

Refurbishment and expansion of the existing rooms of the Founder's Camp on Sparta Farms 259KU

Submitted to:

31 May 2022

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for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

DOCUMENT DESCRIPTION

INDEMNITY AND CONDITIONS RELATING TO THIS

REPORT

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and

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Client:

Londolozi Game Reserve (Pty) Ltd

Submitted to:

The Director: Environmental Impact Management

Mpumalanga Department of Agriculture, Rural Development, Land

& Environmental Affairs

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POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES FOR THE PROPOSED

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TABLE 8:

TABLE 9:

TABLE 10:

Refurbishment and expansion of the existing rooms of the Founder's Camp on Sparta Farms 259KU

1 INTRODUCTION

Zunckel Ecological + Environmental Services has been appointed by Londolozi Game Reserve (Pty) Ltd. to facilitate the process of applying for environmental authorisation and to undertake a basic assessment of the proposed refurbishment and expansion of the existing rooms at their Founder's Camp on the farm Sparta Farms 259KU in the Sabi Sands Game Reserve.

The management of Londolozi continues to strive towards achieving high standards and following global best practice. The long-term Vision as captured in their Management Plan for 2019 to 2029 states that:

It is the Vision of Londolozi to balance the wildness of the reserve against the needs of an African Safari operation and global best practice land management within an inclusive philosophy in which the benefits of the consumptive use of its ecosystem goods and services is both sustainable and shared by neighbouring and affected communities and broader stakeholders.

This Vision is unpacked into nine Management Objectives covering the aspects of governance, ecological and biodiversity management, and infrastructure development and maintenance. Within the latter is the management objective which states the following:

Ensure regular building maintenance aimed at the early detection and resolution of issues that might impact on the efficient management of Londolozi operations and ensure that any new building construction and/or renovation is carried out in a way that does not impact on Londolozi's sensitive natural and socio-economic environment.

The rooms that make up the Founder's Camp are of the oldest within the tourist complex and are showing signs of wear and tear that will begin to impact on the standard of the tourism offering that is Londolozi, i.e. upmarket, low intensity and high-paying guests. It is therefore their intention to refurbish the rooms and to implement relatively minor expansions that will accommodate necessary alterations and client preferences.

In addition to their Management Plan, Londolozi also abides by their Environmental Management Plan (EMP), compiled by Emross Consulting in 2013, and the Sabi Sand Wildtuin Protected Area Management Plan, 2019 - 2029. The EMP prescribes environmental best practice and will be used as a frame of reference for this basic assessment and it's EMP.

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2 ASSESSMENT DETAILS

2.1 THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

The Environmental Assessment Practitioner (EAP) responsible for undertaking the basic assessment and compiling this report is Mr. Kevan Zunckel, a partner in Zunckel Ecological + Environmental Services. Mr Zunckel has 37 years of experience as an ecologist and environmental scientist with an MSc Environmental Science from the University of Cape Town and affiliation with the South African Chapter of the International Association of Impact Assessments (IAIAsa – Membership number: 2396). He is registered as an EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA) and his registration number is 1483. His contact details are as follows and his full CV is included with this report as Annex A:

Postal address: 7 Annthia Road, Hilton, 3245

Cell: 082 929 4270

Email: kevanzunckel@gmail.com

2.2 Names and Expertise of Specialists

In consideration of the EAPs experience both as an ecologist and environmental scientist, as well as the small scale of the proposed developments and low significance of potential impacts, it was not deemed necessary to commission additional specialist studies. The signed Declaration of Interest by the EAP is included in this report as Annex B.

3 DESCRIPTION OF THE PROPOSED ACTIVITY

3.1 Locality of the Proposed Activity

The proposed developments (as described in Section 3.2) are located within the Londolozi Game Reserve on Marthly 258 KU, portion 1. The Londolozi Game Reserve is located within the Sabi Sands Wildtuin (SSW). It falls within the Mpumalanga Province, the Ehlanzeni District Municipality (DC32) and the Bushbuckridge Local Municipality (MP325). The 21 digit Surveyor General code for the property is T0KU00000000025800001. Figure 1 shows the locality of the property relative to important topographical and cadastral features. Coordinates for the central point of Founder's Camp are 24°47'47.71"S and 31°29'49.48"E.

Table 1: Expansion areas per room

It is important to note that the proposed developments are planned to be entirely on the footprints of the existing rooms with expansions from these as indicated in Table 1 and floor plans shown in ANNEX M: PROPOSED NEW FOUNDER'S CAMP FLOOR PLANS. The localities of each room within the Founder's Camp complex are illustrated in Figure 2.

UNIT#	EXPANSION AREA (m²)
4	120
5	22
6	3.5
7	3.5
8	11
9	8.8
10	18
Main area	0
Total	186.8

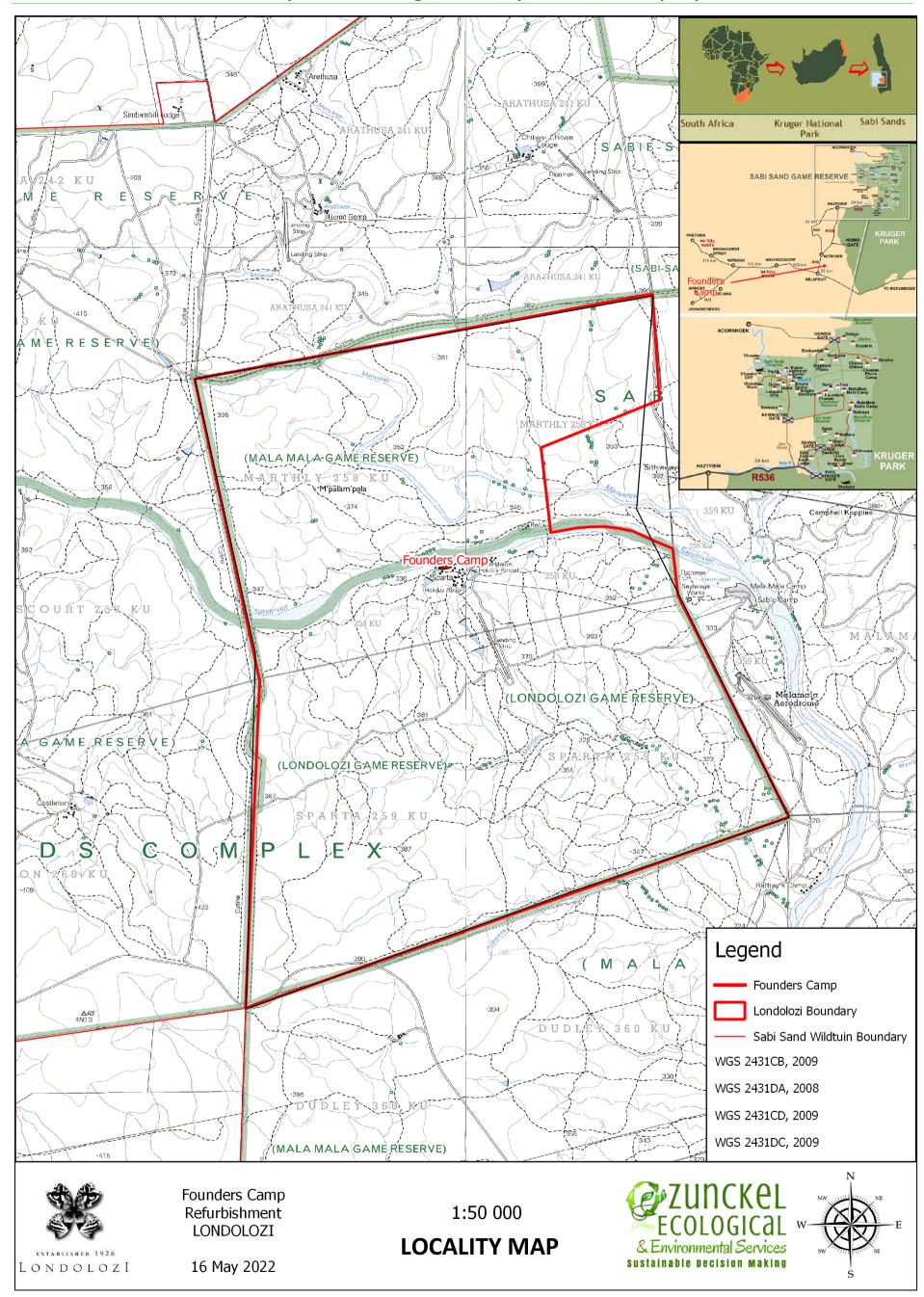


Figure 1: The locality of the proposed developments relative to topographical cadastral features.

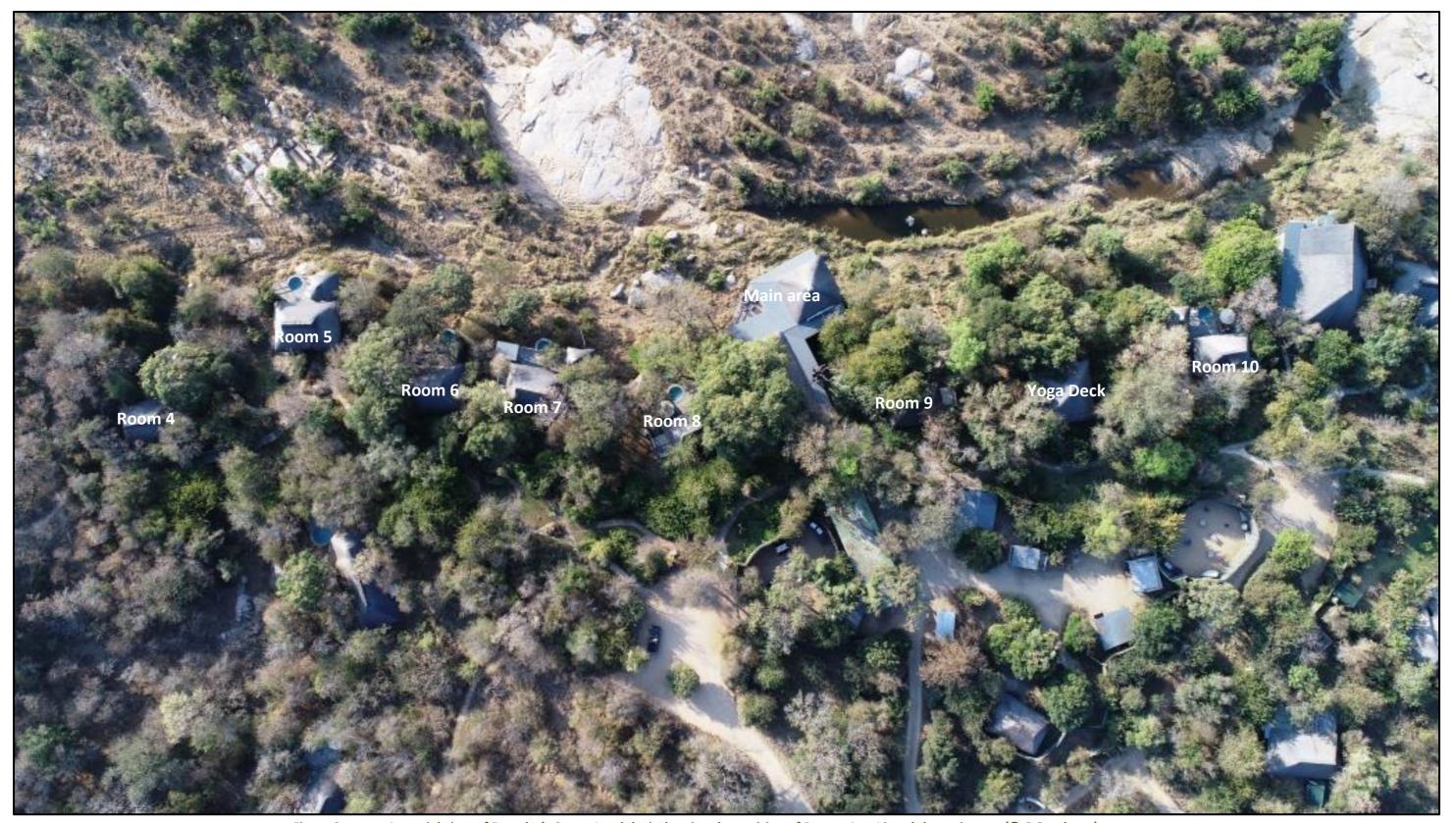


Figure 2: An aerial view of Founder's Camp, Londolozi, showing the position of Rooms 4 to 10 and the main area (© C Goodman).

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3.2 DESCRIPTION OF PROPOSED DEVELOPMENTS

Of the ten rooms that make up Founder's Camp, rooms 4 to 10 are those planned for refurbishment and expansion, as well as the main area which includes the dining and lounge facilities for the guests. A description of what is planned is included in Table 2 and detailed layout plans are included in Appendix M. Note that a distinction needs to be made of the expansions that will encroach on land that is currently undisturbed, and thus triggers the need for this assessment, and that which is on the existing cement footprint. The layout plans in Appendix M show this clearly while the areas recorded in Table 1 are those that exceed the existing footprint. The description in Table 2 includes changes to layouts both within and beyond the existing footprints.

Table 2: Description of the proposed expansions of Founder's Camp per room.

ROOM #	DESCRIPTION OF PLANNED DEVELOPMENTS ¹		
4	The existing room is to be expanded by 64 m ² and re-orientated slightly towards the NNE. The expansion will include a new arrival area that may double as a bedroom with an ensuite bathroom, an expanded master bedroom and a refurbished ensuite bathroom. The existing deck will be replaced with a new one that will cover the existing footprint. Figure 21 and Figure 22 illustrate the non-perennial watercourse over which the expansion is planned to extend.		
5	A new entrance with an external covered area of 3.5m², plus an expansion of 18 m² will provide additional internal space for a shower, toilet and his/her basins. A new lean-to roof of 12m² will be provided on the front of the room on existing footprint, and a new deck area of 6m² to accommodate an outside shower. The existing pool may have to be moved slightly outwards, but this will need to be confirmed once plans have been finalised.		
6	A new entrance with an external covered area of 3.5m^2 , plus an expansion of 23m^2 will provide additional internal space for a shower, toilet and his and her basins and an external service yard. A new lean to roof of 12m^2 will be provided on the front of the room on existing footprint. The existing deck will be squared off to meet the existing sala (see Figure 23) together with additional decking adjacent to the outside shower that will total 9m^2 .		
7	The proposed expansion for this room is limited to an external covered area of 3.5 m ² and a new lean to roof of 12 m ² will be provided on the front of the room on existing footprint. A slight expansion of the existing deck will include an area of approximately 4.5 m ² to accommodate an outside shower. The current entrance includes a retaining wall to accommodate the access path (see Figure 20). This will need to be removed when the access path is aligned with the new entrance.		
8	The extended area of 11 m ² will accommodate layout changes to the existing bathroom with a new lean to roof of 6 m ² over a new entrance (Figure 16) and of 12 m ² on the front of the room on existing footprint. The existing access path will be decommissioned and a new one established to align with the new entrance.		
9	The extended area of $8.8~\text{m}^2$ will accommodate layout changes to the existing bathroom (see Figure 11 & Figure 12) with a new lean to roof of $6~\text{m}^2$ over a new entrance and of $12~\text{m}^2$ on the front of the room on existing footprint. New decking of $2.5~\text{m}^2$ will accommodate an outside shower. A new access path will be constructed to align with the new entrance.		

¹ The areas given in the description are total figures to be added to the existing footprint and include those that are within the existing footprint, as well as those that are additional (as listed in Table 1).

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ROOM #	DESCRIPTION OF PLANNED DEVELOPMENTS ¹			
10	The extension of 18 m ² will accommodate a new layout for the bathroom and allow for the sleeping area to be expanded and to include a new entrance. The latter will include a new lean to rook of 6 m ² and a 12 m ² new lean to roof will be added on to the front of the sleeping area.			
Main area	The entire structure of the main area is to be redone with the existing lounge area being converted into a covered entrance/arrival area, from which guests will descend to the deck which is to be lowered by 900 mm. Sturdier flooring is to be installed for the kitchen and bar area using rib and block, and the existing deck will be expanded to square it off (Figure 14). This will include the movement of the existing fire-pit to be accommodated in the additional decking. There will also be the addition of new staff toilets and an extension of the existing staff walkway eastwards (Figure 15).			

Where new pathways are to be constructed to align with new entrances, it is envisaged that this will require between 10 to 20 m² of currently undisturbed land to be cleared. This implies an additional area of approximately 70 to 140 m² to the 186.8 m² already listed in Table 1. Figure 9 shows the current access to Room 10 and the currently undisturbed vegetation through which a new access will need to be constructed, while Figure 10 shows where the new access will be.

