

POWER STONE CC

**Application for Environmental Clearance Certificate
(ECC) for the proposed borrow pit for the extraction of
River Sand, near Swakopmund, Erongo Region**

Proponent:

POWER STONE CC.
P.O Box 8279
Swakopmund

Project Name:

Application for Environmental Clearance Certificate (ECC) for the proposed extraction of river sand, near Swakopmund, Erongo Region

Location, Coordinates:

Latitude: -22.71417, Longitude: 14.59333

Intended Use:

Development of borrow pit to extract construction material (River sand) for road and infrastructure projects in the Erongo Region.

Regulatory Authority:

Ministry of Environment, Forestry, and Tourism

Consultant:



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NON-TECHNICAL SUMMARY

Power Stone CC proposes the development of a borrow pit for the extraction of river sand material approximately 8 km east of Swakopmund within Dorob National Park, Erongo Region. Earth Environmental Services CC (EES) was appointed to undertake the Environmental Impact Assessment (EIA) and prepare the Environmental Management Plan (EMP) in support of the application for an Environmental Clearance Certificate (ECC). The material to be extracted is required for road construction and related infrastructure projects in the region.

The extraction of river sand from dry, non-perennial riverbed deposits for use in road construction and other infrastructure projects within the Erongo Region. The proposed extraction area covers approximately 0.34 hectares and will be accessed via the C28 road and an existing gravel track. Excavation will be shallow, limited to a maximum depth of 1.5 m, and will involve evenly sloped banks to maintain safe access and prevent landscape instability. No blasting, chemical processing, or permanent infrastructure will be required

Extraction activities will follow a phased, low-impact approach, including site demarcation, limited vegetation clearance where necessary, surface scraping, loading and hauling of river sand, and progressive rehabilitation. Operations will be undertaken using excavators, front-end loaders, and tipper trucks. Expected extraction volumes are approximately 3,000–5,000 m³ per month, dependent on demand. All facilities and equipment will be mobile and removed once extraction is completed

Baseline assessments indicate that the proposed footprint is located within a flat, sparsely vegetated desert environment with visible signs of prior disturbance. No sensitive habitats, lichen fields, active drainage channels, or key biodiversity features were identified within or adjacent to the proposed extraction area. Vegetation recorded is typical of the central Namib and widely distributed, while fauna presence is limited to mobile desert-adapted species. The proposed extraction will not alter river hydrology or intersect groundwater, and no water abstraction is required. All potable water will be sourced off-site.

The surrounding socio-economic environment is centred on Swakopmund and Walvis Bay, which function as key regional hubs for tourism, trade, logistics, and mining. Given the small scale,

temporary nature, and confined footprint of the project, the proposed activity is not expected to interfere with tourism routes or recreational use within Dorob National Park, provided that access control, dust suppression, and housekeeping measures are effectively implemented.

The EIA identified potential impacts associated with dust generation, noise, minor vegetation disturbance, limited habitat alteration, temporary visual intrusion, and low-level risks related to fuel handling and waste generation. All identified impacts were assessed as low to moderate prior to mitigation and are expected to reduce to low or very low significance with the implementation of the prescribed mitigation measures. Positive impacts include short-term employment creation, local procurement opportunities, reduced haul distances, and improved availability of river sand to support regional infrastructure development.

Progressive rehabilitation will be implemented throughout the operational life of the borrow pit. Disturbed areas will be stabilised, re-contoured to match surrounding landforms, and left to recover through natural wind-driven processes. Upon completion of extraction, all temporary infrastructure will be removed, and the site will be rehabilitated to blend with the surrounding desert landscape.

Based on the findings of this EIA, the proposed river sand borrow pit can be developed and operated with low residual environmental impact, provided that the EMP is fully implemented. It is therefore recommended that an Environmental Clearance Certificate (ECC) be issued, subject to the following key conditions:

- Compliance with all EMP commitments and MEFT requirements
- Restriction of activities to the approved 0.34 ha footprint
- Use of existing access tracks only
- Implementation of strict dust, waste, fuel, and housekeeping controls
- Full progressive rehabilitation and post-closure stabilisation

The project is considered environmentally manageable, technically feasible, and socio-economically beneficial, with impacts that are localised, temporary, and reversible when managed in accordance with the approved EMP.

1. INTRODUCTION

1.1. Background

Power Stone CC (hereinafter referred to as the Proponent) is applying for an Environmental Clearance Certificate (ECC) for the extraction of river sand from a designated borrow pit located east of Swakopmund within Dorob National Park. Earth Environmental Services CC (EES) has been appointed to undertake the Environmental Impact Assessment (EIA) and prepare the Environmental Management Plan (EMP) in support of the ECC application.

The proposed activity involves low-impact surface extraction of river sand from dry, non-perennial deposits through controlled scraping methods. No deep excavations or permanent pits will be created. Extraction will not exceed a depth of 1.5 m, and operations will be undertaken in a manner that maintains the natural landform and stability of the surrounding landscape.

1.2. Location, Site Description, Land Use and Infrastructure

1.2.1. Project Location

The project area is located approximately 8 km east of Swakopmund, within the Dorob National Park. Access to the site is gained via the C28 road, followed by an existing gravel track leading directly to the demarcated extraction area. The proposed river sand borrows pit covers a footprint of approximately 0.34 ha (Figures 1–2)

1.2.2. Current land use

The project area lies within Dorob National Park, a coastal conservation landscape that operates under a multi-use land management framework. The park supports ecological protection while accommodating limited, carefully regulated activities such as recreation, tourism, filming, research and small-scale resource use.

The eastern plains of Dorob National Park, where the proposed borrow pit is situated, are characterised by flat gravel surfaces, sparse vegetation and evidence of past human activity. Historical small-scale mining and exploration have occurred in various parts of the park, and a

network of old vehicle tracks is visible across several sections.

These conditions reflect Dorob's inclusive conservation model, which allows low-impact, temporary activities under strict environmental controls, provided that operations do not compromise ecological function, tourism value or landscape character. The proposed river sand extraction aligns with this framework because it is shallow, temporary, rehabilitated progressively, and restricted to a clearly defined polygon.

1.2.3. Site Description

The proposed 0.34 ha river sand borrow pit is located within a dry riverbed system set within a flat, open desert landscape typical of the eastern Namib. The site supports very sparse desert vegetation and shows signs of previous disturbance.

The proposed extraction areas are located north of the Swakop River channel and fall outside the mapped river corridor and associated drainage lines. The Swakop River lies to the south of the proposed footprint, and based on the mapped hydrological features, no direct surface hydrological connectivity between the borrow pit areas and the Swakop River system is evident.

The sites are situated on gravel plains characteristic of the central Namib and are not located within active coastal dune systems. Active dune fields associated with the coastal environment occur further west, closer to the coastline. The proposed borrow pits are therefore spatially separated from mobile dune systems that directly influence coastal sediment dynamics.

A site visit confirmed that:

- The terrain is largely bare and uniform, with minimal ecological sensitivity.
- Previous surface disturbances are present but shallow and scattered.
- Access is already established through existing tracks; no new roads are required.
- The surrounding area contains no permanent infrastructure, as indicated in figure 2-3.

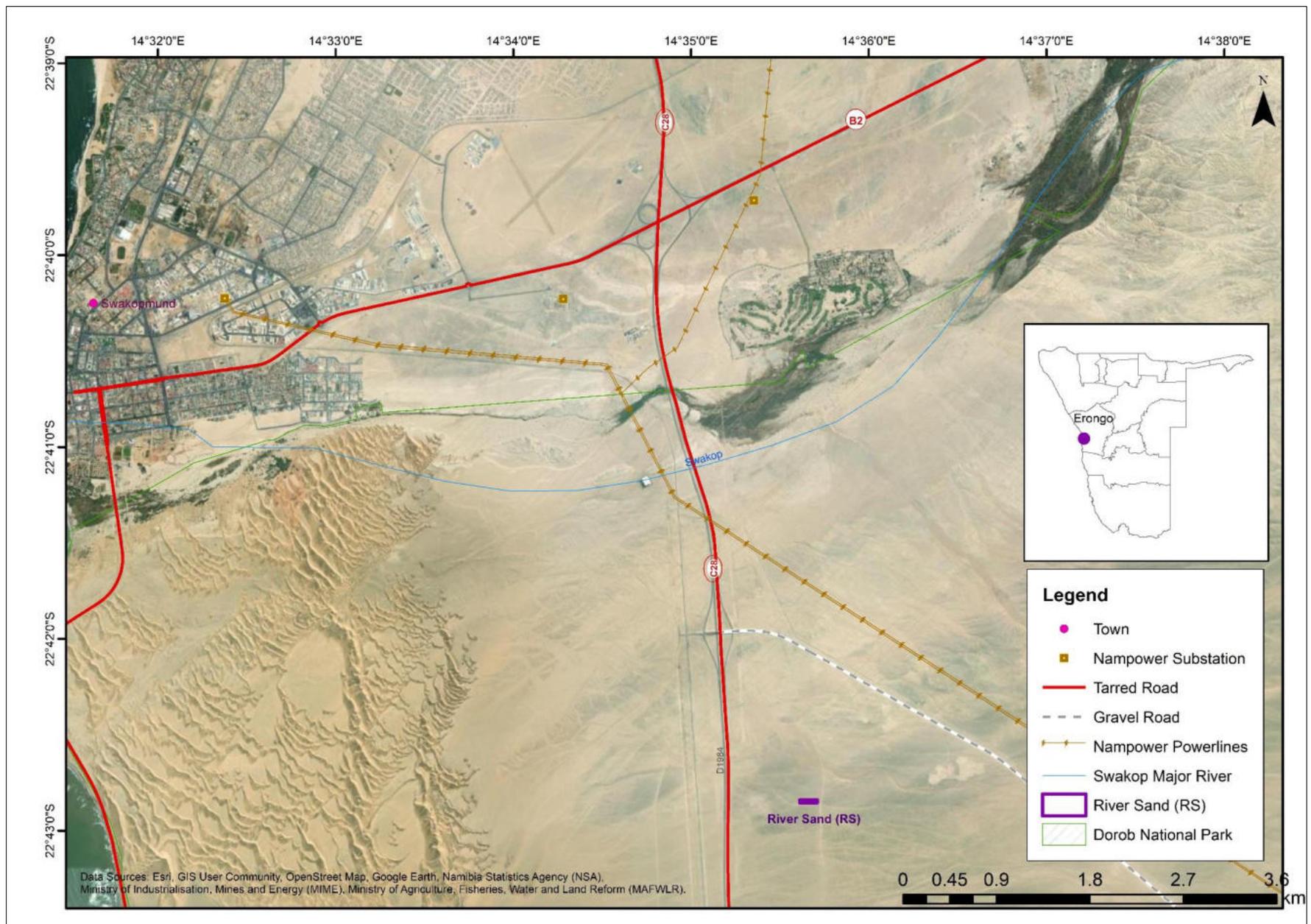


Figure 1 – Locality map and infrastructure of the proposed project

2. PROPOSED PROJECT DESCRIPTION

2.1. Project Activities: River sand Material Extraction

The proposed project involves the extraction of river sand from a designated borrow pit located within a dry, non-perennial riverbed near Swakopmund. The activities will follow a phased and low-impact development approach that includes site preparation, controlled extraction, loading and hauling, and progressive rehabilitation. The operational sequence is outlined below.

Initial On-Site Preparation and Demarcation: Prior to the commencement of extraction activities, the Proponent will undertake pegging and surveying to clearly demarcate the approved extraction footprint. Site preparation activities will include:

- Gaining access via existing tracks only
- Installing appropriate safety and warning signage
- Clearing limited vegetation within the approved footprint where necessary
- Stripping and temporarily setting aside top soil, where present, for use during rehabilitation

Extraction of River Sand

- River sand extraction will be undertaken using a controlled surface scraping method, resembling shallow shaving of the natural ground surface rather than deep excavation. The following activities will apply:
- **Scraping of Surface Layers:** Excavators, graders, and front-end loaders will remove thin layers of river sand, with extraction limited to a maximum depth of 1.5 m. Operators will maintain gently sloping profiles to preserve the natural landform and ensure safe access.
- **Loading and Temporary Stockpiling:** Extracted sand will be moved into small, temporary stockpiles or directly loaded into tipper trucks for transport to construction sites. Stockpiling, where required, will be short term and confined within the approved footprint.

-
- **Material Handling:** No blasting, chemicals, washing, or wet processing will be undertaken. All operations will rely on diesel-powered mobile machinery, and no permanent infrastructure or long-term facilities will be established on site.
 - Extraction activities will rotate across small working areas within the approved polygon. This approach minimises the extent of active disturbance at any given time and allows natural wind-driven processes to assist in levelling and stabilising worked surfaces.

The Proponent is committed to ensuring that all extraction activities remain low impact, controlled, and fully reversible. Progressive rehabilitation will be implemented throughout the operational period and will include reshaping disturbed areas, respreading of stored topsoil where available, and smoothing of surface profiles to avoid artificial depression or steep edges.

Clear and ongoing communication will be maintained with relevant authorities and stakeholders throughout the project lifecycle to ensure that operations remain compatible with conservation objectives, tourism use, and other land uses within Dorob National Park.



Figure 2 - Typical example of the operations

2.2. Supporting Infrastructure

Access and Transportation

The Proponent will utilise existing road infrastructure only for access to the river sand borrow pit. Site access is via the C28 road, followed by an existing gravel track leading directly to the demarcated extraction area. Prior to commencing operations within Dorob National Park, all required authorisations will be obtained from the relevant Parks Division and competent authorities.

Should extraction activities extend over a prolonged period, the Proponent will coordinate with

MEFT and any relevant land users to ensure that access arrangements, security measures, and environmental protection requirements are clearly agreed upon. No new access tracks or roads will be created unless formally authorised by the relevant authority.

Site Facilities and Worker Accommodation

Only temporary and minimal site facilities will be established to support river sand extraction activities. These may include:

- Portable toilets and basic sanitation facilities
- A designated, secure waste collection point
- Temporary safety signage and demarcation

No permanent infrastructure, workshops, or fixed buildings will be constructed. No on-site maintenance areas will be established, and no worker accommodation will be provided at the site. All personnel will commute daily from nearby towns such as Swakopmund, thereby minimising disturbance and avoiding the need for additional services within the park.

Utilities and Resource Supply

No water or power services will be required for the borrow pit operations. Water use will be limited to potable water for drinking purposes and will be transported to the site as required.

Fuel for all machinery will be obtained through daily refuelling in town, and no fuel will be transported to or stored at the site. As a result, no on-site fuel storage will be required. Spill kits will nonetheless be available as a precautionary measure.

A comprehensive waste management system will be implemented. All general and hazardous waste will be removed from the site and disposed of at approved municipal facilities. No waste will be buried, burned, or stored on site, and a strict take-out policy will be enforced to ensure compliance with environmental requirements.

Rehabilitation and Closure

Rehabilitation will be undertaken progressively throughout the extraction period, ensuring that disturbed areas are restored as soon as extraction in each section is completed. Scraped areas will

be reshaped and recontoured to match surrounding natural landforms, with stored topsoil respread where available to promote rapid surface stabilisation.

Edges will be smoothed to prevent the formation of artificial depressions, and all temporary structures, equipment, and waste will be removed. Natural wind-driven processes will assist in redistributing fine sediments and softening any remaining surface markings. By the time final closure is reached, the worked areas will have been reintegrated into the surrounding desert landscape, resulting in stable, safe surfaces that blend seamlessly with the wider environment.

3. PURPOSE OF THE REPORT

This report has been prepared in accordance with the Environmental Management Act (EMA) No. 7 of 2007 and the Environmental Impact Assessment (EIA) Regulations of 2012. The proposed river sand material extraction activity triggers listed activities that cannot be undertaken without an Environmental Clearance Certificate (ECC).

An ECC application will therefore be submitted to the Ministry of Environment, Forestry and Tourism (MEFT) as the issuing authority. No project activities may commence until MEFT has issued its decision.

The listed activities relevant to this project include:

MINING AND QUARRYING ACTIVITIES

3.1 The construction of facilities for any process or activity that requires a licence, right, or authorisation, including renewals, in terms of the Minerals (Prospecting and Mining) Act, 1992.

3.2 Any other form of mining or extraction of natural resources, whether regulated by law or not.

3.3 Resource extraction, manipulation, conservation, and related activities.

Applicability:

The proposed development involves the extraction of river sand through shallow, controlled surface scraping from dry, non-perennial riverbed deposits. Although this activity does not constitute mining in the conventional sense, it is classified as a resource extraction activity and

therefore triggers Listed Activities 3.1–3.3 under the Environmental Management Act and its associated EIA Regulations.

4. LEGAL REQUIREMENTS

4.1. List of applicable laws and legislations

The proposed borrow pit project must comply with national environmental and resource-use legislation as summarised in table 1.

