BASIC ASSESSMENT PROCESS FOR THE PROPOSED CONSTRUCTION OF THE 7KM 50KV POWER LINE FROM ESKOM JUNO SUBSTATION TO THE PROPOSED NEW TRANSNET JUNO TRACTION FEEDER SUBSTATION

FAUNA & FLORA SPECIALIST REPORT FOR BASIC ASSESSMENT

PREPARED FOR NSOVO ENVIRONMENTAL CONSULTING

BY

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October 2014

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DECLARATION OF CONSULTANTS' INDEPENDENCE

- I Simon Todd, as the appointed independent specialist hereby declare that I:
- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Note: The terms of reference must be attached.

Simon Todd Pr.Sci.Nat 400425/11.
October 2014

EXECUTIVE SUMMARY

Transnet Freight Rail (TFR) is upgrading the Sishen-Saldanha line in order to allow for the use of new energy efficient 15E Electrical Locomotives. As part of the upgrade, various traction substations need to be upgraded and in the current case this would require the construction of approximately 7km of 50kV power line in parallel to the existing line from Juno substation to the proposed new Transnet Juno Traction Feeder Substation, as well as associated 60MVA 400/50kV transformer.

As part of the required Basic Assessment process, this ecological specialist study details the ecological characteristics of the site and provides an assessment of the ecological impacts likely to be associated with the development of the power line and associated infrastructure.

A desktop study of the available ecological information and a field assessment were conducted in order to characterise the site. The results indicate that the site is potentially sensitive as the abundance of species of conservation concern in the area is high and the majority of the power line corridor lies within a Critical Biodiversity Area. The footprint of the development is however low and the proximity of the affected areas to the existing railway line and disturbance, ensures that the overall impact of the development is likely to remain low. The site visit also indicated that there are no populations of fauna or flora which are likely to be significantly compromised by the development and no specialized habitats of significance for fauna or flora were observed within the affected area.

With the recommended mitigation measures as listed in this report applied, the overall impact of the development would be restricted to the site and of local significance only. There are no impacts associated with the development that cannot be reduced to a low level through avoidance and mitigation and there are no unavoidable impacts present that are likely to represent a red flag or no-go situation for the development.

Summary assessment of the likely impacts associated with the development of the power line and associated infrastructure at the site.

Impact	Significance – Without Mitigation	Significance – With Mitigation
Construction Phase		
Impacts on Vegetation and Species of Conservation Concern	28 = Low	10 = Low
Faunal Impacts During Construction	32 = Medium	10 = Low
Operational Phase		

Degradation of Ecosystems	32 = Medium	15 = Low
Cumulative Impacts		
Impact on Critical Biodiversity Areas and Broad-Scale Ecological Processes	27 = Low	14 = Low

1 INTRODUCTION

The Sishen-Saldanha line, Transnet Freight Rail's (TFR) iron ore export corridor, forms the backbone of the company's growth strategy. As part of the Transnet Orex expansion, TFR will be replacing the 9E Electrical Locomotives and Diesel Locomotives with the new energy efficient 15E Electrical Locomotives. Eskom Holdings SOC Limited (Eskom) was therefore requested by TFR to provide advice and the necessary provisions in this regard. Consequently, to enable TFR to expand their operations without overloading and interruption of supply, Eskom proposes the following:

- Construction of approximately 5.7 km of 50kV power line in parallel to the existing line from Juno substation to the proposed new Transnet Juno Traction Feeder Substation. The new line will have three single phase supplies each rated at 60MVA;
- Installation of a 1x60MVA 400/50kV transformer;
- Connect in parallel the existing 2x40MvA 275/50Kv transformers and make them to feed north of the substation;

In terms of the National Environmental Management Act: Environmental Impact Assessment Regulations (GN No. R 543 – 546 of 2010), a Basic Environmental Impact Assessment, is required before the development can proceed. As part of the Basic Assessment process, this ecological specialist study details the ecological characteristics of the site and provides an assessment of the likely ecological impacts likely to be associated with the development of the proposed power supply upgrades. The full scope of study is detailed below.

1.1 SCOPE OF STUDY

The scope of the study includes the following activities

- a description of the environment that may be affected by the activity and the manner in which the environ mint may be affected by the proposed project
- a description and evaluation of environmental issues and potential impacts (incl. using direct, indirect and cumulative impacts) that have been identified
- a statement regarding the potential significance of the identified issues based on the evaluation of the issues/impacts
- an indication of the methodology used in determining the significance of potential environmental impacts
- an assessment of the significance of direct indirect and cumulative impacts in terms of the following criteria :
    - the nature of the impact, which shall include a description of what causes the effect, what will be affected and how it will be affected
    - the extent of the impact, indicating whether the impact will be local (limited to

the immediate area or site of development), regional, national or international
  - the duration of the impact, indicating whether the lifetime of the impact will be of a short-term duration (0-5 years), medium-term (5- 15 years), long-term (> 15 years, where the impact will cease after the operational life of the activity) or permanent
  - the probability of the impact, describing the likelihood of the impact actually occurring, indicated as improbable (low likelihood) probable (distinct possibility), highly probable (most likely), or definite (Impact will occur regardless of any preventable measures)
  - the severity/beneficial scale indicating whether the impact will be very severe/beneficial (a permanent change which cannot be mitigated/permanent and significant benefit with no real alternative to achieving this benefit) severe/beneficial (long-term impact that could be mitigated/long-term benefit) moderately severe/beneficial (medium- to long-term impact that could be mitigated/ medium- to long-term benefit), slight or have no effect
  - the significance which shall be determined through a synthesis of the characteristics described above and can be assessed as low medium or high
  - the status which will be described as either positive, negative or neutral
  - the degree to which the impact can be reversed
  - the degree to which the impact may cause irreplaceable loss of resources
  - the degree to which the impact can be mitigated

- a description and comparative assessment of all alternatives
- recommendations regarding practical mitigation measures for potentially significant impacts, for inclusion in the Environmental Management Programme (EMPr)
- an indication of the extent to which the issue could be addressed by the adoption of mitigation measures
- a description of any assumptions uncertainties and gaps in knowledge
- an environmental impact statement which contains :
  - a summary of the key findings of the environmental impact assessment;
  - an assessment of the positive and negative implications of the proposed activity;
  - a comparative assessment of the positive and negative implications of identified alternatives

General Considerations:

- Disclose any gaps in information or assumptions made.
- Recommendations for mitigatory measures to minimise impacts identified.
- An outline of additional management guidelines.

- Provide monitoring requirements, mitigation measures and recommendations in a table format as input into the Environmental Management Plan (EMP) for faunal related issues.

A description of the potential impacts of the development and recommended mitigation measures are to be provided which will be separated into the following project phases:

- Preconstruction
- Construction
- Operational Phase

1.2 ASSESSMENT APPROACH & PHILOSOPHY

The assessment will be conducted according to the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989 as well as within the best-practice guidelines and principles for biodiversity assessment as outlined by Brownlie (2005) and De Villiers et al. (2005).

This includes adherence to the following broad principles:

- That a precautionary and risk-averse approach be adopted towards projects which may result in substantial detrimental impacts on biodiversity and ecosystems, especially the irreversible loss of habitat and ecological functioning in threatened ecosystems or designated sensitive areas: i.e. Critical Biodiversity Areas (as identified by systematic conservation plans, Biodiversity Sector Plans or Bioregional Plans) and Freshwater Ecosystem Priority Areas.

- Demonstrate how the proponent intends complying with the principles contained in section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA), which, amongst other things, indicates that environmental management should.

