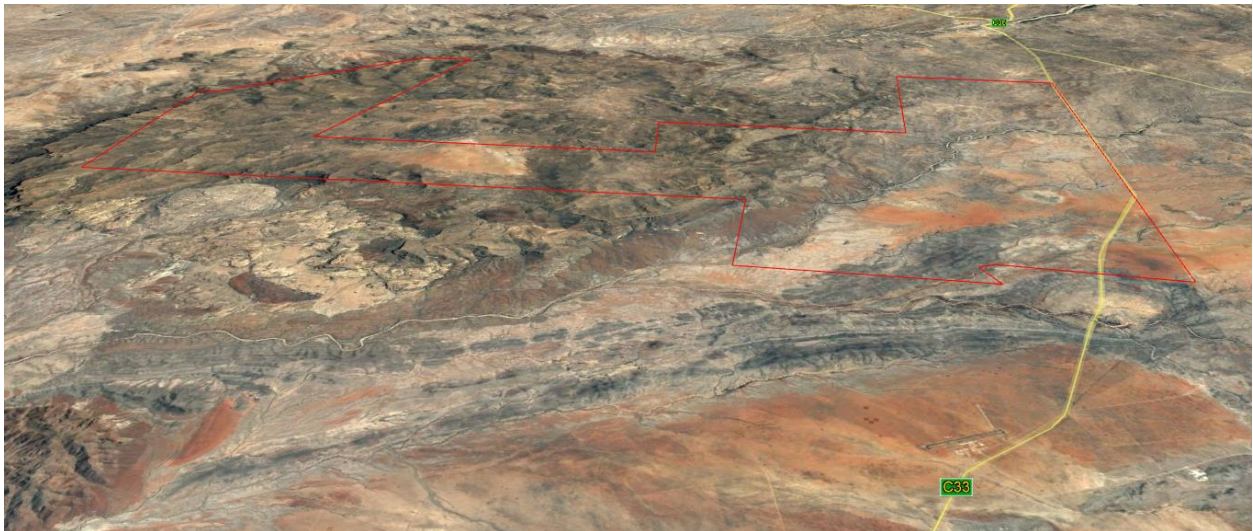


# **SCOPING REPORT WITH ASSESSMENT FOR ERONGO GOLD PROSPECTING WITHIN EPL 6440, ERONGO REGION**



February 2020

Prepared by:  
Philip Hooks

### **Acknowledgement:**

Thanks is given to the National Botanical Research Institute and its staff for providing the flora list for the area being studied.

## EXECUTIVE SUMMARY

Gecko Gold Mining (Pty) Ltd, has been granted EPL6440 by the Ministry of Mines and Energy of Namibia. The license covers 60615.5 hectares near the town of Omaruru. The license is granted for the exploration of base and rare metals, industrial minerals, precious minerals and precious stones. This Scoping Report with assessment, now complete, is submitted for an application for Environmental Clearance to conduct mineral exploration work.

The document focuses on the environment to be worked in, a description of the activities to be undertaken and the potential environmental impacts that could ensue. A Draft Environmental Management Plan has been compiled for Ministry approval. The Draft Scoping Report with assessment & Draft EMP describes mitigations to be implemented, the aspects to be monitored and reported on, as well delegated responsibilities to designated officials. Interested and Affected Parties had an extended period of time to review the Draft Scoping Report with assessment and Draft EMP and have provided input prior to the submission of this report to MET. Although there are objections from landowners on the basis of biodiversity, tourism and economic risks the proponent believes that an amicable compromise can be reached with regards to the proposed exploration activities.

The impacts are considered to be of medium to low significance provided the suggested mitigations are strictly implemented. Stakeholder relations must be well developed, and specific conditions strictly kept as per any negotiations with the interested and affected parties.

The negative Economic & Social Impact and land use conflict with specific relation to the Erongo Mountain Rhino Sanctuary Trust (EMRST) and Tourism facilities on farms is considered to be of high significance. Access to the farms for exploration within the EMRST areas is objected to by the Trust members. It is the Environmental Assessment Practitioner's (EAP's) opinion that although low impact exploration activities could take place within EMRST area if the company abides by the EMP and any other farm owner stipulations, it will be necessary for the Environmental Commissioner to advise on the access rights in light of the official EMRST status. The EMRST members feel the significance remains high even if mitigation measures are implemented. The EMRST requests strongly that the Environmental Commissioner appoint an independent external reviewer for the EIA.

No specialist studies were commissioned for this EIA. The EMRST members feel that a specialist study on the potential impact on the black rhino is necessary. The merits of this sentiment need to be considered by the Environmental Commissioner.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>1 INTRODUCTION.....</b>	<b>9</b>
<b>2 OBJECTIVES .....</b>	<b>11</b>
<b>3 ADMINISTRATIVE AND LEGAL FRAMEWORK .....</b>	<b>13</b>
<b>4 PROJECT MOTIVATION.....</b>	<b>15</b>
<b>5 SCOPE OF THE STUDY.....</b>	<b>15</b>
<b>6 PROJECT DESCRIPTION .....</b>	<b>17</b>
6.1 PROSPECTING .....	17
6.2 EXPLORATION DRILLING, SAMPLE EXTRACTION AND ANALYSIS.....	18
6.3 PITTING, TRENCHING, BULK SAMPLING AND TRIAL MINING .....	20
<b>7 DESCRIPTION OF THE ENVIRONMENT.....</b>	<b>21</b>
7.1 LOCATION.....	21
7.2 GEOLOGICAL SETTING .....	22
7.3 CLIMATE .....	23
7.3.1 <i>Temperature</i> .....	23
7.3.2 <i>Rainfall</i> .....	23
7.3.3 <i>Topography and hydrology/drainage</i> .....	24
7.4 BIOLocal ENVIRONMENT .....	25
7.4.1 <i>Flora</i> .....	25
7.4.2 <i>Fauna</i> .....	28
7.5 SOCIO CULTURAL ENVIRONMENT .....	44
<b>8 STAKEHOLDER CONSULTATION .....</b>	<b>47</b>
<b>9 IMPACT ASSESSMENT.....</b>	<b>61</b>
<b>10 ENVIRONMENTAL MANAGEMENT PLAN.....</b>	<b>87</b>
<b>11 REPORTING AND MONITORING .....</b>	<b>87</b>
<b>12 CONCLUSION .....</b>	<b>89</b>
<b>13 REFERENCES.....</b>	<b>89</b>

**APPENDIX A: FLORA AND FAUNA LISTS..... 91**

**APPENDIX B: PUBLIC PARTICIPATION DOCUMENTS ..... 97**

**APPENDIX C: DRAFT ENVIRONMENTAL MANAGEMENT PLAN FOR GECKO  
GOLD MINING (PTY) LTD WITHIN EPL 6440 ..... 115**

## Table of Tables

Table 1. List of laws applicable to the EIA for EPL6440.....	13
Table 2. International law to which Namibia is signatory .....	14
Table 3: Plant species found in the EPL6440 area that is in are the red data book of Namibian plants.....	25
Table 4: Mammal taxa expected to be found within EPL6440 .....	28
Table 5: Bird species possibly occurring in the EPL.....	34
Table 6: Conservation status of reptiles expected and not expected to be found in EPL6440. ....	37
Table 7. Tourist and Commercial Operators within EMRST (EMRST 2017).....	46
Table 8. Public meeting attendees .....	47
Table 9: Stakeholders, IAPs who received BIDs and correspondence, and who corresponded by email with comments during the scoping phase of the EIA. (summarised comments included) .	49
Table 10: Assessment methodology for evaluating potential impacts.....	61
Table 11: Dust Impacts .....	64
Table 12: Noise Impacts .....	66
Table 13: Health & Safety Impacts.....	68
Table 14: Health & Safety Impacts.....	70
Table 15: Visual Impacts .....	73
Table 16: Land Use Impact.....	75
Table 17: Waste Impact .....	77
Table 18: Ecological Impacts.....	78
Table 19. Groundwater and Surface Water Impacts.....	81
Table 20. Heritage.....	83
Table 21: Socio-Economic Impact.....	84

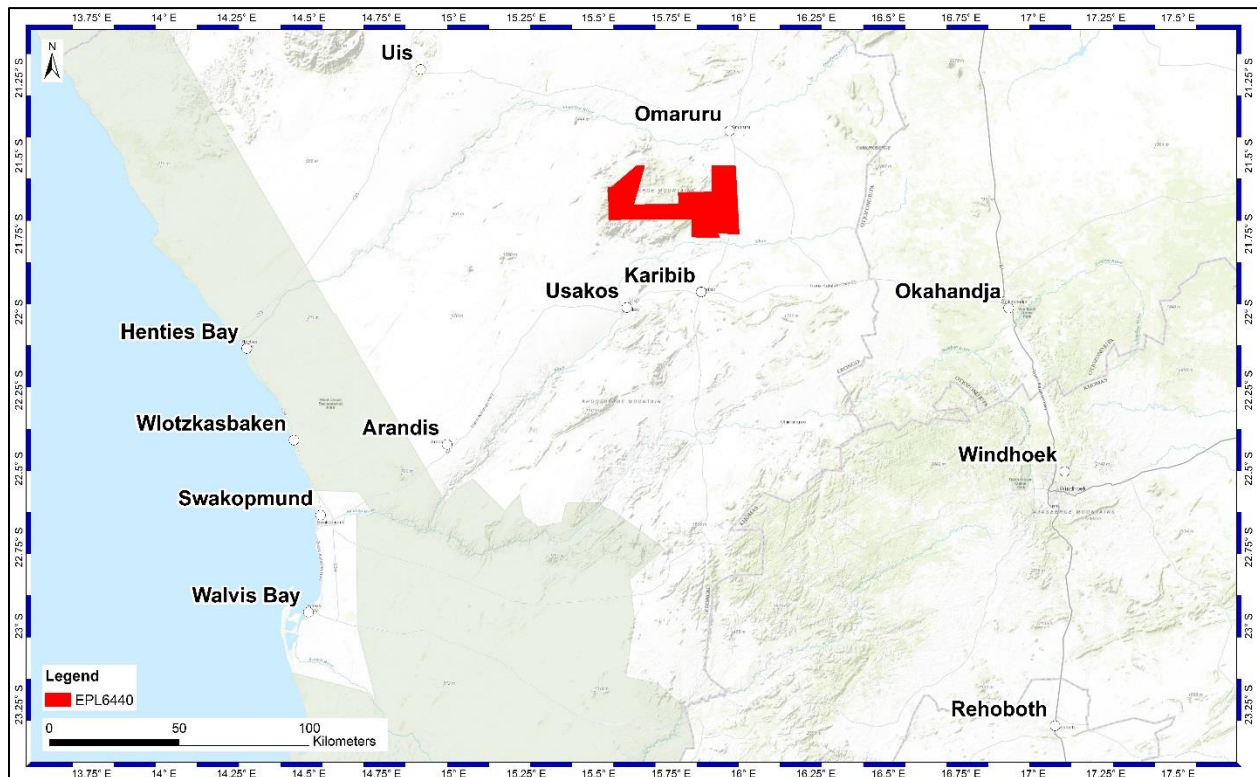
### **Table of Figures**

Figure 1. Location of EPL6440 within central Namibia.....	9
Figure 2. Areas where soil sampling is planned for the prospecting phase.....	18
Figure 3. Map of EPL with corner coordinates.....	21
Figure 4. Map of the farms and Erongo Mountain Rhino Sanctuary Trust.....	22
Figure 5. Map of the =/=Gaingu Conservancy and Erongo Mountain Rhino Sanctuary Trust ....	45



## 1 INTRODUCTION

The Erongo Gold Prospecting Project (referred to as Erongo Gold) is owned by Gecko Gold Mining (Pty) Ltd, a subsidiary of Gecko Exploration (Pty) Ltd. Exclusive Prospecting License (EPL) 6440 is granted to Gecko Gold Mining (Pty) Ltd but activities may not commence prior to the completion of an Environmental Impact Assessment (EIA) and the issuance of environmental clearance. The license area covers 60615.4666 Ha. **Figure 1** renders a map showing the location and the relative extent of the EPL.



**Figure 1. Location of EPL6440 within central Namibia**

Gecko Namibia (Pty) Ltd is the holding company for these two companies. It is a wholly Namibian-owned private company, which was established in 2008 by Mr. Kobus Smit and a number of other Namibian partners. The focus of Gecko Namibia is on the development of projects in the country (Namibia) with particular emphasis on the industrial mineral sector and as well as in the field of the services to the Namibian mining industry. Today, Gecko Namibia employs about 350 people.



## 2 OBJECTIVES

The objective is to carry out an EIA for the Exclusive Prospecting License (EPL) and to determine the potential negative and positive effects the activity might have on the local environment in its broadest sense. Mr. Philip Hooks is the Environmental Assessment Practitioner (EAP) facilitating the EIA process and the responsible person completing this EIA report. Miss Cecilia Ndunge a graduate intern with the company is assisting Mr. Hooks.

One of the objectives Gecko Namibia (Pty) Ltd is to provide sustained employment to Namibians. The company furthermore plans to contribute to Namibia's economy through exporting of products, thus earning foreign exchange.

The objectives of this document are to:

- Communicate the results of the EIA for the proposed exploration activities
- Ensure that the impacts identified are adequately addressed
- Facilitate an informed, transparent and accountable decision-making process by engaging with the relevant authorities and private landowners



### 3 ADMINISTRATIVE AND LEGAL FRAMEWORK

The EIA is based on the requirements of the Namibian Environmental Management Act (Act. No. 7 of 2007), as well as supporting policies and guidelines, which include the environmental regulations of February 2012. An Environmental Clearance Certificate for mineral exploration activities is required and thus an EIA and Environmental Management Plan (EMP) needs to be submitted to the Ministry of Environment and Tourism (MET) of Namibia for approval. The envisaged project is not part of a protected area recognised by MET. However, there are laws applicable to the EIA and the exploration activities as per Table 1 and 2 below.

**Table 1.** List of laws applicable to the EIA for EPL6440

YEAR	LAW/ORDINANCE	APPLICABILITY
1990	<i>The constitution of Namibia (1990) Article 95 (1)</i>	<ul style="list-style-type: none"> <li>➤ Preservation of Namibia's Ecosystems, essential ecological process and biological diversity</li> <li>➤ Sustainable use of Natural Resources</li> </ul>
1992	<i>The Labour Act, No. 6 of 1992</i>	<ul style="list-style-type: none"> <li>➤ Safety and health requirements</li> </ul>
2007	<i>Labour Act No. 11 of 2007 &amp; Rules and Regulations promulgated under the Act.</i>	<ul style="list-style-type: none"> <li>➤ Safety and health requirements</li> </ul>
1998	<i>Affirmative Action (Employment) Act No. 29 of 1998</i>	<ul style="list-style-type: none"> <li>➤ Fair employment practice</li> </ul>
2005	<i>Atomic Energy and Radiation Protection Act No. 5 of 2005</i>	<ul style="list-style-type: none"> <li>➤ Protection of personnel exposed to radiation sources</li> </ul>
1995	<i>Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995</i>	<ul style="list-style-type: none"> <li>➤ Prescribes Environmental Impact Assessments for any developments with potential negative impacts on the Environment</li> </ul>
2013	<i>Water Resources Management Act 11 of 2013</i>	<ul style="list-style-type: none"> <li>➤ Effluent discharge permit required under section 70</li> <li>➤ Seawater abstraction permit required under Section 44</li> <li>➤ Water related pollution and abstraction</li> </ul>
1997	<i>Namibian Water Corporation Act, 12 of 1997</i>	<ul style="list-style-type: none"> <li>➤</li> </ul>
2012	<i>Environmental Management Act 7 of 2007 with Regulations of 2012</i>	<ul style="list-style-type: none"> <li>➤ Establishes Principles for EA</li> <li>➤ Ensures that significant effects of activities are considered timorously and carefully</li> <li>➤ Allows for opportunities for participation by I &amp; APs throughout the assessment process</li> </ul>
1975	<i>Nature Conservation Ordinance 4 of 1975 with amendments and special regulations</i>	<ul style="list-style-type: none"> <li>➤ Protection of various species</li> </ul>

YEAR	LAW/ORDINANCE	APPLICABILITY
1996	<i>Nature Conservation Amendment Act 5 of 1996</i>	➤ To provide for an economically based system of sustainable management and utilisation of game in communal areas
2001	<i>The Forestry Act 12 of 2001</i>	➤ To provide for the protection of the environment and the control and management of forest fires
1969	<i>Soil Conservation Act No. 76 of 1969</i>	➤ To consolidate and amend the law relating to the combating and prevention of soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources
1992	<i>United Nations Convention of Biological Diversity (1992)</i>	➤ Protection of various species
1976	<i>Atmospheric Pollution Prevention Ordinance No.11 of 1976 with amendments as well as the associated proclamations of controlled areas</i>	➤ Pollution prevention
1974	<i>Hazardous Substance Ordinance 14 of 1974, and amendments</i>	➤ Pollution prevention
1990	<i>Petroleum Products and Energy Act No. 13 of 1990, as amended (1994, 2000, 2003)</i>	➤ For control of the furnishing of certain information regarding petroleum products ➤ Disposal of petroleum products
2000	<i>Petroleum Products regulations (2000)</i>	➤ Consumer installation certificates ➤ Safe disposal of petroleum products
1999	<i>Draft Pollution and Waste Management Bill (1999)</i>	➤ Protection for particular species, resources or components of the environment
2004	<i>National Heritage Act 27 of 2004</i>	➤ Disturbance of shipwrecks, archaeological and cultural sites
1994	<i>Convention on Desertification of 1994</i>	➤ Combating desertification and mitigation of the effects of drought
1992	<i>Minerals (Prospecting and Mining) Act 33 of 1992 and special regulations</i>	➤ Exploration and exploitation of mineral resources
2000	<i>Explosives Act of 1956 &amp; Regulations of 1972 promulgated in terms of the Explosives Act 1956</i>	➤ Safe transport and storage of explosives ➤ Accident enquiries ➤ Permitting and penalties

**Table 2. International law to which Namibia is signatory**

International law to which Namibia is a signatory	
1985	Vienna Convention for the Protection of the Ozone Layer
1987	Montreal Protocol on substances that deplete the Ozone Layer
1989	The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal

<b>1989</b>	The Rotterdam convention on the Prior Informed Consent Procedure for Certain Hazardous chemicals and Pesticides in International Trade
<b>1992</b>	The Rio de Janeiro Convention on Biological Diversity
<b>1992</b>	United Nations Framework Convention on Climate Change

#### **4 PROJECT MOTIVATION**

The main proposed mineral to be explored is gold. However, in addition to this, base and rare metals, industrial minerals, precious metals and precious stones may also be considered. This exploration project will contribute to sustaining Namibia's economy.

The project forms part of Gecko Namibia's endeavours to establish economically and environmentally sustainable operations.

#### **5 SCOPE OF THE STUDY**

The scope of the EIA is to determine the potential environmental impacts emanating from the proposed activities by doing a risk assessment. Relevant environmental data has been compiled by making use of primary data through a site visit and direct consultation with stakeholders together with secondary data from desk-top work. Existing specialist fauna and flora data from the internet was used to assess the impacts on biodiversity. The Botanical Research Institute provided a flora list for the area. The EIA Report and EMP will enable stakeholders to make informed judgements regarding the exploration activities from an environmental perspective.

Erongo Gold Project's potential environmental impacts and associated social impacts are identified and addressed in the report. The environmental assessment was conducted to comply with Namibia's Environmental Management Act, the requirements of Local Authorities and all other legal requirements applicable to the project and the country.





## 6 PROJECT DESCRIPTION

Exploration follows three phases as described below. Firstly, there is a prospecting phase, then a drilling phase and lastly a pitting, trenching, bulk sampling and trial mining phase. From the visual appraisal of the available information-aerial photographs and geological maps of the area, it is clear that mineralization potential for the commodities covered exists within the area of EPL6440. Gecko plans to conduct a staged exploration approach as follows:

### 6.1 PROSPECTING

The aerial data will need to be verified through field work. Lithological mapping, sampling and analysis will be necessary. The results from initial lithological mapping may need further confirmation by means of small exploration pits.

Prospecting is in general a low intensity activity. Specifically it constitutes the following:

- A prospector (Geologists and geo-technicians) walking through the area with a rock hammer and GPS examining and mapping the outcropped lithology.
- Collecting rock and sand samples by hand for either mineral or chemical analysis.
- Possible follow up pitting.

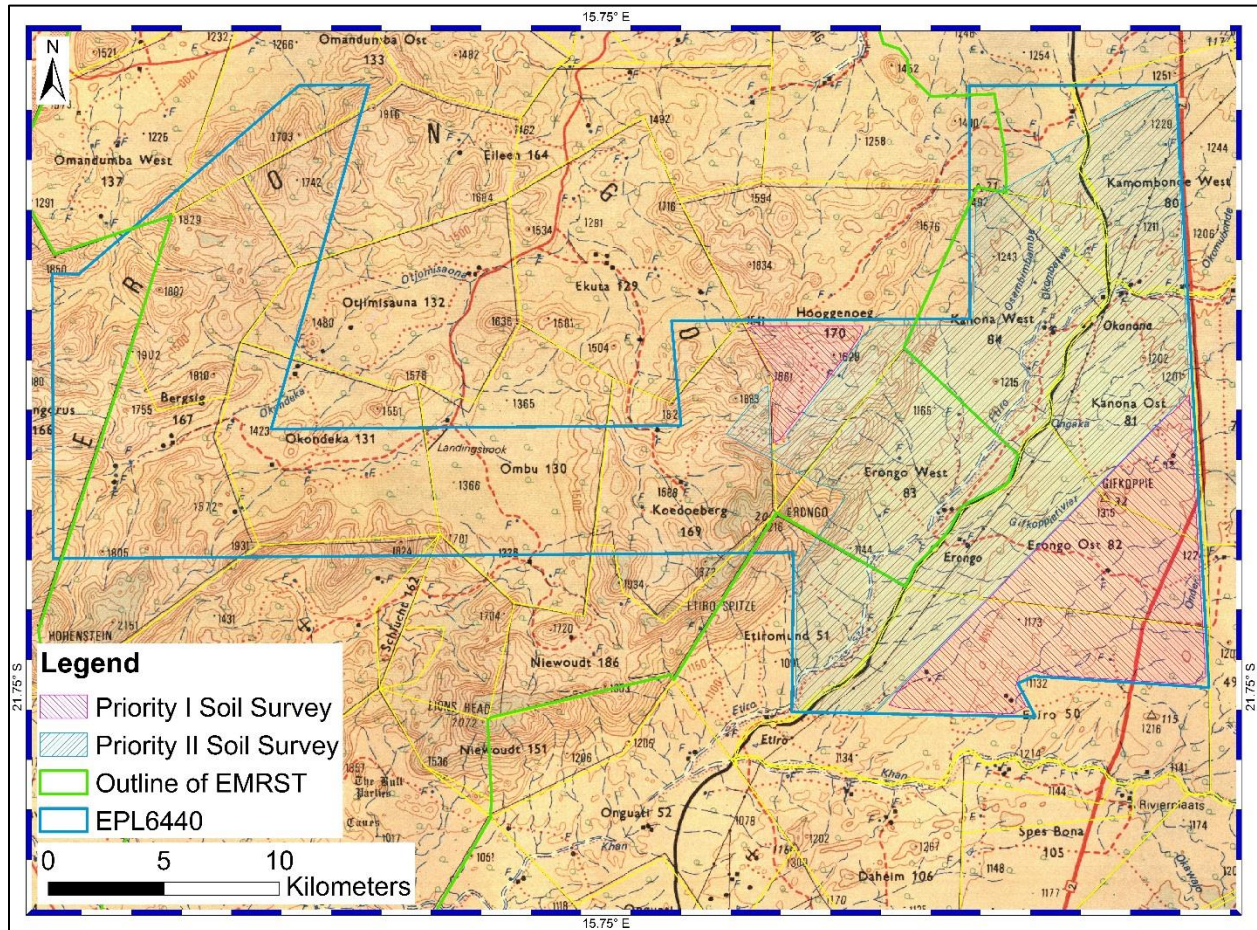
For the first 12 months, prospecting will be done by:

- Data collection and compilation of all available information into GIS digital format and interpretation of data (2 months)
- Mapping of the area & prospect pitting (2 months)
- Analysis of samples (4 months)
- Compilation of data and preliminary viability calculations (5 months)

For the remaining 24 months of the initial license tenement prospecting will be done by the following activities:

- The identification of potential mineral occurrences of base and rare metals, precious metals through remote sensing techniques. Gecko plans to contract an airborne electromagnetic survey over EPL 6440.

- The identification of potential secondary mineral resources of economic interest. The area will also be looked at in the light of secondary mineralisation as well as for different types of mineral deposits.



**Figure 2. Areas where soil sampling is planned for the prospecting phase.**

## 6.2 EXPLORATION DRILLING, SAMPLE EXTRACTION AND ANALYSIS

The most commonly used drilling techniques are Reverse Circulation Drilling (RC) or Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve.

Exploration Diamond Drilling differs from other geological drilling in that a solid core is extracted from depth, for examination on the surface. The key technology of the diamond drill is the actual diamond bit itself. It is composed of industrial diamonds set into a soft metallic matrix. The drill produces a "core" which is logged, photographed and split longitudinally. Half of the

split core is assayed while the other half is permanently stored for future use and re-assayed if necessary.

RC Drilling uses a pneumatic hammer which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample which is comprised of rock chips. It is relatively quick and cheap compared with Diamond Drilling.

The target areas within the EIA which have been identified during the prospecting phase will then undergo exploration drilling to obtain undisturbed samples of the lithology which are associated with the specific minerals present. A number of consecutive drilling campaigns on increasingly closer-spaced exploration grids might be conducted. Drilling is initially done with the diamond coring technique. Once the type of ore body is understood, emphasis then lies on obtaining more closed-spaced samples for gaining confidence and information on the statistical variance. For this latter process, RC Drilling is the preferred technique.

If there are signs of specific target minerals present, then prospecting activities progress to more detailed work program. Drilling is then required to go deeper. Larger samples are geologically logged and analysed in a laboratory.

The establishment of a drilling camp at an approved site within the EPL may be necessary. Existing gravel access roads will be used as far as possible. Solid waste will be removed off site and taken to Omaruru's approved landfill site. Ablution facilities will use chemical toilets and or sealed septic tanks and the sewerage taken to the Omaruru sewerage plant periodically. No power supply infrastructure to the site is planned. Diesel power generation will be used. Temporary storage areas for drilling materials, machines etc. will be necessary at the camp. Security will be supplied on a 24 hour basis at the exploration camp. A fence surrounding the camp will be constructed to ensure people and domestic animals are not put at risk. These support services and facilities will be removed at the end of the 3<sup>rd</sup> phase of the exploration.

Clearing of vegetation at the planned drill sites may be necessary. Permits from the forestry directorate will be required for this purpose. Where necessary, stockpiling of top soil for rehabilitation at a later stage will be undertaken. Necessary landscaping of exploration areas will be undertaken upon completion of each phase of exploration.

### **6.3 PITTING, TRENCHING, BULK SAMPLING AND TRIAL MINING**

In the advanced stage of exploration activities, larger amounts of sample material, whether the main mineral being targeted (i.e. gold) or the secondary mineralisation target may be required for the performing processing trials and metallurgical testing programs. The ground conditions and geotechnical parameters would then be established with a view to extract the mineral from the ore reserve.