Table 1: List of applicable laws and legislations

LAW	SUMMARY DESCRIPTION	PERMITS & APPROVALS REQUIRED
Constitution of the Republic of Namibia, 1990	Establishes national governance principles. Article 95 promotes sustainable natural resource management and environmental protection.	No permit is required, but all project activities must comply with constitutional sustainability objectives.
Environmental Management Act, 2007 (Act No. 7 of 2007) and EIA Regulations, 2012 (MEFT)	Governs environmental protection, requiring EIAs and EMPs for listed activities including resource extraction. Ensures that environmental impacts are identified, assessed and managed.	Environmental Clearance Certificate (ECC) required before commencement of borrow pit operations.
Parks and Wildlife Management Act / Dorob National Park Regulations (MEFT)	Regulate activities inside national parks to ensure conservation of sensitive landscapes.	Park Access Authorisation required for personnel, vehicles and equipment entering Dorob NP.
Water Resources Management Act, 2013 (MAWLR)	Regulates abstraction, use and protection of Namibia's water resources.	Water Abstraction Permit (if water abstraction is proposed – not required if water is transported to site). Effluent Discharge Permit (if liquid waste is generated – not expected for this project).

LAW	SUMMARY DESCRIPTION	PERMITS & APPROVALS REQUIRED
Forest Act, 2001 (MEFT)	Protects indigenous vegetation, especially protected species and riparian habitats.	Tree Harvesting Permit required if protected vegetation must be removed (unlikely due to sparse vegetation in the project area).
Hazardous Substances Ordinance, 1974 (Ordinance 14 of 1974) (MoHSS)	Regulates storage, handling and disposal of hazardous substances such as diesel and lubricants.	Hazardous Substance Handling Permit for fuel storage and handling (if stored on site).
Atmospheric Pollution Prevention Ordinance, 1976 (MoHSS)	Controls dust and air emissions, especially from activities generating particulate matter.	Applicable if dust becomes excessive; must implement dust suppression and mitigation.
Nature Conservation Ordinance, 1975 (MEFT)	Protects wildlife and plant species in Namibia. Restricts disturbance or removal of protected flora and fauna.	Permit for Removal of Protected Plant Species (if applicable). Wildlife Handling Permit (if fauna relocation becomes necessary).
Soil Conservation Act, 1969 & Amendment Act, 1971 (MAWLR)	Prevents soil erosion, degradation, and unsustainable land use.	No permit is required, but compliance with soil protection and rehabilitation guidelines is mandatory.
Labour Act, 2007 (MLIREC)	Ensures fair labour practices, workplace safety and protection of workers.	Work Permits for any foreign employees (if applicable). Compliance with all occupational health and safety provisions.
Petroleum Products and Energy Act, 1990 (MME)	Regulates the storage, handling and transport of fuel.	Consumer Installation Certificate for fuel storage facilities. Fuel Transport Permit if transporting fuel in bulk.
National Heritage Act, 2004 (MEAC)	Protects archaeological and heritage resources. Requires reporting of heritage discoveries.	Heritage Impact Assessment (HIA) if heritage resources are identified. Immediate reporting of finds under the Chance Find Procedure.

5. SCOPE OF REFERENCE

The scope of this Environmental Impact Assessment (EIA) is to systematically identify, evaluate, and manage the potential environmental and social impacts associated with the proposed borrow pit operations east of Swakopmund. The assessment draws on multiple information sources, including a review of existing literature, data provided by the proponent, stakeholder engagement, and site visits undertaken within the project area.

The objectives of the Environmental Scoping Assessment are to:

1. Identify potential environmental and social impacts both positive and negative that may arise from the proposed borrow pit activities.
2. Assess the significance, nature and extent of the identified impacts, considering direct, indirect and cumulative effects on the surrounding biophysical and socio-economic environment.
3. Recommend practical and effective mitigation measures to avoid, minimise or rehabilitate adverse impacts, while enhancing potential project benefits.
4. Engage with relevant stakeholders including park authorities, neighbouring users, and other interested and affected parties to ensure transparency, participation and inclusiveness in the assessment process.
5. Develop an Environmental Management Plan (EMP) that sets out clear actions, responsibilities, and monitoring requirements to guide environmentally responsible project implementation.
6. Support informed decision-making by the Ministry of Environment, Forestry and Tourism (MEFT).

6. EIA APPROACH AND METHODOLOGY

The project follows the Environmental Impact Assessment (EIA) Regulations, 2012, and the Environmental Management Act (EMA) Act No. 7 of 2007.

Steps in the EIA Process in Namibia	
1. Project Identification	
The proponent identifies a project that may have potential environmental impacts. The project must be screened to determine whether an EIA is required.	
2. Screening	
The proponent submits a Background Information Document (BID) to the Ministry of Environment, Forestry, and Tourism (MEFT). The Environmental Commissioner determines if the project requires an EIA based on the listed activities in the Environmental Management Act (EMA) Regulations.	
3. Scoping (Terms of Reference & Public Consultation)	
If an EIA is required, a scoping study is conducted. Baseline environmental studies and public participation are undertaken.	
4. Impact Assessment	
Identification and analysis of potential environmental, social, and economic impacts. Specialists may be required to conduct detailed studies on biodiversity, water resources, land use, and socio-economic conditions. Mitigation measures are proposed to minimize negative impacts.	
5. Public Participation	
The proponent must inform and involve stakeholders (communities, government agencies, NGOs, businesses, and other interested parties). Public meetings, notices, and consultation sessions are held. Stakeholder feedback is incorporated into the EIA report.	
6. Compilation and Submission of the EIA Report	
The EIA Report (including the Scoping Report, Impact Assessment, and Environmental Management Plan (EMP)) is prepared. The final report is submitted to the Environmental Commissioner at MEFT for review.	
7. Review and Decision-Making	
MEFT reviews the EIA report, considering: The quality of documentation. Stakeholder input. Compliance. MEFT may approve, reject, or request modifications.	
8. Environmental Clearance Decision	
If approved, the project is issued an Environmental Clearance Certificate (ECC). If not approved, the proponent may revise and resubmit the EIA or appeal to the Minister.	
9. Monitoring and Compliance	
Once the project begins, environmental monitoring ensures compliance with the EMP. Periodic audits are conducted by MEFT. If violations occur, MEFT can enforce corrective actions or revoke the ECC.	

Figure 3 – Summary EIA Flow Chart

7. PROJECT MOTIVATION/RATIONALE

The Erongo Region is undergoing significant urban growth and rapid infrastructure development, with increasing demand for reliable construction materials to support roads, housing, and public works. Gravel, calcrete, river sand, and dune sand are critical inputs for these projects, and the availability of such materials directly affects the pace and cost of development in the region.

The establishment of the borrow pit will ensure that construction materials can be sourced locally rather than transported over long distances. This will not only reduce transport costs for contractors. By locating borrow pit closer to areas of high demand, the project will contribute to both economic and environmental efficiency.

Beyond cost savings, the borrow pit will play a vital role in supporting public infrastructure initiatives, including the construction and maintenance of regional and national roads. Importantly, the project will create opportunities for local employment during both the operational and rehabilitation phases. This includes skilled and semi-skilled jobs in excavation, haulage, site management, and environmental monitoring. Local communities will also benefit from skills transfer, which can improve long-term employability in the construction and mining sectors.

In the longer term, it will contribute to sustainable regional economic growth by unlocking infrastructure potential and improving service delivery to residents and businesses.

8. ALTERNATIVES CONSIDERED

An assessment of alternatives is required to ensure that potential environmental impacts, technical considerations, and socio-economic implications are evaluated before selecting the most suitable development option. Alternatives assist in identifying the environmentally preferable and practically feasible approach for the proposed borrow pit operation.

8.1. Site / Location Alternatives

The proposed extraction area contains naturally occurring concentrations of river sand suitable for construction use. These deposits are highly localised within dry, non-perennial riverbed

systems, and similar quality material is not uniformly distributed across the wider landscape.

As a result:

- The borrow pit is positioned directly on a viable sand deposit, limiting unnecessary disturbance to surrounding areas.
- Alternative locations were not considered feasible, as they may not contain recoverable river sand of comparable quality or volume.
- Relocating the borrow pit outside the approved footprint would shift activities into less suitable terrain or require the establishment of new access routes, thereby increasing environmental disturbance and ecological risk.

Taking into account geological suitability, environmental sensitivity, and the objective of minimising new disturbance, no alternative sites were considered practical or preferable. The selected location is therefore regarded as the most environmentally manageable option for the proposed river sand extraction.

8.2. Resources and Operational Alternatives

Energy

Operations rely on diesel-powered machinery such as excavators, front-end loaders and tipper trucks. This is standard for small borrow pits and is currently the only practical option for continuous excavation in a remote, off-grid desert environment. While renewable energy systems may support future innovation, solar-powered heavy machinery is not yet viable, and electricity is not required on-site.

Access Roads

The project will rely on existing roads including the C34, C28 and D1984. No new access tracks will be developed unless specifically authorised.

Equipment and Infrastructure

Standard excavation equipment (excavators, loaders, and trucks) will be used. These machines offer efficient extraction with a small operational footprint. Although new technologies may become available in future, current equipment is appropriate for small-scale borrow pits in desert environments. Alternative machinery options would not offer practical or environmental advantages at this stage.

8.3. No-Go Alternative

The No-Go Alternative considers the scenario in which the proposed borrow pit and associated sand extraction activities do not proceed. Under this option, no disturbance would occur within the designated extraction area, and the natural landscape inside Dorob National Park would remain unchanged. Existing ecological conditions, surface soils, and landforms would continue to follow natural processes without human intervention.

While the No-Go scenario avoids all project-related impacts, it also means that no construction materials would be supplied from this source. Local contractors and public infrastructure projects would need to transport sand and river sand materials from more distant locations. This would increase transport costs, elevate fuel consumption and emissions, and may shift extraction pressure to other areas that could be more environmentally sensitive or further from established road networks. In some cases, this may result in greater cumulative environmental impact compared to a controlled, low intensity borrow pit situated within an already disturbed or geologically suitable zone.

The No-Go Alternative would also forego employment opportunities and economic benefits associated with the project, including short-term job creation, local procurement and improved availability of construction materials for regional development.

For these reasons, although environmentally neutral, the No-Go Alternative may not be the most practical or beneficial option when considering broader socio-economic needs and Namibia's infrastructure development priorities.

9. BASELINE ENVIRONMENT/ STUDY AREA

9.1. Biophysical Environment

9.1.1. Climate

Swakopmund is in the Erongo Region with a subtropical dry arid climate, which annually has temperatures varying from 14 to 21°C and barely above 25°C and below 13°C. The average cloud cover of this area causes seasonal variation throughout the year, there is a variation of four seasons, the clear (begins early March to mid-December), clearest (May), cloudy (begins mid-December to early March) and the cloudiest (January) (Spriggs & Amy, 2011).

The most form of precipitation in the region is rain being alone during February month. Rainfall in the western coast of Namibia is rarely common it stays with an average of (0 – 50 mm/a) where most rainfall is variable and localized and can be expected between the months of January through to April. It is also very common to successively experience years with no rainfall at all. Humidity level in this area does not typically vary, it remains steady at 5% throughout, the town also experiences a variation in wind speeds with an average of 14 km per hour in the windiest month July and the calmer month being March with an average of 11kmi per hour, mostly the wind blows from the south with a probability of 11 months (from February to January) reaching it highest peak of 55% (Spriggs & Amy, 2011).

There are four features that affect the coastal climate, these are the Benguela Upwelling System, the Great Escarpment, the Southern Atlantic Anticyclone and lastly the non-appearance of dominant geographical features on the 150-km wide plains which also makes it one of the most climatically stable areas (Swakopmund, 2011). The project area which is approximately 20km from Swakopmund lies within the Interior Foggy Zone (20-60km from the coast), this area is heavily precipitated by fog at night, and evaporation exceeds rainfall. Table 4 provides an overview of the regional climate data.

Table 4 - Regional Climate Data

Average annual rainfall (mm/a)	0-50
Variation in annual rainfall (%)	> 100
Average annual evaporation (mm/a)	2800-3000
Average annual temperatures (°C)	16-17
Average daily sunlight hours	8 – 9
Foggy days per year	75- 100

9.2. Fauna

Plants and animal communities are highly dependable on various factors such as climate, soil type and habitats. Although there are few known fauna and flora associated to the saline flats in this country their habitats (with water, food etc.) play a vital role so is their adaptation level, both fauna and flora in this area highly depend on fog (water source) as it reaches 140km inland (Spiggs and Amy,2011). Generally coastal saline flats are frequently home for migratory birds. Some 75 species of birds' flock to this coast hence Birdlife International has included the park under the category of "Important Bird Area".

The Dorob National Park is home to the Damara tern (*Sternula balaenarum*) a breeding seabird which is endemic to Namibia hence considered a flagship species of the coastal area and this coastal ecosystem serves as its breeding grounds. During the site visit no animals were seen on the project area, however vertebrate animals are more common in spaces with such climatic conditions and sand texture. A possibility of unseen animals could be that most are in hibernation. Desert conditions are suitable for habitats of some reptiles (geckos and snakes) and insects (beetles), the project area however has low richness in mammal species.

A desktop study conducted for the Kuiseb Delta and Dune Belt between 20 and 24 May 2011 on the vertebrate fauna (e.g., reptiles, amphibians, mammals and birds) expected to occur in the general area defined as the Kuiseb River delta and dune belt area between Walvis Bay and Swakopmund revealed that; the central coastal region and the Walvis Bay area in particular, is regarded as "relatively low" in overall (all terrestrial species) diversity (Mendelsohn et al. 2002). Overall terrestrial endemism in the area on the other hand is "moderate to high" (Mendelsohn et al. 2002).

The overall diversity and abundance of large herbivorous mammals (big game) is viewed as "low to medium" with 1-2 species while overall diversity of large carnivorous mammals (large predators) is determined at 4 species with brown hyena being the most important with "medium" densities expected in the area (Mendelsohn et al. 2002).

It is estimated that at least 54 reptile, 7 amphibians, 42 mammal and 182 bird species (breeding residents) are known to or expected to occur in the general/immediate Walvis Bay/Swakopmund area of which a high proportion are endemics. Appendix D Provides a list of species that could potentially occur in the general area.

The high percentage of endemic reptile species (50%) known and/or expected to occur in the general Walvis Bay/Swakopmund area underscores the importance of this area for reptiles. Reptile species of concern are the 2 thread snakes (*Leptotyphlops occidentalis* and *L. labialis*) as well as the sand burrowing/dwelling species such as *Bitis peringueyi* as well as the high proportion (81%) of endemic gecko (e.g., *Pachydactylus species*) species of which very little is known about their ecological role and actual status in Namibia. The seemingly barren sandy dune and gravel plain areas around Walvis Bay/Swakopmund are host to a variety of reptile fauna not often expected and/or acknowledged.

Amphibians are generally not viewed as extremely important in saline coastal areas which are marginal habitat for most amphibians. Although 43% of the amphibians expected to occur in the general area are endemic to Namibia, they are expected to occur further inland – i.e. the Kuiseb and Swakop Rivers and rocky outcrops with temporary pools associated with these landforms. The endemic *Phrynomantis annectens* is probably the amphibian of greatest concern in the area although it occurs widespread throughout large parts of Namibia.

Endemic mammal species of concern include the mole *Eremitalpa granti* and the two bats *Laephotis namibensis* and *Cistugo seabrai* as well as the Hairy-footed Gerbils (*Gerbillurus sp.*). Both bats are very poorly known with only a few records from the general area making them particularly important. The predator of concern is *Hyaena brunnea* which is classified locally as Insufficiently Known, probably Vulnerable; with an international status of Vulnerable (SARDB 2004, IUCN 2010).

9.2.1.1. Birds

The high proportion of endemic birds of which 50% (7 of 14 species) are endemic to Namibia and which are known and/or expected to occur in the general Walvis Bay/Swakopmund area is important and should be taken into consideration regarding development in the area. Species of greatest concern include all the endemics (e.g. Dune and Gray's Larks) as well as *Morus capensis* (Vulnerable – IUCN 2010), *Phalacrocorax capensis* (Near threatened – IUCN 2010), *Phalacrocorax neglectus* (Endangered – IUCN 2010), *Phalacrocorax coronatus* (Near threatened – IUCN 2010), *Phoenicopterus minor* (Endangered – IUCN 2010), *Haematopus moquini* (Near threatened – IUCN 2010), *Charadrius pallidus* (Near threatened – IUCN 2010) and *Sterna balaenarum* (Near threatened – IUCN 2010). Furthermore, the Damara Tern (*Sterna balaenarum*) which breeds in the gravel plain and sandy beach areas in the general area is the species possibly most threatened by development in the immediate Walvis

Bay/Swakopmund area.

9.3. Flora

Vegetation type as well as land coverage changes inland, land coverage decreases between 1% to 5% depending on the distance from the coastal zone. Vegetation that occurs simultaneously on the coastal saline adapt to halophytic conditions such as semi-deserts, the Inland Foggy Zone which includes the project area, contains shrub communities (*Arthaerua leubnitziae*) and lichen fields (*Caloplaca elegantissima-Xanthoparmelia walteri*), plants like Fensteralgen are more common under transparent stones such as quartz which also has a distinctive role in the fixation of minerals and soil formation (Cunningham, 2010). The vegetation in the area includes the pencil bush, dollar bush, and shepherd tree, along with some of the lichen fields, supporting the wildlife residing in the national park borders Figure 4.