    - In order of priority aim to: avoid, minimise or remedy disturbance of ecosystems and loss of biodiversity;
    - Avoid degradation of the environment;
    - Avoid jeopardising ecosystem integrity;
    - Pursue the best practicable environmental option by means of integrated environmental management;
    - Protect the environment as the people's common heritage;
    - Control and minimise environmental damage; and

- Pay specific attention to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic or stressed ecosystems.

These principles serve as guidelines for all decision-making concerning matters that may affect the environment. As such, it is incumbent upon the proponent to show how proposed activities would comply with these principles and thereby contribute towards the achievement of sustainable development as defined by the NEMA.

In order to adhere to the above principles and best-practice guidelines, the following approach forms the basis for the study approach and assessment philosophy:
The study will include data searches, desktop studies, site walkovers / field survey of the property and baseline data collection, describing:

- A description of the broad ecological characteristics of the site and its surrounds in terms of any mapped spatial components of ecological processes and/or patchiness, patch size, relative isolation of patches, connectivity, corridors, disturbance regimes, ecotones, buffering, viability, etc.

In terms of **pattern**, the following will be identified or described:

Community and ecosystem level

- The main vegetation type, its aerial extent and interaction with neighbouring types, soils or topography;
- Threatened or vulnerable ecosystems (*cf. SA vegetation map/National Spatial Biodiversity Assessment, fine-scale systematic conservation plans, etc*).

Species level

- Red Data Book species (giving location if possible using GPS)
- The viability of an estimated population size of the RDB species that are present (include the degree of confidence in prediction based on availability of information and specialist knowledge, i.e. High=70-100% confident, Medium 40-70% confident, low 0-40% confident)
- The likelihood of other RDB species, or species of conservation concern, occurring in the vicinity (include degree of confidence).

Fauna

- Describe and assess the terrestrial fauna present in the area that will be affected by the proposed development.
- Conduct a faunal assessment that can be integrated into the ecological study.
- Describe the existing impacts of current land use as they affect the fauna.
- Clarify species of special concern (SSC) and that are known to be:
    - endemic to the region;
    - that are considered to be of conservational concern;
    - that are in commercial trade (CITES listed species);

- or, are of cultural significance.

- Provide monitoring requirements as input into the Environmental Management Plan (EMPr) for faunal related issues.

Other pattern issues

- Any significant landscape features or rare or important vegetation associations such as seasonal wetlands, alluvium, seeps, quartz patches or salt marshes in the vicinity.
- The extent of alien plant cover of the site, and whether the infestation is the result of prior soil disturbance such as ploughing or quarrying (alien cover resulting from disturbance is generally more difficult to restore than infestation of undisturbed sites).
- The condition of the site in terms of current or previous land uses.

In terms of **process**, the following will be identified or described:

- The key ecological "drivers" of ecosystems on the site and in the vicinity, such as fire.
- Any mapped spatial component of an ecological process that may occur at the site or in its vicinity (i.e. *corridors* such as watercourses, upland-lowland gradients, migration routes, coastal linkages or inland-trending dunes, and *vegetation boundaries* such as edaphic interfaces, upland-lowland interfaces or biome boundaries)
- Any possible changes in key processes, e.g. increased fire frequency or drainage/artificial recharge of aquatic systems.
- Furthermore, any further studies that may be required during or after the EIA process will be outlined.
- All relevant legislation, permits and standards that would apply to the development will be identified.
- The opportunities and constraints for development will be described and shown graphically on an aerial photograph, satellite image or map delineated at an appropriate level of spatial accuracy.

1.3 Relevant Aspects of the Development

The project site is located on the Farm Zout Fontein 178 (Portions 3 and 13), Holrivier 179(Portions 1, 2 and Remainder), Zoet Vlakte 189 Portion 2, Baklei Plaas 227(Portions 28, 42 and Remainder), Baklei Plaas 278(Portions 4, 5, 6 and Remainder), Vanrhynsdorp Rd 452 (Remainder) and Vanrhynsdorp Rd 1343 (Remainder) within the jurisdiction of Matzikama Local Municipality in the Western Cape Province. The development will consist of the following infrastructure:

- Construction of approximately 5.7 km of 50kV power line in parallel to the existing line from Juno substation to the proposed new Transnet Juno Traction Feeder Substation. The new line will have three single phase supplies each rated at 60MVA;
- Installation of a 1x60MVA 400/50kV transformer;
- Connect in parallel the existing 2x40MvA 275/50Kv transformers and make them to feed north of the substation;

Although a servitude of approximately 31m is required for the proposed power lines, a 200m corridor is considered in the assessment in order to allow for flexibility and scope for avoiding sensitive features.

Figure 1. Satellite image of the study area, showing the Juno substation and the route of the proposed power line in red, the existing railway line in black and the new substation in blue.

2 METHODOLOGY

2.1 DATA SOURCING AND REVIEW

Data sources from the literature consulted and used where necessary in the study includes the following:

Vegetation:

- Vegetation types and their conservation status were extracted from the South African National Vegetation Map (Mucina and Rutherford 2006) as well as the National List of Threatened Ecosystems (2011), where relevant. Helme's (2007) report on fine scale vegetation mapping in the Sandveld was also consulted where relevant and is used as an alternative to the national vegetation map.
- Critical Biodiversity Areas for the site and surroundings were extracted from the *Fine Scale Conservation Plan for the Matzikama District* which forms part of the C.A.P.E. Fine-scale Biodiversity Planning Project (Pence 2008).
- Information on plant and animal species recorded for the Quarter Degree Squares (QDS) 3118 CB and DA was extracted from the SABIF/SIBIS database hosted by SANBI. This is a considerably larger area than the study area, but this is necessary to ensure a conservative approach as well as counter the fact that the site itself has not been well sampled in the past.
- The IUCN conservation status (Table 1) of the species in the list was also extracted from the database and is based on the Threatened Species Programme, Red List of South African Plants (2014).
- Freshwater and wetland information was extracted from the National Freshwater Ecosystem Priority Areas assessment, NFEPA (Nel et al. 2011).
- Important catchments and protected areas expansion areas were extracted from the National Protected Areas Expansion Strategy 2008 (NPAES).

Fauna

- Lists of mammals, reptiles and amphibians which are likely to occur at the site were derived based on distribution records from the literature and various spatial databases (SANBI's SIBIS and BGIS databases).
- Literature consulted includes Branch (1988) and Alexander and Marais (2007) for reptiles, Du Preez and Carruthers (2009) for amphibians, Friedmann and Daly (2004) and Skinner and Chimimba (2005) for mammals.
- Apart from the literature sources, additional information on reptiles were extracted from the SARCA web portal, hosted by the ADU, http://vmus.adu.org.za for the above quarter degree squares
- The faunal species lists provided are based on species which are known to occur in the broad geographical area, as well as a preliminary assessment of the availability and quality of suitable habitat at the site.
- The conservation status of each species is also listed, based on the IUCN Red List Categories and Criteria version 2014.2 (See Figure 2) and where species have not been assessed under these criteria, the CITES status is reported where possible. These lists are adequate for mammals and amphibians, the majority of which have been assessed, however the majority of reptiles have not been assessed and therefore, it is not adequate to assess the potential impact of the development on reptiles, based on those with a listed conservation status alone. In order to address this shortcoming,

the distribution of reptiles was also taken into account such that any narrow endemics or species with highly specialized habitat requirements occurring at the site were noted.

