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**ENVIRONMENTAL SCOPING REPORT**  
GONDWANA ETOSHA KING NEHALE LODGE  
OSHIKOTO REGION, NAMIBIA

JANUARY 2019

PREPARED FOR



## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	Development of the Gondwana Etosha King Nehale Lodge, Oshikoto Region, Namibia
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Environmental Compliance Consultancy Contact Details:

We welcome any enquiries regarding this document and its content please contact:

**Stephan Bezuidenhout**

Environmental Consultant & Practitioner

Tel: +264 81 262 7872

Email: [stephan@eccenvironmental.com](mailto:stephan@eccenvironmental.com)

[www.eccenvironmental.com](http://www.eccenvironmental.com)

**Jessica Mooney**

Environmental Consultant & Practitioner

Tel: +264 81 653 1214

Email: [jessica@eccenvironmental.com](mailto:jessica@eccenvironmental.com)

[www.eccenvironmental.com](http://www.eccenvironmental.com)

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## EXECUTIVE SUMMARY

The Gondwana Collection Namibia PTY Ltd has for the last 12 months followed the prescribed MET concession process and was chosen as the preferred developer to undertake a 40 Room lodge in the King Nehale Conservancy. A seventy-five (75) million financial investment has been secured for the development. The planned development will be named the Gondwana Etosha King Nehale Lodge and it is situated in the Oshikoto Region, Namibia in near the Etosha National Park.

The planned project triggers Listed Activities in terms of the Environmental Management Act, 2007 (Act No. 7 of 2007) and Regulations (2011). Therefore, an Environmental Clearance Certificate is required. As part of the Environmental Clearance Certificate application, an environmental impact assessment has been undertaken which satisfies the requirements of the Environmental Management Act, 2007. This Environmental Scoping Report and Environmental Management Plan shall be submitted as part of the application for the Environmental Clearance.

The assessment has been carried out for the construction and operations of the Etosha Gondwana King Nehale Lodge. The project includes the construction of an access road, powerline, water pipeline, sewerage recycling plant, water storage tanks, guest accommodation and entertainment areas.

The planned development is located in the Nama Karoo biome on a flat plane near the Etosha National Park, no plant species of high conservation value were identified within the project area. The site and extent of the lodge infrastructure were selected so as to minimise the environmental footprint, minimise the distance to sources of water and electricity and use existing infrastructure as far as possible.

The environmental and social impact assessment was undertaken using a methodology developed by Environmental Compliance Consultancy which is based on the International Finance Corporation standard for impact assessments. Through the scoping process, a baseline of the site and surrounding environment was compiled by undertaking a site visit and desktop literature review. Sensitive receptors were identified during this phase.

Due to the nature and scale of the project no significant impacts were identified during the scoping phase. Measures to mitigate and manage potential impacts on the environment during the construction and operational phases are outlined in the Draft Environmental and Social Management Plan (ESMP).

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## **DEFINITIONS AND ABBREVIATIONS**

DEA	Directorate of Environmental Affairs
EIA	Environmental Impact Assessment
ESMP	Environmental and Social Management Plan
ENP	Etosha National Park
GDP	Gross Domestic Product
IFC	International Finance Cooperation
I&AP	Interested and affected parties
MET	Ministry of Environment and Tourism

## 1. INTRODUCTION

### 1.1. BACKGROUND TO THE PLANNED PROJECT

Tourism contributes much to the GDP of Namibia. Over one million tourists visit the country annually in search of resorts and destinations which are pristine and integrate the African culture. Gondwana Collection Namibia was founded in 1995 and operates various lodges in Namibia with the key focus of the company being to combine hospitality, nature conservation and social commitment in a sustainable manner. Over the past 7 years the Gondwana Collection has been partnering with communities in Namibia's north-eastern regions, particularly conservancies. Gondwana has a zero-tolerance for any activities that adversely affect biodiversity.

The Gondwana Collection Namibia PTY Ltd is looking to expand its offerings to a broader range of tourists travelling on different financial budgets and seeking different experiences in different regions in Namibia. The current lodges under the Gondwana Collection Namibia PTY Ltd cater to medium to upper market tourist wanting to stay in a reasonably priced lodge or a self-catering campsite.

The current development is a forty (40) room lodge in the King Nehale Conservancy in the Oshikoto region. Gondwana Collection has secured a N\$75 million financial investment for the lodge development. The planned development seeks to offer up-market accommodation with a 4-5-star rating and will expose tourists to the cultural experience in north central Namibia. This area has significant tourism potential and the planned development will generate income for the local conservancy and greater Namibian community. The newly formed venture is designed to further spread financial, social and environmental benefits that eco-tourism can bring to previously disenfranchised communities.



## 1.2. ENVIRONMENTAL REQUIREMENTS

The Environmental Management Act of 2007 stipulates that an Environmental Clearance Certificate is required to undertake Listed Activities under the Act and associated Regulations. Listed activities triggered by the planned project in accordance with the Environmental Management Act, 2007 and supporting regulations are as follows:

LISTED ACTIVITY	EIA SCREENING FINDING
<b>ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES</b> 1 (b) The transmission and supply of electricity	A NamPower line will be installed to provide electricity at the lodge site.
<b>WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES</b> (2.1) The construction of facilities for waste sites, treatment of waste and disposal of waste. (2.3) The import, processing, use and recycling, temporary storage, transit or export of waste	Construction waste and rubble will be created during construction.  Household waste shall be generated during operations, which shall be collected and removed from the site for reused, recycling or final disposal at an appropriate facility.
<b>TOURISM DEVELOPMENT ACTIVITIES</b> (6) The construction of resorts, lodges, hotels or other tourism and hospitality facilities	The planned project is the construction of a lodge.
<b>WATER RESOURCE DEVELOPMENTS</b> 8.6) Construction of industrial and domestic waste water treatment plants and related pipeline systems	Whilst the proposed project is not a dedicated facility for waste management, treatment or disposal, sewerage waste shall be produced on site and will require treatment prior to discharge. A sewerage treatment facility shall be installed.
<b>MINING AND QUARRYING ACTIVITIES</b> (3.2) Other forms of mining or extraction of any natural resources whether regulated by law or not.	Sand removal is required for construction activities. The sand will be sourced from an existing borrow pit.
<b>FORESTRY ACTIVITIES</b> (4) The clearance of forest areas, deforestation, forestation, timber harvesting or any other related activity that requires authorisation in term of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.	Vegetation clearance is required in order to allow the construction of the proposed project.

## 1.3. PURPOSE OF THIS REPORT

The purpose of this report is to present the findings of the EIA for the planned project. The EIA has been undertaken in accordance with the requirements of the Environmental Management Act, 2007 and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) gazetted under the Environmental Management Act, 2007 (referred to herein as the EIA Regulations). This Scoping Report and appendices will be submitted to the Directorate of

Environmental Affairs (DEA) at the Ministry of Environment and Tourism (MET) for review as part of the application for an Environmental Clearance Certificate.

This report has been prepared by Environmental Compliance Consultancy (ECC). ECC's terms of reference for the assessment was strictly to address potential effects, whether positive or negative, and their relative significance, explore alternatives for technical recommendations and identify appropriate mitigation measures for potential impacts. The terms of reference for this project is:

- ECC will conduct site assessments to identify any potentially sensitive areas and conduct the initial environmental site assessment
- Set the regulatory framework for the project - (Chapter 2)
- To identify potential issues associated with the proposed project through detailed revision of existing literature for the project site and surroundings - (Chapter 3)
- Describe and map the current (baseline) environment including the physically and social environment - (Chapter 4)
- Assess the impact on the environment and society from the proposed project including potential interactions with groundwater, surface water, air quality, noise, biodiversity, cultural and social impacts. Provide impact mitigation measures - (Chapter 4)
- Identify potential issues associated with the proposed project through consultation with interested and affected parties and key stakeholders. Conduct public consultation phase as required by the Act - (Chapter 5)
- Conducted an impact assessment on each potential impact generated by the proposed project (ECCs method is aligned to IFC standards) - (Chapter 5)
- Provide recommendations to ensure the projects impacts on the environment and community are minimised - (Chapter 5)
- Develop a practical and implementable ESMP to prevent and mitigate the impacts identified in the impact assessment process (Appendix A)

This report provides information for the Authorities, the public and stakeholders to aid in the decision-making process for the planned project. The objectives are to:

- Provide a description of the planned activities within the context of the planned site and conveyance routes
- Provide a description of the environment that may be affected by the activities
- Identify the laws and guidelines that needed to be considered in the assessment and preparation of this report
- Provide details of the public consultation process
- Describe the need and desirability of the development and all the activities relevant to the same
- Provide a high level environmental and social impact assessment on feasible alternatives that were considered, and
- Report the assessment findings, identifying the significance of effects, including cumulative effects.

In addition to the environmental assessment, a Draft Environmental and Social Management Plan (ESMP) (Appendix A) is also required under the Environmental Management Act, 2007. The Draft ESMP becomes final once the environmental clearance has been issued. At subsequent renewal applications the amendments to the ESMP can be approved by the environmental commissioner. A Draft ESMP has been developed to provide a management framework

for the planning and implementation of activities. The Draft ESMP provides guidelines, standards and arrangements to ensure that the potential environmental and social impacts are prevented, mitigated and/or minimised as far as possible and that statutory requirements and other legal obligations are fulfilled.

#### 1.4. THE PROPONENT OF THE PLANNED PROJECT

The proponent of the planned project is Gondwana Collection Namibia (Pty) Ltd. The postal address is PO Box 90388, Windhoek. The group environmental officer can be contacted via [enviro@gondwana-collection.com](mailto:enviro@gondwana-collection.com).

#### 1.5. ENVIRONMENTAL CONSULTANCY

ECC, a Namibian consultancy, registration number 2013/11401, has prepared this document on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sector. The CVs of the authors of this report are contained in Appendix B.

ECC is independent to the proponent and has no vested or financial interested in the planned project.

All compliance and regulatory requirements regarding this document should be forwarded by email or post to the following address:

**Environmental Compliance Consultancy**

PO BOX 91193

Klein Windhoek, Namibia

Tel: +264 81 262 7872 or Tel: +264 81 653 1214

Email: [info@eccenvironmental.com](mailto:info@eccenvironmental.com)

#### 1.6. REPORT STRUCTURE

**Table 1 – Environmental Scoping Report Sections**

SECTION	TITLE	CONTENT
-	Executive Summary	Executive summary of the EIA
-	Acronyms	A list of acronyms used during the report
1	Introduction	This section introduces the EIA and provides background information on the planned project, proponent and purpose of the report
2	Regulatory Framework	This chapter describes the Namibian environmental regulatory framework applicable to the project and how it has been considered in the assessment and the Scoping Report and ESMP.
3	Project Description	Presents a description of the planned project and how the planned project will be operated.
4	Bio-physical & Socio-economic Environment	Presents a description of the baseline environment of the planned project site.
5	Environmental and Social Impact Assessment	This chapter presents the predicted potential environmental and social effects arising from the planned project, and the mitigation and management strategies to be applied to avoid or reduce the effects.
6	Conclusions	Concludes the findings of the EIA
7	References	A list of reference used for this report

<b>Appendix A</b>	Draft Environmental & Social Management Plan (ESMP)	Description of management and mitigation measures for the planned project
<b>Appendix B</b>	ECC CV's	Curriculum vitae of the authors of this report
<b>Appendix C</b>	Biodiversity List	Detailed list of all species of biodiversity in and around the planned project area
<b>Appendix D</b>	Assessment Methodology	Description of the assessment methodology used for the planned project
<b>Appendix E</b>	Evidence of Public Consultation	Background Information Document, site notice, Newspaper adverts and public consultation feedback (Appendix E1)

## 2. REGULATORY FRAMEWORK

### 2.1. INTRODUCTION

The Constitution of the Republic of Namibia, 1990 clearly defines the nation's position in relation to sustainable development and environmental management. The Constitution says that the State shall actively promote and maintain the welfare of the people by adopting policies aimed at the following:

*"Maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; ...."*

#### **The Constitution of the Republic of Namibia Article 95 (1)**

This section of the report outlines the regulatory framework applicable to the planned project. The proponent is committed to upholding their part in complying with the provisions of the regulatory framework set out below.

### 2.2. INTERNATIONAL CONVENTIONS

INTERNATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
Convention on Biological Diversity (1992)	<p>The Convention on Biological Diversity (1992) has the objectives:</p> <ul style="list-style-type: none"> <li>- The conservation of biological diversity</li> <li>- The sustainable use of biological resources, and</li> <li>- The fair and equitable sharing of benefits arising from the use of genetic resources.</li> </ul>	<p>The vision of the planned project is to integrate the development into the natural environment and conserve and enhance the site's flora and fauna. The biological diversity of the site and surrounding area shall be conserved as part of the planned development.</p>

### 2.3. NATIONAL POLICIES

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
Vision 2030	<p>Vision 2030 sets out the nation's development programmes and strategies to achieve its national objectives. It sets out eight themes to realise the country's long-term vision.</p> <p>Vision 2030 states that the overall goal of the vision is to improve the quality of life of the Namibian people to a level in line with the developed world.</p>	<p>The planned project shall meet the objectives of Vision 2030 and shall contribute to the overall development of the country while building capacity in the local communities.</p>

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
<b>Fifth National Development Plan (NDP5)</b>	<p>The NDP5 is the fifth in the series of seven five-year national development plans that outline the objectives and aspiration of Namibia’s long-term vision as expressed in Vision 2030. The NDP5 is structure on five pillars: economic progression, social transformation, environmental sustainability and good governance. Under the social transformation pillar is the goal of improved education.</p> <p>A desired outcome of NDP5 is to have a diversified and competitive tourism sector with increased number of tourists from 1.4 million in 2015 to 1.8 million.</p>	<p>The planned project supports meeting the objectives of the NDP5 through creating opportunities for ecotourism.</p>
<b>The Environmental Assessment Policy</b>	<p>Approved by Cabinet in 1994, the Policy obliges Namibia to place a high priority on maintaining ecosystems and related ecological processes, and to uphold maximum biological diversity. The Policy recognises that environmental assessments are a key tool towards implementing integrated environmental management. The policy has also gained legislative support by the EMA.</p>	<p>Part of the planned projects vision is to maintain the ecosystems found on the planned site in order to integrate the facilities into the natural environment. An environmental assessment has also been undertaken as required under the EMA. The findings of which are presented in this report.</p>

## 2.4. NATIONAL STATUTES

Environmental and social national Statutes, which are applicable to the planned project or have been considered in the assessment and are summarised in Table 2.

**Table 2 – National Statutes**

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
<b>Environmental Management Act, 2007 (Act No. 7 of 2007) and associated regulations, including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011)</b>	<p>The Act aims to promote sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment.</p> <p>It sets the principles of environmental management as well as the functions and powers of the Minister. The Act requires certain activities to obtain an environmental clearance certificate prior to project development. The Act states an EIA may be undertaken and submitted as part</p>	<p>This report (and ESMP) documents the findings of the EIA process undertaken for the planned project, which will form part of the environmental clearance application. The EIA and report have been undertaken in line with the requirements under the Act and associated regulations.</p>

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
	<p>of the environmental clearance certificate application.</p> <p>The MET is responsible for the protection and management of Namibia's natural environment. The Department of Environmental Affairs under the MET is responsible for the administration for the EIA process.</p>	
<p><b>Water Act, 54 of 1956</b></p>	<p>The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: P</p> <ul style="list-style-type: none"> <li>- Prohibits the pollution of underground and surface water bodies (S23(1)).</li> <li>- Liability of clean-up costs after closure/ abandonment of an activity (S23(2)).</li> <li>- Protection from surface and underground water pollution</li> </ul>	<p>The Act stipulates obligations to prevent pollution of water. Pollution prevention measures have been considered in the assessment and incorporated into the ESMP.</p>
<p><b>National Heritage Act 27 of 2004</b></p>	<p>The Act provides for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. It also makes provision for archaeological 'impact assessments'.</p>	<p>There is potential for heritage objects to be found on the sites, therefore the stipulations in the Act have been taken into consideration and are incorporated into the ESMP.</p>
<p><b>Forest Act, 2001 (12 of 2001)</b> <b>And associated Regulations</b></p>	<p>This Act provides for the establishment of the Forestry Council, and presents laws relating to the management and use of forests and forest produce. It also presents provisions for the protection of the environment and the control and management of forest fires.</p>	<p>Ecological impacts may occur as a result of the planned project due to some site clearance requirements. The project will ensure the Act is complied with, in particular:</p> <ul style="list-style-type: none"> <li>- Clear the vegetation on more than 15 hectares on any piece of land or several pieces of land situated in the same locality which has predominantly woody vegetation requires a permit (S23 (1) (b)).</li> <li>- Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (S22(1) (a)).</li> <li>- Protected species will be identified prior to construction works and measures to protect them, as set out in the ESMP.</li> <li>- Permits for protect species under the Act must be obtained from MAWF prior to any disturbance.</li> </ul>
<p><b>Soil Conservation, 1969 (Act 76 of 1969) and the Soil Conservation</b></p>	<p>Makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil,</p>	<p>Whilst minimum vegetation disturbance will occur on site during construction, there is potential to remove some and disturb soil. The construction methods</p>

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
<b>Amendment Act (Act 38 of 1971)</b>	vegetation and water supply sources and resources. The Minister of Agriculture, Water & Forestry may issue directives to land owners in respect of, amongst others: <ul style="list-style-type: none"> <li>- The prevention of erosion, the denudation, disturbance or drainage of land; and</li> <li>- Any other disturbance of the soil which creates or may create conditions which cause or may cause any form of erosion or pollution of water by silt or drift sand.</li> </ul>	and final design have been considered in the design of the planned project and thus considered the potential degradation of soil.



### 3. PROJECT DESCRIPTION

#### 3.1. NEED FOR THE PLANNED PROJECT

The development of the Gondwana Etosha King Nehale Lodge will attract tourists to the region thereby presenting opportunities for development in the region whilst exposing tourists to a full cultural experience. The tourism industry is an important contributor to the generation of revenue, rural development, employment and poverty reduction. The need to expand the tourism sector and ensure sustainability in the sector is highlighted in Namibia's 5<sup>th</sup> National Development Plan. The Gondwana Etosha King Nehale Lodge will be located in the central northern part of Namibia as depicted on the map in **Error! Reference source not found.**

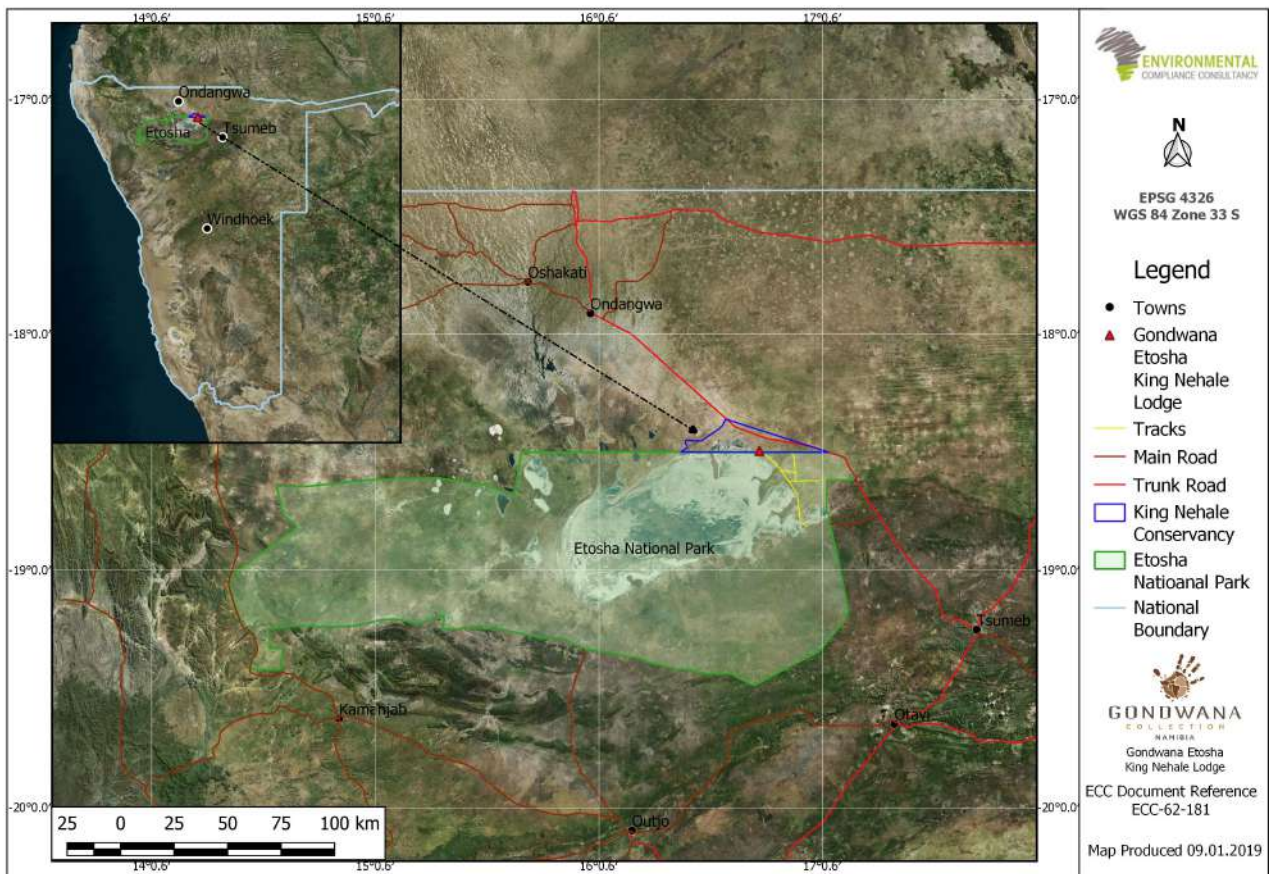


Figure 1: Planned location for Gondwana Etosha King Nehale Lodge

### 3.2.ALTERNATIVES AND HIGH LEVEL COMPARATIVE ASSESSMENT

#### “No-go” Alternative

The no-go alternative presents the option for not undertaking the planned activity or any of its alternatives. In the event that the planned activities are not conducted, any potential impacts associated with the planned projects will be completely avoided. The Gondwana Etosha King Nehale Lodge has the potential to generate social-economic development in the area. Should the project not proceed the project benefits would not materialise. See Table 3

#### High Level Assessment of Alternatives

The preferred alternative presents the option for proceeding with the planned project, whilst ensuring measures are in place to minimise environmental impacts on site. Site selection for the lodge was an iterative process and several sites were initially identified for the planned lodge development as shown in Figure 2 **Error! Reference source not found.**. A site assessment was conducted, and the alternative sites were evaluated, the outcome of which is presented in Table 3.