The site falls within the desert biome, which is characterized by central and southern desert vegetation type (Figure 4). The Namib Desert Biome makes up a large proportion (32%) of the land area with parks in this biome making up 69% of the protected area network or 29.7% of the biome (Barnard, 1998). The vegetation in the Desert Biome is characterized by the dominance of therophytes which persist in the form of seeds during unfavorable conditions (UCCB, 2011).

According to Mendelsohn et al. (2002) the dominant vegetation structure in the Southern Desert is grassland and dwarf shrubland. These Namib grasslands, mainly annual species are very sparse, but nevertheless still dominate the little vegetation that grows around the area. The average plant production is low with 0-5% variation in green vegetation biomass. The overall plant diversity (all species) in the general Walvis Bay/Swakopmund area is estimated as <50 species (Mendelsohn et al. 2002). Burke (2003) estimates that over 400 species – 10% of the flora of Namibia occur in the central Namib and although it has not been identified as a center of endemism, it is dominated by endemics such as *Arthraerua leubnitziae*. The greatest variants affecting the diversity of plants are habitat and climate. Plant endemism is viewed as “medium” with between 1-15 endemics expected from the general Walvis/Swakopmund area (Mendelsohn et al. 2002).

Literature further reveals that the eastern inland sections pro-Namib are dominated by

Stipagrostis obtusa and *Stipagrostis ciliata* after rains while the plains closer towards the coast are dominated by *Mesembryanthemum cryptanthum* (Giess 1971). An interesting feature of the coastal areas is the extensive formation of gypsum crusts in the soil as a result of sulphur releases during upwelling events in the ocean in the past. These substrates support the most diverse lichen fields in the world (Burke 2003). The lichen fields are the areas of concern and specific species e.g., endemics (*Arthraerua leubnitziae* etc.). The under protected *Welwitschia mirabilis* and economically important species such as *Acanthosicyos horridus* (Burke 2003).

9.3.1. Lichen

Lichen diversity within Dorob National Park is exceptionally high, with at least 65 species from 33 genera expected to occur across the broader park landscape (Dorob National Park Management Plan, 2021). Approximately 23 species (34 percent) are endemic to Namibia and a further seven species (10 percent) are near endemic, shared only with the Namib Desert south of the Orange River in South Africa. As a whole, Dorob National Park supports about 37.4 percent of Namibia's 174 known lichen species, highlighting the conservation importance of the area.

However, the borrow pit footprint east of Swakopmund lies on flat gravel plains where lichen development is sparse. During the site visit, no well-developed lichen fields or sensitive lichen mats were found within or immediately adjacent to the proposed extraction area.

9.4. Key Biodiversity Areas and Ecological Considerations Near the Borrow Pit

Although Dorob National Park contains several ecologically sensitive zones, none of the major biodiversity hotspots fall within or directly adjacent to the borrow pit coordinates. The following ecological features are relevant to the local area.

i. Gravel Plains Ecosystem (Local Habitat)

The borrow pit is situated entirely within a gravel plain habitat, typical of the inland Namib. This habitat supports low vegetation cover, primarily hardy pioneer species. No rare, protected, or endemic plant populations were recorded during the assessment. The habitat

is widespread and resilient to shallow, temporary disturbance.

ii. Ephemeral Drainage Features (Regional)

Shallow ephemeral drainage forms associated with inland flows of the Swakop River occur in the broader landscape, but none intersect the borrow pit footprint. The site was selected to avoid surface flow lines and prevent disruption of natural hydrology.

iii. Lichen Crusts (Scattered Occurrence)

Small, scattered lichen patches are typical of the Namib gravel plains. At the project site, these are minimal and not part of any designated lichen field.

iv. Heritage and Archaeological Considerations

No heritage features were recorded within the borrow pit footprint east of Swakopmund. Although the Erongo Region is rich in archaeological resources, the site visit confirmed no graves, cairns, stone structures or artefact concentrations within the proposed area. A Chance Finds Procedure will nonetheless be implemented to ensure compliant handling of any unexpected discoveries.

The proposed development is unlikely to threaten any habitat of high ecological importance. All developments carry some degree of environmental risk, but early identification of key flora species and potentially sensitive habitats, combined with the application of appropriate mitigation measures, can significantly reduce these impacts. Within the proposed borrow pit area, no sensitive habitats were identified, and the plant species recorded are widespread across the central Namib rather than restricted to the project footprint. This indicates that the development is unlikely to threaten any habitat of high ecological importance.

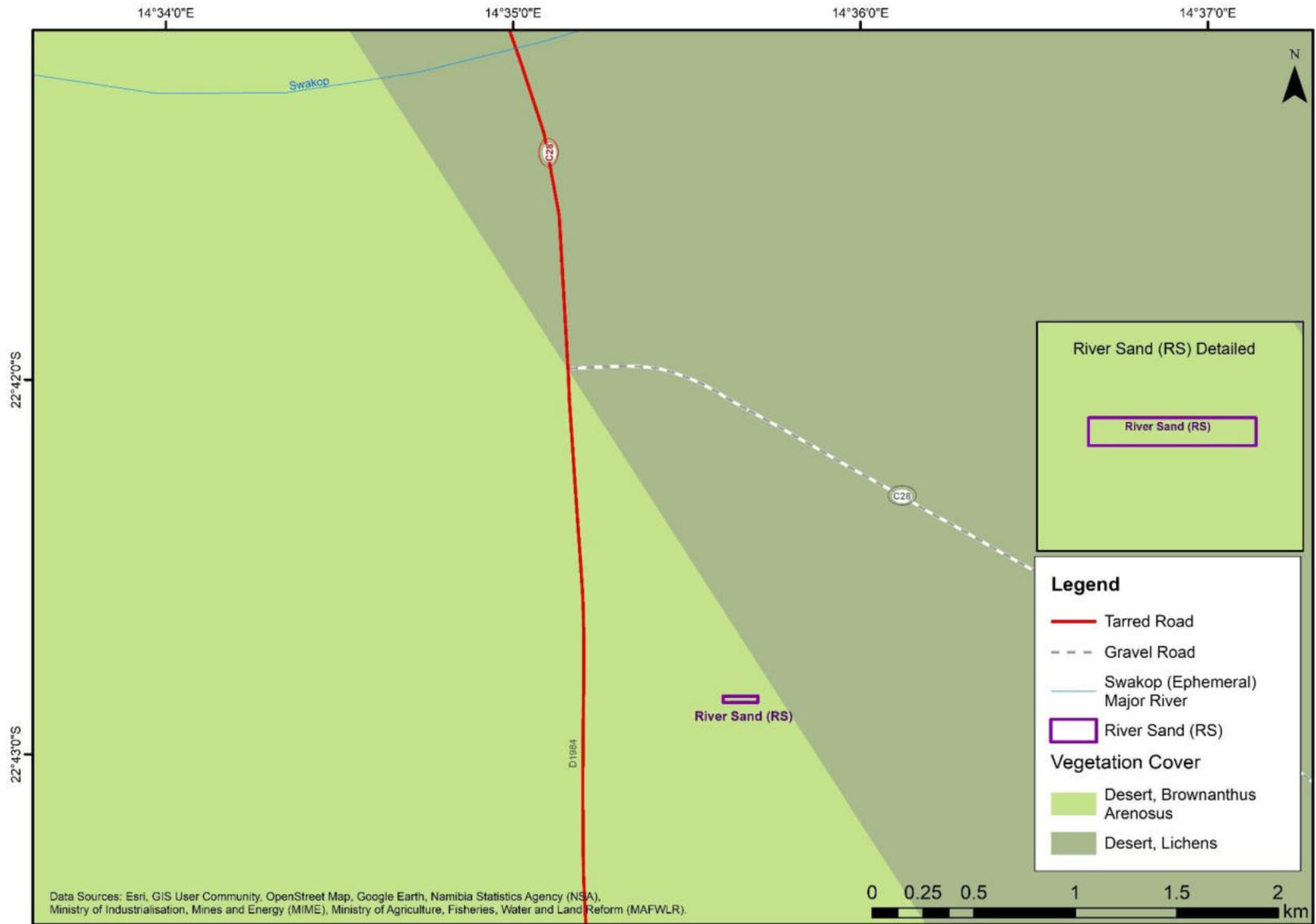


Figure 4: Vegetation type of the proposed area

9.5. Hydrogeology and Geology

The project area lies within the Erongo Basin, which supplies water to key coastal towns such as Swakopmund. Groundwater remains an important resource in this basin, supported by several piped distribution schemes that transfer both surface and groundwater to surrounding settlements. Pipelines associated with these schemes are visible near the project site. For this project, water requirements are minimal and will be limited to domestic use supplied by Swakopmund.

Hydrogeological, the coastal plain has low-yield aquifers and is characterised by poor-quality or saline groundwater, a condition common to much of Namibia's coastal fringe (Christelis & Struckmeier, 2001/2011). The shallow geology does not support substantial groundwater storage, and the risk of intersecting meaningful aquifers during a small-scale borrow pit operation is extremely low.

The regional geology is dominated by the Damara Sequence, with the surface comprising thin layers of Cenozoic superficial deposits, including colluvium, alluvium and fluvial-marine sediments. Beneath these lie Damara Granite intrusions overlain in places by deposits of the Kalahari Group. The dominant material types in the immediate project area are loose sand, calcrete and weathered granite, all of which occur at shallow depths consistent with surface-level borrow pit operations, Figure 5-6.

Coastal environments around Swakopmund are also known for their corrosive conditions, driven by fog moisture, high chloride content, airborne salts and elevated humidity. These conditions do not influence shallow borrow pit extraction but are relevant for equipment maintenance and material handling.

Importantly, the geology of the site supports the presence of naturally occurring construction materials that are already widely utilised in the region, particularly high-quality sands from the Swakop River system used for concrete production and brick manufacturing. The project area contains similar shallow deposits suitable for river sand extraction without the need for deep excavation or blasting.

Given the shallow depth of extraction, absence of groundwater interaction, and the non-aquifer nature of the geological formations present, the proposed borrow pit poses no

significant hydrogeological risk, and impacts remain limited, localised and easily manageable.

9.6. Soil

The project area falls within the Gypsisols soil group, dominated by petric Gypsisols and localised rock outcrops (Figure 8). Soil in the coastal Namib is typically characterised by very low organic carbon content, low macronutrient levels and minimal biological activity. As a result, vegetation growth is sparse, and soil structure remains weak. Poor soil quality in this area is closely linked to the region's aridity, where extremely limited moisture restricts clay development and inhibits chemical weathering. Instead, soil formation is driven mainly by physical weathering processes, including wind abrasion, temperature fluctuations and sediment transport.

Fog plays an important role in the weathering process by depositing marine salts onto soil surfaces, contributing to the gradual breakdown of mineral particles. The broader Namib landscape consists of a mosaic of rocky plains and dune systems, with soil that have low water-holding capacity and limited cohesion. Around Swakopmund, the most common soil type is the gypsum–gravel surface, a hard, brownish-white crust ranging from 30 to 90 cm in thickness. Along the coastal belt, gypsum acts as a cementing agent for sand and gravel. These deposits formed during the Tertiary and Pleistocene periods through interactions between calcrete formations and sulphur-rich marine environments. Studies indicate that more than 90% of gypsum-bearing sediments occur within roughly 50 km of Swakopmund (Schreiber & Schneider, n.d.).

The soil environment in the project area is therefore naturally harsh, nutrient-poor and slow to develop, with limited ecological sensitivity due to low biological productivity. Against this backdrop, the proposed activity represents a very low-intensity disturbance. Soil will be affected only through shallow surface scraping, consistent with small-scale borrow pit operations. Extraction does not require deep excavation or removal of subsoil profiles. Because disturbance is shallow, localised and temporary, natural wind-driven processes quickly soften scrape marks and assist rehabilitation. With progressive levelling and topsoil replacement, the soil surface is expected to revert to its typical desert appearance within a short period.