Bulk sampling for analytical processing will only be carried out if the material obtained during drilling is insufficient. Pits may be dug / excavated to a depth of 4m and 5 cubic meters of samples are taken. The location of the pits will depend on the drilling results. The size of the sample may be adjusted depending on the nature of the mineralisation observed from drilling. The pits and bulk sampling sites are determined from the results of the drilling and will most likely be where drilling had already taken place. A trench may span between drilling sites, thereby incurring additional disturbance.

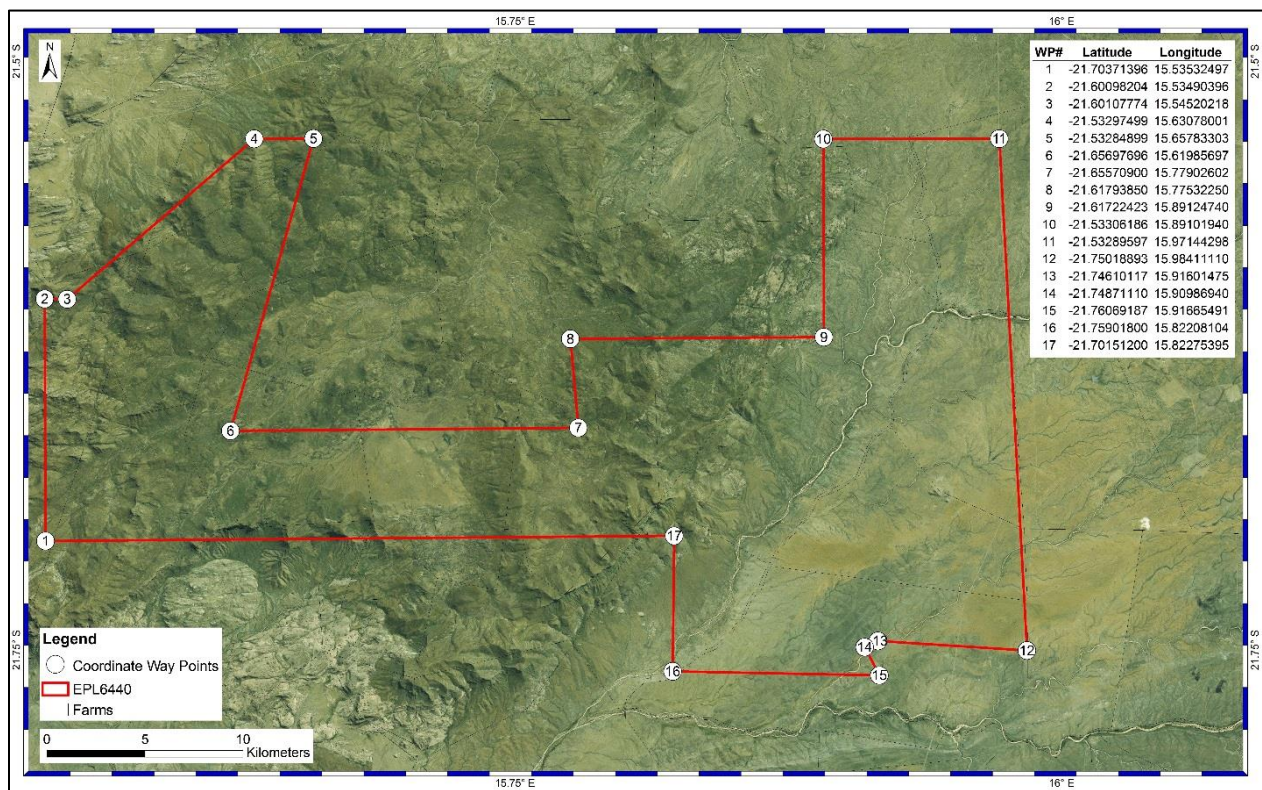
Gecko Gold Mining plans to employ several people for the exploration phases. Initially, the exploration team doing field work would consist of a handful of geological personnel. During the drilling phase the exploration team will increase in numbers. For one RC rig the team consists of 4 members plus a driver. For one DD rig the team will consist of 5 members. Each drill rig will have one foreman and one geologist assigned to it. The camp will have one chef and a camp manager. So, for a very intensive drilling programme, 1 RC rig and 3 DD rigs may be needed. The total personnel number would be no more than 30 for this configuration. At this stage it is not clear how many rigs will be mobilised. During exploration only temporary accommodation will be established within the respective EPL area.

## 7 DESCRIPTION OF THE ENVIRONMENT

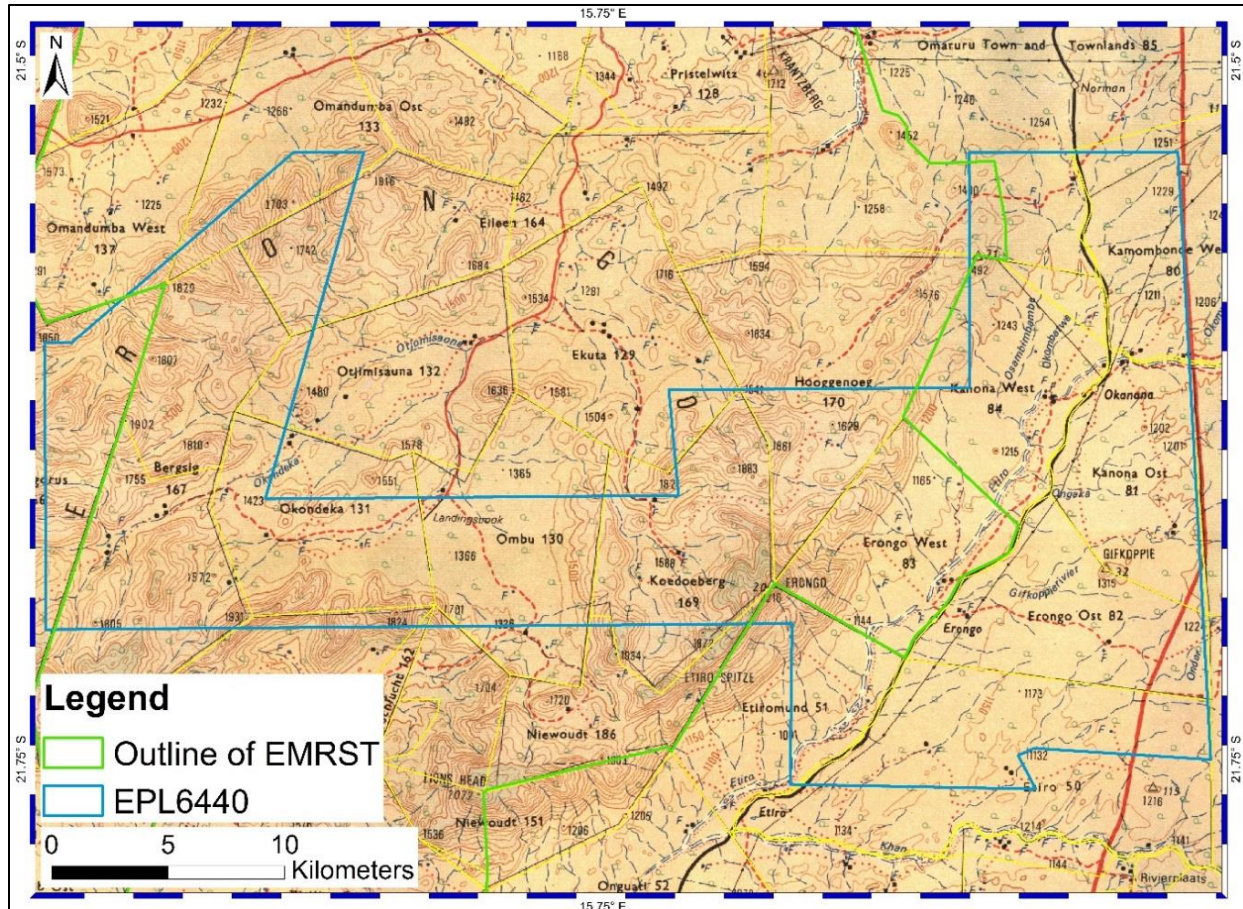
### 7.1 LOCATION

The EPL is located in the Erongo region. The nearest town is Omaruru. **Figure 3** renders a map of the EPL with corner coordinates. **Figure 4** below shows that part of this EPL falls within the Erongo Mountain Rhino Sanctuary Trust (EMRST). Most of the farms within this EMRST boundary are members of this Trust.

Gecko Exploration holds one Exclusive Prospecting License (EPL) of about 60,000 ha covering the southern Erongo Mountain and its periphery. The area falls within the South Central Zone of the Damara Belt, Erongo Region of Namibia. The license shares its geological setting with the major gold exploration and mining tenements in the surroundings i.e. Ondundu, Navachab and Goldkuppe.



**Figure 3. Map of EPL with corner coordinates.**



**Figure 4. Map of the farms and Erongo Mountain Rhino Sanctuary Trust.**

## 7.2 GEOLOGICAL SETTING

EPL 6440 is situated within the Southern Central Zone (SCZ) of the Damara Orogenic Belt Erongo Region of Namibia. The rocks in the area comprises of the granitic basement of the Abbabis Complex which are intruded by a variety of granitic bodies belonging to the Salem Granite Suite. The basal rocks are overlain unconformably by metasedimentary rocks of the Damara Sequence which belongs to the Swakop Group and the younger sediments of the Kalahari Group which form a surficial cover in the area.

The most prominent types of rocks are the metasediments of the Swakop Group which comprises of marbles, quartzites, calc-silicates and carbonaceous schists. The exploration programme is targeting marbles of the Upper Karibib and Rossing formations which host the gold mineralization. The Upper Karibib marbles renders good targets for gold due to the known presence of a large gold deposit in similar lithologies at Navachab mine situated about 20

kilometres to the south of the prospecting licence. Contacts between marbles and schists and the presence of different structures in the area might be major trapping zones of the gold mineralization.

### **7.3 CLIMATE**

Climatic conditions in this region vary from cool, foggy, windy and can be arid. Climate of the Erongo Region is characterised by aridity and this area receive about 200 mm rainfall there are mostly southerly and south easterly winds during summer and north-easterly winds in winter (Mendelsohn, Jarvis, Roberts, & Robertson, 2002).

The EPL is situated between Karibib and Omaruru. These two towns experience long, hot and partly cloudy summers and the short, cool, windy and clear skies in winters are and it is dry year around. Additionally, these areas receive an average percentage of the sky by clouds and significant seasonal variation during the course of the year.

#### **7.3.1 Temperature**

Namibia is considered to be a hot country; however, temperatures are highly variable daily and seasonally. Hence, animals and plants have evolved and developed mechanisms to tolerate and adapt to these conditions. During the year, the temperature ranges from 9.5 to 34.4 °C. The wet season can last up to 3 months (January to April). The EPL is situated between Karibib and Omaruru. These two towns experience long, hot and partly cloudy summers and the short, cool, windy and clear skies in winters are and it is dry year around. Additionally, these areas receive an average percentage of the sky by clouds and significant seasonal variation during the course of the year.

The average annual temperature in the study area (EPL 6440) ranges between 9°C and 34°C, with an average maximum temperature of 27°C during the hottest month of December and an average minimum temperature of below 9°C during the coldest month of June.

#### **7.3.2 Rainfall**

In Namibia rainfall is unpredictable due to change in climate and on average little rainfall is receive in most parts of the country. This EPL area receives precipitation in the form of fog and

rainfall (of about 200mm). Most of the rainfall is received in the summer between January and April.

### **7.3.3 Topography and hydrology/drainage**

This project is situated in the Erongo region, where the land rises about 1000m above sea level. This area is dominated by flat to undulating gravel plains that can be punctuated with occasional ridges and isolated hills and mountains. No major drainage channels exist within the license.



## 7.4 BIOLOCAL ENVIRONMENT

Lists of the flora and fauna are provided in following sections. No field work was carried out for this work. Secondary information sources were used. The conservation status for the fauna was ascertained from the website of the IUCN. The conservation status of the flora was ascertained from reference material and the internet. Only the flora and fauna expected to be located within the EPL area is listed below. There may be some omissions due to outdated information or unverified distribution patterns.

### 7.4.1 Flora

Conservation status of the plants are referred to in the Table 3. Additionally, the lists of all the plants found in the quadrat area in which EPL6440 is located are provided in Appendix A.

Between 400 and 500 plant species could be found on and around the Erongo Mountains. Between 26 to 35 endemic plant species could occur within the EPL area (Mendelsohn et al, 2003) though not exclusive to the area. There are locally endemic plant species on the Erongo Mountains. Plants are susceptible to disturbance and the disappearance of individual specimens or populations from the area due to human disturbance could constitute a significant loss and degradation of the area's biodiversity.

**Table 3: Plant species found in the EPL6440 area that is in are the red data book of Namibian plants.**

Species	Protected by Nature Conservation Ordinance	Red Data	Comments
<i>Acacia erioloba</i>	Protected (forest act no 12 of 2001)	LC	
<i>Acacia erubescens</i>	None	LC	
<i>Acacia hebeclada</i>	None	DD	
<i>Albizia anthelmintica</i>	Protected (Preservation of Trees and Forests Ordinance of 1952 and the Proclamation of SWA administration, No.486 in 1972)	LC	
<i>Aloe dichotoma</i>	Protected (Nature Conservation Ordinance 4 of 1975 and 247 of 1977)	VU A3c	Namibian near endemic
<i>Aloe littoralis</i>	Protected (Nature Conservation Ordinance 4 of 1975 and 247 of 1977) Cites II	LC	Namibian near endemic
<i>Aptosimum angustifolium</i>	None	DDT	
<i>Barleria solitaria</i>	None	LC	Namibian endemic
<i>Boscia albitrunca</i>	Protected (Forest act no 12 of 2001) Protected (Preservation of Trees and Forests Ordinance of 1952 and the Proclamation of SWA administration, No.486 in 1972)	LC	
<i>Boscia foetida</i>	None	LC	

<i>Chamaegigas intrepidus</i>	None	LC	Namibian endemic
<i>Chamaegigas intrepidus</i>	None	LC	Namibian endemic
<i>Cyphostemma congestum</i>	None	LC	
<i>Cyphostemma currorii</i> <i>Ficus ilicina</i>	Protected (Nature Conservation Ordinance 4 of 1975 and 247 of 1977)	LC	
<i>Dianthus namaensis</i>	None	LC	Namibian near endemic
<i>Euphorbia damarana</i>	None	LC	Namibian endemic
<i>Euphorbia guerichiana</i>	None	LC	
<i>Euphorbia monteiroi</i>	None	LC	Namibian endemic
<i>Euphorbia virosa</i>	None	LC	
<i>Faidherbia albida</i>	Protected (Preservation of Trees and Forests Ordinance of 1952 and the Proclamation of SWA administration, No.486 in 1972)	LC	
<i>Felicia smaragdina</i>	None	LC	Namibian endemic
<i>Ficus cordata</i>	Protected (Preservation of Trees and Forests Ordinance of 1952 and the Proclamation of SWA administration, No.486 in 1972)		
<i>Forskaolea viridis</i>	None	LC	
<i>Geigeria ornativa</i>	None	DDT	
<i>Gladiolus saccatus</i>	None	LC	
<i>Helichrysum tomentosulum</i>	None	LC	Namibian near endemic
<i>Hoodia currorii</i>	None	LC	Namibian near endemic
<i>Hoodia gordonii</i>	Not threatened	LC	
<i>Indigofera heterotricha</i>	None	LC	
<i>Indigofera heterotricha</i>	None	LC	
<i>Indigofera holubii</i>	None	LC	
<i>Indigofera rautanenii</i>	None	LC	Namibian endemic
<i>Erythrina decora</i>	Protected (Preservation of Trees and Forests Ordinance of 1952 and the Proclamation of SWA administration, No.486 in 1972)	R	Namibian endemic
<i>Lithops wernerii</i>	None	VU	Namibian endemic
<i>Maerua juncea</i>	None	LC	
<i>Manulea dubia</i>	None	LC	Namibian endemic
<i>Monsonia glauca</i>	None	DD	
<i>Moringa ovalifolia</i>	Protected (Preservation of Trees and Forests Ordinance of 1952 and the Proclamation of SWA administration, No.486 in 1972)	LC	Namibian near endemic
<i>Nemesia fruticans</i>	None	LC	
<i>Oncocalyx welwitschii</i>	None	LC	Namibian near endemic
<i>Ondetia linearis</i>	None	LC	Namibian endemic

<i>Panicum simulans</i>	None	LC	Namibian endemic
<i>Pentarrhinum insipidum.</i>	None	LC	
<i>Petalidium variabile.</i>	None	LC	Namibian near endemic
<i>Seddera schizantha</i>	None	LC	Namibian near endemic
<i>Selago alopecuroides</i>	None	LC	Namibian near endemic
<i>Sesamum capense</i>	None	LC	
<i>Sesamum schinzianum</i>	None	LC	Namibian near endemic
<i>Sesbania pachycarpa</i>	None	LC	Namibian Endemic
<i>Setaria incrassata</i>	None	LC	
<i>Sporobolus festivus.</i>	None	LC	
<i>Stapelia kwebensis</i>	None	LC	
<i>Strophanthus amboensis</i>	None	LC	Namibian near endemic
<i>Strophanthus amboensis</i>	None	LC	
<i>Trema orientalis</i>	None	LC	
<i>Urochloa brachyura</i>	None	LC	
<i>Urochloa panicoides</i>	None	LC	
<i>Viscum rotundifolium</i>	None	LC	
LC=Least Concern; DD=Data Deficiency, DDT=Data Deficiency-Taxonomically problematic, R=Rare, VU A3c =Vulnerable (Criterion A. Rapid decline; A3c is used for a small number of taxa, on the basis of a predicted decline and loss of habitat. >80% decline (CR); >50% decline (EN); >30% decline (VU). VU= Vulnerable			

## 7.4.2 Fauna

Lists of the mammals, birds and reptiles that are expected to be found within the EPL area. Their conservation status is also provided. The author is not aware of any site specific endemic species living within the EPL area. This would need to be confirmed by a specialist should a mine ever be planned within the EPL area. The habitat varies from plains with rivers to mountains and plateaus providing a host of niches for these organisms to live in. Invertebrates have not been listed but should a mine ever be planned a scoping of the invertebrate species would be necessary at the very least. The exploration that is planned for the area is of low intensity and provided the management measures are strictly employed, very little disturbance of the habitats and faunal biodiversity is expected. The ecological functioning of the areas where drilling occurs could be temporarily disturbed depending on the degree of bush clearing required. Pitting, trenching and bulk sampling sites would have to be rehabilitated so that ecological functioning of the that site could return to its former state. The latter areas may take three seasonal cycles to re-establish plant life that could sustain the other lifeforms effectively. It will be imperative to keep the footprint of disturbance to a minimum.

### 7.4.2.1 Mammals

‘The distribution of the 15 endemic mammal species is broadly associated with the escarpment belt separating the Namibia from the higher elevations to the east. However, the majority of endemic mammals are in southern Namibia, and some species have ranges that extend into similar habitats in north-western South Africa.’ (Mendelsohn et al, 2003:113). There are between 3 and 6 endemic mammal species that could be found in the EPL area though not exclusively to that area.

**Table 4: Mammal taxa expected to be found within EPL6440**

<i>Species: scientific name</i>	<b>Species: common name</b>	<b>Expected</b>	<b>Status</b>	<b>Reference</b>
<i>Diceros bicornis</i>	Black rhino	<input checked="" type="checkbox"/>	Critically Endangered	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/6557/0">http://www.iucnredlist.org/details/6557/0</a> <a href="http://wwf.panda.org/what_we_do/angered_species/rhinoceros/african_rhinos/black_rhinoceros/">http://wwf.panda.org/what_we_do/angered_species/rhinoceros/african_rhinos/black_rhinoceros/</a>
<i>Loxodonta africana</i>	Elephant	<input checked="" type="checkbox"/>	Vulnerable	Status, range and taxonomy <a href="http://wwf.panda.org/what_we_do/angered_species/elephants/african_elephants/">http://wwf.panda.org/what_we_do/angered_species/elephants/african_elephants/</a> <a href="http://www.iucnredlist.org/details/12392/0">http://www.iucnredlist.org/details/12392/0</a>

<i>Equus zebra</i>	Hartmann's mountain zebra	<input checked="" type="checkbox"/>	Vulnerable	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/7960/0">http://www.iucnredlist.org/details/7960/0</a>
<i>Giraffa camelopardalis</i>	Giraffe	<input checked="" type="checkbox"/>	Vulnerable	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/9194/0">http://www.iucnredlist.org/details/9194/0</a> <a href="http://www.facts-about.info/giraffe/">http://www.facts-about.info/giraffe/</a>
<i>Elephant Shrews</i>				
<i>Macroscelides flavicaudatus</i> (new species name) <i>Macroscelides proboscideus flavicaudatus</i> (old species name)	Namib round-eared sengi (Elephant-shrew)	<input checked="" type="checkbox"/>	NE endemic	<a href="http://dx.doi.org/10.1644/13-MAMM-A-159">http://dx.doi.org/10.1644/13-MAMM-A-159</a> range <a href="http://www.catalogueoflife.org/col/browse/tree/id/21940147">http://www.catalogueoflife.org/col/browse/tree/id/21940147</a> taxonomy <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicate=Macroscelides+proboscideus+flavicaudatus">http://www.planet-mammiferes.org/drupal/en/node/39?indicate=Macroscelides+proboscideus+flavicaudatus</a>
<i>Elephantulus rupestris</i>	Smith's Rock Elephant-shrew	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=7138">http://maps.iucnredlist.org/map.html?id=7138</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicate=Elephantulus+rupestris+okombahensis">http://www.planet-mammiferes.org/drupal/en/node/39?indicate=Elephantulus+rupestris+okombahensis</a> taxonomy
<i>Elephantulus intufi</i>	Bushveld Elephant-shrew	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=42661">http://maps.iucnredlist.org/map.html?id=42661</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Elephantulus%20intufi">http://www.planet-mammiferes.org/drupal/en/node/42?input=Elephantulus%20intufi</a> taxonomy
<i>Bats</i>				
<i>Sauromys petrophilus</i>	Flat-headed Free Tailed Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=44693">http://maps.iucnredlist.org/map.html?id=44693</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Mormopterus%20petrophilus">http://www.planet-mammiferes.org/drupal/en/node/42?input=Mormopterus%20petrophilus</a> taxonomy
<i>Laephotis namibensis</i>	Namib Long Eared Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=11137">http://maps.iucnredlist.org/map.html?id=11137</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Laephotis%20namibensis">http://www.planet-mammiferes.org/drupal/en/node/42?input=Laephotis%20namibensis</a> taxonomy
<i>Eptesicus hottentotus</i>	Long-tailed Serotine Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=7931">http://maps.iucnredlist.org/map.html?id=7931</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Eptesicus%20hottentotus">http://www.planet-mammiferes.org/drupal/en/node/42?input=Eptesicus%20hottentotus</a> taxonomy
<i>Neoromicia zuluensis</i>	Aloe Serotine Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=44927">http://maps.iucnredlist.org/map.html?id=44927</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Pipistrellus%20zuluensis">http://www.planet-mammiferes.org/drupal/en/node/42?input=Pipistrellus%20zuluensis</a> <a href="http://www.iucnredlist.org/details/44927/0">http://www.iucnredlist.org/details/44927/0</a> taxonomy
<i>Cistugo seabrae</i>	Angola Wingland Bat	<input checked="" type="checkbox"/> western side of EPL	LC	<a href="http://maps.iucnredlist.org/map.html?id=44788">http://maps.iucnredlist.org/map.html?id=44788</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/38?indicate=Cistugo+seabrae">http://www.planet-mammiferes.org/drupal/en/node/38?indicate=Cistugo+seabrae</a> <a href="http://www.iucnredlist.org/details/44788/0">http://www.iucnredlist.org/details/44788/0</a> taxonomy
<i>Nycteris thebaica damarensis</i>	Egyptian Slit-faced Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=14936">http://maps.iucnredlist.org/map.html?id=14936</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicate=Nycteris+thebaica+damarensis">http://www.planet-mammiferes.org/drupal/en/node/39?indicate=Nycteris+thebaica+damarensis</a>

				taxonomy
<i>Rhinolophus fumigatus aethiops</i>	Rüppell's Horseshoe Bat	<input checked="" type="checkbox"/> possibly in the eastern part	LC	<a href="http://maps.iucnredlist.org/map.html?id=19541">http://maps.iucnredlist.org/map.html?id=19541</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Rhinolophus+fumigatus+aethiops">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Rhinolophus+fumigatus+aethiops</a> taxonomy
<i>Rhinolophus clivosus zuluensis</i>	Geoffroy's Horseshoe Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=19531">http://maps.iucnredlist.org/map.html?id=19531</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Rhinolophus+clivosus+zuluensis">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Rhinolophus+clivosus+zuluensis</a> taxonomy
<i>Rhinolophus denti denti</i>	Dent's Horseshoe Bat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=19538">http://maps.iucnredlist.org/map.html?id=19538</a> range <a href="http://www.iucnredlist.org/details/19538/0">http://www.iucnredlist.org/details/19538/0</a> <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Rhinolophus+denti+denti">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Rhinolophus+denti+denti</a> taxonomy
<b>Monkeys &amp; Baboons</b>				
<i>Papio ursinus ursinus</i>	Chacma Baboon	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=16022">http://maps.iucnredlist.org/map.html?id=16022</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Papio+ursinus+ursinus">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Papio+ursinus+ursinus</a> taxonomy
<b>Hares &amp; Rabbits</b>				
<i>Lepus capensis (3 possible sub-species)</i>	Cape Hare	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=41277">http://maps.iucnredlist.org/map.html?id=41277</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Lepus+capensis+narranus">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Lepus+capensis+narranus</a> <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Lepus+capensis+granti">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Lepus+capensis+granti</a> <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Lepus+capensis+mandatus">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Lepus+capensis+mandatus</a> taxonomy
<b>Rodents</b>				
<b>Squirrels</b>				
<i>Xerus inauris</i>	Cape Ground Squirrel	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=23145">http://maps.iucnredlist.org/map.html?id=23145</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Xerus+inauris+namaquensis">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Xerus+inauris+namaquensis</a> taxonomy
<i>Xerus princeps</i>	Kaokoveld Ground Squirrel	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=23146">http://maps.iucnredlist.org/map.html?id=23146</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/38?indicie=Xerus+princeps">http://www.planet-mammiferes.org/drupal/en/node/38?indicie=Xerus+princeps</a> taxonomy
<b>Porcupine, Pangolins Springhare &amp; Dassie Rat</b>				
<i>Hystrix africaeaustralis</i>	Cape Porcupine	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=10748">http://maps.iucnredlist.org/map.html?id=10748</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/38?indicie=Hystrix+africaeaustralis">http://www.planet-mammiferes.org/drupal/en/node/38?indicie=Hystrix+africaeaustralis</a> taxonomy
<i>Pedetes capensis</i>	Springhare	<input checked="" type="checkbox"/> Possibly in the south eastern part of the EPL	LC	<a href="http://maps.iucnredlist.org/map.html?id=16467">http://maps.iucnredlist.org/map.html?id=16467</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Pedetes+capensis+fouriei">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Pedetes+capensis+fouriei</a> <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Pedetes+capensis+fouriei">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Pedetes+capensis+fouriei</a>