3.3 LISTED ACTIVITY

The activity for which environmental authorisation is being sort is **Listed Activity 23** of Listing Notice 3 (National Environmental Management Act 107 of 1998, GNR 985, GG 38282 of 4 December 2014, as amended in GG 40772, GN No. 324 of 7 April 2017):

The expansion of (ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs — (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; in Mpumalanga: i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies.

3.4 Project Sector

The sector within which the project falls is "Services - hospitality" and "Transformation of land – indigenous vegetation" is also relevant.

4 ACTIVITY CONTEXT AND ENVIRONMENTAL FACTORS

4.1 ACTIVITY COMPATIBILITY

From a provincial perspective the Mpumalanga Spatial Development Framework (SDF) was consulted to assess the compatibility of the proposed development with this provincial planning tool. As can be seen in the extract from the 2019 SDF in Figure 3 below, the provincial planning recognises the SSW as a private nature reserve that is part of the Regional Spatial Development Initiative known as the Kruger to Canyon or K2C.

It can be seen from Figure 3 that the proposed refurbishment and expansion of the rooms that make up the Founder's Camp at Londolozi are compatible with the provincial SDF, and at a finer scale, they

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are compatible with the Purpose of the SSW and Vision of Londolozi itself. According to the Management Plan for the SSW for the period 2019 to 2029 the Purpose is (SSW, 2019):

"To conserve and maintain biodiversity, whilst providing opportunities for sustainable ecotourism and meaningful socio-economic contributions for internal and external stakeholders."

The Vision for the Londolozi Game Reserve has been provided and discussed in Section 1 already.

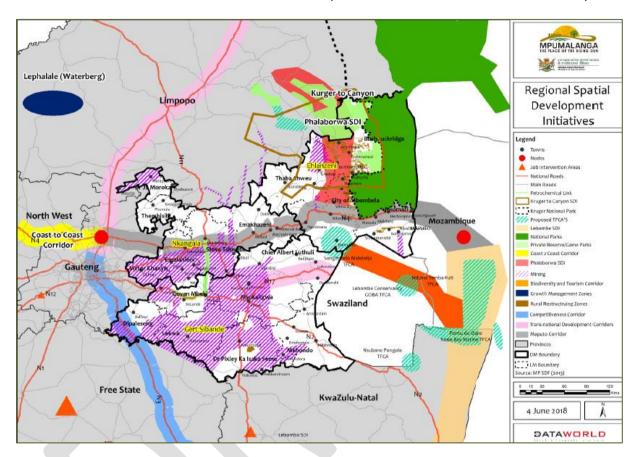


Figure 3: Regional Spatial Development Initiatives (Source: Mpumalanga SDF - 2019).

4.2 SITE DESCRIPTION

The descriptions of the site components provided below mostly focus on the area that encompasses the Founder's Camp within the broader complex that makes up the Londolozi tourism and management facilities within the Londolozi Game Reserve and the Sabi Sands Game Reserve, while broader description is provided in places in order to add context. Information provided has been accessed from the Sabi Sands Game Reserve Management Plan for the period 2019 – 2029, the Londolozi Game Reserve Management Plan for the same period, from observations on site on 5 April 2022 and from knowledge of the area gained from carrying out various projects for Londolozi since 2018. A summary of the biophysical features of the Founder's Camp Refurbishment site is given in Table 4.

4.2.1 Climate

The climatic conditions characteristic of Londolozi may be described as semi-arid. Precipitation occurs predominantly as summer thunder showers with occasional light winter rain when cold fronts

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penetrate deeply into the country. Summer temperatures range between 18° C and 45° C while winter temperatures range between 8° C and 23° C. A south to north rainfall gradient exists in the SSW with the long-term annual averages been 620mm and 570mm respectively. With Londolozi being located roughly in the centre of the SSW and having a longitudinal orientation, this gradient is also applicable.

Typical of semi-arid environments, precipitation is erratic with oscillating period of above and below average rainfall being recorded. Variations range between 248 mm (1991/1992) during drought years to 1147mm (2000/2001) for very wet years with flooding conditions.

4.2.2 Topography

The topography of Londolozi is gently undulating with moderately dissected and rounded hill country, rising above the floor of the Sand River valley. The Sand River is a dominant feature in Londolozi. It crosses the western boundary at an altitude of just more than 330 masl, flowing in an east north easterly direction to exit the property after dropping only 24 m over a distance of 6.25 km. The highest elevation on Londolozi is approximately 417 masl in the south western corner of the property and the lowest is approximately 311 masl at the point at which the Sand River crosses the eastern boundary. On the Founder's Camp site itself, the altitude ranges from 325 to 326 mamsl.

4.2.3 Geology and Soils

The following description of the geology and soils is a direct extract from the SSW Management Plan as it applies to Londolozi:

The geomorphology of the eastern parts of southern Africa and particularly the Lowveld regions, the Kruger National Park and the SSW Protected Area have been directly affected by the large-scale geographical processes which have taken place in South Africa. Due to this, the geological structures and differences in resistance to weathering by different rock types and formations has greatly influenced the current landscape morphology (Venter & Bristow, 1986). The Lowveld is predominantly underlain by the basement gneisses and granites. Using Walraven (Walraven, 1989) the overall area of the SSW Protected Area can be described as follows: A central band runs from close to the eastern boundary to the western boundary and is dominated by medium to coarse grained, sphene-bearing tonalite. Forming an approximate U-shape around the latter is a series classified as quartz-microcline-plagioclase-biotite migmatite and gneiss with mafic and ultra-mafic xenoliths. Local re-crystallisation occurs in the south of the reserve where the Sabie River borders the reserve. A tongue of light grey, medium grained biotite gneiss with coarse grained quartz veldspar leucosomes traverses the area from the north-eastern corner of the reserve (Exeter) through the northern sections of the reserve through to the west to areas adjoining the Kruger National Park. The north-eastern sections of the reserve are classified as grey to pale brown, medium- to coarse grained quartz-feldspar-biotite gneiss with subordinate mafic to ultramafic xenoliths.

In some areas where gabbro and dolerite intrusions strike through, the landscape features are flatter areas of relief (Venter & Bristow, 1986). Within these areas are underlying granophyric quartz gabbro (Sabi Sand Granophyre) which dominates the central and eastern sections of the southern reserve area. The origin of these rocks is unclear, but it may be that the Sabi Sand Granophyre represents some marginal interaction facies between the surrounding Nelspruit suite and gabbroic

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rocks which formerly overlay the granophyre, but which have been removed by erosion. In a narrow band in the eastern and central areas of the reserve, in a band through the south and west, we find what is termed Timbavati Gabbro, a medium- to coarse-grained gabbro, olivine gabbro and quartz gabbro. These are basic rocks with an irregular outcrop pattern distinguished by a clearly recognizable vegetation type. A very prominent dyke, consisting of fine to medium grained, hybridized gabbro, with abundant inclusions of acid rocks and protrudes prominently above the flat topography formed by the granite and gneiss. In the SSW Protected Area, it stretches in a narrow band from the west and central boundary on the reserve though to the neighbouring Mala Mala adjoining the Kruger National Park (Peel & Stalmans, 2010).

Soil is defined as a natural mass of unconsolidated natural material which can support functional ecosystems within protected areas. This represents a critical resource and through its intrinsic properties delivers critical ecosystem services to the ecosystems in which it is found. Within the SSW Protected Area, there is a strong correlation between the geology and soils of the Protected Area. In the SSW Protected Area, the soils occur in distinctive catenary sequences on granitoid rocks. Their formation is a result of the following processes:

- a. The mobilisation and eluviation of clay particles and soluble weathering products from porous soils in upland positions by rain water;
- b. The lateral downward transportation of these components under the influence of gravitation to foot slope positions, where they are redeposited to form impermeable clay horizons. At this point the ground water is forced to the surface, thus forming waterlogged zones (seepage lines) during the rainy season which follow the contours (Venter, 1986). Thus, a general catenary sequence from crest to valley bottom, determined by the sequence of soil complexes (i.e. sandy, hydromorphic, duplex and alluvial) and associated vegetation composition, is repeated regularly across the hills and valleys.

Although these catenary sequences associated with granite-gneiss is representative of the area, the presence of gabbro intrusions and dolerite dikes causes a marked change in soil patterns. These metamorphic units generally weather into clayey structured fertile soils which differ from the normal granite-gneiss pattern (Peel & Stalmans, 2010).

Because of the minimal expansion to existing footprints (total expansion area: 186.8 m²), it is not deemed necessary to conduct any geohydrological surveys for the proposed development.

4.2.4 Hydrology

The main hydrological feature of Londolozi is the Sand River. This river has its source in the foothills of the Drakensberg escarpment to the west and is an important tributary of the Sabie River which forms part of the southern boundary of the SSW. Another important hydrological feature is the Manyaleti River, which is also non-perennial. This river lies north of the Sand River and meanders in a southerly direction turning firstly to the north and then to the east after almost 4km of run-of-river within Londolozi. Its confluence with the Sand River is approximately 1.5 km to the east of Londolozi's eastern boundary with Mala Mala. These features drain the northern two thirds of the property with the southern one third being drained by the Mshabeni and the Tukwane Rivers. Figure 4 illustrates these features.

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Figure 4: Londolozi with the Sand and Manyaleti Rivers draining the northern portion of the property, and the Mxabeni and Tukwane Rivers in the south.

These aquatic ecosystems in the SSW are frequently subjected to extreme events such as floods or droughts, added to which is a severely stressed catchment caused by the ever-increasing demand for water, coupled with a rapidly expanding industrial and agricultural developments and large-scale urbanisation. The SSW's dry climatic conditions, the many non-perennial rivers and the erratic water flow is inherent in them. According to the SSW Management Plan and the National Spatial Biodiversity Assessment (2004), the Sand River is considered to be "moderately modified" and "critically endangered" from the perspective of its Present Ecological State (PES) – (Figure 5). This means that a loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.

In order to gain an understanding of its natural structure and function and its responses to development and exploitation and to conserve it in a state where it can maintain its natural biodiversity, the SSW have undertaken to develop and implement a river health monitoring programme for the Sand and Sabie Rivers that flow through the reserve, based on accepted rapid appraisal methods.

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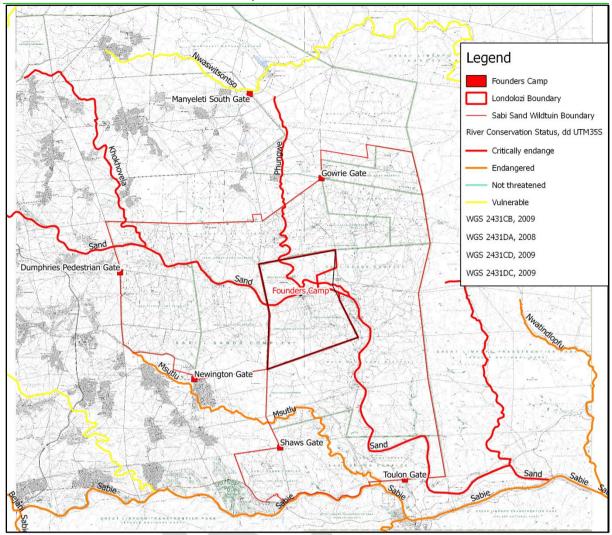


Figure 5: River Conservation Status (National Spatial Biodiversity Assessment, 2004)

Londolozi is carrying out efforts to influence land and other management decisions in the upper catchment of the river. Being a recipient of the consequences of poor upper catchment management makes Londolozi particularly vulnerable, which highlights the need for investments into the catchment to be made on an on-going basis. They also undertake to engage quarterly with SSW to ensure that Londolozi is not having a negative impact on the Sand River and to facilitate a relevant response if there has been.

In addition to these non-perennial watercourses are ephemeral pans, i.e. natural depressions that temporarily hold water in the wet season. These occur throughout the property and represent important water sources as well as a diversification of habitat.

Due to the non-perennial nature of the natural water on Londolozi, a number of artificial water sources have been developed and maintained as a water source for wildlife and human consumption. Water for human consumption is primarily provided from boreholes. However, their capacity to deliver is vulnerable to drought and therefore a series of permanent dams, in the small non-perennial watercourse to the south of the camp, are maintained and kept full of water pumped

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from the Sand River in case of borehole failure. This then allows for the gravitational feeding of the stored water to the camp's water treatment plant.

A network of pumps and pipelines allows Londolozi to manage the water levels in these dams and pans and by doing so, to use them as a management tool in the manipulation of animal movements and distribution.

One of these dams lies 250 m south west of Founder's Camp, on a non-perennial drainage line which passes Unit 4. During the floods of 2012, Unit 4 was flooded by the Sand River pushing up the tributary, which is why it will be raised by 30 cm during the camp refurbishment. All of the Founder's Camp rooms and main area fall within the 32 m setback from the Sand River, hence the need for this Basic Assessment.



Figure 6: Founder's Camp Refurbishment Area showing 32 m setback from the Sand River and the non-perennial stream passing Room 4

4.2.5 Vegetation

A broad description of the vegetation types as per the SSW Management Plan is provided here as it is also applicable to Londolozi:

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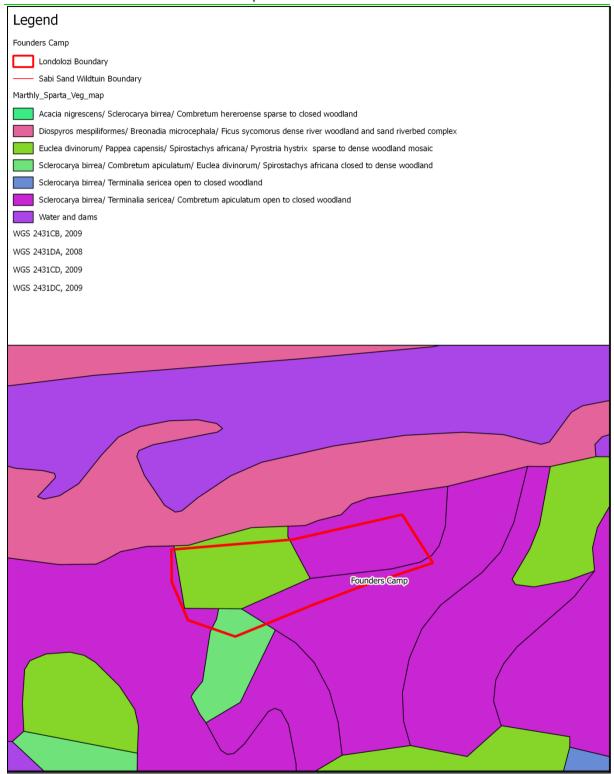


Figure 7: Founder's Camp Vegetation Map

At a very coarse level, the SSW falls within one biome and one bioregion: The Savanna Biome, and the Lowveld Bioregion. The SSW falls mainly within the Granite Lowveld (SVI 3) vegetation type, occurring at altitudes of about 250 - 700 m and is characterised by tall shrubland with few trees to moderately dense low woodland on the deep sandy uplands with *Terminalia sericea, Combretum zeyheri* and *C. apiculatum*, and with a ground layer including *Pogonarthria squarrosa, Tricholaena*

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monachne and Eragrostis rigidior (Mucina & Rutherford, Reprint, 2011). The equivalent vegetation types as described by Acocks (Acocks, 1975) are Arid Lowveld (Veld Type 11) and Lowveld (Veld Type 10). According to Low and Rebelo's classification (Low & Rebelo, 1996), the reserve comprises of Mixed Lowveld Bushveld (Type 19) and Sour Lowveld Bushveld (Type 21).

These vegetation types have provided the basis from which an accurate and easily recognised framework for the habitat delineation within the SSW has been possible. The habitat or finer scale vegetation types relevant to Londolozi's Founder's Camp are listed below and in Figure 7 and their spatial distribution across the site was used to determine the finer scale vegetation types for the proposed development sites:

- Euclea divinorum/ Pappea capensis/ Spirostachys africana/ Pyrostria hystrix sparse to dense woodland mosaic;
- Sclerocarya birrea/Terminalia sericea/Combretum apiculatum open to closed woodland; and
- Sclerocarya birrea/ Combretum apiculatum/ Euclea divinorum/ Spirostachys africana closed to dense woodland.

4.2.6 Fauna

As an open system within the SSW, the Greater Kruger National Park and the Great Limpopo Transfrontier Conservation Area, the full suite of fauna associated with this semi-arid savanna may be encountered at all of these sites. This would exclude aquatic fauna as all the sites are terrestrial, despite their proximity to watercourses.