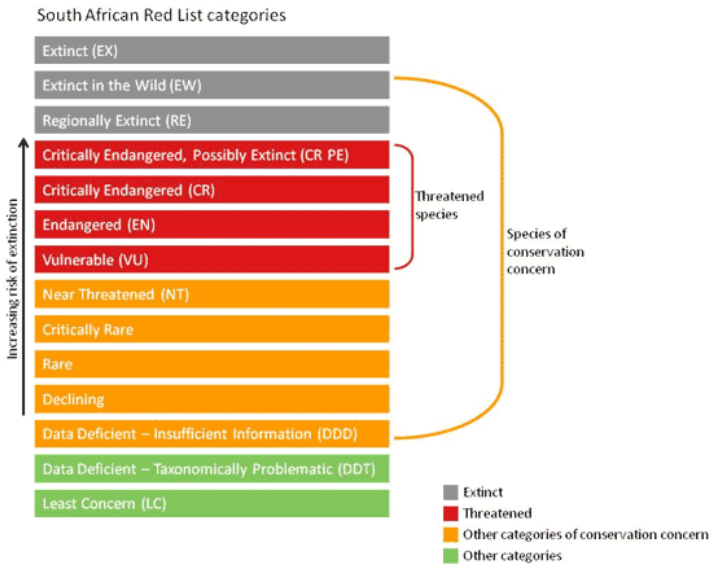

Figure 2. Schematic representation of the South African Red List categories. Taken from http://redlist.sanbi.org/redcat.php

2.2 SITE VISIT

The site visit took place on the 3rd of September 2014. During the site visit, the power line route was walked and all sensitive features present along the route were noted and recorded with a GPS. A full plant species list for the site was developed and all fauna directly or indirectly observed through spoor, scat etc. were also recorded. The presence of sensitive habitats within the site such as drainage features or unique edaphic environments such as rocky outcrops or quartz patches were noted in the field if present and recorded on a GPS. All drainage features were identified and demarcated in the field if necessary.

2.3 SENSITIVITY MAPPING & ASSESSMENT

An ecological sensitivity map of the site was produced by integrating the information collected on-site with the available ecological and biodiversity information available in the literature and various spatial databases. This includes delineating the different habitat units identified in the field and assigning sensitivity values to the units based on their ecological properties, conservation value and the observed presence of species of conservation concern. The ecological sensitivity of the different units identified in the mapping procedure was rated according to the following scale:

- **Low** – Areas of natural or transformed habitat with a low sensitivity where there is likely to be a negligible impact on ecological processes and terrestrial biodiversity. Most types of development can proceed within these areas with little ecological impact.
- **Medium**- Areas of natural or previously transformed land where the impacts are likely to be largely local and the risk of secondary impact such as erosion low. These areas usually comprise the bulk of habitats within an area. Development within these areas can proceed with relatively little ecological impact provided that appropriate mitigation measures are taken.
- **High** – Areas of natural or transformed land where a high impact is anticipated due to the high biodiversity value, sensitivity or important ecological role of the area. These areas may contain or be important habitat for faunal species or provide important ecological services such as water flow regulation or forage provision. Development within these areas is undesirable and should only proceed with caution as it may not be possible to mitigate all impacts appropriately.
- **Very High** – Critical and unique habitats that serve as habitat for rare/endangered species or perform critical ecological roles. These areas are essentially no-go areas from a developmental perspective and should be avoided as much as possible.

In some situations, areas were also classified between the above categories, such as Medium-High, where it was deemed that an area did not fit well into a certain category but rather fell most appropriately between two sensitivity categories.

2.4 SAMPLING LIMITATIONS AND ASSUMPTIONS

The major potential limitation associated with the sampling approach is the narrow temporal window of sampling. Ideally, a site should be visited several times during different seasons to ensure that the full complement of plant and animal species present are captured. However, this is rarely possible due to time and cost constraints and therefore, the representivity of the species sampled at the time of the site visit should be critically evaluated. The current site visit took place in the early summer and the conditions for sampling were good and it is not likely that any additional sampling would yield any additional insights or changes to the assessed sensitivity. The lists of avifauna, amphibians, reptiles and mammals for the site are based on those observed at the site as well as those likely to occur in the area based on their distribution and habitat preferences. This represents a sufficiently conservative and cautious approach which takes the study limitations into account.

3 DESCRIPTION OF THE AFFECTED ENVIRONMENT- BASELINE

3.1 BROAD-SCALE VEGETATION PATTERNS

The national vegetation map (Mucina & Rutherford 2006) for the study area is depicted below in Figure 3. According to the national vegetation map, the whole development footprint lies

within the Namaqualand Spinescent Grassland vegetation type. The vegetation of the area has however been mapped at a finer scale by Helme (2007). According to the map of Helme (2007) (Figure 4), the first half of the line from Juno lies within Namaqualand Strandveld and the second half is within Namaqualand Spinescent Grassland.

Namaqualand Spinescent Grassland occupies 522 km^2 of the knersvlakte from north and east of Vredendal to Lutzville and Koekenaap. It is restricted to deep red, undifferentiated aeolian sands. Namaqualand Spinescent Grassland has not been heavily impacted by intensive agriculture and 96% of the original extent remains. This vegetation unit is however poorly conserved as only 4% of the target of 26% is conserved. Namaqualand Spinescent Grassland is classified as Least Threatened.

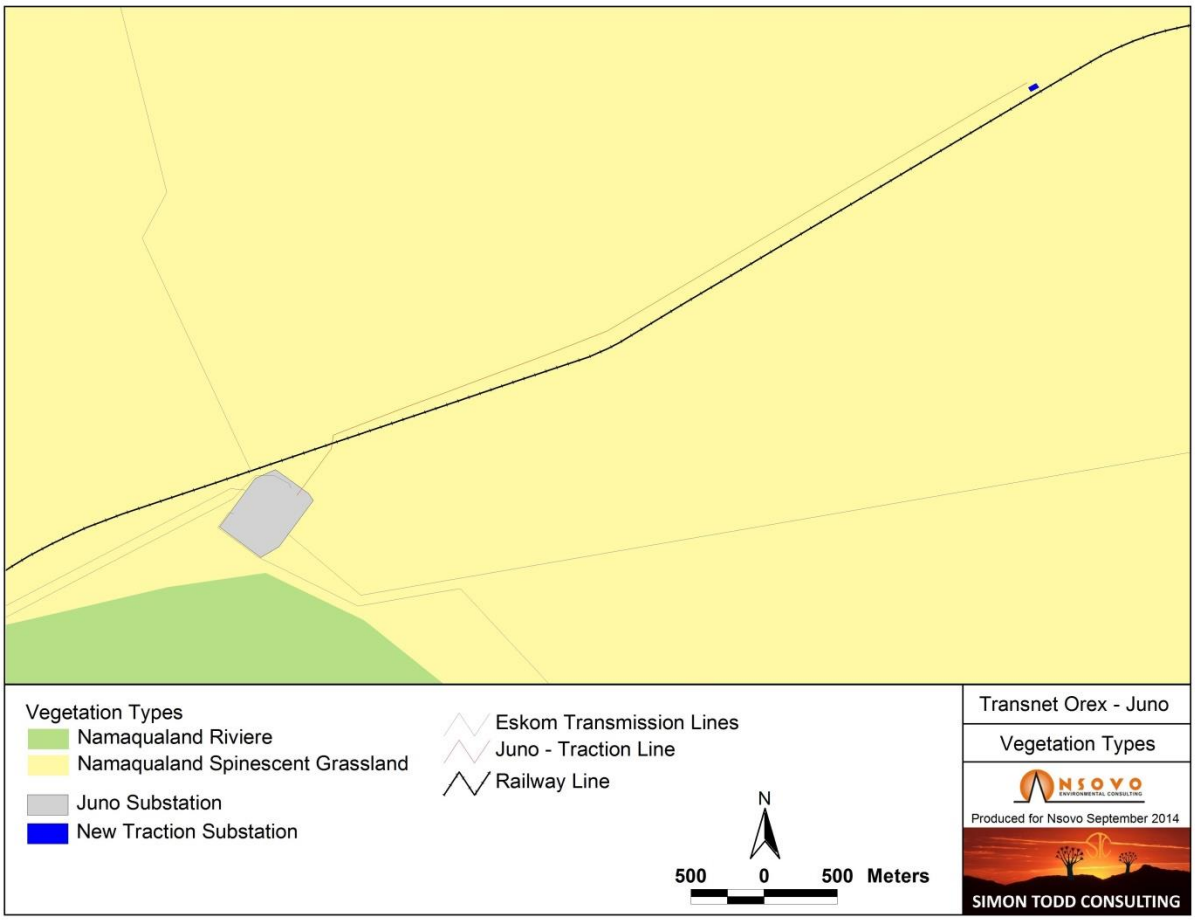

Figure 3. Broad-scale overview of the vegetation in and around the Juno substation and the Transnet Traction substation, according to the national vegetation map as produced by Mucina & Rutherford (2009). There are no wetlands of drainage lines mapped in the area by the NFEPA.

