



# MEOB BAY TOURISM DEVELOPMENT

## Environmental Management Plan Report

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This EMP is extracted from the EIA for the purpose of the digital submission on the MEFT online portal. Both reports should be read together to provide a holistic understanding.

## **MEOB BAY TOURISM DEVELOPMEN**

# **ENVIRONMENTAL MANAGEMENT PLAN**

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1	Issued as Draft	October 2019
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## ABBREVIATIONS

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AIDS	Acquired Immune Deficiency Syndrome
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
HIV	Human Immunodeficiency Virus
km	kilometres
km/h	kilometres per hour
m	metre
m/s	metres per second
MCA	Meob Concession Area
MEFT	Ministry of Environment, Forestry and Tourism
NAMAB	Namibian Affirmative Management and Businesses (Pty) Ltd
NHC	National Heritage Council of Namibia
NNP	Namib-Naukluft National Park
PPE	Personal Protective Equipment
STI	Sexually Transmitted Infections
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VHF	Very High Frequency

# 1 INTRODUCTION

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## 1.1 PROJECT OVERVIEW

Meob Bay is located within the Namib Naukluft Park on the west coast of Namibia (Hardap Region). The proposed site is approximately 240 kilometres south of Walvis Bay and 270 km north of Lüderitz (Figure 1).

The proposed project includes the construction and operation of a lodge near Meob Bay. The project will also include upgrades to an existing and operational tented camp, approximately 3.7 km from the proposed lodge site. It is expected that most guests will fly to the airstrip at Fischersbrunn and be transported to the lodge by 4x4 vehicle on the tracks already established. Access to the lodge can also be gained from Lüderitz, Kanaan, Elim and Walvis Bay.

The applicant for the project is Namibian Affirmative Management and Businesses (NAMAB) (Pty) Ltd. NAMAB was established in 2009 to uplift the quality of life for the people of the south of Namibia by providing work opportunities and opportunities for skills transfer.

The NAMAB concession area covers approximately 25 000 square kilometres (km<sup>2</sup>) of pristine Namib Dessert which incorporates the coastline from Sylvia Hill to Conception Bay, and inland towards Solitaire in the north to the Kanaan gate in the south.

Since the signing of the agreement, NAMAB has offered exclusive eco-adventures via the three different access routes and constructed a semi-permanent eco-tented camp near Meob Bay. Due to the success of the tourism activities, and in order to cater for clients that require higher class accommodation, NAMAB is proposing to upgrade the facilities of this tourism development as described within the EIA Report.