The exception to this generalisation to some extent is Founder's Camp which is within the Londolozi Camp and Staff Village precinct. As such it has partial exclusion of many of the large mammal species due to the perimeter being fenced with an elephant-proof electrical fence. This and the presence of people and much activity keeps many of the large mammal species out of the area. Small mammals, birds, reptiles and insects are less affected by these factors and many still occur within the precinct. An indication of the fauna that occurs in the SSW is provided in Table 3.

Table 3: A broad indication of the fauna that occurs in the SSW and the Londolozi Game Reserve (LMP, 2019)

	TOTAL NUMBER	CONSERVATION STATUS (IUCN RED LIST)		
PHYLUM	SPECIES RECORDED	Species	Status	
Birds	266	Western Red-footed falcon Cape Vulture Lappet-faced Vulture Tawny Eagle Martial Eagle White-breasted Cormorant	Near threatened Vulnerable Vulnerable Vulnerable Vulnerable Protected	
Amphibians 24		Lowveld bullfrog Mottled shovel-nosed frog	Near threatened Near threatened	
Mammals 41 large 34 small		Cheetah African Elephant Pangolin African Lion	Vulnerable Vulnerable Vulnerable Globally vulnerable	

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	TOTAL NUMBER	CONSERVATION STATE	JS (IUCN RED LIST)
PHYLUM	SPECIES RECORDED	Species	Status
		Tsessebe	Endangered
		White Rhinoceros	Near threatened
		Black Rhinoceros	Near threatened
Fish	33	Shortfin barb	Near threatened
		Smallscale yellowfish	Protected
Reptiles	55		

4.2.7 <u>Ecological Functionality</u>

Londolozi is part of an open system and as such ecological dynamics are encouraged to function naturally. Where necessary, management interventions are implemented to simulate natural ecosystem functionality. Therefore the reserve may be considered as having optimum ecological functionality.

The exception to this generalisation is the Londolozi Camp and Staff Village precinct, which must be considered less ecologically functional than the open system of the Londolozi Game Reserve and the SSW. According to the Londolozi Management Plan, the precinct is zoned as an Intensive Development and/or Service Zone. There are however still significant patches of untransformed natural vegetation as well as landscaped areas that maintain a relatively close semblance of the open system outside the precinct. The area therefore still hosts a wide variety of the fauna and flora common to the area.

4.2.8 Cultural / Historical Features

It is highly unlikely that any cultural and / or historical heritage features will be found to occur along or within any of the refurbishment sites, as these areas are already disturbed and their expansion areas are minimal. It is, however, recommended that in the event of chance finds during any refurbishment or operational activities, that work will cease until a Heritage Practitioner is able to assess the artefact/s and guide the management of such heritage finds/sites. SSW is in the process of developing a Cultural Heritage Management Plan for the whole Reserve that will guide the management of known heritage sites and provide guidance in the event of chance finds during any operational activities.

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Table 4: Summary of the biophysical features of the Founder's Camp Refurbishment site

Activity	Elevations (masl) and gradient (%) (north - south or west to east)	Landscape position	Soil types	Rivers and wetlands	Vegetation cover
Founder's Camp	The elevation is 325 to 326 mamsl and the gradient is gently sloping to the north towards the Sand River.	Bottomland	Glenrosa / Clovelly	All rooms and main area fall within the 32 m setback from the nearest watercourse which is the Sand River. A non-perennial tributary of the Sand River passes within 5 m of Room 4. There are no wetlands within 100m of the site.	 Euclea divinorum/ Pappea capensis/ Spirostachys africana/ Pyrostria hystrix sparse to dense woodland mosaic; Sclerocarya birrea/ Terminalia sericea/ Combretum apiculatum open to closed woodland; and Sclerocarya birrea/ Combretum apiculatum/ Euclea divinorum/ Spirostachys africana closed to dense woodland.



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5 LEGAL AND POLICY FRAMEWORK

A comprehensive view of policy and legislation relevant to the proposed developments is provided in Table 5 together with an indication of how the proposed developments are compliant and responsive to these.

Table 5: A list of relevant legislation and policy

Title of legislation, policy or guideline	Purpose of the legislation and applicability to the project	Administering authority	Proposed activity compliance/response
Constitution of Republic of South Africa (108 of 1996):	This is the fundamental law of South Africa, setting out the Bill of Rights as well as the relationship of various government structures to each other. "Everyone has the right — (a) to an environmental that is not harmful to health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that — a. prevent pollution; b. promote conservation; and c. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.	National Government	The proposed activities have been conceptualised, designed and planned in respect of meeting these constitutional requirements in that all recommended mitigation actions will be implemented and frequently monitored ensuring that any pollution risks are avoided and addressed and that conservation is promoted. Both construction and operational phases will happen within the limits of sustainability.
Conservation of Agricultural Resources (Act 43 of 1983):	The purpose of the Conservation of Agricultural Resources Act No. 43 of 1983 (CARA) is to provide for control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants.	National Department of Agriculture (DAFF)	Mitigation measures are in place to ensure that no impacts on soil and water occur during the construction and operational phases of the proposed developments, and the need to address potential weed infestations is also noted in the EMPr.
National Environmental Management: Protected Areas Act (Act No. 57 of 2003):	The Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with national norms and standards; for intergovernmental co-operation and public consultation in matters concerning protected areas, and for matters in connection therewith. The proposed developments fall within a proclaimed Protected Area in terms of this Act, and will therefore be subject to the provisions of this Act. Specifically including the following: Regulations for the proper administration of special nature reserves, national parks and world heritage sites, published under Government Notice R1061, In Government Gazette 28181, dated 28 October 2005. Norms and standards for the management of protected areas, published under Government Notice R382, In Government Gazette 399878, dated 31 March 2016.	Department of Environmental Affairs	The proposed developments are nested within and are controlled by the SSW Management Association. As a proclaimed private nature reserve, the SSW ensure that the development fits within the relevant legal and policy frameworks for the SSW as per their Standard Operating Procedures, Management Plan and Landowner Comanagement Agreements.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10	The objects of the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA) are to provide for the management and conservation of biological diversity within South Africa and of the components of such	Department of Environmental Affairs	As all of the proposed development is located on existing infrastructure and brown field sites there are limited biodiversity concerns. However, their locality within the Londolozi Game Reserve has highlighted the

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	Sparta Farms 259KU				
Title of legislation, policy or guideline	Purpose of the legislation and applicability to the project	Administering authority	Proposed activity compliance/response		
of 2004):	biological diversity; to give effect to ratified international agreements that are binding on South Africa; and to ensure the protection of the ecosystem as a whole, including species that are not targeted for exploitation.		potential impact on the natural environment and relevant mitigation measures have been recommended to ensure that these impacts remain insignificant.		
National Spatial Biodiversity Assessment:	The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on their biophysical characteristics, which are ranked according to priority levels. The proposed development sites are located in the Granite Lowveld, which is ranked as vulnerable with a conservation target of 19%. and some 17% statutorily conserved in the Kruger National Park. It also falls within an areas zoned as Limited and Intensive Development Zones as per the Londolozi Management Plan for 2019 to 2029.	Department of Environmental Affairs and SANBI	The localities and types of proposed development is within an area zoned as Limited and Intensive Development Zones as per the Londolozi Management Plan for 2019 to 2029 and are compatible thus ensuring that the requirements of the NSBA are not compromised.		
National Forests Act, 1998 (Act no 84 of 1998):	The purposes of the National Forests Act No. 84 of 1998 (NFA) are, inter alia, to promote the sustainable management and development of forests for the benefit of all and to enact special measures for the protection of certain forests and trees. The minister may declare any tree, group of trees, woodland or species to be protected trees, groups of trees and species (Section 12) or a particular forest to be a "natural forest" (Section 7). Specified activities in respect of these areas or trees are prohibited by the NFA. Protected trees require permits to move, or damage them.	Department of Agriculture, Forestry and Fisheries	All protected species of trees and shrubs will be avoided in all of the proposed developments.		
National Heritage Resources Act 25 of 1999	The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments exceed 300 metres in length. In this regard, the proposed development site are be subject to engagement with the South African Heritage Resources Agency (SAHRA). Potential impact on cultural heritage, paleontological or archaeological resources through excavation activities or disturbance, whilst unlikely, will need to be monitored.	South African Heritage Resources Agency (SAHRA)	A chance find protocol will be implemented.		
The National Water Act, (Act No. 36 of 1998)	The purpose of the National Water Act 36 of 1998 (NWA) is to ensure that the nation's water resources are protected, used, developed, managed and controlled in ways that ensure that the integrity of water resources are protected.	Department of Water and Sanitation through the	None of the proposed activities will trigger the need for a Water Use Licence. [Waiting to hear from Komati-uSuthu CMA. No response at the time of submitting the dBAR]		
National Environmental Management Waste Act 59 of 2008	The National Environmental Management: Waste Act (NEMWA) was primarily enacted to reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.	Department of Environmental Affairs	Waste generation volumes are insignificant but will be completely absorbed into the waste management infrastructure at Londolozi.		
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993):	The purpose of this Act is to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with, the activities of persons at work. The proposed development will therefore be subject to this Act during the construction and operational	National Department of Labour	The EMPr speaks to these aspects for the construction phase and Londolozi has provided commitments to meeting these requirements in both construction and operation.		

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Title of legislation, policy or guideline	Purpose of the legislation and applicability to the project	Administering authority	Proposed activity compliance/response
	phases of the project.		
DEA Integrated Environmental Management Information Series	IEM is a key instrument of NEMA and provides the overarching framework for the integration of environmental assessment and management principles into environmental decision-making. The aim of the information series is to provide general information on techniques, tools and processes for environmental assessment and Management.	Department of Environmental Affairs	These guidelines have been applied in the assessment of the proposed development and its potential impacts on the natural, social and economic environment.

6 PUBLIC AND AUTHORITY PARTICIPATION

6.1 Public Participation

Public involvement in this impact assessment process was facilitated through the actions listed below. Evidence of these actions can be seen in Annex E:

- Site notices in A3 format were posted at the Newington entrance gate to the SSW on 25 April 2022 and remained there for approximately three months.
- Notice of intention to apply for environmental authorisation was placed in and published by the Mpumalanga News on Wednesday, 27 April 2022 and the Lowvelder on Thursday, 28 April 2022.
- Notification was sent to all immediate neighbours via email with a Background Information Document (BID) attached, on 28 November 2018. A copy of the BID is provided with this report as Annex F.
- All registered Interested and Affected Parties were provided with a copy of the Draft Basic Assessment Report on 3 June 2022.

The contacts database for registered I&APs is provided in Table 6.

Table 6: Contact database for registered I&APs

FIRST NAME	SURNAME	AFFILIATION	ADDRESS	PHONE	EMAIL
		REGISTERED INTEREST	ED AND AFFECTED	PARTIES	
Riaan	Fourie	SSW MA (ECO)	Portion 4 of Lisbon 297 KU Shaws Gate	0664803861	eco@sabisand.co. za
lain	Olivier	SSW-MA (HOD of Conservation)		078 804 0347	warden@sabisand .co.za
		STAKE	HOLDERS		
Philip	Hine	South African Heritage Resources Agency			phine@sahra.org.z a
Khumbel o	Malele	Mpumalanga Tourism and Parks Agency			khumbelomalele@ gmail.com
Thapelo	Shabangu	Ehlanzeni District Municipality		0137598554/0 798743304	stshabangu@ehla nzeni.gov.za
Leavi	Mokoena	Bushbuckridge Local		0729019014/0	mokoenalevy8@g

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FIRST NAME	SURNAME	AFFILIATION	ADDRESS	PHONE	EMAIL
		Municipality, Information		837984703	mail.com
Flomina h	Timba	Centre, Along R40 Road, Bushbuckridge		0828270410	genoskomp@gmai l.com
Charity	Nxumalo			013 004 0453	tcharitynxumalo@ gmail.com
Sampie	Shabangu	Inkomati Usuthu CMA		0629079061	shabangus@iucma .co.za
Robyn	Luyt	Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs		072 157 0587	rluyt@mpg.gov.za
Marisa	Coetzee	SANParks		082 739 3650	marisa.coetzee@s anparks.org

Considering the low level of interest expressed by the public in the proposed developments it was deemed unnecessary to hold a public meeting. Note that only one comment was forthcoming from Chris Fismer of "Dudley", an immediate neighbour whose view was that Dudley will not be affected by this project, and as such they have no objections against it. There have been no responses to the site notice or the advertisements (Annex E).

6.2 AUTHORITY PARTICIPATION

A pre-application meeting was held in person with Ms Robyn Luyt of the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs, ENVIRONMENTAL IMPACT MANAGEMENT (Ehlanzeni District), on 6 April 2022. Minutes of this meeting are included with this report as Annex G.

Hard and digital copies of the Draft Basic Assessment Reports were distributed to the following authorities on 3 June 2022:

- South African Heritage Resources Agency (uploaded to SAHRIS)
- SANParks (digital via Google Drive)
- Inkomati Usuthu Catchment Management Agency (digital via Google Drive)
- Mpumalanga Tourism and Parks Agency (hard copy)
- District and Local Municipalities (Ehlanzeni and Bushbuck Ridge) (digital via Google Drive)
- SSW Management Authority (digital via Google Drive)
- Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (hard copy)

Comments received and responses provided are included in the Comment and Response Report included as Annex H.

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7 NEED AND DESIRABILITY

Much has already been said in Sections 1 and 4.1 in terms of the compatibility of these proposed developments and activities in relation to the Purpose, Desired State and Management Objectives of the SSW as stated in their Protected Area Management Plan for 2019 to 2029 (SSW, 2019); as well as the Vision and Management Objectives of the Londolozi Game Reserve as stated in their Management Plan for 2019 to 2029 (LMP, 2019). In terms of their need and desirability the same rationale may be used.

As a globally recognised destination for high paying guests that strives towards achieving high standards following global best practice, Londolozi needs to ensure that the accommodation provided at Founder's Camp remains optimal and thus allow for the perpetuation of the business model which is responsible for the employment of many people from adjacent communities, both permanently and on a temporary basis; ensuring regular building maintenance aimed at the early detection and resolution of issues that might impact on the efficient management of Londolozi operations; and ensuring that any new building construction and/or renovation is carried out in a way that does not impact on Londolozi's sensitive natural and socio-economic environment.

As previously stated, the rooms that make up the Founder's Camp are of the oldest within the tourist complex and are showing signs of wear and tear that will begin to impact on the standard of the tourism offering that is Londolozi, i.e. upmarket, low intensity and high-paying guests. It is therefore their intention to refurbish the rooms and to implement relatively minor expansions that will accommodate necessary alterations and modernise the establishment in keeping with today's client expectations.

8 AUTHORISATION TIME FRAMES

8.1 VALIDITY PERIOD

All of the proposed developments are planned to be completed within the mandatory five (5) year validity period ascribed to an environmental authorisation, assuming that this is granted.

8.2 ACTIVITY SCHEDULE

Considering the small scale of each of the proposed developments a detailed activity schedule is not provided. If they are authorised, Founder's Camp will be refurbished in 2023.

8.3 COMPLIANCE MONITORING

8.3.1 <u>Development Phase</u>

All of the proposed activities will be subjected to continuous compliance monitoring by the Head of Dept.: Technical Services for Londolozi and contractors will be held accountable for adhering to the EMPr through the signing of a contract committing to such. The Environmental Compliance Officer (ECO) for the SSW will carry out frequent inspections to audit compliance and an independent ECO will be appointed by Londolozi to oversee the process and to facilitate reporting to the relevant compliance official/s in the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (MDARDLEA). The latter will happen no less than monthly and will begin prior

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to the commencement of any of the activities and will continue until all rehabilitation work is completed and clearly successful.

8.3.2 Operational Phase

The SSW and the individual property owners within it have recently instituted an annual "Green Audit" which has been developed and is implemented by an independent environmental auditor. Included within the Green Audits is assessment against compliance with all relevant environmental and natural resource management legislation. Land owners and their managers are expected to keep records of all permits, licences and authorisations; against which activities and developments are audited.

9 CONSIDERATION OF ALTERNATIVES

9.1 ALTERNATIVE SITES

Considering that the application is for refurbishment to existing rooms, with minor extensions and adjustments to the development footprint, as described in Table 2: Description of the proposed expansions of Founder's Camp per room., alternative sites were not considered.

9.2 ALTERNATIVE USES FOR THE SITE

Similarly, it was not judicious to consider alternative uses for the site, since it is an existing tourist camp.