**Table 3 – Alternative sites**

OPTIONS	DESCRIPTION / LOCATION	POTENTIAL IMPACTS
No Go	NA	NA
Site 1	Shortest road to be constructed (1km) Near existing gate (no new gate to be constructed) Shortest water pipeline 2.2 km from existing MET waterline Vegetation type status (not threatened) Habitat (not unique)	Habitat alteration
Site 2	Lengthy road to be constructed (site situated 9km from gate) Far from existing gate (9km) (new gate needs to be constructed) Water pipeline construction to be 9 km from existing MET waterline	Habitat alteration
Site 3	Lengthy road to be constructed (4.4km along the fence of the Etosha National Park)	Habitat alteration

	4.4 km water pipeline to be constructed along fence	
Site 4	Lengthy road to be constructed (4.8 km along the fence of the Etosha National Park)  4.8 km water pipeline to be constructed along fence	Habitat alteration

Various factors were considered in the selection process such as environmental footprint, existing infrastructure and resources.

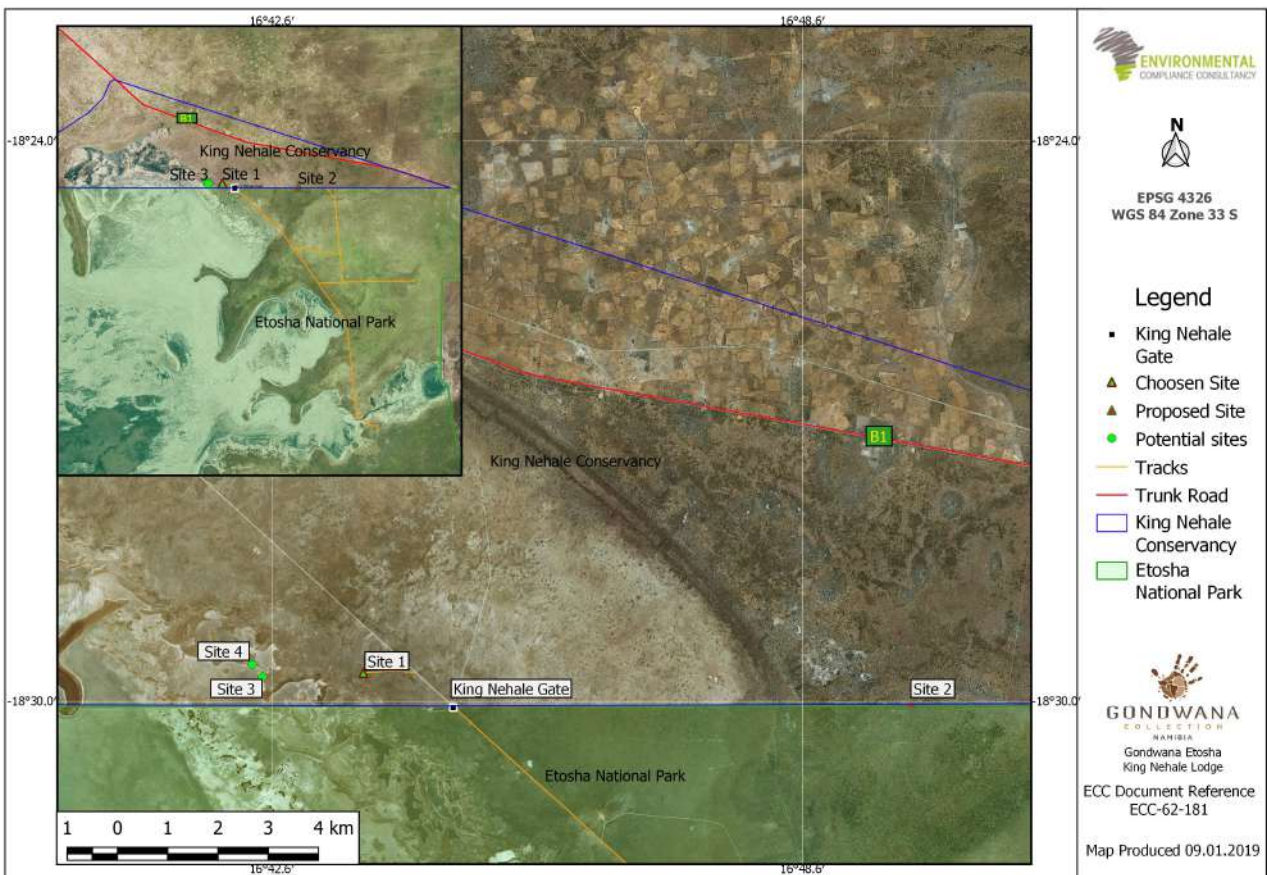


Figure 2: Alternative sites considered for lodge development

The findings of the site assessment indicated that Site 1 is the preferred site; the vegetation type on site is not threatened and no irreplaceable habitat will be damaged due to the lodge development. The final site and design as shown in **Error! Reference source not found.** was selected in order to minimise the environmental footprint, the selected site does not require a long road to be constructed nor a long powerline. The preferred site is closest to the existing gate; therefore, a new gate does not need to be constructed as was the case with previously considered sites. The planned construction methods and lodge design ensures that impacts on the environment are minimal.

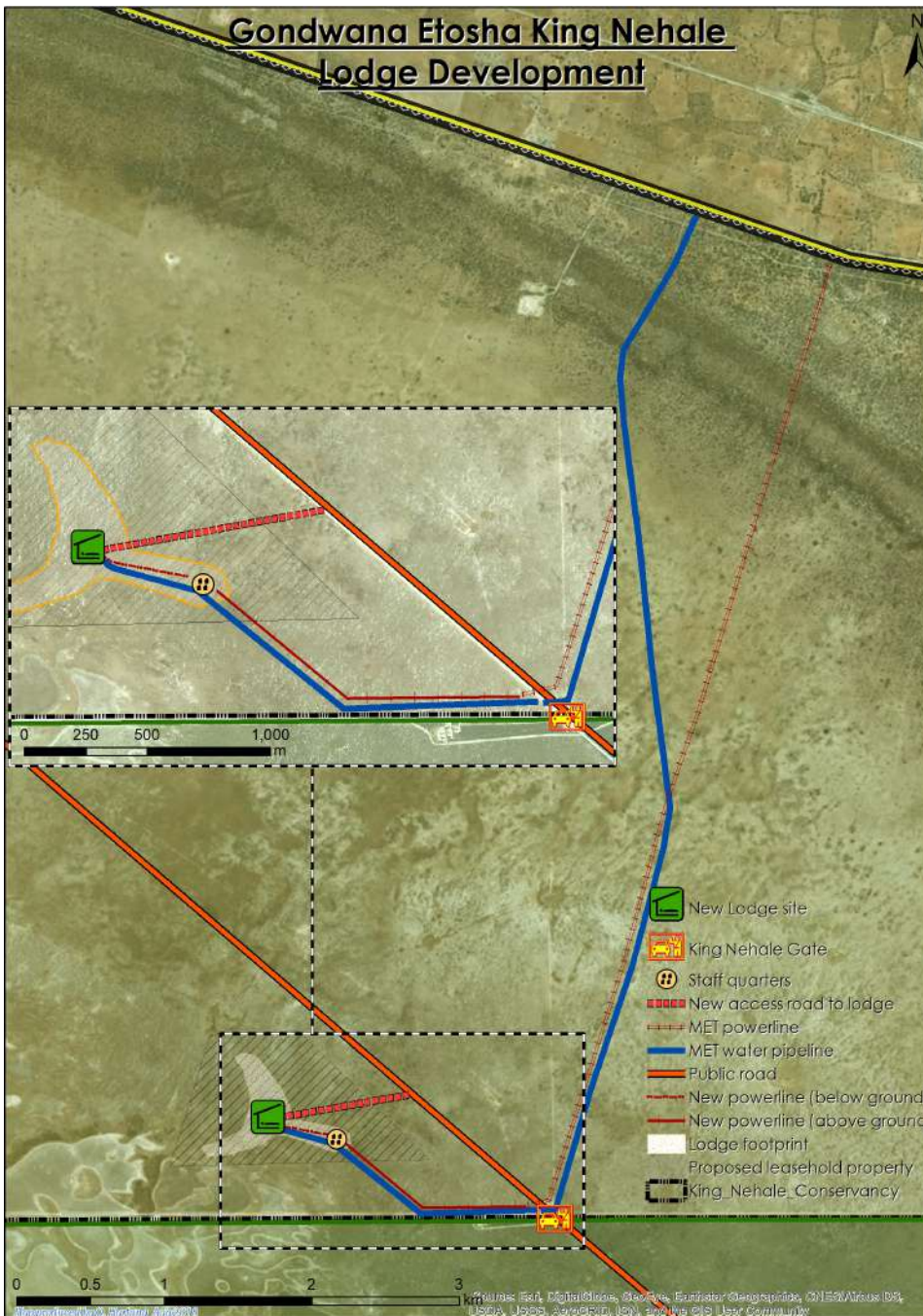


Figure 3: Final selected lodge site location

### 3.3. PLANNED PROJECT

The planned development entails the construction of tourist accommodation consisting of the following;

- Thirty- two (32) Guest rooms, each with an en-suite bathroom, external shower, private patio, splash pool
- Eight (8) family units with en-suite bathrooms, external showers, splash pools and private patio's
- Staff housing for up to forty staff, managers and supervisors
- Power line to provide electricity
- Water pipeline to convey fresh water from the Namwater supply waterline
- Room for back-up generator
- Entrance road, 1km
- Workers campsite during construction phase
- Removal of natural resources (sand /soil) for construction if required
- Water storage tanks, and
- Sewerage recycling plant.

The lodge will be constructed using sandbags which are a cheaper and eco-friendly alternative to bricks as shown in Figure 4 . This method of construction is best suited for remote sites because of the use of ecologically sound and natural materials. The method leaves a very low carbon footprint and unskilled local labour can be used during the construction. Other recycled material which will be used for the for the construction of the lodge include recycled glass for paved walkways and parking lots. The planned final design is shown in Figure 5.



Figure 4: Planned construction method



Figure 5: Planned final lodge design

### 3.3.1. WORKERS AND ACCOMMODATION

During the construction phase of 18 months, up to seventy (70) temporary employment opportunities will be created. A campsite is to be set up as illustrated in during the construction phase to accommodate workers. Once the lodge moves into operation up to forty (40) people will be permanently employed and accommodated at the lodge. Employment will be sourced locally as far as practically possible.

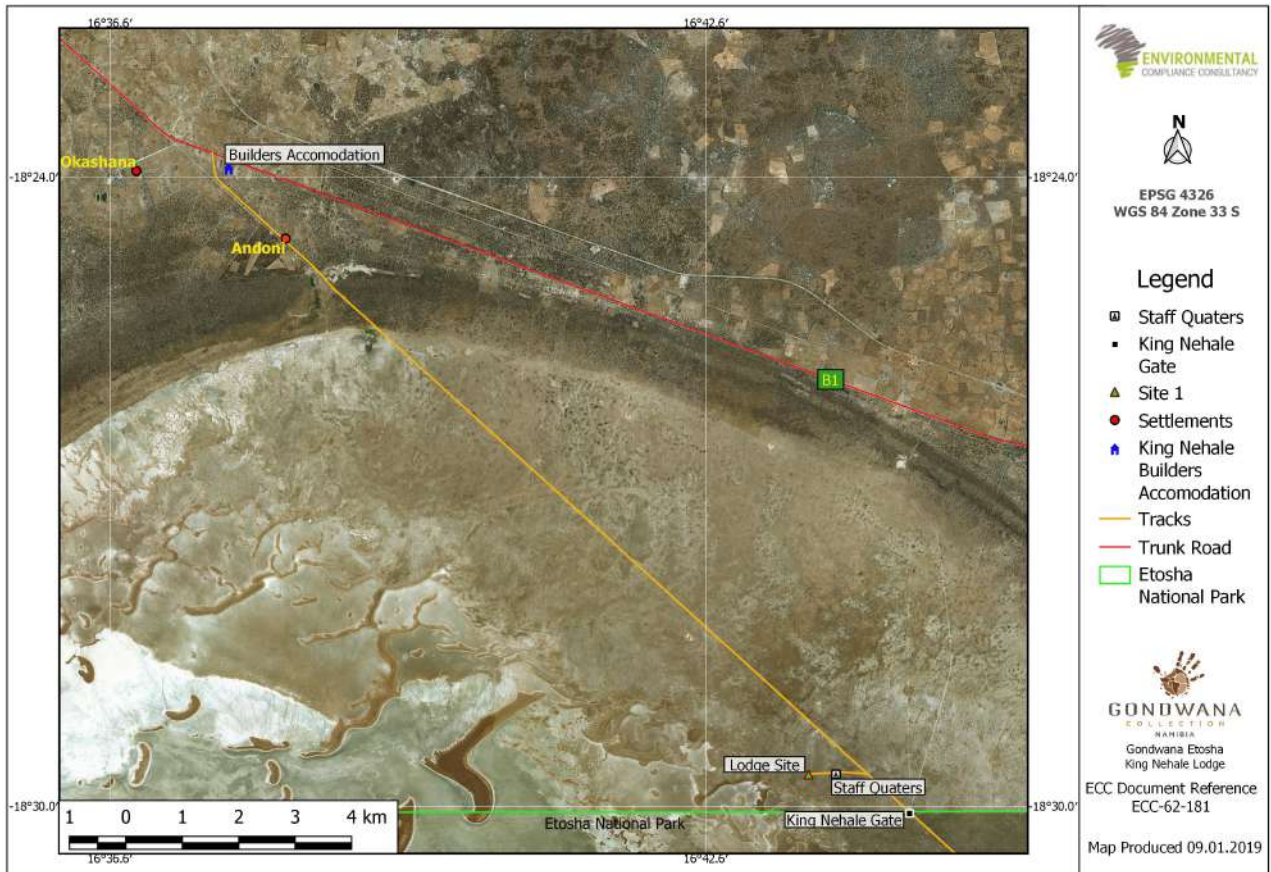


Figure 6: Accommodation to be constructed for workers during the construction period

### 3.3.2. RESOURCE USE AND WASTE MANAGEMENT

#### WASTE

All waste which may attract scavengers to the site shall be stored in a location where it cannot be accessed. Waste will then be separated and stored at the staff quarters where it will be transported to the nearest recycling plant. Waste that cannot be recycled will be transported to the nearest dumpsite. The sludge from the sewerage system will be disposed of at an approved site. The organic compostable waste will be decomposed in a warm compost tank.

#### ELECTRICITY

NamPower currently has a powerline near the to the preferred site as shown in Figure 7. Energy will be sourced from NamPower in conjunction with the use of solar energy. Solar panel roofing will be located at the car park.



**Figure 7: Existing powerline**

#### **WATER**

Water will be sourced via Namwater via a privately installed water pipeline. Currently, there is a Namwater meter and borehole/pipeline connection (See Figure 8) along the B1 road 9km from the planned site. In order to save water, water saving devices will be used in the toilets and low flow shower heads and taps will be installed. The predicted Average Daily Demand (ADD) for the development is outlined in Table 4.

**Table 4 - Maximum average daily water demand by the Namib Pod, based on 100% occupancy**

DESCRIPTION	UNIT	QUANTITY	ADD (PAC)	TOTAL ADD (L/DAY)
Guests	Person	96	170	16 320
Staff	Person	24	170	4 080
Services			5000	5 000
<b>Total at 100% occupancy</b>				<b>25 400</b>

A trickling filter sewerage plant or a similar alternative will be used for the treatment of sewerage and waste water. This will be located near the staff accommodation. Two septic tanks will be constructed near the guest rooms from where water will be pumped to the sewerage plant. Treated water will be returned to the ground via a soak away.





**Figure 8: NamWater meter and borehole connection.**

#### **BUILDING MATERIAL**

The sand and gravel required during the construction phase will be sourced from an existing borrow pit which is under the management of the Omuthiya Town Council.

#### **3.4. LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS**

In line with EIA best practice, assumptions have been made based on realistic worst-case scenarios, thereby ensuring that the worst-case potential environmental impacts are identified and assessed.

In undertaking this investigation, the following has been assumed;

- The information provided by the client is accurate, and
- Should the project be authorised the proponent will implement any recommendations and mitigation measures outlined in this assessment

## **4. BIO-PHYSICAL AND SOCIO-ECONOMIC ENVIRONMENT**

The project location is in the King Nehale Conservancy in the Oshikoto Region, Namibia. The conservancy covers an area of 508.34km<sup>2</sup> of which 1.09km<sup>2</sup> is planned for the lodge property development. The planned development is approximately 2km to the Etosha King Nehale Gate, therefore existing infrastructure is in place to some extent. The access road to the lodge will be developed 16 km from the B1 road along the district road D3646. The access road to the lodge is planned to be approximately 1km from D3646.

#### 4.1. CLIMATE & RAINFALL

Namibia receives approximately 300 days of sunshine per annum. Average summer temperatures range from 20 – 34 degrees Celsius. In winter average daytime temperatures range between 18 – 22 degrees Celsius. The project site is situated in the Oshikoto Region, Namibia which has an average rainfall of 350mm – 550mm. The rainy season is between November and April. The average temperature ranges from 20°C -28°C from Winter to Summer.

#### 4.2. LANDSCAPE AND TOPOGRAPHY

The planned project site is relatively flat with little to no elevated areas as shown in Figure 9. The elevation above sea level is 1001-1100m. The average annual rainfall is 350mm- 550mm. The rainy season is between November and April. The average temperature ranges from 20°C -28°C from Winter to Summer.



**Figure 9: Proposed project site**

#### 4.3. BIODIVERSITY – FLORA

The construction and operational phases of the proposed development could potentially impact on the bio-physical environment, because of habitat disruption. The planned site is situated in the Acacia tree and shrub savanna sub biome consisting of the Karstveld vegetation type which is mostly dominated by mixed woodland (Mendelsohn et al., 2003). The project site is a plain area with the dominant flora on site being grasses as shown in Figure 10. No plant species of high conservation value were identified on/ or within the preferred site boundary during the site visit. Appendix C shows the species of biodiversity found in the vicinity of the Gondwana Etosha King Nehale Lodge – North Central Namibia.



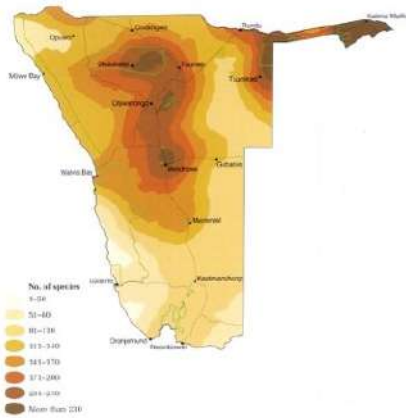
Figure 10: Grass species found on the planned project site

#### 4.4. BIODIVERSITY – FAUNA

The conservancy is rich in a variety of wildlife species as well as locally rare species which are not often found in the conservancy but need special conservancy attention such as lions, black rhino's, caracal, elephants, leopards and ostriches (King Nehale status summary and natural resource report , 2014). Game species found in the conservancy include; springbok, hyena, blue wildebeest, jackal and guinea fowl. Appendix C shows the species of vertebrates and invertebrates found in the vicinity of the Gondwana Etosha King Nehale Lodge – North Central Namibia.

##### 4.4.1. BIRD DIVERSITY

The planned project location is rich in a range of bird species (201-230) as shown in **Error! Reference source not found.** The proposed lodge site is in close proximity to the known flight paths of birds between the Andoni waterholes and the surrounding areas. This area is home to the blue crane which is globally vulnerable and critically endangered in Namibia. The wattled crane is also endangered in Namibia and visits the Etosha National Park regularly. A Detailed list of avian diversity can be found in Appendix C and proposed mitigation measures for bird-powerline interactions are outlined in the ESMP.



**Figure 11: map showing bird species in Namibia (Mendelsohn et al., 2003)**

#### 4.5. SURFACE AND GROUND WATER

The planned site is located in the Etosha catchment area. Wells/springs are located in the vicinity, but not within the preferred site boundary. The image below shows a well located near the planned lodge site.



**Figure 12: Well near planned project site**

#### 4.6. SOILS AND GEOLOGY

The soil type on the planned project site is mostly unconsolidated to semi consolidated sand, gravel and silt, locally calcrete. Figure 13 shows the soil at the planned project site.



**Figure 13: Soil at planned project site**

#### 4.7. SOCIAL ASPECTS

The nearest receptors are located at the Etosha King Nehale Gate, which is approximately 2km from the lodge site. The Conservancy employs 4 staff members. One of the biggest threats to the conservancy benefits at present is commercial poaching, with the rates of commercial poaching peaking in 2009 and steeply reducing since, from thirty-five (35) incidents of commercial poaching in 2009 to three (3) incidents in 2014 (King Nehale status summary and natural resource report, 2014). The predominant land use in the conservancy is hunting, cattle farming is also carried out within the conservancy.

#### 4.8. ECONOMIC ASPECTS

An audit done on the King Nehale Conservancy in 2014 indicated that the total returns in 2014 from the conservancy was N\$ 74 720 of which 88% was combined hunting returns (King Nehale status summary and natural resource report, 2014). The planned project presents several economic benefits for the area in terms of increased tourism activity and employment creation, as seventy people will be employed during the construction phase and forty (40) people will be employed once the lodge is operational.

## 5. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### 5.1. THE ASSESSMENT PROCESS

The EIA methodology applied to this EIA has been developed using the IFC standards and models, in particular Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017) (International Finance Corporation, 2012); Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008); international and national best practice; and over 25 years of combined EIA experience.

The basic assessment project plan is illustrated in Figure 14 and detailed further in the subsequent sections.

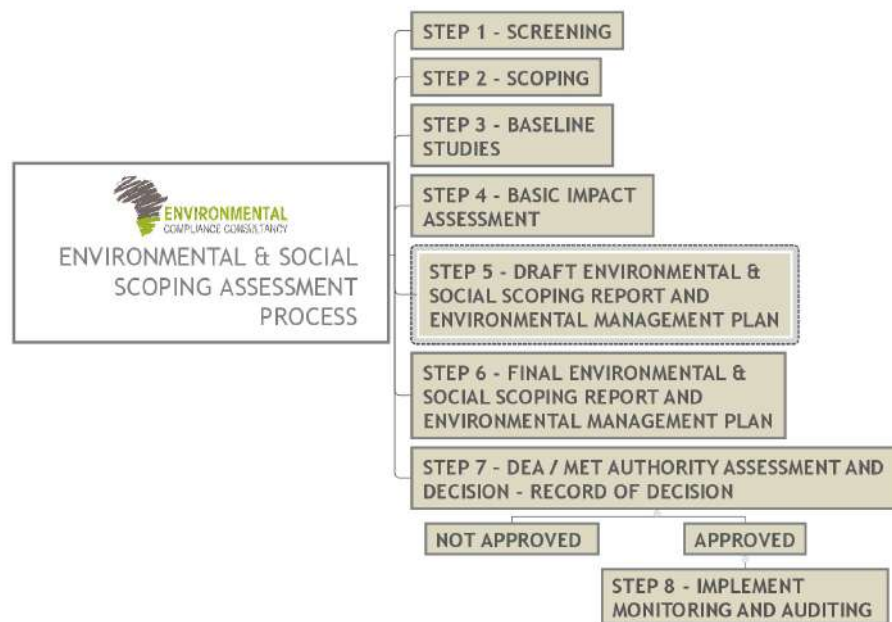


Figure 14 – EIA Scoping Process

#### 5.1.1. SCREENING OF THE PLANNED PROJECT

The first stages of the EIA process were to register the project with the Competent Authority and undertake a screening exercise. The screening exercise determined that the planned project constituted listed activities in terms of the Environmental Management Act, 2007 and associated Regulations. During this process, the location, scale and duration of project activities was considered and any potential risks to the receiving environment were listed. A terms of reference for the environmental assessment was drawn up.