				<a href="#">e=Pedetes+capensis+damarensis taxonomy</a>
<i>Manis temminckii</i>	Cape pangolin	<input checked="" type="checkbox"/>	Vulnerable	Taxonomy, status and range <a href="http://bioweb.uwlax.edu/bio203/s2012/gr-osshue_crai/classification.htm">http://bioweb.uwlax.edu/bio203/s2012/gr-osshue_crai/classification.htm</a> <a href="http://www.iucnredlist.org/details/12765/0">http://www.iucnredlist.org/details/12765/0</a>
<i>Petromus typicus</i>	Dassie rat	<input checked="" type="checkbox"/>	some sub-species endemic	<a href="http://maps.iucnredlist.org/map.html?id=16776">http://maps.iucnredlist.org/map.html?id=16776</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Petromus%20typicus">http://www.planet-mammiferes.org/drupal/en/node/42?input=Petromus%20typicus</a> taxonomy
<i>Rats &amp; Mice</i>				
<i>Rhodomys pumilio</i>	Striped Mouse	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=19436">http://maps.iucnredlist.org/map.html?id=19436</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Rhodomys%20pumilio">http://www.planet-mammiferes.org/drupal/en/node/42?input=Rhodomys%20pumilio</a> <a href="http://www.iucnredlist.org/details/19436/0">http://www.iucnredlist.org/details/19436/0</a> taxonomy
<i>Mus musculus</i>	House Mouse	<input checked="" type="checkbox"/>	LC introduced	<a href="http://maps.iucnredlist.org/map.html?id=13972">http://maps.iucnredlist.org/map.html?id=13972</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/38?indicie=Mus+musculus">http://www.planet-mammiferes.org/drupal/en/node/38?indicie=Mus+musculus</a> taxonomy
<i>Mastomys coucha</i>	Mutimammate Mouse	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=12865">http://maps.iucnredlist.org/map.html?id=12865</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Mastomys%20coucha">http://www.planet-mammiferes.org/drupal/en/node/42?input=Mastomys%20coucha</a> taxonomy
<i>Mastomys natalensis</i>	Natal Mutimammate Mouse	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=12868">http://maps.iucnredlist.org/map.html?id=12868</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Mastomys%20natalensis">http://www.planet-mammiferes.org/drupal/en/node/42?input=Mastomys%20natalensis</a> taxonomy
<i>Aethomys namaquensis namibiensis</i>	Namaqua Rock Mouse	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=573">http://maps.iucnredlist.org/map.html?id=573</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Aethomys+namaquensis+namibensis">http://www.planet-mammiferes.org/drupal/en/node/39?indicie=Aethomys+namaquensis+namibensis</a> taxonomy
<i>Desmodillus auricularis</i>	Short-tailed Gerbil	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=6509">http://maps.iucnredlist.org/map.html?id=6509</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Desmodillus%20auricularis">http://www.planet-mammiferes.org/drupal/en/node/42?input=Desmodillus%20auricularis</a> taxonomy
<i>Gerbillurus paeba</i>	Hairy-footed Gerbil	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=9092">http://maps.iucnredlist.org/map.html?id=9092</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Gerbillurus%20paeba">http://www.planet-mammiferes.org/drupal/en/node/42?input=Gerbillurus%20paeba</a> taxonomy
<i>Petromyscus collinus</i>	Pygmy rock mouse	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=16778">http://maps.iucnredlist.org/map.html?id=16778</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Petromyscus%20collinus">http://www.planet-mammiferes.org/drupal/en/node/42?input=Petromyscus%20collinus</a> taxonomy
<i>Carnivores</i>				
<i>Proteles cristatus</i>	Aardwolf	<input checked="" type="checkbox"/>	LC	<a href="http://www.iucnredlist.org/details/18372/0">http://www.iucnredlist.org/details/18372/0</a> status <a href="http://maps.iucnredlist.org/map.html?id=18372">http://maps.iucnredlist.org/map.html?id=18372</a> range
<i>Mellivora capensis</i>	Honey Badger	<input checked="" type="checkbox"/>	LC	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/41629/">http://www.iucnredlist.org/details/41629/</a>

				0
<i>Acinonyx jubatus</i>	Cheetah	<input checked="" type="checkbox"/>	Vulnerable	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/219/0">http://www.iucnredlist.org/details/219/0</a>
<i>Panthera leo</i>	Lion	<input checked="" type="checkbox"/>	Vulnerable	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/15951/0">http://www.iucnredlist.org/details/15951/0</a>
<i>Genetta genetta</i>	Common Genet	<input checked="" type="checkbox"/>	LC	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/41698/0">http://www.iucnredlist.org/details/41698/0</a>
<i>Hyaena brunnea melampus</i>	Brown Hyaena	<input checked="" type="checkbox"/>	NT	<a href="http://maps.iucnredlist.org/map.html?id=10276">http://maps.iucnredlist.org/map.html?id=10276</a> range <a href="http://www.iucnredlist.org/details/10276/0">http://www.iucnredlist.org/details/10276/0</a> status
<i>Panthera pardus puella</i>	Leopard	<input checked="" type="checkbox"/>	V	<a href="http://www.iucnredlist.org/details/15954/0">http://www.iucnredlist.org/details/15954/0</a> status <a href="http://www.planet-mammiferes.org/drupal/en/node/39?indice=Panthera+pardus+puella">http://www.planet-mammiferes.org/drupal/en/node/39?indice=Panthera+pardus+puella</a> taxonomy
<i>Felis caracal damarensis</i>	Caracal / Lynx	<input checked="" type="checkbox"/>	LC for Caracal caracal	<a href="http://maps.iucnredlist.org/map.html?id=3847">http://maps.iucnredlist.org/map.html?id=3847</a> range <a href="http://www.iucnredlist.org/details/3847/0">http://www.iucnredlist.org/details/3847/0</a> status <a href="http://www.catalogueoflife.org/col/details/species/id/c1f428d59b16403e00b5a28d29d76e4e/source/tree">http://www.catalogueoflife.org/col/details/species/id/c1f428d59b16403e00b5a28d29d76e4e/source/tree</a> subspecies ref
<i>Felis silvestris lybica</i>	African Wild Cat	<input checked="" type="checkbox"/> Possibility	LC	<a href="http://maps.iucnredlist.org/map.html?id=60354712">http://maps.iucnredlist.org/map.html?id=60354712</a> range
<i>Otocyon megalotis</i>	Bat-eared Fox	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=15642">http://maps.iucnredlist.org/map.html?id=15642</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Otocyon%20megalotis">http://www.planet-mammiferes.org/drupal/en/node/42?input=Otocyon%20megalotis</a> taxonomy
<i>Vulpes chama</i>	Cape Fox	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=23060">http://maps.iucnredlist.org/map.html?id=23060</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/38?indice=Vulpes+chama">http://www.planet-mammiferes.org/drupal/en/node/38?indice=Vulpes+chama</a> taxonomy
<i>Canis mesomelas</i>	Black-backed Jackal	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=3755">http://maps.iucnredlist.org/map.html?id=3755</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Canis%20mesomelas">http://www.planet-mammiferes.org/drupal/en/node/42?input=Canis%20mesomelas</a> taxonomy
<i>Ictonyx striatus</i>	Striped Polecat	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=41646">http://maps.iucnredlist.org/map.html?id=41646</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Ictonyx%20striatus">http://www.planet-mammiferes.org/drupal/en/node/42?input=Ictonyx%20striatus</a> taxonomy
<i>Genetta genetta pulchra</i>	Small-spotted Genet	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=41698">http://maps.iucnredlist.org/map.html?id=41698</a> range
<i>Suricata suricatta</i>	Suricate (Meerkat)	<input checked="" type="checkbox"/> Possibility	LC	<a href="http://www.iucnredlist.org/details/41624/0">http://www.iucnredlist.org/details/41624/0</a> range
<i>Cynictis penicillata</i>	Yellow Mongoose	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=41597">http://maps.iucnredlist.org/map.html?id=41597</a> range
<i>Galerella nigrata (or flavescens)</i>	Black Mongoose	<input checked="" type="checkbox"/> Southern extent starts in Erongo Mtns.	NE endemic	<a href="http://www.ibrarian.net/navon/paper/Black_mongoose_Galerella_nigrata_home_range_and.pdf?paperid=11324617">http://www.ibrarian.net/navon/paper/Black_mongoose_Galerella_nigrata_home_range_and.pdf?paperid=11324617</a> range
<i>Orycteropus afer</i>	Aardvark	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=41504">http://maps.iucnredlist.org/map.html?id=41504</a> range



				<a href="http://www.tierseiten.com/roehrenzaehner/aardvark.pdf">http://www.tierseiten.com/roehrenzaehner/aardvark.pdf</a> habitat
<i>Procapra capensis</i>	Rock Dassie	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=41766">http://maps.iucnredlist.org/map.html?id=41766</a> range <a href="http://animaldiversity.org/accounts/Procapra_capensis/taxonomy">http://animaldiversity.org/accounts/Procapra_capensis/taxonomy</a>
<i>Antelope</i>				
<i>Sylvicapra grimmia</i>	Common Duiker	Doubtful resident (rare visitor)	LC	<a href="http://maps.iucnredlist.org/map.html?id=21203">http://maps.iucnredlist.org/map.html?id=21203</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/38?indicate=Sylvicapra+grimmia">http://www.planet-mammiferes.org/drupal/en/node/38?indicate=Sylvicapra+grimmia</a> sub species
<i>Antidorcas marsupialis hoffmeyri</i>	Springbok	<input checked="" type="checkbox"/>	LC	<a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Antidorcas%20marsupialis">http://www.planet-mammiferes.org/drupal/en/node/42?input=Antidorcas%20marsupialis</a> taxonomy / distribution <a href="http://maps.iucnredlist.org/map.html?id=1676">http://maps.iucnredlist.org/map.html?id=1676</a>
<i>Orotragus oreotragus</i>	Klipspringer	<input checked="" type="checkbox"/>	LC	<a href="http://www.scairoberts.com/uploads/1/5/0/4/15042548/2013_klipspringer.pdf">http://www.scairoberts.com/uploads/1/5/0/4/15042548/2013_klipspringer.pdf</a> taxonomy / distribution <a href="http://www.iucnredlist.org/details/15485/0">http://www.iucnredlist.org/details/15485/0</a>
<i>Raphicerus campestris</i>	Steenbok	<input checked="" type="checkbox"/>	LC	<a href="http://maps.iucnredlist.org/map.html?id=19308">http://maps.iucnredlist.org/map.html?id=19308</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Raphicerus%20campestris">http://www.planet-mammiferes.org/drupal/en/node/42?input=Raphicerus%20campestris</a> taxonomy
<i>Oryx gazella</i>	Gemsbok	<input checked="" type="checkbox"/>	LC	<a href="http://www.iucnredlist.org/details/15573/0">http://www.iucnredlist.org/details/15573/0</a> range <a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Oryx%20gazella">http://www.planet-mammiferes.org/drupal/en/node/42?input=Oryx%20gazella</a> taxonomy
<i>Tragelaphus strepsiceros</i>	Kudu	<input checked="" type="checkbox"/>	LC	<a href="http://www.planet-mammiferes.org/drupal/en/node/42?input=Tragelaphus%20strepsiceros">http://www.planet-mammiferes.org/drupal/en/node/42?input=Tragelaphus%20strepsiceros</a> taxonomy <a href="http://maps.iucnredlist.org/map.html?id=22054">http://maps.iucnredlist.org/map.html?id=22054</a> range
<i>Aepyceros melampus</i>	Black-faced Impala	<input checked="" type="checkbox"/>	LC endemic to Namibia	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/550/0">http://www.iucnredlist.org/details/550/0</a>
<i>Madoqua kirkii</i>	Damara dik dik	<input checked="" type="checkbox"/>	LC	Status, range and taxonomy <a href="http://www.iucnredlist.org/details/12670/0">http://www.iucnredlist.org/details/12670/0</a>

#### 7.4.2.2 Birds

‘The majority of the 14 endemic bird species is similar to that of mammals, with most species being concentrated in a fairly narrow zone running from the Naukluft Mountains northwards along the escarpment to the Kunene River, from where they extend a short way into Angola’ (Mendelsohn et al, 2003:112). 8 - 10 bird species that are found in the area of the EPL are bi or tri nationally endemic. That is, they may be found in Angola and South Africa or even Botswana as well as Namibia. **Table 5** lists the birds expected to be found within the EPL area.

**Table 5: Bird species possibly occurring in the EPL.**

Species: scientific name	Species: common name	Expected Status	Reference
<i>Accipiter minullus</i>	Little Sparrowhawk	LC	taxonomy range <a href="https://www.hbw.com/species/little-sparrowhawk-accipiter-minullus">https://www.hbw.com/species/little-sparrowhawk-accipiter-minullus</a> status <a href="http://www.iucnredlist.org/details/22695581/0">http://www.iucnredlist.org/details/22695581/0</a>
<i>Achaetops pycnopygius</i>	Rockrunner	LC	taxonomy range <a href="https://www.hbw.com/species/rockrunner-achaetops-pycnopygius">https://www.hbw.com/species/rockrunner-achaetops-pycnopygius</a> status <a href="http://www.iucnredlist.org/details/22714641/0">http://www.iucnredlist.org/details/22714641/0</a>
<i>Agapornis roseicollis</i>	Rosy-faced Lovebird	LC	taxonomy range <a href="https://www.hbw.com/species/rosy-faced-lovebird-agapornis-roseicollis#Taxonomy">https://www.hbw.com/species/rosy-faced-lovebird-agapornis-roseicollis#Taxonomy</a> status <a href="http://www.iucnredlist.org/details/22685342/0">http://www.iucnredlist.org/details/22685342/0</a>
<i>Anthus similis</i>	Long-billed Pipit	LC	taxonomy range <a href="https://www.hbw.com/species/long-billed-pipit-anthus-similis">https://www.hbw.com/species/long-billed-pipit-anthus-similis</a> status <a href="http://www.iucnredlist.org/details/103821527/0">http://www.iucnredlist.org/details/103821527/0</a>
<i>Aquila nipalensis</i>	Steppe Eagle	EN	taxonomy range <a href="https://www.hbw.com/species/steppe-eagle-aquila-nipalensis">https://www.hbw.com/species/steppe-eagle-aquila-nipalensis</a> status <a href="http://www.iucnredlist.org/details/22696038/0">http://www.iucnredlist.org/details/22696038/0</a>
<i>Aquila rapax</i>	Tawny eagle	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/aquila_rapax.htm">http://www.biodiversityexplorer.org/birds/accipitridae/aquila_rapax.htm</a> status <a href="http://www.iucnredlist.org/details/22696033/0">http://www.iucnredlist.org/details/22696033/0</a>
<i>Aquila spilogaster</i>	African Hawk-eagle	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/aquila_spilogaster.htm">http://www.biodiversityexplorer.org/birds/accipitridae/aquila_spilogaster.htm</a> status <a href="http://www.iucnredlist.org/details/22696084/0">http://www.iucnredlist.org/details/22696084/0</a>
<i>Aquila spilogaster</i>	African Hawk-Eagle	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/aquila_spilogaster.htm">http://www.biodiversityexplorer.org/birds/accipitridae/aquila_spilogaster.htm</a> <a href="https://www.hbw.com/species/african-hawk-eagle-aquila-spilogaster">https://www.hbw.com/species/african-hawk-eagle-aquila-spilogaster</a> status <a href="http://www.iucnredlist.org/details/22696084/0">http://www.iucnredlist.org/details/22696084/0</a>
<i>Aquila verreauxii</i>	Black eagle	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/aquila_verreauxii.htm">http://www.biodiversityexplorer.org/birds/accipitridae/aquila_verreauxii.htm</a> status <a href="http://www.iucnredlist.org/details/22696067/0">http://www.iucnredlist.org/details/22696067/0</a>
<i>Aquila verreauxii</i>	Verreaux's Eagle	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/aquila_verreauxii.htm">http://www.biodiversityexplorer.org/birds/accipitridae/aquila_verreauxii.htm</a> status <a href="http://www.iucnredlist.org/details/22696067/0">http://www.iucnredlist.org/details/22696067/0</a>
<i>Batis pririt</i>	Pririt Batis	LC	taxonomy range <a href="https://www.hbw.com/species/pririt-batis-batis-pririt">https://www.hbw.com/species/pririt-batis-batis-pririt</a> status <a href="http://www.iucnredlist.org/details/22707873/0">http://www.iucnredlist.org/details/22707873/0</a>
<i>Bubo africanus</i>	Spotted Eagle-Owl	LC	taxonomy range <a href="https://www.hbw.com/species/spotted-eagle-owl-bubo-africanus">https://www.hbw.com/species/spotted-eagle-owl-bubo-africanus</a> status <a href="http://www.iucnredlist.org/details/61741628/0">http://www.iucnredlist.org/details/61741628/0</a>
<i>Buteo augur</i>	Augur Buzzard	LC	taxonomy range <a href="http://www.planetofbirds.com/accipitriiformes-accipitridae-augur-buzzard-buteo-augur">http://www.planetofbirds.com/accipitriiformes-accipitridae-augur-buzzard-buteo-augur</a> status <a href="http://www.iucnredlist.org/details/22732019/0">http://www.iucnredlist.org/details/22732019/0</a>

<i>Buteo rufofuscus</i>	Jackal Buzzard	LC	taxonomy range <a href="https://www.hbw.com/species/jackal-buzzard-buteo-rufofuscus">https://www.hbw.com/species/jackal-buzzard-buteo-rufofuscus</a> status <a href="http://www.iucnredlist.org/details/22695987/0">http://www.iucnredlist.org/details/22695987/0</a>
<i>Campethera abingoni</i>	Golden-tailed Woodpecker	LC	taxonomy range <a href="https://www.hbw.com/species/golden-tailed-woodpecker-campethera-abingoni">https://www.hbw.com/species/golden-tailed-woodpecker-campethera-abingoni</a> status <a href="http://www.iucnredlist.org/details/22680902/0">http://www.iucnredlist.org/details/22680902/0</a>
<i>Ciconia nigra</i>	Black Stork	LC	taxonomy range <a href="https://www.hbw.com/species/black-stork-ciconia-nigra">https://www.hbw.com/species/black-stork-ciconia-nigra</a> status <a href="http://www.iucnredlist.org/details/22697669/0">http://www.iucnredlist.org/details/22697669/0</a>
<i>Cinnyricinclus leucogaster</i>	Violet-backed Starling		taxonomy range <a href="https://www.hbw.com/species/violet-backed-starling-cinnyricinclus-leucogaster">https://www.hbw.com/species/violet-backed-starling-cinnyricinclus-leucogaster</a> status <a href="http://www.iucnredlist.org/details/22710791/0">http://www.iucnredlist.org/details/22710791/0</a>
<i>Circaetus cinereus</i>	Brown Snake-Eagle	LC	taxonomy range <a href="https://www.hbw.com/species/brown-snake-eagle-circaetus-cinereus">https://www.hbw.com/species/brown-snake-eagle-circaetus-cinereus</a> status <a href="http://www.iucnredlist.org/details/22695271/0">http://www.iucnredlist.org/details/22695271/0</a>
<i>Circaetus pectoralis</i>	Black-chested Snake-eagle	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/circaetus_pectoralis.htm">http://www.biodiversityexplorer.org/birds/accipitridae/circaetus_pectoralis.htm</a> status <a href="http://www.iucnredlist.org/details/22734223/0">http://www.iucnredlist.org/details/22734223/0</a>
<i>Colius colius</i>	White-backed Mousebird	LC	taxonomy range <a href="https://www.hbw.com/species/white-backed-mousebird-colius-colius">https://www.hbw.com/species/white-backed-mousebird-colius-colius</a> status <a href="http://www.iucnredlist.org/details/22683788/0">http://www.iucnredlist.org/details/22683788/0</a>
<i>Corythaixoides concolor</i>	Gray Go-away-bird	LC	taxonomy range <a href="https://www.hbw.com/species/grey-go-away-bird-corythaixoides-concolor">https://www.hbw.com/species/grey-go-away-bird-corythaixoides-concolor</a> status <a href="http://www.iucnredlist.org/details/22688396/0">http://www.iucnredlist.org/details/22688396/0</a>
<i>Elanus caeruleus</i>	Black-winged kite	LC	taxonomy range <a href="https://www.arkive.org/black-winged-kite/elanus-caeruleus/">https://www.arkive.org/black-winged-kite/elanus-caeruleus/</a> status <a href="http://www.iucnredlist.org/details/22695028/0">http://www.iucnredlist.org/details/22695028/0</a>
<i>Eupodotis afraoides</i>	White-quilled Bustard	LC	taxonomy range <a href="https://www.hbw.com/species/northern-black-bustard-afrotis-afraoides">https://www.hbw.com/species/northern-black-bustard-afrotis-afraoides</a> status <a href="http://www.iucnredlist.org/details/22691970/0">http://www.iucnredlist.org/details/22691970/0</a>
<i>Eupodotis rueppelii</i>	Rüppell's Korhaan	LC	taxonomy range <a href="http://maps.iucnredlist.org/map.html?id=22691980">http://maps.iucnredlist.org/map.html?id=22691980</a> status <a href="http://www.iucnredlist.org/details/22691980/0">http://www.iucnredlist.org/details/22691980/0</a>
<i>Falco peregrinus</i>	Peregrine falcon	LC	taxonomy range <a href="https://animaldiversity.org/accounts/Falco_peregrinus/">https://animaldiversity.org/accounts/Falco_peregrinus/</a> status <a href="http://www.iucnredlist.org/details/45354964/0">http://www.iucnredlist.org/details/45354964/0</a>
<i>Falco rupicolus</i>	Rock kestrel	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/falconidae/falco_rupicolus.htm">http://www.biodiversityexplorer.org/birds/falconidae/falco_rupicolus.htm</a> <a href="http://biodiversity.org.na/taxondisplay.php?nr=1091">http://biodiversity.org.na/taxondisplay.php?nr=1091</a> status <a href="http://www.catalogueoflife.org/col/details/species/id/327765a012ec1f5d65fb97efc7dcd13f">http://www.catalogueoflife.org/col/details/species/id/327765a012ec1f5d65fb97efc7dcd13f</a>

<i>Glaucidium perlatum</i>	Pearl-spotted Owlet	LC	taxonomy range <a href="https://www.owlpages.com/owls/species.php?s=1860">https://www.owlpages.com/owls/species.php?s=1860</a> <a href="https://www.hbw.com/species/pearl-spotted-owlet-glaucidium-perlatum">https://www.hbw.com/species/pearl-spotted-owlet-glaucidium-perlatum</a> status <a href="http://www.iucnredlist.org/details/22689203/0">http://www.iucnredlist.org/details/22689203/0</a>
<i>Gyps africanus</i>	White-backed vulture	CE	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/gyps_africanus.htm">http://www.biodiversityexplorer.org/birds/accipitridae/gyps_africanus.htm</a> status <a href="http://www.iucnredlist.org/details/22695189/0">http://www.iucnredlist.org/details/22695189/0</a>
<i>Hieraaetus pennatus</i>	Booted eagle	LC	taxonomy range <a href="https://www.arkive.org/booted-eagle/hieraaetus-pennatus/">https://www.arkive.org/booted-eagle/hieraaetus-pennatus/</a> status <a href="http://www.iucnredlist.org/details/22696092/0">http://www.iucnredlist.org/details/22696092/0</a>
<i>Indicator minor</i>	Lesser Honeyguide	LC	taxonomy range <a href="https://www.hbw.com/species/lesser-honeyguide-indicator-minor">https://www.hbw.com/species/lesser-honeyguide-indicator-minor</a> status <a href="http://www.iucnredlist.org/details/22680623/0">http://www.iucnredlist.org/details/22680623/0</a>
<i>Lanioturdus torquatus</i>	White-tailed Shrike	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/malaconotidae/lanioturdus_torquatus.htm">http://www.biodiversityexplorer.org/birds/malaconotidae/lanioturdus_torquatus.htm</a> status <a href="http://www.iucnredlist.org/details/22707446/0">http://www.iucnredlist.org/details/22707446/0</a>
<i>Melaenornis herero</i>	Herero Chat	LC	taxonomy range <a href="https://www.hbw.com/species/herero-chat-melaenornis-herero">https://www.hbw.com/species/herero-chat-melaenornis-herero</a> status <a href="http://www.iucnredlist.org/details/22709974/0">http://www.iucnredlist.org/details/22709974/0</a>
<i>Melaniparus carpi</i>	Carp's Tit	LC	taxonomy range <a href="https://www.hbw.com/species/carps-tit-melaniparus-carpi">https://www.hbw.com/species/carps-tit-melaniparus-carpi</a> status <a href="http://www.iucnredlist.org/details/22732625/0">http://www.iucnredlist.org/details/22732625/0</a>
<i>Numida meleagris</i>	Helmeted Guineafowl	LC	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/numididae/numida_meleagris.htm">http://www.biodiversityexplorer.org/birds/numididae/numida_meleagris.htm</a> status <a href="http://www.iucnredlist.org/details/22679555/">http://www.iucnredlist.org/details/22679555/</a>
<i>Phoeniculus damarensis</i>	Violet Woodhoopoe	LC	taxonomy range <a href="https://www.hbw.com/species/violet-woodhoopoe-phoeniculus-damarensis">https://www.hbw.com/species/violet-woodhoopoe-phoeniculus-damarensis</a> status <a href="http://www.iucnredlist.org/details/22682673/0">http://www.iucnredlist.org/details/22682673/0</a>
<i>Poicephalus rueppellii</i>	Ruppell's Parrot	LC	taxonomy range <a href="http://www.avizandum.co.za/ruppells-parrot-poicephalus-rueppellii/">http://www.avizandum.co.za/ruppells-parrot-poicephalus-rueppellii/</a> status <a href="http://www.iucnredlist.org/details/22685321/0">http://www.iucnredlist.org/details/22685321/0</a>
<i>Pternistis adspersus</i>	Red-billed Francolin	LC	taxonomy range <a href="https://www.hbw.com/species/red-billed-francolin-pternistis-adspersus">https://www.hbw.com/species/red-billed-francolin-pternistis-adspersus</a> status <a href="http://www.iucnredlist.org/details/22678819/0">http://www.iucnredlist.org/details/22678819/0</a>
<i>Pternistis hartlaubi</i>	Hartlaub's francolin	LC	taxonomy range <a href="https://www.hbw.com/species/hartlaubs-francolin-pternistis-hartlaubi">https://www.hbw.com/species/hartlaubs-francolin-pternistis-hartlaubi</a> <a href="http://maps.iucnredlist.org/map.html?id=22678799">http://maps.iucnredlist.org/map.html?id=22678799</a> status <a href="http://www.iucnredlist.org/details/22678799/0">http://www.iucnredlist.org/details/22678799/0</a>
<i>Pytilia melba</i>	Green-winged Pytilia	LC	taxonomy range <a href="https://www.hbw.com/species/green-winged-pytilia-pytilia-melba">https://www.hbw.com/species/green-winged-pytilia-pytilia-melba</a> status <a href="http://www.iucnredlist.org/details/22719344/0">http://www.iucnredlist.org/details/22719344/0</a>

<i>Scleroptila gutturalis</i>	Orange River Francolin	LC	taxonomy range <a href="https://www.hbw.com/species/orange-river-francolin-scleroptila-gutturalis">https://www.hbw.com/species/orange-river-francolin-scleroptila-gutturalis</a> status <a href="http://www.biodiversity.org.na/taxondisplay.php?nr=561">http://www.biodiversity.org.na/taxondisplay.php?nr=561</a>
<i>Terathopius ecaudatus</i>	Bateleur	NT	taxonomy range <a href="http://www.biodiversityexplorer.org/birds/accipitridae/terathopius_ecaudatus.htm">http://www.biodiversityexplorer.org/birds/accipitridae/terathopius_ecaudatus.htm</a> status <a href="http://www.iucnredlist.org/details/22695289/0">http://www.iucnredlist.org/details/22695289/0</a>
<i>Tockus damarensis</i>	Damara Hornbill	LC	taxonomy range <a href="https://www.hbw.com/species/damara-hornbill-tockus-damarensis">https://www.hbw.com/species/damara-hornbill-tockus-damarensis</a> status <a href="http://www.iucnredlist.org/details/22725940/0">http://www.iucnredlist.org/details/22725940/0</a>
<i>Tockus monteiri</i>	Monteiro's Hornbill	LC	taxonomy range <a href="https://www.hbw.com/species/monteiros-hornbill-tockus-monteiri">https://www.hbw.com/species/monteiros-hornbill-tockus-monteiri</a> status <a href="http://www.iucnredlist.org/details/22682367/0">http://www.iucnredlist.org/details/22682367/0</a>
<i>Torgos tracheliotos</i>	Lappet-faced vulture	EN	taxonomy range <a href="http://www.arkive.org/lappet-faced-vulture/torgos-tracheliotos/">http://www.arkive.org/lappet-faced-vulture/torgos-tracheliotos/</a> status <a href="http://www.iucnredlist.org/details/22695238/0">http://www.iucnredlist.org/details/22695238/0</a>
<i>Turdoides gymnogenys</i>	Bare-cheeked Babbler	LC	taxonomy range <a href="https://www.hbw.com/species/bare-cheeked-babbler-turdoides-gymnogenys">https://www.hbw.com/species/bare-cheeked-babbler-turdoides-gymnogenys</a> status <a href="http://www.iucnredlist.org/details/22716505/0">http://www.iucnredlist.org/details/22716505/0</a>
<i>Vanellus coronatus</i>	Crowned Lapwing	LC	taxonomy range <a href="https://www.hbw.com/species/crowned-lapwing-vanellus-coronatus">https://www.hbw.com/species/crowned-lapwing-vanellus-coronatus</a> status <a href="http://www.iucnredlist.org/details/22694043/0">http://www.iucnredlist.org/details/22694043/0</a>
LC= least concern, CE= critically endangered NT= near threatened, VU =vulnerable, EN= endangered, NE= not evaluated, evaluated using IUCN website <a href="http://www.iucnredlist.org/">http://www.iucnredlist.org/</a>			

### 7.4.2.3 Reptiles

‘The overall areas in which the 56 endemic reptiles are found are similar to, but broader, than those for endemic birds and mammals’ (Mendelsohn et al, 2003:113). Between 21 and 24 nationally endemic reptile species are expected in the area where the EPL is situated.