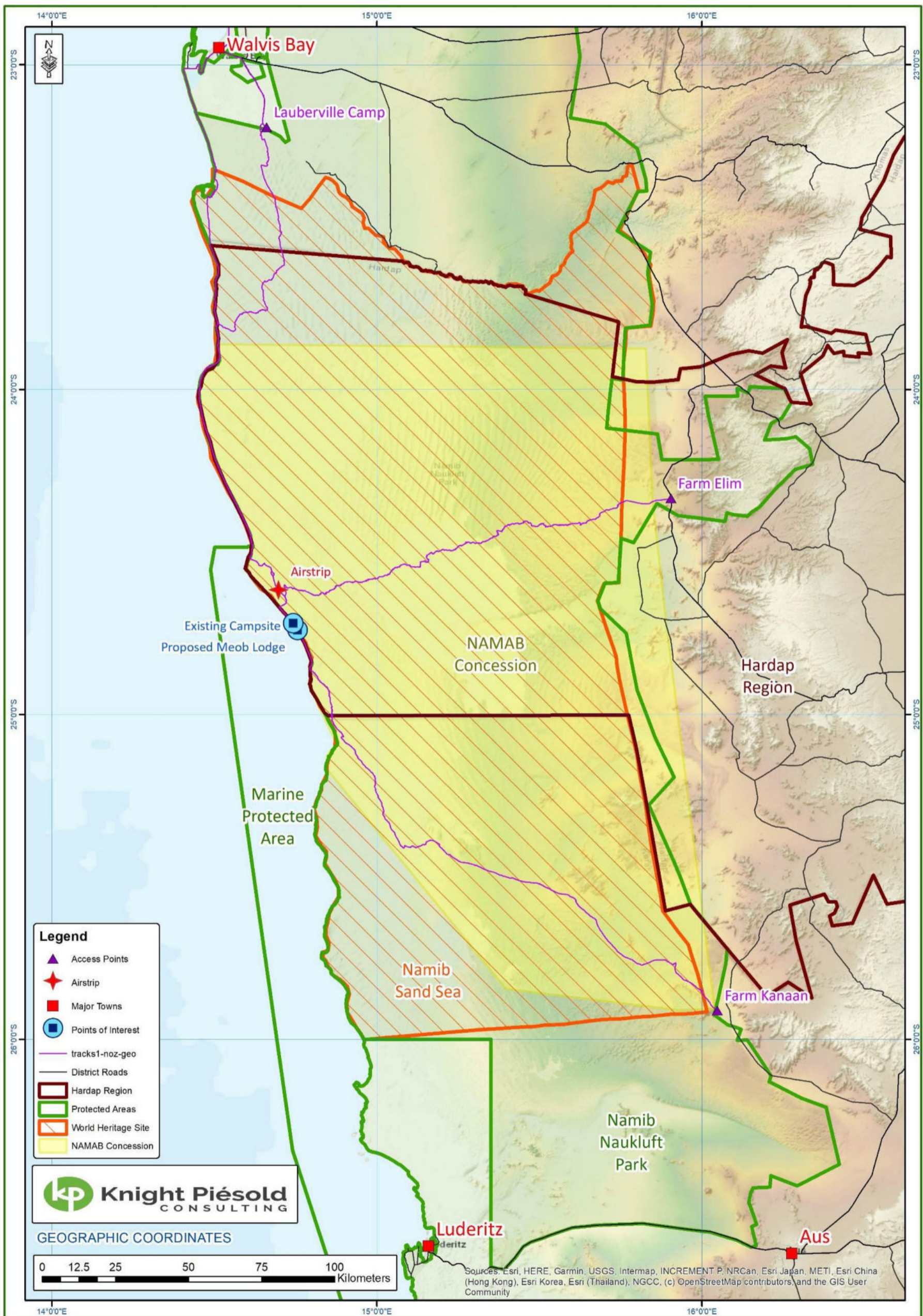


Figure 1: Project location



## 2 ENVIRONMENTAL MANAGEMENT PLAN

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The Environmental Management Plan (EMP) summarises the mitigation and management actions outlined in the EIA. This is done in order to streamline the implementation and monitoring thereof.

The applicant is to ensure full compliance not only with this EMP but also with all Namibian Legislation, and as far as possible all best practice guidelines.

The EMP is split into a Construction, Operation and Decommissioning Phase, in Table 1, Table 2 and Table 3 respectively.

**Table 1: Environmental Management Plan - Construction Phase**

Project activity or issue	Potential impact	Mitigating action
<i>Land use &amp; Aesthetics</i>		
Construction activities	Change of land use	<ul style="list-style-type: none"> <li>• Ensure that sense of place is kept as natural as possible by minimising the footprint and designing and operating facilities that blend in with the natural surrounds.</li> <li>• Keep construction phase as short as possible.</li> </ul>
Construction activities	Visual / aesthetic impact	<ul style="list-style-type: none"> <li>• Ensure that the outer shell of any structure blends with the surrounding environment.</li> <li>• Ensure that visitor accommodation enhances the "sense of place" attraction of the Concession Area.</li> <li>• Site staff quarters, storage facilities, maintenance area and other support facilities away from and out of sight of visitor facilities bearing in mind prevailing weather conditions.</li> <li>• Avoid light pollution, direct lights downwards and avoid floodlighting where feasible.</li> </ul>
Installation linear infrastructure (pipelines / power lines)		<ul style="list-style-type: none"> <li>• Align linear infrastructure together (where feasible) and bury them underground.</li> </ul>
Installation of communication networks / masts		<ul style="list-style-type: none"> <li>• Avoid installation of infrastructure at high points to hide them from view where feasible.</li> </ul>
<i>Soil</i>		
Construction activities	Hazardous spillage	<ul style="list-style-type: none"> <li>• Store hazardous substances in appropriately bunded areas.</li> <li>• Use a drip-tray when refuelling vehicles or machinery.</li> <li>• If a spillage occurs, clean it up immediately and dispose soil at an appropriate site (Walvis Bay) as hazardous waste.</li> </ul>
<i>Fauna</i>		
Construction activities	Loss / Disturbance of fauna	<p><b>Lodge area &amp; camp site:</b></p> <ul style="list-style-type: none"> <li>• Construct the chalets between the <i>Salsola nollothensis</i> and <i>Cladoraphis cyperoides</i> hummocks for least impact on vertebrate species favouring these areas (e.g. reptiles and small mammals) – i.e. do not destroy this habitat. Incorporating these hummocks into the Lodge layout would furthermore contribute to the overall desert ambiance of the facility.</li> <li>• Prevent and discourage indiscriminate killing of perceived dangerous species (e.g. snakes, etc.) as this would diminish and negatively affect the local fauna. No form of poaching, illegal collecting of veld foods (e.g. bird eggs, etc.), etc. should be tolerated, especially during the construction phase.</li> <li>• Remove and relocate perceived dangerous species (e.g. snakes) to similar undisturbed habitats in the general area.</li> <li>• Initiate a suitable and appropriate refuse removal policy as littering could result in certain animals becoming</li> </ul>