9.3 ALTERNATIVE TECHNOLOGIES

Londolozi already has a solar plant and sophisticated waste water treatment plant for all its camps, and has taken many other advanced steps towards achieving high levels of sustainability in a sensitive natural and socio-economic environment. A refurbishment presents an opportunity to consider and bring about additional new technologies which will enhance the efficiencies of the camp, i.e. better LED Lighting.

9.4 No-Go Option

Without modernising of Londolozi's second oldest camp, it will continue to deteriorate and negatively impact on the standard of accommodation offered to high paying guests. Also the opportunity to improve the layout, enhance technologies and management of impacts of each unit would be lost. It is therefore considered to be an improvement, where construction impacts will be managed and kept to a minimal with the implementation and regular audits of an EMPr.

10 ANALYSIS OF POTENTIAL IMPACTS

10.1 Assessment Method

This section provides a discussion on the potential impacts of the proposed refurbishment and the no-go option, and an indication of their significance through superimposing all phases of the proposed refurbishment, as described in Section 3DESCRIPTION OF THE PROPOSED ACTIVITY, on the environmental aspects of the receiving environment as described in Section 4.2. The assessment

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considers the socio-economic, biophysical, visual/aesthetic and cultural heritage aspects of the receiving environment. In addition to this is an indication of the extent to which these impacts may be avoided or mitigated. It will be shown that as all potential impacts may be successfully avoided or mitigated, no offsets will be required and no fatal flaws were identified.

It is noted that environmental impact assessment processes call for the assessment of all the phases of a proposed development, i.e. planning, pre-construction, construction, operation and decommissioning. In the case of these proposed developments it is only the construction and operational phases that are considered relevant for this assessment. The relatively small scale of these proposed developments and the fact that they are planned within and in compatibility with the SSW and LGR Management Plans deems the need to assess the planning and pre-construction phases unnecessary.

The detailed analysis of potential impacts was guided by the scoring allocations as listed in Table 7 and explained in detail in Annex I. Impacts that retain a post-mitigation score higher than 40, i.e. those colour coded from yellow to red, would be recognised as potential fatal flaws that could render the proposed development environmentally unsustainable, and/or which may require further detailed specialist studies.

Potential impacts have been considered according to the construction and operational phases of the proposed refurbishment as described in Section 3.2 and for the no-go option. As there are no plans for decommissioning, assessment of this phase has not been carried out.

The outcome of this process for the proposed refurbishment of Founder's Camp is captured in Error! Reference source not found., Table 9 and Table 10 below. Note that the tables were originally configured to address negative impacts but have been adapted to include positive impacts as well. Where these have been listed, the scoring for 'mitigation efficiency' has been applied conversely in order to cater for the positive effect of the enhancement recommendation. The colour code is also adapted here where only green is used to retain the denoting of a positive impact. In the assessment of the no-go option no mitigating measures have been included as these will not be applicable if nothing is done. The potential impact scores therefore remain the same before and after mitigation.

The tables have been completed by the EAP on the basis of their understanding of both the development proposal and the receiving environment. This understanding has been generated through the interrogation of relevant documents and reports (mostly referenced in this report), a site visit on 6 October 2021 in the company of the HOD Technical Services, and again with the HOD Technical Services on 5 April 2022. Consideration of comments received from registered I&APs and relevant authorities also influenced this understanding.

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Table 7: Impact assessment score allocation guide.

		PRE-MIT	IGATION			POST-MIT	TIGATION	
Extent		Duration	Intensity	Probability	Weighting factor (WF)	Significanc e rating (SR) ²	Mitigation efficiency (ME)	Mitigated aspects (MA) ³
Site		Short term	Low	Unlikely	Low	Low	High	Low
	1	(0-3 years)						
		1	1	1	1	0-19	0.2	0-19
Local		Short to		Possible	Medium low	Medium low	Medium High	Medium low
	2	medium						
		(3-5 years)		2	2	20-39	0.4	20-39
		2						
Regional		Medium term	Medium	Likely	Medium	Medium	Medium	Medium
	3	(5-10 years)						
		3	3	3	3	40-59	0.6	40-59
National		Long term		Highly Likely	Medium High	Medium High	Medium low	Medium High
	4	(10-30 years)						
		4		4	4	60-79	0.8	60-79
Internation	al	Permanent	High	Definite	High	High	Low	High
	5	(>30 years)						
		5	5	5	5	80-100	1.0	80-100

10.2 Specialist Findings and Recommendations in terms of Potential Impacts

It was deemed unnecessary to commission any specialist studies for this assessment for the following reasons:

- the refurbishments are proposed on a brownfield site within an intensive use zone, with a small average expansion area of 23.35 m² per room, cumulatively amounting to 186.8 m²;
- the assessment showed that all of the potential impacts post mitigation, are insignificant; and
- Londolozi have a well-established environmental management plan which has been well implemented in the past with similar projects and an associated track record.

² Significance Rating (without mitigation³ Significance Rating (with mitigation)

² Significance Rating (without mitigation) = SUM (Extent, Duration, Intensity, Probability) * Weighting Factor

⁼ Significance Rating (without mitigation) * Mitigation Efficiency

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10.3 Construction Phase

Table 8: Potential environmental impacts and recommended mitigation measures for the proposed Founder's Camp Refurbishment during the Construction Phase.

POTENTIAL IMPACTS AND RECOM	POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES		DURATION	INTENSITY	PROBABILITY	WEIGHTING	SIGNIFICANCE RATING	MITIGATION EFFICIENCY	ENHANCEME NT POTENTIAL	MITIGATED ASPECTS
IMPACT	MITIGATION / ENHANCEMENT	EXTENT	DUR	INTE	PROB/	WEIG	SIGNIF	MITIG	ENHAI N POTE	MITIC
	SOCIO-ECONOMIC									
A direct impact will be the employment of external contractors to undertake the refurbishment of Founder's Camp and who employ local people to assist with the work.	n/a	3	1	1	5	3	30	H: 1	H: 1	30
	BIOPHYSICAL									
The loss of biodiversity from the vegetation cleared for the approximately 186 m² required to accommodate the building.	The building extensions must be positioned so as not to disturb any protected and/or threatened plants and the clearing of vegetation must be limited to the immediate development footprint with a narrow margin surrounding it to facilitate construction movement. The area must be clearly demarcated and no movement outside will be allowed. Access to the site must also be clearly demarcated and limited to a single entry and exit point. No building material and/or construction equipment is to be stored, even temporarily, on or immediately adjacent to the construction site but rather in a pre-determined area in the service zone of the staff village. Remove and store plants from the development footprint so that they can be used for progressive rehabilitation.		5	2	5	3	39	0.6		23.4
The loss of ecosystem functionality through the loss of natural vegetation cover.	As above, and ensure that construction takes place during the dry season.	1	5	2	5	3	39	0.8		31.2
Disturbance caused by noise and the movement of people, machinery and vehicles that may impact on the movement of fauna and guest experience.	Access to be limited to the immediate development footprint with no movement outside of this allowed, except on existing roads and paths in the staff village. Vehicles and machinery to be well serviced, include exhaust dampers and dis-engage reverse signals. All communications on site to be kept low with no unnecessary shouting or raised voices. Limit construction work during game drive times only when guests are out of camp.	2	3	4	5	2	28	0.4		11.2

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POTENTIAL IMPACTS AND RECOM	MENDED MITIGATION MEASURES	EXTENT	DURATION	INTENSITY	PROBABILITY	/EIGHTING FACTOR	SIGNIFICANCE	AITIGATION EFFICIENCY	ENHANCEME NT POTENTIAL	MITIGATED ASPECTS
IMPACT	MITIGATION / ENHANCEMENT	EXT	DURA	INTER	PROBA	WEIGHTING	SIGNIFI	MITIGATION EFFICIENCY	ENHAN N POTEI	MITIG
The creation of dust that settles on adjacent vegetation and decreases its palatability to grazing and browsing fauna.	Where it is apparent that dust is being created, the working surface should be kept damp and any vegetation that has become unpalatable due to dust settling on it should be sprayed clean.	1	1	2	2	2	12	0.4		4.8
Potential soil erosion caused by the removal of the vegetation cover, removal of soil and compaction of surrounding areas.	Undertake the activity during the dry season, rehabilitate exposed surfaces as soon as possible after development and where the surfaces are permanently exposed ensure that appropriate anti-erosion mechanisms are in place.	1	3	2	2	2	16	0.4		6.4
The introduction of invasive alien plants (IAPs) from contractor's equipment and vehicles, as well as the opening of ground cover and the disturbance of soil, making the area vulnerable to infestations. Note that this is particularly relevant to <i>Parthenium hysterophorus</i> which is already present along Main Road West after entry through the boom gate at the Anti-poaching Unit (APU) although there are a diversity of IAPs in and around the camp and staff village.	All current infestations must be cleared before construction work is initiated, contractor vehicles must be checked before entering the area, i.e. at Newington Gate, to ensure that they are clean and are not carrying soil in from outside, disturbed areas must be rehabilitated progressively throughout the development process, and the areas must be monitored regularly after completion of the works to ensure that there are no new infestations.	2	4	3	3	5	60	0.4		24
The presence of external contractors poses the threat of poaching of both plants and animals.	Ensure that contractors and their staff are well informed of the codes of conduct for working in a protected area, as this relates to the illegal removal of plants and animals. Ensure that this aspect is included in the contractors contract. Maintain a presence during road works to ensure that all movements are monitored and restricted to the development footprint and the staff village, and ensure that the control measures at the APU and Newington Gate are aware of external contractors movements and the need to be vigilant in regards to this potential impact.	2	1	5	2	5	50	0.2		10
Potential pollution of the immediate environment through the introduction of solid and liquid waste from contractors and their workers.	Ensure that the contractor is aware of, and signs an agreement, to ensure that there will be no littering what-so-ever and that they have access to ablution facilities provided on site. All waste is to be separated and stored on site during the day and removed at the end of the day on a daily basis. VISUAL / AESTHETIC	1	1	3	3	2	16	0.4		6.4

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POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES		ENT	URATION	VSITY	ABILITY	TING TOR	CANCE	ATION	VCEME T VTIAL	ATED
IMPACT	MITIGATION / ENHANCEMENT	EXT	DURA	INTENSI	PROBA	WEIGHTIN	SIGNIFI	MITIG/ EFFICI	ENHAN N POTER	MITIG
The clearing of vegetation and exposure of soil, as well as the presence of contractors, workers and their vehicles and equipment may be visible from beyond the construction site.	Limit the development of twin tracks and ensure that areas disturbed are rehabilitated progressively throughout the works. Also ensure that construction is carried out during daylight hours thus preventing the need for lights and that the number of vehicles used and the size of the contract team are kept to the minimum required to get the works done as soon as possible.	2	1	5	5	3	39	0.6		23.4
HERITAGE										
Clearing of vegetation cover and earth works may unearth archaeological material.	Implementation of 'chance find' procedure.	1	1	3	3	3	24	H: 0.2		4.8

10.4 OPERATIONAL PHASE

Table 9: Potential environmental impacts and recommended mitigation measures for the proposed Founder's Camp Refurbishment during the Operation Phase.

POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES		ENT	NOITI	EXTENT	ATION	TENT	ATION	TENT	ATION	NSITY	DURATION	АВІЦІТУ	HTING TOR	ICANCE	ATION IENCY	CEMENT	MITIGATED ASPECTS
IMPACT	MITIGATION / ENHANCEMENT	EX	Z Z		PROBABIL	WEIGH	SIGNIFIC	MITIG	ENHAN	MITIC							
	SOCIO-ECONOMIC				l												
As an indirect impact the operation, Founder's Camp Refurb. will help to maintain the economic integrity of Londolozi (upmarket, low intensity and high-paying guests) and will thus ensure the enhancement of the visitor experience and therefore retain its capacity to employ local people in its operation.	n/a	3	5	2	5	2	30	H: 1	H: 1	30							

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POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES		EXTENT	DURATION	INTENSITY	PROBABILITY	WEIGHTING FACTOR	SIGNIFICANCE RATING	MITIGATION EFFICIENCY	ENHANCEMENT POTENTIAL	MITIGATED ASPECTS
IMPACT	MITIGATION / ENHANCEMENT	EX	DUR	NA PA	PROB	WEIG	SIGNIF RA	MITIG	ENHAN	MITIC
	BIOPHYSICAL									
The loss of biodiversity from the vegetation cleared from the 186 m ² for the Founder's Camp Refurb.	Ensure that the development skirt surrounding the buildings are immediately rehabilitated with plants removed from the site during construction.	1	5	1	5	2	24	1.0		24
The loss of ecosystem functionality in relation to the development footprint.	As above	2	5	1	5	2	26	1.0		26
Potential rupture of sewerage reticulation resulting in unnatural eutrophication of adjacent watercourse.	Regular checks and maintenance on infrastructure. Quarterly engagement with SSW i.t.o. their aquatic biomonitoring to ensure that Londolozi is not having an impact, and to facilitate a relevant response if there has been.	1	4	1	1	1	7	0.2		1.4
Potential soil erosion caused by the slight increase in hardened surface area and the resultant accelerated run-off.	Install stone aprons under the thatch driplines to attenuate run-off from the roof. Ensure that surrounding vegetation remains in a good condition so that it retains the capacity to retard run-off and hold the soil. Monitor for soil erosion.	2	5	1	2	3	30	0.4		12
The proliferation of invasive alien plant infestations as a result of the disturbances caused by the development.	Monitor the situation closely and ensure that the emergence of any IAPs is dealt with immediately and in the most effective way. Ensure that post development rehabilitation is complete and successful.	1	2	3	3	3	27	0.2		5.4
	VISUAL / AESTHETIC									
The roofs of the new structures may be visible from outside of the camp.	Ensure that the surrounding trees are kept in place as a screen to any potential visual impact	2	5	1	1	2	18	0.4		7.2

10.5 Assessment of the No-Go Option

Assessment of the No-Go Option for the Founder's Camp Refurbishment Table 10:

POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES		EXTENT	DURATION	INTENSITY	PROBABILITY	WEIGHTING FACTOR	SIGNIFICANCE RATING	MITIGATION EFFICIENCY	ENHANCEMENT POTENTIAL	MITIGATED ASPECTS
IMPACT	MITIGATION / ENHANCEMENT	EXT	DUR	INTE	PROB/	WEIG	SIGNIF RA	MITIC	ENHAN	MITIC
	SOCIO-ECONOMIC									
Guest experience will deteriorate and employment options will not be realised either in the short- or long-term.		2	3	2	5	2	24			
	BIOPHYSICAL							_		
None of the negative biophysical impacts will occur, although the positive impacts of enhanced efficiencies will be a lost and the risks of infrastructure failure are increased. This loss counteracts the potential positive impact of the no-go options in this regards and affects the scoring.		2	5	3	5	3	45			
	VISUAL / AESTHETIC							-		
Continuous deterioration will impact on the general aesthetics of the rooms and their ability to maintain their standard, and to secure the paying clients necessary to support Londolozi's business model.		2	5	3	3	4	52			
	HERITAGE									
No heritage sites will be impacted on.		1	5	2	5	3	39			

10.6 CUMULATIVE IMPACTS

The current Management Plan for the LGR states that there needs to be a concerted and sustained effort to reduce the cumulative anthropogenic impacts on the area. An additional 186 m² of hardened surface area at Founder's Camp may be seen as an undesirable cumulative impact. However, the potential contribution that the facility is planned to make to the perpetuation of Londolozi's guest offering needs to be seen as an acceptable trade-off. If the potential of the facility is realised to its full, this positive impact may be seen as a desirable cumulative impact.

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11 ENVIRONMENTAL IMPACT STATEMENT

11.1 SUMMARY OF KEY FINDINGS

Most of the potential impacts are relatively insignificant prior to mitigation and post mitigation they are insignificant. The only potential impacts that are significant prior to mitigation are associated with the introduction of IAPs and the poaching of fauna and flora. Mitigation of both is possible and to levels of insignificance.

Assessment of the no-go option shows that the proposed refurbishments offer a positive trade-off that will have an overall positive impact on the environment.

11.2 SENSITIVITY MAP

Founder's Camp is located within the SSW which places it within a sensitive natural environment. Each of the rooms fall within the 32 m setback of the Sand River and a non-perennial drainage line passes by Room 4 to the east, as discussed in Section 4.2.4. The refurbishment is, however, proposed on an existing footprint and is appropriate to the Londolozi Intensive Development/Services Zones (Londolozi Management Plan 2019 - 2029 (February 2019). Mitigation measures have been proposed to raise the height of Room 4 above the flood level, and all construction works will be limited to the immediate development footprint with a narrow margin of 2 m surrounding it to facilitate construction movement.