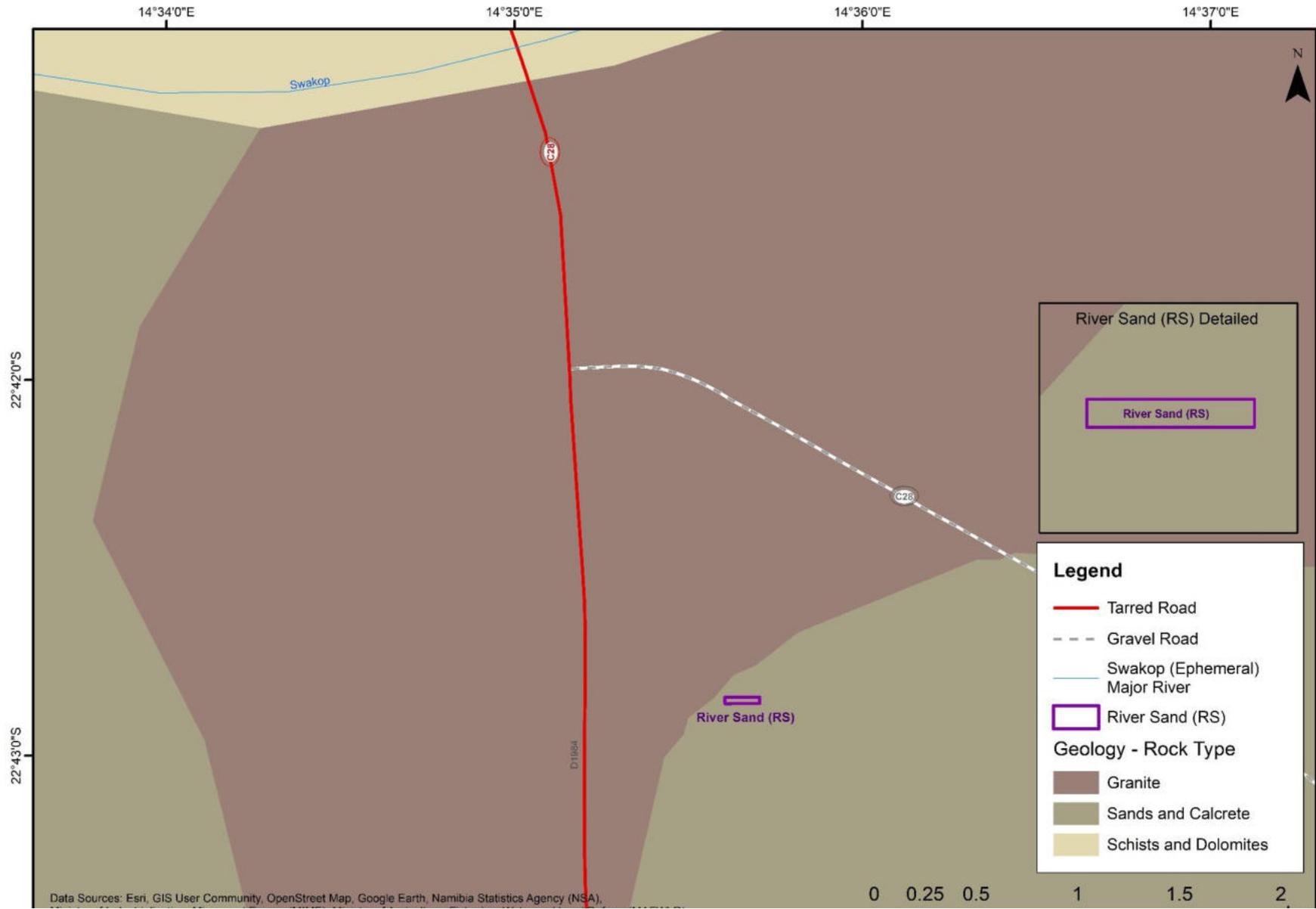


Figure 5: Geology of the proposed area

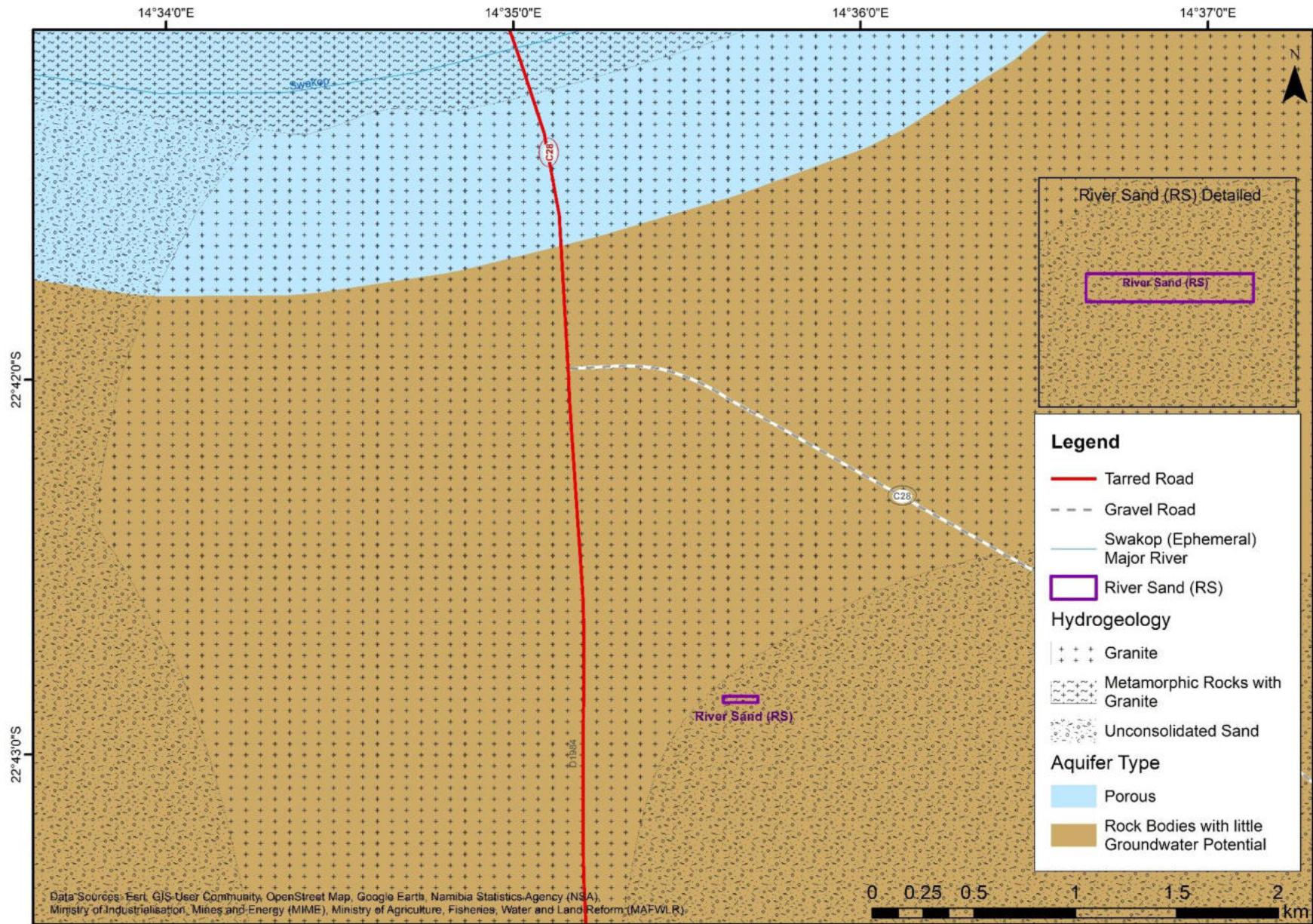


Figure 6: Hydrology of the proposed area

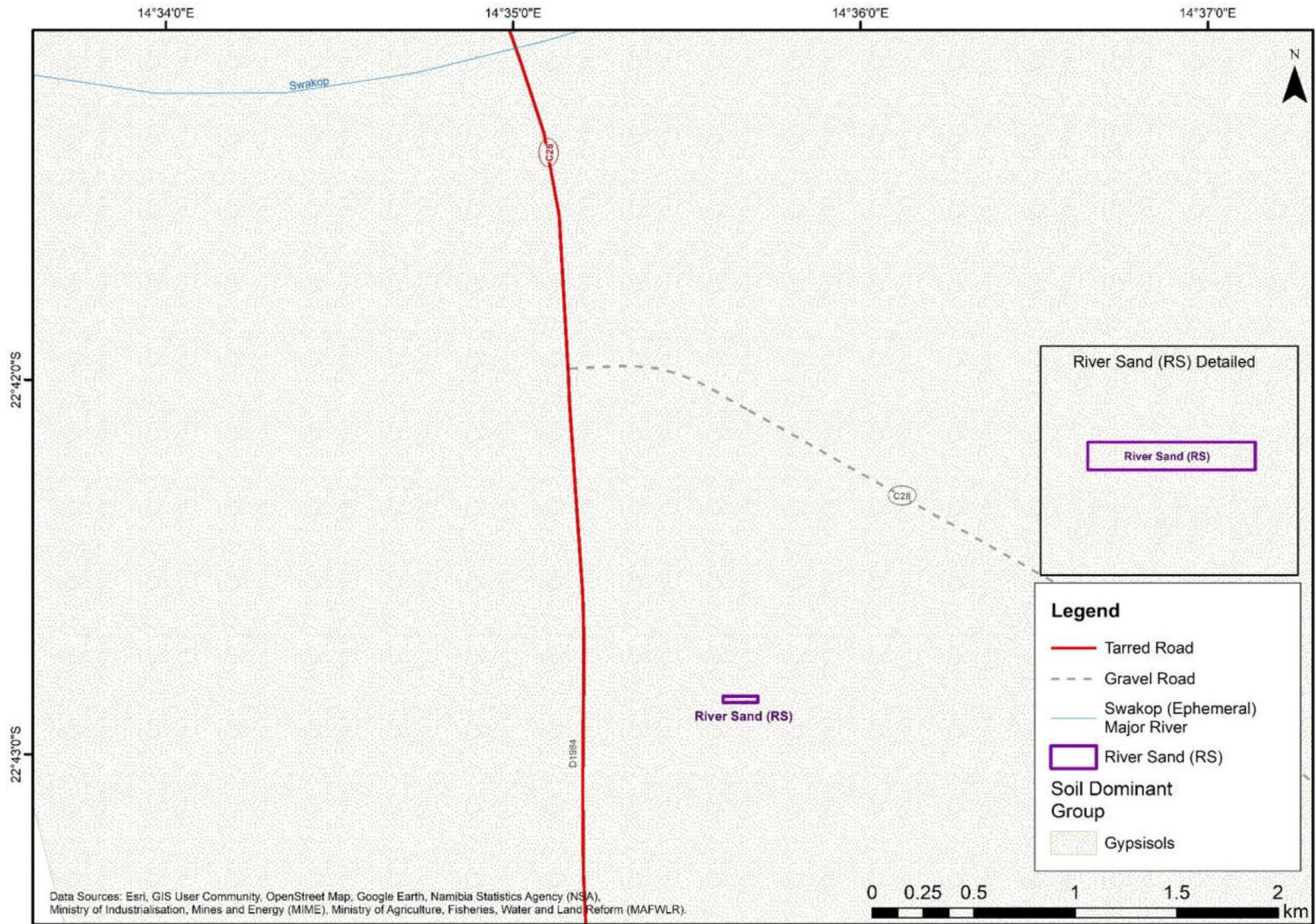


Figure 7 – Dominant soil type in the proposed project area

9.7. Socio-Economic setting

9.7.1. Regional Profile

Swakopmund is one of Namibia's principal coastal towns and a major tourism destination, known for its historic architecture, recreational activities, and unique setting between the Namib Desert and the Atlantic Ocean. It serves as the administrative capital of the Erongo Region and is well connected through the B2 national road, rail links to Windhoek, and the Swakopmund Airport. Together with Walvis Bay, the town forms an important economic and logistics hub, supported by well-developed transport infrastructure, reliable telecommunications, and established utility networks.

The local economy is driven mainly by tourism, fishing, and service industries, with additional support from mining activities in the wider region. Socioeconomic indicators show that the Erongo Region is one of the more affluent regions in Namibia, with relatively high per capita income levels and a low proportion of households experiencing severe food expenditure stress compared to national averages (NSA, 2011).

A review of the National Heritage Council and environmental information service databases indicates that no known heritage or archaeological sites occur within the proposed project area. Should any heritage resources be encountered during project activities, chance find procedures will be implemented in accordance with the National Heritage Act, 2004.

The proposed project area shows evidence of prior disturbance, which reduces the likelihood of impacts on undisturbed environmental or cultural resources.

9.7.2. Tourism and Stakeholder Activities in the Area

The project area lies within a broader landscape that supports various forms of outdoor recreation, adventure tourism and conservation-based activities typical of the central Namib. Dorob National Park is one of Namibia's most visited coastal protected areas, drawing both local and international tourists. Tourism activities contribute significantly to the local economy of Swakopmund and rely on the area's open desert scenery, accessible dune systems and unique biodiversity.

A range of tourism operators and recreational stakeholders conduct activities in the wider region, including:

- Guided desert tours and ecological interpretation trips

- Quad biking and off-road recreational driving in designated use zones
- Sandboarding and Dune Adventure Sports
- Photographic tours focusing on landscape, birds and deserted wildlife
- Stargazing and space science tourism due to excellent night sky conditions
- Commercial events, filming and small group excursions
- Cultural and historical tours linked to Swakopmund's heritage

These activities generally take place along established tourism corridors, recreational zones and designated dunes closer to Swakopmund and the coastal road network.

The proposed borrow pit is small in scale, involves shallow, low-impact extraction, and operates within a defined polygon away from major tourist routes. No scenic dune features will be altered, and the operation avoids areas commonly used for sandboarding or guided tours. Access will follow existing tracks, preventing unnecessary disturbance to recreational landscapes.

10. STAKEHOLDER ENGAGEMENT

10.1. Public participation

The public participation process was undertaken in accordance with the Environmental Management Act (2007) and the EIA Regulations (2012). Its purpose is to ensure that Interested and Affected Parties (I&APs) have an opportunity to receive information about the proposed project, raise concerns, and contribute constructively to the assessment.

A formal comment period of 21 days was provided, running from Monday, 24 November 2025 to Monday, 15 December 2025. During this period, several methods were used to notify stakeholders and invite participation.

10.1.1. Newspaper Adverts

Public notices were published once per week for two consecutive weeks in widely circulated national newspapers. The first advertisement appeared in the Market Watch section, which covers the Allgemeine Zeitung, Namibian Sun, and Republikein. The second advertisement was scheduled for publication on Monday, 1 December 2025.

Tear sheets of these notices are provided in Appendix B.

10.1.2. Site notice

Site notices were placed at strategic, publicly accessible locations around Swakopmund and the project area, including:

- Swakopmund Municipality notice board
- Erongo Regional Council notice board
- Goanikontes
- Nonidas
- Project site boundaries

These notices remained in place for the duration of the comment period. Photographs of the posted notices are included in Appendix B.

10.1.3. Public Meeting

A public meeting was held on 16 December 2025 to provide stakeholders with an opportunity to express their interests and raise any concerns or issues requiring in person discussion. As attached EIA report.

10.1.4. Stakeholder participation and recommendation

Stakeholder participation during the public meeting held on 16 December 2025 was constructive and outcome oriented. Interested and Affected Parties representing the tourism sector, environmental and biodiversity interests, cultural and heritage specialists, and the local community actively engaged in discussions on the proposed borrow pit operations. Attached report and attendance list.

Key concerns focused on the potential impacts of dune sand extraction on tourism routes, landscape aesthetics, and sense of place within Dorob National Park. While the sub-base and river sand extraction sites were generally accepted, strong opposition was expressed to the initially proposed dune sand site. This feedback directly informed the process, resulting in collaboration between the consultant, the proponent, and tourism representatives to identify an alternative dune sand extraction site shortly after the meeting. Additional procedural concerns, including communication gaps and the need for wider consultation, were

acknowledged and addressed. Further written comments received after the meeting, particularly from the Municipality of Swakopmund, highlighted cumulative impacts, tourism considerations, and alignment with existing environmental management frameworks. All stakeholder inputs were formally recorded and will be incorporated into the Environmental Impact Assessment and Environmental Management Plan to ensure that identified concerns are mitigated and managed appropriately..

11. Evaluation of Impacts

11.1. Assessment procedure

This section evaluates the potential environmental and social impacts associated with the proposed borrow pit operations within Dorob National Park. The assessment considers Planning and Site Selection, Site Establishment, Operational phase, and Rehabilitation and Closure phases, and includes direct, indirect and cumulative impacts in relation to other land uses in the area such as tourism routes, recreational activities, existing tracks and historic disturbances.

Impact identification is based on:

- Establishing baseline environmental conditions of the gravel plains areas near Swakopmund.
- Understanding the likely landscape changes if the activity proceeds.
- Analysing the operational footprint in detail to predict consequences.
- Identifying significant impacts that may occur and proposing feasible mitigation measures.

11.2. Sources of Impacts

11.2.1. Likely Sources of Positive Impacts

The proposed borrow pit operations are small in scale but still generate several positive environmental and socio-economic contributions at local and regional level. Key positive impacts include:

- Supports road and infrastructure development in Swakopmund and the wider Erongo Region
- Reduces haul distances, fuel use, emissions, and road wear through local material sourcing
- Creates short to medium term local employment and income opportunities
- Provides skills development in equipment operation, safety, and environmental management
- Supports local contractors and service providers

- Demonstrates low impact, rehabilitated extraction compatible with Dorob National Park objectives

11.2.2. Likely Sources of Negative Impacts

Table 1: The key sources of potential negative impacts associated with the proposed borrow pit and its supporting activities, by project phase.

Project Phase	Project Activity	Likely Impact
Planning and Site Selection	Selection of borrow pit footprint on gravel plains	Localised land-use change within Dorob National Park; temporary loss of sparse vegetation and surface habitat
	Selection of access route from C28 and existing track	Potential visual and traffic impact if access is not confined to existing approved routes
Site Establishment	Demarcation of footprint and access track	Soil disturbance and potential compaction within the demarcated area
	Establishment of temporary site facilities (fuel storage, maintenance area, toilets, waste point)	Localised risk of soil contamination and visual clutter if not properly managed
Operational Phase – Extraction	Surface scraping and loading of river sand material	Disturbance of gravel plain surface and sparse vegetation; temporary loss of microhabitat; minor displacement of small fauna
	Movement of machinery and tipper trucks within the site	Dust generation; noise; disturbance to nearby recreational users and tourism viewpoints if unmanaged
	Haulage of material along C28 and existing tracks	Increased traffic and dust along existing routes; potential safety risks if speed control is not enforced
	Presence of machinery and stockpiles	Temporary visual impact within the park landscape
Operational Phase – Supporting Activities	Worker presence on site	Potential littering, informal footpaths and disturbance if housekeeping and access control are poor
	Interaction with nearby tourism and recreation users	Possible perception of conflict with tourism experience (noise, dust, visual intrusion) if coordination and communication are inadequate
Rehabilitation and Closure	Recontouring and topsoil spreading	Short-term dust and disturbance during final shaping of surfaces
	Removal of temporary infrastructure and waste	Risk of residual contamination or litter if de-camping is poorly managed
	Post-closure landscape condition	Risk of uneven surfaces or small depressions if rehabilitation is incomplete, with potential safety and aesthetic implications

The following methodology is applied to the predication and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect, and cumulative where:

Status	Whether the impact/risk on the overall environment will be
	<ul style="list-style-type: none"> • Positive - Environment overall will benefit from the impact/risk; • Negative - Environment overall will be adversely affected by the impact/risk; • Neutral - Environment overall not be affected.

Direct impacts	Impacts are directly caused by the activity and usually occur at the same time and place of the activity. These impacts are often related to the construction, operation or maintenance of an operation and are often obvious and quantifiable.
Indirect impacts	These types of impacts include all the potential impacts that are not evident immediately when the activity is carried out, or which occur at a different place due to the activity.
Cumulative impacts	Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present, or reasonably foreseeable future activities.

In addition to the above, the impact assessment methodology includes the following aspects:

Spatial Extent	The size of the area that will be affected by the impact:
	<ul style="list-style-type: none"> Site specific - Only within the site boundaries Local - limited to within 15 km of the area Regional - limited to ~100 km radius National - limited to within the borders of Namibia International - extending beyond Namibia's borders

Consequence	The anticipated consequence of the impact:
	<ul style="list-style-type: none"> • Extreme - Environmental functions and processes are altered such that they permanently cease); • Severe - Environmental functions and processes are altered such that they temporarily or permanently cease); • Substantial - environmental functions and processes are altered such that they temporarily or permanently cease); • Moderate - Environment continues to function but in a modified manner); or • Slight - No natural systems/environmental functions, patterns, or processes are affected.

Duration	The timeframe during which the impact/risk will be experienced
	<ul style="list-style-type: none"> • Very short term - instantaneous; • Short term - less than 1 year; • Medium term - 1 to 10 years; • Long term - The impact will occur for the project duration • Permanent - The impact will occur beyond the project decommissioning.

Reversibility of the Impacts	The extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase)
	<ul style="list-style-type: none"> • Yes - High reversibility of impacts (impact is highly reversible at end of project life); • Partially - Moderate reversibility of impacts; or • No - Impacts are non-reversible (impact is permanent).

Using the criteria above, the impacts will further be assessed in terms of the following:

Probability	The probability of the impact/risk occurring
	<ul style="list-style-type: none"> • Very likely; • Likely; • Unlikely; • Very unlikely; and • Extremely unlikely.

To determine the significance of the identified impact/risk, the consequence is multiplied by probability. This approach incorporates internationally recognized methods from the IPCC (2014) assessment of the effects of climate change and is based on an interpretation of existing information in relation to the proposed activity. The significance is then rated qualitatively as follows against a predefined set of criteria (i.e., probability and consequence) as indicated below:

		IMPACT = CONSEQUENCE X PROBABILITY				
PROBABILITY	Very Likely					Very High Impact
	Likely				High Impact	
	Unlikely			Moderate Impact		
	Very Unlikely		Low Impact			
	Extremely Unlikely	Very Low Impact				
		Slight	Moderate	Substantial	Severe	Extreme

Where:

Significance	Will the impact cause a notable alteration of the environment?
	<ul style="list-style-type: none"> • Very low (5) - The risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures and will not have an influence on decision-making. • Low (4) - The risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision making; • Moderate (3) - The risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated; • High (2) - The risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision making); and • Very high (1) - The risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision making.