**Table 6: Conservation status of reptiles expected and not expected to be found in EPL6440.**

Species: scientific name	Species: common name	Expected	Status	Reference
Tortoises & Terrapins				
<i>Stigmochelys (Geochelone) pardalis</i>	Leopard Tortoise	<input checked="" type="checkbox"/>	LC	<a href="http://www.britishcheloniagroup.org.uk/testudo/v7/v7n2pirog">http://www.britishcheloniagroup.org.uk/testudo/v7/v7n2pirog</a> Range <a href="http://www.catalogueoflife.org/col/details/species/id/13209721">http://www.catalogueoflife.org/col/details/species/id/13209721</a> Taxonomy <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pelomedusa subrufa</i>	Marsh/Helmeted Terrapin	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pelomedusa&amp;species=subrufa">http://reptile-database.reptarium.cz/species?genus=Pelomedusa&amp;species=subrufa</a>

				General <a href="http://www.catalogueoflife.org/col/details/species/id/70fb9207dac7da2ac75ad41d468fbe12">http://www.catalogueoflife.org/col/details/species/id/70fb9207dac7da2ac75ad41d468fbe12</a> Taxonomy
<b>Snakes</b>				
<b>Thread Snakes</b>				
<i>Namibiana (Leptotyphlops) occidentalis</i>	Western Thread Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Namibiana&amp;species=occidentalis&amp;search_param=%28%28common_name%3D%27Leptotyphlops+occidentalis%27%29%29">http://reptile-database.reptarium.cz/species?genus=Namibiana&amp;species=occidentalis&amp;search_param=%28%28common_name%3D%27Leptotyphlops+occidentalis%27%29%29</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Namibiana (Leptotyphlops) labialis</i>	Damara Thread Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Namibiana&amp;species=labialis">http://reptile-database.reptarium.cz/species?genus=Namibiana&amp;species=labialis</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<b>Pythons</b>				
<i>Python sebae</i>	Rock python	<input checked="" type="checkbox"/>	has not yet been assessed for the IUCN Red List	Range and Status Taxonomy <a href="https://www.arkive.org/african-rock-python/python-sebae/">https://www.arkive.org/african-rock-python/python-sebae/</a> <a href="https://snake-facts.weebly.com/african-rock-python.htm">https://snake-facts.weebly.com/african-rock-python.htm</a>
<i>Python anchietae</i>	Angolan Python	<input checked="" type="checkbox"/>	LC	Range and Status Taxonomy <a href="http://www.iucnredlist.org/details/177539/0">http://www.iucnredlist.org/details/177539/0</a>
<b>Burrowing Snakes</b>				
<i>Xenocalamus bicolor</i>	Bi-coloured Quill-snouted Snake	<input checked="" type="checkbox"/>	NE	Favoured habitat is alluvial sand in moist savannah. <a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/attractaspididae/Xenocalamus_bicolor.htm">http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/attractaspididae/Xenocalamus_bicolor.htm</a> Range <a href="http://reptile-database.reptarium.cz/species?genus=Xenocalamus&amp;species=bicolor&amp;search_param=%28%28search%3D%27Xenocalamus+bicolor%27%29%29">http://reptile-database.reptarium.cz/species?genus=Xenocalamus&amp;species=bicolor&amp;search_param=%28%28search%3D%27Xenocalamus+bicolor%27%29%29</a> Taxonomy <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<b>Typical Snakes</b>				
<i>Boaedon (Lamprophis) fuliginosus</i>	Brown House Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Boaedon&amp;species=fuliginosus">http://reptile-database.reptarium.cz/species?genus=Boaedon&amp;species=fuliginosus</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Lycophidion capense multimaculatum</i>	Cape Wolf Snake	<input checked="" type="checkbox"/>	NE	<a href="http://www.krugerpark.co.za/africa_cape_wolf_snake.html">http://www.krugerpark.co.za/africa_cape_wolf_snake.html</a> A number of sub-species exist across the range; <a href="http://reptile-database.reptarium.cz/species?genus=Lycophidion&amp;species=capense&amp;search_param=%28%28genus%3D%27Lycophidion%27%29%28species%3D%27capense%27%29%29">http://reptile-database.reptarium.cz/species?genus=Lycophidion&amp;species=capense&amp;search_param=%28%28genus%3D%27Lycophidion%27%29%28species%3D%27capense%27%29%29</a> Taxonomy <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Lycophidion namibianum</i>	Namibian Wolf snake	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Lycop">http://reptile-database.reptarium.cz/species?genus=Lycop</a>

				<a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> <u>hidion&amp;species=namibianum</u> Taxonomy and Range
<i>Pseudaspis cana</i>	Mole Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pseudaspis&amp;species=cana">http://reptile-database.reptarium.cz/species?genus=Pseudaspis&amp;species=cana</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pythonodipsas carinata</i>	Western Keeled Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pythonodipsas&amp;species=carinata">http://reptile-database.reptarium.cz/species?genus=Pythonodipsas&amp;species=carinata</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Dipsina multimaculata</i>	Dwarf Beaked Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Dipsina&amp;species=multimaculata">http://reptile-database.reptarium.cz/species?genus=Dipsina&amp;species=multimaculata</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Psammophis notostictus</i>	Karoo Sand Snake	<input checked="" type="checkbox"/>	NE	<a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/colubridae/psammophis_notostictus.htm">http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/colubridae/psammophis_notostictus.htm</a> Range <a href="http://reptile-database.reptarium.cz/species?genus=Psammophis&amp;species=notostictus">http://reptile-database.reptarium.cz/species?genus=Psammophis&amp;species=notostictus</a> Taxonomy <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Psammophis leightoni namibensis</i>	Namib Sand Snake	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Psammophis&amp;species=namibensis&amp;search_param=%28search%3D%27Psammophis+leightoni+namibensis%27%29">http://reptile-database.reptarium.cz/species?genus=Psammophis&amp;species=namibensis&amp;search_param=%28search%3D%27Psammophis+leightoni+namibensis%27%29</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Psammophis brevirostris leopardinus</i>	Leopard Grass Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Psammophis&amp;species=leopardinus&amp;search_param=%28search%3D%27Psammophis+brevirostris+leopardinus%27%29">http://reptile-database.reptarium.cz/species?genus=Psammophis&amp;species=leopardinus&amp;search_param=%28search%3D%27Psammophis+brevirostris+leopardinus%27%29</a> Taxonomy <a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/colubridae/psammophis_leopardinus.htm">http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/colubridae/psammophis_leopardinus.htm</a> Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Dasypeltis scabra</i>	Common Egg Eater	<input checked="" type="checkbox"/>	LC	<a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/colubridae/dasypeltis_scabra.htm">http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/colubridae/dasypeltis_scabra.htm</a> Taxonomy <a href="http://www.iucnredlist.org/details/176780/0">http://www.iucnredlist.org/details/176780/0</a> Range and Status
<i>Telescopus finkeldeyi</i>	Damara Tiger Snake	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Telescopus&amp;species=finkeldeyi&amp;search_param=%28search%3D%27Telescopus+sp.%27%29">http://reptile-database.reptarium.cz/species?genus=Telescopus&amp;species=finkeldeyi&amp;search_param=%28search%3D%27Telescopus+sp.%27%29</a> Taxonomy <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Range and Status
<i>Telescopus semiannulatus polystictus</i>	Western Tiger Snake	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Telescopus&amp;species=semiannulatus&amp;search_param">http://reptile-database.reptarium.cz/species?genus=Telescopus&amp;species=semiannulatus&amp;search_param</a>

				<a href="http://www.iucnredlist.org/search">m=%28%28search%3D%27Telescopus+se miannulatus+polystictus%27%29%29 Taxonomy and Range http://www.iucnredlist.org/search Status</a>
<i>Aspidelaps lubricus infuscatus</i>	Coral Snake	<input checked="" type="checkbox"/>	NE endemic	<a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/elapidae/Aspidelaps_lubricus_infuscatus.htm">http://www.biodiversityexplorer.org/reptiles/ squamata/serpentes/elapidae/Aspidelaps lub ricus infuscatus.htm</a> Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status <a href="http://reptile-database.reptarium.cz/species?genus=Aspidelaps&amp;species=lubricus">http://reptile- database.reptarium.cz/species?genus=Aspid elaps&amp;species=lubricus</a> Taxonomy
<i>Aspidelaps scutatus scutatus</i>	Shield-nose Snake	<input checked="" type="checkbox"/>	NE	<a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/elapidae/aspidelaps_scutatus.htm">http://www.biodiversityexplorer.org/reptiles/ squamata/serpentes/elapidae/aspidelaps_scut atus.htm</a> Range <a href="http://reptile-database.reptarium.cz/species?genus=Aspidelaps&amp;species=scutatus&amp;search_param=%28%28search%3D%27Aspidelaps+scutatus+scutatus%27%29%29">http://reptile- database.reptarium.cz/species?genus=Aspid elaps&amp;species=scutatus&amp;search_param=%2 8%28search%3D%27Aspidelaps+scutatus+s cutatus%27%29%29</a> Taxonomy <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Bitis arietans</i>	Puff Adder	<input checked="" type="checkbox"/>	NE	<a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/viperidae/bitis_arietans.htm">http://www.biodiversityexplorer.org/reptiles/ squamata/serpentes/viperidae/bitis_arietans. htm</a> Taxonomy <a href="http://reptile-database.reptarium.cz/species?genus=Bitis&amp;species=arietans">http://reptile- database.reptarium.cz/species?genus=Bitis&amp; species=arietans</a> Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Bitis caudalis</i>	Horned Adder	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Bitis&amp;species=caudalis">http://reptile- database.reptarium.cz/species?genus=Bitis&amp; species=caudalis</a> Taxonomy <a href="http://www.biodiversityexplorer.org/reptiles/squamata/serpentes/viperidae/bitis_caudalis.htm">http://www.biodiversityexplorer.org/reptiles/ squamata/serpentes/viperidae/bitis_ caudalis. htm</a> Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Naja nigricincta nigricincta</i>	Western Barred Spitting Cobra	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Naja&amp;species=nigricincta&amp;search_param=%28%28search%3D%27Naja+nigricollis+nigricincta%27%29%29">http://reptile- database.reptarium.cz/species?genus=Naja&amp; species=nigricincta&amp;search_param=%28%2 8search%3D%27Naja+nigricollis+nigricinct a%27%29%29</a> Range & Taxonomy
<i>Dendroaspis polylepis</i>	Black Mamba	<input checked="" type="checkbox"/>	LC	<a href="http://reptile-database.reptarium.cz/species?genus=Dendroaspis&amp;species=polylepis&amp;search_param=%28%28search%3D%27Dendroaspis+polylepis%27%29%29">http://reptile- database.reptarium.cz/species?genus=Dendr oaspis&amp;species=polylepis&amp;search_param= %28%28search%3D%27Dendroaspis+polyl epis%27%29%29</a> Range & Taxonomy
Lizards				
Skinks				
<i>Mabuya acutilabris</i>	Wedge-snouted Skink	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=acutilabris&amp;search_param=%28%28search%3D%27Mabuya+acutilabris%27%29%29">http://reptile- database.reptarium.cz/species?genus=Trach ylepis&amp;species=acutilabris&amp;search_param= %28%28search%3D%27Mabuya+acutilabri s%27%29%29</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Mabuya capensis</i>	Cape Skink	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=capensis">http://reptile- database.reptarium.cz/species?genus=Trach ylepis&amp;species=capensis</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status



<i>Mabuya occidentalis</i>	Western Three-striped Skink	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=occidentalis">http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=occidentalis</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Mabuya sulcata</i>	Western Rock Skink	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=sulcata">http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=sulcata</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
Old World Lizards				
<i>Mabuya variegata</i>	Variegated Skink	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=variegata&amp;search_param=%28%28search%3D%27Mabuya+variegata+vriegata%27%29%29">http://reptile-database.reptarium.cz/species?genus=Trachylepis&amp;species=variegata&amp;search_param=%28%28search%3D%27Mabuya+variegata+vriegata%27%29%29</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Heliobolus lugubris</i>	Bushveld Lizard	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Heliobolus&amp;species=lugubris">http://reptile-database.reptarium.cz/species?genus=Heliobolus&amp;species=lugubris</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Meroles anchietae</i>	Shovel-snouted Lizard	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Merol es&amp;species=anchietae">http://reptile-database.reptarium.cz/species?genus=Merol es&amp;species=anchietae</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Meroles suborbitalis</i>	Spotted Desert Lizard	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Merol es&amp;species=suborbitalis">http://reptile-database.reptarium.cz/species?genus=Merol es&amp;species=suborbitalis</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pedioplanis namaquensis</i>	Namaqua Sand Lizard	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pedioplanis&amp;species=namaquensis">http://reptile-database.reptarium.cz/species?genus=Pedioplanis&amp;species=namaquensis</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pedioplanis undata</i>	Western Sand Lizard	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pedioplanis&amp;species=undata">http://reptile-database.reptarium.cz/species?genus=Pedioplanis&amp;species=undata</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pedioplanis gaerdesi</i>	Kaokoveld Sand Lizard	<input checked="" type="checkbox"/>	LC endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Pedioplanis&amp;species=gaerdesi">http://reptile-database.reptarium.cz/species?genus=Pedioplanis&amp;species=gaerdesi</a> Taxonomy <a href="http://www.iucnredlist.org/details/178213/0">http://www.iucnredlist.org/details/178213/0</a> Status and Range
Plated Lizards				
<i>Cordyl osaurus subtessellatus</i>	Dwarf Plated Lizard	<input checked="" type="checkbox"/>	LC	<a href="http://reptile-database.reptarium.cz/species?genus=Cordyl osaurus&amp;species=subtessellatus">http://reptile-database.reptarium.cz/species?genus=Cordyl osaurus&amp;species=subtessellatus</a> Taxonomy <a href="http://www.iucnredlist.org/details/178341/0">http://www.iucnredlist.org/details/178341/0</a> Range and Status
Monitors				
<i>Varanus albigularis</i>	Rock Monitor	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Varan">http://reptile-database.reptarium.cz/species?genus=Varan</a>

				<a href="#">us&amp;species=albigularis</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<b>Agamas</b>				
<i>Agama aculeata</i>	Ground Agama	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Agama&amp;species=aculeata">http://reptile-database.reptarium.cz/species?genus=Agama&amp;species=aculeata</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Agama anchietae</i>	Anchieta's Agama	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Agama&amp;species=anchietae">http://reptile-database.reptarium.cz/species?genus=Agama&amp;species=anchietae</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Agama planiceps</i>	Namibian Rock Agama	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Agama&amp;species=planiceps&amp;search_param=%28%28search%3D%27Agama+planiceps%27%29%29">http://reptile-database.reptarium.cz/species?genus=Agama&amp;species=planiceps&amp;search_param=%28%28search%3D%27Agama+planiceps%27%29%29</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<b>Geckos</b>				
<i>Afroedura africana africana</i>	African Flat Gecko	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Afroedura&amp;species=africana">http://reptile-database.reptarium.cz/species?genus=Afroedura&amp;species=africana</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Chondrodactylus angulifer namibensis</i>	Giant Ground Gecko	<input checked="" type="checkbox"/>	LC	<a href="http://reptile-database.reptarium.cz/species?genus=Chondrodactylus&amp;species=angulifer">http://reptile-database.reptarium.cz/species?genus=Chondrodactylus&amp;species=angulifer</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Lygodactylus bradfieldi</i>	Bradfield's Dwarf Gecko	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Lygodactylus&amp;species=bradfieldi">http://reptile-database.reptarium.cz/species?genus=Lygodactylus&amp;species=bradfieldi</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pachydactylus bicolor</i>	Velvety Thick-toed Gecko	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=bicolor">http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=bicolor</a> Taxonomy <a href="http://www.pachydactylus.com/pages/english/pachydactylus/p.-bicolor.php">http://www.pachydactylus.com/pages/english/pachydactylus/p.-bicolor.php</a> Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pachydactylus turneri</i>	Turner's Thick-toed Gecko	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Chondrodactylus&amp;species=turneri">http://reptile-database.reptarium.cz/species?genus=Chondrodactylus&amp;species=turneri</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pachydactylus punctatus</i>	Speckled Thick-toed Gecko	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=punctatus">http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=punctatus</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pachydactylus scherzi</i>	Schertz's Thick-toed	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=scherzi">http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=scherzi</a>

	Gecko			<a href="#">dactylus&amp;species=scherzi</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Pachydactylus weberi</i>	Weber's Thick-toed Gecko	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=weberi">http://reptile-database.reptarium.cz/species?genus=Pachydactylus&amp;species=weberi</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Ptenopus carpi</i>	Namib Chirping Gecko	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Ptenopus&amp;species=carpi">http://reptile-database.reptarium.cz/species?genus=Ptenopus&amp;species=carpi</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Ptenopus garrulus maculatus</i>	Common Barking Gecko	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Ptenopus&amp;species=garrulus">http://reptile-database.reptarium.cz/species?genus=Ptenopus&amp;species=garrulus</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Rhoptropus afer</i>	Common Namib Day Gecko	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Rhoptropus&amp;species=afer">http://reptile-database.reptarium.cz/species?genus=Rhoptropus&amp;species=afer</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Rhoptropus boultoni</i>	Boulton's Namib Day Gecko	<input checked="" type="checkbox"/>	NE	<a href="http://reptile-database.reptarium.cz/species?genus=Rhoptropus&amp;species=boultoni">http://reptile-database.reptarium.cz/species?genus=Rhoptropus&amp;species=boultoni</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status
<i>Rhoptropus bradfieldi</i>	Bradfield's Namib Day Gecko	<input checked="" type="checkbox"/>	NE endemic	<a href="http://reptile-database.reptarium.cz/species?genus=Rhoptropus&amp;species=bradfieldi&amp;search_param=%28%28search%3D%27Rhoptropus+bradfieldi%27%29%29">http://reptile-database.reptarium.cz/species?genus=Rhoptropus&amp;species=bradfieldi&amp;search_param=%28%28search%3D%27Rhoptropus+bradfieldi%27%29%29</a> Taxonomy and Range <a href="http://www.iucnredlist.org/search">http://www.iucnredlist.org/search</a> Status

## 7.5 SOCIO CULTURAL ENVIRONMENT

There is no formal urban settlement within the EPL. Omaruru town is located some 10 kilometres to the north. The Farms are in themselves are commercial farming, lodges or hunting establishments. Each farm has variable personnel who are employed in either of these enterprises. In many cases the owners of the property live on the farms with their families and the employees too may have family members staying on the farm with them. From time to time the farm owners travel to either Karibib or Omaruru for access to food, fuel and medical services. Where the farm is a lodge or hunting establishment then tourists and hunters access the farms. From the farm owner's perspective these activities are the norm and acceptable in terms of their commercial objectives and conservation aspirations.

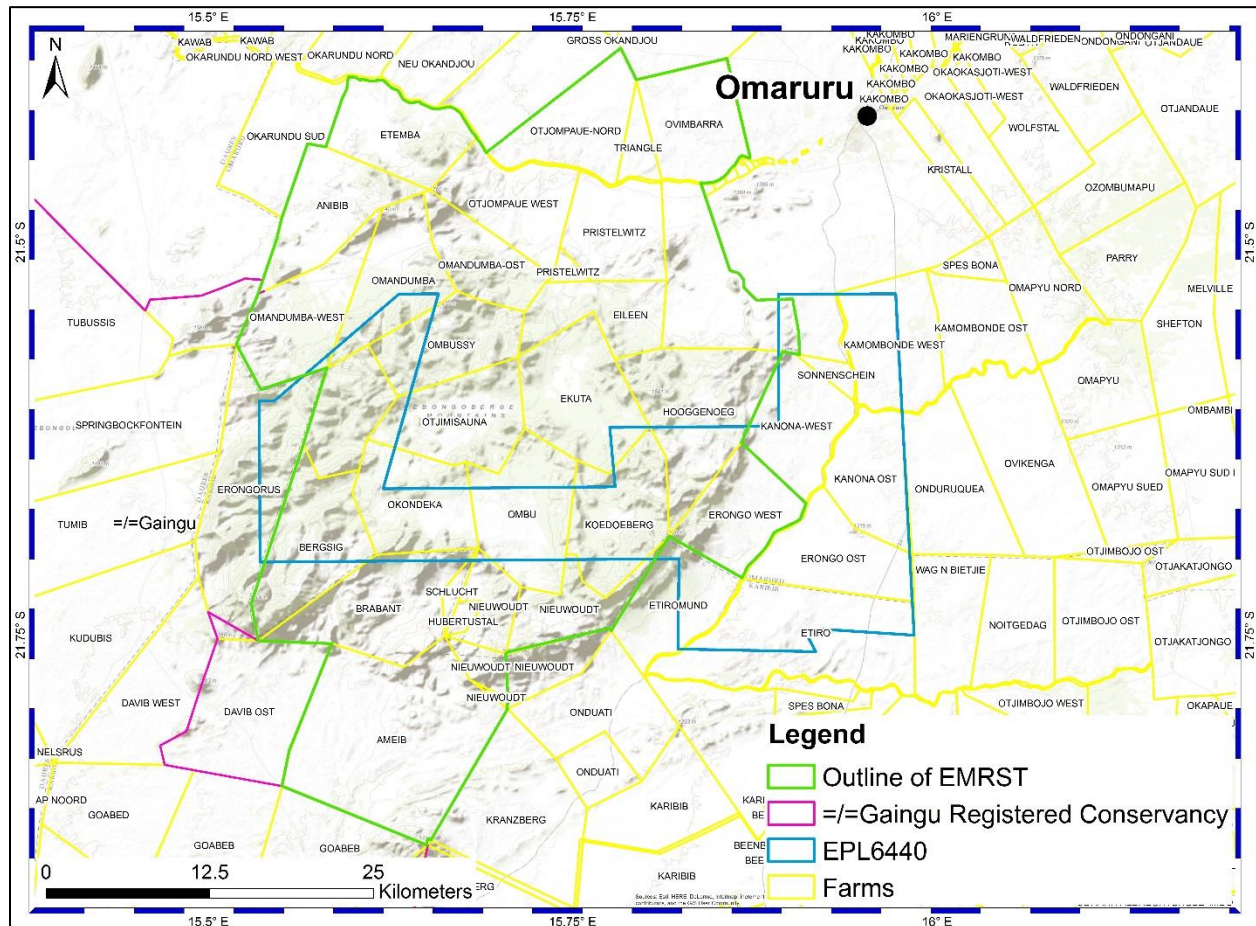
A number of the farm owners have organised themselves and established the *Erongo Mountain Rhino Sanctuary Trust*, which they recognise as a protected area in the Erongo Region of Namibia, though not recognised by MET under the provisions of the Nature Conservation Ordinance. The Trust was formerly registered as a commercial conservancy under the Ordinance, until the MET withdrew the recognition of such conservancies due to a lack of provisions in the Ordinance to recognise such conservancies.

“The Erongo Mountain Rhino Sanctuary Trust (EMRST) aims at protecting the indigenous fauna and flora of the region, as well as the reintroduction of species that were part of the natural biodiversity historically. The EMRST is made up of numerous privately owned land units (*20 member farms*), whose owners decided to contribute their land to this project. This has led to the unprecedented situation that almost all inner fences and individual border fences have been removed, to allow the game animals freedom of movement (*There are an additional 12 geographically incorporated supportive non-member farm units within and surrounding the Erongo Mountains*). Furthermore, the principles of the Trust state that no domestic livestock may be kept for commercial purposes; another step towards returning the Erongo Mountains to a pristine state. This large area – 180 000 hectares - which the Erongo Mountain Rhino Sanctuary Trust encompasses, is now almost completely “fence-free” and is therefore wholly available for the protection and conservation of the occurring animal and plant species. Within these 200 000 the game can move freely. There is merely a fence on the borders of the EMRST at places where there are no mountains, to prevent the reintroduced Black rhinoceros from leaving the area into

neighbouring farmland. As commercial livestock keeping is not possible on farms who have dedicated their land to the principles of the EMRST, most make their living through one or other form of tourism. There are plentiful tourism destinations in the project area” This information was extracted from the following website.

(<http://www.erongomountains.org/site/erongo/namibia/conservation/emrst/home.html> 17.4.2018)

The recognised EMRST area is depicted in Figure 5.



