

DAISY SOLAR PV FACILITY

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT



PRODUCED FOR SAVANNAH ENVIRONMENTAL

ON BEHALF OF ENERGY TEAM (PTY) LTD



Simon.Todd@3foxes.co.za

March 2023

DAISY SOLAR PV FACILITY

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

EXECUTIVE SUMMARY

Energy Team (Pty) Ltd is proposing the development of a solar photovoltaic (PV) facility with a contracted capacity of up to 360MW on a site located approximately 20km west of the town of Komaggas, and 24km southeast of Kleinsee. The DFFE Screening Tool indicates that the Terrestrial Biodiversity Theme for the site is restricted to areas of low sensitivity, with the result that a Terrestrial Biodiversity Compliance Statement is required to inform the development application. To these ends, 3Foxes Biodiversity Solutions has been appointed to provide a Terrestrial Biodiversity Compliance Statement for the Daisy Solar PV Facility.

Two site visits and a detailed field assessment within the development footprint was conducted in the spring flowering season, to inform the current study. The results of the field assessment indicate that there are some dune areas within the site that are considered vulnerable to disturbance and are also home to several listed plant species and are significant faunal habitats, with the result that these areas have been delimited as No-Go areas. Under the layout assessed, these areas have been avoided by the development. Two plant species of concern, *Wahlenbergia asparagoides* (VU) and *Helichrysum tricostatum* (NT), can be confirmed present on the site. Impacts on these two species are assessed separately but, in each case, the impact on the development on these species was found to be within acceptable limits.

The contribution of the current project to cumulative impact is considered to be moderate given the relatively large footprint of the development at 600ha. This is however considered to be of a local nature only and is unlikely to have any broader implications. The site lies less than 1km from an NPAES Focus Area east of the site, but once constructed, the PV facility is unlikely to generate any significant boundary effects beyond the immediate footprint of the development. The proximity of the development to the Focus Area is therefore considered acceptable.

The footprint of the Daisy Solar PV Facility PV Facility is restricted to low sensitivity features and in terms of terrestrial biodiversity is considered acceptable. As such, from a terrestrial ecology perspective there are no reasons to oppose the Daisy Solar PV Facility.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:	(For official use only)
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Daisy Solar PV Facility PV Project

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

Energy Team (PTY) LTD

Daisy Solar PV Facility - Terrestrial Biodiversity Compliance Statement
Revision No. 1

Prepared by: 3Foxes Biodiversity Solutions

1. SPECIALIST INFORMATION

Specialist Company Name:	3Foxes Biodiversity Solutions			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100%
Specialist name:	Simon Todd			
Specialist Qualifications:	BSc. (Zool. & Bot.), BSc Hons (Zool.), MSc (Cons. Biol.)			
Professional affiliation/registration:	SACNASP 400425/11			
Physical address:	23 De Villiers Road, Kommetjie 7975			
Postal address:	23 De Villiers Road, Kommetjie			
Postal code:	7975	Cell:	082 3326502	
Telephone:		Fax:		
E-mail:	Simon.Todd@3foxes.co.za			

2. DECLARATION BY THE SPECIALIST

I, Simon Todd, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

3Foxes Biodiversity Solutions

Name of Company:

25 February 2023

Date:

Energy Team (PTY) LTD
Daisy Solar PV Facility - Terrestrial Biodiversity Compliance Statement
Revision No. 1

Prepared by: 3Foxes Biodiversity Solutions

Date: February 2023

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3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Simon Todd, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



Signature of the Specialist

3Foxes Biodiversity Solutions

Name of Company

25 February 2023

Date

Signature of the Commissioner of Oaths

Date

SHORT CV/SUMMARY OF EXPERTISE – SIMON TODD



Simon Todd Pr.Sci.Nat
Director & Principle Scientist
C: 082 3326502
Simon.Todd@3foxes.co.za

23 De Villiers Road
Kommetjie
7975

Ecological Solutions for
People & the Environment

Simon Todd is Director and principal scientist at 3Foxes Biodiversity Solutions and has over 20 years of experience in biodiversity measurement, management and assessment. He has provided specialist ecological input on more than 200 different developments distributed widely across the country, but with a focus on the three Cape provinces. This includes input on the Wind and Solar SEA (REDZ) as well as the Eskom Grid Infrastructure (EGI) SEA and Karoo Shale Gas SEA. He is on the National Vegetation Map Committee as representative of the Nama and Succulent Karoo Biomes. Simon Todd is a recognised ecological expert and is a past chairman and current deputy chair of the Arid-Zone Ecology Forum. He is registered with the South African Council for Natural Scientific Professions (No. 400425/11).