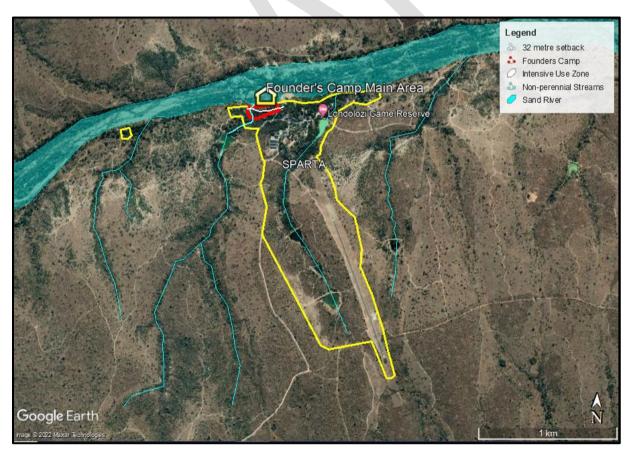


Figure 8: Founder's Camp Sensitivity Map showing Londolozi Intensive Development / Services Zones and sensitive hydrological features.

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12 ASSUMPTIONS AND LIMITATIONS

The Basic Assessment Report has been prepared on the strengths of the information available, from site visits and that provided by the Applicant and other relevant sources at the time of the assessment. Comments and inputs from I&APs were carefully considered. Topographical, vegetation and the SSW and LGR Management Plans were consulted. The assumptions made and constraints that were prevalent did not obviously have any restrictive or negative implications on the study.

In undertaking this investigation and compiling the Basic Assessment Report, the following has been assumed:

- The information provided by the client is accurate;
- The scope of this investigation is limited to assessing the environmental impacts associated with the construction and operation of the proposed Road Works and Rural Abattoir; and
- Should the project be authorised, the Applicant will implement any recommendations and mitigation measures outlined in the BAR and conditions of environmental authorisation into the detailed design and construction contract specifications of the proposed projects.

There is a high level of confidence in the accuracy of the information provided, sourced and gathered and that the resultant assessment has produced recommendations that are appropriate and that will ensure the sustainability of the proposed development.

13 RECOMMENDATION AND CONDITIONS OF AUTHORISATION

It is recommended that the proposed Founder's Camp Refurbishment as described in Sections 3.2, and the listed activity as presented in Section 3.3 be granted environmental authorisation. The conditions of authorisation are all the mitigation measures listed in Sections 10.3, 10.4 and 10.6 which need to be strictly adhered to within the context of the compliance monitoring recommendations in Section 8.3, as well as adherence to the stand-alone EMPr and those included as Annex C.

14 CONCLUSION

In conclusion it may be stated that the development proposal assessed in this report will have an overall positive impact on the management of the LGR as it progressively works to improve is management effectiveness as well as the redress of negative impacts from past developments.

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15 REFERENCES

- Londolozi Game Reserve (LGR) (2019). Londolozi Management Plan for 2019 2029. Unpublished document compiled by Messrs Kevan Zunckel, Chris Goodman and Rob Crankshaw.
- Mucina, Ladislav & Rutherford, M.C. (2006). The vegetation of South Africa, Lesotho and Swaziland. SANBI, Pretoria, South Africa.
- Nel, J.L., Driver, A., Strydom, W.F., Maherry, A., Petersen, C., Hill, L., Roux, D.J., Nienaber, S., van Deventer, H., Swartz, E. and Smith-Adao, L.B. (2011). ATLAS of FRESHWATER ECOSYSTEM PRIORITY AREAS in South Africa: Maps to support sustainable development of water resources. Report to the Water Research Commission. WRC Report No. TT 500/11, August 2011.
- Sabi Sands Wildtuin (SSW), 2019. Sabi Sand Wildtuin Protected Area | Protected Area Management Plan, 2019 2029. Unpublished document compiled by Mr Iain Olivier, Dr Mike Peel and Mr Edwin Pierce.



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ANNEX A: FULL CURRICULUM VITEA OF KEVAN ZUNCKEL: ENVIRONMENTAL ASSESMENT PRACTITIONER

Curriculum Vitae Kevan Zunckel

PERSONAL DETAILS

Full Names: Kevan Zunckel

Home Address: 'Grace Cottage', 7 Annthia Road, Hilton, 3245, South Africa

Tel: H: +27 (0) 33 343 1739 W: +27 (0) 33 343 1739 Fax: H: +27 86 517 5582 W: +27 86 517 5582

E-mail: kevanzunckel@gmail.com

Cell: +27 82 929 4270

Age: 60

Date of birth: 29th June 1961 ID number: 6106295044084 Nationality: South African

Marital Status: Married on the 19th April 2003

Children: Tamaryn (2 February 1987) Jessica Grace (13 April 2005)

Hannah Kathleen (4 February 2008)

Health: Excellent

EDUCATION

Matriculation

Attained in 1987 at Kingsway High School – Amanzimtoti, KwaZulu Natal, South Africa.

Other achievements during the matric year were as follows:

first team rugby first team squash

first team basketball (nominated for Durban and District trials)

chairman of the schools "Out-door Club" which entailed the organising and leading of regular hiking trips to the Kwa Zulu-Natal Drakensberg

Under Graduate (1981 -1984)

Four year B.Sc. Forestry / Nature Conservation at the University of Stellenbosch.

Post Graduates (1988 - April 1990)

M.Sc. Environmental Science at the University of Cape Town. The year of 1988 entailed full-time study in the form of course work and group projects. A scientific report / thesis was then compiled during the period from January 1989 to April 1990. The thesis was entitled "The Ecology and Management of the Kaapsehoop Cycad (*Encephalartos laevifolius*)".

RESUME OF WORKING EXPERIENCE

May 2010 to current

Partner with Zunckel Ecological & Environmental Services providing independent consulting services in the fields of specialist biodiversity assessments and management, protected area planning and management, sustainability assessments and management, resource ecology, pro-active and re-active environmental assessments and management planning. Some examples of relevant projects undertaken are tabled below.

EMPLOYER	CONTACT PERSON & CONTACT DETAILS	PROJECT DESCRIPTION	DURATION AND DATE COMPLETED
Deutsche	Lisa Blanken	Participate as a member of a consulting team with the	Oct 2021 –

EMPLOYER	CONTACT PERSON & CONTACT DETAILS	PROJECT DESCRIPTION	DURATION AND DATE COMPLETED
Gesellschaft fur Internationale Zusammenarbeit (GIZ) - Botswana	Cell: +267 72 817 577 Email: lisa.blanken@giz.de	determination of the resource economic value of SADC TFCAs.	on-going
UNDP Country Office Cape Verde	Goetz Schroth Email: goetz.schroth@undp.org	Compile a Project Information Form for submission to the Global Environment Facility for funding to support the revision and upgrading of biodiversity conservation governance for Cape Verde.	July – Nov 2021
UNDP Country Office Botswana	Chimbidzani Bratonozic Cell: +267 74217124 Email: chimbidzani.bratonozic@undp.org	Provide assistance as an external expert to the Environment and Climate Change portfolio of the Botswana Country Office of the UNDP in the process of developing the Country Programme Document for the period of 2022 – 2026.	Feb – June 2021
Mkambati Matters (Pty) Ltd.	Keith Stannard Cell: +27 82 7880086 Email: keith@lodgelogistics.com	Fulfil the role of an independent Environmental Compliance Officer to monitor compliance with the conditions of establishment as detailed in the environmental authorisation and report to the relevant authorities on a monthly basis.	July 2020 – on-going
South African Experiences Trading (PTY) Ltd	Lysta Stander Cell: 0716888201 Email: lysta@experiences.co.za	Undertake the environmental impact assessment and facilitate the process of applying for environmental authorisation for the operation of two mobile seasonal tented camps in the Kruger National Park.	August 2020 – on-going
and Tourism	Chimbidzani Bratonozic Tel.: +267 74 217 124 Email: chimbidzani.bratonozic@undp.org	Provide assistance to MENT and facilitate the process of their Annual Work Planning within the context of the recent political changes in the country, i.e. their desire to shift from a middle-income to a higher income economy, as well as the changes in approach to dealing with wildlife management (the reintroduction of hunting and the management of elephant).	14 Feb 2020 – May 2020
African Wildlife Foundation	Fiesta Warinwa Tel.: +254 711 063260 Email: fwarinwa@awf.org	Support the Ethiopian Wildlife Conservation Authority in the completion of the General Management Plan for the Simien Mountains National Park World Heritage Site.	Dec 2019 – October 2020
UNDP Lesotho	Lebone Molahlehi Tel.: +266 5896 3956 Email: lebone.molahlehi@undp.org	As the Chief Technical Advisor provide strategic support to the GEF/UNDP funded project "Reducing Vulnerability to Climate Change in the lowlands of the Sengu River catchment in Lesotho".	May 2019 – Dec 2021
Kruger Shalati (Pty) Ltd.	Keith Stannard Tel: +27 82788 0086 Email: keith@lodgelogistics.com	Facilitate and complete the process of applying for environmental authorisation for the Kruger Shalati development at Skukuza in the Kruger National Park and on-going environmental auditing as an independent compliance auditor for project implementation.	Jan 2018 – on-going
Environment and	André Baumgarten Tel: +264-81-5622-212 Email: andre.baumgarten@gopa.de	Facilitate the development of national guidelines for the zoning of Namibian protected areas.	Feb – April 2019
Londolozi Game Reserve	Chris Goodman Tel.: 013 735 5653 Cell: 084 692 2294 Email: chrisgoodman@londolozi.co.za	Provide ecological advice, environmental management and environmental compliance monitoring services for specific projects as and when needed. Thus far involvement has included ECO services for a number of projects, EIA for proposed developments and the facilitation of the development of a management plan for the property.	Oct 2017 – on-going
Singita Sabi Sands (Pty) Ltd.	Marc Alkema Tel.: +27 13 735 9800 Email: Marc.A@singita.com	Provide environmental management services for specific projects as and when needed in the Singita Sabi Sands portion of the Sabi Sands Game Reserve.	Oct 2017 – Sept 2019
	Kasahun Abera Tel.: +251 (0) 913 028435 Email: kassahun.abera@giz.de	Facilitate the process for and mentor key staff of the Ethiopian Wildlife Conservation Authority in the compilation of General Management Plans for three of	Feb 2018 – July 2019

EMPLOYER	CONTACT PERSON & CONTACT DETAILS	PROJECT DESCRIPTION	DURATION AND DATE COMPLETED
Zusammenarbeit (GIZ)		their national parks, i.e. Awash, Borenasaint and Chabera Chachura.	
Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ)	Vincent Frémondière Tel.: + 251 (0) 967 898 614 Cell: +33 6 13121510 Email: vincent.fremondiere@giz.de	Compile and present a course on an integrated approach to the planning and management of protected areas to relevant staff of the Ethiopian Wildlife Conservation Authority in Addis Ababa, Ethiopia.	Nov 2017
Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ)	Vincent Frémondière Tel.: + 251 (0) 967 898 614 Cell: +33 6 13121510 Email: vincent.fremondiere@giz.de	Provide protected area management expertise to the process of assessing the organisational structure and strengthening potential for the Ethiopian Wildlife Conservation Authority, working in collaboration with a senior human resource management specialist.	Aug – Sept 2017
Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ)	Martin Leineweber Tel.: +267 –723 004 13 Email: martin.leineweber@giz.de	Provide a summarised version of the SADC TFCA Guidelines inclusive of a flow diagram reflecting the guideline recommendations.	July – Sept 2017
UNDP Small Grants Programme	Anele Moyo Tel.: 012 354 8166 Cell: 079 879 7314 Email: anele.moyo@undp.org	Facilitate a process of intense stakeholder consultation and compile a COMPACT Site Strategy for the Maloti Drakensberg Park World Heritage Site on the foundation of a scoping exercise, a baseline assessment, and conceptual model and institutional modalities.	June – Sept 2017
UNDP and South African Department of Environmental Affairs	Mandy Cadman Tel.: 041 379 4221 Cell: 084 464 2559 Email: mandycadman@telkomsa.net	Facilitate a process of engagement with national and provincial conservation agencies to secure their inputs into the development of a National Biodiversity Framework for South Africa on the basis of the National Biodiversity Strategy and Action Plan.	Feb – June 2017
Environmental Rural Solutions	Nicky McLeod Tel.: 039 737 4849 Cell: 082 782 6067 Email: nicky@enviros.co.za	Facilitate a stakeholder engagement process aimed at the building of capacity to undertake an ecosystem services review and comparative analysis of scenarios related to options for the management of the Umzimvubu River catchment.	Feb – June 2017
Graham Muller and Associates	Graham Muller Tel: +27 31 206 1249 m Muller Cell: +27 83 457 1150 development adjacent to the ukhahlamba Drakensherg		Sept 2016 – Jan 2017.
IUCN Eastern and Southern African Regional Office	Leo Niskanen Tel.: +254 (20) 249 3561 /65 Cell: +254 (738) 420 766 Email: Leo.Niskanen@iucn.org	Investigate and compile a development plan for the establishment of a transboundary hiking trail in the Afar Region of Ethiopia and Djibouti.	May – Aug 2016
Eko Horizont	Ms Maja Vasilijević Tel: +385 (91) 3010 194 Email: maja.vasilijevic1@gmail.com	Working in collaboration with fellow transboundary conservation specialists, develop training material based on the latest IUCN WCPA Best Practice Guideline on Transboundary Conservation (Vasilijević et al, 2015) and present this at the international workshop on Transboundary Conservation "Hands Across Borders" in the Glacier National Park in September 2016.	
IUCN ESARO	Mr Leo Niskanen Tel: +254 (738) 420 7660750 Email: Leo.Niskanen@iucn.org	Compile a Joint Management Plan for the Lower Awash – Lake Abbé Transboundary Conservation Landscape in collaboration with key stakeholders in Ethiopia and Djibouti.	May – Aug 2016
University of South Africa (Varsity College – Pietermaritzburg)	Ms Kirsten Forbes Tel: +2733-386 2376 Email: kforbes@varsitycollege.co.za	Prepare and deliver lectures on Environmental Education to 2 nd year UNISA BA students.	Feb – April 2016
	Ms Christine Mentzel Tel: +27 74 452 0750 Email: Christine.Mentzel@iucn.org	Review the current situation with regards to the monitoring and evaluation of SADC TFCAs and design a project and road map for the development of a M&E	Feb – March 2016