**Figure 5. Map of the Gaingu Conservancy and Erongo Mountain Rhino Sanctuary Trust**

“The conservation incentives created have led to the establishment of several lodges, guest and hunting farms and campsites within the EMRST area. Altogether 186 directly tourism related jobs were created by the EMRST project and they employ 36 Security guards to do anti-poaching patrols and general security. A recent survey approximates the visiting tourist numbers to stand at 25,000 (photo tourists, trophy hunters, campers and day visitors) that visit the project

annually. Thus the project contributes significantly to social upliftment in the area and serves as a showcase of Namibia's natural splendour. EMRST's vision is to be a nature reserve in the true sense of the word, with emphasis on the protection of the endemic species of the Namibian Escarpment and the endangered black rhinoceros and black-faced impala, for the benefit of present and future generations and the Namibian people in particular." (EMRST 2017) Table 7 lists the EMRST member farms and their particular tourism or commercial enterprises.

**Table 7. Tourist and Commercial Operators within EMRST (EMRST 2017)**

<b>Farm Name</b>	<b>Tourism and Commercial Activity</b>
Ameib	Guest farm & Campsite
Schlucht + Brabant	Hunting Farm
Ovimbarra	Guest & Hunting Farm
Omandumba-West 1	Guest & Hunting Farm & Campsite
Omandumba-West 1	Self-Catering Camp
Otjimisauna+Ekuta	Lodge & Hunting Farm
Anibib/AiAiba	Lodge
Otjompau West, North + Pristelwitz	Hunting Farm & Oasis Factory
Omandumba East + Ombuwa	Hunting Farm
Otjohotozu	Guest & Hunting Farm
Erongo Wilderness Lodge	Lodge
Hooggenoeg	Hunting Farm
<i>18 accommodations with 186 staff employed in these enterprises.</i>	

A section of the Erongo mountain which does not fall within the EMRST area is formally included in the registered =/-Gangu Conservancy. A small section of the EPL area extends into this conservancy area. Any exploration activities carried out in this area would most likely not impact on the conservancy's social and economic objectives. Nonetheless, as a stakeholder, they would be consulted prior to access if the company needed to explore on Farm Erongorus.

## 8 STAKEHOLDER CONSULTATION

Consultation with the public forms an integral component of an EIA investigation and enables Interested and affected parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with the proposed development and to identify additional issues, which they feel, should be addressed in the EIA.

This background information document (BID) (See **Appendix B**) provided IAPs with the opportunity to register and engage in the public participation process. Through registering they have the opportunity to:

- Provide the EIA coordinator with additional information which should be taken into account in the assessment of impacts and during decision-making;
- Attend meetings and obtain information about the proposed project;
- Share any comments, issues or concerns related to the proposed exploration activities;
- Review and comment on the draft report and EMP and findings from the EIA process.

The public participation notices for the EIA and the public meetings were advertised over two consecutive weeks in two national papers, namely, New Era and Die Republikein. Proofs of the adverts are found in **Appendix B**. Table 8 lists the persons who attended the public meetings.

**Table 8. Public meeting attendees**

<b>Name</b>	<b>Role / Organisation / Company</b>
Kai-Uwe Denker	Chairperson – Erongo Mountain Rhino Sanctuary Trust (EMRST)
Saima Shihepo	SHE officer – Karibib Town Council
S. van Wyk	Owner – Farm Koedoeberg
M. van Wyk	Owner – Farm Koedoeberg
Bianca Foelscher	Resident - Karibib
Aloisius Uugwanga	Participant
Hilia Haikali	Participant
Johan Nel	Contractor
Joos Fourie	Electrical Contractor

Eugene La Grange	Contractor
Munjonganda Kamuaruuma	Ministry of Environment & Tourism - Omaruru
Jens Roland	Attorney – (EMRST)
Ferdinand Herzog	Trustee - EMRST
Milton Hochobeb	Participant
Dr. Rolf Lübbe	Trustee - EMRST
Christian Traupe	Chairperson – Omaruru Farmers Association
Flip van Rhyen	Owner – Farm Nieuwoudt 186
Daniel Rusberg	Representative – Farm Erongo East
Interested & Affected Party	Co-owner Farm Hoogenoeg / Trustee EMRST

During the public meetings a number questions, comments and objections were received. Some responses were provided. The comments and responses are contained in **Appendix B**. A summary of the interactions is provided below.

The first public meeting took place in Karibib. The difference between exploration and mining was clarified. The SHE officer from Karibib asked what would be the life of mine expectancy. No details were available to answer this. The Chairperson of the Erongo Mountain Rhino Sanctuary Trust (EMRST) submitted a written objection on behalf of the Trust. This letter is found in **Appendix B**. A local resident raised concerns about the impacts of mining on the health of residents wondering if it was safe to live near mines that extract Lithium. It was made clear that the current activities were explorative in nature and that Gold was the mineral that was being sought in particular and not Lithium. During the first presentation in Karibib it was stated that the focus of the exploration would be on the plains to the east of the Erongo Mountains. Local contractors were interested in opportunities to provide their services to the drilling industry. Other local residents who attended were interested in job opportunities.

The second public meeting was held in Omaruru. A farming representative asked about the number of quarries or holes that would be created and raised concerns about animal safety. He also asked about the safety of the chemicals in relation to the groundwater. The nature of exploration was re-iterated and that mining would be the subject of another EIA process.



Another interested and affected party asked whether the mining, should it ever take place, would be isolated or consolidated in one large area. The concern raised was the impact that a large mining operation would have a great impact on the tourism and commercial sustainability of the farms. If the mine was to operate for many years, all the business investment would be lost due to the impact on the game farm or lodge. This potential eventuality creates such uncertainty about the future of the farms and their viability to sustain the business activities. It was difficult to see the two opposing activities being mutually benefitting. The farming would be affected negatively undoubtedly. This I&AP and other trustees of the EMRST were opposed to the exploration as it would impact the Trust negatively from a biodiversity perspective not to speak of the business aspect of the farms. Information about the biodiversity, social and economic nature of the farms and EMRST was requested for use in the scoping EIA report.

**Table 9** below provides a summary of the responses from the various stakeholders and IAPs. All the IAPs were given 30 days to comment on the BID and a further 30 days for public review of the Draft EIA Report and Draft EMP. There was an overwhelming opposition from farmers who were trustees of the EMRST. They provided details about the biodiversity on their farms. The trustees also provided information about the investments made and the personnel employed. Non EMRST trustees and farmers outside the EMRST boundary provided both letters of acceptance and objection to the exploration. One hunting lodge stated that they had had bad experience with mining on another farm.

**Table 9: Stakeholders, IAPs who received BIDs and correspondence, and who corresponded by email with comments during the scoping phase of the EIA. (summarised comments included)**

Name	Capacity / Status	Company / Organisation / Farm	Comments
Wensel Badenhorst	Manager	Omapyu Investments (Pty) Ltd; Farms Kanona West & Sonnenschein (Kanona Hunting	Contacted farm manager by phone; Farm manager emailed an objection to the planned project on behalf of the company.  A generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and

		& Safari Ranch)	<p>palaeontological values were highlighted.</p> <p>“We are 100% a hunting and guest farm and cannot allow it that there will be prospectors busy on the farm whilst hunting. On our other farm we have mining going on and we can see which negative impact it has on the game environment and for our farming and hunting business. Half of the farm cannot be utilised by us because of the mining. Therefore we will not allow any mining and prospecting on Kanona West.”</p>
Office of the President	Permanent Secretary	Omapyu Investments (Pty) Ltd; Farms Kanona West & Sonnenschein (Kanona Hunting & Safari Ranch)	BID and notice sent to the office of the President.
S. van Wyk	Owner (Not an EMRST trustee)	Koedoeberg 169	Attended public meeting and received presentation, notice and BID by email
Anneli Wamback	Owner (EMRST trustee)	Farm Oubokberg (Koedoeberg 169 portion 2)	<p>Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against planned project were received by mail.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p>
Interested & affected party	Owner (EMRST trustee)	Wild Erongo / Farm Hooggenoeg 170	<p>Attended meeting; BID issued; Objection letter received.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p> <p>“The farm Hooggenoeg is dedicated to preserve high value wildlife habitat and has been purchased to be</p>

			<p>recovered and attached to the EMRST area.</p> <p>Since purchase a few years ago every effort had been undertaken restless to clean the farm from all livestock and fences, rubbish disposals, dangerous scrap and obstacles to create safe and natural habitat. Activities/disturbances had been reduced to necessary minimums and restricted to intensive field controls, snare removals, anti-poaching, mainting water points. This farm shall be kept close to a “preservation” status. Eco-friendly tourism and wildlife/flora research activities are focused for later stage. The farm is member of the EMRST and is bound to its constitution as well as to MET’s MOU. Farm Hooggenoeg agrees and refers to all stated in objection letter of EMRST.</p> <p>My deepest concern is herewith expressed in regards of <b>any</b> man made disturbances, noises, water/soil/air pollution, any destroying of environment, habitat and wildlife by man, machines, chemicals, toxical wastes.</p> <p>Any prospecting activities will already start destroying a long-term aim and vision of a large embracing conservation area and thus destroy future plans of tourism business, fundraising projects and valuable nature research themes all based on this unique inselberg complex.</p> <p><b>More detailed concerns of confidential content not meant for publication will brought to consideration at court.”</b></p>
<p>Andreas Fellner</p>	<p>Owner</p>	<p>Farm Otjohotozu 85 Guestfarm (east of Farm Eileen)</p>	<p>Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against planned project were received by mail.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p>

			“Prospecting or any mining activity will destroy the attraction of my environment and with it my future in this wonderful heritage. We think on tomorrow and the future generation to conserve and inherit it to them in untouched condition. Please keep out with respect to our nature!”
Anika and Eckart Waldschmidt	Owners	Farm Kanona Ost	Contacted the farmers by phone; they requested BID and this was sent to them; no comments received.
Birgit Stiftel and Helmut Metzger	Owners (EMRST trustee)	Farm Ovimbarra and Triangle	Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against planned project were received by mail.  Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.
Charles Cleghorn	Consultant	Consultancy	Request BID after seeing advert in the newspaper asked to be kept posted as progress occur.
Christian Traupe	Chairperson	Omaruru Boere vereniging (Farmers association)	Attended public meeting; presentation, notice and BID was sent by email.
Interested and affected party	Owner (EMRST trustee)	Farm Erongo West 83	Public meeting was attended; Presentation, notice and BID was sent; Objection against planned project were received by mail.  Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.  The objection listed the tourism aspects and the inclusion within the EMRST with the view to conserve this beautiful environment for future sustainable use. “All

			that will be finished, when the nature is destroyed by the activities of prospecting and mining.” The owner opposes the project in no uncertain terms.
Interested and affected party	Owner (EMRST trustee)	Farm Omandumba Ost 133 Portion 1	<p>Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against planned project were received by mail.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p> <p>“Over the last two decades, the people in this area have dedicated their lives and livelihood to create a sustainable income through tourism and conservation for conservation. This area is one of a kind! Should mining go ahead the sustainable use of the area and conservation would be put to an end. One cannot rehabilitate this unique environment.”</p>
Daniel Rusberg	Representative	Farm Erongo Ost	Attended the public meeting and received a BID via email; Requested updates on all new developments.
Agostinho Victor	Owner	Erongo Ost	Requested BID; Presentation, notice and BID was sent. Awaiting feedback
Veno Mukona Tjiseua	Agricultural Technician	MAWF – Omaruru Agriculture	Contact by phone; sent the notice, BID and presentation to his email address.
Fidi alpers	Resident	NGO	Met in Omaruru and discussed project briefly; he requested BID; Presentation, notice and BID was sent by email.
Gravel Travel Booking	no information	no information	Requested information to register enquiry but no reply was received.

Hafeni Hiveluah	Geologist	no information	Read notice in the newspaper; requested BID and this was sent by email.
Hubert Herzog	Owner (EMRST trustee)	Herzog Hunting; Otjompau West 134; Ombuwa 164 (a portion of original Eileen 164)	<p>Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against planned project were received by mail.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p> <p>“Mining, prospecting etc. will destroy a life’s work, the future of this wonderful nature and the future of every family. I will fight against with all legal possibilities! I made investment and and donations in millions to build up this wilderness area. I will fight like a lion!”</p> <p>“No ways for any person to enter!”</p>
Gudrun Hacker	Owner (EMRST trustee)	Farm Otjompau Nord 125	<p>Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against planned project were received by mail.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p>
Ferdinand Herzog	Owner (EMRST trustee)	Farm Omandumba Ost 133	<p>Public meeting was attended; Presentation, notice and BID was sent; Objection against planned project were received by mail.</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p>
Trevor Petersen	Owner	Kranzberg Lavender Fields	Presentation, notice and BID was sent to the farmer owner by an EMRST representative; Objection against

		58	<p>planned project were received by mail</p> <p>Generic letter received where conservation values, species diversity, social values, economic value and archaeological, aesthetic, cultural, historical and palaeontological values were highlighted.</p>
Chief Manase Zeraeua	Beneficiary	Resettlement Farm Kamombonde West 80	Received contact details from Ministry of Land Reform; called the beneficiaries and explained the project over the phone; No concerns were raised and the company was invited to call them should they want to start prospecting and make detailed arrangements.
Mr. Kleopas Tjongarero	Beneficiary	Resettlement Farm Kamombonde West 80	Received contact details from Ministry of Land Reform; called the beneficiaries and explained the project over the phone; In an email I received the following objections: 'I hereby wish to state that I am totally against any form of prospecting within the Erongo Mountain Area or within the EMRST area....Any prospecting or mining would have a severe impact on the natural behaviour of game and would have a negative impact on Eco Tourism and threaten our livelihood. It would drastically affect the safety and well-being of our livestock and the environment as well as the business of farm owners comprising the EMRST. Mining, prospecting etc. will destroy a life's work, the future of this wonderful nature and the future of every family. Over the last two decades, the people in this area have dedicated their lives and livelihood to create a sustainable income through tourism and conservation for conservation. This area is one of a kind! Should mining go ahead the sustainable of the area and conservation would be put to an end. One cannot rehabilitate this unique environment. Prospecting or any mining activity will destroy the attraction of our environment and with it my future in this wonderful heritage. I think on tomorrow and the future generation to conserve and inherit it to them in untouched condition. Please keep out

			with respect to our nature! My deepest concern is herewith expressed in regards of any man made disturbances, noises, water/soil/air pollution, any destroying of environment, habitat and wildlife by man, machines, chemicals, toxically wastes.’
Lelley Mulike	Erongo Regional Administrator	Ministry of Land Reform	Presentation, notice and BID was sent by email; no comments were received.
Jens Roland	Attorney for EMRST	Fisher, Quarmby and Pfeifer  Legal Practitioners and Conveyancers	Attended the public meeting; received the notice, BID and presentation; provided valuable information regarding the EMRST; sent an objection letter on behalf of EMRST ;  “Any prospecting and mining activity would drastically affect the safety and well-being of the rhino population, as well as the business of farm owners comprising the EMRST. Our instructions are therefore to inform you as well as the relevant Ministries that our client objects to any and all prospecting activities on land that forms part of the EMRST”
Kai-Uwe Denker	Owner & Executive Chairperson of EMRST	Farm Brabant	Attended the public meeting; issued the legal letter during the meeting and stated that the EMRST will not allow entry to the EMRST area due to its sensitive biodiversity; received a BID at the meeting and by email; sent an objection letter separately referring to the biodiversity highlights of the area and in conclusion stated “that all this is threatened by prospecting and mining operations in our area and therefore object to the proposed activities of Gecko Gold Mining (Pty) Ltd within the designated area of EPL6440.”
Karen & Walter Schmidt	Owners	Farm Ombu 130	Presentation, notice and BID was sent to the farmer owner by an EMRST representative; an objection letter was received.  “We hereby wish to state that we are totally against any



			form of prospecting within the Erongo Mountain Area or within the EMRST area....Any prospecting or mining would have a severe impact on the natural behaviour of game and would have a negative impact on Eco Tourism and threaten our livelihood”
Laurica Afrikaner	Hydrologist	MAWF (Water Affairs)	A letter and BID was sent to the Permanent Secretary regarding the project; A regional representative responded; A letter was received from the Permanent Secretary which provided comments and guidelines for the prospecting activities.
Natanael Amadhila	Regional Chief Forester	MAWF (Forestry Directorate)	The notice, BID and presentation was forwarded by email
Eckhardt Waldschmidt	Owner	Farm Kanona Ost 81	Letter received by email objecting to any exploration or mining activities on his farm. The BID and presentation were forwarded by email. The risk to the egg laying hen rearing station is considered too great to have any industrial activities on his farm. Additionally he feels that the farm’s game and cattle would also be seriously affected.

Most farmers objected to the project due to the Erongo Mountains Rhino Sanctuary Trust (EMRST) area that is highly sensitive from a biodiversity and ecological perspective. Additionally, they state that the proposed activities will affect the economic, aesthetic and archaeological value of their farms. The noise from the envisaged project is expected to hinder the hunting activities.

Additional comments and concerns were received during the review period of the Draft EIA Report. A legal firm (Nakamhela Attorneys) representing the EMRST members provided numerous constructive comments. A number of these comments have been considered and incorporated into the report and have been referenced appropriately. Some corrections have been made to the assessment as a result of this input. The full discourse from the legal firm can be found in **Appendix B**.

A response to the Draft EIA received from the legal firm is stated here. ‘There is no conflict between hunting and the stated conservation mandate of the EMRST. The national policy on game utilization in protected areas and other State Land (in February 2015) states that game hunting can be undertaken provided it remains sustainable and does not lead to conflict between different forms of utilisation. The policy provides guidelines for utilisation of game through harvesting of game for meat for various purposes, trophy hunting and removal of live game. Additionally, sustainable trophy hunting can raise income for protected area management and can provide economic incentives to conserve wildlife. If carried out sustainably, ethically and in a planned manner, trophy hunting need not compromise the conservation and non-consumptive tourism objectives of protected areas.’ (Nakamhela, 2018) This answers any concern that hunting is in any way in conflict with the principles of conservation.

In conclusion, and quite importantly, the members of the EMRST have demanded that the Environmental Commissioner appoint an independent external reviewer for the EIA (Nakemhela, 2018).

The members of the EMRST who sent in submissions stated that some information given is confidential and as such should not all be included in the public documents of the EIA report. This information pertains to particular farms and any sharing of such information may compromise the conservation efforts of the trust. This information may be used by the company in planning and avoiding particularly sensitive areas should environmental clearance be granted.

Mrs Biana Foelscher, a resident of Karibib who attended the public meeting provided a lengthy submission in writing as summarised below:

- Concern that multiple mineral groups are held under one licence providing rights to explore all such minerals, leads to a monopolising of available minerals in Namibia by any licence holder. It should be made obvious from the start which minerals are being targeted with a view to potential mining activities.
- All stakeholders should be engaged and both nearby towns should be considered in the development of the project.
- The promise of employment and investment into Namibia should not be used to promote and motivate for a positive record of decision without some assurance that any future changes in the market forces will not result in the premature retrenchment of employees.

The sustainable employment promised must be a commitment that would not easily be reversed when investors feel they are not making sufficient profits.

- All government ministries should be included in the discussions and decision making process of the project development.
- With regards to project motivation, it is concerning that it appears the project development of multiple mineral exploration prospects excludes smaller individual entrepreneurs from gaining access to the area to explore other minerals.
- To avoid the exploitation of Namibia's resources for the benefit of non-Namibians how does Gecko support the more inclusive approach to less fortunate Namibian entrepreneurs.
- Will the results of the electromagnetic survey be accessible by stakeholders and interested and affected parties or will the results remain confidential and allow Gecko Namibia (Pty) Ltd to be the sole beneficiary of the potential wealth?
- The local authorities should be engaged with respect to the potential development so as to plan for the potential influx of people seeking jobs with the company.
- A concern is raised with regards to the inclusion of the registered conservancy that overlaps the EPL6440 in the west. What is their role and how will they be affected.
- The exposure of the project was biased as it was advertised in supposedly biased newspapers.
- The longstanding and sustainable economic contribution of the tourism facilities, on the farms within the EPL, towards the country's GDP could be at risk if the exploration project goes ahead. The exploration project needs to prove itself in terms of its contributions to the GDP.
- Will it not be possible for the opposing parties (i.e. EMRST & Gecko Gold Mining) to establish a practical master plan, thereby effectively demonstrating an achievable harmony between two very contrasting industrial sectors?



## 9 IMPACT ASSESSMENT

The purpose of this section is to assess and identify the most pertinent environmental impacts by describing certain quantifiable aspects of these impacts and to provide possible mitigation measures to minimise the magnitude of the impacts that would be expected from the various activities that constitute the proposed mineral exploration in EPL6440.

The following potential impacts on the environment during exploration activities have been identified:

- Dust
- Noise
- Health & Safety
- Visual
- Land Use
- Waste
- Ecological
- Groundwater and surface water
- Heritage
- Socio-Economic

These identified potential impacts have been evaluated. Mitigation measures are proposed for each aspect of the different potential impacts identified. Comments and concerns raised during the public consultation process have been considered and included. The assessment methodology for evaluating the potential impacts is defined in **Table 10**.

**Table 10:** Assessment methodology for evaluating potential impacts

Risk Event	Description of the risk that may lead to an impact.
Status (+ or -)	<p><b>Positive</b> - environment overall will benefit from the impact</p> <p><b>Negative</b> - environment overall will be adversely affected by the impact</p> <p><b>Neutral</b> - environment overall will not be affected</p>
Extent	<b>Site specific</b>

	<p><b>Local</b> (limited to within 15 km of the area)</p> <p><b>Regional</b> (limited to ~100 km radius)</p> <p><b>National</b> (limited to within the borders of Namibia)</p> <p><b>International</b> (extending beyond Namibia's borders)</p>
Duration	<p><b>Very Short</b> (days, &lt;3 days)</p> <p><b>Short</b> (days, 3 days – 1 year)</p> <p><b>Medium</b> (months, 1 - 5 year)</p> <p><b>Long</b> (years, 5 - 20 years)</p> <p><b>Permanent</b> (&gt;20 years)</p>
Intensity	<p><b>No lasting effect</b> (No environmental functions and processes are affected)</p> <p><b>Minor effects</b> (The environment functions, but in a modified manner)</p> <p><b>Moderate effects</b> (Environmental functions and processes are altered to such extent that they temporarily cease)</p> <p><b>Serious effects</b> (where environmental functions and processes are altered such that they permanently cease and/or exceed legal standards/requirements)</p>
Probability	<p>Refers to the probability that a specific impact will happen following a risk event.</p> <p><b>Improbable</b> (low likelihood)</p> <p><b>Probable</b> (distinct possibility)</p> <p><b>Highly probable</b> (most likely)</p> <p><b>Definite</b> (impact will occur regardless of prevention measures)</p>
Prevention	Measures to reduce the probability of an impact occurring.
Significance	<b>None</b> (A concern or potential impact that, upon evaluation, is found to have

(no mitigation)	<p>no significant impact at all.)</p> <p><b>Low</b> (Any magnitude, impacts will be localised and temporary. Accordingly the impact is not expected to require amendment to the project design.)</p> <p><b>Medium</b> (Impacts of moderate magnitude locally to regionally in the short term. Accordingly the impact is expected to require modification of the project design or alternative mitigation.)</p> <p><b>High</b> (Impacts of high magnitude locally and in the long term and/or regionally and beyond. Accordingly the impact could have a ‘no go’ implication for the project unless mitigation or re-design is practically achievable)</p>
Mitigation	Description of possible mitigation measures
Significance (with mitigation)	<p><b>None</b> (A concern or potential impact that, upon evaluation, is found to have no significant impact at all.)</p> <p><b>Low</b> (Any magnitude, impacts will be localised and temporary. Accordingly the impact is not expected to require amendment to the project design.)</p> <p><b>Medium</b> (Impacts of moderate magnitude locally to regionally in the short term. Accordingly the impact is expected to require modification of the project design or alternative mitigation.)</p> <p><b>High</b> (Impacts of high magnitude locally and in the long term and/or regionally and beyond. Accordingly the impact could have a ‘no go’ implication for the project unless mitigation or re-design is practically achievable.)</p>
Confidence Level	<p>The degree of confidence in the predictions, based on the availability of information and specialist knowledge.</p> <p><b>Low</b> (based on the availability of specialist knowledge and other information)</p>

	<p><b>Medium</b> (based on the availability of specialist knowledge and other information)</p> <p><b>High</b> (based on the availability of specialist knowledge and other information)</p>
--	---

**Table 11: Dust Impacts**

Risk Event	Disturbances to soil and rock resulting in excessive dust in the atmosphere
Nature of Impact	<p>Prospecting work is likely to create minimal dust. Drilling using reverse circulation or impact drilling is very likely to create dust due to the nature of the technique. The generated dust impacts on personnel working in close proximity to the drilling rig. Impacts on the photo-transpirational efficiency of the surrounding plants can be hampered. The dusty plants are less palatable to grazing or browsing animals.</p> <p>‘EMRST members state that dust will also be created by the wildlife that are disturbed by the exploration activity. They raise a concern that the dust plumes will affect tourism activities. An additional concern is that the disturbance of the game will be long lasting, beyond the period of drilling, and it will take a long time for them to return to the drilling area’ (Nakamhela, 2018)</p>
Status	Negative
Extent	<b>Site Specific</b> and possibly <b>local</b> depending on mobility of particles and prevailing weather conditions. Only on very windy days would visually impacting dust travel further than 15km. The source does not move unlike with trucks on dirt roads so the impact is along a single vector.
Duration	Short term if the drilling continued for more than three days and on a 24 hour basis. This is unlikely as the farmers will most likely only allow activities from dawn to dusk. There are also regular stoppages for maintenance and or shift changes.