Skills & Primary Competencies

- Research & description of ecological patterns & processes in Nama Karoo, Succulent Karoo, Thicket, Arid Grassland, Fynbos and Savannah Ecosystems.
- Ecological Impacts of land use on biodiversity
- Vegetation surveys & degradation assessment & mapping
- Long-term vegetation monitoring
- Faunal surveys & assessment.
- GIS & remote sensing

Tertiary Education:

- 1992-1994 – BSc (Botany & Zoology), University of Cape Town
- 1995 – BSc Hons, Cum Laude (Zoology) University of Natal
- 1996-1997- MSc, Cum Laude (Conservation Biology) University of Cape Town

Employment History

- 2009 – Present – Sole Proprietor of Simon Todd Consulting, providing specialist ecological services for development and research.

- 2007 Present – Senior Scientist (Associate) – Plant Conservation Unit, Department of Botany, University of Cape Town.
- 2004-2007 – Senior Scientist (Contract) – Plant Conservation Unit, Department of Botany, University of Cape Town
- 2000-2004 – Specialist Scientist (Contract) – South African National Biodiversity Institute
- 1997 – 1999 – Research Scientist (Contract) – South African National Biodiversity Institute

A selection of recent work is as follows:

Strategic Environmental Assessments

Co-Author. Chapter 7 - Biodiversity & Ecosystems - Shale Gas SEA. CSIR 2016.

Co-Author. Chapter 1 Scenarios and Activities – Shale Gas SEA. CSIR 2016.

Co-Author – Ecological Chapter – Wind and Solar SEA. CSIR 2014.

Co-Author – Ecological Chapter – Eskom Grid Infrastructure SEA. CSIR 2015.

Contributor – Ecological & Conservation components to SKA SEA. CSIR 2017.

Relevant Studies Related to the Current Project Area

- Zonnequa WEF. Fauna & Flora Assessment. Savannah Environmental 2018.
- Komas WEF. Fauna & Flora Assessment. Savannah Environmental 2018
- Kap Vley Wind Energy Facility near Kleinsee. Fauna and Flora Assessment. CSIR, 2018.
- Gromis WEF. Fauna and Flora Assessment. CSIR, 2020
- Komas WEF. Fauna and Flora Assessment. CSIR, 2020
- Eskom Kleinsee 300MW WEF. Fauna Assessment. Savannah Environmental, 2012.
- Project Blue Wind and Solar Energy Facility, Near Kleinsee. Fauna and Flora Assessment. Savannah Environmental, 2012.
- G7 Richtersveld Wind Farm. Fauna and Flora Assessment. ERM, 2011.

Daisy Solar PV PV Facility

Terrestrial Biodiversity Compliance Statement

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DAISY SOLAR PV PV FACILITY

Terrestrial Biodiversity Compliance Statement

1. INTRODUCTION

Energy Team (Pty) Ltd is proposing the development of a solar photovoltaic (PV) facility with a contracted capacity of up to 360MW on a site located approximately 20km west of the town of Komaggas, and 24km southeast of Kleinsee. The solar PV development will be known as the Daisy Solar PV Facility and would be located within Focus Area 8 of the Renewable Energy Development Zones (REDZ), which is known as the Springbok REDZ, and within the Northern Corridor of the Strategic Transmission Corridors. Savannah Environmental are conducting the required Basic Assessment process and 3Foxes Biodiversity Solutions has been appointed on behalf of Energy Team (Pty) Ltd to provide terrestrial ecological inputs for the development in line with GN 320 (20 March 2020) and GN 1150 (30 October 2020) of the NEMA EIA Regulations of 2014.