#### 5.1.2. SCOPING OF THE ENVIRONMENTAL ASSESSMENT

No detailed or full EIA was deemed necessary at the end of the screening phase. A high-level assessment to identify potential impacts; and confirm if further investigation was required. The severity of potential significant effects was assigned, and appropriate mitigations have been suggested. This report presents the findings of the scoping assessment. The conclusion summary is presented in Section 6.

##### 5.1.2.1. BASELINE STUDIES

A baseline study was undertaken as part of the scoping phase. It involved collecting all pertinent information from the current status of the receiving environment. This provided a baseline where changes that occur as a result of the planned project can be compared to it.

For the planned project, baseline information was obtained through desk-based study and a site inspection. The baseline focused on the environmental receptors that could be affected by the planned project. The baseline was presented in Section 4.

##### 5.1.2.2. IMPACT PREDICTION AND EVALUATION

Impact prediction and evaluation involves predicting the possible changes to the environment as a result of the development/project. The methodology presented in Appendix D was applied to determine the magnitude of impact and whether or not the impact was considered significant or if further investigation was required. The findings of the high-level assessment are presented in Section 5.3.

### 5.2. CONSULTATION

Public participation and consultation as stipulated in Section 21 of the Environmental Management Act, 2007 and associated regulations for a project that requires an Environmental Clearance Certificate was carried out. Consultation was a compulsory and critical component of the scoping phase.

A key aim of the consultation process was to inform stakeholders and interested and affected parties (I&AP) about the planned project. Detailed consultation processes were conducted by Gondwana Pty Ltd; this included meeting with the Regional Council and the Traditional Authorities. The methods undertaken for the planned project are detailed as follows, which are in line with the requirements of the EIA Regulations.

#### 5.2.1. NEWSPAPER ADVERTISEMENTS

Notices regarding the planned project and associated activities were circulated in two newspapers namely the 'Namibian' and 'Republikein' on the 5th and 11th of October 2018. The purpose of this was to commence the consultation process and enable I&APs to register an interest in the project. The advertisements can be seen in Appendix E.

#### 5.2.2. BACKGROUND INFORMATION DOCUMENT

The Background Information Document (BID) presented a high-level description of the planned project; set out the EIA process and when and how consultation was undertaken, and contact details for further enquiries were made available to all registered I&APs. The BID can be found in Appendix E.

#### 5.2.3. SITE NOTICES

The site notice ensured that neighbouring properties and stakeholders were made aware of the planned project. The notice was set up at the planned lodge boundary as rendered in Appendix E.

#### 5.2.4. CONSULTATION FEEDBACK

Three people registered as I&AP's for the project, comments and responses from the registered I&AP's on the scoping report and ESMP are illustrated in appendix E1.

### 5.3. SCOPING ASSESSMENT FINDINGS

When undertaking the scoping exercise, the design of the planned project and best practice measures were considered to ensure the likely significant effects and any required additional mitigation measures were identified. The following topics were considered during the scoping phase:

- Surface water and groundwater (including geomorphology)
- Soils
- Landscape (visual impacts, change in landscape, sense of place)
- Socio-economics (employment, local businesses, community, demographics & tourism, land use)
- Noise
- Biodiversity (fauna and flora)
- Human environment (infrastructural services, traffic and transport)
- Air Quality (including dust)
- Cultural Heritage and Palaeontological receptors

The source-pathway-receptor model was used to evaluate the potential impacts of the planned project and determine if further assessment is required.



- Source of potential impact – where does the impact come from, e.g. the activity, ground excavation, which emits dust.
- The potential pathway – how can the pollution / impact travel through the environment e.g. wind direction and speed.
- The receptor and effect – what can be affected and how e.g. water body, sedimentation, water quality affected.

The findings of the scoping assessment phase are set out in Table 5

**Table 5 - Findings of scoping assessment phase**

ENVIRONMENTAL OR SOCIAL IMPACT DESCRIPTION (HAZARD/RISK)	RECEPTOR	TYPE	PROJECT PHASE	EXTENT	DURATION	REVERSIBILITY	SENSITIVITY BIOPHYSICAL ENVIRONMENT	SENSITIVITY SOCIAL ENVIRONMENT	LIKELIHOOD	RESIDUAL IMPACT AFTER MITIGATION
Vegetation clearance for construction of buildings, roads/tracks.	Terrestrial ecology and biodiversity	Direct	Construction	Local	Short Term	Partly Reversible	Small / Minor	Insignificant / Low	Certain	Minor (3)
Potential pollution of groundwater by hydrocarbons during construction	Groundwater quality	Indirect	Construction	Local	Temporary	Partly Reversible	Insignificant / Low	NA	Unlikely	Low (1)
Chemicals and pathogens pollute groundwater when containment of sewage treatment plant is breached, or raw sewage is disposed on/near the site	Groundwater quality	Indirect	Construction and Operations	Local	Temporary	Reversible	Small / Minor	NA	Unlikely	Low (1)

ENVIRONMENTAL OR SOCIAL IMPACT DESCRIPTION (HAZARD/RISK)	RECEPTOR	TYPE	PROJECT PHASE	EXTENT	DURATION	REVERSIBILITY	SENSITIVITY BIOPHYSICAL ENVIRONMENT	SENSITIVITY SOCIAL ENVIRONMENT	LIKELIHOOD	RESIDUAL IMPACT AFTER MITIGATION
Reduction in soil quality	Soil	Direct	Construction	Local	Short Term	Partly Reversible	Small / Minor	NA	Likely	Low (2)
Changes to aesthetics-disturbed view from the road (tourists and local community)	Topography and Landscape	Indirect	Construction and Operations	Local	Long Term	Irreversible	NA	Insignificant / Low	Likely	Low (1)
Light may cause disturbance/disorientation of animals at night	Terrestrial ecology and biodiversity	Direct	Operations	Local	Long Term	NA	Small / Minor	NA	Likely	Low (2)
Noise and lights may act as a distraction/attraction to different species.	Terrestrial ecology and biodiversity	Direct	Construction and Operations	Local	Long Term	NA	Insignificant / Low	NA	Unlikely	Low (1)
Increased pollution such as plastic etc.	Built Environment	Direct	Construction and Operations	Local	Long Term	Reversible	Insignificant / Low	Insignificant / Low	Unlikely	Low (1)

ENVIRONMENTAL OR SOCIAL IMPACT DESCRIPTION (HAZARD/RISK)	RECEPTOR	TYPE	PROJECT PHASE	EXTENT	DURATION	REVERSIBILITY	SENSITIVITY BIOPHYSICAL ENVIRONMENT	SENSITIVITY SOCIAL ENVIRONMENT	LIKELIHOOD	RESIDUAL IMPACT AFTER MITIGATION
Impacts on birds due to powerline interactions	Terrestrial ecology and biodiversity	Indirect	Operations	International	Long Term	Partly Reversible	Small / Minor	NA	Likely	Low (1)
Increased human activity can impact biodiversity security	Terrestrial ecology and biodiversity	Direct	Construction and Operations	International	Long Term	NA	Moderate / Medium	NA	Likely	Minor (3)
Impacts on flora and fauna due to dust	Terrestrial ecology and biodiversity	Direct	Construction	Local	Long Term	Reversible	Insignificant / Low	NA	Unlikely	Low (1)
Creation of local jobs (70) during the construction phase	Socio Economic Activities	Positive	Construction	Regional	Temporary	NA	NA	Small / Minor	Certain	Moderate (6)

ENVIRONMENTAL OR SOCIAL IMPACT DESCRIPTION (HAZARD/RISK)	RECEPTOR	TYPE	PROJECT PHASE	EXTENT	DURATION	REVERSIBILITY	SENSITIVITY BIOPHYSICAL ENVIRONMENT	SENSITIVITY SOCIAL ENVIRONMENT	LIKELIHOOD	RESIDUAL IMPACT AFTER MITIGATION
Construction noise impacting neighboring residents	Community	Direct	Construction	Local	Short Term	NA	NA	Small / Minor	Unlikely	Low (1)
Operational noise impacting neighboring residents	Community	Direct	Operations	Local	Long Term	NA	NA	Insignificant / Low	Unlikely	Low (1)
Neighboring Properties visual amenity impacted by development	Topography and Landscape	Direct	Construction and Operations	Local	Long Term	Irreversible	NA	Insignificant / Low	Unlikely	Low (1)
Impacts on local community due to increased income generation	Socio Economic Activities	Positive	Construction and Operations	Local	Long Term	NA	NA	Small / Minor	Certain	Moderate (6)
Knowledge and technology skills transfer to workers during the operational phase and training of local employees	Socio Economic Activities	Positive	Construction and Operations	Regional	Long Term	NA	Small / Minor	Small / Minor	Likely	Minor (4)
Potential risk for social interactions and	Socio Economic Activities	Indirect	Construction and Operations	Regional	Long Term	NA	NA	Small / Minor	Unlikely	Minor (4)

ENVIRONMENTAL OR SOCIAL IMPACT DESCRIPTION (HAZARD/RISK)	RECEPTOR	TYPE	PROJECT PHASE	EXTENT	DURATION	REVERSIBILITY	SENSITIVITY BIOPHYSICAL ENVIRONMENT	SENSITIVITY SOCIAL ENVIRONMENT	LIKELIHOOD	RESIDUAL IMPACT AFTER MITIGATION
transmission of infectious diseases										
Potential inconvenience due to operational noise to people utilizing small buildings (offices) at the Etosha King Nehale Gate	Community	Indirect	Operations	Local	Long Term	NA	NA	Insignificant / Low	Unlikely	Low (1)
Creation of local jobs (40) during the operational phase	Socio Economic Activities	Positive	Operations	Regional	Long Term	NA	NA	Small / Minor	Certain	Moderate (6)
Potential for soil contamination due to breach of containment of sewage treatment plant	Soil	Indirect	Operations	Local	Long Term	Reversible	Small / Minor	NA	Unlikely	Low (1)
Potential for soil contamination due to hydrocarbon spills	Soil	Direct	Construction	On-Site	Short Term	Reversible	Small / Minor	NA	Unlikely	Low (1)
Sand extraction for construction activities	Soil	Direct	Construction	Local	Short Term	NA	Insignificant / Low	NA	Certain	Minor (3)
Potential to unearth archaeological remains	Heritage	Direct	Construction	National	Temporary	NA	NA	Small / Minor	Unlikely	Low (1)

The findings of the scoping assessment indicate that the residual impacts of the planned project are within reasonable limits and no impact with a high risk has been identified. Mitigation and management measures are set out in the ESMP and through the implementation of these measures a significant reduction can be realized on the residual impacts of the planned project. A moderate 6 rating can be achieved in the socio-economic aspects of the project, which relates to the increase in employment and income generated for the local community from the planned project. The overall environmental impact is negative and of low significance while the social impacts are considered to be positive and significant, aligned to the 5th National Development Plan of Namibia.

#### 5.4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The ESMP for the planned project is presented in Appendix A. It provides management options to ensure the impacts of the planned project are minimised. An ESMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary.

The management measures should be adhered to during all stages of the exploration activities. All persons involved and partaking in the planned activities should be made aware of the measures outlined in the ESMP to ensure activities are conducted in an environmentally sound manner.

The objectives of the ESMP are:

- To include all components of the development and operations of the project
- To prescribe the best practicable control methods to lessen the environmental impacts associated with the project
- To monitor and audit the performance of operational personnel in applying such controls, and
- To ensure that appropriate environmental training is provided to responsible operational personnel.

## 6. CONCLUSIONS

The environmental assessment that was undertaken for the planned project followed ECC's EIA methodology to identify if there is potential for significant effects to occur as a result of the planned project. Through the scoping process, no significant impacts to the environmental impacts have been identified. Various best practices and mitigation measures have been identified to avoid and reduce effects as far as reasonably practicable, as well as ensure the environment is protected and unforeseen effects are avoided.

**On this basis, it is of the opinion of ECC that an Environmental Clearance Certificate could be issued, on condition that the management and mitigation measures specified in the ESMP are implemented and adhered to.**



## 7. REFERENCES

International Finance Corporation. (2012). *IFC Performance Standards on Environmental and Social Sustainability*. The World Bank.

International Finance Corporation. (2017). *A Guide to Biodiversity for the Private Sector. The Social and Environmental Impact Assessment Process*.

(2014). *King Nehale status summary and natural resource report* .

Mendelsohn et al., J. (2003). *Atlas of Namibia*. David Philip.

Ministry of Environment and Tourism, Ministry of Mines and Energy. (2018). *National Policy on the Prospecting and Mining in Protected Areas* . Windhoek: Ministry of Environment and Tourism, Ministry of Mines and Ener.

## **APPENDIX A: ENVIRONMENTAL MANAGEMENT PLAN**

## **APPENDIX B: ECC CVS**



# Stephan Bezuidenhout

Managing Director



Hello! :)

## ABOUT ME

**Name**

Jacobus Stephan Bezuidenhout  
- But you can call me Stephan -

**Born**

11 April 1989

**Phone**

+27 74 181 8891 or  
+264 81 262 7872

**Email**

stephan@enviroconsultants.co.za

**Website**

www.enviroconsultants.co.za

Contact me!

## How to reach me!

+264 81 262 7872 

Stephan.bezuidenhout 

+27741818891 

Stephan Bezuidenhout 



## Education & Qualifications

University of Pretoria  
South Africa  
2012

Bachelor of Applied Science Hons -  
Environmental Management

University of Stellenbosch  
South Africa  
2008

Bachelors in Geography and Environment

**Additional Qualifications:**

- EcoNomics Sustainable Design Training Programme – Worley Parsons Int.
- Snake Bite and Snake Handling
- Level 1 & 2 First Aid
- Industrial Environmental Compliance

**Publications:**

*"Some ecological side-effects of chemical and physical bush clearing in a southern African rangeland ecosystem" in the South African Journal of Botany. Published on 14 Aug 2015.*



## Experience & Work History

**Current**

**Managing Director**

- Environmental Compliance Consultancy
- Providing professional consulting services to clients in Namibia with particular focus on approvals, ECCs, reporting and compliance.
- ECC Approvals
- Mine Closure Plans
- Rehabilitation
- Pipeline projects
- Cultural Change programmes
- IMS (ISO14001 and 18001)

**Feb 2015 - Current**

**ENVIRONMENTAL CONSULTANT & PRACTITIONER**

Clients in SA & Namibia

*In February 2015 an opportunity came about to launch my own business, Environmental Compliance Consultancy (ECC). During this time I have worked alongside Savannah Environmental (Pty) LTD and other consultancies to deliver several environmental projects including:*

- Abengoa Solar SA, Kaxu Solar One (100MW) Concentrating Solar Plants (CSP) Trough Environmental Control Officer during commissioning and rehabilitation phases Northern Cape Province, South Africa



# Stephan Bezuidenhout

Managing Director  
+264 81 262 7872

## References

*Feel free to ask the boss :)*

**SALOME BEESLAAR**  
Environmental Practitioner  
Pr.Sci.Nat: 400385/14

**ESCA COETZEE**  
Environmental Scientist  
Sasol Technology

**PHIL BARKER**  
Pipeline Construction Superintendent  
Worley Parsons

*Or ask those who have worked for me?*

**Michael Moreland**  
Environmental Scientist  
CSP Solar Energy Projects

## Professional Associations

- South African Institute of Ecologists and Environmental Scientists (SAIE&ES)
- Environmental Assessment Practitioners Association of Namibia (EAPAN#172).

## Fun Facts:

- Keen fisherman (Big Game Fish)
- Passionate Hunter & Conservationist
- 21ft vessel certified skipper
- Summated Kilimanjaro
- Have survived scorpion stings and a snakebite!
- Did I mention I love camping?

## Words I live by:

**'Do what makes you happy  
the rest will follow'**



## Experience & Work History

### Feb 2015 - Current Continued...

- **Konkoonsies II PV Solar Energy Facility, On-site substation and a 132kV power line** Environmental Assessment Practitioner during EIA process Northern Cape Province, South Africa
- **Abengoa Solar SA Paulputs CSP (Pty) Ltd. 150 MW CSP Tower** Environmental Assessment Practitioner during EIA Process Northern Cape Province, South Africa
- **Abengoa Solar SA, Xina Solar One (200 MW) CSP Trough** Environmental Control Officer during construction phase. Northern Cape Province, South Africa
- **Abengoa Solar SA, Khi Solar One (50 MW) CSP Tower.** Environmental Control Officer during commissioning and rehabilitation phases. Northern Cape Province, South Africa for Abengoa Solar
- **Isondlo Project Support (IPS) (Pty) Ltd.** Soil Remediation and commissioning report of NGALA Camp. Gauteng, South Africa
- **Berekisanang Empowerment Farm.** Annual external Water Use Licence audit and 70 hectare agricultural development. Northern Cape, South Africa.
- **Ebeneaser Empowerment Farm.** Annual External Water Use Licence Audit. Northern Cape, South Africa

### Jan 2013 - Feb 2015 Environmental Coordinator

ROMPCO PIPELINE – Worley Parsons  
Mozambique and South Africa

- Experience was gained in the oil & gas and construction industries. The pipeline length was 127km. Application and obtaining of environmental permits encompassed a large section of the role. The position also required the management of an on-site environmental team. It was required to meet with different governmental departments and build relationships with key individuals to allow swift communication and permit a platform for transparency. Ensured compliance with National, best neighbouring as well as IFC legislation and standards. Review and submission of monthly reports and monthly audits was also a requirement of the position.



# Johanna Ithindi

## ENVIRONMENTAL GRADUATE



Hello! :)

### ABOUT ME

**Name**

Johanna Ithindi

**Born**

08 November 1990

**Phone**

+264 81 693 1329

**Email**

johanna@eccenvironmental.com

**Website**

www.eccenvironmental.com

Contact me!

### HOW TO REACH ME

+264 81 693 1329 

+264 81 693 1329 

### REFERENCES

**JESSICA MOONEY**  
Environmental and Safety Consultant

**NNENESI KGABI**  
Professor  
Namibia University of Science and  
Technology



### Education & Qualifications

Namibia University of  
Science and  
Technology,  
Namibia  
2016

Master of Integrated Water Resources  
Management

Polytechnic of Namibia  
2014

Bachelor of Environmental Health Sciences



### Experience & Work History

June 2018-  
Present

**Environmental Graduate**

- Environmental Compliance Consultancy
  - Draft and develop the best practice mining guide for the Namibian mining sector
  - Environmental Assessment activities
  - Participate in environmental requirements of projects, including licences, monitoring and reporting

Jun 2016 –  
Feb 2017

**Research Intern**

- Namibia University of Science and Technology
  - Collection and management of research data
  - Data analysis and report writing
  - Organize workshops for stakeholders

Mar 2016 –  
Jun 2016

**Research Assistant**

- Namibia University of Science and Technology
  - Coordinate project activities for the Environmental Engineering Master Programme,
  - Assisting staff in the department with research activities.
  - Compiling and documentation of program material.

Feb 2014 –  
Dec 2014

**Laboratory Technologist**

- Polytechnic of Namibia
  - Coordinate student trips and excursions, tutor and Prepare practical for students
  - Procurement of laboratory equipment and consumables
  - Coordinate and ensure the placement of students for Work Integrated Learning (WIL)

### Words I live by:

*'You only fail when you stop trying'*



# Charne' Eimann

## JUNIOR "ENVIRONMENTAL AND MINING PRACTITIONER"



Hello! :)

### ABOUT ME

**Name**  
Charne' Eimann

**Born**  
25 May 1993

**Phone**  
+264 81 210 3970

**Email**  
charne@eccenvironmental.com

**Website**  
www.eccenvironmental.com

Contact me!

### HOW TO REACH ME

+264 81 210 3970 

+264 81 210 3970 

### REFERENCES

**JESSICA MOONEY**  
Environmental and Safety Consultant

**DUAN CAMPBELL**  
Long -term Planner  
Rosh Pinah Zinc Corporation



### Education & Qualifications

- Namibia University of Science and Technology, Namibia 2017
- Bachelor of Engineering (B-ENG) in Mining**
- Major subjects include: Drilling and blasting, Surface mining, Underground mining and Environmental Engineering
  - Carried out Research on the application of X-Ray Florescent Technology at the Rosh Pinah Zinc Mine



### Experience & Work

#### History

August 2018- Present

#### Junior "Environmental and Mining" Practitioner

- Environmental Compliance Consultancy  
Draft and develop the best practice mining guide for the Namibian mining sector
- Additional work includes**
- Drafting EIA adverts and BID documents
  - Assisting in the development of scoping reports and Environmental Management Plans for exploration projects

Feb 2018 – August 2018

#### Graduate Mining and Environment Environmental Compliance Consultancy

- Draft and develop Namibia's first Environmental Best Practice Guide for the Mining sector.

#### Additional work includes:

- Adverts, Background Information Documents, Scoping Environmental Impact Assessment and Environmental Management Plan for Sand Mining Project;
- Drafting EIA Adverts for various projects;
- Engage with various stakeholders in the mining industry
- Attendance of stakeholder meetings and draft minutes

June 2017 – August 2017

#### Intern Rosh Zinc Corporation

- I carried out my final year research at the Rosh Pinah Zinc Mine whilst assisting with duties including
- Accompanying blasting and charging teams underground to assist in blasting and charging operation and assisting with geological mapping
  - Working with the surveying department to estimate the mines low grade resources

### Words I live by:

*'The mind is everything, what you think is what you become'*



# Michael Matengu

Environmental Control Officer and GIS Specialist



*Hello! :)*

## ABOUT ME

**Name**

Michael Matengu

**Born**

19 February 1985

**Phone**

+264 81 213 1704

**Email**

matengu@eccenvironmental.com

**Website**

www.eccenvironmental.com

*Contact me!*

## How to reach me!

+264 81 213 1704 

+264 81 213 1704 



## Education & Qualifications

University  
Of Namibia  
2003-2006

Bachelor of Applied Science -Environmental  
Management  
April 2010

Additional  
Qualifications

Institute of Business Management  
Certificate in Health, Safety and Security Administ  
2016-2017

Advanced Learning Interactive System  
Diploma Geographic Information Systems (GIS)  
2013 - 2014



## Experience & Work History

Current

Jul 2018 – Present

### Environmental Control Officer & GIS Specialist

- Environmental Compliance Consultancy
- Providing professional consulting services to clients in Namibia with focus on mapping and data collection, reporting and compliance.
- Consult and manage projects, including FSC group schemes
- Manage and co-ordinate Geographic Information Systems
- Interpretation of data and mapping
- Site visits and assessments

Aug 2016 –Jan2017

### HSE Manager

- China State Construction and Engineering Corporation (Husab Mine)
- Conducted SHE Inductions of new employees' visitors and contractors on site
- Led relevant safety training for all levels within the business
- Reviewed safety training programs, procedure and policies
- Health and safety inspections
- Ensure all SHE incidents investigations and reporting are completed timely



## APPENDIX C: BIODIVERSITY LIST

### Reptile Diversity

The reptile diversity known, and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge is indicated in Table 1:

**Table 1.** Reptile diversity known and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge – i.e. north-central Namibia.