	The plants covered with dust whose functioning will be affected are those directly downwind and within the first 150m. Thereafter the conditions approach average ambient air quality conditions for the Namibian context.
Intensity	<b>Moderate effect</b> in a radius of 150m. No known hazardous status of the substrate is expected (e.g. if radioactive)
Probability	Probable
Prevention	Dust creation cannot be prevented completely.
Significance (no mitigation)	<b>Medium to Low.</b> Natural weather conditions can create very dusty atmospheric conditions. The small scale and site specific exploration activities contribute very little to the widespread ambient conditions that often prevail. Cars travelling on the access roads can create dust plumes trailing behind them. Exploration activities entail driving or walking to particular sites to collect samples. The impact is not persistent for the long term. The site specific (<150m radius) perennial and every green grasses, shrubs and trees would usually experience relief from the dust laden covering on an annual basis as rainy periods wash off the dust. New growth would not be covered. The deciduous and annual plants would grow fresh and dust free foliage on an annual basis.
Mitigation	Dust suppression techniques should be employed if the specific exploration activity is likely to create dusty atmospheric conditions in excess of the periodic extremes. The first two listed are easy to apply but the 3 <sup>rd</sup> measure may not always be possible due to project deadlines. Measure number 4 may not be practical due to shortage of water in the area or on that particular farm. <ol style="list-style-type: none"> <li>1. Avoid activities that create excessive dust on extremely windy days.</li> <li>2. Personnel are required to wear personal protection equipment if excessive dust is created for prolonged working periods.</li> <li>3. Time the reverse circulation drilling to coincide with rainy times and</li> </ol>

	<p>or the last winter months before the rainy season. Avoid the 3 months immediately after the last rains.</p> <p>4. If this cannot be avoided, manual spraying of the foliage within the first 10m around the drill pad will assist the plant productivity greatly after demobilising.</p>
Significance (with mitigation)	<b>Low</b>
Confidence Level	<b>High</b>

**Table 12: Noise Impacts**

Risk Event	Disturbance of sense of place and the effect on tranquil ambient noise levels
Nature of Impact	Potential noise sources during the exploration of EPL6440 could originate from vehicles, hammers, powered hand tools, excavators and drill rigs. The nuisance factor of these noise sources will depend on the proximity of the exploration activities to the national road, homesteads and sensitive animal habitats. Other vehicles travelling on the road contribute to the ambient noise levels. The exploration activities potentially contribute to the cumulative effects of traffic noise on the areas immediately (first kilometre) from the road. However, the further away from the road that exploration drilling occurs the greater its role in contributing to the ambient noise levels. The impact of exploration drilling may affect the sense of place of the numerous lodges, hunting farms and other tourist destinations. The noise may also impact on the temporary or permanent habits of the fauna in that particular location where drilling takes place.
Status (+ or -)	<b>Negative</b>
Extent	<b>Site specific and Localised</b> (up to 1km depending on the weather conditions)

Duration	<b>Short</b>
Intensity	<b>Minor Effects</b> (i.e. cumulative when near the national road) & <b>Moderate Effects</b> in quieter locations of farms, lodges and hunting establishments.
Probability	<b>Definite</b>
Prevention	Noise creation cannot be prevented completely and will occur and should be mitigated as best as possible.
Significance (no mitigation)	<b>Medium</b>
Mitigation	<p>For rural districts the day time ambient noise level requirement outlined in SANS 10103 (2008) between 6am and 10pm is 45dBA. This is in line with the guidelines published by the World Health Organisation (WHO).</p> <p>There are industry standards to which the noise sources (i.e. machinery) must comply. Regular maintenance of machinery should maintain the acceptable noise levels for operators working with the machines. The activities are to take place during daylight hours only. Periods of silence during the day may be necessary.</p> <p>Levels of 90dBA will be experienced alongside the drilling rigs, exposure to which over an 8 hour shift, can lead to hearing impairments. The guidelines and PPE mitigations are discussed under the health and safety section.</p> <p>It is recommended that any complaints regarding noise be recorded in the reports.</p>
Significance (with mitigation)	<b>Low</b>
Confidence	<b>High</b>

Level	
-------	--

**Table 13: Health & Safety Impacts**

Risk Event	The effects of excessive noise and vibration on the health and safety of personnel.
Nature of Impact	<p><b>Noise:</b></p> <p>Long term exposure to high levels of noise can cause permanent hearing loss. Neither surgery nor a hearing aid can help correct this type of hearing loss.</p> <p>Short term exposure to loud noise can also cause a temporary change in hearing (your ears may feel stuffed-up) or ringing in your ears (tinnitus). These short-term problems may go away within a few minutes or hours after leaving the noisy area.</p> <p><b>Vibration:</b></p> <p>Different vibration types are defined as (The European Parliament and the Council of the European Union, 2002):</p> <p>Hand-Arm Vibration is defined as mechanical vibration that, when transmitted to the human hand-arm system, entails risks to the health and safety of workers, in particular vascular, bone or joint, neurological or muscular disorders.</p> <p>Whole-Body Vibration is defined as the mechanical vibration that, when transmitted to the whole body, entails risks to the health and safety of workers, in particular, lower back morbidity and trauma to the spine.</p>
Status	<b>Negative</b>
Extent	<b>Site Specific</b>
Duration	<b>Short</b> but continuous exposure to high noise levels may lead to <b>permanent</b> hearing loss

Intensity	<b>Moderate to Serious Effects</b>
Probability	<b>Probable</b>
Prevention	<p>Engineering controls that reduce sound exposure levels are available and technologically feasible for most noise sources. Engineering controls involve modifying or replacing equipment, or making related physical changes at the noise source or along the transmission path to reduce the noise level at the worker's ear. The same goes for vibration.</p> <p>Choose low-noise tools and machinery.</p> <p>Maintain and lubricate machinery and equipment (e.g. oil bearings).</p> <p>Place a barrier between the noise source and employee (e.g., sound walls or curtains).</p> <p>Enclose or isolate the noise source.</p>
Significance (no mitigation)	High
Mitigation	<p><b>Noise:</b></p> <p>OSHA sets legal limits on noise exposure in the workplace. These limits are based on a worker's time weighted average over an 8 hour day. With noise, OSHA's permissible exposure limit (PEL) is 90dBA for all workers for an 8 hour day. The OSHA standard uses a 5dBA exchange rate. This means that when the noise level is increased by 5dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half.</p> <p>The WHO guideline on maximum noise levels to prevent hearing impairment set noise level limits at an average of 70 dBA over a 24 hour period with maximum noise levels not exceeding 110 dBA during the period. These latter limits would apply if the day time shift is prolonged beyond the 8 hour day.</p> <p>Mitigation include:</p>

	<p>Operating noisy machines during shifts when fewer people are exposed.</p> <p>Limiting the amount of time a person spends at a noise source.</p> <p>Providing quiet areas where workers can gain relief from noise sources</p> <p>Where possible, restricting worker presence to a suitable distance away from noisy equipment. (Controlling noise exposure through distance is often an effective, yet simple and inexpensive administrative control.)</p> <p>In open space, for every doubling of the distance between the source of noise and the worker, the noise is decreased by 6dBA.</p> <p>Hearing protection devices, such as earmuffs and plugs, are considered an acceptable, but less desirable option to control exposures to noise.</p> <p><b>Vibration:</b></p> <p>Industry vibration regulations, set daily exposure limit values and action values for both hand-arm and whole body vibration for eight hour shifts. Personnel can work shorter shifts where conditions exist causing excessive vibration.</p>
Significance (with mitigation)	<b>Low</b>
Confidence Level	<b>High</b>

**Table 14: Health & Safety Impacts**

Risk Event	Injury risks due to normal working conditions
Nature Impact	of The potential impacts on human health and safety resulting from exploration activities could include occupational accidents and injuries, vehicle accidents, exposure to weather extremes, trips and fall on uneven terrain, adverse health effects from dust generation and emissions, and contact with hazardous materials. The potential for these impacts to occur would be low because of

	<p>the limited range of activities and number of workers required during exploration. Gecko follows a set of industry-specific safety and health policies on the work place.</p> <p>Operational procedures during tanker ship offloading pose numerous risks to operational personnel. These risks are assessed in terms of the predicted impact if realised. Typical examples are:-</p> <ul style="list-style-type: none"> <li>➤ Carcinogenic effects of some petroleum products</li> <li>➤ Breathing in excessive fumes</li> <li>➤ Product contact with eyes and skin</li> <li>➤ Slipping on wet surfaces</li> <li>➤ Working at heights</li> <li>➤ Muscular injury from incorrect lifting techniques</li> </ul>
Status (+ or -)	<b>Negative</b>
Extent	<b>Site specific</b>
Duration	<b>Permanent</b>
Intensity	<b>Minor to Serious Effects</b>
Probability	<b>Highly probable</b>
Prevention	<p>The operations of the exploration can cause serious health and safety risks to workers on site. Occupational exposures are normally related to dermal contact with fuels and inhalation of fuel vapours during handling of such products. For this reason adequate measures must be brought in place to ensure safety of staff on site.</p> <p>An integrated health and safety management system acts as a monitoring tool and mitigating tool. The monitoring tools are elaborated upon in the EMP.</p> <p>Typical mitigating measures within the health and safety management systems</p>

	<p>are:-</p> <ul style="list-style-type: none"> <li>➤ Operational and procedural manuals</li> <li>➤ Health and safety training</li> <li>➤ Housekeeping rules</li> <li>➤ Colour coding areas, pipes, equipment and substances</li> <li>➤ Signage for personal protective equipment (e.g. protective clothing like safety boots and hard hats)</li> <li>➤ Safe working procedures and permits to work</li> <li>➤ Emergency response plans</li> <li>➤ Material Safety Data Sheets (MSDS)</li> <li>➤ First aid treatment and training</li> <li>➤ Medical procedures and emergency services</li> <li>➤ Daily safety reminders and/or drills</li> <li>➤ Regulations for handling fuel</li> </ul> <p>The MSDS gives health related medical responses for personnel assisting staff who are exposed to the fuels.</p>
Significance (no mitigation)	<b>Medium</b>
Mitigation	Procedures for dealing with injuries or accidents must be in place and all contact details for emergency personnel available. The company safety manual is used as developed by the guidelines and statutory requirements under the Labour Act.
Significance (with mitigation)	<b>Low</b>
Confidence Level	<b>High</b>



**Table 15: Visual Impacts**

Risk Event	Changes to the aesthetic appeal of the area due to presence of people, vehicles and machinery. Visible changes to habitats due to human activities.
Nature of Impact	<p>The experience of enjoying the vista unobstructed by human activities is considered highly desirable. Impact to visual resources would be considered adverse if the landscape were substantially degraded or modified. Exploration activities will only have temporary and minor visual effects, resulting from the presence of workers, vehicles and other equipment. The project area may be regarded as pristine throughout due to the insignificant degree of disturbance from current and historical activities. Exploration activities would possibly contribute to this to some degree through drill pad and road construction. Prospecting phase activities would have negligible effect on this aspect.</p> <p>‘EMRST members expect the effects of the drilling phase to be very high with rigs and vehicles moving through the area. Tourists leave comments about the places they visit on online chat platforms. Once it has been reported that exploration activities were seen in the EMRST area, this will lead to cancellations and reductions of further bookings.’ (Nakamhela 2018)</p>
Status	<b>Negative</b>
Extent	<b>Localised</b>
Duration	<b>Short</b> (presence of vehicles, personnel and machinery) <b>Long</b> (un-rehabilitated prospecting holes or pits)
Intensity	<b>Moderate Effects</b>
Probability	<b>Definite</b>
Prevention	For exploration to take place, personnel, vehicles and machinery will be deployed into the area for the short term periodically. Exploration is not possible without disturbing small sections of the various habitats.

Significance (no mitigation)	<b>High</b>
Mitigation	<p>Best practice methodologies for exploration will be employed. They may include the following: (Some of these also apply to mitigations for ecological impacts as well)</p> <p>As far as is possible existing roads and tracks are used to access target sites for sampling and drilling.</p> <p>Walking to target sites being careful not to disturb plants and faunal habitats.</p> <p>Personnel to be trained regarding the observable signs of faunal and floral biodiversity and the avoidance of habitat disturbance.</p> <p>Minimise the footprint of personnel, vehicles and machinery. As far as is possible no vegetation is to be removed. Where new roads are constructed the methods should be low intensive and possibly use manpower and not machines. New roads if planned well could assist with the future objectives of the farm, lodge or hunting establishment.</p> <p>Rehabilitate habitats through the removal of obvious signs of human presence.</p> <p>Removal all waste on a daily basis and dispose of it in the appropriate manner.</p> <p>Removal of machinery from the exploration sites if periods of inactivity are protracted.</p> <p>Drilling and subsequent phases should take place during the least busy tourism period as a measure to circumvent the negative publicity</p>
Significance (with mitigation)	<b>Medium</b>
Confidence Level	<b>Medium.</b> Often, the sites that are disturbed and rehabilitated at least from an aesthetic perspective will in time be recolonized by both plants and animals. The aim is to minimise the footprint so as to achieve the least impact due to

	<p>anthropogenic influences.</p> <p>There is no way to predict that changing the drilling period to less busy tourist times, that tourists, even if fewer in number, will not publish negative publicity.</p>
--	---

**Table 16: Land Use Impact**

Risk Event	Users and owners of the land could potentially experience restrictions to their constitutionally entitled liberties.
Nature of Impact	<p>EPL6440 lies within state owned land and privately owned land. The EMRST consists of member farms which are privately owned.</p> <p>Mineral exploration within the EMRST area is believed to be in opposition to the commercial, societal and biodiversity objectives and status of the area. Impacts on these aspects are expected and the future viability of these aspects lies in the balance according to its members.</p> <p>The value that mineral exploration and later still possible mining is contested when cannot be compared to the stated sustainable value that the EMRST provides for future generations.</p> <p>No compromise on this impasse appears possible. The conflict in land use and the exploration intent could potentially be contested in a court of law.</p> <p>‘EMRST members have made conservation and tourism their only land use. The threats to the business model will not only last during the exploration period, but will remain thereafter, because the reputation of the sanctuary among tourists would have been lost. The land use model, into which the EMRST members have invested no for a number of years will be destroyed’ (Nakamhela, 2018)</p>
Status	<b>Negative</b>
Extent	<b>Regional</b>

Duration	<b>Short</b> (non-tourism farms within the EPL) <b>Long</b> (tourism-based farms within the EPL)
Intensity	<b>Minor Effects</b> (non-tourism based farms) <b>Serious Effects</b> (tourism based farms)
Probability	<b>Definite</b>
Prevention	Exploration by definition implies the presence of an exploration team. The exploration activities would take place within the EMRST area. Thus it would not be possible to avoid the conflict of land use.
Significance (no mitigation)	<b>High.</b> The mineral exploration phase does not foresee in any way that the activities will not impinge on the rights of the EMRST members.
Mitigation	<p>Law requires that permission be provided through the issuing of an environmental clearance certificate for the listed activity. The EIA process facilitates a transparent process by which concerns can be raised. Common decency will direct Gecko Gold Mining (Pty) Ltd to inform all stakeholders of the starting date for the activities once a positive record of decision has been issued. The proponent is subservient to the conditions laid down by the clearance certificate and the law that upholds it. The implementation of the exploration programme will be in accordance with the approved Environmental Management Plan (EMP). The draft EMP can be found in <b>Appendix C.</b></p> <p>Excluding the EMRST area from the drilling programme would reduce the land use conflict considerably.</p>
Significance (with mitigation)	<b>High</b> (even if the EMP is strictly implemented and all efforts are made to reduce the impacts on the biodiversity, commercial and social aspects of the EMRST member farms the objection to the exploration will not be removed based on the aspirations of the EMRST members)

	<b>Low</b> (explore in non EMRST area only)
Confidence Level	<p><b>Low</b></p> <p>Specifically, the Ministry of Environment &amp; Tourism needs to clarify the grounds for which the exploration company will not be able to undertake exploration activities within the EMRST area. What is the official status of the EMRST as per the areas listed as protected areas under law? Some National Parks in the country have mines operating within their boundaries. On what grounds would the EMRST be able to prohibit similar mineral licence activities? Is it purely based on the rights of the private landowner that the exploration may not take place on the farms within the EMRST area? The Ministry will possibly need to grant permission to explore only within the areas where individual farm owners have granted access.</p>

**Table 17: Waste Impact**

Risk Event	Waste Production
Nature of Impact	The ability of a product to act as a waste which must be cleaned up. The majority of waste produced will result from maintenance work performed on the machinery. Spilled product is also regarded as waste. Packaging from food products is included.
Status (+ or -)	<b>Negative</b>
Extent	<b>Site specific</b>
Duration	<b>Short</b>
Intensity	<b>Minor Effects</b>
Probability	<b>Definite</b>
Prevention	Spillage prevention is possible through employing trained personnel and

	implementing general maintenance and upkeep of equipment.
Significance (no mitigation)	<b>Medium</b>
Mitigation	<p>Spills and leaks must be reported and cleaned without delay.</p> <p>Workers will be made aware of their isolated living conditions, any goods for private use or for the business need to be brought a long way to the site and any waste generated also has to be taken over a long distance to the next dumping site. Therefore, avoidance of waste generation and recycling of all applicable materials are actioned daily.</p> <p>The domestic waste, which is separated from all paper and organic materials, is taken to the nearest official dump site which is at Omaruru. Oil from the servicing of the vehicles and machines is collected in drums and gets taken together with all other industrial waste which is generated on site to the hazardous waste site in Walvis Bay or it is converted to energy by Oiltech who will remove the waste. Either way certificate of disposal need to kept on file.</p> <p>Sewerage waste is to be removed from site. The department of water affairs have provided guidelines for the establishment of septic tanks. These are provided in <b>Appendix B</b>.</p>
Significance (with mitigation)	<b>Low</b>
Confidence Level	<b>High</b>

**Table 18: Ecological Impacts**

Risk Event	Exploration activities may affect biodiversity of fauna and flora directly or through habitat alteration.
------------	---

Nature of Impact	<p>Through the exploration for mineral resources there is potential for impacting the diversity of species within the various habitats by reducing population numbers of a particular species within the EPL. Pressures on the population numbers can potentially pressurise the populations within an area to an extent that causes the species to no longer exist within that area. Should a species be endemic to that same area then the risk of extinction is high. Altering the habitat can potentially result in the same outcome.</p> <p>Among the fauna and flora of the area there are species whose range is limited to specific habitats found within the Erongo Mountains and surrounding plains. No specialist fauna and flora studies were commissioned by the company for the EPL EIA project. Specialist studies were deemed unnecessary for this environmental impact assessment due to low intensity and extent of the exploration activities. Exploration may occur throughout the whole EPL but the total activity footprint as a percentage of the total areas of each habitat is estimated to be very low.</p> <p>The fauna and flora were listed earlier and the conservation status internationally and locally was stated. For the most part the endemic species found within the area under assessment are also found elsewhere in the country. The species that are classified as Near Threatened, Vulnerable and Critically Endangered are those that although found elsewhere in Namibia should be taken cognisance of. Their specific habitat and feeding, breeding, nesting and migratory habits must not be impacted upon in the least degree.</p>
Status	<b>Negative</b>
Extent	<b>Localised</b>
Duration	<b>Short to Medium</b> term
Intensity	<b>Serious effect</b> if an individual/s is/are disturbed or destroyed/killed

Probability	<b>Probable</b>
Prevention	Though the habitats will remain relatively undisturbed due to the very low percentage activity footprint planned, without prior knowledge of the whereabouts of the vulnerable, threatened and critically endangered species and their preferred habitat, it may not be possible to prevent an impact, regardless of how small it might be.
Significance (no mitigation)	<b>Medium.</b> The fact that the intensity of the exploration is very low, as already explained the significance of the impact is considered medium based on the sensitivity of the species highlighted.
Mitigation	<p>Those areas targeted for exploration will be accessed along existing roads and tracks as far as possible. Many of the sites will initially be visited on foot. The latter two exploration phases may need to produce new tracks to access targeted sites. The dry water courses provide the next option for gaining access to remote sites for vehicles where no tracks formerly exist. These habitats are occasionally disturbed by flash floods and must re-establish communities of fauna and flora thereafter.</p> <p>Exploration teams need to be trained and provided orientation on how to best access sites for exploration with least impact on the observable and hidden signs of fauna and flora and their habitats.</p> <p>Rehabilitation of sites that have been explored must restore the sites, as far as is possible to their prior state so as to mitigate the visual impact and to allow for the best possible re-colonisation of the site, by plants and animals.</p> <p>Certain basic rules are laid out for protected areas. Though the EMRST area and the surrounding farms are not officially protected areas the following rules it must be adhered to.</p> <ul style="list-style-type: none"> <li>➤ No killing (poaching) or capturing of animals</li> <li>➤ No littering</li> </ul>



	<ul style="list-style-type: none"> <li>➤ No speeding</li> <li>➤ Driving only on existing roads (unless permits for clearing are issued by Ministry of Agriculture, Water and Forestry)</li> <li>➤ No collection of fire wood (unless permission has been granted by the farm owner)</li> </ul> <p>Awareness training regarding the sensitive nature of the EMRST must be provided to all staff. The poaching of critically endangered species such as the black rhino is prohibited. The presence of drilling personnel within the EMRST cannot in anyway jeopardise the security measures taken to safeguard the population of the rhinos within the EMRST.</p>
Significance (with mitigation)	<b>Low</b>
Confidence Level	<p><b>Medium.</b> Knowledge of the whereabouts of the above mentioned species and their habitats may not be readily available and this makes it difficult to predict whether the low significance can be practically achieved.</p> <p>‘EMRST members state that a specialist study of the potential impact on the black rhino is necessary, to highlight the potential effect on this species, and to frame the significance thereof in the context of international efforts to prevent rhino extinction. The black rhino is classified as a critically endangered species and it is not possible to conduct exploration in the EMRST, without impacting their habitat, feeding, breeding and territorial habits.’ (Nakamhela, 2018)</p>

**Table 19. Groundwater and Surface Water Impacts**

Risk Event	Exploration activities may affect the availability of water and the quality thereof
Nature of Impact	Through the exploration for mineral resources there is potential for impacting: <ul style="list-style-type: none"> <li>➤ Water availability for deep rooted trees in riverbeds (groundwater)</li> </ul>

	<ul style="list-style-type: none"> <li>➤ Water availability and quality for people (groundwater)</li> <li>➤ Water availability for animals' habitat and for drinking (surface water)</li> </ul>
Status	<b>Negative</b>
Extent	<b>Localised</b>
Duration	<b>Short to Long term</b>
Intensity	<b>Serious effect</b> if people's lives are at stake or habitat is permanently lost
Probability	<b>Probable</b> if water abstraction or water pollution is not controlled or prevented
Prevention	It is possible to prevent over abstraction and pollution of water resources
Significance (no mitigation)	<b>High;</b> Should the prevention measures not be in place then the significance of the impact will be high. The population carrying capacity is already low due to limited water resources.
Mitigation	<p>No surface water bodies (eg. Farm dams) should be used for the exploration activities</p> <p>Namwater could supply the exploration activities via the Omaruru town or the pump station adjacent to the Khan river. These sources should not jeopardise the farming community's needs.</p> <p>Farm boreholes may also be used but the sustainability of each farm borehole may differ. Again, only sustainable use of these sources should be made.</p> <p>Boreholes drilled in the field should not be contaminated in case they are linked to aquifers being made use of by nearby farmers. Should the company find good groundwater during the exploration activity, the borehole may be used as a water source provided the permission of the farmer is given and the necessary abstraction permit is attained from the department of water affairs. Again, only sustainable yields may be abstracted.</p> <p>Farmers may choose to maintain the new water boreholes after the exploration</p>

	ceases.
Significance (with mitigation)	<b>Low</b>
Confidence Level	<b>High</b>

**Table 20. Heritage**

Risk Event	Exploration activities may impact archaeological or historical sites.
Nature of Impact	Any archaeological or historic sites of significant importance within the EPL that are damaged or destroyed, would constitute an impact on the heritage of Namibia.  The procedure of chance finds is to be followed where no known sites of importance are recorded for the EPL area.
Status	<b>Negative</b>
Extent	<b>Site specific</b>
Duration	<b>Long term</b>
Intensity	<b>Serious effect</b> (sites of importance are known to the farmers eg. rock paintings)
Probability	<b>Unlikely</b>
Prevention	Impacts of this nature are avoided if the site locations are known and are then avoided.
Significance (no mitigation)	<b>Medium</b>

Mitigation	The chance find of any potential heritage site should be communicated to the police and the National Heritage Council of Namibia. If exploration activities occur at the location where a chance find was made then the activities should cease until the necessary authorities have visited the site and provided the go ahead to proceed with activities.
Significance (with mitigation)	<b>Low</b>
Confidence Level	<b>High;</b> Knowledge of the whereabouts of heritage sites is known.

**Table 21: Socio-Economic Impact**

Risk Event	Positive aspect of sustaining employment in the sector.
Nature of Impact	<p>The project to be carried out at EPL6440 site will employ a limited number of people involved with exploration on an intermittent basis. From 10 to 30 staff would be on site during the drilling phase depending on the intensity of the drilling programme. The downstream employment like transport and other services will most likely be out sourced. The project's ability to earn foreign exchange through export makes it attractive to the Namibian fiscal services and is of national interest.</p> <p>On the negative side, the social and economic basis of the commercial farms, lodges and hunting farms may be adversely affected by the presence and activities of the exploration team and equipment.</p> <p>'Members of the EMRST rely on tourism as the sole source of their livelihood and all investments have been made on this basis. Any exploration activities, will cause a disturbance to the tourism activities, leading to reduced tourist numbers and to a loss of revenue, to the extent that the EMRST will not be able to continue and fulfil its mandate, nor meet sustainable levels of income generation and job creation. The EMRST, operates as one whole integrated</p>

	and interrelated ecological and economic unit, and therefore any exploration anywhere in the EMRST will affect all other areas ecologically, touristically and from a business point of view' (Nakamhela, 2018)
Status	<b>Positive &amp; Negative</b>
Extent	<b>Regional</b> (radius of up to 100 km)
Duration	<b>Short.</b> Up to one year of drilling spread over a broad area.
Intensity	<b>Moderate effect</b> (for the positive) <b>Serious effect</b> (for the negative; though this is difficult to quantify; the expectation from the members of EMRST )
Probability	<b>Probable</b> (both the negative and positive aspects)
Prevention	If the environmental clearance certificate is not forthcoming, then the positive impact is halted.
Significance (no mitigation)	<b>Low (positive)</b> The project will employ very few personnel, so it is not significant in the greater scheme of things. <b>High (negative)</b> Exploration activities alone are anticipated by EMRST members to have a devastating impact on the sustainability of their businesses and the livelihoods of their employees.
Mitigation	Where possible, local persons (i.e. from the adjacent towns and farms) should be employed. This depends on the level of skills the local persons have. Sustainable employment will result should the project be allowed to go ahead.  The drilling programme could take place during less busy tourism times and if necessary increase the number of drill rigs during that time so as to shorten the period of activity.
Significance (with mitigation)	<b>Low (positive)</b> <b>Medium (negative)</b>

Confidence Level	High
---------------------	------

## **10 ENVIRONMENTAL MANAGEMENT PLAN**

The management of Gecko Gold Mining is conscious of the company's special operating conditions. Therefore management will emphasize to all staff to be aware of the DOs and DON'Ts in this operational and living situation. The Environmental Management Plan provides an overview of the mitigation and monitoring measures for the planned exploration.

Limited impact is foreseen from the envisaged exploration programme. All steps and exploration measures will be communicated and agreed upon with the Department of Environmental Affairs. All pits and trenches as well as borehole sites will be adequately rehabilitated.

All personnel involved in the exploration activities will undergo an environmental awareness training prior to prospecting on the ground together with tuition on safety and health issues.

## **11 REPORTING AND MONITORING**

Monitoring of the environmental issues concerned should take place throughout the period of the operations. Gecko would like to have a site visit by the Department of Environmental Affairs (DEA) to take place shortly after the formulation of the environmental contract to ensure that all the information supplied in the assessment paper are correct and that all the proposed mitigation measures are being complied with and no substantial impact on the environment is occurring. Once the operations are established at full scale further the evaluation should be conducted by DEA in order to consider the measures applied and their efficiency for impact mitigation. Any problems or faults must be brought to the attention of the management team of Gecko Gold Mining in order to discuss ways to improve the systems in place. Follow up site visits on a six month or annual basis are deemed sufficient to deduce whether the measures are effective or not.





## **12 CONCLUSION**

In conclusion, this project in the EPL 6440 will explore gold and base metals mainly, although the categories include base and rare metals, industrial minerals, precious minerals and precious stones. Through exploring for these commodities, contributions to the Namibia's economy will be made and continued employment to the existing staff is made possible.

For all aspects of operations and prospecting work strict adherence to the company's Environment, Health and Safety policies must be ensured. Environmental training of the work force as well as monitoring of all aspects pertaining to Environment, Health and Safety must be carried out in accordance with the EMP.