As part of the required studies for the required Basic Assessment application for environmental authorisation, 3Foxes Biodiversity Solutions has been appointed to provide a Terrestrial Biodiversity Compliance Statement for the development application. The DFFE Screening Tool indicates that the Terrestrial Biodiversity Theme for the site is restricted to areas of low sensitivity. Consequently, in terms of the regulations, a Terrestrial Biodiversity Compliance Statement is required for the Daisy Solar PV Facility PV Facility. To these ends, this Terrestrial Biodiversity Compliance Statement for the Daisy Solar PV Facility PV Facility, addresses the potential impacts of the Daisy Solar PV Facility PV Facility on Terrestrial Biodiversity and must be included in the EIA for the development and any mitigation and monitoring measures as identified, must be incorporated into the EMP for the development.

1.1 Scope and Objectives

In terms of GN 320 (20 March 2020) and GN 1150 (30 October 2020) of the NEMA EIA Regulations of 2014 (as amended), prior to the commencement of a specialist assessment, a site sensitivity verification must be undertaken to confirm the current land use and environmental sensitivity of the proposed project areas as identified by the Screening Tool. In terms of the Assessment Criteria, the following guidelines are provided for areas identified as Low Sensitivity:

1.1 An applicant, intending to undertake an activity identified in the Scope of this Protocol, on a site identified as being of "low sensitivity" for terrestrial biodiversity on the national web based environmental screening tool must submit a Terrestrial Biodiversity Compliance Statement to the competent authority, unless:

1.1.1 The information gathered from the Initial Site Sensitivity Verification differs from that identified as having a “low” terrestrial biodiversity sensitivity by the national web based environmental screening tool and it is found to be of a “very high” sensitivity.

1.2 Should paragraph 1.1.1 apply, a Terrestrial Biodiversity Impact Assessment is to be undertaken and a report should be prepared in accordance with the requirements of a Terrestrial Biodiversity Impact Assessment.

2. Terrestrial Biodiversity Compliance Statement

2.1 The Terrestrial Biodiversity Compliance Statement, must be prepared by a suitably qualified specialist in the field of ecological sciences, on the site being submitted as the preferred development site and must verify:

2.1.1 That the site is of “low” sensitivity for terrestrial biodiversity; and

2.1.2 Whether or not the proposed development will have any impact on the biodiversity feature.

3. The Terrestrial Biodiversity Compliance Statement, must contain, as a minimum, the following information:

3.1 Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise;

3.2 A signed statement of independence by the specialist;

3.3 Baseline profile description of biodiversity and ecosystems, including the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;

3.4 Methodology used to verify the sensitivities of the terrestrial biodiversity on the national web based environmental screening tool;

3.5 Methodology used to undertake the site survey and prepare the Compliance Statement, including equipment and modelling used where relevant;

3.6 Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;

3.7 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and

3.8 Any conditions to which the statement is subjected.

4 A signed copy of the full **Terrestrial Biodiversity Compliance Statement** must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

The above Terms of Reference and reporting requirements are achieved in this study and report.

1.2 Outputs of the DFFE Screening Tool

The output of the DFFE Screening Tool for the Terrestrial Biodiversity Theme is illustrated below and indicates that the whole of the Daisy Solar PV Facility site falls within areas classified as Low Sensitivity.



Figure 1. DFFE Screening Tool output for the Daisy Solar PV Facility site showing that tool indicates that the site falls entirely within low sensitivity areas for the Terrestrial Biodiversity Theme.

2. TECHNICAL DESCRIPTION

2.1 Project Description

The Daisy Solar PV Facility site is located Empire approximately 20km west of the town of Komaggas, and 24km southeast of Kleinzee, within the Nama Khoi Local Municipality and the Namakwa District Municipality, Northern Cape. The infrastructure associated with the 360MW solar PV facility will include:

- Solar PV array comprising PV modules and mounting structures
- Inverters and transformers

- Low voltage cabling between the PV modules to the inverters
- 33kV cabling between the project components and the facility substation
- 132kV onsite facility substation
- 132kV power line to connect to the grid at Zonnequa Collector Substation within a 300m wide and approximately 3.5km long corridor.
- Battery Energy Storage System (BESS)
- Site offices and maintenance buildings, including workshop areas for maintenance and storage
- Laydown areas
- Site access and internal roads.

The layout of the Daisy PV Project is illustrated in Figure 2 below.