Confidence	The degree of confidence in predictions based on available information and specialist knowledge
	<ul style="list-style-type: none"> • Low - Based on the availability of specialist knowledge and other information • Medium - Based on the availability of specialist knowledge and other information • High - Based on the availability of specialist knowledge and other information

Impacts are evaluated for the construction and operation phases of the development. The assessment of impacts for the decommissioning phase is not presented in detail this document, as there is limited understanding at this stage of what this might entail. Impacts have been evaluated with and without mitigation in order to determine the effectiveness of mitigation measures on reducing the significance of a particular impact. The Assessment is presented in the following section and further in the Environmental Management Plan (EMP).

12. IMPACTS ASSESSMENT

12.1. Pre-Operation Phase (Planning and Site Preparation)

Impact Pathway	Nature of Impact	Spatial Extent	Duration	Consequence	Probability	Reversibility	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation	Confidence
Footprint demarcation and minor site establishment	Local disturbance to sparse vegetation and surface crust	Site-specific	Short-term	Slight	Likely	Partially	Moderate	Limit clearing to approved footprint; avoid off-track movement; brief workers on sensitive desert surfaces	Low	High
Use of existing access tracks	Local soil compaction from vehicles	Local	Short-term	Slight	Likely	Yes	Low	Strict use of existing C28 tracks; no creation of new routes	Very Low	High
Temporary facility setup	Small risk of litter or minor pollution	Site-specific	Short-term	Slight	Likely	Yes	Moderate	Provide waste bins; no fuel stored during this phase; implement housekeeping rules, Take in – take out policy	Very Low	High
Pre-operation employment	Job creation for local workers	Local	Short-term	Slight	Very Likely	Yes	Low Positive	Prioritize local labour where possible	Moderate Positive	Medium

Impact Pathway	Nature of Impact	Spatial Extent	Duration	Consequence	Probability	Reversibility	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation	Confidence
Visual presence of workers and vehicles	Temporary visual intrusion	Very Local	Very Short-term	Slight	Likely	Yes	Moderate	Keep footprint compact; remove all temporary materials at end of phase	Low	High

12.2. Operation Phase (Extraction, Loading, Hauling)

Impact Pathway	Nature of Impact	Spatial Extent	Duration	Consequence	Probability	Reversibility	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation	Confidence
Shallow scraping to 1.5 m	Loss of habitat for common desert species	Site-specific	Medium-term	Moderate	Likely	Partial	Moderate	Keep excavation shallow; restrict activity to 11.7 ha footprint; avoid any lichen patches if encountered	Low	High
Movement of machinery	Soil compaction, disturbance	Local	Medium-term	Moderate	Likely	Yes	Moderate	Restrict movement to working area; no new tracks	Low	High
Shallow scraping and surface disturbance interacting with natural aeolian processes	Temporary alteration of surface texture and redistribution of loose sediments through wind-driven sand movement		Short- to medium-term	Low to moderate	Likely	Yes (high)	Low to Moderate	Limit excavation depth to a maximum of 1.5 m and maintain shallow, even surfaces Implement progressive reshaping of worked areas to avoid abrupt edges or depressions Avoid creating fine, unconsolidated stockpiles		

Impact Pathway	Nature of Impact	Spatial Extent	Duration	Consequence	Probability	Reversibility	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation	Confidence
								<p>exposed to strong winds</p> <p>Allow natural aeolian processes to assist in surface smoothing following rehabilitation</p> <p>Suspend activities during extreme wind conditions where excessive sand movement or dust is observed</p>		
Loading and hauling	Dust generation affecting workers and local vegetation	Local	Medium-term	Moderate	Very Likely	Partial	High	Water suppression when needed; avoid operations during extreme winds; PPE use	Moderate	High
Machinery operation	Noise disturbance	Local	Short-term	Slight	Likely	Yes	Low	Maintain equipment; avoid after-hours operation; provide ear protection	Very Low	Medium

Impact Pathway	Nature of Impact	Spatial Extent	Duration	Consequence	Probability	Reversibility	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation	Confidence
Temporary stockpiles	Increased dust; visual impact	Site-specific	Short-term	Slight	Likely	Yes	Low	Keep stockpiles low; stabilize with moisture if needed	Very Low	High
Waste generation	Litter and minor pollution	Local	Short-term	Moderate	Likely	Yes	Moderate	Implement take-in take-out waste policy; dispose at Swakopmund site	Low	High
Visual impact of operations	Visible machinery on gravel plain	Local	Short-term	Slight	Likely	Yes	Moderate	Keep operations compact and low profile	Low	High
Employment during operations	Increased local jobs	Regional	Medium-term	Moderate	Very Likely	Yes	Moderate Positive	Employ local operators and drivers	High Positive	Medium
Interaction with tourists and tour operators	Temporary disturbance to visual experience and sense of wilderness	Local	Short-term	Slight	Possible	Yes	Moderate	Limit operational footprint; avoid peak tourism times where feasible; maintain orderly site appearance	Low	Medium

12.3. Rehabilitation and Closure Phase

Impact Pathway	Nature of Impact	Spatial Extent	Duration	Consequence	Probability	Reversibility	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation	Confidence
Recontouring and topsoil spreading	Restoration of natural landform	Site-specific	Long-term	Moderate	Very Likely	Yes	Moderate Positive	Shape area to match surroundings; smooth edges; return topsoil	High Positive	High
Removal of temporary facilities	Elimination of visual clutter	Site-specific	Short-term	Slight	Unlikely	Yes	Low Positive	Full site clean-up and waste removal	Moderate Positive	High
Final shaping for aeolian restoration	Promotes natural recovery via wind action	Local	Long-term	Moderate	Likely	Yes	Moderate Positive	Maintain natural micro-topography	High Positive	High
Residual soil compaction	Slower recovery of some sections	Site-specific	Short to Medium-term	Slight	Likely	Yes	Low	Rip compacted areas where appropriate	Very Low	High
Post-closure visual character	Restored desert appearance	Local	Long-term	Moderate	Very Likely	Yes	Moderate Positive	Ensure even blending with gravel plain	High Positive	High

13. Assessment of the Overall Significant Impacts

13.1.1. Pre-Operation (Planning and Site Preparation)

This phase includes site demarcation, limited surface clearing where necessary, establishment of a small temporary working area, and access to the site using existing tracks from the C28 road. Baseline assessments indicate that the proposed river sand extraction footprint is already disturbed, with evidence of historical surface disturbance, informal vehicle tracks, and a general absence of sensitive flora, lichen fields, active drainage lines, or key biodiversity features.

The extraction area is located within a dry, non-perennial riverbed characterised by sandy deposits and sparse desert vegetation. As a result, disturbances during the pre-operation phase are expected to be limited, temporary, and fully reversible. Typical impacts include minor surface disturbance, light dust generation, and short-term visual activity.

- Restrict all activities strictly to the approved river sand extraction footprint
- Clearly demarcate the approved area to prevent encroachment into undisturbed terrain
- Apply strict housekeeping measures, ensuring all temporary markers, waste, and materials are removed prior to operations
- Use existing access routes only; no new roads or tracks will be created

With these measures in place, no significant ecological or social impacts are anticipated during the pre-operation phase, and all minor disturbances are expected to be rapidly reversible.

13.1.2. Operation Phase (Extraction, Loading and Hauling)

This is the primary phase where most project-related impacts originate. The extraction method is a shallow, light-touch scraping process, limited to a maximum depth of 1.5 m, with no blasting, no chemicals, and no water abstraction on-site.

Habitat and Biodiversity

The site contains no sensitive habitats, no key biodiversity areas, and no protected vegetation or lichen fields. Vegetation is sparse and widespread across the broader central Namib, meaning removal of individuals within the footprint does not affect species viability.

Key impacts include short-term disturbance and temporary displacement of small fauna. Because habitats in the gravel plain recover through natural wind-driven processes, these impacts remain low in magnitude.

Mitigation Measures:

- Avoid operations outside the demarcated area.
- Maintain shallow scraping to preserve natural microtopography.
- Inspect working areas for fauna before operations.

Soil Disturbance, Erosion, and Landform Alteration

River sand extraction involves the removal of thin surface layers and does not result in deep pits or permanent changes to landform. Without mitigation, surface disturbance could increase susceptibility to localised erosion or create uneven profiles.

Mitigation Measures:

- Progressive rehabilitation: recontour and level every completed section.
- Replace stockpiled topsoil over worked areas as soon as possible.
- Smooth edges and avoid artificial depressions.

These measures convert the active work areas back into natural-looking gravel plains. Residual impact is Low.

Dust and Air Quality

Machinery movement and loading activities generate dust, which may disperse across the open gravel plain. Because vegetation is sparse and receptors are far away, dust is a manageable impact but remains the most notable issue.

Mitigation Measures:

- Limit operations to less windy days.
- Reduce vehicle speed.
- Stop dust-creating activities during extreme winds.
- Provide PPE to workers.

Residual significance is Moderate, the only impact not fully reducible to low due to natural wind conditions in the Namib.

Noise

Noise will be generated by loaders and trucks, but the site is remote and surrounded by undeveloped plains.

Mitigation Measures:

- Limit operations to daytime.
- Maintain machinery and fit mufflers.
- Provide hearing protection.

Residual impact is Very Low.

Waste and Pollution Risks

Waste generation will be minimal and limited mainly to domestic waste. A strict take in take out policy will be applied, and no maintenance activities or workshops will be conducted on site.

Mitigation Measures

- implement a strict take in take out waste management system
 - Maintain spill kits on site and ensure staff are trained in spill prevention and response
 - Dispose of all waste at the approved Swakopmund municipal disposal facility
-

With these measures in place, waste and pollution risks are expected to remain low.

Visual Impact

During operations, trucks and machinery may be visible from certain viewpoints, which could temporarily affect the visual experience of tourists and tour operators. However, the project area is remote, partially disturbed, and operations will be short term and fully reversible.

Mitigation Measures

- Keep operations compact and confined to the approved footprint
- Avoid bright colours, reflective materials, and unnecessary signage
- Maintain orderly site conditions to minimise visual intrusion

With these measures in place, the residual visual impact on tourists and tour operators is expected to be very low.

Overall, the proposed river sand extraction project is expected to result in low residual environmental impacts. All impacts are localised, temporary, and fully reversible, and the activity is compatible with the Dorob National Park's multi-use management framework. With effective implementation of mitigation measures and progressive rehabilitation, the project footprint will reintegrate into the surrounding desert environment, leaving only a minimal and temporary environmental signature.

14. REHABILITATION

14.1. Progressive Rehabilitation

Progressive rehabilitation will be implemented throughout the operational life of the borrow pit to minimise the extent and duration of environmental disturbance. Excavation will be undertaken in small, defined sections, allowing each worked area to be rehabilitated as soon as extraction is completed. This approach reduces exposed surfaces, limits erosion, and promotes early stabilisation of disturbed areas.

Progressive rehabilitation measures will include backfilling of excavated areas, recontouring to match surrounding landforms, respreading of topsoil, and stabilisation of surfaces to encourage natural recovery. Disturbed areas will not be left open unnecessarily, and rehabilitation will occur concurrently with ongoing operations where practical.

14.2. Rehabilitation

Rehabilitation for closure will focus on achieving a safe, stable, and self sustaining landform that blends with the surrounding environment and does not pose long term safety or environmental risks. All remaining infrastructure, equipment, and waste will be removed from the site, and final shaping and stabilisation of the land surface will be completed. Closure rehabilitation will ensure that the site meets regulatory requirements and supports future compatible land use.

Together, progressive rehabilitation during operations and final rehabilitation at closure will ensure that environmental impacts are minimised, fully reversible, and managed in line with best practice and regulatory expectations.

15. CONCLUSION AND RECOMMENDATION

The objective of this environmental scoping assessment was to identify and evaluate the potential environmental impacts associated with the proposed borrow pit activities, assess their significance, and recommend practical mitigation measures.

Given the limited scale of the proposed borrow pit activities, the shallow nature of extraction, and the step-by-step approach to site development and progressive rehabilitation, the potential environmental impacts are expected to be low to moderate in magnitude, temporary in duration, localised in extent, and manageable through standard mitigation measures. All identified impacts have been addressed through appropriate mitigation measures, which are expected to reduce residual impacts to acceptable levels when effectively implemented.

Based on the findings of this assessment, it is recommended that an Environmental Clearance Certificate (ECC) be issued for the proposed project, subject to compliance with the Environmental Management Plan (EMP) and any conditions imposed by the competent authority. In implementing the project, the Proponent shall:

- Obtain all additional permits or approvals that may be required
- Comply fully with all mitigation and management measures contained in the EMP
- Ensure that rehabilitation is implemented progressively and in accordance with regulatory requirements.
- Coordinate and communicate with relevant stakeholders throughout project implementation to promote coexistence, including responding to enquiries, addressing site related concerns, and keeping affected parties and authorities informed of project progress and environmental compliance.

With these measures in place, the proposed borrow pit activities are considered environmentally acceptable and compatible with the surrounding environment.

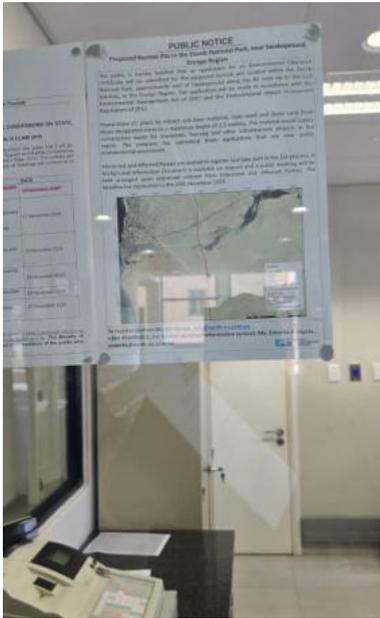
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APPENDIX A – ENVIRONMENTAL CONSULTANTS CV

APPENDIX B – SITE NOTICES AND ADVERTS



Notices at the Erongo Regional Council Notice board



Notices at the site boundaries



Notices at the Goanikontes



Notices at Nonidas

SARB Governor: New 3% Inflation target is non-negotiable

❖ New norm

Lesetja Kganyago says the target must be achieved "at all material times" as repo rate is cut to 6.75%.

OGONE TLHAGE

South African Reserve Bank (SARB) Governor Lesetja Kganyago says the newly stated inflation target of 3% will be non-negotiable and will have to be achieved at all material times. Kganyago made the remarks following the announcement of the repo rate, which was reduced by 25 basis points, bringing it down to 6.75% with effect from 21 November 2025.

From a target range to a point target

This follows a recent decision by South African finance minister Enoch Godongwana and Kganyago to move away from the inflation-targeting framework – which aimed to keep inflation within a 3–6% band instituted under then-SARB Governor Tito Mboweni – to a new target that aims to keep inflation firmly at 3%, with a tolerance band of 1 percentage point either side.

"To support communication and accountability, we therefore want it understood that inflation will not always be precisely 3%. When there are deviations, we will explain what has driven inflation away from target, and we will do what is required to get back to target," he said.



NEW NORM: South African Reserve Bank governor Lesetja Kganyago addresses the media while announcing a reduction in the repo rate by 25 basis points in that country this week, bringing it to 6.75%. PHOTO: SARB

While achieving the stated inflation target would be challenging, Kganyago stressed the need for the SARB to ensure it always achieves its objective.

"The tolerance band, of 1 percentage point either side of 3%, does not mean we will be indifferent to inflation anywhere between 2% and 4%. We want to be at 3%," Kganyago said. "However, no central bank has the tools to deliver inflation at an exact point all the time. As flexible inflation targeters, we also recognise that trying to offset all price shocks would create undesirable volatility in output," he added.

Why the repo rate was cut

The SARB expects to achieve its new firm inflation target over the next year or two, Kganyago said. "Monetary policy actions have their main effects on prices after 12 to 24 months, so you should expect us to achieve our target over that horizon. Accordingly, we want longer-run expectations to anchor at 3%, staying there even when there are shocks. This lag between monetary policy decisions and outcomes, also explains why the 3% target is taking effect now, but will be achieved over the forecast period," Kganyago said.

Kganyago was upbeat that the

Reserve Bank was moving in the right direction following the shift in monetary policy.

"For inflation expectations, we do not have an update from our usual survey this meeting, but market rates and surveys of analysts both show further progress towards the 3% objective," he said. According to him, core goods prices were benefiting from exchange-rate strength. "Food price inflation seems to have peaked, although we have a small upward revision to this forecast, mainly from beef prices. Services inflation is unchanged from the last meeting; the announced medical aid increases are

lower than last year's; at the same time, housing inflation has accelerated, which warrants ongoing scrutiny," he said.

Against this backdrop, the SARB's Monetary Policy Committee decided to reduce the policy rate by 25 basis points, Kganyago explained.