EMPLOYER	CONTACT PERSON & CONTACT DETAILS	PROJECT DESCRIPTION	DURATION AND DATE COMPLETED
		framework.	
University of KwaZulu Natal: Centre for Water Resources Research	Prof Graham Jewitt Tel: +2733-2605678 Cell: +2784 717 0766 Email: jewittg@ukzn.ac.za	Contributions to the Green Fund project: Investing in Ecological Infrastructure to Enhance Water Security in the uMngeni River Catchment. Jewitt, G., Zunckel, K., Dini, J., Hughes, C., de Winnaar, G., Mander, M., Hay, D., Pringle, C., McCosh, J., and Bredin, I. (eds.), 2015, 'Investing in ecological infrastructure to enhance water security in the uMngeni River catchment, Green Economy Research Report No. 1, Green Fund, Development Bank of Southern Africa, Midrand.	July 2014 – November 2015
Isikhungusethu Environmental Services (Pty) Ltd.	Mr Roger Davis Tel: +2782 775 8834 Email: roger@isik.co.za	Undertake a comparative analysis of community livelihood strategies using an ecosystem services review approach as a means to equip stakeholders to assess the potential impact of the proposed Fuleni Coal Mine and to engage more pro-actively with the impact assessment process.	Sept – November 2015
IUCN World Commission for Protected Areas: Transboundary Conservation Specialist Group	Ms Maja Vasilijevic maja.vasilijevic1@gmail.com +385 (91) 950 9970	Revise and update the IUCN Best Practice Guideline on Transboundary Conservation. Vasilijević, M., Zunckel, K., McKinney, M., Erg, B., Schoon, M., Rosen Michel, T. (2015). Transboundary Conservation: A systematic and integrated approach. Best Practice Protected Area Guidelines Series No. 23, Gland, Switzerland: IUCN. xii + 107 pp.	Aug 2012 – May 2015
SADC Directorate for Food, Agriculture and Natural Resources (FANR)	Dr Bartolomeu Soto bsoto@tvcabo.co.mz	Compile guidelines for the establishment and development of SADC TFCAs in collaboration with the SADC TFCA Network.	Dec 2013 – Sept 2014
Institute of Natural Resources (INR)	Fonda Lewis Tel: +2733 346 0796 Cell: +2782 803 8989 Email: flewis@inr.org.za	Support the selection and design of economic instruments to incentivise improved natural resources management in target areas in the uMzimvubu and uMngeni River catchments.	Feb 2014 – May 2014
Wildlands Conservation Trust	Kevin McCann Tel: +2733 343 6380 Cell: +2783 447 0657 Email: KevinM@wildlands.co.za	The Building of Institutional Capacity for the AmaNgwane and AmaZizi Communities for the Declaration and Management of new Protected Areas	Sept 2014 – July 2015
Institute of Natural Resources (INR)	Fonda Lewis Tel: +2733 346 0796 Cell: +2782 803 8989 Email: flewis@inr.org.za	Support the INR project team in the identification and assessment of economic instruments that could create meaningful incentives for improved natural resource management in the South African case study, i.e. the upper uThukela valley.	July 2013 – May 2014
Ezemvelo KZN Wildlife	Mr Lehlohonolo Joe Phadima Email: phadimal@kznwildlife.com Cell: +2782 727 8761	EKZNW Climate Change Response Strategy on the four biomes in KZN.	Feb-2013 - Apr-2013
Emross Consulting (Pty) Ltd.	Mr Andrew Rossaak Email: andrew@emross.co.za Cell: +2782 3399 627	Design of the UNDP project: Improving Management Effectiveness of the South African Protected Area Network	Oct – Dec 2013
South African National Biodiversity Institute (SANBI)	Ms Kristal Maze Tel: +2712 843 5260 Cell: +2782 890 0188 Email: k.maze@sanbi.org.za	Coordination of Market Supply Chain for Payment for Ecosystem Services in the Upper uThukela, Umzimvubu and uMngeni Catchments for the SANBI Grasslands Programme.	May 2011 – August 2013
KZN Dept. Economic Development and Tourism	Mr Roger Davis Email: roger@isik.co.za +2782 775 8834	Ecosystem Goods and Services Specialist for the KZN Spatial Economic Development Strategy.	April 2011 - April 2012
KZN Biodiversity Stewardship Programme Coordinator Ezemvelo KZN	Mr. Kevin McCann Tel: +2733 343 6380 E-mail: KevinM@wildlands.co.za	Facilitation of the KZN Biodiversity Stewardship Agreement process for the Upper uThukela (AmaNgwane and AmaZizi) Wilderness Areas, inclusive of a biodiversity assessment and the compilation of protected area management plans.	Sept 2010 – May 2011

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EMPLOYER	CONTACT PERSON & CONTACT DETAILS	PROJECT DESCRIPTION	DURATION AND DATE COMPLETED
Wildlife			
David Bristow, Green Safari Africa Project	David Bristow Email: eardstapper@gmail.com	Author of assessment criteria and sustainability assessor of ±28 Lodges in 4 African countries for the book Africa's Finest: The Most Responsible, Sustainable Safari Destinations in Africa, showcasing the top 50+ sustainable safari destinations in sub-Saharan Africa in 14 countries and 30 "other green places to visit" finalists.	Dec-10 – June 2012
Ezemvelo KZN Wildlife	Mr Oscar Mthimkhulu Cell: +2782 457 7174 Email: mthimkho@kznwildlife.com	Economic assessment of the natural capital of the buffer zone of the uKhahlamba Drakensberg Park World Heritage Site and development of economic incentive options for residents to participate in the establishment and maintenance of the buffer	Sep 2009 – April 2010
South African National Biodiversity Institute	+2783 290 1170 the Riodiversity Management Plan for the Albany Cycad		Jan 2009 – July 2009
South African National Parks	Dr Michael Knight +2783 640 4918 Email: mknight@nmmu.ac.za	Feasibility study for the establishment of a high altitude grassland conservation and development area in the Eastern Cape Drakensberg	Dec 2009 – May 2010

April 2008 to March 2010

Environmental consultant with Golder Associates Africa (Pty) Ltd. within the Sustainable Development Division and based in their KwaZulu Natal office. Participated in a number of climate change relates projects for the City of Durban related to food security and community resilience.

September 2002 to March 2008

Project Coordinator: Maloti Drakensberg Transfrontier Project. This position entailed the establishment of a Project Coordinating Unit consisting of a team of multi-disciplinary specialists and the coordination of their activities both within South Africa and with Lesotho, within the Maloti Drakensberg Bioregion. A key aspect of the position was also to ensure continued support for and participation in the project by key role-playing national, provincial and local government departments and stakeholders. Considering that this was a closed ended five year contract position a key focus was on a sustainable exit strategy. Part of this involved investigating income generating opportunities associated with the natural and cultural resources of the bioregion. One of the more exciting components of the latter was the possibility of establishing trading systems related to the delivery of ecological services. Also key to project sustainability was the establishment of strong institutional structures and linkages within and between the three spheres of government and the two countries. This project was funded by the Global Environment Facility through the World Bank with a grant amount of US\$ 7.9 million. For more information see www.maloti.org.

April 2002 to August 2002

Independent consultant having provided my expertise to the following agencies/organisations:

The USA aid agency Development Alternatives Incorporated in the compilation and review of the joint management plan for the Greater Limpopo Transfrontier Park.

I was employed by the Southern African Wildlife College to facilitate a curriculum development workshop related to the Bush Meat Crisis.

The Forestry Stewardship Council used my services to facilitate a workshop with forestry companies and compliance auditors looking for ways to improve the accreditation process.

The national Dept. of Water Affairs and Forestry employed me to provide mentoring services to their indigenous forest managers in terms of the compilation of Integrated Management Plans.

January 1996 to March 2002

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Head of the Research and Development (R&D) division of the Mpumalanga Parks Board (MPB). The change in name of this division from the traditional Scientific Services was significant in the sense that the commercialisation mandate given to the MPB put emphasis on the need to formulate ways in which sufficient funds could be generated to support conservation in the Province. The identification of the fund generating opportunities became the responsibility of R&D. To ensure that the integrity of the resource base was not compromised in the pursuit of self-sufficiency, a process following Integrated Environmental Management Principles was identified, and has been adhered to. It was expected of R&D to ensure that the MPB remains focused on their core business of nature conservation while still commercialising the assets for which it is responsible.

As Head of this division I championed and contributed to a number of initiatives that have been recognised within the conservation fraternity as being visionary. The management planning process for protected area management, the commercialisation strategy and various land acquisition proposals are examples of these. The short course entitled "A strategic approach to the integrated planning and management of protected areas", which I presented for three years at the Southern African Wildlife College, has become one of the college's most popular short courses.

I served as the founding Chair of the Board of Trustees for the Ekangala Grassland Trust for two years. This body was established to champion the establishment and maintenance of an inter-provincial grassland biosphere reserve of approximately 1 million hectares. Although I lost my original place on the Board of Trustees through my retrenchment from the MPB, I was requested to remain on the Board as a Trustee. This I accepted and was consulted often by the current Chair and Project Co-ordinator.

I became involved in the process of establishing a Trans-Frontier Park between South Africa, Mozambique and Zimbabwe, the Greater Limpopo Transfrontier Park. At a workshop between the three countries I compiled and presented a power point presentation entitled "A framework for the joint management plan for the Gaza-Kruger-Gonerazhou Trans-Frontier Park" (the name by which it was previously known). This was accepted and was used to guide the compilation of the joint management plan. I also reviewed the plan as mentioned above.

In recognition of the growing and potential threat of bovine TB to the above initiative, as well as to the management of wildlife in the Kruger National Park and adjacent livestock, I worked in collaboration with the Mpumalanga office of the Dept. of Agriculture's veterinary services, and the veterinary services in the Kruger National Park, to convene and facilitate and workshop of all relevant stakeholders. The workshop was known as the International TB Indaba and was hosted by the Mpumalanga Parks Board. Delegates presented various perspectives on the issue and formulated recommendations that were handed over to the national Dept. of Agriculture for implementation.

November 1994 to January 1996

Although there was essentially no change in employer, this period has been entered separately into the C.V. due to the change in direction that took place within the organisation as a result of the political changes in the country and the formation of nine new provinces. This period therefore entailed the amalgamation of 3 conservation agencies that then existed in the new Mpumalanga Province into one, the Transvaal Provincial Administration's Nature Conservation component, KwaNdebele Nature Conservation and the Kangwane Parks Corporation.

The vehicle that was used to achieve the above was an Executive Committee which was comprised of a number of task teams representing the various disciplines within a typical nature conservation agency. I was given the responsibility of leading the Scientific Services task team.

The main function of this role was to compile a business plan for the scientific services component within a new paradigm of conservation that would be applicable to the new South Africa. This necessitated much interaction with the scientists and technicians to ensure that they were both included in the process, in terms of their inputs, and that they embraced the new paradigm. In addition to this I had to ensure that the results of the above process fitted into that of the vision of the new organisation.

The reason why this period seems to have taken almost two years was due to political complications. The direction taken for the new agency was one of a parastatal nature, and while this was originally supported by the politicians, it had to go through a long period of re-evaluation just when everything was in place for

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implementation, i.e. March 1995. From then until September 1995 all that had been achieved was scrutinised very carefully, including a 2-month intensive commission of enquiry.

The end result of this process was confirmation that all that had preceded it was correct. A significant addition that was made, however, was that in accepting the parastatal nature of the organisation, the Provincial government gave the MPB the mandate to commercialise conservation and to ensure financial self-sufficiency within 5 years. This then set the next process into motion and that was finalising the organisational structure and appointing key personnel. Even though people had been fulfilling specific roles, such as myself as leader of the scientific services task team, we had to apply for a position in the new organisation. This period lasted from September 1995 to January 1996 at which point my application for the position of Head of Research and Development was successful.

To begin with, the R&D Division had a staff component of 40 comprised of 14 scientists, 20 technicians and 6 field assistants. Although the staff worked closely together, the organisational structure included ecologists, specialist scientists, conservation planners, a GIS component and one developing an environmental management and audit system.

February 1991 to November 1994

Head of the Ecological Services Division of the Transvaal Provincial Administration's chief Directorate of Nature and Environmental Conservation office in Nelspruit.

The responsibilities of this post were to lead and co-ordinate the section that was to supply the Regional Head with scientifically based information to ensure the wise utilisation of the natural resources of the region. The region being the Eastern Transvaal, from the Olifants River in the north to the Pongola River in the south. The section was comprised of three ecologists and the Divisional Head.

The Division's activities included providing resource management advice on State Land (mostly TPA Nature Reserves) and private land such as game farms and private nature reserves, conservation education internally and externally and environmental conservation, i.e. impact assessments.

Towards the end of this period the political restructuring began and in preparation for the development of the new provinces, a Strategic Management Committee was formed. I became involved in drawing up the new structure for the Eastern Transvaal Province's Department of Environmental Affairs and was requested to coordinate the section of the structure that was called "Professional Services". This portfolio included ecologists, environmental scientists, terrestrial and aquatic scientists, a Geographical Information System's expert and a Landscape Architect.

August 1989 to January 1991

Nature Conservation Scientist for Flora Scientific Services in the above organisation, working on the threatened plants of the Transvaal. This project entailed surveys of the distribution and conservation status of threatened plants and the subsequent compilation of Conservation Plans for each species worked on.

January 1985 to July 1989

Conservation Planner for the Eastern and Southern Transvaal Forest Regions of the Forestry Branch of the Department of Water Affairs and Forestry, based in Nelspruit.

The responsibilities of this post primarily entailed the drawing up of Conservation Plans for the State Timber Plantations in the above mentioned regions. Integrated Environmental Management (I.E.M) principles were used in the compilation of and motivating for the implementation of these plans.

In April 1987 the conservation areas and the related personnel of the Forestry Branch, throughout the country, were transferred to the various Provincial Conservation bodies. Forestry's conservation personnel in the Transvaal were transferred to the TPA and then seconded back to Forestry. In the middle of 1989 the post with Flora Scientific Services was offered to me and I accepted. The reason for acceptance of this offer was that there seemed to be little future for a career in conservation in the Forestry Branch. The understanding of the importance of sound environmental management had not yet taken root within the Forestry Branch. Resignation was not necessary as the move merely entailed withdrawing from secondment.

NATIONAL SERVICE

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Carried out during 1979 and 1980 in the South African Air Force as a Meteorological Observer. After basic training and completion of the relevant course in Pretoria, 3 months were spent at the radar station on Mariepskop (near Hoedspruit), 9 months at Grootfontein and 6 months at Air Force Base Durban. I played rugby for the S.A.A.F at Mariepskop and Grootfontein.

REFERENCES

NAME	POSITION	CONTACT
Mr Oscar	Chief Executive Office	+27824577174
Mthimkhulu	Sabi Sands Game Reserve	
Ms Maja	Director of Ekohorizon and Vice-chair of the IUCN WCPA +385 (91) 3010 194	
Vasilijević	Transboundary Conservation Specialist Group	maja.vasilijevic1@gmail.com
Dr Mandy	Biodiversity Specialist +27 41 379 4221	
Cadman	Independent Consultant	mandycadman@telkomsa.net

PAPERS PUBLISHED AND CONFERENCE PRESENTATIONS

- Zunckel, K. and de Wet, S.F. 1992. Veld condition assessment of some game farms and nature reserves in the Eastern Transvaal lowveld during the 1991/92 drought. Paper presented at the Third International Wildlife Ranching Symposium A Celebration of Diversity, held at the CSIR in Pretoria in October 1992.
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- Zunckel, K; Mokuku, C and Stewart, G. 2004. **The Maloti Drakensberg Transfrontier Conservation and Development Project.** In Managing Mountain Protected Areas: Challenges and Responses for the 21st Century. David Harmon and Graeme L. Worboys, editors. Andromeda Editrice, Italy.
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- Zunckel, K and Zunckel, K.L. 2015. **The Application of Anthropocene Thinking to Environmental Assessments**. Paper presented at the International Association for Impact Assessment: South African Chapter, national conference at Champagne Sports, 11 14 August 2015.

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- Vasilijević, M., Zunckel, K., McKinney, M., Erg, B., Schoon, M., Rosen Michel, T. 2015. **Transboundary Conservation: A systematic and integrated approach**. Best Practice Protected Area Guidelines Series No. 23, Gland, Switzerland: IUCN. xii + 107 pp.
- Zunckel, K. 2014. Southern African Development Community Transfrontier Conservation Guidelines: The establishment and development of TFCA initiatives between SADC Member States. Guidelines compiled for and in collaboration with the SADC TFCA Network and the SADC Directorate for Food, Agriculture and Natural Resources Gaborone, Botswana.
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AFFILIATIONS

Environmental Assessment Practitioners Association of South Africa - Ref. 2020/1483

International Association for Impact Assessments: South African Chapter – Mem. No. 2396.

IUCN World Commission on Protected Areas - member.

IUCN World Commission on Protected Areas, Transboundary Conservation Specialist Group, Chair.

IUCN World Commission on Protected Areas, International Connectivity Conservation Network, Focal Point for Africa.

IUCN Theme on Indigenous Peoples, Local Communities, Equity and Protected Areas (TILCEPA) – member.

IUCN Commission on Environmental, Economic and Social Policy (CEESP) – member.

COMPUTER SKILLS

Most Microsoft packages with specific proficiencies in word processing, spreadsheets, Power Point presentations and electronic communications. Although not proficient in spatial data software, I was instrumental in introducing the use of Idrisi and later other GIS packages (ArcView and ArcInfo) to the TPA and MPB. I therefore have a good understanding of the value and application of such spatial data management tools. Typing proficiency is fast and accurate.

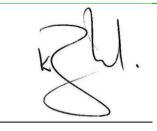
LANGUAGE PROFICIENCY

Language	Spoken	Written	Reading
English	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Good

CONFIRMATION OF AUTHENTICITY

I, Kevan Zunckel, the undersigned hereby confirm that all that is recorded in this document is authentic.

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Kevan Zunckel

Zunckel Ecological & Environmental Services



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ANNEX B: SIGNED DECLARATIONS OF INTEREST BY EAP AND SPECIALISTS AND SPECIALIST CVS



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ANNEX C: LONDOLOZI ENVIRONMENTAL MANAGEMENT PLAN FOR CONSTRUCTION AND RENOVATION OF BUILDINGS

1. SCOPE

The scope of this Environmental Management Plan (EMP) is to set a protocol for addressing environmental issues associated with the construction and renovation of buildings, to ensure that appropriate controls and checks are implemented to minimise potential environmental damage and to mitigate the impacts that may occur during the construction, renovation and development of buildings.