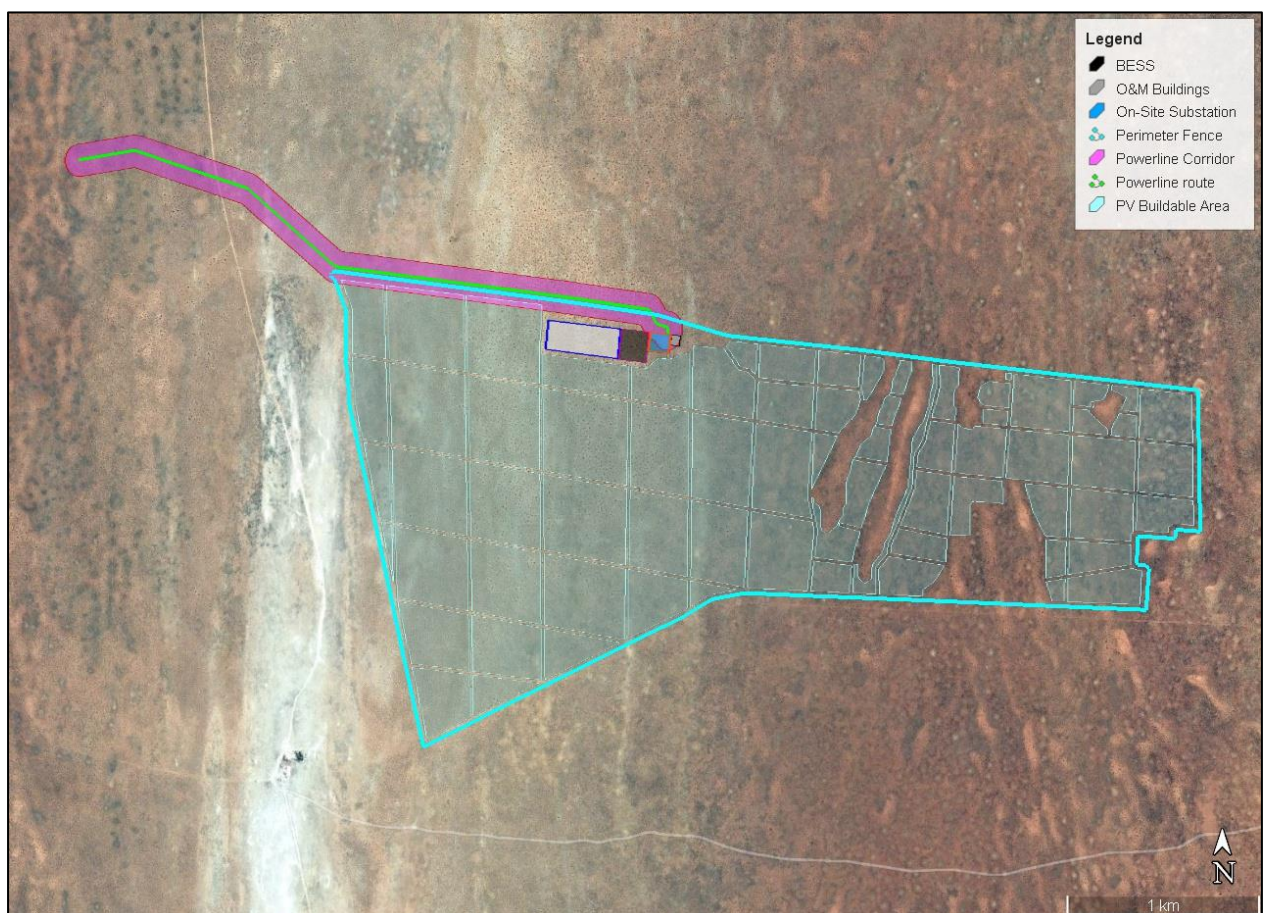


Figure 2. Satellite image showing the location of the proposed Daisy PV Facility and grid connection.

3. ASSESSMENT METHODOLOGY

3.1 Site Visit

The site was sampled twice for the current assessment. An initial field assessment took place on the 19th of November 2021 and then a follow-up more extensive field assessment took place from 21-23 September 2022. During the initial field assessment, it was past the typical wet season and the conditions were relatively dry. However, despite that, there were numerous species of annuals and perennials in flower at the time, suggesting some late rains that had stimulated some species to persist well past the typical end of the wet season. During the second field assessment, conditions were considered near-optimal for the field assessment with the vegetation in a green and growing condition with many species in flower. The overall amount of rain for the season was however low, with the result that some annuals and geophytes were likely suppressed to some degree by the drier conditions. In terms of actual sampling, regular transects were walked across the PV footprint area, amounting to a sampling track within the development footprint of over 20km (**Error! Reference source not found.**).