"The decision was unanimous. Members agreed there was scope now to make the policy stance less restrictive, in the context of an improved inflation outlook. The quarterly projection model continues to forecast gradual rate cuts as inflation subsides. As before, this rate path remains a broad policy guide. Our decisions will continue to be taken on a meeting-by-meeting basis, with careful attention to the outlook, data outcomes, and the balance of risks to the forecast.

Bank of Namibia welcomes the move

The Bank of Namibia (BoN) has voiced its support for the policy shift, saying it will result in lower and more stable long-term inflation in Namibia. "An analysis carried out by the BoN found that a lower inflation target of 3% in South Africa will result in low and stable long-term inflation in Namibia, which is ultimately good for the objective of price stability," central bank Governor Johannes Gawaxab said in a statement.

"Moreover, the eventual decline in inflation is expected to lead to a reduction in interest rates in the medium term. Mindful of the envisaged benefits of the lower inflation target, the Bank of Namibia welcomes the new target, as this could enhance welfare and macroeconomic stability for Namibia," he added.



NOTICE OF INITIAL SELECTION DOCUMENT (ISD) FOR EPC CONTRACT

The Namibian Ports Authority (Namport) hereby invites interested and eligible firms to participate in the Initial Selection process for the award of an Engineering, Procurement, and Construction (EPC) Contract for the Port of Walvis Bay South Port – Berth 9 Modification Project, located in Walvis Bay, Namibia.

Bid Reference Number	Brief Description	Pre-Application and Site Meeting	Last Day for Clarification Requests	Closing Date
ISD/EPC/NAMPOR-3694/2025	Port of Walvis Bay South Port – Berth 9 Modification, may include but is not limited to the following major components: <ul style="list-style-type: none"> Reinforced concrete and/or steel Quay wall, bridge and deck construction Modification of existing jetty Dredging and Land Reclamation Ground Improvement and Road Works 	Non-Compulsory Pre-Application and Site Meeting on 08/12/2025 @10h00 AM Local Namibian Time (Virtual Bid Opening Link available on website)	09/01/2026	29/01/2026 @ 12h00 PM Local Namibian Time (Virtual Bid Opening Link available on website)

- The Initial Selection Document (ISD) will be available from the Namport website at <https://www.namport.com.na/procurement>. Interested eligible bidders are requested to visit the website for full details of the bidding requirements. Bidders must register as suppliers and express interest in the specific bid.
- A Non-compulsory Pre-Application and Site meeting is scheduled for 08/12/2025 at 10H00 AM. Bidders should take note that the virtual meeting link is available on the website.
- The completed Initial Selection Applications must be submitted to: The Tender Box, Namibian Ports Authority (Namport) Reception, No. 17 Rikumbi Kandangs Road, Walvis Bay by 29 January 2026 at 12h00 PM local Namibian time

ALL enquiries related to this bid must be directed in writing by email to the following contact details:
 Procurement Manager: Melissa de Klerk
 Acting Tender and Contracts Administrator: Debby Strydom
 Tel: +264 208 2319
 E-mail: m.deklerk@namport.com.na or d.strydom@namport.com.na or procurement@namport.com.na

PUBLIC NOTICE

Proposed Borrow Pits/ Sand Mining in the Dorob National Park, near Swakopmund, Erongo Region

The public is hereby notified that an application for an Environmental Clearance Certificate will be submitted for the proposed borrow pits / sand mining activities located within the Dorob National Park, approximately east of Swakopmund along the B2 road up to the C28 junction, in the Erongo Region. The application will be made in accordance with the Environmental Management Act of 2007 and the Environmental Impact Assessment Regulations of 2012.

Powestone CC proposes to extract sub-base material, river sand, and dune sand from three designated areas to supply construction materials for roadworks, housing, and other infrastructure projects in the region. The company has submitted three applications currently undergoing environmental assessment.

Interested and Affected Parties are invited to register and take part in the EIA process. A Background Information Document is available upon request, and a public meeting will be arranged upon expressed interest from Interested and Affected Parties. The deadline for registration is the 15th December 2025.

To register contact Ms Aili lipinge, info@earth-es.com.na,
 For technical information contact: Ms. Emerita Ashipala, emerita@earth-es.com.na





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PUBLIC NOTICE

Proposed Borrow Pits in the Dorob National Park, near Swakopmund, Erongo Region

The public is hereby notified that an application for an Environmental Clearance Certificate will be submitted for the proposed borrow pits activities located within the Dorob National Park, approximately east of Swakopmund along the B2 road up to the C28 junction, in the Erongo Region. The application will be made in accordance with the Environmental Management Act of 2007 and the Environmental Impact Assessment Regulations of 2012.

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To register contact Ms Aili lipinge, info@earth-es.com.na,
For technical information contact: Ms. Emerita Ashipala, emerita@earth-es.com.na




NOTICE OF BIDS

The Namibian Ports Authority (Namport) hereby invites bids through the Request For Proposal (RFP) procedures for:

- (i) The Engineering Consulting Services in Road- and Land Infrastructure; and
- (ii) Feasibility & Safety study for simultaneous operations (SIMOPS) at two existing fuel import jetties at the North Port for the Namibian Ports Authority.

Bid Reference Number	Brief Description	Pre-bid Conference	Last Day for Clarification Requests	Closing Date
CS/RFP/NAMPOR-3683/2025	Engineering Consulting Services in Road- and Land Infrastructure at the North Port, for the Namibian Ports Authority	Non-Compulsory Pre-bid meeting on 12 December 2025 @10h00 AM	08 January 2026	28 January 2026 @ 12h00 PM (Virtual Bid Opening Link available on website)
CS/RFP/NAMPOR-3686/2025	Feasibility & safety study for simultaneous operations (Simops) at two existing fuel import jetties, Port of Walvis Bay - North Port, Namibia	Non-Compulsory Pre-bid meeting on 11 December 2025 @10h00 AM	12 January 2026	30 January 2026 @ 12h00 PM (Virtual Bid Opening Link available on website)

- Bids are invited through the Request for Proposal (RFP) procedure, and the invitation is open to all eligible bidders. All Bidders must comply with the requirements outlined in the bidding document.
- Interested eligible bidders are requested to visit the Namport website at <https://www.namport.com.na/procurement> for details of the bidding requirements. Bidders must register as suppliers, express interest in a specific bid, to be granted access to the bidding documents.
- A Non-compulsory Pre-Bid meeting is scheduled for 12 December 2025 AT 10H00 AM for CS/RFP/NAMPOR-3683/2025 and 11 December 2025 AT 10H00 AM for CS/RFP/NAMPOR-3686/2025. The meetings will be held at Executive Boardroom, Namport Head Office, Walvis Bay. Bidders should take note that the virtual meeting link is also available on the website for bidders that would like to join the meeting virtually.

All enquiries related to this bid must be directed in writing by email to the following contact details:

Procurement Manager Melani de Klerk Tel: +264 208 2319 Email: m.deklerk@namport.com.na	Acting Tender and Contracts Administrator Debyly Sylvester Tel: +264 208 2450 Email: d.sylvester@namport.com.na or procurement@namport.com.na
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Appendix C - STAKEHOLDER REGISTER

POWER STONE CC PROPOSED BORROW PITS STAKEHOLDER REGISTER			
	Stakeholder	Details	Comment
1	Frank Löhnert	flohnert@iway.na	
2	Robert Scott	robert@electric.com.na	
3	Daniela Magg	daniela.magg@googlemail.com	
4	Michelle Inixas	michelleinixas56@gmail.com	
5	Charl Baard	Charlbaard822@gmail.com	
6	Karel Andries Esterhuysen – (EPL 8776 holder) -		
7	Elspa Mining – adjacent area south to Epl 3887		
8	Bannerman Mining Resources Namibia (Pty) Ltd's Swakopmund	info@bmnenergy.com	
9	Topnaar Traditional Authority Contact Person (Acting Chief): Name: Stoffel Anamab	Cell Number: 081 209 9105 Email: stoffelanamab1961@gmail.com	
10	6. Desert Adventures Chris Nel	Cell: +264 64 406096 , Email at info@namibiadesertexplorers.com	
11	Stro Safari Tours	Sabinebaas7@gmail.com	
12	Stro Safari Tours	strosafaritours@gmail.com	
13	Robert Scott	robert@electric.com.na	
14	charlys desert tours	gerald@charlysdesserttours.com	
15	Living Desert	info@livingdeserttours.com.na	
16		nature@iafrica.com.na	
17	Alter Action	alteraxn@iafrica.com.na	
18	Mark de Wet (Swakopmund Fat Bike Tours)	mark@swakopfatbiketours.com	

Notification – Proposed Borrow Pit Operations in Dorob National Park, near Swakopmund, Erong...



Earth Environmental Services <info@earth-es.com>

To

Cc: 'Emerita Ashipala'

Bcc: 'robert@electric.com.na'; 'daniela.magg@googlemail.com'; 'michelleinixas56@gmail.com'; 'Charlbaard822@gmail.com'; 'info@bmnenergy.com'; 'stoffelanamab1961@gmail.com'; 'info@namibiadesertexplorers.com'; 'kallieandriesesterhuizen@gmail.com'; 'Emerita Ashipala'

Reply

Reply All

Forward



Wed 26/11/2025 11:11 am

You forwarded this message on 01/12/2025 3:51 pm.



Powerstone Stakeholder Letter.pdf

158 KB



Intergrated Background Information Document for Power Stone cc 241125.pdf

875 KB



Dear Stakeholder,

As an identified stakeholder, you are hereby notified of Powerstone CC's proposed small-scale borrow pit operations within a selected area of Dorob National Park near Swakopmund. As part of the environmental assessment process required under the Environmental Management Act of 2007 and the Environmental Impact Assessment Regulations of 2012,

Please find attached the following documents for your review:

- Stakeholder Notification Letter
- Background Information Document (BID)

The proposed activities involve low-intensity, shallow surface scraping of sub-base material, river sand and dune sand within three designated polygons. Operations will be temporary, small in scale and scheduled to minimise disturbance to other park users, including tourism and recreational activities. Details of the extraction methods, environmental safeguards and rehabilitation approach are included in the attached documents.

You are kindly invited to register as an Interested and Affected Party (IAP) and to submit any comments or queries you may have.

You will be informed should a public meeting be scheduled.

For registration, comments, or further information, please contact: Aili Iipinge on info@earth-es.com.na

We appreciate your engagement in this process and look forward to your feedback.

APPENDIX D – FAUNA SPECIES LIST

Reptile diversity known and/or expected to occur in the general Kuiseb delta and dune belt area – i.e., Walvis Bay and Swakopmund areas.

Species: Scientific name	Species: Common name	Namibian conservation and legal status	International status
TURTLES AND TERRAPINS			
<i>Pelomedusa subrufa</i>	Marsh/Helmeted Terrapin	Secure	
SNAKES			
Thread Snakes			
<i>Leptotyphlops occidentalis</i>	Western Thread Snake	Endemic ;Secure	SARDB Peripheral
<i>Leptotyphlops labialis</i>	Damara Thread Snake	Endemic ;Secure	
Burrowing Snakes			
<i>Xenocalamus bicolor bicolor</i>	Bicoloured Quill-snouted Snake	Secure	
Typical Snakes			
<i>Lamprophis fuliginosus</i>	Brown House Snake	Secure	
<i>Lycophidion capense</i>	Cape Wolf Snake	Secure	
<i>Pseudaspis cana</i>	Mole Snake	Secure	
<i>Dipsina multimaculata</i>	Dwarf Beaked Snake	Endemic ;Secure	
<i>Psammophis trigrammus</i>	Western Sand Snake	Endemic ;Secure	
<i>Psammophis notostictus</i>	Karoo Sand Snake	Secure	
<i>Psammophis leightoni namibensis</i>	Namib Sand Snake	Secure	
<i>Dasyplepis scabra</i>	Common/Rhombic EggEater	Secure	
<i>Aspidelaps lubricus infuscatus</i>	Coral Snake	Secure	
<i>Aspidelaps scutatus</i>	Shield-nose Snake	Secure	
<i>Naya nigricincta</i>	Black-necked Spitting Cobra	Endemic ;Secure	
<i>Bitis arietans</i>	Puff Adder	Secure	
<i>Bitis caudalis</i>	Horned Adder	Secure	
<i>Bitis peringueyi</i>	Péringuey's Adder	Endemic ;Secure	
LIZARDS			
Skinks			
<i>Typhlosaurus braini</i>	Brains's Blind Legless Skink	Endemic ;Secure	
<i>Typhlacontias brevipes</i>	FitzSimmons' Burrowing Skink	Endemic ;Secure	
<i>Trachylepis occidentalis</i>	Western Three-striped Skink	Secure	
<i>Trachylepis striata wahlbergi</i>	Striped Skink	Secure	
<i>Trachylepis sulcata</i>	Western Rock Skink	Secure	
<i>Trachylepis variegata variegata</i>	Variegated Skink	Secure	

Old World Lizards			
<i>Heliobolus lugubris</i>	Bushveld Lizard	Secure	
<i>Meroles anchietae</i>	Shovel-snouted Lizard	Secure	
<i>Meroles cuneirostris</i>	Wedge-snouted Desert Lizard	Endemic ;Secure	
<i>Meroles micropholidotus</i>	Small-scaled Desert Lizard	Endemic ;Rare?	
<i>Meroles reticulates</i>	Reticulated Desert Lizard	Endemic ;Secure	
<i>Meroles suborbitalis</i>	Spotted Desert Lizard	Secure	
<i>Pedioplanis breviceps</i>	Short-headed Sand Lizard	Endemic ;Secure	
<i>Pedioplanis namaquensis</i>	Namaqua Sand Lizard	Secure	
<i>Pedioplanis inornata</i>	Plain Sand Lizard	Endemic ;Secure	
Plated Lizards			
<i>Cordylus subaeneus</i>	Dwarf Plated Lizard	Endemic ;Secure	
Monitors			
<i>Varanus albigularis</i>	Rock Monitor	Vulnerable; Peripheral Protected Game	CITES Appendix II Safe to Vulnerable
Agama			
<i>Agama planiceps</i>	Namibian Rock Agama	Secure	
Chameleons			
<i>Bradypodion pumilum</i>	Cape Dwarf Chameleon	Introduced alien Secure	CITES Appendix II
<i>Chamaeleo namaquensis</i>	Namaqua Chameleon	Secure	CITES Appendix II
Geckos			
<i>Afroedura africana</i>	African Flat Gecko	Endemic ;Rare?	
<i>Chondrodactylus angulifer namibensis</i>	Giant Ground Gecko	Secure	
<i>Narudasia festiva</i>	Festive Gecko	Endemic ;Secure	
<i>Pachydactylus bicolor</i>	Velvety Thick-toed Gecko	Endemic ;Secure	
<i>Pachydactylus kockii</i>	Koch's Thick-toed Gecko	Endemic ;Secure	
<i>Pachydactylus turneri</i>	Turner's Thick-toed Gecko	Secure	
<i>Pachydactylus scherzi</i>	Schertz's Thick-toed Gecko	Endemic ;Secure	
<i>Pachydactylus rugosus rugosus</i>	Rough Thick-toed Gecko	Endemic ;Secure	
<i>Pachydactylus weberi weneri</i>	Weber's Thick-toed Gecko	Endemic ;Secure	
<i>Palmatogecko rangei</i>	Wed-footed Gecko	Endemic ;Secure	
<i>Ptenopus carpi</i>	Carp's Barking Gecko	Endemic ;Secure	
<i>Ptenopus garrulus maculatus</i>	Common Barking Gecko	Secure	
<i>Ptenopus kocki</i>	Kock's Barking Gecko	Endemic ;Secure	
<i>Rhoptropus afer</i>	Common Namib Day Gecko	Endemic ;Secure	

<i>Rhoptropus boultoni</i>	Boulton's Namib Day Gecko	Endemic ;Secure	
<i>Rhoptropus bradfieldi</i>	Bradfield's Namib Day Gecko	Endemic ;Secure	

Amphibian diversity known and/or expected to occur in the general Kuiseb delta and dune belt area – i.e. Walvis Bay and Swakopmund areas.

Species: Scientific name	Species: Common name	Status
Toads		
<i>Poyntonophrynus dombensis</i>	Dombe Toad	Endemic
<i>Poyntonophrynus hoeschi</i>	Hoesch's Toad	Endemic
<i>Amietophrynus poweri</i>	Power's Toad or Western Olive Toad	
Rain Frogs		
<i>Breviceps adspersus</i>	Common/Bushveld Rain Frog	
Rubber Frog		
<i>Phrynomantis annectens</i>	Marbled Rubber Frog	Endemic
Bull and Sand Frogs		
<i>Tomopterna tandyi</i>	Tandy's Sand Frog	
Platannas		
<i>Xenopus laevis</i>	Common Platanna	

Mammal diversity known and/or expected to occur in the general Kuiseb delta and dune belt area – i.e. Walvis Bay and Swakopmund areas.