Project activity or issue	Potential impact	Mitigating action
		<p>accustomed to humans and associated activity and result in typical problem animal scenarios – e.g. crows, black-backed jackal, brown hyena, various gulls, etc.</p> <ul style="list-style-type: none"> <li>• When observing Damara Terns or shorebirds displaying behaviour that indicates the presence of a nest nearby (e.g. mobbing or alarm call behaviour by parent birds, birds acting injured to distract attention from their nest), avoid the nest and a 100 m radius until nesting has clearly been concluded.</li> <li>• Use only existing tracks/roads when travelling in the area.</li> <li>• Implement and maintain track discipline limited to pre-determined tracks with maximum speed limits (e.g. 40 km/h) as this would result in fewer faunal road mortalities and overall destruction of vegetated areas which serve as habitat to a variety of fauna.</li> <li>• Avoid off road driving in areas prone to scarring (e.g. gravel/gypsum/salt plains/flats/pans). Avoid nocturnal driving, as this result in the destruction of slow-moving fauna – e.g. various reptiles and other nocturnal species.</li> <li>• Rehabilitate all new tracks, construction site(s), temporary accommodation site(s), etc.</li> <li>• Avoid and/or limit the use of lights during nocturnal activities as this influence and/or affects various nocturnal species – e.g. especially migrating Palearctic birds, bats, owls, etc. and contribute to “light pollution”. Use focused lighting for least effect.</li> <li>• Install a suitable contained sewerage system for the least impact on the environment and ensure that a risk strategy is in place to contain potential operational problems.</li> <li>• Initiate a suitable and appropriate refuse removal policy as littering could result in certain animals becoming accustomed to humans and associated activity and resulting typical problem animal scenarios – e.g. crows, black-backed jackal, brown hyena, etc.</li> <li>• Prevent using driftwood and other firewood sourced throughout the area, but rather source firewood from outside the Park, especially invasive alien species such as <i>Prosopis</i> spp..</li> <li>• Prohibit domestic pets – e.g. cats and dogs – accompanying, workers/staff/tourists as they cause considerable damage to the local fauna. Cats also interbreed and transmit diseases to the indigenous African wildcat found in the area while dogs could transmit canine diseases to brown hyena. The indiscriminate and wanton killing of the local fauna by such pets should be avoided at all cost.</li> <li>• No animal (marine or terrestrial) may be injured, fed, trapped, hunted or harmed in any way.</li> <li>• Limit water abstraction so as not to impact negatively on the groundwater recharge and consequently the associated vegetation which would affect vertebrate species dependent thereon.</li> <li>• Educate/inform contractors and staff on dangerous (e.g. snakes) and protected species (e.g. brown hyena) to avoid and the consequences of killing and/or illegal collection of such species. Liaise with the Ministry of Environment and Tourism (MET) to provide this service as the area is within the NNP and United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site.</li> </ul>
Flora		
Construction activities	Loss / Disturbance of flora	<b>Important areas:</b>

Project activity or issue	Potential impact	Mitigating action
		<ul style="list-style-type: none"> <li>• Avoid off road driving on gravel and gypsum plains.</li> <li>• Avoid off road driving on salt pans.</li> <li>• Avoid overexploiting and/or contaminating any and all water sources throughout the area as this will ultimately affect the vegetation, especially the extensive stands of <i>Cladoraphis cyperoides</i> and <i>Odyssea paucinervis</i> which in turn provide habitat and serve as a source of food for a variety of vertebrates.</li> <li>• Although there are no !Nara in the proposed development area, the northern access route from Walvis Bay passes patches of these plants in the Sandwich Harbour area and these should be avoided.</li> </ul> <p><b>Lodge area and camp site:</b></p> <ul style="list-style-type: none"> <li>• Construct the chalets between the <i>Salsola nollothensis</i> and <i>Cladoraphis cyperoides</i> hummocks for least impact on flora – i.e. do not destroy this habitat. Incorporating these hummocks into the Lodge layout would furthermore contribute to the overall desert ambiance of the facility.</li> <li>• Prevent and discourage illegal collection of flora (e.g. unique bulbs potentially occur in the area and only visible of periodic rain showers) as this would diminish and negatively affect the local flora.</li> <li>• Use only existing tracks/roads when travelling in the area.</li> <li>• Implement and maintain track discipline limited to pre-determined tracks with maximum speed limits (e.g. 40 km/h) as this would result in less dust pollution and overall destruction of vegetated areas which serve as habitat to a variety of fauna.</li> <li>• Avoid off road driving in areas prone to scarring (e.g. gravel/gypsum/salt plains/flats/pans) or dominated by lichens.</li> <li>• Prevent the planting of potentially alien invasive plant species (e.g. <i>Tecoma stans</i>, <i>Pennisetum setaceum</i>, etc.) for ornamental purposes as part of the landscaping (e.g. around Lodge, staff accommodation, etc.) should this be thought necessary. Alien species often “escape” and become invasive causing further ecological damage.</li> <li>• Implement a policy of “no tolerance” towards any invasive alien plant species encountered in future in the area. This should include the removal and destruction of these species throughout the proposed development areas.</li> <li>• If any landscaping is to be undertaken, incorporate only indigenous vegetation.</li> <li>• Limit water abstraction so as not to impact negatively on the groundwater recharge and consequently the associated vegetation which would affect vertebrate species dependent thereon.</li> <li>• Monitor water levels.</li> <li>• Educate/inform contractors and staff on protected species to avoid and the consequences of illegal collection of such species. Liaise with MET to provide this service as the area is within the NNP and UNESCO World Heritage Site.</li> <li>• Prohibit the use of any pesticides or herbicides.</li> </ul>