Namaqualand Strandveld occurs in the Northern and Western Cape from the southern Richtersveld to Donkins Bay in the south. This vegetation unit may penetrate as much as 40

km inland, but is separated from the coast by Namaqualand Coastal Duneveld. It occurs on the coastal peneplain, associated with stabilised aeolian deep red yellowish red stable dunes and deep sand overlying marine sediments and granite gneisses. Mucina & Rutherford list 8 endemic species for this vegetation type, however this is an underestimate and there are certainly more than twice this number as undescribed species are regularly encountered in this vegetation unit as it has not been well investigated in the past. This vegetation type is threatened by mining for heavy metals, and about 10% has been lost to date, but it is still listed as Least Threatened.

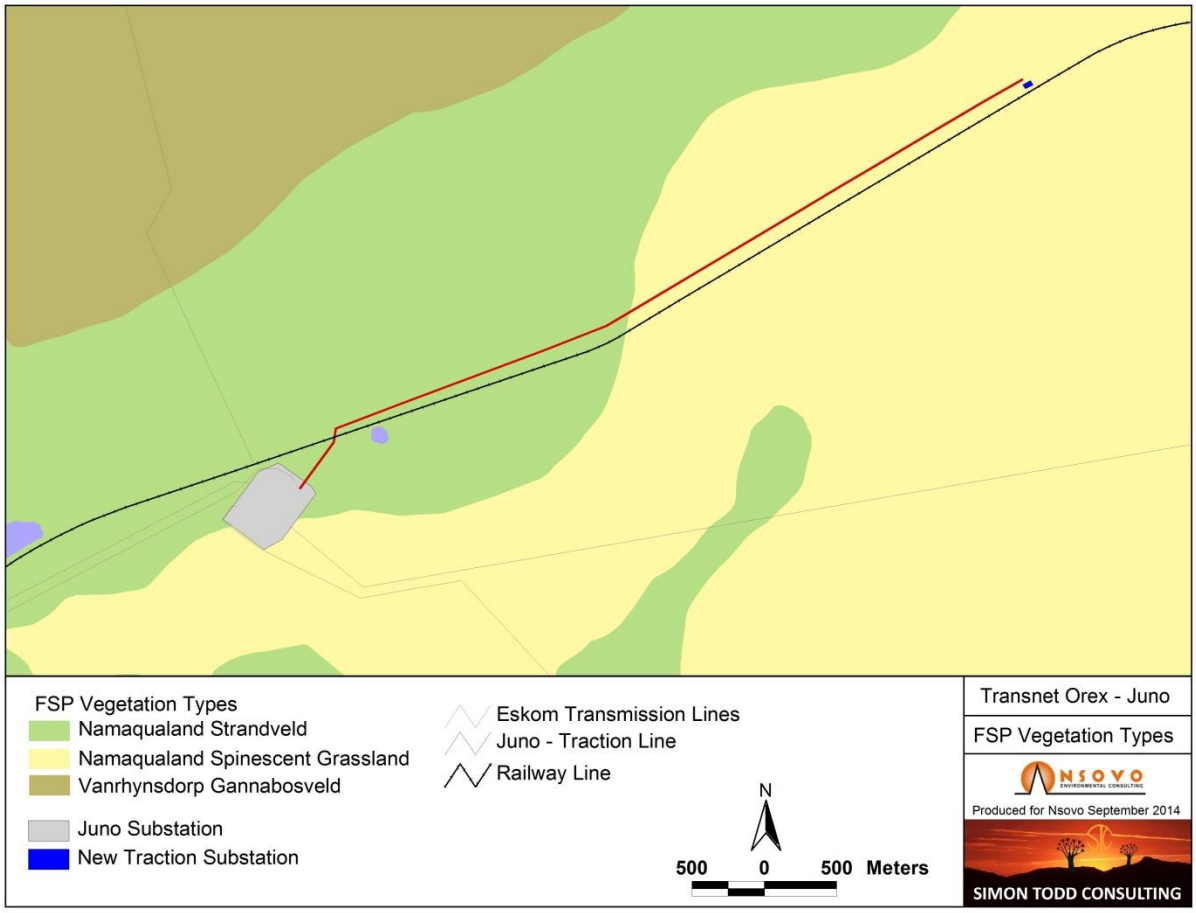

Figure 4. Vegetation types in and around the Juno substation and the Transnet Traction substation, according to the fine-scale vegetation map produced by Helme (2007). This is a preferable interpretation of the vegetation of the area to the national vegetation map.

3.2 FINE-SCALE VEGETATION PATTERNS

Towards the Juno substation as well as the central section of the power line route, the vegetation is typical of Namaqualand Strandveld and consists of woody and succulent shrubs

such as *Othonna cylindrica*, *Zygophyllum cordifolium*, *Galenia fruticosa*, *Salsola namibica*, *Drosanthemum deciduum*, *Ruschia bipapillata*, *Drosanthemum latipetalum*, *Delosperma crassum*, *Lampranthus uniflorus* and *Lycium ferocissimum*. Annuals are common and consist of species such as *Osteospermum pinnatum* var. *pinnatum*, *Arctotis hirsuta*, *Cotula bipinnata*, *Foveolina tenella*, *Rhynchopsidium pumilum*, *Oncosiphon suffruticosum* and *Senecio arenarius*. Those sections of the power line corridor on deeper sands consist of Namaqualand Spinescent Grassland dominated by the spiny shrub-like grass *Cladoraphis spinescens*. Other species present include *Zygophyllum morgsana*, *Galenia africana*, *Hermannia scordifolia*, *Hermannia trifurca*, *Lebeckia halenbergensis*, *Asparagus juniperoides*, *Tetragonia fruticosa*, *Conicosia elongata*, *Dorotheanthus rourkei*.

A number of alien species were observed at the site, mostly annuals associated with disturbance including *Medicago polymorpha*, *Lolium rigidum*, *Bromus pectinatus*, *Malva parviflora*, *Amsickia retrosa, Hordeum murinum*, *Stipa capensis* and *Atriplex lindelyi* subsp *inflata*. These species are generally restricted to the disturbed parts of the railway servitude and do not occur in the undisturbed veld.

The central section of the power line corridor and towards Juno consist of Namaqualand Strandveld and are dominated by low succulent shrubs.

The majority of the power line corridor occurs on deep red sands heavily dominated by *Cladoraphis spinescens*

The proposed substation site within the railway servitude. The area consists of disturbed indigenous vegetation, cleared areas and alien species.