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status		
			SARDB (2004)	IUCN (2016)	CITES
<b>TURTLES AND TERRAPINS</b>					
<i>Stigmochelys pardalis</i>	Leopard Tortoise	Vulnerable; Peripheral; Protected Game			C2
<i>Psammobates oculiferus</i>	Kalahari Tent Tortoise	Vulnerable; Protected Game			C2
<i>Pelomedusa subrufa</i>	Marsh/Helmeted Terrapin	Secure			C3
<b>SNAKES</b>					
<b>Blind Snakes</b>					
<i>Rhinotyphlops boylei</i>	Boyle's Beaked Blind Snake	Endemic; Secure			
<i>Rhinotyphlops schinzi</i>	Schinz's Beaked Blind Snake	Endemic; Secure	P		
<i>Rhinotyphlops schlegelii</i>	Schlegel's Beaked Blind Snake	Secure			
<b>Thread Snakes</b>					
<i>Leptotyphlops scutifrons</i>	Peters' Thread Snake	Secure			
<b>Pythons</b>					
<i>Python anchietae</i>	Dwarf Python	Endemic; Insufficiently known; Protected game		LC	C2
<i>Python natalensis</i>	Southern African Python	Vulnerable; Peripheral; Protected Game	V		C2
<b>Burrowing Asps</b>					
<i>Atractaspis bibronii</i>	Bibron's Burrowing Asp	Secure			
<i>Atractaspis duerdeni</i>	Duerden's Burrowing Asp	Endemic; Insufficiently known; Rare?			
<b>Purple-glossed Snakes</b>					
<i>Amblyodipsas ventrimaculata</i>	Kalahari Purple-glossed Snake	Secure			
<b>Quill Snouted Snakes</b>					
<i>Xenocalamus bicolor bicolor</i>	Bicoloured Quill-snouted Snake	Secure			
<i>Xenocalamus mechowii</i>	Elongate Quill-snouted Snake	Secure			
<b>Typical Snakes</b>					
<i>Lamprophis fuliginosus</i>	Brown House Snake	Secure			
<i>Lycophidion capense</i>	Cape Wolf Snake	Secure			
<i>Mehelya capensis</i>	Cape File Snake	Secure			
<i>Mehelya vernayi</i>	Angola File Snake	Insufficiently known; Rare?			
<i>Pseudaspis cana</i>	Mole Snake	Secure			
<i>Prosymna bivittata</i>	Two-striped Shovel-snout	Secure			
<i>Prosymna frontalis</i>	South-western Shovel-snout	Endemic; Secure	P		
<i>Psammodromus tritaeniatus</i>	Striped Skaapsteker	Secure			
<i>Psammodromus trigrammus</i>	Western Sand Snake	Endemic; Secure			

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status		
			SARDB (2004)	IUCN (2016)	CITES
<i>Psammophis leightoni trinasalis</i>	Namib Sand Snake	Secure			
<i>Psammophis jallae</i>	Jalla's Sand Snake	Insufficiently known; Rare?	P		
<i>Psammophis subtaeniatus</i>	Stripe-bellied Sand Snake	Secure			
<i>Psammophis brevirostris leopardinus</i>	Leopard/Short-snouted Grass Snake	Secure			
<i>Psammophis mossambicus</i>	Olive Grass Snake	Secure			
<i>Philothamnus semivariatus</i>	Spotted Bush Snake	Secure			
<i>Dasypeltis scabra</i>	Common/Rhombic Egg Eater	Secure			
<i>Telescopus semiannulatus</i>	Eastern Tiger Snake	Secure			
<i>Dispholidus typus</i>	Boomslang	Secure			
<i>Aspidelaps lubricus infuscatus</i>	Coral Snake	Secure			
<i>Aspidelaps scutatus</i>	Shield-nose Snake	Secure			
<i>Elapsoidea semiannulata</i>	Angolan Garter Snake	Secure			
<i>Elapsoidea sunderwallii</i>	Sundevall's Garter Snake	Endemic; Secure			
<i>Naja anchietae</i>	Snouted Cobra	Secure			
<i>Naja mossambica</i>	Mozambique Spitting Cobra	Secure			
<i>Naja nigricincta</i>	Black-necked Spitting Cobra	Endemic; Secure	R		
<i>Dendroaspis polylepis</i>	Black Mamba	Secure			
<i>Bitis arietans</i>	Puff Adder	Secure			
<i>Bitis caudalis</i>	Horned Adder	Secure			
<b>Worm Lizard</b>					
<i>Zygaspis quadrifrons</i>	Kalahari Round-headed Worm Lizard	Secure			
<i>Monopeltis anchietate</i>	Anchieta's Spade-snouted Worm Lizard	Secure			
<i>Monopeltis infuscata</i>	Dusky Spade-snouted Worm Lizard	Secure			
<i>Monopeltis mauricei</i>	Slender Spade-snouted Worm Lizard	Secure			
<b>LIZARDS</b>					
<b>Skinks</b>					
<i>Acontias occidentalis</i>	Percival's Legless Skink	Secure			
<i>Lygosoma sundevallii</i>	Sundevall's Writhing Skink	Secure			
<i>Trachylepis capensis</i>	Cape Skink	Secure			
<i>Trachylepis occidentalis</i>	Western Three-striped Skink	Secure			
<i>Trachylepis spilogaster</i>	Kalahari Tree Skink	Endemic; Secure			
<i>Trachylepis striata wahlbergi</i>	Striped Skink	Secure			
<i>Trachylepis varia</i>	Variable Skink	Secure			
<i>Trachylepis variegata punctulata</i>	Variiegated Skink	Secure			
<i>Panaspis wahlbergii</i>	Wahlberg's Snake-eyed Skink	Endemic; Secure			
<b>Old World Lizards</b>					
<i>Heliobolus lugubris</i>	Bushveld Lizard	Secure			
<i>Ichnotropis capensis</i>	Cape Rough-scaled Lizard	Secure			
<i>Ichnotropis squamulosa</i>	Common Rough-scaled Lizard	Secure			
<i>Nucras intertexta</i>	Spotted Sandveld Lizard	Endemic; Secure			
<i>Nucras holubi</i>	Holub's Sandveld Lizard	Secure			
<i>Pedioplanis lineocellata lineocellata</i>	Spotted Sand Lizard	Endemic; Secure			
<i>Pedioplanis namaquensis</i>	Namaqua Sand Lizard	Secure			
<b>Plated Lizards</b>					
<i>Gerrhosaurus multilineatus</i>	Kalahari Plated Lizard	Secure			

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status		
			SARDB (2004)	IUCN (2016)	CITES
<i>Gerrhosaurus nigrolineatus</i>	Black-lined Plated Lizard	Secure			
<i>Gerrhosaurus validus maltzahni</i>	Giant Plated Lizard	Secure			
<b>Girdled Lizards</b>					
<i>Cordylus jordani</i>	Jordan's Girdled Lizard	Endemic; Secure			C2
<b>Monitors</b>					
<i>Varanus albigularis</i>	Rock or White-throated Monitor	Vulnerable; Peripheral; Protected Game	Safe to Vulnerable		C2
<b>Agama</b>					
<i>Agama aculeata</i>	Ground Agama	Secure			
<i>Agama anchietae</i>	Anchietae's Agama	Secure			
<i>Agama planiceps</i>	Namibian Rock Agama	Endemic; Secure			
<b>Chameleons</b>					
<i>Chamaeleo dilepis</i>	Flap-neck Chameleon	Secure		LC	C2
<b>Geckos</b>					
<i>Lygodactylus bradfieldi</i>	Bradfield's Dwarf Gecko	Endemic; Secure			
<i>Narudasia festiva</i>	Festive Gecko	Endemic; Secure			
<i>Pachydactylus bicolor</i>	Velvety Thick-toed Gecko	Endemic; Secure			
<i>Pachydactylus capensis</i>	Cape Thick-toed Gecko	Endemic; Secure			
<i>Pachydactylus turneri</i>	Turner's Thick-toed Gecko	Secure			
<i>Pachydactylus punctatus</i>	Speckled Thick-toed Gecko	Secure			
<i>Pachydactylus rugosus rugosus</i>	Rough Thick-toed Gecko	Endemic; Secure			
<i>Pachydactylus weberi</i>	Weber's Thick-toed gecko	Endemic			
<i>Ptenopus garrulus garrulus</i>	Common Barking Gecko	Endemic; Secure			

Namibian conservation and legal status according to the Nature Conservation Ordinance No 4 of 1975 (Griffin 2003)

Endemic – includes Southern African Status (Branch 1998)

SARDB (2004): R = Rare; V = Vulnerable; P = Peripheral (South African Red Data Book)

IUCN (2016): LC = Least Concern (most other reptiles have not yet been assessed by the IUCN Red List)

CITES: Appendix 2 or 3 species

**Source for literature review:** Alexander and Marais (2007), Branch (1998), Branch (2008), Boycott and Bourquin 2000, Broadley (1983), Buys and Buys (1983), Cunningham (2006), Griffin (2003), Griffin (2007), Hebbard (n.d.), Marais (1992), Tolley and Burger (2007)

## Amphibian Diversity

The amphibian diversity known, and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge is indicated in Table 2:

**Table 2.** Amphibian diversity known and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge – i.e. north-central Namibia.

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status: IUCN (2016)
<b>Rain Frog</b>			
<i>Breviceps adspersus</i>	Bushveld Rain Frog		LC
<b>Toads</b>			
<i>Amietophrynus poweri</i>	Western Olive Toad		LC
<b>Kassinias</b>			
<i>Kassina senegalensis</i>	Bubbling Kassina		LC
<b>Rubber Frog</b>			
<i>Phrynomantis affinis</i>	Spotted Rubber Frog	Endemic	LC
<i>Phrynomantis annectens</i>	Marbled Rubber Frog		LC
<i>Phrynomantis bifasciatus</i>	Banded Rubber Frog		LC
<b>Puddle Frog</b>			
<i>Phrynobatrachus mababiensis</i>	Dwarf Puddle Frog		LC
<i>Phrynobatrachus natalensis</i>	Snoring Puddle Frog		LC
<b>Ornate Frogs</b>			
<i>Hildebrandtia ornata</i>	Ornate Frog		LC
<b>Cacos</b>			
<i>Cacosternum boettgeri</i>	Boettger's Caco		LC
<b>Bullfrogs</b>			
<i>Pyxicephalus adspersus</i>	Giant Bullfrog*		LC
<b>Sand Frogs</b>			
<i>Tomopterna krugerensis</i>	Knocking Sand Frog		LC
<i>Tomopterna tandyi</i>	Tandy's Sand Frog		LC
<b>Platannas</b>			
<i>Xenopus laevis</i>	Common Platanna		LC

Namibian conservation and legal status according to the Nature Conservation Ordinance No 4 of 1975 (Griffin 2003)

IUCN (2016): LC = Least Concern

\*The giant bullfrog is classified as "near threatened" by Du Preez and Carruthers (2009)

**Source for literature review:** Carruthers (2001), Channing (2001), Channing and Griffin (1993), Du Preez and Carruthers (2009), Griffin (2007), Passmore and Carruthers (1995)

## Mammal Diversity

The mammal diversity known, and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge in Table 3:

**Table 3.** Mammal diversity known and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge – i.e. north-central Namibia.

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status		
			IUCN (2016)	SARDB (2004)	CITES
<b>Elephant Shrews</b>					
<i>Elephantulus intufi</i>	Bushveld Elephant-shrew	Secure		DD	
<b>Aardvark</b>					
<i>Orycteropus afer</i>	Aardvark	Secure; Protected Game			
<b>Shrews</b>					
<i>Crocidura fuscomurina</i>	Tiny Musk Shrew	Secure		DD	
<i>Crocidura cyanea</i>	Reddish-grey Musk Shrew	Secure		DD	
<i>Crocidura hirta</i>	Lesser Red Musk Shrew	Secure		DD	
<b>Hyrax</b>					
<i>Procavia capensis</i>	Rock Hyrax	Secure; Problem animal			
<b>Bats</b>					
<i>Clootis percivali</i>	Percival's Short-eared Trident Bat	Not listed	<sup>1</sup> V		
<i>Eidolon helvum</i>	African Straw-coloured Bat	Secure; Migrant	NT		
<i>Hipposideros caffer</i>	Sundevall's Leaf-nosed Bat	Secure		DD	
<i>Hipposideros gigas</i>	Giant Leaf-nosed Bat	Not listed	<sup>1</sup> NT		
<i>Hipposideros vittatus</i>	Striped Leaf-nosed Bat	Not listed	NT		
<i>Rhinolophus blasii</i>	Blasius's Horseshoe Bat	Not listed	NT		
<i>Rhinolophus clivosus</i>	Geoffroy's Horseshoe Bat	Secure		NT	
<i>Rhinolophus darlingi</i>	Darling's Horseshoe Bat	Secure; Peripheral		NT	
<i>Rhinolophus denti</i>	Dent's Horseshoe Bat	Secure		NT	
<i>Rhinolophus fumigatus</i>	Rüppell's Horseshoe Bat	Secure		NT	
<i>Rhinolophus hildebrandtii</i>	Hildebrandt's Horseshoe Bat	Not listed			
<i>Taphozous mauritanicus</i>	Mauritian Tomb Bat	Secure			
<i>Nycteris thebaica</i>	Egyptian Slit-faced Bat	Secure			
<i>Chaerephon nigeriae</i>	Nigerian Free-tailed Bat	Secure			
<i>Mops midas</i>	Midas Free-tailed Bat	Secure			
<i>Tadarida aegyptiaca</i>	Egyptian Free-tailed Bat	Secure			
<i>Miniopterus natalensis</i>	Natal Long-fingered Bat	Secure		NT	
<i>Eptesicus hottentotus</i>	Long-tailed Serotine Bat	Secure			
<i>Glauconycteris variegata</i>	Variiegated Butterfly Bat	Secure		NT	
<i>Laephotis botswanae</i>	Botswana Long-eared Bat	Secure		V	
<i>Mimetillus thomasi</i>	Thomas Flat-headed Bat	Not listed			
<i>Neoromicia capensis</i>	Cape Serotine Bat	Secure			
<i>Neoromicia zuluensis</i>	Zulu Serotine Bat	Secure			
<i>Pipistrellus rueppellii</i>	Rüppell's Pipistrelle	Insufficiently known; Peripheral			
<i>Pipistrellus rusticus</i>	Rusty Pipistrelle	Secure		NT	
<i>Scotophilus dinganii</i>	Yellow-bellied House Bat	Secure			
<b>Hares and Rabbits</b>					
<i>Lepus saxatilis</i>	Scrub Hare	Secure			
<i>Pronolagus randensis</i>	Jameson's Red Rock Rabbit	Secure			
<b>Rodents</b>					
<b>Molerat</b>					
<i>Cryptomys damarensis</i>	Damaraland Mole-Rat	Secure			
<b>Porcupine</b>					
<i>Hystrix africaeaustralis</i>	Cape Porcupine	Secure			
<b>Rats and Mice</b>					
<i>Petromys typicus</i>	Dassie Rat	Endemic; Secure		NT	
<i>Pedetes capensis</i>	Springhare	Secure			
<i>Xerus inaurus</i>	South African Ground Squirrel	Secure			
<i>Graphiurus murinus</i>	Woodland Dormouse	Secure			

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status		
			IUCN (2016)	SARDB (2004)	CITES
<i>Rhodomys pumilio</i>	Four-striped Grass Mouse	Secure			
<i>Mus indutus</i>	Desert Pygmy Mouse	Secure			
<i>Mastomys natalensis</i>	Natal Multimammate Mouse	Secure			
<i>Mastomys coucha</i>	Southern Multimammate Mouse	Secure			
<i>Thallomys paedulus</i>	Acacia Rat	Secure			
<i>Thallomys nigricauda</i>	Black-tailed Tree Rat	Secure			
<i>Aethomys chrysophilus</i>	Red Veld Rat	Secure			
<i>Aethomys namaquensis</i>	Namaqua Rock Mouse	Secure			
<i>Desmodillus auricularis</i>	Cape Short-tailed Gerbil	Secure			
<i>Gerbillurus paebe</i>	Hairy-footed Gerbil	Secure			
<i>Tatera leucogaster</i>	Bushveld Gerbil	Secure		DD	
<i>Tatera brantsii</i>	Highveld Gerbil	Secure			
<i>Saccostomus campestris</i>	Pouched Mouse	Secure			
<i>Malacothrix typica</i>	Gerbil Mouse	Secure			
<i>Steatomys pratensis</i>	Fat Mouse	Secure			
<i>Petromyscus collinus</i>	Pygmy Rock Mouse	Endemic; Secure			
<i>Mus musculus</i>	House Mouse	Invasive alien			
<b>Primates</b>					
<i>Galago moholi</i>	South African Galago	Vulnerable; Protected Game			C2
<i>Papio ursinus</i>	Chacma Baboon	Secure; Problem animal			C2
<b>Hedgehog</b>					
<i>Atelerix frontalis angolae</i>	Southern African Hedgehog	Insufficiently Known; Rare; Protected Game		R; NT	
<b>Pangolin</b>					
<i>Manis temminckii</i>	Ground Pangolin	Vulnerable; Peripheral; Protected Game		V	C2
<b>Carnivores</b>					
<i>Proteles cristatus</i>	Aardwolf	Insufficiently known; (Vulnerable?) Peripheral			
<i>Hyaena brunnea</i>	Brown Hyena	Insufficiently known; (Vulnerable?) Peripheral	NT	NT	
<i>Crocuta crocuta</i>	Spotted Hyena	Secure?; Peripheral		NT	
<i>Acinonyx jubatus</i>	Cheetah	Vulnerable; Protected Game	V	V	C1
<i>Panthera pardus</i>	Leopard	Secure?; Peripheral; Protected Game	NT		C1
<i>Caracal caracal</i>	Caracal	Secure; Problem Animal			C2
<i>Felis silvestris</i>	African Wild Cat	Vulnerable			C2
<i>Felis nigripes</i>	Black-footed Cat	Indeterminate; Rare	V		C1
<i>Genetta genetta</i>	Small Spotted Genet	Secure			
<i>Suricata suricatta</i>	Suricate	Secure			
<i>Cynictis penicillata</i>	Yellow Mongoose	Secure			
<i>Galerella sanguinea</i>	Slender Mongoose	Secure			
<i>Mungos mungo</i>	Banded Mongoose	Secure			
<i>Helogale parvula</i>	Dwarf Mongoose	Secure			
<i>Otocyon megalotis</i>	Bat-eared Fox	Vulnerable?; Peripheral			
<i>Vulpes chama</i>	Cape Fox	Vulnerable?			
<i>Canis mesomelas</i>	Black-backed Jackal	Secure; Problem animal			
<i>Mellivora capensis</i>	Honey Badger/Ratel	Secure; Protected Game		NT	
<i>Ictonyx striatus</i>	Striped Polecat	Secure			
<b>Pigs</b>					

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status		
			IUCN (2016)	SARDB (2004)	CITES
<i>Phacochoerus africanus</i>	Common Warthog	Secure; Hunttable Game			
<b>Antelopes</b>					
<i>Tragelaphus strepsiceros</i>	Greater Kudu	Secure; Hunttable Game			
<i>Tragelaphus oryx</i>	Eland	Insufficiently known; Vulnerable (?); Protected Game			
<i>Alcelaphus buselaphus</i>	Red Hartebeest	Secure; Protected Game			
<i>Oryx gazella</i>	Gemsbok	Secure; Hunttable game			
<i>Sylvicapra grimmia</i>	Common Duiker	Secure			
<i>Antidorcas marsupialis</i>	Springbok	Secure; Hunttable game			
<i>Madoqua damarensis</i>	Damara Dik-Dik	Insufficiently known; Protected Game			
<i>Raphicerus campestris</i>	Steenbok	Secure; Protected Game			
<i>Oreotragus oreotragus</i>	Klipspringer	Secure; Specially Protected Game			

SARDB (2004): R = Rare; E = Endangered; NT = Near Threatened; DD = Data Deficient

IUCN (2016): V = Vulnerable; NT = Near Threatened

<sup>1</sup>Monadjem *et al.* (2010)

CITES: Appendix 1 or 2 species

Other species not listed are viewed as “Least Concern” by IUCN (2016)

**Source for literature review:** De Graaff (1981), Griffin and Coetzee (2005), Estes (1995), Griffin (2007), Joubert and Mostert (1975), Monadjem *et al.* (2010), Skinner and Smithers (1990), Skinner and Chimimba (2005), Stander and Hanssen (2003) and Taylor (2000)

## Avian Diversity

The bird diversity known, and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge is indicated in Table 4:

**Table 4.** Bird diversity known and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge – i.e. north-central Namibia. [This table excludes migratory birds (e.g. Petrel, Albatross, Skua, etc.); species breeding extralimital (e.g. stints, sandpipers, etc.) and aquatic birds (e.g. ducks, herons, etc.) and rather focuses on birds that are breeding residents or can be found in the area during any time of the year. This would imply that many more birds (e.g. Palearctic migrants and aquatic species) could occur in the area depending on “favourable” environmental conditions]

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status	
			Southern Africa	IUCN (2016)
<i>Struthio camelus</i>	Common Ostrich			
<i>Anthropoides paradiseus</i>	Blue Crane			
<i>Bugeranus carunculatus</i>	Wattled Crane			
<i>Scleroptila levaillantoides</i>	Orange River Francolin		Near endemic	
<i>Pternistis hartlaubi</i>	Hartlaub's Spurfowl	Endemic	Near endemic	
<i>Peliperdix coqui</i>	Coqui Francolin			
<i>Pternistis adpersus</i>	Red-billed Spurfowl		Near endemic	
<i>Dendroperdix sephaena</i>	Crested Francolin			
<i>Pternistis swainsonii</i>	Swainson's Spurfowl			
<i>Coturnix coturnix</i>	Common Quail			
<i>Coturnix delegorguei</i>	Harlequin Quail			
<i>Numida meleagris</i>	Helmeted Guineafowl			
<i>Turnix sylvaticus</i>	Kurrichane Buttonquail			
<i>Indicator minor</i>	Lesser Honeyguide			
<i>Campethera bennettii</i>	Bennett's Woodpecker			
<i>Campethera abingoni</i>	Golden-tailed Woodpecker			
<i>Dendropicos fuscescens</i>	Cardinal Woodpecker			
<i>Dendropicos namaquus</i>	Bearded Woodpecker			
<i>Tricholaema leucomelas</i>	Acacia Pied Barbet		Near endemic	
<i>Tockus monteiri</i>	Monteiro's Hornbill	Endemic		
<i>Tockus damarensis</i>	Damara Hornbill	Endemic	Near endemic	
<i>Tockus erythrorhynchus</i>	Red-billed Hornbill			
<i>Tockus leucomelas</i>	Southern Yellow-billed Hornbill		Near endemic	
<i>Tockus bradfieldi</i>	Bradfield's Hornbill		Near endemic	
<i>Tockus nasutus</i>	African Grey Hornbill			
<i>Upupa africana</i>	African Hoopoe			
<i>Phoeniculus purpureus</i>	Green Wood-Hoopoe			
<i>Phoeniculus damarensis</i>	Violet Wood-Hoopoe	E; Endemic		
<i>Rhinopomastus cyanomelas</i>	Common Scimitarbill			
<i>Coracias garrulus</i>	European Roller	NT		
<i>Coracias caudatus</i>	Lilac-breasted Roller			
<i>Coracias naevius</i>	Purple Roller			
<i>Merops hirundineus</i>	Swallow-tailed Bee-eater			
<i>Merops persicus</i>	Blue-cheeked Bee-eater			
<i>Merops apiaster</i>	European Bee-eater			
<i>Colius colius</i>	White-backed Mousebird		Endemic	
<i>Urocolius indicus</i>	Red-faced Mousebird			
<i>Poicephalus meyeri</i>	Meyer's Parrot			
<i>Poicephalus rueppellii</i>	Rüppell's Parrot	NT; Endemic	Near endemic	
<i>Agapornis roseicollis</i>	Rosy-faced Lovebird	Endemic	Near endemic	
<i>Cypsiurus parvus</i>	African Palm Swift			
<i>Apus apus</i>	Common Swift			
<i>Tachymarptis melba</i>	Alpine Swift			
<i>Apus bradfieldi</i>	Bradfield's Swift		Near endemic	
<i>Apus affinis</i>	Little Swift			
<i>Corythaixoides concolor</i>	Grey Go-away Bird			
<i>Tyto alba</i>	Barn Owl			
<i>Otus senegalensis</i>	African Scops-Owl			
<i>Ptilopsis granti</i>	Southern White-faced Scops-Owl			
<i>Asio capensis</i>	Marsh Owl			



Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status	
			Southern Africa	IUCN (2016)
<i>Bubo africanus</i>	Spotted Eagle Owl			
<i>Bubo lacteus</i>	Verreaux's Eagle-Owl			
<i>Glaucidium perlatum</i>	Pearl-spotted Owlet			
<i>Glaucidium capense</i>	African Barred Owlet			
<i>Caprimulgus pectoralis</i>	Fiery-necked Nightjar			
<i>Caprimulgus tristigma</i>	Freckled Nightjar			
<i>Caprimulgus rufigena</i>	Rufous-cheeked Nightjar			
<i>Columba livia</i>	Rock Dove			
<i>Columba guinea</i>	Speckled Pigeon			
<i>Streptopelia capicola</i>	Cape Turtle Dove			
<i>Streptopelia senegalensis</i>	Laughing Dove			
<i>Turtur chalcospilos</i>	Emerald-spotted Wood-dove			
<i>Oena capensis</i>	Namaqua Dove			
<i>Neotis ludwigii</i>	Ludwig's Bustard	E	Near endemic	E
<i>Ardeotis kori</i>	Kori Bustard	NT		NT
<i>Lophotis ruficrista</i>	Red-crested Korhaan		Near endemic	
<i>Afrotis afraoides</i>	Northern Black Korhaan		Endemic	
<i>Pterocles namaqua</i>	Namaqua Sandgrouse		Near endemic	
<i>Pterocles bicinctus</i>	Double-banded Sandgrouse		Near endemic	
<i>Pterocles burchelli</i>	Burchell's Sandgrouse		Near endemic	
<i>Gallinago nigripennis</i>	African Snipe			
<i>Rostratula benghalensis</i>	Greater Painted Snipe			
<i>Burhinus capensis</i>	Spotted Thick-knee			
<i>Vanellus armatus</i>	Blacksmith Lapwing			
<i>Vanellus coronatus</i>	Crowned Lapwing			
<i>Rhinoptilus africanus</i>	Double-banded Courser			
<i>Rhinoptilus chalconotus</i>	Bronze-winged Courser			
<i>Cursorius rufus</i>	Burchell's Courser		Near endemic	
<i>Cursorius temminckii</i>	Temminck's Courser			
<i>Macheiramphus alcinus</i>	Bat Hawk			
<i>Elanus caeruleus</i>	Black-shouldered Kite			
<i>Milvus aegyptius</i>	Yellow-billed Kite			
<i>Gyps africanus</i>	White-backed Vulture	E		E
<i>Gyps coprotheres</i>	Cape Vulture	CE		E
<i>Aegyptius tracheliotos</i>	Lappet-faced Vulture	V		
<i>Trigonoceps occipitalis</i>	White-headed Vulture	V		
<i>Terathopius ecaudatus</i>	Bateleur	E		
<i>Haliaeetus vocifer</i>	African Fish-Eagle	V		
<i>Circaetus pectoralis</i>	Black-chested Snake-Eagle			
<i>Circaetus cinereus</i>	Brown Snake-Eagle			
<i>Circus maurus</i>	Black Harrier	E		
<i>Circus macrourus</i>	Pallid Harrier	NT		
<i>Polyboroides typus</i>	African Harrier-Hawk			
<i>Kaupifalco monogrammicus</i>	Lizard Buzzard			
<i>Melierax canorus</i>	Southern Pale Chanting Goshawk		Near endemic	
<i>Melierax gabar</i>	Gabar Goshawk			
<i>Accipiter badius</i>	Shikra			
<i>Accipiter minullus</i>	Little Sparrowhawk			
<i>Accipiter avampensis</i>	Ovambo Sparrowhawk			
<i>Buteo augur</i>	Augur Buzzard			
<i>Aquila rapax</i>	Tawny Eagle	E		

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status	
			Southern Africa	IUCN (2016)
<i>Aquila verreauxii</i>	Verreaux's Eagle	NT		
<i>Aquila spilogaster</i>	African Hawk-Eagle			
<i>Aquila pennatus</i>	Booted Eagle	E		
<i>Aquila wahlbergi</i>	Wahlberg's Eagle			
<i>Polemaetus bellicosus</i>	Martial Eagle	E		V
<i>Sagittarius serpentarius</i>	Secretarybird	V		V
<i>Polihierax semitorquatus</i>	Pygmy Falcon			
<i>Falco rupicolus</i>	Rock Kestrel			
<i>Falco rupicoloides</i>	Greater Kestrel			
<i>Falco chicquera</i>	Red-necked Falcon			
<i>Falco biarmicus</i>	Lanner Falcon			
<i>Falco peregrinus</i>	Peregrine Falcon	NT		
<i>Egretta garzetta</i>	Little Egret			
<i>Ardea cinerea</i>	Grey Heron			
<i>Ardea melanocephala</i>	Black-headed Heron			
<i>Bubulcus ibis</i>	Cattle Egret			
<i>Scopus umbretta</i>	Hamerkop			
<i>Threskiornis aethiopicus</i>	African Sacred Ibis			
<i>Anastomus lamelligerus</i>	African Openbill			
<i>Ciconia nigra</i>	Black Stork	E		
<i>Ciconia episcopus</i>	Woolly-necked Stork			
<i>Ephippiorhynchus senegalensis</i>	Saddle-billed Stork	E		
<i>Leptoptilos crumeniferus</i>	Marabou Stork	NT		
<i>Oriolus auratus</i>	African Golden Oriole			
<i>Dicrurus adsimilis</i>	Fork-tailed Drongo			
<i>Terpsiphone viridis</i>	African Paradise-Flycatcher			
<i>Nilaus afer</i>	Brubru			
<i>Dryoscopus cubla</i>	Black-backed Puffback			
<i>Tcharga senegalus</i>	Black-crowned Tcharga			
<i>Tchagra australis</i>	Brown-crowned Tchagra			
<i>Laniarius atrococcineus</i>	Crimson-breasted Shrike		Near endemic	
<i>Prionops plumatus</i>	White-crested Helmet-shrike			
<i>Lanioturdus torquatus</i>	White-tailed Shrike	Endemic	Near endemic	
<i>Batis molitor</i>	Chinspot Batis			
<i>Batis pririt</i>	Pirit Batis		Near endemic	
<i>Corvus capensis</i>	Cape Crow			
<i>Corvus albus</i>	Pied Crow			
<i>Corvinella melanoleuca</i>	Magpie Shrike			
<i>Lanius collaris</i>	Common Fiscal			
<i>Eurocephalus anguitimens</i>	Southern White-crowned Shrike		Near endemic	
<i>Anthoscopus minutes</i>	Cape Penduline Tit		Near endemic	
<i>Parus niger</i>	Southern Black Tit			
<i>Parus carpi</i>	Carp's Tit	Endemic	Near endemic	
<i>Parus cinerascens</i>	Ashy Tit		Endemic	
<i>Riparia paludicola</i>	Brown-throated Martin			
<i>Riparia cincta</i>	Banded Martin			
<i>Hirundo albigularis</i>	White-throated Swallow			
<i>Hirundo dimidiata</i>	Pearl-breasted Swallow			
<i>Hirundo cucullata</i>	Greater Striped Swallow			
<i>Hirundo abyssinica</i>	Lesser Striped Swallow			
<i>Hirundo semirufa</i>	Red-breasted Swallow			

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status	
			Southern Africa	IUCN (2016)
<i>Hirundo fuligula</i>	Rock Martin			
<i>Pycnonotus nigricans</i>	African Red-eyed Bulbul		Near endemic	
<i>Achaetps pycnopygius</i>	Rockrunner	Endemic	Near endemic	
<i>Sylvietta rufescens</i>	Long-billed Crombec			
<i>Eremomela icteropygialis</i>	Yellow-bellied Eremomela			
<i>Eremomela usticollis</i>	Burnt-necked Eremomela			
<i>Turdoides bicolor</i>	Southern Pied Babbler		Endemic	
<i>Turdoides gymnogenys</i>	Bare-cheeked Babbler	Endemic	Near endemic	
<i>Parisoma subcaeruleum</i>	Chestnut-vented Tit-Babbler		Near endemic	
<i>Zosterops senegalensis</i>	African Yellow White-eye			
<i>Zosterops pallidus</i>	Orange River White-eye		Endemic	
<i>Cisticola chiniana</i>	Rattling Cisticola			
<i>Cisticola rufilatus</i>	Tinkling Cisticola			
<i>Cisticola subruficapilla</i>	Grey-backed Cisticola		Near endemic	
<i>Cisticola juncidis</i>	Zitting Cisticola			
<i>Cisticola jaridulus</i>	Desert Cisticola			
<i>Prinia flavicans</i>	Black-chested Prinia			
<i>Malcorus pectoralis</i>	Rufous-eared Warbler		Endemic	
<i>Camaroptera brevicaudata</i>	Grey-backed Camaroptera			
<i>Calamonastes fasciolatus</i>	Barren Wren-Warbler		Near endemic	
<i>Mirafra passerina</i>	Monotonous Lark			
<i>Mirafra africana</i>	Rufous-naped Lark			
<i>Mirafra fasciolata</i>	Eastern Clapper Lark		Near endemic	
<i>Mirafra sabota</i>	Sabota Lark			
<i>Calendulauda africanoides</i>	Fawn-coloured Lark		Near endemic	
<i>Chersomanes albofasciata</i>	Spike-heeled Lark		Near endemic	
<i>Eremopterix leucotis</i>	Chestnut-backed Sparrowlark			
<i>Eremopterix verticalis</i>	Grey-backed Sparrowlark		Near endemic	
<i>Calandrella cinerea</i>	Red-capped Lark			
<i>Spizocorys conirostris</i>	Pink-billed Lark		Near endemic	
<i>Monticola brevipes</i>	Short-toed Rock Thrush			
<i>Psophocichla litsitsirupa</i>	Groundscraper Thrush			
<i>Bradornis infuscatus</i>	Chat Flycatcher		Near endemic	
<i>Melaenornis mariquensis</i>	Marico Flycatcher		Near endemic	
<i>Cercotrichas leucophrys</i>	White-browed Scrub-Robin			
<i>Cercotrichas paena</i>	Kalahari Scrub-Robin			
<i>Oenanthe monticola</i>	Mountain Wheatear		Near endemic	
<i>Oenanthe pileata</i>	Capped Wheatear			
<i>Cercomela familiaris</i>	Familiar Chat			
<i>Myrmecocichla formicivora</i>	Ant-eating Chat		Endemic	
<i>Onychognathus nabouroup</i>	Pale-winged Starling		Near endemic	
<i>Lamprotonis nitens</i>	Cape Glossy Starling			
<i>Lamprotonis australis</i>	Burchell's Starling			
<i>Cinnyricinclus leucogaster</i>	Violet-backed Starling			
<i>Creatophora cinerea</i>	Wattled Starling			
<i>Chalcomitra amethystina</i>	Amethyst Sunbird			
<i>Chalcomitra senegalensis</i>	Scarlet-chested Sunbird			
<i>Cinnyris talatala</i>	White-bellied Sunbird			
<i>Nectarinia fusca</i>	Dusky Sunbird		Near endemic	
<i>Cinnyris mariquensis</i>	Marico Sunbird			
<i>Bualornis niger</i>	Red-billed Buffalo-Weaver			

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International Status	
			Southern Africa	IUCN (2016)
<i>Sporopipes squamifrons</i>	Scaly-feathered Finch		Near endemic	
<i>Plocepasser mahali</i>	White-browed Sparrow-Weaver			
<i>Philetairus socius</i>	Sociable Weaver		Endemic	
<i>Ploceus intermedius</i>	Lesser Masked-Weaver			
<i>Ploceus velatus</i>	Southern Masked-Weaver			
<i>Ploceus rubiginosus</i>	Chestnut Weaver			
<i>Quelea quelea</i>	Red-billed Quelea			
<i>Euplectes afer</i>	Yellow-crowned Bishop			
<i>Euplectes orix</i>	Southern Red Bishop			
<i>Ortygospiza atricollis</i>	African Quailfinch			
<i>Amadina erythrocephala</i>	Red-headed Finch		Near endemic	
<i>Amadina fasciata</i>	Cut-throat Finch			
<i>Estrilda erythronotos</i>	Black-faced Waxbill			
<i>Estrilda astrild</i>	Common Waxbill			
<i>Granatina granatina</i>	Violet-eared Waxbill			
<i>Uraeginthus angolensis</i>	Blue Waxbill			
<i>Pytilia melba</i>	Green-winged Pytilia			
<i>Vidua macroura</i>	Pin-tailed Whydah			
<i>Vidua paradisaea</i>	Long-tailed Paradise-Whydah			
<i>Vidua regia</i>	Shaft-tailed Whydah			
<i>Passer domesticus</i>	House Sparrow			
<i>Passer motitensis</i>	Great Sparrow		Near endemic	
<i>Passer melanurus</i>	Cape Sparrow		Near endemic	
<i>Passer griseus</i>	Southern Grey-headed Sparrow			
<i>Motacilla aguimp</i>	African Pied Wagtail			
<i>Motacilla capensis</i>	Cape Wagtail			
<i>Anthus cinnamomeus</i>	African Pipit			
<i>Anthus vaalensis</i>	Buffy Pipit			
<i>Crithagra atrogularis</i>	Black-throated Canary			
<i>Serinus flaviventris</i>	Yellow Canary		Near endemic	
<i>Serinus albogularis</i>	White-throated Canary		Near endemic	
<i>Emberiza impetuani</i>	Lark-like Bunting		Near endemic	
<i>Emberiza tahapisi</i>	Cinnamon-breasted Bunting			
<i>Emberiza capensis</i>	Cape Bunting		Near endemic	
<i>Emberiza flaviventris</i>	Golden-breasted Bunting			

Simmons et al. (2015): CE = Critically Endangered; E = Endangered; NT = Near threatened; V = Vulnerable

Endemic – Namibian status (Brown *et al.* 1998, Simmons *et al.* 2015)

Endemic and near endemic – southern African status (Hockey *et al.* 2006)

IUCN (2016): CE = Critically Endangered; E = Endangered; V = Vulnerable; NT = Near Threatened

**Source for literature review:** Brown (2008), Brown *et al.* (1998), Brown *et al.* (2006), Hockey *et al.* (2006), Komen (n.d.), Maclean (1985), Simmons *et al.* (2015), and Tarboton (2001)

## Tree and Shrub Diversity

It is estimated that at least 79-109 species of larger trees and shrubs (>1m) – Coats Palgrave 1983 [81 sp.], Curtis and Mannheimer 2005 [91 sp.], Mannheimer and Curtis 2009 [128 sp], Van Wyk and Van Wyk 1997 [60 sp.] – occur in the general area of the proposed Etosha King Nehale Lodge.

The trees and shrubs known, and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge (derived from Curtis and Mannheimer 2005 and Mannheimer and Curtis 2009) is presented in Table 5 below. Species indicated are known from the quarter-degree square distribution principle used and don't necessarily occur throughout the entire area. Some species indicated to possibly occur in the area according to Coats Palgrave (1983) and Van Wyk and Van Wyk (1997) is excluded here.

**Table 5.** The trees and shrubs known, and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge

Species: Scientific name	Expected: Curtis and Mannheimer (2005)	Expected: Mannheimer and Curtis (2009)	Status
<i>Acacia ataxacantha</i>	√	√	
<i>Acacia erioloba</i>	√	√	Protected (F#)
<i>Acacia erubescens</i>	√	√	
<i>Acacia fleckii</i>	√	√	
<i>Acacia hebeclada</i>	√	√	
<i>Acacia hereroensis</i>	√	√	
<i>Acacia karroo</i>	√	√	
<i>Acacia kirki</i>	√	√	
<i>Acacia luederitzii</i>		√	
<i>Acacia mellifera</i>	√	√	
<i>Acacia nebrownii</i>		√	
<i>Acacia nilotica</i>	√	√	
<i>Acacia reficiens</i>	√	√	
<i>Acacia senegal</i>	√	√	
<i>Acacia tortilis</i>	√	√	
<i>Adenium boehmianum</i>		√	Protected (F#)
<i>Albizia anthelmintica</i>	√	√	Protected (F#)
<i>Aloe litoralis</i>	√	√	NC; C2; Protected (F#)
<i>Bauhinia petersiana</i>	√	√	
<i>Berchemia discolor</i>	√	√	Protected (F#)
<i>Boscia albitrunca</i>	√	√	Protected (F#)
<i>Boscia foetida</i>		√	
<i>Burkea africana</i>	√	√	Protected (F#)
<i>Cadaba aphylla</i>		√	
<i>Caesalpinia rubra</i>	√	√	
<i>Carissa bispinosa</i>		√	
<i>Carissa edulis</i>		√	
<i>Catophractes alexandri</i>	√	√	
<i>Combretum apiculatum</i>	√	√	
<i>Combretum collinum</i>	√	√	
<i>Combretum engleri</i>		√	
<i>Combretum hereroense</i>		√	
<i>Combretum imberbe</i>	√	√	Protected (F#)
<i>Combretum psidioides</i>		√	
<i>Combretum zeyheri</i>	√	√	
<i>Commiphora africana</i>		√	

<b>Species: Scientific name</b>	<b>Expected: Curtis and Mannheimer (2005)</b>	<b>Expected: Mannheimer and Curtis (2009)</b>	<b>Status</b>
<i>Commiphora angolensis</i>	√	√	
<i>Commiphora glandulosa</i>	√	√	
<i>Commiphora glaucescens</i>		√	Near-endemic
<i>Commiphora mollis</i>	√	√	
<i>Commiphora pyracanthoides</i>	√	√	
<i>Commiphora tenuipetiolata</i>		√	
<i>Cordia sinensis</i>		√	
<i>Croton gratissimus</i>	√	√	
<i>Cyphostemma juttae</i>		√	Endemic; NC; Protected (F#)
<i>Dichrostachys cinerea</i>	√	√	
<i>Diospyros lycioides</i>	√	√	
<i>Dombeya rotundifolia</i>	√	√	
<i>Ehretia alba</i>	√	√	
<i>Elaeodendron transvaalense</i>		√	Protected (F*)
<i>Elephantorrhiza elephantina</i>	√	√	
<i>Elephantorrhiza suffruticosa</i>	√	√	
<i>Erythrina decora</i>	√	√	Protected (F#); Endemic
<i>Euclea divinorum</i>	√	√	
<i>Euclea undulata</i>	√	√	
<i>Euphorbia avasmontana</i>	√	√	C2
<i>Euphorbia guerichiana</i>		√	C2
<i>Euphorbia virosa</i>		√	C2
<i>Faidherbia albida</i>	√	√	Protected (F#)
<i>Ficus burkei</i>	√	√	Protected (F#)
<i>Ficus cordata</i>	√	√	Protected (F#)
<i>Ficus ilicina</i>	√	√	
<i>Ficus sycomorus</i>	√	√	Protected (F#)
<i>Flueggea virosa</i>	√		
<i>Fockea multiflora</i>	√	√	
<i>Grewia avellana</i>			
<i>Grewia bicolor</i>	√	√	
<i>Grewia falcistipula</i>		√	
<i>Grewia flava</i>	√	√	
<i>Grewia flavescens</i>	√	√	
<i>Grewia olukondae</i>	√	√	
<i>Grewia retinervis</i>	√	√	
<i>Grewia schinzii</i>		√	
<i>Grewia subspathulata</i>		√	
<i>Grewia tenax</i>	√	√	
<i>Grewia villosa</i>	√	√	
<i>Gossypium triphyllum</i>		√	
<i>Gymnosporia buxifolia</i>		√	
<i>Gymnosporia senegalensis</i>	√	√	
<i>Gyrocarpus americanus</i>		√	Protected (F*)
<i>Heteromorpha papillosa</i>		√	Endemic
<i>Ipomoea adenoides</i>		√	
<i>Kirkia acuminata</i>	√	√	
<i>Lannea discolor</i>		√	
<i>Lycium bosciifolium</i>	√	√	
<i>Lycium cinereum</i>	√	√	
<i>Lycium eenii</i>	√	√	
<i>Maerua juncea</i>	√	√	

<b>Species: Scientific name</b>	<b>Expected: Curtis and Mannheimer (2005)</b>	<b>Expected: Mannheimer and Curtis (2009)</b>	<b>Status</b>
<i>Maerua parvifolia</i>		√	
<i>Maerua schinzii</i>	√	√	Protected (F*)
<i>Melianthus comosus</i>	√	√	
<i>Montinia caryophyllacea</i>	√	√	
<i>Moringa ovalifolia</i>	√	√	Protected (F*); NC; Near-endemic
<i>Mundulea sericea</i>	√	√	
<i>Obetia carruthersiana</i>	√	√	Near-endemic
<i>Ochna pulchra</i>	√	√	Protected (F*)
<i>Olea europaea</i>	√	√	Protected (F*)
<i>Opilia campestris</i>		√	
<i>Osyris lanceolata</i>	√	√	
<i>Ozoroa crassinervia</i>	√	√	Near-endemic; Protected (F*)
<i>Ozoroa insignis</i>		√	
<i>Ozoroa paniculosa</i>	√	√	
<i>Pavetta zeyheri</i>		√	
<i>Peltophorum africanum</i>	√	√	Protected (F*)
<i>Phaeoptilum spinosum</i>	√	√	
<i>Philenoptera nelsii</i>	√	√	Protected (F*)
<i>Pouzolzia mixta</i>		√	
<i>Rhigozum brevispinosum</i>	√	√	
<i>Rhigozum trichotomum</i>		√	
<i>Rothea myricoides</i>		√	
<i>Searsia ciliata</i>	√	√	
<i>Searsia lancea</i>	√	√	Protected (F#)
<i>Searsia marlothii</i>	√	√	
<i>Searsia pyroides</i>	√	√	
<i>Searsia tenuinervis</i>	√	√	
<i>Securidata longepedunculata</i>	√	√	Protected (F*)
<i>Spirostachys africana</i>	√	√	Protected (F#)
<i>Steganoaenia araliacea</i>	√	√	
<i>Strophanthus amboensis</i>		√	Near-endemic
<i>Tarchonanthus camphoratus</i>	√	√	
<i>Terminalia brachystemma</i>	√	√	
<i>Terminalia prunioides</i>	√	√	
<i>Terminalia sericea</i>	√	√	
<i>Tinnea rhodesiana</i>		√	
<i>Vangueria cyanescens</i>	√	√	
<i>Vangueria infausta</i>		√	
<i>Ximenia americana</i>		√	
<i>Ximenia caffra</i> var. <i>caffra</i>	√	√	
<i>Ziziphus mucronata</i>	√	√	Protected (F#)

**Endemic and Near-endemic** – (Craven 1999, Curtis and Mannheimer 2005, Mannheimer and Curtis 2009)

**F#** – Forestry Act No. 12 of 2001

**F\*** – Curtis and Mannheimer (2005) + Mannheimer and Curtis (2009)

**NC** – Nature Conservation Ordinance No. 4 of 1975

**C2** – CITES Appendix 2 species (Curtis and Mannheimer 2005)

## Grass Diversity

It is estimated that up to 111 grasses – 73 to 88 species – (Müller 2007 [88 sp.], Müller 1984 [73 sp.], Van Oudshoorn 1999 [73 sp.]) occur in the area.