Project activity or issue	Potential impact	Mitigating action
<i>Marine Resources</i>		
Construction team on site	Exploitation of marine resources	<ul style="list-style-type: none"> <li>Any fishing by construction workers will be strictly prohibited.</li> </ul>
<i>Socio-economic</i>		
Construction activities	Job opportunities	<ul style="list-style-type: none"> <li>Appoint local contractor(s) and workers from the Hardap Region for the construction activities</li> </ul>
Construction activities	Health and Safety of Construction workers	<ul style="list-style-type: none"> <li>Implement the requirements of the Labour Act 11 of 2007 (as amended) to ensure the health and safety of workers and visitors.</li> <li>Develop and implement a Health and Safety Plan before construction and continue implementation during operation</li> <li>Provide training to all workers prior to starting work.</li> <li>Ensure that the contractor has a Human Immunodeficiency Virus (HIV) /Acquired Immune Deficiency Syndrome (AIDS) Policy and Programme and Health and Safety Plan is in place for their workers.</li> </ul>
<i>Archaeology</i>		
Construction Activities	Damage or destruction of shell middens	<ul style="list-style-type: none"> <li>Engage with the NHC regarding the proposed project.</li> <li>The lodge location should be at least 500 m from any or the middens, to prevent physical disturbance and to exclude the lodge from the immediate landscape setting of the sites.</li> <li>Also proposed is an archaeological exclusion zone measuring approximately 170 ha, with a boundary length of 6.8km. It is proposed that this area should be completely closed, most especially to vehicle traffic.</li> </ul>
Construction Activities	Destruction of other	<ul style="list-style-type: none"> <li>Educate all staff on the provisions of the National Heritage Act 27 of 2004 with regard to the protection of all archaeological sites and the need to report any new finds.</li> <li>Should a possible or suspected site be discovered (e.g. a grave), immediately stop work, cordon the area off and photograph the area/site; immediately inform the project manager/supervisor, and contact an Archaeologist and the NHC of Namibia.</li> <li>Under no circumstances are archaeological and/or cultural heritage sites to be disturbed or any relics to be removed from such a site.</li> <li>Appoint an archaeologist to supervise and monitor development activities to ensure that no unnecessary destruction takes place.</li> </ul>
<i>Air Quality</i>		
Construction of Lodge	Increase in carbon emissions from construction vehicles and incinerator	<ul style="list-style-type: none"> <li>Undertake necessary maintenance on vehicles and equipment and keep a maintenance record.</li> <li>Incinerators "donkeys" used to burn waste and heat water should only burn biodegradable (paper-based) waste.</li> </ul>
Construction of Lodge	Increase in dust	<ul style="list-style-type: none"> <li>Implement speed limits of 40 km/h</li> </ul>

Project activity or issue	Potential impact	Mitigating action
		<ul style="list-style-type: none"> <li>• Provide personal protective equipment (PPE) to construction workers to prevent or minimise dust inhalation from construction activities.</li> </ul>
<i>Noise</i>		
Construction of Lodge	Generation of noise (e.g. vehicle and building noise)	<ul style="list-style-type: none"> <li>• Limit travelling speed of all vehicles and machinery to 40 km/h.</li> <li>• Undertake necessary maintenance on vehicles and equipment and keep a maintenance record.</li> </ul>
<i>Surface and Groundwater</i>		
Construction activities	Impact on surface and groundwater	<ul style="list-style-type: none"> <li>• Limit water abstraction so as not to negatively affect any spring, fountain, wetland, seep or any other natural water source in the concession area.</li> <li>• Restrict water usage to a maximum of 100 litres per occupied visitor bed per day and a maximum of 100 litres per staff member per day.</li> <li>• Prohibit sourcing of water into the Park via a pipeline from east of the Park border.</li> <li>• Install adequate meters for monitoring compliance to the above limits.</li> <li>• Undertake all laundry well outside the Park.</li> <li>• Implement proper pollution control measures.</li> <li>• Immediately clean up all accidental pollution (oil spills, diesel spills etc.)</li> </ul>
<i>Waste Management</i>		
Construction activities	Various environmental impacts	<ul style="list-style-type: none"> <li>• Minimise the creation of waste at source.</li> <li>• Prioritise solid waste recycling, separation at source and safe disposal of unavoidable waste.</li> <li>• Remove all solid waste from the Park to the Walvis Bay Landfill Site.</li> <li>• Provide suitable waste storage and separation facilities that are fully enclosed and inaccessible by any wildlife.</li> <li>• Ensure that waste storage containers have lids to prevent wind dispersal of waste.</li> <li>• Burn biodegradable waste and paper waste products in a suitable incinerator.</li> <li>• Prohibit the burning of plastic or rubber or any of their derivatives, styrofoam products, or any waste fuel or lubricants.</li> <li>• Remove all ash and other waste to the Walvis Bay Landfill Site in appropriate sealed containers or bags on a monthly basis.</li> <li>• Minimise the impact of liquid waste on the natural environment in general, and on both surface and groundwater resources in particular.</li> <li>• Install a plastic septic tank system at the temporary construction camp.</li> <li>• Prohibit the disposal of sewerage into the sea or water resources</li> </ul>