In addition to the above sampling, the site has been sampled numerous times in the past from 2017 till the present for the Zonnequa Wind Farm development which is on the same property as the current development and includes the site within its area. Sampling for that development included camera trapping across the site as well as extensive vegetation surveys to characterise the vegetation of the site and wider area.

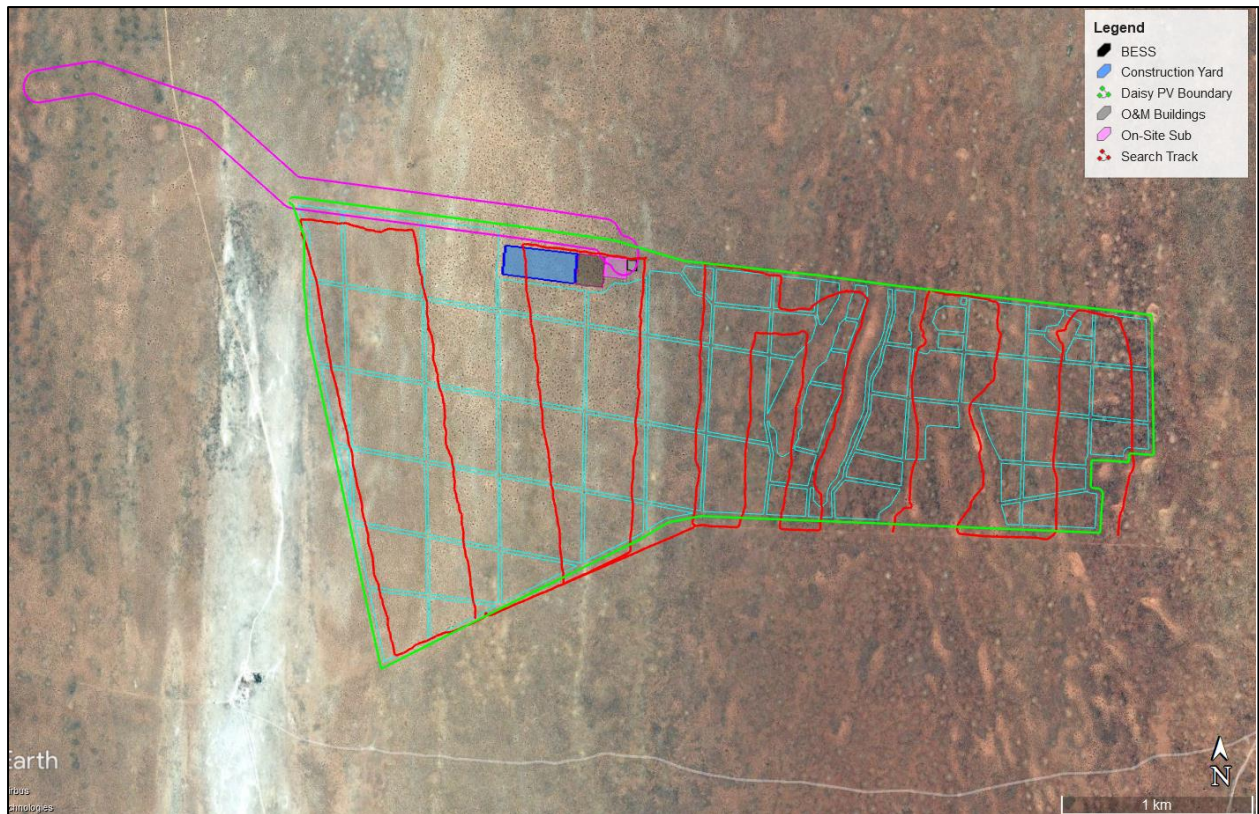


Figure 3. . Figure showing the search track (red line) that was walked across the Daisy Solar PV Facility footprint area

3.2 Data Sourcing and Review

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

Vegetation:

- Vegetation types were extracted from the South African National Vegetation Map (2018 update).
- Information on plant and animal species recorded for the wider area was extracted from the South African Biodiversity Information Facility (SABIF)/ SANBI Integrated Biodiversity Information System (SIBIS) database hosted by the South African National Biodiversity Institute (SANBI). Data was extracted for a significantly 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 International Union for Conservation of Nature (IUCN) conservation status 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 (2022).