The grasses known and/or expected to occur in the area (<sup>1</sup>Müller 1984, <sup>2</sup>Van Oudtshoorn 1999, and <sup>3</sup>Müller 2007) is presented in Table 6 below.

**Table 6.** Grass diversity known and/or expected to occur in the general area of the proposed Etosha King Nehale Lodge – i.e. north-central Namibia.

Species: Scientific name	Status	Ecological Status	Grazing Value
<sup>2,3</sup> <i>Andropogon chinensis</i>		Decreaser	High
<sup>1</sup> <i>Andropogon schinzii</i>		Decreaser	High
<sup>1,2,3</sup> <i>Antheophora pubescens</i>		Decreaser	High
<sup>1,3</sup> <i>Antheophora schinzii</i>		?	Low
<sup>1,2,3</sup> <i>Aristida adscensionis</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Aristida congesta</i>		Increaser 2	Low
<sup>2,3</sup> <i>Aristida stipitata</i>		Increaser 2	Low
<sup>1,3</sup> <i>Aristida effusa</i>		?	Low
<sup>1,2,3</sup> <i>Aristida meridionalis</i>		Increaser 3	Low
<sup>1,2,3</sup> <i>Aristida rhiniochloa</i>		Increaser 2	Low
<sup>1,3</sup> <i>Aristida stipitata</i>		Increaser 2	Low
<sup>3</sup> <i>Aristida stipoides</i>		?	Low
<sup>1,2,3</sup> <i>Brachiaria deflexa</i>		Increaser 2	Average
<sup>2</sup> <i>Brachiaria eruciformis</i>		Increaser 2	Average
<sup>1,2</sup> <i>Bothriochloa radicans</i>		Increaser 2	Low
<sup>3</sup> <i>Brachiaria malacodes</i>		Increaser 2	Low
<sup>1,2</sup> <i>Brachiaria marlothii</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Brachiaria nigropedata</i>		Decreaser	High
<sup>1</sup> <i>Brachiaria poaeoides</i>		?	Average
<sup>1,2,3</sup> <i>Cenchrus ciliaris</i>		Decreaser	High
<sup>2</sup> <i>Centropodia glauca</i>		Decreaser	High
<sup>1,2,3</sup> <i>Chloris virgata</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Cymbopogon caesius</i>		Increaser 1	Low
<sup>2</sup> <i>Cymbopogon plurinodis</i>		Increaser 1	Low
<sup>1,3</sup> <i>Cymbopogon pospischilii</i>		Increaser 1	Low
<sup>1,2,3</sup> <i>Cynodon dactylon</i>		Increaser 2	High
<sup>1,2,3</sup> <i>Dactyloctenium aegyptium</i>		Increaser 2	Average
<sup>1,3</sup> <i>Danthoniopsis ramosa</i>		?	Average
<sup>2,3</sup> <i>Dichanthium annulatum</i>		Decreaser	High
<sup>1</sup> <i>Dichanthium papillosum</i>		Decreaser	High
<sup>1,2,3</sup> <i>Digitaria eriantha</i>		Decreaser	High
<sup>2,3</sup> <i>Digitaria velutina</i>		Increaser 2	Low
<sup>2</sup> <i>Diplachne fusca</i>		Decreaser	High
<sup>1,2,3</sup> <i>Echinochloa holubii</i>		Increaser 2	Average
<sup>2</sup> <i>Eleusine coracana</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Elionurus muticus</i>		Increaser 3	Low
<sup>1,2,3</sup> <i>Enneapogon cenchroides</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Enneapogon desvauxii</i>		Intermediate	Average



Species: Scientific name	Status	Ecological Status	Grazing Value
<sup>3</sup> <i>Enneapogon scaber</i>		?	Low
<sup>1,2,3</sup> <i>Enneapogon scoparius</i>		Increaser 3	Low
<sup>1,3</sup> <i>Entoplocamia aristulata</i>		?	Average
<sup>1,3</sup> <i>Eragrostis annulata</i>		?	Low
<sup>2,3</sup> <i>Eragrostis bicolor</i>		?	Low
<sup>1,2,3</sup> <i>Eragrostis biflora</i>		Increaser 2	Low
<sup>2</sup> <i>Eragrostis cilianensis</i>		Increaser 2	Low
<sup>2</sup> <i>Eragrostis curvula</i>		Increaser 2	High
<sup>1,3</sup> <i>Eragrostis cylindriflora</i>		Increaser 2	Low
<sup>3</sup> <i>Eragrostis dinteri</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Eragrostis echinochloidea</i>		Increaser 2	Average
<sup>2</sup> <i>Eragrostis gummiflua</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Eragrostis lehmanniana</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Eragrostis nindensis</i>		Increaser 2	Average
<sup>1,3</sup> <i>Eragrostis omahekensis</i>	Endemic	Increaser 2	Low
<sup>1,3</sup> <i>Eragrostis porosa</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Eragrostis rigidior</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Eragrostis rotifer</i>		?	Average
<sup>1,3</sup> <i>Eragrostis scopelophila</i>	Endemic	Decreaser	Average
<sup>1,2,3</sup> <i>Eragrostis superba</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Eragrostis trichophora</i>		Increaser 2	Average
<sup>1</sup> <i>Eragrostis truncata</i>		?	Average
<sup>2,3</sup> <i>Eragrostis viscosa</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Fingerhuthia africana</i>		Decreaser	Average
<sup>1,2,3</sup> <i>Heteropogon contortus</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Hyparrhenia hirta</i>		Increaser 1	Average
<sup>2</sup> <i>Imperata cylindrica</i>		Increaser 1	Low
<sup>3</sup> <i>Leptochloa fusca</i>		?	Average
<sup>1,2,3</sup> <i>Melinis repens</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Microchloa caffra</i>		Increaser 2	Low
<sup>1,3</sup> <i>Monelytrum leuderitzianum</i>		?	Low
<sup>3</sup> <i>Odyssea paucinervis</i>		?	Low
<sup>2,3</sup> <i>Oropetium capense</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Panicum coloratum</i>		Decreaser	High
<sup>1,3</sup> <i>Panicum lanipes</i>		?	High
<sup>1,2,3</sup> <i>Panicum maximum</i>		Decreaser	High
<sup>3</sup> <i>Panicum novemnerve</i>		?	Low
<sup>3</sup> <i>Panicum repens</i>		Decreaser	High
<sup>1,3</sup> <i>Panicum stapfianum</i>		Decreaser	High
<sup>1,3</sup> <i>Pennisetum foermeranum</i>	Endemic	?	Low
<sup>1,3</sup> <i>Pogonarthria fleckii</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Pogonarthria squarrosa</i>		Increaser 2	Low
<sup>2,3</sup> <i>Schizachyrium sanguineum</i>		Increaser 1	Low
<sup>1,2,3</sup> <i>Schmidtia kalahariensis</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Schmidtia pappophoroides</i>		Decreaser	High
<sup>1,3</sup> <i>Setaria finita</i>	Endemic	?	Low
<sup>2</sup> <i>Setaria incrassata</i>		Decreaser	High
<sup>2</sup> <i>Setaria pallide-fusca</i>		Increaser 2	Average
<sup>1,2,3</sup> <i>Setaria verticillata</i>		Increaser 2	Average
<sup>3</sup> <i>Sorghum bicolor</i>		?	High
<sup>2,3</sup> <i>Sporobolus festivus</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Sporobolus fimbriatus</i>		Decreaser	High
<sup>1,2,3</sup> <i>Sporobolus ioclados</i>		Increaser 2	Average

<b>Species: Scientific name</b>	<b>Status</b>	<b>Ecological Status</b>	<b>Grazing Value</b>
<sup>2</sup> <i>Sporobolus pyramidalis</i>		Increaser 2	Low
<sup>1,2</sup> <i>Stipagrostis ciliata</i>		Decreaser	High
<sup>1,2,3</sup> <i>Stipagrostis hirtigluma</i>		Increaser 2	Low
<sup>1,3</sup> <i>Stipagrostis hochstetteriana</i>		Decreaser	High
<sup>1,2,3</sup> <i>Stipagrostis namaquensis</i>		?	Average
<sup>1,2,3</sup> <i>Stipagrostis obtusa</i>		Decreaser	High
<sup>1,2,3</sup> <i>Stipagrostis uniplumis</i>		Increaser 2	Average
<sup>1,2</sup> <i>Themeda triandra</i>		Decreaser	High
<sup>2,3</sup> <i>Tragus berteronianus</i>		Increaser 2	Low
<sup>3</sup> <i>Tragus racemosus</i>		Increaser 2	Low
<sup>1,2,3</sup> <i>Tricholaena monachne</i>		Increaser 2	Average
<sup>2</sup> <i>Trichoneura grandiglumis</i>		Increaser 2	Low
<sup>1</sup> <i>Triraphis purpurea</i>		Increaser 1	Low
<sup>1,3</sup> <i>Triraphis ramosissima</i>		?	High
<sup>1</sup> <i>Urochloa bolbodes</i>		Decreaser	High
<sup>3</sup> <i>Urochloa brachyura</i>		?	Average
<sup>2,3</sup> <i>Urochloa oligotricha</i>		Decreaser	High
<sup>2,3</sup> <i>Urochloa panicoides</i>		Increaser 2	High
<sup>3</sup> <i>Urochloa trichopus</i>		?	Low
<sup>3</sup> <i>Willkommia sarmentosa</i>		?	High

**Endemic – Müller (2007)**

? – not classified in literature, but often similar to other species within the genus

None of the grass species known/expected to occur in the general area of the proposed Etosha King Nehale Lodge are however exclusively associated with the proposed development areas.

## APPENDIX D: ASSESSMENT METHODOLOGY

The evaluation and prediction of environmental and social impacts require the assessment of the project characteristics against the baseline of environmental and social characteristics and ensuring all potentially significant impacts are identified and assessed.

The significance of an impact was determined by taking into consideration the combination of the sensitivity and importance/value of environmental and social receptors that may be affected by the planned project, the nature and characteristics of the impact, and the magnitude of potential change. The magnitude of change (the impact) is the identifiable changes to the existing environment which may be direct or indirect; temporary/short term, long term or permanent; and either beneficial or adverse. These are described as follows and thresholds provided in Tables 1 to 3.

- The **sensitivity and value of a receptor** are determined by identifying how sensitive and vulnerable a receptor is to change, and the importance of the receptor (internationally, nationally, regionally and locally).
- The **nature and characteristics of the impact** are determined through consideration of the frequency, duration, reversibility and probability and the impact occurring.
- The **magnitude of change** measures the scale or extent of the change from the baseline condition, irrespective of the value. The magnitude of change may alter over time, therefore temporal variation is considered (short-term, medium-term; long-term, reversible, reversible or permanent)

**Table 1 - Sensitivity and Value of Receptor**

SENSITIVITY AND VALUE	DESCRIPTION
High	Of value, importance or rarity on an international and national scale, and with very limited potential for substitution; and/or very sensitive to change or has little capacity to accommodate a change.
Medium	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or moderate sensitivity to change, or moderate capacity to accommodate a change.
Low	Of value, importance or rarity on a local scale; and/or not particularly sensitive to change or has considerable capacity to accommodate a change.

**Table 2 - Nature of Impact**

NATURE	DESCRIPTION
<b>Positive</b>	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
<b>Negative</b>	An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.
<b>Direct</b>	Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/receptors.
<b>Indirect</b>	Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area
<b>Extent / Geographic Scale</b>	
<b>On-site</b>	Impacts that are limited to the boundaries of the planned project site
<b>Local</b>	Impacts that occur in the local area of influence, including around the planned site and within the wider community
<b>Regional</b>	Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.
<b>National</b>	Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
<b>International</b>	Impacts that affect a receptor that is internationally important by virtue of scale, designation, quality or rarity.
<b>Duration</b>	
<b>Short-term</b>	Impacts that are likely to last for the duration of the activity causing the impact and are recoverable
<b>Medium-term</b>	Impacts that are likely to continue after the activity causing the impact and are recoverable
<b>Long-term</b>	Impacts that are likely to last far beyond the end of the activity causing the damage but are recoverable over time
<b>Reversibility</b>	
<b>Permanent /Irreversible</b>	Impacts which are not reversible and are permanent
<b>Temporary / Reversible</b>	Impacts are reversible and recoverable in the future
<b>Likelihood</b>	
<b>Certain</b>	The impact is likely to occur
<b>Likely</b>	The impact is likely to occur under most circumstances
<b>Unlikely</b>	The impact is unlikely to occur

**Table 3 - Magnitude of Change**

MAGNITUDE OF CHANGE	DESCRIPTION
<b>Major</b>	Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or Large-scale or major improvement of resources quality; extensive restoration or enhancement; major improvement of attribute quality.
<b>Moderate</b>	Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or Benefit to, or addition of, key characteristics, features or elements; improvements of attribute quality.
<b>Minor</b>	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring.
<b>Negligible</b>	Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.

The level of certainty has also been applied to the assessment to demonstrate how certain the assessment conclusions are and where there is potential for misinterpretation or a requirement to identify further mitigation measures, thereby adopting a precautionary approach. Where there is a low degree of certainty, monitoring and management measures can be implemented to determine if the impacts are worse than predicted and support the identification of additional mitigation measures through the lifetime of the planned project. Table 4 provides the levels of certainty applied to the assessment, as well as a description.

**Table 4 – Level of certainty**

LEVEL OF CERTAINTY	DESCRIPTION
<b>High</b>	Likely changes are well understood. Design/information/data used to determine impacts is very comprehensive. Interactions are well understood and documented. Predictions are modelled, and maps based on interpretations are supported by a large volume of data. Design/information/data has very comprehensive spatial coverage or resolution.
<b>Medium</b>	Likely changes are understood. Design/information/data used to determine impacts include a moderate level of detail. Interactions are understood with some documented evidence. Predictions are modelled but not yet validated and/or calibrated. Mapped outputs are supported by a moderate spatial coverage or resolution.
<b>Low</b>	Interactions are currently poorly understood and not documented. Predictions are not modelled, and the assessment is based on expert interpretation using little or no quantitative data. Design is not fully developed, or information has poor spatial coverage or resolution.

The significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change (as discussed above) and guided by the matrix presented in Figure 1. The matrix is applicable for impacts that are either positive or negative. The distinction and description of significance and whether the impact is positive, or negative is provided in Table 4.

**Figure 1 – Guide to significance ratings**

		<b>Magnitude of Change</b>				
		Negligible	Minor	Moderate	Major	
	<b>High</b>	Minor (3)	Moderate (6)	Major (9)	Major (12)	
	<b>Medium</b>	Low (2)	Minor (4)	Moderate (6)	Major (8)	
	<b>Low</b>	Low (1)	Low (2)	Minor (3)	Moderate (4)	
						<b>Sensitivity</b>

Significance is not defined in the Namibian EIA Regulations, however the Draft Procedure and Guidance for EIA and EMP states that the significance of a predicted impact depends upon its context and intensity. Accordingly, definitions for each level of significance has been provided in Table 4. These definitions were used to check the conclusions of the assessment of receptor sensitivity, nature of impact and magnitude of impact was appropriate.

**Table 4 – Significance Description**

SIGNIFICANCE OF IMPACT	DESCRIPTION
<b>Major (negative)</b>	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors.  Impacts are expected to be permanent and non- reversible on a national scale and/or have international significance or result in a legislative non- compliance.
<b>Moderate (negative)</b>	Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.
<b>Minor (negative)</b>	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.
<b>Low (negative)</b>	Impacts are considered to be local factors that are unlikely to be critical to decision-making.
<b>Low – Major (Beneficial)</b>	Impacts are considered to be beneficial to the environment and society:

To ensure the beneficial impacts are brought out in the assessment, green has been applied to ensure the different type of impact is clear. The description for each level of significance presented in Table 4 was also followed when determining the level of significance for a beneficial impact.

The significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change, as well as the definition for significance. In most instances, moderate and major adverse impacts are considered as significant, however there may be some instances where impacts are lower than this but are considered to be significant. The following thresholds were therefore used to double check the assessment of significance had been applied appropriately; a significant impact would meet at least one of the following criteria:

- It exceeds widely recognized levels of acceptable change;
- It threatens or enhances the viability or integrity of a receptor or receptor group of concern; and
- It is likely to be material to the ultimate decision about whether or not the environmental clearance certificate is granted.

## APPENDIX E: EVIDENCE OF PUBLIC CONSULTATION

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Market Watch

THURSDAY 11 OCTOBER 2018



**Office of the Bursar**

### Request for Proposals

Procurement Reference No: SC/RP/NUST-029/2018

NUST hereby invites registered and reputable Namibian Professional Consultancy Service Providers to submit both financial and technical bids for **The Provision of Consulting Services to develop the State of Energy Report and framework for the Namibia Energy Institute (NEI).**

- Interested eligible Bidders may obtain further information from NUST Procurement Management Unit by sending an email to [bidbox@nust.na](mailto:bidbox@nust.na).
- A complete set of Terms of Reference / Bidding Documents in English is available for download from the NUST website at [www.nust.na](http://www.nust.na).
- Bids must be placed in closed envelopes clearly marked as per instructions in the TOR Documents and delivered to the **Namibia University of Science and Technology, Bid Box, E-Haus, 13 Storch Street, Windhoek West.**
- Bids will be opened in the presence of the Bidders and/or their representatives who choose to attend, at the Namibia University of Science and Technology, E-Haus, 13 Storch Street, Windhoek West, **on Friday, 26 October 2018, immediately after closing time.**
- Electronic Bidding will not be permitted. Late Bids will be rejected.**

**Closing date: Friday, 26 October 2018**  
Time: 12:00 (local time)  
Cost: Free

Interested eligible bidders contact:  
Procurement Related Enquiries:  
Procurement Management Unit  
T: +264 61 207 2000  
E: [bidbox@nust.na](mailto:bidbox@nust.na)

**NAMIBIA UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY  
[www.nust.na](http://www.nust.na)

**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS**

**DEVELOPMENT OF THE GONDWANA ETOSHA KING NEHALE LODGE, OSHIKOTO REGION, NAMIBIA**

Environmental Compliance Consultancy cc (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in accordance with the Environmental Management Act, 2007 will be made as per the following:


**Applicant:** Gondwana Collection Namibia (Pty) Ltd  
**Environmental Assessment Practitioner:** Environmental Compliance Consultancy  
**Location:** Oshikoto Region, Namibia.

**Project:** Proposed development of the Gondwana Etosha King Nehale Lodge in the King Nehale Conservancy, Oshikoto region, Namibia.

**Proposed Activity:** The proposed project includes the development of a forty (40) room lodge in the King Nehale Conservancy in the Oshikoto Region, 1 km from the Etosha National Park. The lodge will be constructed using sand bags which are an eco-friendly alternative to bricks. Additional activities to be carried out on site include; construction of water sewage tanks, water pipeline to import fresh water, powerline to import electricity, staff housing, room for back-up generator and sewage recycling plant.

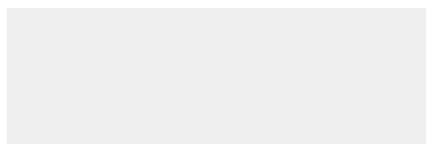
**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, 2007 (No 7 of 2007), ECC on behalf of Gondwana Collection Namibia (Pty) Ltd is required to submit an application for Environmental Clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Review Period:** The review and comment period is to provide I&AP's and stakeholders an opportunity to comment on the project, this period is effective from **4<sup>th</sup> October 2018 – 24<sup>th</sup> October 2018**. Interested and affected parties (I&APs) and Stakeholders are required to register for the project at: <http://eccenvironmental.com/project>



**Contact:** Mr JS Bezuidenhout or Ms J Mooney  
**Environmental Compliance Consultancy**  
**Registration Number:** CC/2013/11404  
PO Box 91193, Klein Windhoek  
Tel: +264 816 53 1214 or +264 81 653 1214  
E-mail: [info@eccenvironmental.com](mailto:info@eccenvironmental.com)  
**Website:** <http://www.eccenvironmental.com>  
**Project ID:** ECC-62-181

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## TENDERS

MTC hereby invites appropriately qualified companies to apply for the following tenders:

**MTC41/18/0**  
DECOMMISSIONING, INSTALLATIONS AND COMMISSIONING OF MICROWAVE LINKS FOR MTC

BRIEFING MEETING DATE:  
Monday, 15 October 2018, 10:00  
CLOSING DATE:  
Friday, 26 October 2018, 14:30

**MTC44/18/0**  
EXTERIOR REVAMP AND BRANDING OF THE MTC HEAD OFFICE BUILDING


BRIEFING MEETING DATE:  
Monday, 15 October 2018, 10:00  
CLOSING DATE:  
Friday, 26 October 2018, 14:30

**MTC43/18/0**  
SUPPLY, DELIVERY, INSTALLATION, TRAINING AND AFTER SALES AND MAINTENANCE SUPPORT OF A COMPLETE UHD FLY-AWAY KIT FOR MTC

BRIEFING MEETING DATE:  
Friday, 12 October 2018, 10:00  
CLOSING DATE:  
Friday, 19 October 2018, 14:30

Tender documents are available at:  
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**AFRICA NEWS IN BRIEF**

**NENE SAYS WAS FIRED FOR BLOCKING RUSSIAN DEAL**  
South Africa's finance minister Nhlamhla Nene told a judicial corruption inquiry on Wednesday that he was fired by former president Jacob Zuma for refusing to approve a US\$100 billion nuclear power deal with Russia in 2015.  
Nene is the highest profile figure to give evidence at a probe into alleged influence-peddling by the Gupta

family, friends of Zuma, who are accused of using their relationship with the former leader to unduly win state contracts.  
Zuma has repeatedly denied accusations by his opponents that he pushed for a deal with President Vladimir Putin at a BRICS summit for Russia to build a fleet of nuclear power stations.