Species: Scientific name	Species: Common name	Namibian conservation	Species: Scientific name
Moles			
<i>Eremitalpa granti</i>	Grant's Golden Mole	Endemic; Secure	¹ Vulnerable
Elephant Shrews			
<i>Macroscelides proboscideus flavicaudatus</i>	Round-eared Elephant-shrew	Endemic; Secure	
Bats			
<i>Lissonycteris angolensis</i>	*Angolan Soft-furred Fruit Bat	Not listed	
<i>Tadarida aegyptiaca</i>	Egyptian Free-tailed Bat	Secure	
<i>Cistugo seabrai</i>	Namibian Wing-gland Bat	Endemic; Rare	¹ Vulnerable; ² Near Threatened
<i>Laephotis namibensis</i>	Namib Long-eared Bat	Endemic; Insufficiently known	
<i>Nycteris thebaica</i>	Common Slit-faced Bat	Secure	
<i>Rhinolophus clivosus</i>	Geoffroy's Horseshoe Bat	Secure	¹ Near Threatened
<i>Rhinolophus darling</i>	Darling's Horseshoe Bat	Secure	¹ Near Threatened
<i>Rhinolophus capensis</i>	*Cape Horseshoe Bat	Secure	¹ Near Threatened; ² Near Threatened
<i>Taphozous mauritanus</i>	*Mauritanian Tomb Bat	Secure	
<i>Chaerephon ansorgei</i>	*Ansorge's Free-tailed Bat	Not listed	
<i>Sauromys petrophilus</i>	Roberts's Flat-headed Bat	Secure	
<i>Miniopterus natalensis</i>	Natal Long-fingered Bat	Secure	¹ Near Threatened

<i>Eptesicus hottentotus</i>	Long-tailed Serotine	Secure	
<i>Neoromicia zuluensis</i>	*Zulu Serotine	Secure	
<i>Pipistrellus rueppellii</i>	*Rüppell's Pipistrelle	Insufficiently known; Peripheral	
Hares and Rabbits			
<i>Lepus capensis</i>	Cape Hare	Secure	
Rodents			
Rats and Mice			
<i>Parotomys littledalei namibensis</i>	Littledale's Whistling Rat	Endemic; Secure	¹ Near Threatened
<i>Rhodomys pumilio</i>	Striped Mouse	Secure	
<i>Mus musculus</i>	House Mouse	Invasive alien	
<i>Aethomys chrysophilus</i>	Red Veld Rat	Secure	
<i>Micaelamys (Aethomys) namaquensis</i>	Namaqua Rock Mouse	Secure	
<i>Rattus</i>	House Rat	Invasive alien	
<i>Rattus norvegicus</i>	Brown Rat	Invasive alien	
<i>Desmodillus auricularis</i>	Short-tailed Gerbil	Secure	
<i>Gerbillurus paeba infernus</i>	Hairy-footed Gerbil	Endemic; Insufficiently known	
<i>Gerbillurus tytonis</i>	Dune Hairy-footed Gerbil	Endemic; Secure	
<i>Gerbillurus setzeri</i>	Setzer's Hairy-footed Gerbil or Namib Brush-tailed Gerbil	Endemic	
<i>Petromyscus collinus</i>	Pygmy Rock Mouse	Endemic; Secure	
<i>Mastomys coucha</i>	Southern Multimammate Mouse	Secure	
<i>Petromys typicus</i>	Dassie Rat	Endemic; Secure	¹ Near Threatened
Carnivores			
<i>Hyaena brunnea</i>	Brown Hyena	Insufficiently known; Vulnerable?	¹ Near Threatened
Peripheral	² Near Threatened		
<i>Crocuta</i>	Spotted Hyena	Secure? Peripheral	¹ Near Threatened
<i>Felis silvestris</i>	African Wild Cat	Vulnerable	CITES Appendix II
<i>Vulpes chama</i>	Cape Fox	Vulnerable?	
<i>Canis mesomelas</i>	Black-backed Jackal	Secure; Problem animal	
<i>Ictonyx striatus</i>	Striped Polecat	Secure	
<i>Suricata suricatta marjoriae</i>	Suricate	Endemic; Secure	
Antelopes			
<i>Sylvicapra grimmia</i>	Common Duiker	Secure	
<i>Antidorcas marsupialis</i>	Springbok	Secure; Huntable game	

Bird diversity known and/or expected to occur in the general Kuiseb delta and dune belt area – i.e. Walvis Bay and Swakopmund areas.

Species: Scientific name	Species: Common name	Status: Namibia	Status: Southern Africa
<i>Struthio camelus</i>	Common Ostrich		
<i>Podiceps cristatus</i>	Great Crested Grebe		
<i>Tachybaptus ruficollis</i>	Little Grebe		
<i>Podiceps nigricollis</i>	Black-necked Grebe		
<i>Pelecanus onocrotalus</i>	Great White Pelican		
<i>Pelecanus rufescens</i>	Pink-backed Pelican		
<i>Phalacrocorax lucidus</i>	White-breasted Cormorant		
<i>Morus capensis</i>	Cape Gannet	Speciall y protecte d	Vulnerable; Breeding endemic
<i>Phalacrocorax capensis</i>	Cape Cormorant		Near-threatened; Breeding endemic
<i>Phalacrocorax neglectus</i>	Bank Cormorant	Speciall y protecte d	Endemic; Endangered
<i>Phalacrocorax africanus</i>	Reed Cormorant		
<i>Phalacrocorax coronatus</i>	Crowned Cormorant		Endemic; Near-threatened
<i>Anhinga melanogaster</i>	Darter		
<i>Ardea cinerea</i>	Grey Heron		
<i>Ardea melanocephala</i>	Black-headed Heron		
<i>Ardea purpurea</i>	Purple Heron		
<i>Egretta garzetta</i>	Little Egret		
<i>Egretta intermedia</i>	Yellow-billed Egret		
<i>Egretta alba</i>	Great Egret		
<i>Egretta ardesiaca</i>	Black Egret		
<i>Bubulcus ibis</i>	Cattle Egret		
<i>Ardeola ralloides</i>	Squacco Heron		
<i>Ixobrychus minutus</i>	Little Bittern		
<i>Scopus umbretta</i>	Hamerkop		
<i>Ciconia nigra</i>	Black Stork		
<i>Phoenicopterus ruber</i>	Greater Flamingo	Vulnerabl e	
<i>Phoenicopterus minor</i>	Lesser Flamingo	Vulnerabl e	Near-threatened
<i>Dendrocygna viduata</i>	Whitefaced Duck		
<i>Alopochen aegyptiacus</i>	Egyptian Goose		
<i>Anas capensis</i>	Cape Teal		
<i>Anas hottentota</i>	Hottentot Teal		
<i>Anas erythrorhyncha</i>	Redbiled Teal		
<i>Anas smithii</i>	Cape Shoveller		
<i>Netta erythrophthalma</i>	Southern Pochard		
<i>Sagittarius serpentarius</i>	Secretarybird		
<i>Gyps africanus</i>	White-backed Vulture		

<i>Aegypius tracheliotus</i>	Lappet-faced Vulture		
<i>Circaetus pectoralis</i>	Black-chested Snake-Eagle		
<i>Elanus caeruleus</i>	Black-shouldered Kite		
<i>Aquila verreauxii</i>	Verreaux's Eagle		
<i>Aquila rapax</i>	Tawny Eagle		
<i>Polemaetus bellicosus</i>	Martial Eagle		
<i>Buteo augur</i>	Augur Buzzard		
<i>Melierax canorus</i>	Southern Pale Chanting Goshawk		Near endemic
<i>Falco peregrines</i>	Peregrine Falcon		
<i>Falco biarmicus</i>	Lanner Falcon		
<i>Falco chicquera</i>	Red-necked Falcon		
<i>Falco rupicolus</i>	Rock Kestrel		
<i>Falco rupicoloides</i>	Greater Kestrel		
<i>Francolinus adspersus</i>	Red-billed Francolin		
<i>Trunix sylvatica</i>	Kurrichane Buttonquail		
<i>Porphyrio</i>	African Purple Swamphen		
<i>Gallinula chloropus</i>	Common Moorhen		
<i>Fulica cristata</i>	Red-knobbed Coot		
<i>Ardeotis kori</i>	Kori Bustard		
<i>Neotis ludwigii</i>	Ludwig's Bustard		Endangered; Near endemic
<i>Eupodotis rueppellii</i>	Rüppell's Korhaan	Endemic	Near endemic
<i>Eupodotis afra</i>	Black Korhaan		
<i>Actophilornis africanus</i>	African Jacana		
<i>Rostratula benghalensis</i>	Painted Snipe		
<i>Haematopus moquini</i>	African Black Oystercatcher	Vulnerable	Near threatened; Endemic
<i>Charadrius marginatus</i>	White-fronted Plover		
<i>Charadrius pallidus</i>	Chestnut-banded Plover		Near threatened
<i>Charadrius pecuarius</i>	Kittlitz's Plover		
<i>Charadrius tricollaris</i>	Three-banded Plover		
<i>Vanellus armatus</i>	Blacksmith Lapwing		
<i>Recurvirostra avosetta</i>	Pied Avocet		
<i>Himantopus</i>	Black-winged Stilt		
<i>Burhinus capensis</i>	Spotted Thick-knee		
<i>Cursorius rufus</i>	Burchell's Courser		
<i>Rhinoptilus africanus</i>	Double-banded Courser		
<i>Larus dominicanus</i>	Kelp Gull		
<i>Larus cirrocephalus</i>	Grey-headed Gull		
<i>Larus hartlaubii</i>	Hartlaub's Gull		Endemic
<i>Sterna bergii</i>	Swift Tern		
<i>Sterna balaenarum</i>	Damara Tern	Endemic; Endangered	Near threatened; Breeding endemic
<i>Chlidonias hybridus</i>	Whiskered Tern		
<i>Pterocles namaqua</i>	Namaqua Sandgrouse		Near endemic

<i>Pterocles bicinctus</i>	Double-banded Sandgrouse		Near endemic
<i>Columba guinea</i>	Speckled Pigeon		
<i>Columba livea</i>	Rock Dove		
<i>Streptopelia capicola</i>	Cape Turtle Dove		
<i>Streptopelia senegalensis</i>	Laughing Dove		
<i>Streptopelia capicola</i>	Cape Turtle-Dove		
<i>Oena capensis</i>	Namaqua Dove		
<i>Agapornis roseicollis</i>	Rosy-faced Lovebird	Endemic	Near endemic
<i>Corythaixoides concolor</i>	Grey Go-away-bird		
<i>Tyto alba</i>	Barn Owl		
<i>Otus leucotis</i>	Southern White-faced Scops-Owl		

<i>Glaucidium perlatum</i>	Pearl-spotted Owlet		
<i>Bubo africanus</i>	Spotted Eagle Owl		
<i>Bubo lacteus</i>	Giant Eagle Owl		
<i>Caprimulgus tristigma</i>	Freckled Nightjar		
<i>Apus bradfieldi</i>	Bradfield's Swift		Near endemic
<i>Colius</i>	White-backed Mousebird		Endemic
<i>Urocolius indicus</i>	Red-faced Mousebird		
<i>Ceryle rudis</i>	Pied Kingfisher		
<i>Merops hirundineus</i>	Swallow-tailed Bee-eater		
<i>Upupa epops</i>	Hoopoe		
<i>Phoeniculus cyanomelas</i>	Scimitar-billed Woodhoopoe		
<i>Tockus monteiri</i>	Monteiro's Hornbill	Endemic	
<i>Tockus nasutus</i>	African Grey Hornbill		
<i>Lybius leucomelas</i>	Pied Barbet		
<i>Dendropicus fuscescens</i>	Cardinal Woodpecker		
<i>Mirafraba sabota</i>	Sabota Lark		
<i>Mirafraba curvirostris</i>	Long-billed Lark		
<i>Calendulauda erythrochlamys</i>	Dune Lark	Endemic	Endemic
<i>Chersomanes albofasciata</i>	Spike-heeled Lark		Near endemic
<i>Calandrella cinerea</i>	Red-capped Lark		
<i>Alauda starki</i>	Stark's Lark		Endemic
<i>Ammomanopsis grayi</i>	Gray's Lark	Endemic	Near endemic
<i>Certhilauda subcoronata</i>	Karoo Long-billed Lark		Endemic
<i>Eremopterix verticalis</i>	Grey-backed Sparrowlark		Near endemic
<i>Hirundo fuligula</i>	Rock Martin		
<i>Riparia paludicola</i>	Brown-throated Martin		
<i>Dicrurus adsimilis</i>	Fork-tailed Drongo		
<i>Corvus capensis</i>	Cape Crow		
<i>Corvus albus</i>	Pied Crow		
<i>Parus cinerascens</i>	Ashy Tit		Near endemic
<i>Anthoscopus minutes</i>	Cape Penduline Tit		Near endemic
<i>Turdoides bicolor</i>	Pied Babbler		
<i>Pycnonotus nigricans</i>	African Red-eyed Bulbul		Near endemic
<i>Monticola brevipes</i>	Short-toed Rock Thrush		

<i>Namibornis herero</i>	Herero Chat	Endemic	Near endemic
<i>Oenanthe monticola</i>	Mountain Wheatear		Near endemic
<i>Cercomela familiaris</i>	Familiar Chat		
<i>Cercomela tractrac</i>	Tractrac Chat		Near endemic
<i>Cercomela schlegelii</i>	Karoo Chat		Near endemic
<i>Myrmecocichla formicivora</i>	Ant-eating Chat		Endemic
<i>Erythropygia paena</i>	Kalahari Robin		
<i>Parisoma subcaeruleum</i>	Chestnut-vented Tit-Babbler		Near endemic
<i>Parisoma layardi</i>	Layard's Tit-Babbler		Endemic
<i>Zosterops pallidus</i>	Orange River White-eye		Endemic
<i>Sylvietta rufescens</i>	Long-billed Crombec		
<i>Eremomela icteropygialis</i>	Yellow-bellied Eremomela		
<i>Eremomela gregalis</i>	Karoo Eremomela		
<i>Acrocephalus baeticatus</i>	African Reed-Warbler		
<i>Acrocephalus gracilirostris</i>	Lesser Swamp-Warbler		
<i>Cisticola aridulus</i>	Desert Cisticola		
<i>Cisticola subruficapilla</i>	Grey-backed Cisticola		Near endemic
<i>Cisticola juncidis</i>	Zitting Cisticola		
<i>Prinia flavicans</i>	Black-chested Prinia		
<i>Melaenornis mariquensis</i>	Marico Flycatcher		Near endemic
<i>Bradornis infuscatus</i>	Chat Flycatcher		Near endemic
<i>Muscicapa striata</i>	Spotted Flycatcher		
<i>Batis pririt</i>	Pirit Batis		Near endemic
<i>Motacilla capensis</i>	Cape Wagtail		
<i>Anthus navaeseelandiae</i>	Richard's Pipit		
<i>Anthus similes</i>	Long-billed Pipit		
<i>Anthus vaalensis</i>	Buffy Pipit		
<i>Tchagra australis</i>	Brown-crowned Tchagra		
<i>Lanius collaris</i>	Common Fiscal		
<i>Laniarius atrococcineus</i>	Crimson-breasted Shrike		Near endemic
<i>Nilaus afer</i>	Brubru		
<i>Telophorus zeylonus</i>	Bokmakierie		Near endemic
<i>Creatophora cinerea</i>	Wattled Starling		
<i>Lamprotornis nitens</i>	Cape Glossy Starling		
<i>Onychognathus nabouroup</i>	Pale-winged Starling		Near endemic
<i>Chalcomitra senegalensis</i>	Scarlet-chested Sunbird		
<i>Nectarinia mariquensis</i>	Marico Sunbird		
<i>Nectarinia fusca</i>	Dusky Sunbird		Near endemic
<i>Passer domesticus</i>	House Sparrow		
<i>Passer motitensis</i>	Great Sparrow		Near endemic
<i>Passer melanurus</i>	Cape Sparrow		Near endemic
<i>Passer griseus</i>	Southern Grey-headed Sparrow		
<i>Sporopipes squamifrons</i>	Scaly-feathered Finch		Near endemic
<i>Plocepasser mahali</i>	White-browed Sparrow-Weaver		
<i>Philetairus socius</i>	Sociable Weaver		Endemic

<i>Ploceus velatus</i>	Southern Masked Weaver		
<i>Quelea</i>	Red-billed Quelea		
<i>Euplectes orix</i>	Southern Red Bishop		
<i>Estrilda erythronotos</i>	Black-faced Waxbill		
<i>Estrilda astrild</i>	Common Waxbill		
<i>Amadina erythrocephala</i>	Red-headed Finch		Near endemic
<i>Vidua regia</i>	Shaft-tailed Whydah		
<i>Serinus alario</i>	Black-headed Canary		
<i>Serinus flaviventris</i>	Yellow Canary		Near endemic
<i>Crithagra atrogulariis</i>	Black-throated Canary		
<i>Serinus albogularis</i>	White-throated Canary		Near endemic
<i>Emberiza capensis</i>	Cape Bunting		Near endemic
<i>Emberiza tahapisi</i>	Cinnamon-breasted Bunting		
<i>Emberiza impetuani</i>	Lark-like Bunting		Near endemic