The exploration within the EPL the company will follow a phased approach which will be in line with the relevant Namibian legislation and regulations. The exploration program will be conducted in line with the EMP thus implementing the necessary mitigation measures, monitoring and stipulated rehabilitation.

It is of utmost importance that good relations are upheld with the farming community and the members of the Erongo Mountain Rhino Sanctuary Trust (EMRST). Access to the farms for exploration within the EMRST area is objected to by the Trust members. It is the EAP's opinion that although low impact exploration activities could take place within EMRST area if the company abides by the EMP and any other farm owner stipulations, it will be necessary for the Environmental Commissioner to advise on the access rights in light of the official EMRST status.

## **13 REFERENCES**

Mendelsohn, J., Jarvis, A., Roberts, C., & Robertson, T. (2003). Atlas of Namibia. A Portrait of the Land and its People. Cape Town: David Philip Publishers; New Africa Books (Pty) Ltd.



## APPENDIX A: FLORA AND FAUNA LISTS

### Flora List for the EPL6440 Area.

SPECIES
<i>Abutilon fruticosum</i> Guill. & Perr.
<i>Acacia erioloba</i> E.Mey.
<i>Acacia erubescens</i> Welw. ex Oliv.
<i>Acacia hebeclada</i> DC. subsp. hebeclada
<i>Acalypha segetalis</i> Müll.Arg.
<i>Acanthosicyos naudinianus</i> (Sond.) C.Jeffrey
<i>Acrotome fleckii</i> (Gürke) Launert
<i>Aizoon virgatum</i> Welw. ex Oliv.
<i>Albizia anthelmintica</i>
<i>Aloe dichotoma</i>
<i>Aloe littoralis</i>
<i>Ammannia baccifera</i> L. subsp. baccifera
<i>Amphiasma merenskyanum</i> Bremek.
<i>Aptosimum angustifolium</i> F.E.Weber & Schinz
<i>Aptosimum arenarium</i> Engl.
<i>Aptosimum lineare</i> Marloth & Engl. var. lineare
<i>Argemone ochroleuca</i> Sweet subsp. ochroleuca
<i>Aristida meridionalis</i> Henrard
<i>Aristida parvula</i> (Nees) De Winter
<i>Azima tetracantha</i> Lam.
<i>Barleria lancifolia</i> T.Anderson subsp. lancifolia
<i>Barleria solitaria</i> P.G.Mey.
<i>Boscia albitrunca</i> (Burch.) Gilg & Gilg-Ben.
<i>Boscia foetida</i> Schinz subsp. foetida
<i>Brachiaria deflexa</i> (Schumach.) C.E.Hubb. ex Robyns
<i>Bulbostylis densa</i> (Wall.) Hand.-Mazz. subsp. densa
<i>Cardiospermum pechuelii</i> Kuntze
<i>Chamaegigas intrepidus</i> Dinter ex Heil
<i>Chamaegigas intrepidus</i> Dinter ex Heil
<i>Cleome angustifolia</i> Forssk. subsp. petersiana (Klotzsch) Kers
<i>Cleome foliosa</i> Hook.f. var. lutea (Sond.) Codd & Kers
<i>Cleome rubella</i> Burch.
<i>Clerodendrum dekindtii</i> Gürke
<i>Combretum apiculatum</i> Sond. subsp. apiculatum
<i>Commiphora dinteri</i> Engl
<i>Commiphora glandulosa</i> Schinz
<i>Commiphora glaucescens</i> Engl.
<i>Commiphora pyracanthoides</i> Engl.
<i>Commiphora saxicola</i> Engl

<i>Commiphora tenuipetiolata</i> Engl.
<i>Commiphora virgata</i> Engl.
<i>Convolvulus sagittatus</i> Thunb.
<i>Cotyledon orbiculata</i> L. var. orbiculata
<i>Crassula tabularis</i> Dinter
<i>Craterostigma plantagineum</i> Hochst.
<i>Crotalaria argyraea</i> Welw. ex Baker
<i>Crotalaria barnabassii</i> Dinter ex Baker f.
<i>Crotalaria distans</i> Benth. subsp. distans
<i>Crotalaria heidmannii</i> Schinz
<i>Crotalaria podocarpa</i> DC.
<i>Croton gratissimus</i> Burch. var. gratissimus
<i>Cyamopsis serrata</i> Schinz
<i>Cyperus fulgens</i> C.B.Clarke var. fulgens
<i>Cyphostemma congestum</i> (Baker) Desc. ex Wild & R.B.Drumm.
<i>Cyphostemma currorii</i>
<i>Danthoniopsis dinteri</i> (Pilg.) C.E.Hubb.
<i>Diandrochloa pusilla</i> (Hack.) De Winter
<i>Dianthus namaensis</i> Schinz var. dinteri (Schinz) S.S.Hooper
<i>Dimorphotheca cuneata</i> (Thunb.) Less.
<i>Eragrostis annulata</i> Rendle ex Scott-Elliot
<i>Eragrostis rotifer</i> Rendle
<i>Eriocephalus luederitzianus</i> O.Hoffm.
<i>Erythrina decora</i>
<i>Euclea undulata</i>
<i>Euphorbia damarana</i>
<i>Euphorbia guerichiana</i>
<i>Euphorbia monteiroi</i> Hook.f. subsp. brandbergensis B.Nord.
<i>Euphorbia monteiroi</i> Hook.f. subsp. monteiroi
<i>Euphorbia virosa</i>
<i>Faidherbia albida</i>
<i>Felicia anthemidodes</i> (Hiern) Mendonça
<i>Felicia smaragdina</i> (S.Moore) Merxm.
<i>Ficus cordata</i>
<i>Ficus ilicina</i>
<i>Flueggea virosa</i> (Roxb. ex Willd.) Voigt subsp. virosa
<i>Forsskaolea viridis</i> Ehrenb. ex Webb
<i>Geigeria ornativa</i> O.Hoffm.
<i>Gladiolus saccatus</i> (Klatt) Goldblatt & M.P.de Vos
<i>Gloriosa superba</i> L.
<i>Gomphocarpus fruticosus</i> (L.) W.T.Aiton subsp. fruticosus
<i>Gonialoe dinteri</i> (A.Berger) Boatwr. & J.C.Manning
<i>Grewia subspathulata</i> N.E.Br.

<i>Grewia tenax</i> (Forssk.) Fiori var. <i>capillipes</i> Lanza
<i>Gymnosporia maranguensis</i> (Loes.) Loes.
<i>Helichrysum tomentosulum</i> (Klatt) Merxm. subsp. <i>tomentosulum</i>
<i>Helinus integrifolius</i> (Lam.) Kuntze
<i>Hermannia helianthemum</i> K.Schum.
<i>Hermannia modesta</i> (Ehrenb.) Mast.
<i>Hermannia quartiniana</i> A.Rich.
<i>Hermbstaedtia odorata</i> (Burch.) T.Cooke var. <i>odorata</i>
<i>Hibiscus dinteri</i> Hochr.
<i>Hibiscus elliottiae</i> Harv.
<i>Hibiscus sidiformis</i> Baill.
<i>Hirpicium gorterioides</i> (Oliv. & Hiern) Roessler subsp. <i>gorterioides</i>
<i>Hoodia currorii</i> (Hook.) Decne. subsp. <i>currorii</i>
<i>Hoodia gordonii</i> (Masson) Sweet ex Decne.
<i>Hoodia</i> species
<i>Indigofera charlieriana</i> Schinz var. <i>lata</i> J.B.Gillett
<i>Indigofera heterotricha</i> DC. subsp. <i>heterotricha</i>
<i>Indigofera holubii</i> N.E.Br.
<i>Indigofera rautanenii</i> Baker f.
<i>Indigofera sordida</i> Benth. ex Harv.
<i>Indigofera vicioides</i> Jaub. & Spach var. <i>vicioides</i>
<i>Ipomoea optica</i> (L.) Roth ex Roem. & Schult.
<i>Ipomoea obscura</i> (L.) Ker Gawl. var. <i>obscura</i>
<i>Jamesbrittenia pallida</i> (Pilg.) Hilliard
<i>Kohautia cynanchica</i> DC.
<i>Laggera decurrens</i> (Vahl) Hepper & J.R.I.Wood
<i>Lapeirousia coerulea</i> Schinz
<i>Leobordea platycarpa</i> (Viv.) B.-E. van Wyk & Boatwr. [2]
<i>Leonotis ocyimifolia</i> (Burm.f.) Iwarsson var. <i>schinzii</i> (Gürke) Iwarsson
<i>Lessertia benguellensis</i> Baker f.
<i>Limosella grandiflora</i> Benth. [1]
<i>Lindernia parviflora</i> (Roxb.) Haines
<i>Lithops wernerii</i> Schwantes ex H.Jacobsen
<i>Lophiocarpus dinteri</i> Engl.
<i>Lycium eenii</i> S.Moore
<i>Maerua juncea</i> Pax subsp. <i>crustata</i> (Wild) Wild
<i>Manulea dubia</i> (Skan) Overkott ex Roessler
<i>Maytenus heterophylla</i> (Eckl. & Zeyh.) N.Robson subsp. <i>arenaria</i> N.Robson
<i>Melhania damarana</i> Harv.
<i>Monechma genistifolium</i> (Engl.) C.B.Clarke subsp. <i>genistifolium</i>
<i>Monsonia glauca</i> R.Knuth
<i>Moringa ovalifolia</i>
<i>Myrothamnus flabellifolius</i> Welw.

<i>Namacodon schinzianum</i> (Markgr.) Thulin
<i>Nemesia fruticans</i> (Thunb.) Benth.
<i>Nemesia lilacina</i> N.E.Br.
<i>Nemesia</i> sp.
<i>Nicotiana africana</i> Merxm.
<i>Oldenlandia herbacea</i> (L.) Roxb. var. <i>flaccida</i> Bremek.
<i>Oldenlandia herbacea</i> (L.) Roxb. var. <i>herbacea</i>
<i>Olea europaea</i> L. subsp. <i>africana</i> (Mill.) P.S.Green
<i>Oncocalyx welwitschii</i> (Engl.) Polhill & Wiens
<i>Ondetia linearis</i> Benth.
<i>Osteospermum montanum</i> Klatt
<i>Oxalis purpurascens</i> T.M.Salter
<i>Panicum schinzii</i> Hack.
<i>Panicum simulans</i> Smook
<i>Pechuel-loeschea leubnitziae</i> (Kuntze) O.Hoffm.
<i>Pentarrhinum insipidum</i> E.Mey.
<i>Petalidium lanatum</i> (Engl.) C.B.Clarke
<i>Petalidium variabile</i> (Engl.) C.B.Clarke var. <i>spectabile</i> Mildbr.
<i>Petalidium variabile</i> (Engl.) C.B.Clarke var. <i>variabile</i>
<i>Phaeoptilum spinosum</i> Radlk.
<i>Polygala</i> sp.
<i>Portulaca oleracea</i> L.
<i>Ptycholobium biflorum</i> (E.Mey.) Brummitt subsp. <i>angolensis</i> (Baker) Brummitt
<i>Rhus marlothii</i> Engl.
<i>Rhynchosia sublobata</i> (Schumach. & Thonn.) Meikle
<i>Schoenoplectiella leucantha</i> (Boeck.) Lye
<i>Seddera schizantha</i> Hallier f.
<i>Selago alopecuroides</i> Rolfe
<i>Senecio eenii</i> (S.Moore) Merxm.
<i>Sesamum capense</i> Burm.f.
<i>Sesamum schinzianum</i> Asch.
<i>Sesamum</i> sp.
<i>Sesbania pachycarpa</i> DC. subsp. <i>dinterana</i> J.B.Gillett
<i>Sesbania sphaerosperma</i> Welw.
<i>Sesuvium sesuvioides</i> (Fenzl) Verdc. var. <i>angustifolium</i> (Schinz) Gonç.
<i>Setaria incrassata</i> (Hochst.) Hack.
<i>Sporobolus festivus</i> Hochst. ex A.Rich.
<i>Stapelia kwebensis</i> N.E.Br.
<i>Stipagrostis damarensis</i> (Mez) De Winter
<i>Strophanthus amboensis</i> (Schinz) Engl. & Pax
<i>Tapinanthus glaucocarpus</i> (Peyr.) Danser
<i>Tephrosia oxygona</i> Welw. ex Baker subsp. <i>lactea</i> (Schinz) A.Schreib.
<i>Tetragonia calycina</i> Fenzl

<i>Tragia dinteri</i> Pax
<i>Trema orientalis</i> (L.) Blume
<i>Urochloa brachyura</i> (Hack.) Stapf
<i>Urochloa panicoides</i> P.Beauv.
<i>Vangueria cyanescens</i> Robyns
<i>Vangueria infausta</i> Burch. subsp. infausta
<i>Vangueria proschii</i> Briq.
<i>Viscum rotundifolium</i> L.f.
<i>Withania somnifera</i> (L.) Dunal
<i>Xerophyta viscosa</i> Baker
<i>Zaleya pentandra</i> (L.) C.Jeffrey
<i>Ziziphus mucronata</i> Willd. subsp. mucronata
<i>Zornia glochidiata</i> Rchb. ex DC.

**Fauna listed (common names) by farmers/land owners as being present or observed within the trust area:**

**Protected Game**

Black Rhino, Black Faced Impala, Mountain Zebra, Giraffe, Klipspringer, Aardwolf, Bat-eared Fox, Dik-Dik, Duiker, Eland, Steenbok, Brown Hyena, Antbear, Cheetah, Leopard, Rock & Dwarf Python, Honey Badger, Pangolin, Tortoise, Monitor Lizard.

**Game**

Oryx, Kudu, Springbok, Warthog, Baboon, Jackal, Caracal, Black Mongoose, Slender Mongoose, Red Rock Hare, Cape Hare, Ground Squirrel.

**Birds**

Hartlaub's Francolin, Redbilled Francolin, Ruppell's Parrot, Rosy-faced Lovebird, Monteiro's Hornbill, Carp's Black Tit, Damara Rockrunner, Pririt Batis, White Tailed Shrike, Violet-eared Waxbill, Red Headed Finch.

**Vultures/Birds of Prey**

White-Backed and Lappet-Faced Vultures, Verreaux's Eagle, African Hawk Eagle, Booted Eagle, Tawny Eagle, Snake Eagles, Augur Buzzard Kestrels, Kite, Goshawks, Owls, Pearl Spotted Owl, Black Stork.



## APPENDIX B: PUBLIC PARTICIPATION DOCUMENTS

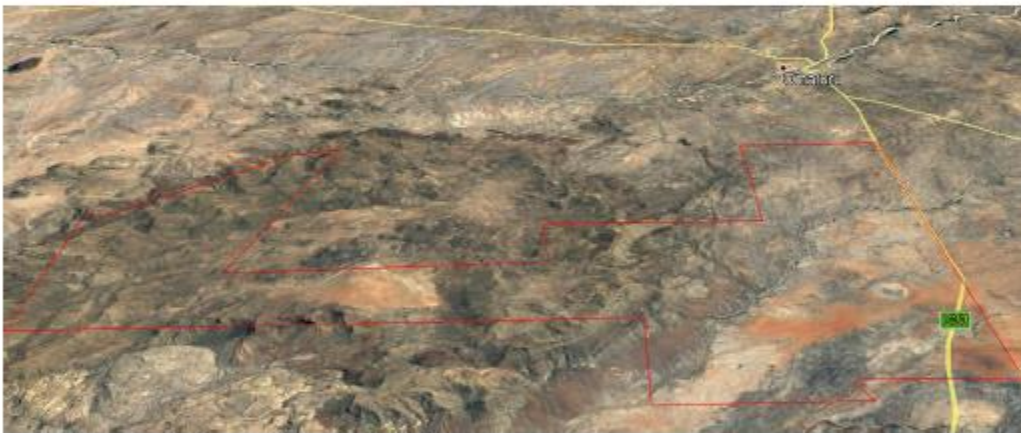
2017.10.31

Erongo Gold Project - BID

GGM

# BACKGROUND INFORMATION DOCUMENT

ENVIRONMENTAL IMPACT ASSESSMENT FOR ERONGO GOLD  
PROSPECTING WITHIN EPL 6440, ERONGO REGION



Prepared by Philip Hooks

October 2017

2017.10.31

Erongo Gold Project - BID

GGM

## TABLE OF CONTENTS

1	Introduction .....	3
2	Background Information .....	4
3	Project Motivation .....	5
4	Scope of the Study .....	5
5	Project Description.....	6
	Staged Exploration Approach .....	6
	Prospecting .....	6
	Exploration drilling, sample extraction and analysis .....	7
	Pitting, Trenching, Bulk Sampling And Trial Mining.....	7
6	Possible Environmental, Social and Cultural Impacts of the Project .....	8
7	Public Participation .....	8

2017.10.31

Erongo Gold Project - BID

GGM

## 1 INTRODUCTION

The Erongo Gold Prospecting Project (referred to as Erongo Gold) is owned by Gecko Gold Mining (Pty) Ltd, a subsidiary of Gecko Exploration (Pty) Ltd. EPL 6440 is granted to Gecko Gold Mining (Pty) Ltd. and Figure 1 below renders a map of the general location of the EPL in the Erongo Region of Namibia.

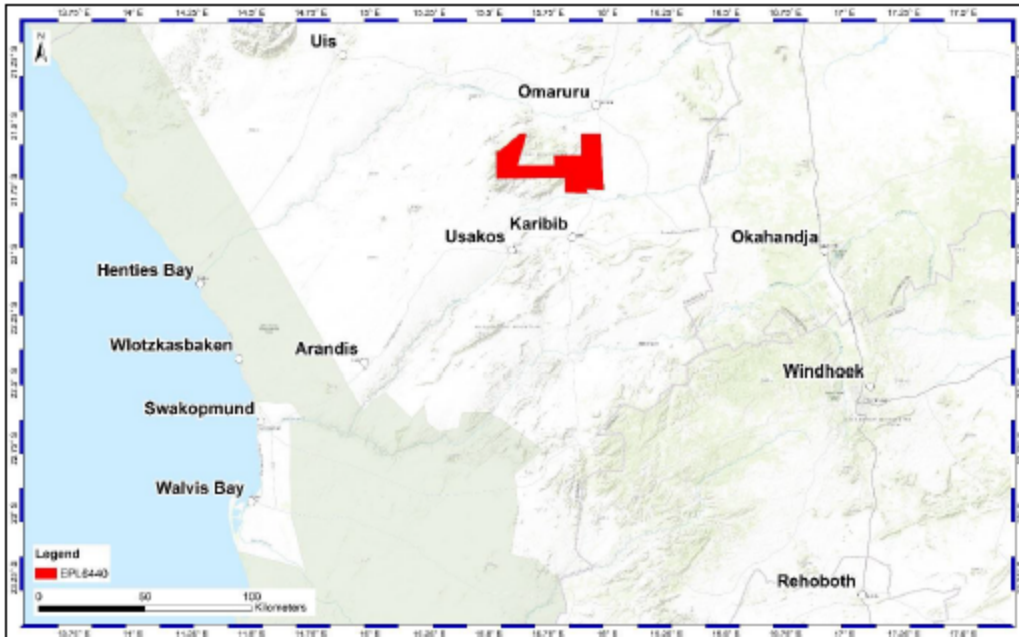


Figure 1. Location of EPL6440 within the Erongo Region

The EIA is based on the requirements of the Namibian Environmental Management Act (Act. No. 7 of 2007), as well as supporting policies and guidelines, which include the environmental regulations of February 2012. An Environmental Clearance Certificate for mineral exploration activities is required and thus an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) needs to be submitted to the Ministry of Environment and Tourism (MET) of Namibia for approval.

A risk assessment will be undertaken to determine the potential impacts of the project on the environment. The EIA Report and EMP will enable stakeholders to make informed judgements regarding the exploration activities from an environmental perspective. The environment is defined in the Environmental Assessment Policy and Environmental Management Act as "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, palaeontological or social values".

This background information document (BID) provides I&APs with the opportunity to register and engage in the public participation process. Through registering you have the opportunity to:

- Provide the EIA coordinator with additional information which should be taken into account in the assessment of impacts and during decision-making;
- Attend meetings and obtain information about the proposed project;
- Share any comments, issues or concerns related to the proposed exploration activities;
- Review and comment on the report and findings from the EIA process.

2 BACKGROUND INFORMATION

The objective of the Gecko group of companies is to develop and operate projects in the mineral and chemical industry and also in providing services to the mining industry of Namibia through exploration drilling, chemical analyses, research and development metallurgical test work, civil engineering and construction, process design and plant construction as well as contract mining (<http://www.gecko.na>).

Erongo Gold fulfils aspects of the group's interests through the exploration for gold within EPL6440. The nearest town is Omaruru. Figure 2 below shows the location of the exploration project in relation to the Omaruru townlands, private and state owned farms and the ≠/Gaingu conservancy. A freehold conservancy exists over the Erongo Mountains and a number of the farms are members of that conservancy. Figures 2 and 3 render maps of the EPL and give the licence's corner coordinates.

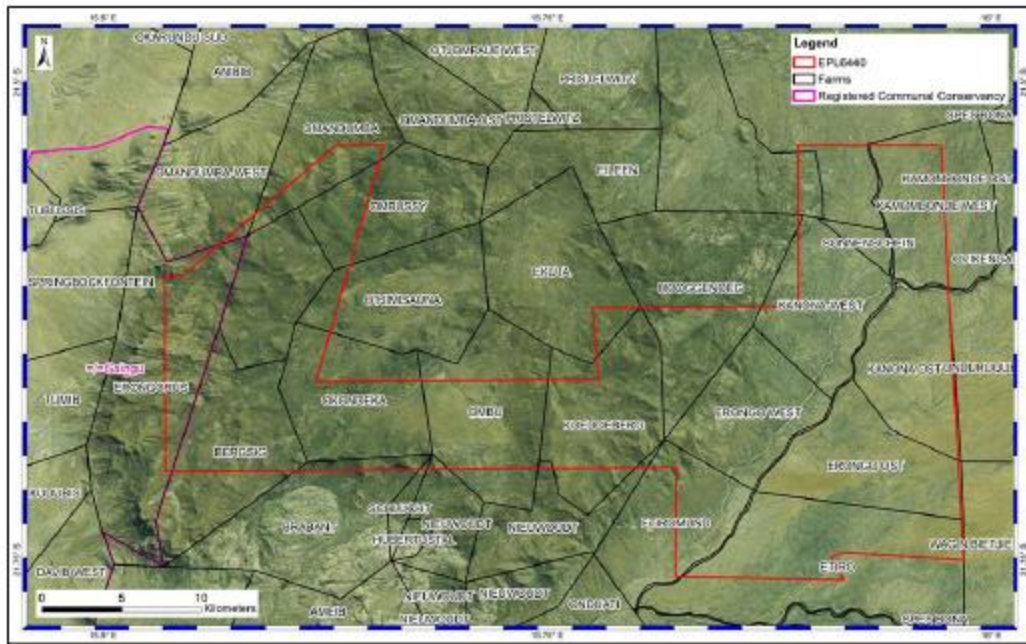


Figure 2. Farms and Conservancy within EPL6440

2017.10.31

Erongo Gold Project - BID

GGM

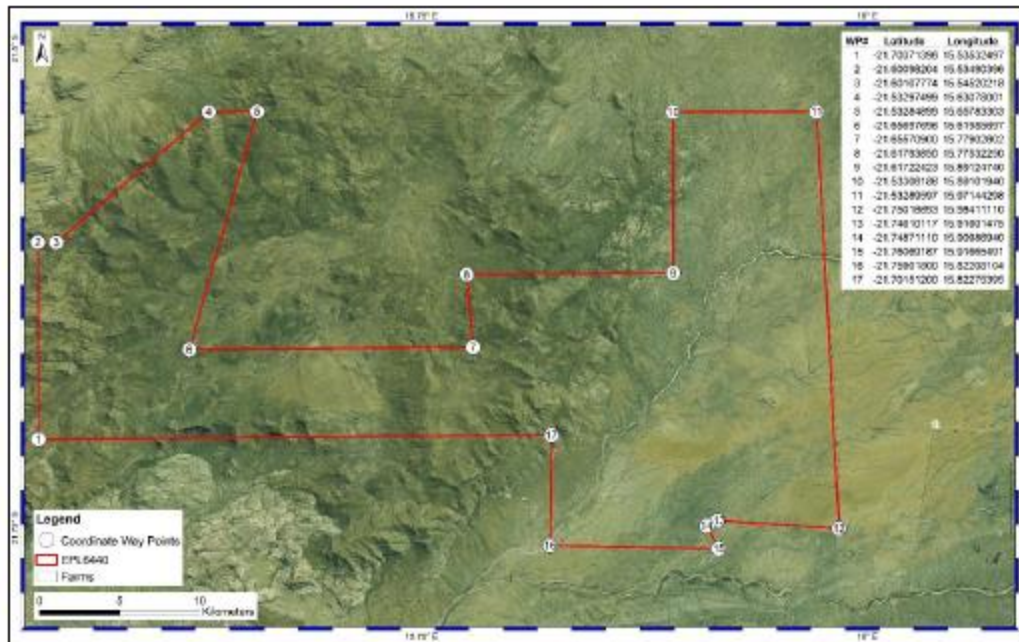


Figure 3. EPL6440 corner coordinates

### 3 PROJECT MOTIVATION

The main proposed mineral to be explored is gold. However, in addition to this, base and rare metals, industrial minerals, precious metals and precious stones may also be considered. This project has the potential to contribute to Namibia's economy.

Table 1 lists the direct and indirect benefits that will arise should the mine be given environmental clearance and activities start up.

Table 1. Project benefits

Project	Direct Benefits	Indirect Benefits
Erongo Gold	<ul style="list-style-type: none"> <li>➤ Continued employment opportunities</li> <li>➤ Direct capital investment in order to determine and define mineral resources in Namibia</li> <li>➤ Stimulation of economic development (e.g. ongoing supply of materials and services to the exploration and drilling industry)</li> <li>➤ Continuing skills development</li> </ul>	<ul style="list-style-type: none"> <li>➤ Expansion of exploration and drilling industry in the region and country.</li> <li>➤ Inducement of additional investments.</li> <li>➤ Maintenance of new long-term employment opportunities in sectors relying on exploration and drilling activities.</li> </ul>

### 4 SCOPE OF THE STUDY

The scope of the EIAs is to determine the potential environmental impacts emanating from the proposed activities. Relevant environmental data will be compiled by making use of primary data through site visits and direct consultation with stakeholders together with secondary data from desk-top work. Existing specialist fauna and flora studies, if available, will be used to assess the impacts on biodiversity.

2017.10.31

Erongo Gold Project - BID

GGM

Potential environmental impacts and associated social impacts will be identified and addressed in the report. The environmental assessment will be conducted to comply with Namibia's Environmental Management Act, the requirements of Local Authorities and all other legal requirements applicable to the project and the country.

## 5 PROJECT DESCRIPTION

From the visual appraisal of the available information-aerial photographs and geological maps of the area, it is clear that mineralization potential for the commodities covered exists within the area of EPL6440. Gecko plans to conduct a staged exploration approach. The application for environmental clearance is based on this description of the exploration phases. Interested and affected parties are requested to provide input into the EIA process.

### STAGED EXPLORATION APPROACH

Exploration follows three phases as described below. Firstly, there is a prospecting phase, then a drilling phase and lastly a pitting, trenching, bulk sampling and trial mining phase.