2. AGREEMENT

It is important to note that the EMP is to be read as a contract between the Contractor and Londolozi. It is therefore crucial that the Contractor is supplied with a copy of the EMP (or provided access to this through a web link or by other means) and it is made clear that failure to adhere to its requirements may lead to penalties levied against the Contractor.

It is also noted that any damage caused by the Contractor to areas outside the construction site, is to be compensated for, repaired or replaced at the Contractor's expense, to the satisfaction of the Londolozi Management in accordance with the Contractors penalty schedule as listed in Appendix 2.

The Landcare Manager may institute contractual measurements to ensure that Contractors adhere to the environmental obligations agreed upon. Penalties for non-compliance may be enforced and Construction staff must adhere to any management plans, policies, codes of conduct and other requirements of the Sabi Sands Game Reserve. These documents will be made available to the contractor.

The Contractor will be required to sign each page of this EMP as an acceptance of the conditions stipulated.

Londolozi looks to maintaining a fair, ethical and transparent working environment. Disagreements and grievance structures are in place and should any disagreements or issues arise, these can be managed through the existing company processes. It is preferable to all parties that a reasonable attempt is made to resolve issues through open discussion, and if necessary, with a neutral party present.

3. RESPONSIBLE PERSON

The Landcare Manager, acting in the capacity as Londolozi's Environmental Officer (here after referred to as Landcare Manager), is appointed by Company Board of Directors to ensure full compliance with the requirements of this Environmental Management Plan (EMP). The Landcare Manager should be familiar with the contents of this document and requirements of Londolozi and the Sabi Sands Game Reserve.

The primary role of the Environmental Control Officer is to act as quality controller regarding all environmental concerns. In this respect, the Landcare Manager is to conduct periodic site

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inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise.

The Landcare Manager will keep a written record in the form of compliance reports during the construction phase to monitor compliance and general progress. These compliance reports must be kept on file for possible future inspection.

The Landcare Manager may at any time institute action against a contractor due to non-compliance with the EMP.

The Landcare Manager will be responsible for the training of Contractors in terms of conveying the contents of this EMP and associated policy and Codes of Conduct to them through an induction / training session.

4. DEFINITIONS

Pre-construction: Involves all facets for the preparation of the site for construction.

Construction: For the purpose of this document, construction is defined as the physical action of constructing any structures, temporary as well as permanent. This activity should be checked prior to ensure it complies with all necessary legislation and EIA regulations.

Post-construction/rehabilitation: This phase includes the restoration of the surrounding environment that was impacted upon due to the construction process to its original state.

Decommissioning: The decommissioning of a building will occur when the use of the said structure is no longer required or when it has become non-viable in terms of maintenance to continue its upkeep. This phase is not anticipated, although it is acknowledged as a potential possibility. An EMP for this task specifically will have to be compiled.

This activity should be checked prior to ensure it complies with all necessary legislation and EIA regulations.

The SSW (draft) Management Plan Building Policy:

- Buildings must blend in with the local landscape. They should be against a natural backdrop and exterior colours should be natural and earthy to blend with the site;
- Buildings must not be higher than the surrounding tree-line;
- The structures must be planned around large trees and must minimize the need for the removal of trees or large boulders;
- Light and sound pollution must be minimized in the location, design, structure and management of all buildings and infrastructure;
- New infrastructure must not be located where it may have a potentially negative effect on important existing infrastructure, or on the possible future tourism experience of an area;
- Emphasis must be placed on water and energy saving devices and processes.

Incident: An event resulting in temporary or permanent cumulative or immediate adverse effects on the environment, e.g. an oil or chemical spillage, or release of refrigerant gas. Typically, the spill of more than 1 litre of petrol or diesel or oil or paint would constitute an incident

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Natural vegetation: All existing vegetation species, indigenous or otherwise, of trees, shrubs, ground cover, grasses and all other plants found growing on the site.

Rehabilitation: Making the land useful again after a disturbance. It involves the recovery of natural ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily reestablish the pre-disturbance condition, but does involve establishing geological and hydrologically stable landscapes that support the natural ecosystem mosaic.

Topsoil: The upper soil profile irrespective of the fertility appearance, structure, agriculture potential, fertility and composition of the soil, usually containing organic material and which is colour specific.

Protected Tree/ plant: A tree or plant which is listed as a protected species in terms of the National Forest Act or the Mpumalanga Nature Conservation Act. Both these lists are attached in Appendix 3.

5. INCIDENT REGISTERS AND REPORTING

Accidents, resulting in an incident will happen from time to time. The reporting process seeks to ensure that these are addressed and that environmental damage is minimised and that practical measures are put in place to prevent recurrence where appropriate. The purpose of the reporting is not to apportion blame, however this does not exclude the possibility that action will be taken if a failure to follow the environmental management plan, specific instructions or negligence is shown.

A site book will be kept on site at all times and completed/updated by the Contractor regularly. All incidents, instructions and agreements must be recorded in the site book. The site book must be a copy type book, available to Londolozi management for inspections. All incidents must be reported to the Landcare Manager, and the responsible Contractor will sign the logging of the incident, to ensure that the information contained in the site book is correct. The site book must contain the date, time and place of the incident that took place. Remedial measure(s) taken must also be recorded in the logbook.

Refer to Appendix 1, for an example of the information and format for incident recording.

6. CONTROLS DURING PRE-CONSTRUCTION AND CONSTRUCTION

6.1 VEHICLE ACCESS

Vehicle access to Londolozi will be through Newington Gate only and via the existing main access road. No new roads or short-cuts are to be constructed by the Contractor. Access to the footprint of the development location will be via existing roads and through the Londolozi access control boom gate. No new access is to be created without prior authorisation from the Londolozi Management (in writing) and Sabi Sands Game Reserve (if necessary).

The access road should be closely monitored for signs of potential degradation during the course of the project, this particularly due to the movement of heavy machinery. The Landcare Manager will advise on appropriate measures to mitigate any road degradation should it be required.

6.2 PROTECTION OF FAUNA AND FLORA

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Londolozi has a responsibility to comply with the National Environmental Management Act (NEMA). The Londolozi properties are also declared protected in terms of the National Environmental Management Protected Areas Act (NEMPAA) and there is a SSW management plan in the process of formal approval. Contractors have no right to damage or destroy fauna and flora without written approval from the Landcare Manager. During site layout, trees that are authorised for removal will be identified and tagged and only these trees may be removed. Any trees that are protected species may not be moved or damaged unless this is the only option available. In these cases, efforts will be made to transplant the tree following the granting of the prescribed permits.

If wood from a protected species, such as Lead Wood, is to be used in construction, permits to possess said wood must be kept on file. If wood from a protected species is purchased, this must come with a permit for transport and possession. If dead wood is collected, permits must be obtained prior to such collection.

In order to limit damage to the environment during construction, the site layout phase will also identify and peg/demarcate the stockpile sites.

No foreign materials may be nailed or attached to any trees and all 'no-go' areas are to be demarcated through the use of colour coded pegs.

No firewood or any other plant material or animal may be removed from the site.

No soil or overburden or naturally occurring rocks may be removed from the site.

The footprint to be impacted must be scrutinised for the presence of any fauna (burrowing animals such as baboon spiders, scorpions etc.) and necessary relocation action taken in the event of finding any. No footprint may be worked until such time that the Landcare Manager has completed the footprint investigation.

Open trenches must be marked and if left overnight must have escape routes available for animals – such as a sloped end to natural ground level, or a branch 'ladder' placed in the trench.

Debris and litter on site must be removed daily, particularly plastics, rope, string and wire, which can all form animal traps, or entangle on an animal, compromising its survivability.

All toxins, solvents and harmful substances must be removed from site or stored in a locked vermin proof container or room.

Contractors should clearly understand that they are working within a nature reserve. Contravention of any conservation and environmental legislation may result in prosecution. The Contractor is responsible for any illegal action by his/her staff, e.g. illegal hunting, setting of snares, fishing etc.

The Contractor will be held liable for the replacement of any plant or feature under the protection of these specifications that is removed or damaged by the Contractor's negligence or mismanagement.

The Landcare Manager shall monitor that there is no introduction of alien invasive species to the construction site. Should any such species be identified, immediate complete physical removal and any additional appropriate control measures are to be implemented under the guidance of the Landcare Manager.

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6.3 ESTABLISHMENT OF CONSTRUCTION SITE

6.3.1 Inside of camp:

The location of storage areas etc. will be indicated by the Landcare Manager. No drainage lines may be impacted upon by stored material. Where building materials are stored on the construction site, these must be neatly stacked and kept tidy. It is necessary for the Contractors to travel to and from the construction site on a daily basis.

The site boundaries will be laid out by the Landcare Manager with coloured pegs. This boundary may not be altered without Landcare Manager approval. All activities must be contained within the demarcated area and are the responsibility of the contractor. The demarcations must remain in place until rehabilitation phase has been completed.

6.3.2 Outside of camp:

There is to be no storage of construction materials outside of camp. Should storage be required for an out-of-camp construction job, this will be allocated in camp in consultation with the Landcare Manager.

Where building materials are stored on the construction site, these must constitute a maximum of one days supplies, except for stockpiles of sand and stone. Building materials must be neatly stacked on as small a footprint as possible and kept tidy.

All Contractors are to comply with the terms as stipulated in this document It is necessary for the Contractors to travel to and from the construction site on a daily basis.

No contractor on site accommodation is available at Londolozi, however, by arrangement, it may be possible for the contractor to erect tents on a site identified for such and with management agreement.

6.4. ABLUTION FACILITIES AND WASTE/ REFUSE DISPOSAL

Toilet facilities are not always available at the construction sites. Contractors are encouraged to tap into the existing sewerage pipes and septic tanks wherever possible. However, a temporary ablution facility must be in place. Toilets are to be erected at a ratio of at least 1:15 toilets per persons. The Landcare Manager will monitor the standard of hygiene and maintenance of toilets throughout the duration of the contract. It is the Contractors responsibility to keep these toilets clean and functional. Toilet paper is to be provided by the Contractor. Temporary toilets are to be secured to prevent toppling over.

Contractors are requested to paint all portable toilets a dull military nutria type colour (eg: Polynesia, matt finish) to lessen the visual impact of these temporary facilities in the natural environment. The same applies to any temporary sheds erected for material storage on building sites.

In terms of refuse disposal, the Contractor will ensure that, on a daily basis, all refuse is removed from site and disposed of at the Londolozi waste centre. The use of clear plastic refuse liners in the dustbins is obligatory to facilitate the sorting and removal of waste. These dustbins will be managed

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in accordance with the Londolozi waste management policy and management plan (part 4 of this document). It is essential that no refuse be disposed of amongst the building rubble generated, since this rubble may later be used in other applications. Building rubble and building waste is not catered for in the Londolozi waste stream. Building rubble and any other non-compactable rubble should be safely stored to be transported at a later stage. A skip container for rubble may be placed at the site as determined by the Landcare Manager. All such rubble and building waste must be removed from the site and the reserve unless specifically directed to do otherwise by the Landcare Manager.

6.5. PROVISION OF WATER

Water is currently available from the Londolozi reticulation system. This water is suitable for human consumption.

The Landcare Manager is to train Contractors on correct and safe water usage practices. Water is a precious and limited resource at Londolozi and must be used sparingly.

Washing of vehicles and laundry is prohibited on all construction sites.

Hose pipes must be entire and free of leaks and taps turned off when not in use. Hose pipes should have taps at both ends.

Handwash facilities and drinking water should be available to employees at all times.

6.6. AIR POLLUTION

No significant air pollution is anticipated. Dust suppression may be necessary if work is conducted in camp. This should be discussed with the Landcare Manager.

6.7. NOISE

Within camp, contractors must gain confirmation with regards to work hours, as this is highly dependent on existing guest movements and occupation levels. Site personnel may be required to vacate the site from time to time to a suitable venue, as directed by the Landcare Manager.

Outside of camp, management may allow extended work hours. Any work hour schedules should therefore be in agreement with management and obtained in writing.

Noise pollution will be monitored and should the need arise, the Landcare Manager may request the contractors to use manual equipment or to fit sound deadening apparatus to their equipment e.g. silencers, soundproof boxes etc. The Landcare Manager will monitor noise levels and if deemed to be excessive will request for the contractors to limit use to specified times.

Noise levels shall adhere to SABS 0103 specifications and no hooters or sirens may be used on site except where required in terms of SABS standards or in emergencies.

The use of generators may only be done with the prior permission (in writing) from Londolozi Management.

Unnecessary noise will not be tolerated. Contractors will not be permitted to shout on site. The use of megaphones is prohibited. Radios and / or any other music or sound systems are prohibited.

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6.8. VEHICLE AND EQUIPMENT FUELLING AND MAINTENANCE

All vehicle refuelling and maintenance is to occur in areas specifically maintained for these activities e.g. the workshop. The servicing and repair of equipment is to take place in the workshop or off site in areas specifically designed and designated for this.

In the event of an on-site emergency repair, the contractor must ensure that all work is conducted over an impervious layer preventing spillage of oils and fuels into the environment. Sufficient absorbent materials and spill kits must be available to assist with potential clean up requirements.

6.9. SOIL CONTAMINATION AND RESPONSE

Should any soil contamination occur during construction, such contamination is to be immediately reported to the Landcare Manager. The soil shall be removed and stored in an area determined by the Landcare Manager and shall be labelled as to the form of contamination to prevent its future use. After consultation with the Manager, the contaminated soil must be cleaned or disposed of in accordance with legislation. Minor (less than 50 litres) soil contamination by hydrocarbons (fuel) may be addressed with a bioremediation solution. Bioremediation is the application of biological microbes for the clean-up of hazardous oil spills resulting in a safe, efficient and cost-effective solution. Bioremediation uses microbes, enzymes, oxygen and other nutrients to chemically transform oil into carbon dioxide and water.

6.10. CEMENT

Cement mixing is to take place on an impermeable layer. Cement mixing areas must not be in the vicinity of drainage-lines or water bodies as cement is toxic to aquatic species. Cement wash must be prevented from entering any drainage lines.

It is suggested that cement working equipment, at the end of a working day, is washed in a drum of water. Allowing the water to settle overnight will make the upper layers of water available for further cement mixing and wetting. The remaining sludge can be allowed to dry and disposed of at the end of the project as building rubble.

Any excess cement and concrete mixes shall be retained on the construction site until completion of the construction when all spoil material and rubble will be removed and the rehabilitation process commences.

All used cement bags are immediately to be disposed of into the solid waste system. These bags are not to be used for other on site applications. On site burning of cement bags is not permitted unless in a controlled manner and with the Landcare Managers permission. The normal process will be for waste cement bags to enter the general waste system.

6.11. PROVISION OF STORAGE FACILITIES - DANGEROUS AND TOXIC MATERIALS

All toxic materials such as paints, fuel, or oil shall be stored in well ventilated areas that can be locked.

It is essential for safety reasons that all toxic materials are handled in an appropriate manner as prescribed by the labels on the products used.

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Drip trays are to be placed underneath paints and toxic materials in storage to contain accidental spills.

Toxic substance volumes must be kept at less than a total of 100 litres on site at any one time.

Should any spillage or pollution of any toxic materials occur, the Landcare Manager should immediately be contacted and mitigation measures taken. The Contractor will be liable for any clean-up costs, legal costs or fines, which may arise from such an accident.

Washing of tools used for the application of these materials is to be done in washing trays and water stored in drums, adequately labelled as toxic, with closing lids for disposal on recommendation by the Landcare Manager. No cleaning may take place using the environment as a receptor.

Empty containers that contained toxic substances are not to be used for any other application, but are to be returned to supplier, or punctured and discarded (not in the reserve) as recommended by the Landcare Manager and the product label.

6.12. PROVISION OF STORAGE FOR CONSTRUCTION MATERIAL

The Contractor will be responsible for the storage of construction material at a site determined in conjunction with the Landcare Manager. Where necessary in the stockpiled areas, the topsoil is to be removed and stored adjacent to the stockpile. No bushes or trees are to be removed for this purpose.

All storage areas are to be indicated with the Landcare Manager.

6.13. TOPSOIL REMOVAL AND STORAGE

The topsoil of all the areas affected by construction (material stockpiles and construction footprint) is to be removed and stored in heaps not higher than 1.5 meters. Periodic watering will be required to maintain the microbial action within the topsoil. Care should be taken to store topsoil in such an area, where it will not be susceptible to soil erosion or contamination from any other materials. Care should be taken to prevent any compaction of the topsoil occurring. In some case it may be necessary to trench the area around the topsoil stockpiles to prevent runoff water from heavy rains eroding these stockpiles.