Project activity or issue	Potential impact	Mitigating action
		<ul style="list-style-type: none"> <li>Remove toxic and hazardous effluent to Walvis Bay Landfill Site.</li> </ul>
<i>Tracks vehicles and driving</i>		
Driving to and from site as part of construction process	Various environmental impacts	<ul style="list-style-type: none"> <li>Only use existing roads and tracks in the concession area, and no new track, road or airstrips may be laid out without the prior written permission of the MET.</li> <li>Maintain and repair the track network if necessary.</li> <li>Adhere to the speed limit of 40 km/h in the Concession Area.</li> </ul>

**Table 2: Environmental Management Plan – Operational Phase**

Project activity or issue	Potential impact	Mitigating action
<i>Land use &amp; Aesthetics</i>		
Operation of Lodge and tented camp	Change of land use	<ul style="list-style-type: none"> <li>Keep the sense of place as natural as possible.</li> </ul>
Use of lights	Visual impact	<ul style="list-style-type: none"> <li>Avoid light pollution, direct lights downwards and avoid floodlighting where feasible.</li> </ul>
<i>Soil</i>		
Operation of Lodge and camp	Hazardous spillage	<ul style="list-style-type: none"> <li>Store hazardous substances in appropriately bunded areas.</li> <li>Use a drip-tray when refuelling vehicles or machinery.</li> <li>If a spillage occurs, clean it up immediately and dispose soil at an appropriate site as hazardous waste.</li> </ul>
<i>Fauna</i>		
Operation of Lodge	Loss / Disturbance of fauna	<p><b>Lodge area &amp; camp site:</b></p> <ul style="list-style-type: none"> <li>Prevent and discourage indiscriminate killing of perceived dangerous species (e.g. snakes, etc.) as this would diminish and negatively affect the local fauna.</li> <li>Prevent and discourage all forms of poaching, illegal collecting of veld foods (e.g. bird eggs).</li> <li>Remove and relocate perceived dangerous species (e.g. snakes) to similar undisturbed habitats in the general area.</li> <li>Initiate a suitable and appropriate refuse removal policy as littering could result in certain animals becoming accustomed to humans and associated activity and result in typical problem animal scenarios – e.g. crows, black-backed jackal, brown hyena, various gulls, etc.</li> <li>When observing Damara Terns or shorebirds displaying behaviour that indicates the presence of a nest nearby (e.g. mobbing or alarm call behaviour by parent birds, birds acting injured to distract attention from their nest), avoid the nest and a 100 m radius until nesting has clearly been concluded.</li> <li>Schedule the beach driving trips to coincide with the receding tide, i.e. driving should occur only 2-</li> </ul>



Project activity or issue	Potential impact	Mitigating action
		<p>3 hours either side of the low tide.</p> <ul style="list-style-type: none"> <li>• Maintain a buffer of at least 25 m and a vehicle speed slower than 30 km/h around roosting or feeding shorebirds.</li> <li>• If necessary, stop to allow large groups of roosting or foraging birds to move away from approaching vehicles and to take flight without causing a mass stampede.</li> <li>• Maintain a buffer of at least 100 m and a vehicle speed of slower than 30 km/h around seal colonies or haul-out sites, allowing seals to move away from approaching vehicles towards the ocean without causing a mass stampede.</li> <li>• Consider imposing a seasonal closure during periods critical to the life cycle of vulnerable coastal bird species. This would concurrently provide opportunity to allow impacted macroinvertebrates to recover.</li> <li>• Lodge guests may not undertake any recreational fishing or bait collection whilst in the area.</li> <li>• Make use of existing tracks/roads as much as possible throughout the area.</li> <li>• Implement and maintain track discipline limited to pre-determined tracks with maximum speed limits (e.g. 40 km/h) as this would result in fewer faunal road mortalities and overall destruction of vegetated areas which serve as habitat to a variety of fauna.</li> <li>• Avoid off road driving in areas prone to scarring (e.g. gravel/gypsum/salt plains/flats/pans).</li> <li>• Avoid night-time driving as this may result in the accidental deaths of slow-moving fauna – e.g. various reptiles and other nocturnal species.</li> <li>• Avoid and/or limit the use of lights during nocturnal activities as this influence and/or affects various nocturnal species – e.g. especially migrating Palaearctic birds, bats, owls, etc. and contribute to “light pollution”. Use focused lighting for least effect.</li> <li>• Initiate a suitable and appropriate refuse removal policy as littering could result in certain animals becoming accustomed to humans and associated activity and resulting typical problem animal scenarios – e.g. crows, black-backed jackal, brown hyena, etc.</li> <li>• Prevent using driftwood and other firewood sourced throughout the area, but rather source firewood from outside the park, especially invasive alien species such as <i>Prosopis spp.</i></li> <li>• Prohibit domestic pets – e.g. cats and dogs – accompanying, workers/staff/tourists as they cause considerable damage to the local fauna. Cats also interbreed and transmit diseases to the indigenous African wildcat found in the area while dogs could transmit canine diseases to brown hyena. The indiscriminate and wanton killing of the local fauna by such pets should be avoided at all cost.</li> <li>• Prohibit the injury, feeding, trapping, hunting or harming of marine and terrestrial animals in any way.</li> <li>• Be conservative with the abstraction of water so as not to impact negatively on the groundwater recharge and consequently the associated vegetation which would affect vertebrate species</li> </ul>