Ecosystem:

- Freshwater and wetland information was extracted from the National Freshwater Ecosystem Priority Areas assessment, NFEPA (Nel *et al.* 2011) as well as the 2018 NBA.
- Critical Biodiversity Areas (CBAs) and ESAs in the study area were obtained from the Northern Cape CBA map (Holness & Oostehuisen 2016).
- Protected Area Expansion Strategy Focus Areas for the region were extracted from the 2018 NPAES (DEA 2018) available at https://egis.environment.gov.za/data_egis/data_download/current
- There are no threatened ecosystems within the site (NBA 2018)
- Strategic Water Source Areas (SWSAs) for the area were extracted from the SWSAs map available on the SANBI BGIS data portal (Water Research Commission. 2017 Surface and Groundwater SWSA [Vector] 2017).

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 the ADU databases (ReptileMap, Frogmap and MammalMap) <http://vmus.adu.org.za> as well as the iNaturalist citizen science site <https://www.inaturalist.org/>
- Literature consulted includes Branch (1988) and Alexander and Marais (2007) for reptiles, Du Preez and Carruthers (2009) for amphibians, EWT & SANBI (2016) and Skinner and Chimimba (2005) for mammals.
- The faunal species lists provided are based on species which are known to occur in the broad geographical area, as well as an assessment of the availability and quality of suitable habitat at the site.
- The conservation status of mammals is based on the IUCN Red List Categories (EWT/SANBI 2016), while reptiles are based on the South African Reptile Conservation Assessment (Bates *et al.* 2013) and amphibians on Minter *et al.* (2004) as well as the IUCN (2022).

3.3 Assumptions and Limitations

There are a number of assumptions and limitations associated with the study relating to fauna and flora and the inherent variability and unpredictability of ecological systems as detailed below. These relate primarily to specific species and the likely presence or absence of these species at the site. However, from a broader perspective, the CBA mapping and conservation planning tools for the area are themselves also subject to various kinds of uncertainty and underlying assumptions that can't be dealt with in detail here.

In terms of fauna, the following limitations are inherent in the study:

- It is not possible to confirm the absence of a faunal species with 100% certainty. A species may be absent from an area during sampling but may move through the area occasionally or seasonally.
- Some species are rare or difficult to locate and it may be very difficult to confirm either the absence or presence of such species without long-term studies.
- The presence of such species are assessed in the current study based on observations of such species from the wider area in the various publicly available databases and citizen science websites (Virtual Museum & iNaturalist), as well as the habitat suitability, quality and condition as observed in the field.

In terms of vegetation, conditions at the time of the main survey were good, but this followed an extended drought in the region, the effects of which were visible at the site and included a high proportion of dead shrubs and a depressed cover of the annuals, forbs and geophytes. As such, some species which may at other times be common at the site may have been rare or absent from the site during the field assessment. However, the site was very well covered during the field assessment with the result that such effects have been reduced as far possible.

4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

4.1 Vegetation

The Daisy Solar PV footprint falls entirely within the Namaqualand Strandveld vegetation type (**Figure 4**~~Error! Reference source not found.~~, **Figure 5**). This vegetation type occurs in the Northern and Western Cape Provinces from the southern Richtersveld as far south as Donkins Bay. Especially in the north of this unit it penetrates up to 40km inland and approaches the coast only near the river mouths of the Buffels, Swartlintjies, Spoeg, Bitter and Groen Rivers. In the south of the unit it is variably narrow and approaches the coast more closely. It consists of flat to undulating coastal peneplains with vegetation being a low species richness shrubland dominated by a plethora of erect and creeping succulent shrubs as well as woody shrubs and in wet years annuals are also abundant. It is associated with deep red or yellowish-red Aeolian dunes and deep sand overlying marine sediments and granite gneisses. Mucina and Rutherford (2006 and 2018) list eight endemic species for this vegetation type, which is likely an under-estimate. About 10% of this vegetation type has been lost mainly to coastal mining for heavy metals and it is not currently listed. Within the study area, the vegetation is relatively homogenous, although there is some variation depending on the nature of the underlying sand and landscape position. The most conspicuous feature within the site being the occasional low dunes which are more prevalent in the east of the Daisy Solar PV project area. Two plant species of concern were confirmed present within the site, namely *Wahlenbergia asparagoides* (VU) which is common across most of the site and *Helichrysum tricostatum* (NT), which was uncommon and occasional within the site. The impacts of the development on these two species are assessed in their own associated plant species assessments.