APPENDIX E – FLORA SPECIES LIST

SPECIES	ENDEMISM	PROTECTED	IUCN2
<i>Abutilon pycnodon</i> Hochr.			
<i>Acacia reficiens</i> Wawra subsp. <i>reficiens</i>			
<i>Acanthopsis hoffmannseggiana</i> (Nees) C.B. Clarke			
<i>Acrotome fleckii</i> (Gürke) Launert	Endemic		
<i>Adenolobus garipensis</i> (E.Mey.) Torre & Hillc.			
<i>Adenolobus pechuelii</i> (Kuntze) Torre & Hillc. subsp. <i>pechuelii</i>			
<i>Aizoanthemum dinteri</i> (Schinz) Friedrich	Endemic		
<i>Aizoanthemum galenioides</i> (Fenzl ex Sond.) Friedrich	Endemic		
<i>Aloe asperifolia</i> A. Berger	Endemic	Protected	
<i>Anticharis ebracteata</i> Schinz	Endemic		
<i>Anticharis imbricata</i> Schinz	Endemic		
<i>Arctotis venusta</i> Norl.			
<i>Aristida parvula</i> (Nees) De Winter			
<i>Arthraerua leubnitziae</i> (Kuntze) Schinz	Endemic		
<i>Atriplex lindleyi</i> Moq. subsp. <i>inflata</i> (F. Muell.) Paul G. Wilson			
<i>Atriplex semibaccata</i> R.Br. var. <i>appendiculata</i> Aellen			
<i>Blepharis grossa</i> (Nees) T. Anderson	Near Endemic		
<i>Blepharis obmitrata</i> C.B. Clarke			
<i>Boscia albitrunca</i> (Burch.) Gilg & Gilg-Ben.		Forestry Protected	
<i>Brachiaria glomerata</i> (Hack.) A. Camus			
<i>Brownanthus kuntzei</i> (Schinz) Ihlenf. & Bittrich			
<i>Calostephane marlothiana</i> O. Hoffm.	Endemic		
<i>Camptoloma rotundifolium</i> Benth.			
<i>Capparis hereroensis</i> Schinz	Endemic		
<i>Centropodia glauca</i> (Nees) Cope			
<i>Chascanum garipense</i> E. Mey.			
<i>Chenopodium murale</i> L. var. <i>acutidentatum</i> Aellen			
<i>Chenopodium murale</i> L. var. <i>murale</i>			

SPECIES	ENDEMISM	PROTECTED	IUCN2
<i>Citrullus ecirrhosus</i> Cogn.	Near Endemic		
<i>Cladoraphis spinosa</i> (L.f.) S.M.Phillips			
<i>Cleome elegantissima</i> Briq.			
<i>Cleome foliosa</i> Hook.f. var. <i>lutea</i> (Sond.) Codd & Kers			
<i>Cleome gynandra</i> L.			
<i>Cleome semitetrandra</i> Sond.			
<i>Cleome suffruticosa</i> Schinz	Endemic		
<i>Codon royenii</i> L.			
<i>Commiphora oblanceolata</i> Schinz	Near Endemic		
<i>Commiphora saxicola</i> Engl.	Endemic		
<i>Commiphora wildii</i> Merxm.			
<i>Cordia</i> sp. C			
<i>Cotula anthemoides</i> L.			
<i>Cotula coronopifolia</i> L.			
<i>Cotyledon orbiculata</i> L. var. <i>orbiculata</i>			
<i>Crassothonna protecta</i> (Dinter) B.Nord.			
<i>Crotalaria colorata</i> Schinz subsp. <i>colorata</i>	Endemic		
<i>Crotalaria colorata</i> Schinz subsp. <i>erecta</i> (Schinz) Polhill	Endemic		
<i>Cucumis africanus</i> L.f.			
<i>Cullen tomentosum</i> (Thunb.) J.W.Grimes			
<i>Cyamopsis serrata</i> Schinz			
<i>Cynodon dactylon</i> (L.) Pers.			
<i>Cyperus laevigatus</i> L.			
<i>Cyperus marginatus</i> Thunb.			
<i>Datura innoxia</i> Mill.			
<i>Dauresia alliariifolia</i> (O.Hoffm.) B.Nord. & Pelsler			
<i>Deverra denudata</i> (Viv.) Pfisterer & Podlech subsp. <i>aphylla</i> (Cham. & Schltdl.) Pfisterer & Podlech			
<i>Dichrostachys cinerea</i> (L.) Wight & Arn. subsp. <i>africana</i> Brenan & Brummitt var. <i>africana</i>			
<i>Dinteracanthus kaokoanus</i> (E.Tripp & K.G.Dexter) E.Tripp & I.Darbysh.	Endemic		
<i>Dipcadi platyphyllum</i> Baker			
<i>Doellia cafra</i> (DC.) Anderb.			

SPECIES	ENDEMISM	PROTECTED	IUCN2
<i>Drimia fasciata</i> (B.Nord.) J.C.Manning & Goldblatt			
<i>Dyerophytum africanum</i> (Lam.) Kuntze			
<i>Eleocharis seydeliana</i> Podlech			
<i>Engleria africana</i> O.Hoffm.			
<i>Enneapogon desvauxii</i> P.Beauv.			
<i>Entoplocamia aristulata</i> (Hack. & Rendle) Stapf			
<i>Eragrostis annulata</i> Rendle ex Scott- Elliot			
<i>Eragrostis omahekensis</i> De Winter	Endemic		
<i>Eriocephalus pinnatus</i> O.Hoffm.	Endemic		
<i>Euclea pseudebenus</i> E.Mey. ex A.DC.			
<i>Euphorbia giessii</i> L.C.Leach	Endemic		
<i>Euphorbia glanduligera</i> Pax			
<i>Euphorbia lignosa</i> Marloth	Near Endemic		
<i>Euphorbia phylloclada</i> Boiss.			
<i>Fagonia minutistipula</i> Engl.			
<i>Faidherbia albida</i> (Delile) A.Chev.		Forestry Protected	
<i>Felicia anthemidodes</i> (Hiern) Mendonça			
<i>Felicia smaragdina</i> (S.Moore) Merxm.	Endemic		
<i>Ficus cordata</i> Thunb. subsp. <i>cordata</i>		Forestry Protected	
<i>Flaveria bidentis</i> (L.) Kuntze			
<i>Forsskaolea hereroensis</i> Schinz	Near Endemic		
<i>Frankenia pulverulenta</i> L.			
<i>Galenia africana</i> L.			
<i>Galenia papulosa</i> (Eckl. & Zeyh.) Sond.			
<i>Galenia papulosa</i> (Eckl. & Zeyh.) Sond. var. <i>microphylla</i> Adamson			
<i>Gazania jurineifolia</i> DC. subsp. <i>scabra</i> (DC.) Roessler	Near Endemic		
<i>Geigeria ornativa</i> O.Hoffm.			
<i>Geigeria rigida</i> O.Hoffm.	Endemic		
<i>Gisekia africana</i> (Lour.) Kuntze var. <i>africana</i>			
<i>Glinus lotoides</i> L. var. <i>lotoides</i>			

SPECIES	ENDEMISM	PROTECTED	IUCN2
<i>Gomphocarpus filiformis</i> (E.Mey.) Dietr.			
<i>Gossypium herbaceum</i> L. subsp. <i>africanum</i> (Watt) Vollesen			
<i>Helichrysum argyrosphaerum</i> DC.			
<i>Helichrysum candolleanum</i> H.Buek			
<i>Helichrysum herniarioides</i> DC.			
<i>Helichrysum obtusum</i> (S.Moore) Moeser			
<i>Helichrysum roseo-niveum</i> Marloth & O.Hoffm.			
<i>Heliotropium albiflorum</i> Engl.	Endemic		
<i>Heliotropium curassavicum</i> L.			
<i>Heliotropium ovalifolium</i> Forssk.			
<i>Heliotropium tubulosum</i> E.Mey. ex DC.			
<i>Hermannia affinis</i> K.Schum.			
<i>Hermannia amabilis</i> Marloth ex K.Schum.	Endemic		
<i>Hermannia helianthemum</i> K.Schum.			
<i>Hermannia solaniflora</i> K.Schum.	Near Endemic		
<i>Hermbstaedtia spathulifolia</i> (Engl.) Baker	Endemic		
<i>Hexacyrtis dickiana</i> Dinter	Near Endemic		
<i>Hibiscus elliotiae</i> Harv.			
<i>Hirpicium gazanioides</i> (Harv.) Roessler			
<i>Hoodia currorii</i> (Hook.) Decne. subsp. <i>currorii</i>		Protected	
<i>Hoodia gordonii</i> (Masson) Sweet ex Decne.		Protected	Near Threatened
<i>Hypertelis cerviana</i> (L.) Thulin			
<i>Hypertelis salsoloides</i> (Burch.) Adamson var. <i>salsoloides</i>			
<i>Indigastrum argyroides</i> (E.Mey.) Schrire			
<i>Indigofera auricomma</i> E.Mey.			
<i>Indigofera heterotricha</i> DC. subsp. <i>heterotricha</i>			
<i>Jamesbrittenia barbata</i> Hilliard	Endemic		
<i>Jamesbrittenia canescens</i> (Benth.) Hilliard var. <i>canescens</i>			

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<i>Jamesbrittenia hereroensis</i> (Engl.) Hilliard	Endemic		
<i>Jamesbrittenia maxii</i> (Hiern) Hilliard			
<i>Juncus rigidus</i> Desf.			
<i>Kissenia capensis</i> Endl.			
<i>Kleinia longiflora</i> DC.			
<i>Kohautia caespitosa</i> Schnizl. subsp. <i>brachyloba</i> (Sond.) D.Mantell			
<i>Kohautia ramosissima</i> Bremek.			
<i>Launaea intybacea</i> (Jacq.) P.Beauv.			
<i>Leobordea platycarpa</i> (Viv.) B.-E. van Wyk & Boatwr. [2]			
<i>Lepidium englerianum</i> (Muschl.) Al-Shehbaz			
<i>Limeum argute-carinatum</i> Wawra ex Wawra & Peyr. var. <i>argute-carinatum</i>			
<i>Limeum myosotis</i> H.Walter var. <i>confusum</i> Friedrich			
<i>Lobelia thermalis</i> Thunb.			
<i>Lolium rigidum</i> Gaudich.			
<i>Lophiocarpus polystachyus</i> Turcz.			
<i>Lycium oxycarpum</i> Dunal			
<i>Lycium tetrandrum</i> Thunb.			
<i>Maerua schinzii</i> Pax		Forestry Protected	
<i>Mesembryanthemum cryptanthum</i> Hook.f.			
<i>Mesembryanthemum guerichianum</i> Pax			
<i>Microcharis disjuncta</i> (J.B.Gillett) Schrire var. <i>disjuncta</i>			
<i>Monechma cleomoides</i> (S.Moore) C.B.Clarke			
<i>Monechma desertorum</i> (Engl.) C.B.Clarke	Endemic		
<i>Monechma divaricatum</i> (Nees) C.B.Clarke			
<i>Myxopappus hereroensis</i> (O.Hoffm.) Källersjö	Endemic		
<i>Nesaea luederitzii</i> Koehne var. <i>luederitzii</i>			
<i>Nidorella resedifolia</i> DC. subsp. <i>resedifolia</i>			
<i>Odyssea paucinervis</i> (Nees) Stapf			

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<i>Ondetia linearis</i> Benth.	Endemic		
<i>Ophioglossum polyphyllum</i> A.Braun			
<i>Ornithogalum rautanenii</i> Schinz	Endemic		
<i>Ornithogalum stapffii</i> Schinz	Endemic		
<i>Ornithoglossum vulgare</i> B.Nord.			
<i>Orphanthera albida</i> Schinz			
<i>Osteospermum microcarpum</i> (Harv.) Norl. subsp. <i>microcarpum</i>			
<i>Panicum repens</i> L.			
<i>Parkinsonia africana</i> Sond.			
<i>Paspalum vaginatum</i> Sw.			
<i>Pechuel-loeschea leubnitziae</i> (Kuntze) O.Hoffm.			
<i>Pelargonium otaviense</i> R.Knuth			
<i>Pergularia daemia</i> (Forssk.) Chiov. var. <i>daemia</i>			
<i>Petalidium canescens</i> (Engl.) C.B.Clarke	Endemic		
<i>Petalidium variabile</i> (Engl.) C.B.Clarke var. <i>spectabile</i> Mildbr.	Endemic		
<i>Phragmites australis</i> (Cav.) Steud.			
<i>Poa annua</i> L.			
<i>Polygala guerichiana</i> Engl.			
<i>Polygonum plebeium</i> R.Br.			
<i>Polypogon monspeliensis</i> (L.) Desf.			
<i>Polypogon viridis</i> (Gouan) Breistr.			
<i>Potamogeton pectinatus</i> L.			
<i>Psilocaulon kuntzei</i> (Schinz) Dinter & Schwantes			
<i>Psilocaulon salicornioides</i> (Pax) Schwantes	Near Endemic		
<i>Raphionacme haeneliae</i> Venter & Verhoeven	Endemic		
<i>Rhus marlothii</i> Engl.			
<i>Ruellia marlothii</i> Engl.			
<i>Ruppia maritima</i> L.			
<i>Salsola aphylla</i> L.f.			
<i>Salsola arborea</i> C.A.Sm. ex Aellen			
<i>Salsola gemmifera</i> Botsch.			
<i>Salsola kali</i> L.			
<i>Salsola swakopmundi</i> Botsch.	Endemic		
<i>Salvadora persica</i> L. var. <i>persica</i>			

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<i>Salvia garipensis</i> E.Mey. ex Benth.	Near Endemic		
<i>Sarcocaulon mossamedense</i> (Welw. ex Oliv.) Hiern	Near Endemic		
<i>Sarcocornia natalensis</i> (Bunge ex Ung.-Sternb.) A.J.Scott var. <i>affinis</i> (Moss) O'Callaghan			
<i>Senecio engleranus</i> O.Hoffm.	Endemic		
<i>Senecio flavus</i> (Decne.) Sch.Bip.			
<i>Sesamum marlothii</i> Engl.	Endemic		
<i>Sesbania pachycarpa</i> DC. subsp. <i>dinterana</i> J.B.Gillett	Near Endemic		
<i>Sesuvium sesuvioides</i> (Fenzl) Verdc.			
<i>Sonchus oleraceus</i> L.			
<i>Spergularia media</i> (L.) C.Presl			
<i>Sporobolus consimilis</i> Fresen.			
<i>Sporobolus nebulosus</i> Hack.	Near Endemic		
<i>Sporobolus virginicus</i> (L.) Kunth			
<i>Stapelia kwebensis</i> N.E.Br.		Protected	
<i>Stipagrostis ciliata</i> (Desf.) De Winter var. <i>capensis</i> (Trin. & Rupr.) De Winter			
<i>Stipagrostis damarensis</i> (Mez) De Winter	Near Endemic		
<i>Stipagrostis dinteri</i> (Hack.) De Winter			
<i>Stipagrostis giessii</i> Kers			
<i>Stipagrostis hermannii</i> (Mez) De Winter	Near Endemic		
<i>Stipagrostis hochstetteriana</i> (Beck ex Hack.) De Winter var. <i>hochstetteriana</i>			
<i>Stipagrostis hochstetteriana</i> (Beck ex Hack.) De Winter var. <i>secalina</i> (Henrard) De Winter			
<i>Stipagrostis namaquensis</i> (Nees) De Winter			
<i>Stipagrostis obtusa</i> (Delile) Nees			
<i>Stipagrostis schaeferi</i> (Mez) De Winter			
<i>Stipagrostis subacaulis</i> (Nees) De Winter			
<i>Suaeda merxmulleri</i> Aellen			
<i>Suaeda plumosa</i> Aellen			
<i>Tamarix ramosissima</i> Ledeb.			
<i>Tamarix usneoides</i> E.Mey. ex Bunge			

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<i>Tapinanthus oleifolius</i> (J.C.Wendl.) Danser			
<i>Tephrosia dregeana</i> E.Mey. var. <i>dregeana</i>	Near Endemic		
<i>Tetraena clavata</i> (Schltr. & Diels) Beier & Thulin	Near Endemic		
<i>Tetragonia decumbens</i> Mill.			
<i>Tetragonia reduplicata</i> Welw. ex Oliv.			
<i>Trianthema hereroensis</i> Schinz	Endemic		
<i>Tribulus excrucians</i> Wawra			
<i>Tribulus zeyheri</i> Sond. subsp. <i>zeyheri</i>			
<i>Trichodesma africanum</i> (L.) Lehm.			
<i>Tripteris microcarpa</i> Harv. subsp. <i>microcarpa</i>			
<i>Tripteris microcarpa</i> Harv. subsp. <i>septentrionalis</i> (Norl.) B.Nord.			
<i>Tripteris nervosa</i> Hutch.	Endemic		
<i>Triraphis pumilio</i> R.Br.			
<i>Vahlia capensis</i> (L.f.) Thunb. subsp. <i>vulgaris</i> Bridson var. <i>vulgaris</i>			
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.f. ex A.Gray var. <i>encelioides</i>			
<i>Welwitschia mirabilis</i> Hook.f.	Near Endemic	Protected	
<i>Xanthium strumarium</i> L.			
<i>Zannichellia palustris</i> L.			
<i>Zygophyllum simplex</i> L.			
<i>Zygophyllum spongiosum</i> Van Zyl			
<i>Zygophyllum stapffii</i> Schinz	Endemic		