Project activity or issue	Potential impact	Mitigating action
		dependent thereon.
<i>Flora</i>		
Operation of Lodge	Loss / Disturbance of flora	<p><b>Important areas:</b></p> <ul style="list-style-type: none"> <li>• Avoid off road driving on gravel and gypsum plains.</li> <li>• Avoid off road driving on salt pans.</li> <li>• Avoid overexploiting and/or contaminating any and all water sources throughout the area as this will ultimately affect the vegetation, especially the extensive stands of <i>Cladoraphis cyperoides</i> and <i>Odyssea paucinervis</i> which in turn provide habitat and serve as a source of food for a variety of vertebrates.</li> <li>• Avoid the patches of !Nara in the northern access route from Walvis Bay in the Sandwich Harbour area.</li> </ul> <p><b>Lodge area and camp site:</b></p> <ul style="list-style-type: none"> <li>• Prevent and discourage illegal collection of flora (e.g. unique bulbs potentially occur in the area and only visible of periodic rain showers) as this would diminish and negatively affect the local flora.</li> <li>• Make use of existing tracks/roads as much as possible throughout the area.</li> <li>• Implement and maintain track discipline limited to pre-determined tracks with maximum speed limits (e.g. 40 km/h) as this would result in less dust pollution and overall destruction of vegetated areas which serve as habitat to a variety of fauna.</li> <li>• Avoid off road driving in areas prone to scarring (e.g. gravel/gypsum/salt plains/flats/pans) or dominated by lichens.</li> <li>• Prevent the planting of potentially alien invasive plant species (e.g. <i>Tecoma stans</i>, <i>Pennisetum setaceum</i>, etc.) for ornamental purposes as part of the landscaping (e.g. around Lodge, staff accommodation, etc.) should this be thought necessary. Alien species often “escape” and become invasive causing further ecological damage.</li> <li>• Implement a policy of “no tolerance” towards any invasive alien plant species encountered in future in the area. This should include the removal and destruction of these species throughout the proposed development areas. Such activity would be beneficial to the overall ecology of the areas.</li> <li>• Incorporate indigenous vegetation into the overall landscaping of the area (e.g. around Lodge, staff accommodation, etc.). This would create a natural ambiance while indigenous species require less water and overall maintenance.</li> <li>• Limit water abstraction so as not to impact negatively on the groundwater recharge and consequently the associated vegetation which would affect vertebrate species dependent thereon.</li> <li>• Monitor water levels and potential impacts on vegetation.</li> <li>• Prohibit the use of any pesticides.</li> </ul>
<i>Marine Resources</i>		

Project activity or issue	Potential impact	Mitigating action
Catch-and release fishing	Exploitation of marine resources	<ul style="list-style-type: none"> <li>Prohibit a fishing on site.</li> </ul>
<i>Socio-economic</i>		
Operation of Lodge and camp	Inability to maintain “five desert flower” rating	<ul style="list-style-type: none"> <li>Maintain the operations at a level of a 'five desert flower' rating in the Namibian Eco- wards System, or equivalent thereof, during the entire term of this Concession.</li> </ul>
Operation of Lodge and camp	Job opportunities	<ul style="list-style-type: none"> <li>Source employees of the lodge from the Hardap Region.</li> </ul>
Operation of Lodge and camp	Staff health and wellbeing	<ul style="list-style-type: none"> <li>Execute the project to be in full compliance with the Labour Act 11 of 2007 (as amended) to ensure the health and safety of workers and visitors.</li> <li>Ensure that an HIV/AIDS Policy and Programme and Health and Safety Plan is in place.</li> <li>Appoint a SHE (Safety, Health, Environment) Representative once the staff complement reaches 10.</li> <li>Prevent communicable disease (e.g. Sexually Transmitted Infections (STIs) such as HIV transmission) by providing active screening and treatment of employees; prevent illness among employees (through health awareness and education initiatives); ensure ready access to medical treatment, confidentiality and appropriate care.</li> </ul>
<i>Archaeology</i>		
Operation of Lodge and camp	Damage or destruction of shell middens	<ul style="list-style-type: none"> <li>Further engagement is required with the NHC regarding the proposed project.</li> <li>The lodge location should be at least 500 m from any or the middens, to prevent physical disturbance and to exclude the lodge from the immediate landscape setting of the sites.</li> <li>Also proposed is an archaeological exclusion zone measuring approximately 170 ha, with a boundary length of 6.8km. It is proposed that this area should be completely closed, most especially to vehicle traffic.</li> <li>Provide training to guides to explain cultural significance of the middens to visitors</li> </ul>
Operation of Lodge and camp	Destruction of other potential heritage features	<ul style="list-style-type: none"> <li>Make all staff aware of the provisions of the National Heritage Act 27 of 2004 with regard to the protection of all archaeological sites and the need to report any new finds.</li> <li>Stop work immediately if a possible or suspected site is discovered (e.g. a grave), , cordon the area off and photograph the area/site; immediately inform the project manager/supervisor, and contact an Archaeologist and the NHC of Namibia.</li> <li>Prohibit the removal of disturbance of archaeological and/or cultural heritage sites or relics.</li> </ul>
<i>Air Quality</i>		
Operation of Lodge and camp	Increase in carbon emissions from construction vehicles and incinerator	<ul style="list-style-type: none"> <li>Undertake necessary maintenance on vehicles and equipment and keep a maintenance record.</li> <li>Burn only biodegradable (paper-based) waste in incinerators “donkeys”.</li> </ul>
<i>Noise</i>		