3.3 LISTED AND PROTECTED PLANT SPECIES

The broad area around the site has a high level of plant diversity and includes more than 50 species of high conservation concern. As a result, there is a real concern regarding the potential impact of the development on such species of conservation concern. However, the habitats affected by the power line are widespread and there are no highly specialised habitats affected by the power line, which would be likely to contain species of high conservation concern. The areas of Namaqualand Spinescent Grassland are homogenous and similar habitat is widely available around the site. Similarly, species of conservation concern are likely to be more common within the areas of Namaqualand Strandveld, but no areas of specific concern were observed along the power line route. Overall, it is possible that some species of conservation concern occur within the affected area, but this is likely to be a small proportion of any affected populations and a significant impact on any particular species is highly unlikely.

Table 1. Summary of the IUCN status of the plant species known from the vicinity of the Juno site.

Status	Count
CR	2
EN	18
VU	36
NT	10
Thr*	7
Rare	14
Declining	3
DDD	5
LC	754
DDT	16
Grand Total	**865**

3.4 Critical Biodiversity Areas & Broad-Scale Processes

The site falls within the planning domain of the Matzikama Fine-Scale Conservation Plan produced as part of the C.A.P.E. Fine-scale Biodiversity Planning Project (Pence 2008). This biodiversity assessment identifies Critical Biodiversity Areas (CBAs) which represent biodiversity priority areas which should be maintained in a natural to near natural state. The CBA maps indicate the most efficient selection and classification of land portions requiring safeguarding in order to meet national biodiversity objectives. In terms of this map, the power line route runs along the margin of a CBA bounded in large part by the railway line (Figure 5). It is highly unlikely that the development would generate a significant impact on the CBAs of the area given the low footprint of the development as well as the proximity of the site to the railway line.

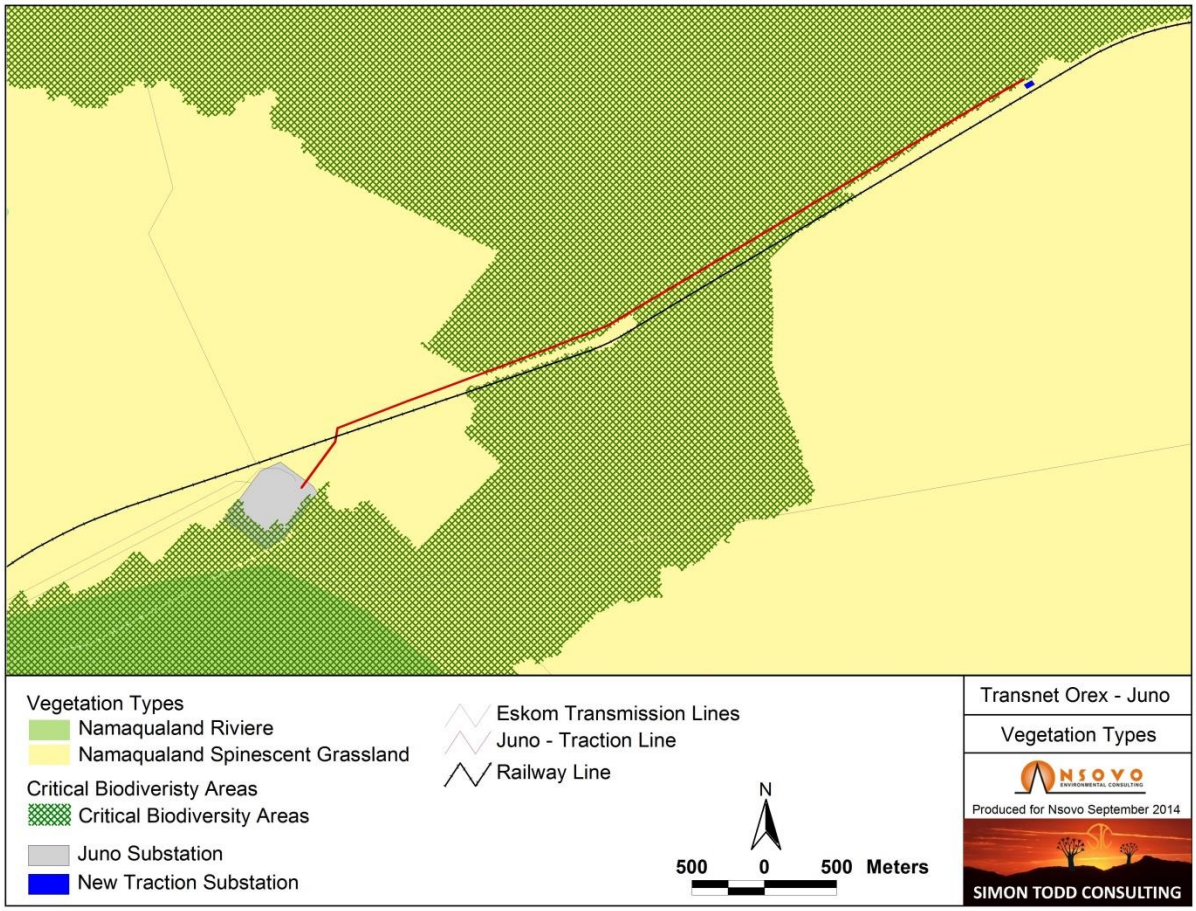

Figure 5. Critical Biodiversity Areas in and around the study area. Parts of the site fall within CBAs, but transformed areas along the railway line, where mapped are excluded from the CBA

3.5 FAUNAL COMMUNITIES

Mammals

A total of 46 terrestrial mammals and eight bat species potentially occur at the site (Annex 2). The relatively limited range of habitats present would however reduce the number of species that actually occur within the affected area substantially and only about 20 terrestrial mammals have a moderate to high likelihood of actually occurring at the site. Species associated with rock cover are not likely to occur at the site and only species associated with relatively sandy habitats are likely to be common. Species observed to be present in the area include, Aardvark, Cape Porcupine, African Mole Rat, Meerkat, Yellow Mongoose and Gerbils, probably Cape Short-tailed Gerbil *Desmodillus auricularis*.

The site lies within the distribution range of three listed mammal species, the White-tailed Mouse *Mystromys albicaudatus*, Honey Badger *Mellivora capensis* and Natal long-fingered bat *Miniopterus natalensis*. Given the proximity of the affected area to the railway line and the associated disturbance, the affected area is not likely to be important for terrestrial mammals and the development of the power line and substation would not result in a significant impact on the viability of the local populations of any mammal species. The impact on bats would be small as the site itself does not contain any habitats such as water bodies or taller vegetation that would be potentially important as bat foraging habitat.

Overall there do not appear to be any highly significant issues regarding mammals and the development of the site. In general the major impact associated with the development of the site for mammals would be a small amount of habitat loss and potentially some cumulative contribution to the disruption of the broad-scale connectivity of the landscape.

Reptiles

The site lies in or near the distribution range of at least 42 reptile species (Appendix 3). Based on distribution maps and habitat requirements, the composition of the reptile fauna is likely to comprise 2 tortoises, 15 snakes, 17 lizards and skinks, 7 geckos and 1 chameleon. Given that this relatively low total includes species associated with rocky habitats which are not present at the site, the actual number of species which occur at the site is likely to be a lot lower. Although species associated with rocky habitats are not likely to occur at the site, species associated with open, sandy substrates are likely to be common. This is likely to include species such as the Spotted Sand Lizard *Pedioplanis lineoocellata*, Knox's Desert Lizard *Meroles knoxii* and Variegated Skink *Mabuya variegata*. The Angulate Tortoise *Chersina angulata* is common in the area and would be vulnerable to construction-phase disturbance. The only listed species which may occur at the site is the Cape Sand Snake *Psammophis leightoni*, which is listed under SARCA 2014 as Vulnerable. However, given the low footprint of the development within intact areas, any impact on reptiles is likely to be largely transient in nature and restricted to the construction phase.

