8</b>
	Introduction to Range Science	8			<b>8</b>
	Introduction to Evolutionary Biology	12			<b>12</b>


 <b>BOTSWANA</b> Qualifications Authority	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
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	Vertebrate Zoology		12		<b>12</b>
	Invertebrate Zoology		12		<b>12</b>
	General Microbiology		8		<b>8</b>
<b>CORE COMPONENT</b>  <i>Subjects/Courses/ Modules/Units</i>	Behavioral Ecology			12	12
	Wildlife Ecology			12	12
	Resources Economics			12	12
	Geographical Information System			12	12
	Wildlife (Field) Attachment			12	12
	Biometry			16	16
	Land Surveying and Evaluation			12	12
	Conservation Ecology			12	12
	Environmental Impact Assessment			12	12
	Research Techniques in Wildlife Management			12	12
	Rural Sociology			12	12
	Applied Techniques in Wildlife Management			12	12
	Aquatic Biology			12	12
	Introduction to Remote Sensing			12	12

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	Field Practical Training			12	12
	Policies in Wildlife Management			12	12
	Conservation Planning			12	12
	Wildlife Animal Welfare			12	12
	Project			16	16
	Wildlife Utilization			12	12
	Wildlife Diseases			12	12
<b>ELECTIVE/ OPTIONAL COMPONENT</b>  <i>Subjects/Courses/ Modules/Units</i>	Financial Management in Agriculture			12	12
	Development of Entrepreneurial Skills in Agribusiness			12	12
	Project Appraisal and Evaluation			12	12
	GEC (General Education Course)			12	12

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<b>SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL</b>	
<b>TOTAL CREDITS PER NCQF LEVEL</b>	
<b>NCQF Level</b>	<b>Credit Value</b>
<b>5</b>	<b>68</b>
<b>6</b>	<b>128</b>
<b>7</b>	<b>284</b>
<b>TOTAL CREDITS</b>	<b>480</b>
<b>Rules of Combination:</b> <b>(Please Indicate combinations for the different constituent components of the qualification)</b>	
<p>Rules of Combinations</p> <p>Fundamental Component = 196 credits</p> <p>Core component = 260 credits</p> <p>Elective component = 24 credits</p> <p>All Fundamental and core modules are compulsory.</p> <p>Candidates can choose any two modules in the electives component (each course carries 12 credits).</p>	

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### **ASSESSMENT ARRANGEMENTS**

The assessments methods for this qualification are

Formative assessment, which contributes 50% of the final grade

Summative assessment, which contributes 50% of the final grade.

### **MODERATION ARRANGEMENTS**

There will be provision for internal and external moderation as a quality assurance measure. Both the internal and external moderators must be registered with BQA as moderators and assessors.

### **RECOGNITION OF PRIOR LEARNING**

Recognition of Prior Learning, RPL and Credit Accumulation and Transfer will be applicable and considered for award of this qualification. Assessment for RPL shall be done as per the individual ETP policy in line with the national policy on RPL.

### **CREDIT ACCUMULATION AND TRANSFER**

Credit Accumulation and Transfer will be applicable and considered for award of this qualification. Assessment for CAT shall be done as per the individual ETP policy in line with the national policy on CAT.

### **PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)**


#### **Graduate studies –**

Graduates in Bachelor of Science in Wildlife Management can articulate vertically to NCQF Level 9 qualifications such as:

1. Master of Science in Wildlife Management
2. Master of Science in Conservation Biology
3. Master of Philosophy in Natural Resources Management

#### **Employment Pathways –**

Graduates in Bachelor of Science in Wildlife Management can pursue careers as:

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1. Wildlife Officer/Park Managers.
2. Project coordinators
3. Game farm managers
4. Education and outreach officers
5. Wildlife Consultants

### **QUALIFICATION AWARD AND CERTIFICATION**

Learners shall be awarded the qualification Bachelor of Science in Wildlife Management upon attaining 480 credits and satisfying the rules of combination stated above. Learners meeting prescribed requirements will be issued a certificate in accordance with prescribed standards.

### **REGIONAL AND INTERNATIONAL COMPARABILITY**

This qualification was benched marked regionally and internationally (see attached comparability matrix) and the following conclusions were made; This qualification is better than the Bachelor of Natural Resource Management (Nature Conservation) offered at the Namibia University of Science and Technology in relation to the modules offered and credit value, though there are similarities in NQF levels. This qualification is at par with the Bachelor of Science in Conservation Ecology (New Mexico State University, USA) in the modules offered though higher in credit value. Similarly, the qualification is at par with Bachelor of Science in Wildlife Conservation and Management (University of Arizona, USA) in the modules offered though NQF level and credit value were not provided.

### **REVIEW PERIOD**

The qualification will be reviewed every five years.

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