#### PROSPECTING

The aerial data will need to be verified through field work. Lithological mapping, sampling and analysis will be necessary. The results from initial lithological mapping may need further confirmation by means of small exploration pits.

Prospecting is in general a low intensity activity. Specifically it constitutes the following:

- Geologists and geo-technicians walking through the area with rock hammer and GPS examining and mapping the outcropped lithology.
- Collecting rock and sand samples by hand for either mineral or chemical analysis.
- Possible follow up pitting.

For the first 12 months, prospecting will be done by:

- Data collection and compilation of all available information into GIS digital format and interpretation of data (2 months)
- Mapping of the area & prospect pitting (2 months)
- Analysis of samples (4 months)
- Compilation of data and preliminary viability calculations (5 months)

For the remaining 24 months of the initial license tenement prospecting will be done by the following activities:

- The identification of potential mineral occurrences of base and rare metals, precious metals through remote sensing techniques. Gecko plans to contract an airborne electromagnetic survey over EPL 6440.
- The identification of potential secondary mineral resources of economic interest. Besides the initial mineralisation model which is being pursued in the endeavour to consolidate and expand prospecting area, the area will also be looked at in the light of secondary mineralisation as well as for different other types of mineral deposits.

2017.10.31

Erongo Gold Project - BID

GGM

---

#### EXPLORATION DRILLING, SAMPLE EXTRACTION AND ANALYSIS

The most commonly used drilling techniques are Reverse Circulation Drilling (RC) or Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve.

Exploration Diamond Drilling differs from other geological drilling in that a solid core is extracted from depth, for examination on the surface. The key technology of the diamond drill is the actual diamond bit itself. It is composed of industrial diamonds set into a soft metallic matrix. The drill produces a "core" which is logged, photographed and split longitudinally. Half of the split core is assayed while the other half is permanently stored for future use and re-assayed if necessary.

RC Drilling uses a pneumatic hammer which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample which is comprised of rock chips. It is relatively quick and cheap compared with Diamond Drilling

The target areas within the EIA which have been identified during the prospecting phase will then undergo exploration drilling to obtain undisturbed samples of the lithology which are associated with the specific minerals present. A number of consecutive drilling campaigns on increasingly closer-spaced exploration grids might be conducted. Drilling is initially done with the diamond coring technique. Once the type of ore body is understood, emphasis then lies on obtaining more closed-spaced samples for gaining confidence and information on the statistical variance. For this latter process, RC Drilling is the preferred technique.

If there are signs of specific minerals presence, prospecting activities progress to more detailed work program. Drilling is then required to go deeper. Larger samples are geologically logged and analysed in a laboratory.

The establishment of a drilling camp at an approved site within the EPL may be necessary. Existing gravel access roads will be used as far as possible. Solid waste will be removed off site and taken to Omaruru's approved landfill site. Ablution facilities will use chemical toilets and or sealed septic tanks and the sewerage taken to the Omaruru sewerage plant periodically. No power supply infrastructure to the site is planned. Diesel power generation will be used. Temporary storage areas for drilling materials, machines etc. will be necessary at the camp. Security will be supplied on a 24 hour basis at the exploration camp. A fence surrounding the camp will be constructed to ensure people and domestic animals are not put at risk. These support services and facilities will be removed at the end of the 3<sup>rd</sup> phase of the exploration.

Clearing of vegetation at the planned drill sites may be necessary. Permits from the forestry directorate will be required for this purpose. Where necessary, stockpiling of top soil for rehabilitation at a later stage will be undertaken. Necessary landscaping of exploration areas will be undertaken upon completion of each phase of exploration.

---

#### PITTING, TRENCHING, BULK SAMPLING AND TRIAL MINING

In the advanced stage of exploration activities, larger amounts of sample material is required for the performing processing trials and metallurgical testing programs. The ground conditions and geotechnical parameters would then be established with a view to extract the mineral from the ore reserve.

Bulk sampling for analytical processing will only be carried out if the material obtained during drilling is insufficient. Pits may be dug / excavated to a depth of 4m and 5 cubic meters of samples are taken. The location of the pits will depend on the drilling results.

2017.10.31

Erongo Gold Project - BID

GGM

## 6 POSSIBLE ENVIRONMENTAL, SOCIAL AND CULTURAL IMPACTS OF THE PROJECT

Potential impacts that can arise from the proposed exploration project include but are not limited to:

- Dust Pollution
- Noise impacts
- Visual impacts
- Impact on archaeological and cultural features
- Impacts on ground and surface water quality
- Loss of biodiversity
- Alteration of habitat and landscape
- Increased traffic volumes on public roads
- Potential employment opportunities (temporary)
- Stimulation of local economy through service supply to drilling program

## 7 PUBLIC PARTICIPATION

The Environmental Impact Assessment process involves interaction with individuals and organisations who are interested in, or who could be affected by, the proposed development and/or operational activities of the development. The role of the Interested and Affected Parties (I&APs) are stipulated in the regulations of the Environmental Management Act as follows:

23. (1) A registered interested or affected party is entitled to comment in writing, on all written submissions made to the Environmental Commissioner by the applicant responsible for the application, and to bring to the attention of the Environmental Commissioner any issues which that party, believes may be of significance to the consideration of the application, as long as -

- (a) comments are submitted within 7 days of notification of an application or receiving access to a scoping report or an assessment report;
- (b) the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

(2) Before the applicant submits a report compiled in terms of these regulations to the Environmental Commissioner, the applicant must give registered interested and affected parties access to, and an opportunity to comment in writing on the report. (3) Reports referred to in sub regulation (2) include -

- (a) scoping reports;
  - (b) scoping reports amended and resubmitted;
  - (c) assessment reports; and
  - (d) assessment reports amended and resubmitted.
- (4) Any written comments received by the applicant from a registered interested or affected party must accompany the report when the report is submitted to the Environmental Commissioner.
- (5) A registered interested or affected party may comment on any final report that is submitted by a specialist reviewer for the purposes of these regulations where the report contains substantive information which has not previously been made available to a registered interested or affected party.

24. The applicant responsible for an application must ensure that the comments of interested and affected parties are recorded in reports submitted to the Environmental Commissioner in terms of these regulations, and comments by interested and affected parties on a report which is to be submitted to the Environmental Commissioner may be attached to the report without recording those comments in the report itself.



2017.10.31

Erongo Gold Project - BID

GGM

We therefore invite all I&APs to provide in writing, any issues and suggestions regarding the proposed development. This correspondence must include:

1. Name & Surname;
2. Organization represented;
3. Position in the organization;
4. Contact details and;
5. Any direct business, financial, personal or other interest which you may have in the approval or refusal of the application.

All contributions, comments and concerns must be submitted by 1<sup>st</sup> December 2017. Subsequent to the issuing of the EIA report the registered and interested parties will be provided with a further 15 working day review period. If we do not receive any comment from you, it will be accepted that you do not have any objections/comments with regard to the project.

For further information, or to register as an Interested or Affected Party, please contact:

Mr. Philip Hooks (EIA Coordinator)


Fax: (+264-61) 225 304

E-Mail: philip.hooks@gecko.na

Friday, October 20 2017 | NEW ERA

**PUBLIC MEETING NOTICE**  
**ENVIRONMENTAL IMPACT ASSESSMENT FOR EPL6440 PROSPECTING ACTIVITIES, ERONGO MOUNTAINS & WESTERN PLAIN, ERONGO REGION**

In terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment (EIA) Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made to the Environmental Commissioner for environmental clearance for prospecting activities within Exclusive Prospecting Licence (EPL) 6440.



**Figure.** Map of project area between Karibib and Omaruru.

**Project:** Erongo Gold Prospecting  
**Proposer:** Gecko Gold Mining (Pty) Ltd  
**Coordinator:** Mr. Philip Hooks

**Public Information Meetings:**  
 1<sup>st</sup> November 2017 at the Usab Community Hall (Karibib) at 2pm and the Omaruru Rest Camp (Omaruru) at 8pm

You are hereby invited to attend either public meeting and share any comments, issues or concerns related to the proposed prospecting activities, for consideration in the EIA Report and Environmental Management Plan.


Should you require any additional information please contact Mr. Philip Hooks:  
 Cell: 081-1278936. Fax: (+264-61) 225304 or E-Mail: [philip.hooks@gecko.na](mailto:philip.hooks@gecko.na)

Written submissions must be made before  
 1<sup>st</sup> December 2017

Friday, October 27 2017 | NEW ERA

**PUBLIC MEETING NOTICE**  
**ENVIRONMENTAL IMPACT ASSESSMENT FOR EPL6440 PROSPECTING ACTIVITIES, ERONGO MOUNTAINS & WESTERN PLAIN, ERONGO REGION**

In terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment (EIA) Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made to the Environmental Commissioner for environmental clearance for prospecting activities within Exclusive Prospecting Licence (EPL) 6440.



**Figure.** Map of project area between Karibib and Omaruru.

**Project:** Erongo Gold Prospecting  
**Proposer:** Gecko Gold Mining (Pty) Ltd  
**Coordinator:** Mr. Philip Hooks

**Public Information Meetings:**  
 1<sup>st</sup> November 2017 at the Usab Community Hall (Karibib) at 2pm and the Omaruru Rest Camp (Omaruru) at 8pm

You are hereby invited to attend either public meeting and share any comments, issues or concerns related to the proposed prospecting activities, for consideration in the EIA Report and Environmental Management Plan.

Should you require any additional information please contact Mr. Philip Hooks:  
 Cell: 081-1278936. Fax: (+264-61) 225304 or E-Mail: [philip.hooks@gecko.na](mailto:philip.hooks@gecko.na)

Written submissions must be made before  
 1<sup>st</sup> December 2017

FRIDAY 20 OCTOBER 2017

**Republikein**  
Jou land. Jou taal. Jou koerant.

## PUBLIC MEETING NOTICE

### ENVIRONMENTAL IMPACT ASSESSMENT FOR EPL6440 PROSPECTING ACTIVITIES, ERONGO MOUNTAINS & WESTERN PLAIN, ERONGO REGION

In terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment (EIA) Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made to the Environmental Commissioner for environmental clearance for prospecting activities within Exclusive Prospecting Licence (EPL) 6440.



Figure. Map of project area between Karibib and Omaruru

Project: Erongo Gold Prospecting  
Proponent: Gecko Gold Mining (Pty) Ltd  
Coordinator: Mr Philip Hooks

Public Information Meetings:  
1st November 2017 at the Usab Community Hall (Karibib) at 2pm and the Omaruru Rest Camp (Omaruru) at 6pm

You are hereby invited to attend either public meeting and share any comments, issues or concerns related to the proposed prospecting activities, for consideration in the EIA Report and Environmental Management Plan.

Should you require any additional information please contact Mr. Philip Hooks:

Call: 081-1279936  
Fax: (+264-61) 225304  
E-Mail: [philip.hooks@gecko.na](mailto:philip.hooks@gecko.na)

Written submissions must be made before 1st December 2017

## PUBLIC MEETING NOTICE

### ENVIRONMENTAL IMPACT ASSESSMENT FOR EPL6440 PROSPECTING ACTIVITIES, ERONGO MOUNTAINS & WESTERN PLAIN, ERONGO REGION

In terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment (EIA) Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made to the Environmental Commissioner for environmental clearance for prospecting activities within Exclusive Prospecting Licence (EPL) 6440.

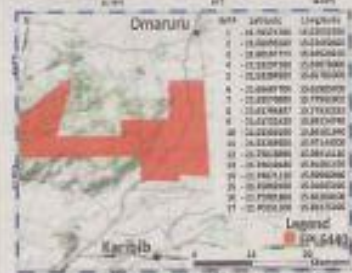


Figure. Map of project area between Karibib and Omaruru

Project: Erongo Gold Prospecting  
Proponent: Gecko Gold Mining (Pty) Ltd  
Coordinator: Mr Philip Hooks

Public Information Meetings:  
1st November 2017 at the Usab Community Hall (Karibib) at 2pm and the Omaruru Rest Camp (Omaruru) at 6pm

You are hereby invited to attend either public meeting and share any comments, issues or concerns related to the proposed prospecting activities, for consideration in the EIA Report and Environmental Management Plan.

Should you require any additional information please contact Mr. Philip Hooks:

Call: 081-1279936  
Fax: (+264-61) 225304  
E-Mail: [philip.hooks@gecko.na](mailto:philip.hooks@gecko.na)

Written submissions must be made before 1st December 2017

FRIDAY 21 OCTOBER 2017

## Erongo Gold Mining Prospecting EIA- Minutes of Public Meetings – 1.11.2017

Philip Hooks presented the project and facilitated the public consultation of the EIA process.

Place: Karibib/Usab Community Hall – 2pm.

Comments / Queries / Concerns	Response
<p>The EPL6440 covers an area that includes the Erongo Mountain Rhino Sanctuary Trust (EMRST); the chairperson of the trust presented a letter from the trust's attorneys relaying the member's objection to prospecting within the boundaries of the EMRST – Kai-Uwe Denker.</p>	<p>A request was made to provide a map of the trust – Philip Hooks</p>
<p>Would the farmers be willing to allow non-invasive prospecting with access to the farms for ground mapping or rock and soil sampling? From the soil sampling plan that was provided from the geologists most of the work will occur on the plain area east of the mountainous area – Philip Hooks</p>	<p>The members of the trust do not want anyone to enter the EMRST area due to sensitivity of the area</p>
<p>If a mine was to start what would the life of the mine be and how far will the mine be from the towns – Saima Shihepo</p>	<p>The current project is for exploration only and should mining ever go ahead it is not known now how long mining could go on for; likewise it is not possible to state now where the mine site would be situated – Philip Hooks</p>
<p>Our company would be interested in providing support services to the camp site – Joos Fourie</p>	<p>Noted</p>

Philip Hooks presented the project and facilitated the public consultation of the EIA process.

Place: Omaruru Rest Camp Conference Hall – 6pm.

Comments / Queries / Concerns	Response
<p>The concerns we have concerns that exploration results in holes, pits and even quarries that will endanger the domestic and wild animals. There is also a concern that the chemicals used are a safety hazard – Daniel Rusberg</p>	<p>As part of the requirement of the environmental management plan, rehabilitation of any invasive exploration activities is required by the company – Philip Hooks</p>
<p>The concerns are that should the results of the exploration be very positive then mining will be the next step. What will the mine layout look like, isolated areas or consolidated in one area? What will the life of mine be? This will have impacts on business. There will be uncertainties about the future and viability of the farms and the business they generate</p>	<p>These are valid concerns. To provide for a robust assessment of the impacts it will be beneficial if each farmer / member of the trust could provide relevant information about their farms that provides a baseline for the agricultural and touristic environment that you wish to preserve. – Philip Hooks</p>

**REPUBLIC OF NAMIBIA****MINISTRY OF AGRICULTURE, WATER AND FORESTRY**

Tel: (061) 2087555  
Fax: (061) 221733  
Email: Joseph.Amunime@mawf.gov.na

Office of the Permanent Secretary  
Government Office Park  
Private Bag 13184  
WINDHOEK

*Enquiries: Ms L. Afrikaner*  
Tel: (061) 208 7172

**Phillip Hooks**  
Environmental Specialist/EIA Project Coordinator  
Gecko Namibia

Dear Mr. Hooks

**SUBJECT: NOTIFICATION OF THE EIA PROJECT FOR EPL6440 IN ERONGO REGION**

Your letter dated 10 November 2017 from your office bears reference and is hereby acknowledged.

The Department of Water Affairs and Forestry (DWAF) in the Ministry of Agriculture, Water and Forestry has gone through the notification of the EIA project for EPL6440 in the Erongo region. In view of providing comments to the EIA document in terms of projects activities which falls within the mandate of the Directorate of Water Resources Management (DWRM), the comments are attached herewith.

Sincerely,

  
Percy W. Misika  
PERMANENT SECRETARY  
Ministry of Agriculture, Water & Forestry

**EIA FOR THE PROPOSED FOR EPL6440 IN ERONGO REGION**  
**RESPONSE SHEET FOR INTERESTED AND AFFECTED PARTIES**

Participant 1. Name: Laurica Afrikaner	Organization: Ministry of Agriculture, Water and Forestry: Water Environment Division
Position: Hydrologist	Telephone: 061-2087172
Fax: 061-2087160	E-mail: Laurica.Afrikaner@mawf.gov.na
Comments/Suggestions/Questions	
<b>DIRECTORATE OF WATER AFFAIRS AND FORESTRY</b>	
<b><u>GENERAL COMMENTS</u></b>	
<ul style="list-style-type: none"> <li>• How many sealed septic tanks will be used or build for the ablution facilities on the site and for what population.</li> </ul>	
<b><u>OVERALL COMMENTS</u></b>	
Please find below conditions for building a septic tank	
<ul style="list-style-type: none"> <li>• The system as a whole shall be operated in such a manner that no health hazards, nuisances or pollution of surface or underground water occurs.</li> <li>• No intractable or toxic waste shall be allowed to find its way into the septic tanks.</li> <li>• All septic tank facilities must be constructed in accordance with the Namibian code of practice for septic tanks.</li> <li>• Septic tanks may be constructed of any suitable non-corrosive material in order to provide an average retention period of twenty-four hours. The compartments of the septic tank must be covered by a lid.</li> <li>• Septic tank construction shall incorporate a vertical baffle to enhance the removal of sludge and floating material, and a manhole to facilitate desludging.</li> <li>• Satisfactory methods shall be used for the removal and disposal of grit, screenings, floating debris and sludge. None of these products shall be disposed of to any person for any purpose.</li> <li>• No borehole, dwelling or occupied building shall be allowed within 500 meters of the nearest septic tank.</li> </ul>	

Philip Hooks  
Environmental Specialist / EIA Project Coordinator  
Gecko Namibia

Permanent Secretary  
c/o Ms. Saima Amadhila  
Ministry of Agriculture, Water & Forestry

10<sup>th</sup> November 2017

**RE: NOTIFICATION OF THE EIA PROJECT FOR EPL6440 IN THE ERONGO REGION**

Dear Permanent Secretary

I have been tasked to undertake an **Environmental Impact Assessment (EIA)** in terms of the Environmental Management Act (No 7 of 2007) and the EIA Regulations (Government Notice No. 30 of 2012). Notice is hereby given to all potential interested and affected parties that an application will be made to the Environmental Commissioner for an **environmental clearance (EC)** for prospecting activities within Exclusive Prospecting Licence (EPL) 6440. The EPL have been granted to Gecko Gold Mining (Pty) Ltd but no prospecting activities may start until EC has been issued by the Ministry of Environment & Tourism. The EPL is located within the Erongo Region over the Erongo Mountain area.

Public consultation in the form of two public meetings took place on the 1<sup>st</sup> November 2017.

1. The first meeting took place at **Usab Community Hall** in Karibib at 2pm
2. The second meeting took place at **Omaruru Rest Camp** in Omaruru at 6pm

I have consulted with members of your ministry. Namely, Mr. Usurua from the Water Directorate in Karibib and Mr. Venomukona from the Agriculture Directorate in Omaruru and Mr. Amadhila from the Forestry Directorate in Otjiwarongo.

I have included the **Background Information Document (BID)** and public meeting presentation with the email. The BID provides maps showing the location of the claims.

You are hereby officially invited to share any comments, issues or concerns related to the mining activity. These same comments, issues and concerns will be considered in the **EIA Report** and **Environmental Management Plan** if relevant to environmental issues.



Yours sincerely



**FISHER, QUARMBY & PFEIFER**  
 ATTORNEYS NOTARIES CONVEYANCERS • RECHTSANWÄLTE NOTARIE GRUNDBUCHANWÄLTE • PROKUREURS NOTARISSE AKTEVERVAARDIGERS  
 C/o Robert Mugabe Avenue and Thorar Street, Entrance at 43 Burg Street, Windhoek. PO Box 37, Windhoek, Namibia  
 Tel: 00264-61-233 171/4 Fax: 00264-61-228 286 Email: monique@fqp.com.na

YOUR REF:

OUR REF.:JR/mvz/238470

DATE: 31 October 2017

Gecko Gold Mining (Pty) Ltd  
 No. 8 Sinclair Street  
 Windhoek  
 Namibia

Att: Mr Philip Hooks  
 Fax: 061 225 304

Dear Sir,

**RE: ERONGO GOLD PROSPECTING**

We have been instructed by our client, The Trustees for the time being of the Erongo Mountain Rhino Sanctuary Trust of Namibia ("the Trust") to address this letter to you.

Our instructions are that you will be making an application to the Environmental Commissioner for an environmental clearance for prospecting activities within Exclusive Prospecting License 6440 area.

EPC 6440 is situated to a large extent over Farms that comprise the Erongo Mountain Rhino Sanctuary Trust ("EMRST"). For back-ground information on the Erongo Mountain Rhino Sanctuary Trust and their activities, please find attached hereto our prospect and visit their website under [www.erongomountains.org](http://www.erongomountains.org).

In addition to being home to rare and in the case of the black rhino highly endangered animals, the farms that make up the EMRST are all used for the purpose of tourism and the protection and conservation of the animals and plant species occurring within the area of the EMRST.

Any prospecting and mining activity would drastically affect the safety and well-being of the rhino population, as well as the business of farm owners comprising the EMRST.

Our instructions are therefore to inform you as well as the relevant Ministries that our client objects to any and all prospecting activities on land that forms part of the Erongo Mountain Rhino Sanctuary Trust.

Our clients rights remain strictly reserved.

Yours faithfully

**FISHER, QUARMBY & PFEIFER**

PER: JENS ROLAND

PARTNERS  
 GRAHAM STUART McCULLOCH, CHRISTIAAN JOHAN GOUWS, ADRIANA JACOBA VAN DER MERWE  
 FLORIS PETRUS COETZEE, ALWYN ABRAHAM HARMSE, LEIGH-ANNE AGNEW, JENS ROLAND

ASSISTED BY  
 JEROME GAYA, SEAN VINCENT McCULLOCH, CAITLIN QUINN



## APPENDIX C: DRAFT ENVIRONMENTAL MANAGEMENT PLAN FOR GECKO GOLD MINING (PTY) LTD WITHIN EPL 6440

The Environmental Management Plan (EMP) describes the processes that Gecko Gold Mining (Pty) Ltd will follow to maximize compliance and minimize harm to the environment. This plan will also help to map out progress towards achieving continual improvements.

The main objectives of the Environmental Management Plan are to:

- Minimize adverse impacts on the environment;
- Protect the environmental quality of the site;
- Meet the requirements of all national and local legislations;
- Provide detailed specifications for the management and mitigation of activities that have the potential to impact negatively on the environment.
- To set out the roles and responsibilities of all role-players with regard to environmental management;
- To specify rehabilitation requirements;
- To establish monitoring requirements to ensure that all staff members on site comply with the Environmental Specifications. One of the senior geological team members on site should be designated to perform this function on a day-to-day basis.

The company will emphasize that all staff are aware of the DOs and DON'Ts applicable to this project and its location.

**Table 13: Draft summary of Environmental Management Plan**

Environmental Impacts	Mitigation Measures	Monitoring / Action & Methods	Responsibilities	Resources required for Implementation
Ecology	<ul style="list-style-type: none"> <li>➤ No killing of animals</li> <li>➤ Avoid nesting birds</li> <li>➤ Where possible no destruction of plants</li> <li>➤ Avoid highly sensitive environments or minimise footprint in high priority areas</li> <li>➤ Keep to existing tracks (vehicular, animal)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Awareness training regarding the sensitive nature of the EMRST must be provided to all staff.</li> <li>➤ The poaching of critically endangered species such as the black rhino is prohibited. The presence of drilling personnel within the EMRST</li> </ul>	Site manager, HSE Officer, team leaders, all workers	<ul style="list-style-type: none"> <li>➤ Taxa checklists and mapped conservation areas.</li> <li>➤ Permits for bush clearing for roads and drill pads.</li> </ul>

	<ul style="list-style-type: none"> <li>➤ All waste and scrap to be removed</li> <li>➤ Rehabilitate sites by gently raking disturbed soil substrate to remove evidence of heavy vehicles.</li> </ul>	<p>cannot in anyway jeopardise the security measures taken to safeguard the population of the rhinos within the EMRST. – background checks with the Namibian Police for personnel is recommended</p> <ul style="list-style-type: none"> <li>➤ Photograph before and after exploration activities.</li> </ul>		
Dust & Noise	<ul style="list-style-type: none"> <li>➤ Dust suppression techniques if necessary (drive slowly)</li> <li>➤ PPE to reduce noise</li> <li>➤ Maintenance of machinery to reduce noise</li> </ul>	<ul style="list-style-type: none"> <li>➤ Report on health of personnel</li> <li>➤ Scheduled maintenance reported</li> </ul>	Site manager	Equipment (incl. PPE) and Tools
Water consumption	<ul style="list-style-type: none"> <li>➤ Minimize use and loss</li> <li>➤ Check container piping and taps regularly for leakage</li> </ul>	<ul style="list-style-type: none"> <li>➤ Awareness training</li> <li>➤ Periodic inspections by superiors</li> <li>➤ Monitor expenses</li> </ul>	All workforce and management	Abstraction permit if necessary
Land Use	<ul style="list-style-type: none"> <li>➤ Awareness of proximity to major tourist attraction of the country</li> <li>➤ Minimize visual blemish</li> <li>➤ Kindliness of the workers</li> <li>➤ Avoid conflict with tourism sector</li> </ul>	<ul style="list-style-type: none"> <li>➤ Awareness training</li> <li>➤ Periodic inspections by superiors</li> </ul>	All workforce and management	Funds to conduct a cleaning up program in the area (rehabilitation)
Waste	<ul style="list-style-type: none"> <li>➤ Removal of litter</li> <li>➤ Careful use and storage of chemicals</li> <li>➤ Oil adsorbing materials available in workshop and all vehicles at all times</li> </ul>	<ul style="list-style-type: none"> <li>➤ Awareness training</li> <li>➤ Periodic inspections by superiors</li> <li>➤ Implementation of cleaning up program</li> </ul>	All workforce and management	Funds set up and implement training courses Funds to conduct a cleaning up program in the area
Fuel storage and potential pollution	<ul style="list-style-type: none"> <li>➤ Temporary fuel storage facility erected on site shall comply with</li> </ul>	<ul style="list-style-type: none"> <li>➤ Awareness training</li> <li>➤ Periodic inspections by superiors</li> </ul>	Site manager	Gecko will provide for safe fuel storage and handling at an approved

	<p>specification for storage and handling of petroleum products;</p> <ul style="list-style-type: none"> <li>➤ Tanks shall be placed on a concrete slab, allowing sumps for containment of spillage</li> </ul>			<p>maintenance site. Temporary customer installation certificate from MME</p>
Workers conduct	<ul style="list-style-type: none"> <li>➤ Training</li> <li>➤ Fines/penalties for lack of compliance</li> </ul>	<ul style="list-style-type: none"> <li>➤ Constant monitoring to ensure compliance</li> </ul>	Team leaders and workers foreman	<p>Training manual and time set aside for training Procedures Manual for drilling.</p>
Health & Safety	<ul style="list-style-type: none"> <li>➤ Follow procedures</li> <li>➤ Wear correct PPE</li> </ul>	<ul style="list-style-type: none"> <li>➤ HSE officer to check that procedures are followed</li> <li>➤ Compliancy reports submitted</li> </ul>	HSE Officer & site manager	<p>Emergency Response Plans, First Aid kits and first aid trained personnel.</p>