No specialised reptile habitats were observed within the development footprint and there were no areas of particular significance for reptiles present at the site. As a result, the small amount of habitat loss resulting from the power line, which in the long-term would be negligible, is not considered significant in terms of generating an impact on reptiles.

Amphibians

The site lies within or near the range of seven amphibian species, none of which are listed. The site has no mesic habitats with the result that those species associated with permanent water are not likely to occur at the site. Only four species have a high probability of occurring

at the site, the Raucous Toad, Karoo Toad, Cape Sand Frog and Namaqua Rain Frog. The loss of habitat associated the development is small and the area is not likely to represent an important area for any of these species. The greatest threat to amphibians associated with the development is probably chemical and fuel/oil spills related to the construction activities and possibly the operation of the facility. The site is upstream and relatively close to the Olifants River and so any large pollution spills would also enter this system. Provided that suitable precautions are taken during the construction phase to reduce impacts such as pollution, then it is highly unlikely that the development would have a significant impact on amphibians.

3.6 SITE SENSITIVITY ASSESSMENT

As there are no drainage or wetland features within the power line corridor and the two affected vegetation types are considered to be of equal sensitivity with no locally sensitive features present, a sensitivity map of the power line corridor has not been produced. The disturbed and transformed rail line servitude is of low sensitivity, but only the new substation would be located within this area. The power line will be located within the adjacent rangeland which is considered to be of moderate sensitivity given the potential abundance of species of conservation concern within the area. There are however no areas within the site which are considered to be of high sensitivity or which would be likely to harbour an abundance of species of conservation concern. Overall, the alignment of the power line route is considered favourable and there are no recommendations for deviations or changes to the proposed alignment. As the current line will run parallel to the existing line, it is also likely that the existing access road along the railway line can be used and an additional access route during operation is not likely to be required.

4 IDENTIFICATION & NATURE OF IMPACTS

4.1.1 Impact Risk Factors

Potential ecological impacts resulting from the construction and operation of the Juno – Juno Traction 50kV power line would stem from a variety of different activities and risk factors associated with the construction and operational phases of the project including the following:

Planning & Construction Phase

- Vegetation clearing & site preparation
- Operation of heavy machinery at the site
- Human presence

Operational Phase

- Servitude maintenance activities

- Power line presence
- Human presence

Decomissioning

- Operation of heavy machinery at the site
- Human presence

The above impacts would be likely to result in the following impacts which are described briefly below and assessed for each phase of the development as appropriate thereafter:

4.1.2 Construction Phase Impacts

Impacts on Vegetation and Species of Conservation Concern

The abundance of listed species at the site is high and it is possible that these may be impacted by the development. In addition, loss of currently intact habitat resulting from site clearing within the development footprint is an inevitable consequence of the development.

Faunal Impacts

Increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to fauna resident or utilising the site. Sensitive and shy fauna would move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species would not be able to avoid the construction activities and might be killed. Some mammals and reptiles would also be vulnerable to illegal collection or poaching.

4.1.3 Operational Phase

Degradation of Ecosystems

Disturbance along the power line route is likely to increase the vulnerability of the disturbed areas to wind or water erosion. Furthermore, these areas are likely to remain vulnerable to alien plant invasion for some time following construction and it is highly likely that alien species will invade these areas to a greater or lesser extent.

Faunal Impacts

During the operational phase of the development, impacts on fauna are likely to be very low and with standard mitigation and avoidance, no significant impacts on fauna during operation are anticipated. This impact is therefore not assessed for the Operational Phase.

4.1.4 Cumulative impacts

Impact on Critical Biodiversity Areas and Broad-Scale Ecological Processes

The site is located partly within a CBA and the cumulative loss of habitat resulting from the development would contribute to cumulative impacts on the CBAs and the disruption of landscape connectivity. Given that the development is located at least partly within a CBA, this impact is of potential concern and is assessed.

5 IMPACT ASSESSMENT

5.1 CONSTRUCTION PHASE IMPACTS

Impacts on Vegetation and Species of Conservation Concern

The abundance of listed species at the site is high and it is possible that these may be impacted by the development. In addition, loss of currently intact habitat resulting from site clearing within the development footprint is an inevitable consequence of the development.

Issue	Corrective measures	Impact rating criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Loss of listed and protected plants from the development footprint	No	Negative	1	2	4	4	28 = Low
	Yes	Negative	1	2	2	2	10 = Low
Corrective Actions	• There should be a preconstruction walk-through of the power line route to identify species of conservation concern that should be avoided or translocated. • Individuals of protected species which cannot be avoided, should be translocated to safe sites nearby. • A permit from CapeNature is required for any vegetation clearing, destruction or translocation of listed or protected plant species. • Existing tracks should be used for access wherever possible and a permanent road beneath the new power line is not recommended.						

Faunal Impacts During Construction

Increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to fauna or resident utilising the site. Sensitive and shy fauna would move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species would not be able to avoid the construction activities

and might be killed. Some mammals and reptiles would also be vulnerable to illegal collection or poaching.

Issue	Corrective measures	Impact rating criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Faunal Impacts During Construction	No	Negative	1	2	5	4	32 = Medium
	Yes	Negative	1	1	3	2	10 = Low
Corrective Actions	• Any active faunal burrows within the development footprint should be located and marked before construction and avoided until the occupant animals can be excluded or have moved away due to the nearby construction activities. • Any fauna threatened by construction activities should be removed to safety by the ECO or other suitably qualified person. • Existing roads and access routes should be used wherever possible. • During construction all vehicles should adhere to demarcated tracks or roads and the speed limit should not exceed 40km/h on larger roads and should be 20-30km/h on smaller access tracks. • Where necessary, dust suppression should be done to reduce dust impacts on surrounding areas. • All construction staff should undergo environmental induction before construction commences in order to raise awareness and reduce potential faunal impacts. • All spills of hazardous material should be cleared in the appropriate manner according to the nature and identity of the spill and all contaminated soil removed from the site.						

5.2 OPERATIONAL PHASE IMPACTS

Degradation of Ecosystems

Disturbance along the power line route is likely to increase the vulnerability of the disturbed areas to erosion. Furthermore, these areas are likely to remain vulnerable to alien plant invasion for some time following construction and alien species are likely to invade the disturbed area to a greater or lesser degree.

Issue	Corrective measures	Impact rating criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Ecosystem Degradation	No	Negative	1	2	5	4	32 = Medium
	Yes	Negative	1	2	2	3	15 = Low

Corrective Actions	• Any erosion problems observed along the power line servitude should be rectified as soon as possible using the appropriate revegetation and erosion control works. • Any woody invaders present along the power line route should be cleared on an annual basis.

5.3 CUMULATIVE IMPACTS

Impact on Critical Biodiversity Areas and Broad-Scale Ecological Processes

The site is located partly within a CBA and the cumulative loss of habitat resulting from the development would contribute to cumulative impacts on the CBAs and the disruption of landscape connectivity. Given that the development is located at least partly within a CBA, this impact is of potential concern and is assessed.

Issue	Corrective measures	Impact rating criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Impact on CBAs	No	Negative	1	4	4	3	27 = Low
	Yes	Negative	1	4	2	2	14 = Low
Corrective Actions	• The development footprint should be kept to a minimum, especially along the power line corridor. • Follow-up checks should be conducted on an annual basis to ensure that alien species have not invaded the disturbed areas and no other forms of degradation have occurred.						