-Nampa/Reuters

**MINING FIRMS SAY ZAMBIA'S TAX HIKE PLAN WOULD RUIN ECONOMY**

Zambia's proposed mining tax increases would hobble Africa's second biggest copper industry, companies said on Thursday, a further warning to investors already concerned about the country's mounting debt.  
Several mines would become unprofitable if the tax plans were implemented with overall copper production likely to fall, Zambia Chamber of Mines President Nathan Chishimba said.  
"More tax regime instability, massive increases, and novel taxes not seen anywhere else in the world, will hurt the mining industry and all those who rely on its success," Chishimba said in a statement.  
"As industry production shrinks through the impact, there will be less jobs, less taxes and as a



PHOTO NAMPA/REUTERS

result there will be less in the government's bank account for many years to come."


-Nampa/Reuters

**KENYA'S EARNINGS FROM TOURISM TO CLIMB - MINISTER**  
Kenya's tourism minister forecast that the country is likely to earn

15% more this year from its tourism sector as visitor numbers jump 17 to 18%.


The East African nation, which relies on tourism as a key source of hard currency and jobs, had 1.47 million tourists last year and earned 120 billion shillings (US\$1.19 billion) from the sector.

-Nampa/Reuters




**MINISTRY OF AGRICULTURE, WATER AND FORESTRY**  
**SLAUGHTER CATTLE AUCTION OF SACHINGA LDC**

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From Katima Mulilo, drive 30 km until Sachinga LDC sign board on your right. Drive 2 km up to farmstead  
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**THURSDAY, 11 OCTOBER 2018**  
**10H00**  
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**REPUBLIC OF NAMIBIA**  
Ministry of Health and Social Services, First City Centre, 6th Floor, Levinson Arcade of Independence Avenue, Namibia

**PROGRAMME MANAGEMENT UNIT (PMU)**  
THE MINISTRY OF HEALTH AND SOCIAL SERVICES  
GLOBAL FUND NAMIBIA-TENDER COMMITTEE

**ADVERTISEMENT**  
**TENDERS ARE INVITED FOR THE FOLLOWING:**

Tender No: GF 005/2018  
**DESCRIPTION:**  
Provision of Internal Audit services to Namibia Global Fund Programme  
Closing Date: Thursday, 25 October 2018 at 11h00

**TENDER DOCUMENTS TO BE COLLECTED FROM:**  
Ministry of Health and Social Services, Global Fund (PMU)  
First City Centre, 6th Floor, Levinson Arcade  
Independence Avenue  
Windhoek, Namibia

**TENDER DOCUMENTS TO BE HAND DELIVERED IN THE CORRECT TENDER BOX AT THE ABOVE ADDRESS**  
All interested parties are invited to attend the tender opening session on **Thursday, 25 October 2018, after 11h00** at venue to be confirmed.


A non-refundable levy of NS 300.00 per Tender is payable.

NB: NO LATE TENDERS WILL BE ACCEPTED and THE NGFP TENDER COMMITTEE'S DECISION IS FINAL AND IRREVOCABLE.

**Please Note:**  
NO CASH or CHEQUES. Direct deposits or EFTs are the only acceptable payment method. Account number available on request from the below contact person.

Kindly contact Ms. Anna Amupanda (Telephone number below) for banking details

Contact Persons: Mr. J. Alcock or Mr. K. Strauss  
Tel: + 264 61- 296 5700  
Fax: + 264 61- 234 956

  
THE MOTOR VEHICLE ACCIDENT FUND OF NAMIBIA

**Consultancy Services (SC)**

**ESTABLISHMENT OF BUSINESS REQUIREMENTS FOR A COMPLETE ERP SOLUTION - REF: SC/RP/MVA Fund - 03/2018**



The MVA Fund invites suppliers to submit technical and financial proposals for Establishing Business Requirements for an Enterprise Resource Planning (ERP) solution/ comprehensive IT System for the Motor Vehicle Accident Fund of Namibia.

Bid documents with detailed information are available at MVA Fund Windhoek Service Centre at a non-refundable administrative fee of N\$100.00. For further information and submission, please visit our website at: <http://www.mvafund.com.na>.

Bids addressed to the Procurement Management Unit must be delivered in sealed envelopes and dropped off in the bid box by reception at: MVA Fund Service Centre, Church Street, Erf No. 8596, Windhoek.

Due Date: Monday, 29 October 2018 at 12H00

Contact Person: Bonfasius Kleopas  
Procurement Manager  
Tel: (061) 289 7051

[www.mvafund.com.na](http://www.mvafund.com.na) Get in touch on  

**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS**  
**DEVELOPMENT OF THE GONDWANA ETOSHA KING NEHALE LODGE, OSHIKOTO REGION, NAMIBIA**

Environmental Compliance Consultancy cc (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in accordance with the Environmental Management Act, 2007 will be made as per the following:


**Applicant:** Gondwana Collection Namibia (Pty) Ltd  
**Environmental Assessment Practitioner:** Environmental Compliance Consultancy  
**Location:** Oshikoto Region, Namibia.

**Project:** Proposed development of the Gondwana Etosha King Nehale Lodge in the King Nehale Conservancy, Oshikoto region, Namibia.

**Proposed Activity:** The proposed project includes the development of a forty (40) room lodge in the King Nehale Conservancy in the Oshikoto Region, 1 km from the Etosha National Park. The lodge will be constructed using sand bags which are an eco-friendly alternative to bricks. Additional activities to be carried out on site include; construction of water sewage tanks, water pipeline to import fresh water, powerline to import electricity, staff housing, room for back-up generator and sewage recycling plant.

**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, 2007 (No 7 of 2007), ECC on behalf of Gondwana Collection Namibia (Pty) Ltd is required to submit an application for Environmental Clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Review Period:** The review and comment period is to provide I&AP's and stakeholders an opportunity to comment on the project, this period is effective from **4<sup>th</sup> October 2018 – 24<sup>th</sup> October 2018**. Interested and affected parties (I&APs) and Stakeholders are required to register for the project at: <http://eccenvironmental.com/project>

  
**ENVIRONMENTAL COMPLIANCE CONSULTANCY**

**Contact:** Mr JS Bezuidenhout or Ms J Mooney  
**Environmental Compliance Consultancy**  
**Registration Number: CC/2013/11404**  
PO Box 91193, Klein Windhoek  
Tel: +264 816 53 1214 or +264 81 653 1214  
E-mail: [info@eccenvironmental.com](mailto:info@eccenvironmental.com)  
**Website:** <http://www.eccenvironmental.com>  
**Project ID:** ECC-62-181

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**MUNICIPALITY OF KEETMANSHOOP**

**SALE OF ERVEN**

**COUNCIL CALLING FOR OBJECTIONS**

Keetmanshoop Municipality is herewith calling for objections for the disposal of the listed erven by way of Private Treaty in accordance with section 30(1) (i) of the Local Authorities Act, 1992 (Act 23 of 1992), as amended. Notice is hereby in terms of Section 45(2) of the Local Authority Act 23 of 1992.

ERF NO.	NAME	SUBURB	ZONING	SIZE OF ERF	PRICE R#	COUNCIL RESOLUTION
Porton 28	Mr Johan Steyn	Keetmanshoop	Agricultural	30.000.00m <sup>2</sup>	1.000.000.00 (Net Excludes)	23rd January 2018 Item 10
077	Mr HJ Rosenthal	Kleinfontein	Residential 1	595m <sup>2</sup>	70.180.00	17th February 2018 Item 20
2421	Mrs Helene Christian	Tweebagge Extension 2	Residential 2	5.000m <sup>2</sup>	277.790.00	04th July 2018 Item 142
100	Mr Joel Nyamshelo	Tweebagge Extension 1	Residential 1	1.007m <sup>2</sup>	80.390.00	04th July 2018 Item 141
260	Swapo Party	Tweebagge	Residential 1	530m <sup>2</sup>	31.000.00	04th July 2018 Item 140
3036	Sofia Magdalena Gellert	Tweebagge Extension 2	Residential 1	330m <sup>2</sup>	5.533.44	1st August 2018 Item 158
3920	Mr Mathew Numbala	Tweebagge Extension 5	Residential 1	254m <sup>2</sup>	605.490.00	01 August 2018 Item 157
1040	Mr Adriaan Berends	Erzidan Extension 1	Residential 3	1941m <sup>2</sup>	584.820.00	1st August 2018 Item 156
1281	Mrs Catherine J Daga	Keetmanshoop	Light Industrial	3000m <sup>2</sup>	426.000.00 (Net Excludes)	19th April 2018 Item 77
1054	Mr Ludwig H Joubert	Tweebagge Extension 2	Residential 1	125m <sup>2</sup>	36.200.00	19th April 2018 Item 78
400	Mr Lukas Gellert	Tweebagge Extension 2	Residential 1	110m <sup>2</sup>	4.390.00	20th May 2018 Item 100
500	Mr Clemens Apollis	Tweebagge Extension 2	Residential 1	350m <sup>2</sup>	10.890.00	20th May 2018 Item 101
510	Mr Othmar A Christian	Tweebagge Extension 2	Residential 1	330m <sup>2</sup>	11.790.00	20th May 2018 Item 102
1131	Mr Sylvia Noyes	Keetmanshoop	Residential 1	1475m <sup>2</sup>	221.290.00	20th May 2018 Item 112
1816	Mr Elizabeth Hill	Tweebagge Extension 2	Business 2	430m <sup>2</sup>	33.000.00	20th May 2018 Item 113
1602	Mr Henrich Kluge	Tweebagge Extension 2	Residential 1	125m <sup>2</sup>	36.200.00	1st August 2018 Item 159
2974	Swapo Party	Tweebagge Extension 4	Designated Residential	21.000m <sup>2</sup>	0.000.00	1st August 2018 Item 170
Township 150 (vra. Porton 185)	BMVG Trading Enterprise CC	Keetmanshoop	Industrial 1	20.000m <sup>2</sup>	600.000.00 (Net Excludes)	04th July 2018 Item 147

Notice is hereby given in terms of section 63(2) of the Local Authority Act 23 of 1992, as amended that the Municipality Council of Keetmanshoop offers the under-mentioned Industrial and Business erven for sale by means of Private Transaction. All prices Excludes VAT.

HIGHEST TENDER	ERF NR.	ERF SIZE	ZONE	SETUP PRICE (VAT EXCL.)	PRICE
Liesel H Baskamp	2299	180m <sup>2</sup>	Business	R# 61.300.00	R#260.500.00 (VAT Excl)
Archa Nole Kapela	2298	900m <sup>2</sup>	Business	R#90.300.00	R#187.410.00 (VAT Excl)
Nazomsa H van der Merwe	3300	900m <sup>2</sup>	Business	R#90.300.00	R#202.230.00 (VAT Excl)
Veronica Toussan	3301	900m <sup>2</sup>	Business	R#90.300.00	R#202.230.00 (VAT Excl)
Gene Rhu Hooes Oordeman Inv.CC	3302	1584m <sup>2</sup>	Business	R#158.400.00	R#198.990.00 (VAT Excl)
Melias K Namapolo	1255	4200m <sup>2</sup>	Industrial	R#289.000.00	R#1.380.000.00 (VAT Excl)
Urina Lohys Lintweh	1274	3361m <sup>2</sup>	Industrial	R#289.000.00	R#445.052.00 (VAT Excl)

All written objections should be submitted within seven(7) working days from date of this publication to address provided below (stating reasons) for objection.

Any queries regarding these erven can be addressed to the undersigned or our Property office (Vra Etraste Koning or Barbara Metzger) at tel: 063-221246 or Fax: 063-221265.

Yours in development



**DESMOND CODRUS BASSOS**  
CHIEF EXECUTIVE OFFICER

The Gateway to Southern Oshana

**City of Windhoek**

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## PUBLIC NOTICE

### CLOSURE OF ROAD PENDUKA VILLAGE TURN-OFF

**Description of the Affected Roadworks:**  
Public is hereby informed that the Penduka Access road going to Penduka Village near the Goringgob Dam will be closed due to a new infrastructure project and will only be open for the residents of Penduka Village.

**Duration:**  
The construction work will commence on October 20th and will last until 2019. We urge all road users to adhere to the traffic signals and any special restrictions around the construction work.

We apologise for any inconvenience while the necessary work is underway.

**Locality Map:**



**Enquiries:**  
Location: 061 279600  
Enquiries: 061 279600  
Email: 061 279600

**Coordinating Consulting Engineer:**  
Enquiries: 061 279600  
Email: 061 279600

**Issued by:**  
Office of the Chief Executive Officer  
Corporate Communications, Marketing & Public Participation  
Tel: 061 279600 / 279601  
Fax: 061 279600 / 279602  
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2018 Windhoek City of Windhoek

#### NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS DEVELOPMENT OF THE GONDWANA ETOSHA KING NEHALE LODGE, OSHKOTO REGION, NAMIBIA

Environmental Compliance Consultancy (ECC) Hereto gives notice to the public that an application for an Environmental Clearance Certificate in accordance with the Environmental Management Act, 2007 will be made on the 20th October 2018.

**Applicant:** Gondwana Collection Namibia (Pty) Ltd  
**Environmental Assessment Practitioner:** Environmental Compliance Consultancy  
**Location:** Oshana Region, Namibia.

**Project:** Proposed development of the Gondwana Etosha King Nehale Lodge in the King Nehale Conservancy, Oshana region, Namibia.

**Proposed Activity:** The proposed project includes the development of a luxury 600 room lodge in the King Nehale Conservancy in the Oshana Region, 1 km from the Etosha National Park. The lodge will be constructed using steel and glass which are all eco-friendly materials to be used. Additional activities to be carried out on site include: construction of water storage tanks, water pipeline to transport fresh water, concrete to meet authority, and the laying of roads for both, an parking and sewage recycling plant.

**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, 2007 (Act 23 of 2007), ECC on behalf of Gondwana Collection Namibia (Pty) Ltd is required to submit an application for Environmental Clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Review Period:** The review period is open to provide BAFs and also obtain an opportunity to comment on the project. This period is effective from 04 October 2018 – 24th October 2018. Interested and affected parties (IAPs) and Stakeholders are required to register for this project at: <http://www.environmental.com.na>.

**Contact:** Mr JS Bealshelvet or Mr J Moore  
Environmental Compliance Consultancy  
Registration Number: OC284/14/04  
PO Box 61100, Windhoek  
Tel: +264 279 42 2010 or +264 21 860 1212  
E-mail: [info@environmental.com.na](mailto:info@environmental.com.na)  
Website: [www.environmental.com.na](http://www.environmental.com.na)  
Project ID: ECC-09-101

THE NAMIBIAN

FRIDAY 5 OCTOBER 2018 C1

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### NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS DEVELOPMENT OF THE GONDWANA ETOSHA KING NEHALE LODGE, OSHAKATI REGION, NAMIBIA

Environmental Compliance Consultancy (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in accordance with the Environmental Management Act, 2007 will be made as per the following:

**Applicant:** Gondwana Collection Namibia (Pty) Ltd  
**Environmental Assessment Practitioner:** Environmental Compliance Consultancy  
**Location:** Oshana Region, Namibia.

**Project:** Proposed development of the Gondwana Etosha King Nehale Lodge in the King Nehale Conservancy, Oshana region, Namibia.

**Proposed Activity:** The proposed project includes the development of a fully 400 room lodge in the King Nehale Conservancy in the Oshana Region. It is near the Great National Park. The lodge will be constructed using solid logs which are eco-friendly alternative to bricks. Additional activities to be carried out on site include: construction of water service tanks, water pipelines to transport fresh water, sewerage to transport sanitary effluent, laundry room for linen, air generation and sewage recycling plant.

**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, 2007 (Act 7 of 2007), ECC (as agent of Gondwana Collection Namibia (Pty) Ltd) is required to submit an application for Environmental Clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Review Period:** The review period period is to provide BAP's an opportunity to comment on the project. The period is effective from 4th October 2018 – 24th October 2018. Interested and affected parties (IAPs) and Stakeholders are required to register for the project at: <http://www.environmental.com.nam>

**Contact:** Mr JJ Bredenkamp or Ms J Marney  
Environmental Compliance Consultancy  
Registration Number: CC2012/1104  
PO Box 24 192, Klein Windhoek  
Tel: +264 61 92 1214 or +264 91 800 1014  
E-mail: [info@environmental.com.nam](mailto:info@environmental.com.nam)  
Website: <http://www.environmental.com.nam>  
Project ID: 180102-187




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<b>Windhoek Divisional Office</b> <ul style="list-style-type: none"> <li>Marketing Manager</li> <li>Promotions Co-ordinator</li> <li>Human Resources Administrator</li> <li>Estimator</li> <li>Administrative Clerk</li> </ul>	<b>Windhoek Lifestyle Centre</b> <ul style="list-style-type: none"> <li>Granning/Verifying Clerk</li> </ul>	<b>Keetmanshoop</b> <ul style="list-style-type: none"> <li>Driver</li> </ul>	<b>Ondangwa</b> <ul style="list-style-type: none"> <li>Administrative Supervisor</li> </ul>
<b>Windhoek Central</b> <ul style="list-style-type: none"> <li>Salesperson: Tools</li> </ul>	<b>Otjiwarongo</b> <ul style="list-style-type: none"> <li>Granning/Verifying Clerk</li> <li>Salesperson</li> </ul>	<b>Tsumeb</b> <ul style="list-style-type: none"> <li>Granning/Verifying Clerk</li> </ul>	<b>Katima Mulilo</b> <ul style="list-style-type: none"> <li>Branch Manager</li> <li>Dispatch Controller</li> <li>Driver</li> <li>Forklift Driver</li> </ul>

**CLOSING DATE - 12 October 2018**

If you are interested and have the required knowledge and skills, you may submit your CV to [recruitment@pupkewitz.com.na](mailto:recruitment@pupkewitz.com.na) on or before the closing date. Please indicate the position name in the subject line. Also note that only shortlisted candidates will be contacted. We offer a market related remuneration associated with a large corporate employer. We are an equal opportunity employer. Should you require additional information about the positions, please visit [www.megabuild.com.na](http://www.megabuild.com.na)



# DEVELOPMENT OF THE GONDWANA ETOSHA KING NEHALE LODGE, OSHIKOTO REGION, NAMIBIA

ENVIRONMENTAL IMPACT ASSESSMENT - OCTOBER 2018

CLIENT: GONDWANA COLLECTION NAMIBIA PTY LTD

## BACKGROUND INFORMATION DOCUMENT



### PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to provide interested and affected parties (I&APS) a background to the proposed project: Development of the Gondwana Etosha King Nehale Lodge, and hereby invite I&APS to register as part of the Environmental Impact Assessment (EIA) process. Through registering, all I&APS will be kept informed throughout the EIA process, and a platform for participation will be provided to submit comments/recommendations pertaining to the project.

This BID includes the following:

- Proposed Project: What is proposed and where
- Why the project is deemed necessary and what benefits or adverse impacts are anticipated
- What alternatives to the project have been considered
- How the EIA process works
- The public participation and how to become involved
- Next steps and way forward

### PROJECT INTRODUCTION

The project site is approximately 1km north of the Etosha National Park King Nehale Gate within the King Nehale Conservancy in the Oshikoto Region. Gondwana Collection Namibia PTY Ltd proposes to develop a lodge with a 4-5star rating consisting of forty (40) rooms. Gondwana Collection Namibia has been partnering with communities in the north eastern Regions of Namibia for the past seven (7) years, the Joint Venture Partnership with the King Nehale Conservancy is intended to further spread the financial and social benefits of ecotourism to the previously disenfranchised communities.

The proposed project triggers the Environmental Management Act of 2007 (Act No. 7 of 2007) due to it meeting the thresholds of the following Listed Activities:

1b the transmission and supply of electricity

2.1 the construction of waste sites, treatment of waste and disposal of waste

2.3 the import, processing, use and recycling, temporary storage, transit or export of waste

6. the construction of resorts, lodges, hotels or other tourism and hospitality facilities

8.6 construction of industrial and domestic wastewater treatment plants and related pipeline system

Environmental Compliance Consultancy [ECC] has been commissioned by the Proponent to undertake an environmental assessment and an Environmental Management Plan (EMP) in compliance with Namibian law in respect of, specifically, the Environmental Management Act of 2007 and associated Regulations. An Environmental Clearance application will be submitted to the Ministry of Environment and Tourism (MET).

### SCOPING

A SCOPING PROCESS IS A SHORTER PROCESS THAN A 'FULL' EIA BUT APPLIES THE SAME PRINCIPALS AND ASSESSMENT METHODOLOGY.

### INDEPENDENT ASSESSMENT PROCESS

WHY IS AN INDEPENDENT ASSESSMENT PROCESS IMPORTANT?

NAMIBIAN LAW AND INTERNATIONAL BEST PRACTICE CALL FOR THE PROFESSIONALS CARRYING OUT AN ENVIRONMENTAL ASSESSMENT PROCESS TO BE INDEPENDENT (I.E. HAVE NO CONNECTION TO THE PROJECT PROPONENT OR INTEREST IN THE PROJECT'S OUTCOME) TO ENSURE PROCESS INTEGRITY.

IN THIS WAY - LIKE APPOINTED FINANCIAL AUDITORS - STAKEHOLDERS AND THE AUTHORITIES REVIEWING APPLICATIONS CAN BE ASSURED



## GONDWANA ETOSHA KING NEHALE LODGE DEVELOPMENT

# WHAT IS PROPOSED?

The Gondwana Collection Namibia PTY Ltd proposes to develop a lodge with a 4-5star rating, the lodge buildings will be constructed using sandbags which are an eco-friendly alternative to bricks. The construction method is ideal for remote sites which have a low carbon footprint. Once operational the lodge will provide employment to forty (40) permanent staff members, the staff accommodation will be approximately 400 meters from the lodge site. The proposed development will consist of the following;

- Thirty-two (32) guest rooms and eight (8) family units each with an en-suite bathroom, external shower, private patio and splash pools;
- A main lodge area (bar, laundry, courtyard, toilets, reception and offices);
- Staff housing for 20 staff;
- A room housing the back-up generator;
- A powerline to import electricity;
- A water pipeline;
- Waste storage tanks; and
- Sewage recycling plants.



## WHAT ALTERNATIVES ARE BEING CONSIDERED?

Best practice environmental assessment methodology calls for consideration of different alternatives to a project being developed. The alternatives for the proposed project are currently being considered, which shall be included in the EIA Scoping Report. Some of these alternatives include, but not limited to design development, alternative site locations and distance from utilities such as access road, electricity and water.

## SCOPE OF ASSESSMENT

The Gondwana Etosha King Nehale Lodge will be situated approximately 1km from the Etosha King Nehale gate. The Lodge will offer up-market accommodation in close proximity to the Etosha National Park and offer tourists a central Namibian cultural experience. The development will be positioned among the existing vegetation on the plains and will be designed to blend into the environment.