Project activity or issue	Potential impact	Mitigating action
Operation of Lodge and camp	Generation of noise impacting wildlife	<ul style="list-style-type: none"> <li>• Limit travelling speed of operational vehicles to 40 km/h. Undertake necessary maintenance on vehicles and equipment and keep a maintenance record.</li> </ul>
<i>Surface and Groundwater</i>		
Operation of Lodge and camp	Impact on surface and groundwater	<ul style="list-style-type: none"> <li>• Limit water abstraction so as not to negatively affect any spring, fountain, wetland, seep or any other natural water source in the concession area.</li> <li>• Restrict water usage to a maximum of 100 litres per occupied visitor bed per day and a maximum of 100 litres per staff member per day.</li> <li>• Prohibit sourcing of water into the Park via a pipeline from east of the Park border.</li> <li>• Install adequate meters for monitoring compliance to the above limits.</li> <li>• Undertake all laundry well outside the Park.</li> <li>• Implement proper pollution control measures.</li> <li>• Immediately clean up all accidental pollution (oil spills, diesel spills etc.)</li> </ul>
<i>Waste Management</i>		
Operation of Lodge and camp	Various environmental impacts	<ul style="list-style-type: none"> <li>• Minimise the creation of waste at source.</li> <li>• Achieve waste minimisation by:               <ul style="list-style-type: none"> <li>– buying in bulk quantities</li> <li>– using refillable, bulk dispensers (e.g. toiletries) instead of individually packaged products</li> <li>– avoiding the use of polystyrene foam altogether</li> <li>– using glass/durable plastic rather than disposable plastic items such as straws and cups</li> <li>– providing in-room recycling procedures and appropriate receptacles.</li> </ul> </li> <li>• Use environmentally sensitive cleaning products, i.e. free of phosphates and Volatile Organic Compounds (VOCs)</li> <li>• Prioritise solid waste recycling, separation at source and safe disposal of unavoidable waste.</li> <li>• Remove all solid waste from the Park to the Walvis Bay Landfill Site</li> <li>• Ensure that there are suitable waste storage and separation facilities that are fully enclosed and inaccessible by any wildlife available.</li> <li>• Ensure that waste storage containers have lids to prevent wind dispersal of waste.</li> <li>• Burn biodegradable waste and paper products in a suitable incinerator.</li> <li>• Prohibit the burning of plastic or rubber or any of their derivatives, styrofoam products, or any waste fuel or lubricants.</li> <li>• Remove all ash and other waste to the Walvis Bay Landfill Site in appropriate sealed containers or bags on a monthly basis.</li> </ul>

Project activity or issue	Potential impact	Mitigating action
		<ul style="list-style-type: none"> <li>Minimise the impact of liquid waste on the natural environment in general, and on both surface and groundwater resources in particular.</li> <li>Install and maintain a proper sewerage treatment system.</li> <li>Prohibit the disposal of sewerage within the sea or watercourses.</li> <li>Comply with the Concessor's directives and/or regulations as regards waste and wastewater.</li> <li>Remove toxic and hazardous effluent to the Walvis Bay Landfill Site.</li> </ul>
<i>Tracks vehicles and driving</i>		
Driving by visitors and guides	Various environmental impacts	<ul style="list-style-type: none"> <li>Only use existing roads and tracks in the concession area, and no new track, road or airstrips may be laid out without the prior written permission of the MET.</li> <li>Maintain and repair the track network if necessary.</li> <li>Do not exceed the speed limit of 40 km/h anywhere in the Concession Area.</li> <li>Undertake beach driving visitor activities below the high-water mark.</li> <li>Develop a track maintenance plan for approval by the MET.</li> <li>Ensure that all safari drivers or other drivers employed by the Concessionaire are:               <ul style="list-style-type: none"> <li>skilled in desert driving conditions;</li> <li>obtain the relevant national qualification when it becomes available.</li> </ul> </li> <li>Ensure that all safari drivers or other drivers employed by the Concessionaire have a thorough knowledge of the track network and access routes authorised in terms of the Concession Contract.</li> </ul>
Forbidden Activities		
Activities by tourists	Various environmental impacts	<ul style="list-style-type: none"> <li>Prohibit the undertaking of the following activities by the Concessionaire, including its staff, invitees or clients in the Concession Area:               <ul style="list-style-type: none"> <li>The use of quadbikes, three wheelers, or any other sort of motor bike;</li> <li>The use of sand yachts, or other wind-propelled vehicles;</li> <li>Ballooning, paragliding, parasailing, hang-gliding, skydiving or any other air sport; and</li> <li>The use of microlights or helicopters or any other small plane for recreational purposes or visitor activities.</li> <li>The launching or use of boats of any description (rigid or inflatable) for recreational purposes or visitor activities.</li> <li>The planting or keeping of alien, exotic or any other vegetation not occurring locally or any vegetable or fruit variety in the Concession Area.</li> <li>The introduction or keeping of pets, livestock or pack animals.</li> <li>The keeping of wild animals of any description.</li> </ul> </li> </ul>