5.4 SUMMARY ASSESSMENT

A summary assessment of the likely impacts associated with the development of the 50kV line from Juno to the traction substation with associated substation is provided below. The area has a high abundance of species of conservation concern and potential impact is therefore high. However the length of the power line is less than 6 km and with mitigation, the footprint of the line would amount to no more than 1 or 2 ha, which accounts for the low anticipated impacts on fauna and flora during construction. The importance of the area is also reflected in the fact that most of the adjacent areas are classified as Critical Biodiversity Areas and negative impact on these areas is undesirable. However, only the power line corridor would impact the CBA and would generate a very small amount of disturbance that is highly unlikely to significantly affect the CBAs of the area. No highly significant impacts or impacts which cannot be mitigated to an acceptable level have been identified.

Summary assessment of the likely impacts associated with the development of the power line and associated infrastructure at the site.

Impact	Signficance – Without Mitigation	Significance – With Mitigation
Construction Phase		
Impacts on Vegetation and Species of Conservation Concern	28 = Low	10 = Low
Faunal Impacts During Construction	32 = Medium	10 = Low
Operational Phase		
Degradation of Ecosystems	32 = Medium	15 = Low
Cumulative Impacts		
Impact on Critical Biodiversity Areas and Broad-Scale Ecological Processes	27 = Low	14 = Low

6 CONCLUSION & RECOMMENDATIONS

The site is potentially sensitive given the high abundance of species of conservation concern in the area as well as the status of large parts of the site as Critical Biodiversity Areas. The footprint of the development is however low and the proximity of the affected areas to the existing railway line and disturbance, ensures that the overall impact of the development is likely to remain low. There are no populations of fauna or flora which are likely to be significantly compromised by the development and no specialised habitats of significance for fauna or flora were observed within the affected area.

With the recommended mitigation measures as listed in this report applied, the overall impact of the development would be restricted to the site and of local significance only. There are no impacts associated with the development that cannot be reduced to a low level through avoidance and mitigation and there are no unavoidable impacts present that are likely to represent a red flag or no-go situation for the development.

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8 ANNEX 2. LIST OF MAMMALS

List of mammals which are likely to occur in the broad vicinity of the study area. Habitat notes and distribution records are based on Skinner & Chimimba (2005), while conservation status is from the IUCN Red Lists 2013.

Scientific Name	Common Name	Status	Habitat	Likelihood
Afrosoricida (Golden Moles):				
Chrysochloris asiatica	Cape Golden Mole	LC	Coastal parts of the Northern and Western Cape	High
Macroscledidea (Elephant Shrews):				
Macroscelides proboscideus	Round-eared Elephant Shrew	LC	Species of open country, with preference for shrub bush and sparse grass cover, also occur on hard gravel plains with sparse boulders for shelter, and on loose sandy soil provided there is some bush cover	High
Elephantulus edwardii	Cape Rock Elephant Shrew	LC	From rocky slopes, with or without vegetation, from hard sandy ground bearing little vegetation, quite small rocky outcrops	Low
Tubulentata:				
Orycteropus afer	Aardvark	LC	Wide habitat tolerance, being found in open woodland, scrub and grassland, especially associated with sandy soil	Definite
Hyracoidea (Hyraxes)				
Procavia capensis	Rock Hyrax	LC	Outcrops of rocks, especially granite formations and dolomite intrusions in the Karoo. Also erosion gullies	Low
Lagomorpha (Hares and Rabbits):				
Lepus capensis	Cape Hare	LC	Dry, open regions, with palatable bush and grass	Low
Lepus saxatilis	Scrub Hare	LC	Common in agriculturally developed areas, especially in crop-growing areas or in fallow lands where there is some bush development.	High
Rodentia (Rodents):				
Cryptomys hottentotus	African Mole Rat	LC	Wide diversity of substrates, from sandy soils to heavier compact substrates such as decomposed schists and stony soils	Definite
Hystrix africaeaustralis	Cape Porcupine	LC	Catholic in habitat requirements.	Definite
Graphiurus ocularis	Spectacled Dormouse	LC	Associated with sandstones of Cape Fold mountains, which have many vertical and horizontal crevices.	Low
Acomys subspinosus	Cape Spiny Mouse	LC	Assocaited with rocky areas on mountain slopes in Fynbos	Low
Rhabdomys pumilio	Four-striped Grass Mouse	LC	Essentially a grassland species, occurs in wide variety of habitats where there is good grass cover.	High
Mus minutoides	Pygmy Mouse	LC	Wide habitat tolerance	High
Myomyscus verreauxii	Verreaux's Mouse	LC	Scrub on grassy hillsides and riverine forest	Low

Aethomys namaquensis	Namaqua Rock Mouse	LC	Catholic in their habitat requirements, but where there are rocky koppies, outcrops or boulder-strewn hillsides they use these preferentially	Low
Parotomys brantsii	Brants' Whistling Rat	LC	Associated with a dry sandy substrate in more arid parts of the Nama-karoo and Succulent Karoo. Species selects areas of low percentage of plant cover and areas with deep sands.	Low
Parotomys littledalei	Littledale's Whistling Rat	LC	Riverine associations or associated with Lycium bushes or Psilocaulon absimile	Low
Otomys unisulcatus	Bush Vlei Rat	LC	Shrub and fynbos associations in areas with rocky outcrops Tend to avoid damp situations but exploit the semi-arid Karoo through behavioural adaptation.	High
Desmodillus auricularis	Cape Short-tailed Gerbil	LC	Tend to occur on hard ground, unlike other gerbil species, with some cover of grass or karroid bush	High
Gerbillurus paeba	Hairy-footed Gerbil	LC	Gerbils associated with Nama and Succulent Karoo preferring sandy soil or sandy alluvium with a grass, scrub or light woodland cover	High
Gerbilliscus afra	Cape Gerbil	LC	Confined to areas of loose, sandy soils of sandy alluvium. Common on cultivated lands.	High
Mystromys albicaudatus	White-tailed Mouse	EN	Variable vegetation, but live in cracks or burrows in the soil	Low
Malacothrix typica	Gerbil Mouse	LC	Found predominantly in Nama and Succulent Karoo biomes, in areas with a mean annual rainfall of 150-500 mm.	High
Dendromus melanotis	Grey Climbing Mouse	LC	Often associated with stands of tall grass especially if thickened with bushes and other vegetation	Low
Steatomys krebsii	Krebs's Fat Mouse	LC	Prefer a sandy substrate.	High
Primates:				
Papio ursinus	Chacma Baboon	LC	Can exploit fynbos, montane grasslands, riverine courses in deserts, and simply need water and access to refuges.	Low
Eulipotyphla (Shrews):				
Myosorex varius	Forest Shrew	LC	Prefers moist, densely vegetated habitat	Low
Suncus varilla	Lesser Dwarf Shrew	LC	Often associated with termitaria, little else known	Low
Crocidura cyanea	Reddish-Grey Musk Shrew	LC	Occurs in relatively dry terrain, with a mean annual rainfall of less than 500 mm. Occur in karroid scrub and in fynbos often in association with rocks.	Moderate
Carnivora:				
Proteles cristata	Aardwolf	LC	Common in the 100-600mm rainfall range of country, Nama-Karoo, Succulent Karoo Grassland and Savanna biomes	Low
Caracal caracal	Caracal	LC	Caracals tolerate arid regions, occur in semi-desert and karroid conditions	Low