6.14 BORROW PITS, QUARRIES AND THATCH

The creation of borrow pits and quarries of any size on Londolozi, is not permitted. Material may be obtained from borrow pits on Londolozi with management's permission.

Any imported fill or sand shall be free of weeds, litter and contaminants.

Thatch grass shall be free of contaminants, combed and be free of viable seed as per standard thatching regulations and standards.

6.15 SPOIL MATERIAL

All spoil material shall be disposed of in accordance with legislation. No spoil material will be left on site at completion of the project and the reuse of any material (excess crushed stone, sand etc)

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should be investigated. These spoil materials may be relocated to stockpile areas within Londolozi for later use, by arrangement with the Landcare Manager.

6.16 FIRE PREVENTION

No open fires will be allowed on the construction site or in the veld under any circumstances.

It will be expected by all Contractors to indicate their ability to fight accidental fires, through having fully functional and serviced equipment on site in the event of accidental fires. The Landcare Manager will determine the level of equipment and training required by the Contractors.

6.17 STORM WATER MANAGEMENT

No obstructions of any storm water system will be allowed and the dumping of water used for the cleaning of equipment will also not be permissible, the management of this water has been addressed under point 6.10 and 6.11 above.

Only level areas are to be used for stockpile zones and care is to be taken to prevent the stockpiling of materials in drainage lines. The Landcare Manager will assist in determining these areas.

6.18 GROUNDWATER MANAGEMENT

Caution should always be deployed when working with or in the vicinity of bore holes. No construction site run-off or waste should be allowed within 100m of a borehole.

6.19 WASTE DISPOSAL

All refuse waste will be managed in accordance with Londolozi's waste management policy and management plan.

Building rubble and any other non-compactable rubble should be safely and suitably stored for later removal. Open vehicles transporting rubble should be carefully loaded to prevent material from falling off the load area. No waste may be buried or burned on site.

6.20 TRAFFIC CONTROL

All vehicles used by Contractors and sub-contractors are to be maintained in a safe working condition.

Vehicle operators are to be in possession of valid driver licenses. It is advisable to insure vehicles and operators against claims arising from accidents and third party liability. All vehicles shall undergo regular checks to ensure they are free of oil or other lubricant leaks. The Landcare Manager may at any time prevent sub-standard or dangerous equipment from being used on Londolozi.

Contractors and sub-contractor drivers are to be courteous in all dealings with other road users and shall adhere to all roadway signage and speed limits.

Contractors and sub-contractors are to use the shortest possible route between the place of entry and the construction site at all times. Unauthorised driving through the reserve for purposes other than the building contract is not permitted.

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All the contractor's vehicles must have the contractor's decal clearly visible on both sides.

Contractors vehicles may not be left on a building site over weekends or holiday periods. These vehicles must be removed and parked in an area indicated by the Landcare Manager during these periods.

6.20 LITTERING

No littering by the Contractors or sub-contractors shall be allowed. The Landcare Manager shall monitor the neatness of the work site for any litter.

6.21 COMMUNICATION

It is essential that good communication channels between the Contractor and Landcare Manager be maintained.

6.22 TRENCHING

Trenching must be undertaken with care, considering appropriate drainage, existing water and power services and other buried obstacles.

For significant trees (as indicated by the Landcare Manager), trenching must be 3m away from the stem.

Where possible, trenches should be excavated and backfilled on a progressive basis. Excavations to stand open for no longer than 2 days if at all possible. Excavations should preferably be opened and closed on the same day. If excavations are to be left open over night, they must be clearly marked with a reflecting material and have exit points for fauna so any such can escape and are not trapped.

Ensure that no trench longer than 500m is exposed at any one time.

Programme excavation to take place only once the required materials are on site. This facilitates the immediate laying of services and / or construction of subsurface infrastructure and minimises open trench time.

7. REHABILITATION PHASE

7.1 REHABILITATION OF THE CONSTRUCTION SITE

On completion of construction, the site must be rehabilitated through the removal of all construction facilities introduced, removal of waste and any other feature constructed or established during the use of the site. All areas devoid of vegetation or where spoils and stockpiles have been stored shall be scarified or ripped and the topsoil, previously removed and stockpiled, shall be reintroduced to these areas. In some cases it may be necessary to re-seed and mulch. This, however, will be at the discretion and under the advice of the Landcare Manager.

All natural and appropriate storm water drainage areas and channels must be restored. This may also entail the creation and installation of appropriate erosion control measures. Such measures will be determined by the Landcare Manager and may involve berms, walls or other construction.

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Any concrete from past activity on the site may be required to be broken and removed – as determined by the Landcare Manager.

7.2 FINAL REHABILITATION OF THE SURFACE

On completion of the construction phase, the various surfaces in use by the contractors and sub-contractors shall be finally rehabilitated as described in this document. All infrastructures, equipment, plant and any other items used during the construction period must be removed from site. Waste receptacles, scrap and rubble will be removed entirely from site. No burial or burning of any material whatsoever will be allowed on site.

Final rehabilitation shall commence within 1 week from cessation of construction operations.

8. SITE SAFETY MANAGEMENT PROCEDURES

Disasters are a constant threat when working in conservation areas and especially on construction sites.

In order to avoid accidental fires and to aid firefighting, the Contractors must be instructed in Londolozi fire management procedures by the Landcare Manager.

In case of flooding, Londolozi will notify contractors of flooding potential as soon as this information is received (from, for example, weather forecasts).

The greatest factor regarding disaster management in this instance is the proximity to medical care for injuries on duty or evacuation in the case of serious illness. The Contractor is to have a first aid kit available on site at all times along with at least one person with a basic first aid training and current / valid certificate.

Contractors are expected to abide by National health and safety standards, and as such, hard hats are expected to be worn on site, protective eye wear, dust masks and ear protection made available for tasks that require such and harnesses for any work above 1.8 meters. Scaffolding must be secure and appropriate warning signage placed for dangerous activities. Proper footwear should be worn by all employees.

The contractor must identify the following person(s) to the Landcare Manager for each site:

- A safety representative
- A first aid officer

Contractors must be able to demonstrate that all workers are registered with the Workers Compensation Commission - WCA.

ANNEX D: PHOTOS OF THE PROPOSED FOUNDER'S CAMP REFURBISHMENT⁴



Figure 9: Room 10, arrow illustrating proposed new pathway.



Figure 11: Room 9 outside shower which will be enclosed.



Figure 10: Back of Room 10, showing position of new entrance



Figure 12: Room 9 outside shower which will be enclosed for a new bathroom area

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⁴ All photographs are the copyright of K Zunckel.



Figure 15: Main area toilet and walkway extension incl. dead Leadwood.

Figure 16:

New entrance to Room 8



Figure 17: Room 7 new bathroom extension



Figure 19: Slight extension to Room 7's deck



Figure 18: Underneath the deck of Room 7, showing existing footprint



Figure 20: Portion or Room 7's retaining wall to be removed for new access.



Figure 21: View upstream of non-perennial watercourse over which Room 4 is planned to straddle.



Figure 22: View downstream of non-perennial watercourse, Room 4



Figure 23: The existing decking in front of Room 6 where it is planned to extend the decking to close the gap between the pool and the sala.



Figure 24: Site notice put up at Sabi Sands Newington Gate on 2022-04-25.



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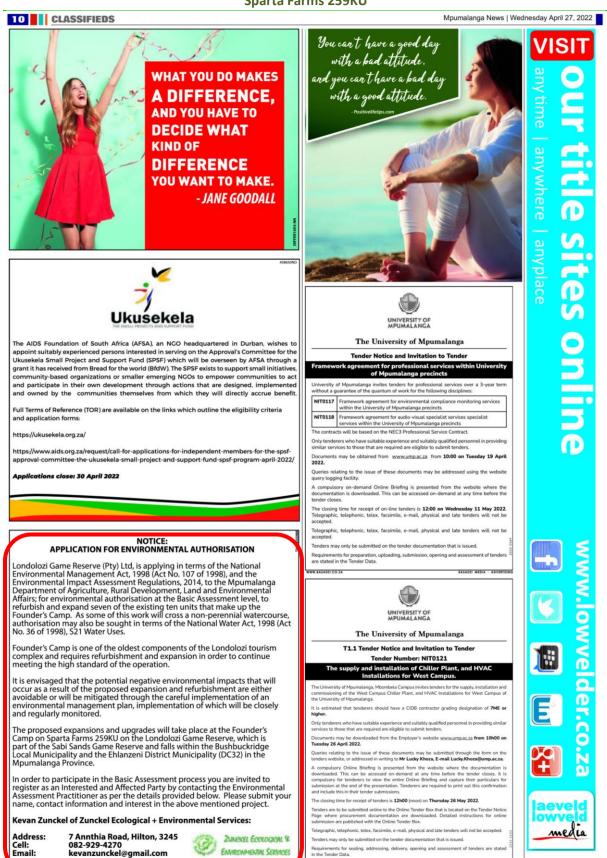


Figure 25: Mpumalanga News BAR Advertisement, Wednesday, 27 April 2022

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NOTICE: APPLICATION FOR ENVIRONMENTAL AUTHORISATION

Londolozi Game Reserve (Pty) Ltd, is applying in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014, to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs; for environmental authorisation at the Basic Assessment level, to refurbish and expand seven of the existing ten units that make up the Founder's Camp. As some of this work will cross a non-perennial watercourse, authorisation may also be sought in terms of the National Water Act, 1998 (Act No. 36 of 1998), S21 Water Uses.

Founder's Camp is one of the oldest components of the Londolozi tourism complex and requires refurbishment and expansion in order to continue meeting the high standard of the operation.

It is envisaged that the potential negative environmental impacts that will occur as a result of the proposed expansion and refurbishment are either avoidable or will be mitigated through the careful implementation of an environmental management plan, implementation of which will be closely and regularly monitored.

The proposed expansions and upgrades will take place at the Founder's Camp on Sparta Farms 259KU on the Londolozi Game Reserve, which is part of the Sabi Sands Game Reserve and falls within the Bushbuckridge Local Municipality and the Ehlanzeni District Municipality (DC32) in the Mpumalanga Province.

In order to participate in the Basic Assessment process you are invited to register as an Interested and Affected Party by contacting the Environmental Assessment Practitioner as per the details provided below. Please submit your name, contact information and interest in the above mentioned project.

Kevan Zunckel of Zunckel Ecological + Environmental Services:

Address: Cell: Fmail:

7 Annthia Road, Hilton, 3245 082-929-4270 kevanzunckel@gmail.com

ENVIRONMENTAL SERVICE

Lowvelder

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Figure 26: Lowvelder BAR Advertisement, Thursday, 28 April 2022

for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

ANNEX F: BACKGROUND INFORMATION DOCUMENT



for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

ANNEX G: MINUTES OF PRE-APPLICATION MEETING

From: Kevan Zunckel [mailto:kevanzunckel@gmail.com] Sent: Monday, April 11, 2022 11:36 AM

To: rluyt@mpg.gov.za Cc: Chris Goodman (chrisgoodman@londolozi.co.za)

Subject: Notes from pre-application meeting re Londolozi Founders Camp upgrade

Dear Robyn

Thanks again for making the time to meet with us on the 6^{th} of April 2022 to discuss Londolozi's intention to apply for authorisation for the upgrade of units 4-10 of their Founder's Camp in the Sabi Sands Game Reserve.

To recap, Londolozi wish to upgrade seven of the ten units that make up their Founder's Camp located on the property Marthly 258KU Portion 1, on the banks of the Sand River. Most of these units are within the 32m buffer from the edge of the Sand River and Unit 4 is immediately adjacent a non-perennial 3rd order tributary. For five out of the seven units the plans are for minor expansions with most of the upgrades taking place on the existing footprints. Expansions will however encroach on untransformed natural vegetation. The plans for Unit 4 are for a substantial expansion of approximately double its current footprint and a slight change in orientation. This expansion will take the unit out over the non-perennial tributary where the plan is to use ribbon blocks to suspend the construction above the drainage line and limit its impact on the hydrology. In total the additional area that will be impacted on by these expansions is just less than 200m².

The activity that is triggered by the proposed expansions and for which authorisation will need to be applied is the following:

Activity 23 of Listing Notice 3 – The expansion of (ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse in f. Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA.

The need for specialist studies will be taken up with the relevant agencies, i.e. flood lines and water use licence – Incomati Usuthu Catchment Management Agency; vegetation assessment – Mpumalanga Tourism and Parks Agency; and Heritage Assessment – South African Heritage Resources Agency. These agencies will be sent a Background Information Document and will be requested to comment on the need for specialist studies or not. Alternatively our own ecological expertise will be used to provide details on the vegetation and water course delineation through the production of a sensitivity map as part of the basic assessment report.

Please would you confirm if you agree that the above captures our discussions accurately or provide any additional thoughts or inputs that we may have missed.

Thanks and kind regards

Kevan

------Forwarded message -----

From: Robyn Luyt rluyt@mpg.gov.za Date: Fri, 27 May 2022 at 13:20

Subject: Re: FW: Notes from pre-application meeting re Londolozi Founders Camp upgrade

To: kevanzunckel@gmail.com Cc: <karzunckel@gmail.com>

Hi Kevan,

Apologies - I missed this in my inbox, which is currently inundated with bold / unread items.

I agree with your account of our discussions. Just to clarify - SAHRA to confirm requirements for heritage studies. In terms of ecology - your baseline assessment would be acceptable unless MTPA makes specific requirements. Ecology to include assessment of aquatic impacts (remember to complete the specialist declaration form if you are doing the ecological work).

Kind Regards

Robyn

ANNEX H: COMMENT AND RESPONSE REPORT

I&AP	COMMENT RESPONSE		
	BACKGROUND INFORMATION DOCUMENT DD) APRIL 2022	
Chris Fismer, neighbour at "Dudley" Fismer@fsf.co.za 25 May 2022 1:22 PM	Our view is that Dudley will not be affected by this project, and as such we have no objections against it.	Noted.	
	DRAFT BASIC ASSESSMENT REPORT DD M.	ΔΥ 2022	
	DRAIT DASIC ASSESSMENT REPORT DD M	1	
		1.	

ANNEX I: SUMMARY OF QUANTIFIERS AND QUALIFIERS USED FOR ASSESSMENT PURPOSES

CAREGORY	RATING	EXPLANATION
Sensitivity of Aspect	Low	The aspect has very little value in terms of its ecological importance e.g. a highly disturbed area is rated as low);
/ Magnitude or	Medium	The aspect has certain qualities which make it ecologically valuable); or
intensity of impact:	High	The aspect is near pristine and has numerous qualities which make it extremely ecologically valuable).
	Short-term	Impact restricted to construction and early operation (0-5 years);
Duration (time	Medium-term	Impact will cease on closure of the site (6-30 years);
scale):	Long-term	Impacts will exist beyond the life of the site (>30 years); or
	Permanent	Impacts will have permanent potential.
	Site	The impact will be limited to within the site boundaries;
	Local	The impact will affect surrounding areas;
Geographic Spatial Scale:	Regional	The impact will affect areas far beyond the site boundary but limited to the Province of KwaZulu-Natal; or
	National	The impact will affect areas far beyond the site boundary within the South Africa.
Ciamifica mas matima	Low	The impact will have a minimal effect on the environment;
Significance rating pre / post-	Medium	The impact will result in a measurable deterioration in the environment; or
mitigation:	High	The impact will cause a significant deterioration in the environment.
		Definite (>90%);
D		Probable (>70%);
Degree of certainty:		Possible (40%); or
		Unsure (<40%).
		No mitigation necessary;
Mitigation	Full	Full mitigation/reversal of the impact is possible;
Mitigation:	Partial	Only partial mitigation/reversal of the impact is possible; or
	None	No mitigation or reversal of the impact is possible.

for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

ANNEX J: EVIDENCE OF DISTRIBUTION OF DBAR TO I&APS

Evidence will be provided in the fBAR.



for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

ANNEX K: COPIES OF COMMENTS FROM NATIONAL AND PROVINCIAL ENVIRONMENTAL MANAGEMENT AUTHORITIES



for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

ANNEX L: RECORDS OF SITE MEETINGS WITH AUTHORITIES

At the time of submitting the dBAR, no site meeting was called for by any of the authorities.

Comments will be reflected in Annex K as a record of the findings, should any site visit/s take place.



for the refurbishment and expansion of the existing rooms that comprise the Founder's Camp on Sparta Farms 259KU

ANNEX M: PROPOSED NEW FOUNDER'S CAMP FLOOR PLANS