**Table 3: Environmental Management Plan – Decommissioning Phase**

Project activity or issue	Potential impact	Mitigating action
<i>Land use</i>		
Decommissioning activities	Change of land use	<ul style="list-style-type: none"> <li>Decommissioning activities to take no more than 40 days (in line with concession agreement).</li> </ul>
<i>Aesthetics</i>		
Decommissioning activities	Visual / aesthetic impact	<ul style="list-style-type: none"> <li>Return the project-area to its natural / wilderness state once the project has been decommissioned.</li> </ul>
<i>Soil</i>		
Decommissioning activities	Hazardous spillage	<ul style="list-style-type: none"> <li>Store hazardous substances in appropriately banded areas.</li> <li>Use a drip-tray when refuelling vehicles or machinery.</li> <li>If a spillage occurs, clean it up immediately and dispose soil at an appropriate site (Walvis Bay) as hazardous waste.</li> </ul>
<i>Fauna</i>		
Decommissioning activities	Loss / Disturbance of fauna	<ul style="list-style-type: none"> <li>Refer to the mitigation measures of the construction and operational phases relating to fauna.</li> </ul>
<i>Flora</i>		
Decommissioning activities	Loss / Disturbance of flora	<ul style="list-style-type: none"> <li>Refer to the mitigation measures of the construction and operational phases relating to flora.</li> </ul>
<i>Socio-economic</i>		
Decommissioning activities	Job opportunities	<ul style="list-style-type: none"> <li>Use local contractor(s) and workers from the Hardap Region for the decommissioning activities</li> </ul>
<i>Archaeology</i>		
Decommissioning activities	Damage or destruction of shell middens	<ul style="list-style-type: none"> <li>Take care to avoid midden sites during decommissioning activities.</li> </ul>
<i>Air Quality</i>		
Decommissioning activities	Increase in carbon emissions from decommissioning vehicles and incinerator	<ul style="list-style-type: none"> <li>Undertake necessary maintenance on vehicles and equipment and keep a maintenance record.</li> <li>Incinerators “donkeys” used to burn waste and heat water should only burn biodegradable (paper-based) waste.</li> </ul>
Decommissioning activities	Increase in dust	<ul style="list-style-type: none"> <li>Implement speed limits of 40 km/h</li> <li>Provide personal protective equipment (PPE) to decommissioning workers to prevent or minimise dust inhalation from construction activities.</li> </ul>
<i>Noise</i>		

Project activity or issue	Potential impact	Mitigating action
Decommissioning activities	Generation of noise (e.g. vehicle and building noise)	<ul style="list-style-type: none"> <li>• Limit travelling speed of all vehicles and machinery to 40 km/h.</li> <li>• Undertake necessary maintenance on vehicles and equipment and keep a maintenance record.</li> </ul>
<i>Surface and Groundwater</i>		
Decommissioning activities	Impact on surface and groundwater	<ul style="list-style-type: none"> <li>• Ensure that water abstraction does not negatively affect any spring, fountain, wetland, seep or any other natural water source in the concession area.</li> <li>• Restrict water usage to a maximum of 100 litres per staff member per day.</li> <li>• Prohibit sourcing of water into the Park via a pipeline from east of the Park border.</li> <li>• Install adequate meters for monitoring compliance to the above limits.</li> <li>• Undertake all laundry well outside the Park.</li> <li>• Implement proper pollution control measures.</li> <li>• Clean up all accidental pollution (oil spills, diesel spills etc.) immediately/</li> </ul>
<i>Waste Management</i>		
Decommissioning activities	Various environmental impacts	<ul style="list-style-type: none"> <li>• Demolish and remove from site materials for re-use and/or safe disposal.</li> </ul>

## 3 CERTIFICATION

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This report was prepared and reviewed by the undersigned.



Prepared:

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Lloyd Lynch, Environmental Scientist



Reviewed:

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Tania Oosthuizen, Senior Environmental Scientist  
*Environmental Assessment Professional of Namibia (EAPAN) Registered*

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