Felis silvestris	African Wild Cat	LC	Wide habitat tolerance.	Low
Genetta genetta	Small-spotted genet	LC	Occur in open arid associations	Moderate
Suricata suricatta	Meerkat	LC	Open arid country where substrate is hard and stony. Occur in Nama and Succulent Karoo but also fynbos	Definite
Cynictis penicillata	Yellow Mongoose	LC	Semi-arid country on a sandy substrate	Definite
Herpestes pulverulentus	Cape Grey Mongoose	LC	Wide habitat tolerance	High
Atilax paludinosus	Marsh Mongoose	LC	Associated with well-watered terrain, living in close association with rivers, streams, marshes, etc.	Low
Vulpes chama	Cape Fox	LC	Associated with open country, open grassland, grassland with scattered thickets and coastal or semi-desert scrub	Moderate
Canis mesomelas	Black-backed Jackal	LC	Wide habitat tolerance, more common in drier areas.	Low
Otocyon megalotis	Bat-eared Fox	LC	Open country with mean annual rainfall of 100-600 mm	Moderate
Aonyx capensis	African Clawless Otter	LC	Predominantly aquatic and do not occur far from permanenet water	Low
Ictonyx striatus	Striped Polecat	LC	Widely distributed throughout the sub-region	High
Mellivora capensis	Ratel/Honey Badger	IUCN LC/SA RDB EN	Catholic habitat requirements	Low
Rumanantia (Antelope):				
Sylvicapra grimmia	Common Duiker	LC	Presence of bushes is essential	Low
Raphicerus campestris	Steenbok	LC	Inhabits open country,	Moderate
Raphicerus melanotis	Cape Grysbok	LC	Thick scrub bush, particularly along the lower levels of hills	Low
Chiroptera (Bats)				
Pipistrellus capensis	Cape Serotine Bat	LC	Wide habitat tolerances, but often found near open water	High
Tadarida aegyptiaca	Egyptian Free-tailed Bat	LC	In arid areas. often associated with water sources	High
Tadarida pumila	Little free-tailed bat	LC	Wide habitat tolerance	High
Miniopterus schreibersii	Schreibers' long-fingered bat	NT	Cave dwelling and suitable caves are an essential habitat requirement	High
Myotis tricolor	Temminck's hairy Bat	LC	Occurrence may be goverened by the presence of caves	Low
Eptesicus hottentotus	Long-talied serotine bat	LC	Wide habitat tolerance	High
Rhinolophus capensis	Cape horseshoe bat	LC	Many records from coastal caves	High
Eidolon helvum	Straw-coloured fruit bat	LC	Occasional migratory visitors within southern Africa	Low

9 ANNEX 3. LIST OF REPTILES

List of reptiles which are likely to occur in the broad vicinity of the Juno site, based on records from the SARCA database, conservation status is from Bates et al. 2013.

Family	Genus	Species	Subspecies	Common name	Red list category	No. records
Agamidae	*Agama*	*atra*		Southern Rock Agama	Least Concern	2
Agamidae	*Agama*	*hispida*		Spiny Ground Agama	Least Concern	4
Atractaspididae	*Homoroselaps*	*lacteus*		Spotted Harlequin Snake	Least Concern	1
Chamaeleonidae	*Bradypodion*	*occidentale*		Western Dwarf Chameleon	Least Concern	2
Colubridae	*Boaedon*	*capensis*		Brown House Snake	Least Concern	1
Colubridae	*Dasypeltis*	*scabra*		Rhombic Egg-eater	Least Concern	1
Colubridae	*Psammophis*	*crucifer*		Cross-marked Grass Snake	Least Concern	1
Colubridae	*Psammophis*	*leightoni*		Cape Sand Snake	Vulnerable	1
Colubridae	*Psammophis*	*notostictus*		Karoo Sand Snake	Least Concern	4
Cordylidae	*Cordylus*	*mclachlani*		McLachlan's Girdled Lizard	Least Concern	1
Cordylidae	*Karusasaurus*	*polyzonus*		Karoo Girdled Lizard	Least Concern	26
Elapidae	*Naja*	*nivea*		Cape Cobra	Least Concern	1
Gekkonidae	*Chondrodactylus*	*angulifer*	*angulifer*	Common Giant Ground Gecko	Least Concern	1
Gekkonidae	*Chondrodactylus*	*bibronii*		Bibron's Gecko	Least Concern	1
Gekkonidae	*Goggia*	*lineata*		Striped Pygmy Gecko	Least Concern	3
Gekkonidae	*Pachydactylus*	*austeni*		Austen's Gecko	Least Concern	3
Gekkonidae	*Pachydactylus*	*geitje*		Ocellated Gecko	Least Concern	2
Gekkonidae	*Pachydactylus*	*labialis*		Western Cape Gecko	Least Concern	3
Gekkonidae	*Pachydactylus*	*mariquensis*		Marico Gecko	Least Concern	3
Gekkonidae	*Pachydactylus*	*weberi*		Weber's Gecko	Least Concern	8
Gerrhosauridae	*Cordylosaurus*	*subtessellatus*		Dwarf Plated Lizard	Least Concern	3
Lacertidae	*Meroles*	*knoxii*		Knox's Desert Lizard	Least Concern	19
Lacertidae	*Nucras*	*livida*		Karoo Sandveld Lizard	Least Concern	2
Lacertidae	*Pedioplanis*	*lineoocellata*	*pulchella*	Common Sand Lizard	Least Concern	6
Lacertidae	*Pedioplanis*	*namaquensis*		Namaqua Sand Lizard	Least Concern	1
Leptotyphlopidae	*Namibiana*	*gracilior*		Slender Thread Snake	Least Concern	2
Scincidae	*Acontias*	*lineatus*		Striped Dwarf Legless Skink	Least Concern	9
Scincidae	*Scelotes*	*caffer*		Cape Dwarf Burrowing Skink	Least Concern	2
Scincidae	*Trachylepis*	*capensis*		Cape Skink	Least Concern	2
Scincidae	*Trachylepis*	*sulcata*	*sulcata*	Western Rock Skink	Least Concern	1
Scincidae	*Trachylepis*	*variegata*		Variegated Skink	Least Concern	5
Scincidae	*Typhlosaurus*	*caecus*		Southern Blind Legless Skink	Least Concern	5

Testudinidae	*Chersina*	*angulata*		Angulate Tortoise	Least Concern	17
Testudinidae	*Psammobates*	*tentorius*	*subsp. ?*	Tent Tortoise (subsp. ?)	Least Concern	2
Testudinidae	*Psammobates*	*tentorius*	*trimeni*	Namaqua Tent Tortoise	Not listed	3
Typhlopidae	*Rhinotyphlops*	*lalandei*		Delalande's Beaked Blind Snake	Least Concern	1

10 ANNEX 4. LIST OF AMPHIBIANS

List of amphibians which are likely to occur in in the broad vicinity of the Juno site. Habitat notes and distribution records are based on Du Preez and Carruthers (2009), while conservation status is from the Minter et al. 2004.

Scientific Name	Common Name	Status	Habitat	Distribution	Likelihood
Breviceps namaquensis	Namaqua Rain Frog	Not Threatened	Arid sandy habitats from the coast to inland mountains	Endemic	Medium
Amietophrynus rangeri	Raucous Toad	Not Threatened	Rivers and stream in grassland and fynbos	Endemic	High
Vandijkophrynus gariepensis	Karoo Toad	Not Threatened	Karoo Scrub	Widespread	High
Xenopus laevis	Common Platanna	Not Threatened	Any more or less permanent water	Widespread	Low
Amietia fuscigula	Cape River Frog	Not Threatened	Large still bodies of water or permanent streams and rivers.	Widespread	Low
Strongylopus grayii	Clicking Stream Frog	Not Threatened	Winter and summer rainfall areas in the fynbos, Succulent and Nama Karoo	Widespread	Low
Tomopterna delalandii	Cape Sand Frog	Not Threatened	Lowlands in fynbos and Succulent Karoo	Endemic	Low