The proposed project could potentially result in environmental and social impacts, both beneficial and adverse. The following construction activities are envisaged which shall be further refined as the project develops:

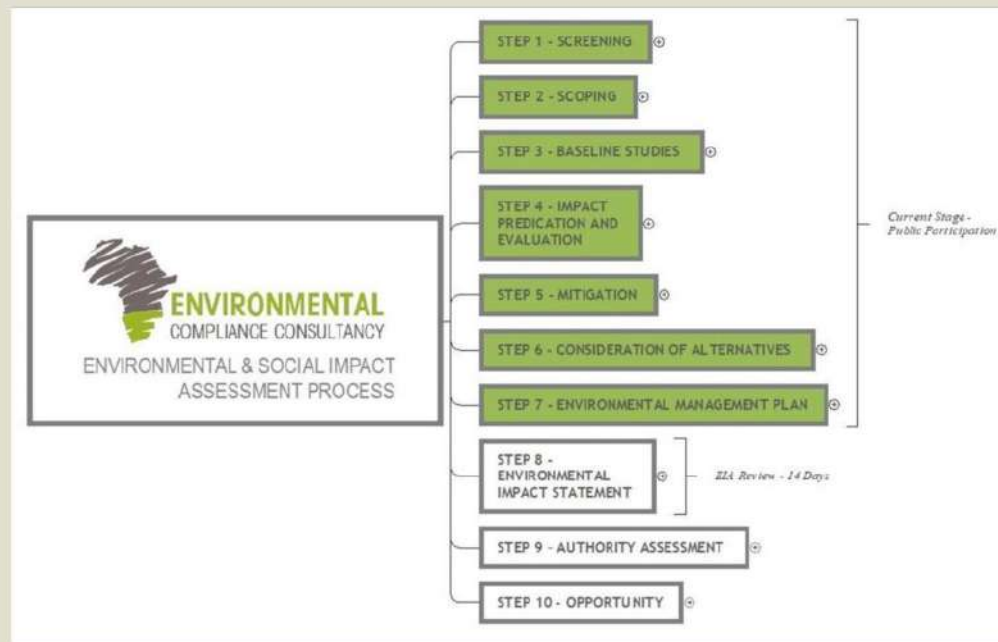
- Minimal vegetation clearance;
- Creation of access and internal roads;
- A car park will be located in an existing clearing, which might be slightly enlarged. Solar panels will be located in the car park to provide some shade;
- Construction of drainage infrastructure, power and water supply infrastructure, sewerage treatment facility and associated connections and pipework; and
- Construction of walkways made from recycled glass, walkways will be illuminated by LED lights that are focused on the path and not upwards, in this way minimizing light pollution.

Due to the nature of the proposed project, the design philosophy and vision of the development, and the implementation of industry best practice mitigation measures, the effects on the environment and society are expected to be minimal and localised. It is likely that there may be some short term, temporary localised disruption to ecological features (flora and fauna) on the site during the construction phase. During operations, it is likely that there may be some minor adverse as well as beneficial effects to the local society and economy.



## THE EIA PROCESS

The EIA process that shall be followed is in accordance with Environmental Management Act 2007. ECC shall conduct the environmental application process and manage the public participation process. Following the EIA process flowchart below, this project is currently at the Scoping phase and the public participation process is being conducted.



ECC will perform the following:

- Identify key stakeholders, authorities and municipalities, environmental groups and interested or affected members of the public, hereafter referred to as I&APs;
- Compile a BID for the proposed development (this document);
- Advertise the environmental application in two national newspapers;
- Place an on-site notices at conspicuous places at/ near the proposed development boundary;
- If required host a public meeting to encourage stakeholder participation and engagement, and provide details of issues identified by the environmental practitioner, stakeholders and I&APs;
- Record all comments of I&APs and present such comments, as well as responses provided by ECC, in the Comments and Responses Report, which will be included in the Scoping Report that shall submitted to MME and the MET; and
- Circulate the I&AP comments to the project team.

GONDWANA ETOSHA KING NEHALE LODGE



## MOVING FORWARD...

### PUBLIC PARTICIPATION & HOW TO GET INVOLVED

Public Participation is an important part of the EIA process; it allows the public and other stakeholders to raise concerns or provide valuable local environmental knowledge that can benefit the assessment, in addition it can aid the design evolution process.

The commenting period for the project for all I&APs will be 14 days from notification (newspaper adverts). The Draft Scoping Report will be made available to all relevant stakeholders and I&APs for further comment, before the final submission to the MET and the Competent Authority.

I&APs are encouraged to register in this Scoping Process using our website.

<http://eccenvironmental.com/projects/>

Comments must be submitted in writing and can be emailed to the following address:

[info@eccenvironmental.com](mailto:info@eccenvironmental.com)

Tel: +264 81 626 7278

Please note the EIA review period will be 14 days from the date that the I&AP have been notified.

### CONTACT US

#### Environmental Compliance Consultancy Contact Details

We welcome any enquiries regarding this document and its content, please contact:

#### Stephan Bezuidenhout

Environmental Consultant & Practitioner

Tel: +264 81 262 7872

Email: [stephan@eccenvironmental.com](mailto:stephan@eccenvironmental.com)

#### Jessica Mooney

Environmental Consultant & Practitioner

Tel: +264 81 653 1214

Email: [jessica@eccenvironmental.com](mailto:jessica@eccenvironmental.com)

At ECC we make sure all information is easily accessible to the public, follow our social media pages to be kept up to date.

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+264 81 262 7872 OR

+264 81 653 1214



**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS**

**DEVELOPMENT OF THE GONDWANA ETOSHA KING NEHALE LODGE, OSHIKOTO REGION, NAMIBIA**

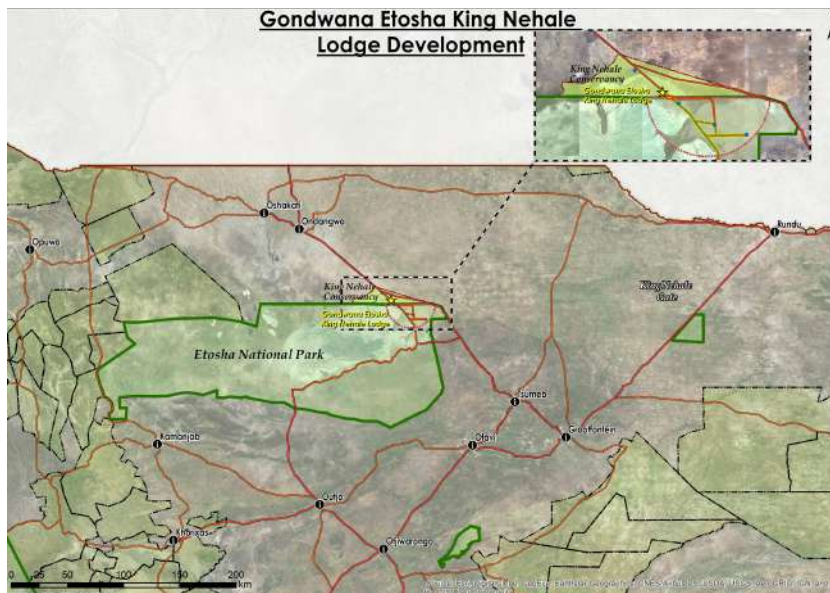
Environmental Compliance Consultancy CC (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in accordance with the Environmental Management Act, 2007 will be made as per the following:

**Applicant:** Gondwana Collection Namibia (Pty) Ltd  
**Environmental Assessment Practitioner (EAP):** Environmental Compliance Consultancy

**Project:** Proposed development of the Gondwana Etosha King Nehale Lodge in the King Nehale Conservancy, Oshikoto Region, Namibia.

**Proposed Activity:** The proposed project is for the development of a forty (40) room lodge in the King Nehale Conservancy in the Oshikoto Region. The lodge will be constructed using sand bags which are an eco-friendly alternative to bricks. Additional activities to be carried out on site include; construction of water sewage tanks, water pipeline to import fresh water, powerline to import electricity, staff housing, room for back- up generator, sewage recycling plant and construction of an access road.

**Project Location:** Oshikoto Region, Namibia.



**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, 2007 (No 7 of 2007), ECC on behalf of Gondwana Collection Namibia (Pty) Ltd is required to submit an application for Environmental Clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Purpose of the Review and Comment Period:** As part of the public participation process, the purpose of the review and comment period is to present the proposed project and to afford interested and affected parties an opportunity to comment on the project to ensure that all issues and concerns are captured and considered in the assessment.



Contact: Mr JS Bezuidenhout or Mrs J Mooney  
Environmental Compliance Consultancy  
Registration Number: CC/2013/11404  
PO Box 91193, Klein Windhoek  
Tel: +264 816 53 1214 or +264 81 653 1214  
E-mail: info@eccenvironmental.com  
Website: <http://www.eccenvironmental.com>  
Project ID: ECC-62-181

Appendix E1 – Interested and Affected Party Comments

**Wednesday, December 12, 2018 at 1:14:58 PM Central Africa Time**

**Subject:** RE: Public Review - Gondwana Etosha King Nehale Lodge  
**Date:** Wednesday, 12 December 2018 at 12:58:33 PM Central Africa Time  
**From:** Mike & Ann Scott  
**To:** 'Stephan Bezuidenhout'  
**Attachments:** image001.png

Dear Stephan

Thank you for your comprehensive Draft Scoping and Environmental & Social Management Plan. We have a few comments for you to consider in terms of the avifauna and the power supply:

1. The marking of the entire above-ground section of power line is strongly recommended, in view of its proximity to Etosha National Park and the known flightpaths of birds between the Andoni waterholes and surrounding areas, in particular the Blue Crane, Critically Endangered in Namibia and globally Vulnerable; resident in the Park for much of the year, and breeding in the Park during the summer. Wattled Crane, Endangered in Namibia and also globally Vulnerable, also visits the Andoni area from time to time. The Blue Crane at least should be included in your bird list (p57).

2. Mitigation for bird and power line interactions:

To mitigate for power line collisions, the recommended marking device is a Double Loop Bird Flight Diverter, fitted to the top conductor at 5-10 m intervals, alternating black and white. Alternatively (or in combination) the Viper Live Bird Flapper could be considered. Both devices are manufactured by Preformed Line Products (PLP).

Further mitigation measures to prevent electrocutions should also be incorporated:

- the earthing on wooden power line poles should stop 300 mm below the lowest phase to provide an "air space safety gap", in order to reduce electrocution risk; this procedure is known as "gapping".
- transformer/switchgear structures should be designed in such a way that they are not attractive as bird perches/nesting sites; selected live components should be insulated (e.g. using PVC piping or low-density polyethylene pipe [LDPE]; contact NamPower for advice).
- on strain structures where "jumper" wires are used in a horizontal configuration, the two outer jumpers should be suspended below the cross arm and the third/centre jumper should be insulated, or offset; or all jumpers insulated.
- should bird electrocutions take place, safe alternative perching areas/perching platforms may be provided.

3. The mitigation should take place during the construction stage, rather than the operational stage; regular monitoring would be important during the operational stage.

4. You may want to check on the relevant power line utility: in the North NamPower is responsible for transmission/high voltage lines, but Nored would be responsible for distribution/low voltage lines.

5. We have already forwarded our previous concerns about bird collisions in the Andoni area to Quintin Hartung at Gondwana, but let us know if you would also like us to forward this correspondence to you.

Please let us know if you require any further details.

Best wishes  
Ann & Mike Scott

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**From:** Stephan Bezuidenhout <stephan@eccenvironmental.com>  
**Sent:** Tuesday, December 11, 2018 5:48 PM  
**To:** Stephan Bezuidenhout <stephan@eccenvironmental.com>  
**Subject:** Public Review - Gondwana Etosha King Nehale Lodge

Dear Registered Interested and Affected Parties,

Page 1 of 2



### Potential threat to birds by the low voltage distribution power line north of King Nehale Gate, Etosha National Park

A relatively new low voltage power line in the area north of the King Nehale Gate, servicing the gate infrastructure at Andoni in the Etosha National Park (NP; see Figure 1), is regarded as a potential threat to birds in the area.



Figure 1. Approximate position of the low voltage (HPCD) power line (star) in the area of the King Nehale gate, immediately north of Andoni in the Etosha National Park.

The line is about 6.5 km long. The structure is a horizontal line post compact delta (HPCD), i.e. a single pole with three conductors running 80 cm beneath each other (Figure 2). This structure is used widely for low voltage, private distribution lines in Namibia.

The mission of the NamPower/NNF Strategic Partnership is to address wildlife and power line interactions in Namibia. The data collated by the Partnership over the past five years (see websites <http://www.nnf.org.na/project/nampowernnf-partnership/13/5/5.html> and [www.the-eis.com](http://www.the-eis.com)) has identified this structure as both a collision risk for bird species such as bustards, flamingos and raptors in Namibia, and an electrocution risk for gregarious species such as vultures when more than one bird attempts to sit on the same pole. The power line incidents recorded for 280 individual birds to date have involved the mortality of sixty birds (22%) on HPCD lines and associated structures (Figure 3 & 4). Given the difficulty of recording such incidents, this figure is likely to be an underestimate.



Figure 2. The HPCD (horizontal line post compact delta) structure is used widely for low voltage, private power lines throughout Namibia.

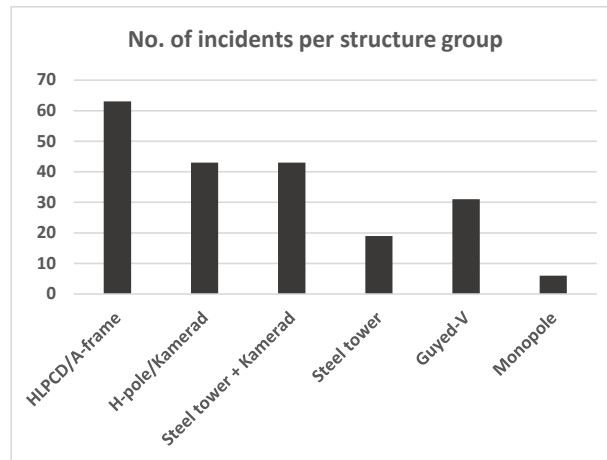


Figure 3. The HLPCD structure has been implicated in a number of power line incidents in Namibia, resulting in at least 60 wildlife mortalities to date (NamPower/NNF Strategic Partnership).



Figure 4. Examples of bird mortalities recorded on low voltage/HLPCD structures:  
 Top left: Kori Bustard collision (Aroab 33 kV line, July 2013);  
 Top right: Greater Flamingo collision (2 birds; Gibeon 33 kV line, September 2012);  
 Bottom left & right: Lappet-faced Vulture electrocution (Aroab 33 kV line, July 2013) (NamPower/NNF Strategic Partnership).



The proximity of this power line to the Etosha NP is a cause for concern, given the rich diversity of birdlife and the location of the Andoni waterhole and associated water bodies <4 km away from the line. Birds move regularly between the plains and water bodies of this area and those of the neighbouring agricultural areas, including the Omadhiya Lake system.

Using 1816DB as a representative quarter degree square for the area, at least 23 bird species have been identified that are sensitive to impacts of collisions on power lines; of these, at least 11 are also prone to electrocutions on power line structures (Figure 5; Table 1). These species are likely to fly diurnally and/or nocturnally.



Figure 5. Power line sensitive bird species in Etosha NP and environs (www.the-eis.com 2014). The number of species per quarter degree grid (QDS) is indicated by light (low) to dark (high).

**23 Red-listed bird species affected by power lines in QDS 1816DB**

*\*Globally Threatened*

**Potential impacts:**

**Collision:**

*Critically Endangered:* \*Blue Crane, \*Cape Vulture

*Endangered:* Bateleur, Black Stork, Great White Pelican, Martial Eagle, Saddle-billed Stork, Slaty Egret, Tawny Eagle, \*Wattled Crane

*Near Threatened:* Black-winged Pratincole, \*Grey Crowned Crane, Maccoa Duck, Marabou Stork, Peregrine Falcon, Verreauxs' (Black) Eagle, \*White-backed Vulture

*Vulnerable:* Chestnut-banded Plover, Greater Flamingo, \*Lappet-faced Vulture, \*Lesser Flamingo, White-headed Vulture

*Power line sensitive:* Kori Bustard

**Electrocution:**

*Critically Endangered:* \*Cape Vulture

*Endangered:* Bateleur, Black Stork, Martial Eagle, Tawny Eagle

*Near Threatened:* Marabou Stork, Peregrine Falcon, Verreauxs' (Black) Eagle, \*White-backed Vulture

*Vulnerable:* \*Lappet-faced Vulture, White-headed Vulture



The three crane species are of high concern. In particular, the small Blue Crane population (*Critically Endangered* in Namibia and also *Globally Threatened*; Figure 6 & 7) is in decline, with a maximum of only 23 birds recorded in 2013, compared to 60 in 2006; the loss of even one individual in a power line incident would thus be significant. Wattled Cranes (*Endangered* in Namibia and also *Globally Threatened*) have recently made their appearance at Andoni, and are similarly at risk (Figure 6-8).



Figure 6. Two Wattled Cranes (centre) with a group of Blue Cranes at Andoni in April 2013. This is one of the first records of Wattled Cranes within Etosha National Park in living memory. Note the larger 132 kV power line running along the B1 road in the background.

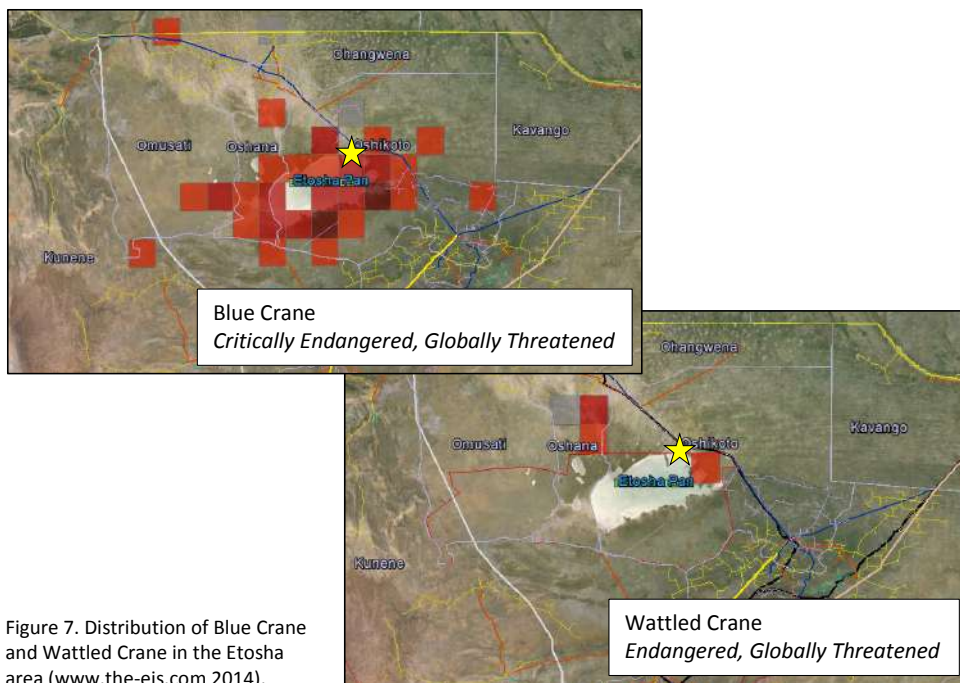


Figure 7. Distribution of Blue Crane and Wattled Crane in the Etosha area (www.the-eis.com 2014).

Blue Cranes are highly susceptible to collisions with overhead power lines (Shaw *et al.* 2010). Recent research (Martin & Shaw 2010) indicates that due to the existence of blind areas in their visual field, these birds will be blind in the direction of travel when in flight. Apart from the crane family, this characteristic is shared by other bird groups including bustards, storks and some raptors including vultures and snake-eagles.

In a survey of 199 km of power lines in the Cape Overberg, SA (where approximately half of the global population of Blue Cranes is found), Blue Cranes were found to be the most common in terms of mortalities (54% of all carcasses; Shaw *et al.* 2010). A collision rate of 0.31 cranes/km power line per year was estimated, implying an annual take-off of 12% (5-23%) of the total population within the Overberg study area. This is regarded as a possibly unsustainable source of mortality.

The Namibia Blue Crane Project was initiated by the Namibia Crane Working Group in 2006 (see <http://www.nnf.org.na/CRANES/index.htm>). Ringing and satellite tracking studies and seasonal surveys have shown that, in the Etosha area, Blue Cranes move regularly between the Andoni plains/water bodies and the neighbouring agricultural areas/wetlands, including Okashana north of Andoni, and chiefly the Omadhiya Lakes including Lake Oponono (Figure 8). Any power lines on their flight paths would present an unforeseen obstruction, especially in areas where the birds are taking off from or coming in to land at water bodies and in poor light. During the rainy season the situation is exacerbated by the more extensive presence of water in unusual areas. It appears that an EIA may not have been conducted for the construction of the power line – which would have helped identify these risks in advance.



Figure 8. A recent record of 12 Blue Cranes and one Wattled Crane in the Lake Oponono area, north of Etosha NP (Boorman & Kolb pers. comm.). These two species are seen in association in the area. Blue Cranes are known to move between Lake Oponono and the Andoni area.

These concerns about power lines in the area are supported by the Environmental Impact Assessment (EIA) for the Proposed 400 kV Transmission Line from Ruacana to Oshivelo via Ongwediva, currently in process (Enviro Dynamics; J Pallett pers. comm.). The proposed new line is considered a risk to bird species such as cranes in the Etosha NP and environs, and the initial route has been moved further to the north-east and east of Andoni as a primary mitigation measure. Additional potential mitigation measures, namely marking, are under discussion.



Figure 9. Two Wattled Cranes coming in low from the north to land near the Andoni waterhole in April 2013. This water hole is <4 km south of the HPCD power line.

#### Recommendations

Mitigation for the high potential impacts of the King Nehale HPCD line is regarded as a matter of urgency.

- The ideal mitigation would be to replace the line with a good solar system, and we would like to request that the feasibility of this option is first investigated. A sponsorship, e.g. by INNOSUN, could be explored as this matter is of high conservation priority.
- Alternatively, burying the line beneath the ground could be investigated.
- Should this not be possible, the marking of the entire line with one or more suitable mitigation devices should be implemented. Provision should be made for mitigation for both diurnal and nocturnal flight patterns.
- Given the high potential for scavenging in the area, the effectiveness of the line marking should be monitored regularly, on a weekly basis for at least the first year afterwards and thereafter at least once a month for the life of the line.

The NamPower/NNF Strategic Partnership is willing to assist on request, where possible.

#### References

Martin GR, Shaw JM. 2010. Bird collisions with power lines: Failing to see the way ahead? *Biological Conservation* 143(11): 2695-2702.

Shaw JM, Jenkins AR, Smallie JJ, Ryan PG. 2010. Modelling power-line collision risk for the Blue Crane *Anthropoides paradiseus* in South Africa. *Ibis* 152: 590-599.

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Ann & Mike Scott  
Email [ecoserve@iway.na](mailto:ecoserve@iway.na); cell 081 284 5130  
NamPower/NNF Strategic Partnership  
<http://www.nnf.org.na/project/nampowernnf-partnership/13/5/5.html>  
Namibia Crane Working Group  
<http://www.nnf.org.na/CRANES/index.htm>  
31 July 2014