Figure 4. Typical Namaqualand Strandveld vegetation on gently undulating sandy plains which represents the majority of the Daisy Solar PV Facility footprint.



Figure 5. The dunes within the Daisy Solar PV Facility site are generally quite low and frequently, but not always less-vegetated than the surrounding plains. There are however considered important features for fauna and flora.

4.2 Fauna

In terms of the fauna that are known from the wider area and potentially occur at the site, the potential diversity is considered to be moderate and numbers approximately 40 mammals, 45 reptiles and about seven frogs and toads (See Appendix 1-3). Mammals observed directly or through camera trapping include Steenbok, Cape Hare, Cape Fox, Bat-eared fox, Striped Polecat, Suricate, Cape Porcupine, Common Duiker, Honey Badger, Small Spotted Genet, Grey Mongoose, Caracal, Yellow Mongoose and African Wild Cat. Reptiles and amphibians observed on the site or in the immediate environment include Angulate Tortoise, Giant Desert Lizard, Common Giant Ground Gecko, Knox's Desert Lizard, Common Sand Lizard, Cape Skink, Coastal Dwarf Legless Skink, Namaqua Sand Lizard, Pink Blind Legless Skink, Dwarf Beaked Snake and Many-horned Adder and Namaqua Rain Frog.

In terms of the two terrestrial fauna species identified by the Screening Tool, Sensitive Species 32 can be confirmed absent with a high degree of confidence as this reptile species has a strong association and preference for rocky terrain, which is not present within or near the site. As such, this species is considered absent from the site and its surrounds and the site is considered low sensitivity for this species. In terms of the Sandveld Winter Katydid *Brinckiella mauerbergerorum*, the presence or absence of this species on the site is less definitive, but based on the amount of time spent on site and in the area which amounts to several weeks across different seasons and years and the failure to detect this species on the site, it is concluded that this species is absent from the site. As such, the site is considered low sensitivity for this species.

Apart from the species identified by the Screening Tool, four red-listed mammal SCC are known from the wider area. This includes the Leopard *Panthera pardus* (Vulnerable), Litledale's Whistling Rat *Parotomys littedalei* (Near Threatened), African Clawless Otter *Aonyx capensis* (Near Threatened) and Grants' Golden Mole *Eremitalpa granti granti* (Vulnerable). The Leopard and Otter can be definitively considered absent from the site as these species are associated with rugged terrain and the coastline/freshwater ecosystems respectively and would not occur within the site. The distinctive burrows made by Litledale's Whistling Rat were not observed within the site and the substrate is considered generally too soft for this species. Grants' Golden Mole is usually restricted to within 10km of the coastline and as the site is more than 16km from the coast, it is unlikely that this species is present. Furthermore, Grants' Golden Mole prefers the soft unconsolidated sands that occur closer to the coast and the habitat within the site is considered unsuitable for this species. As such, none of the mammal SCC that occur in the area are likely to be present within the site. The Desert Rain Frog *Breviceps macrops* occurs in Strandveld vegetation up to 10 km from the coastline and is listed as Vulnerable. As with Grants' Golden Mole, the site is considered too far

from the coastline for this species and it is considered highly unlikely that it is present within the development footprint.

4.3 Critical Biodiversity Areas & Broad-Scale Processes

The CBA and ESA map for the broader project area is indicated below in Figure 6 and indicates that there are no CBAs or ESAs within the Daisy Solar PV Facility footprint area. The area to the east of the site is classified as an ESA and CBA, and is also part of a larger NPAES Focus Area. At its closest point, the NPAES Focus Area is approximately 700m from the site. However, this is not considered to represent a significant concern for the NPAES Focus Area because operational solar PV facilities have very little edge effect and there is little scope for disruption of ecological processes or other interactions between the facility and biodiversity of the area. The proximity of the Daisy PV Facility to the NPAES Focus Area is therefore considered acceptable and there is no specific additional mitigation or avoidance beyond that already suggested that would need to be implemented to further reduce potential impacts on the nearby CBA and NPAES Focus Area.

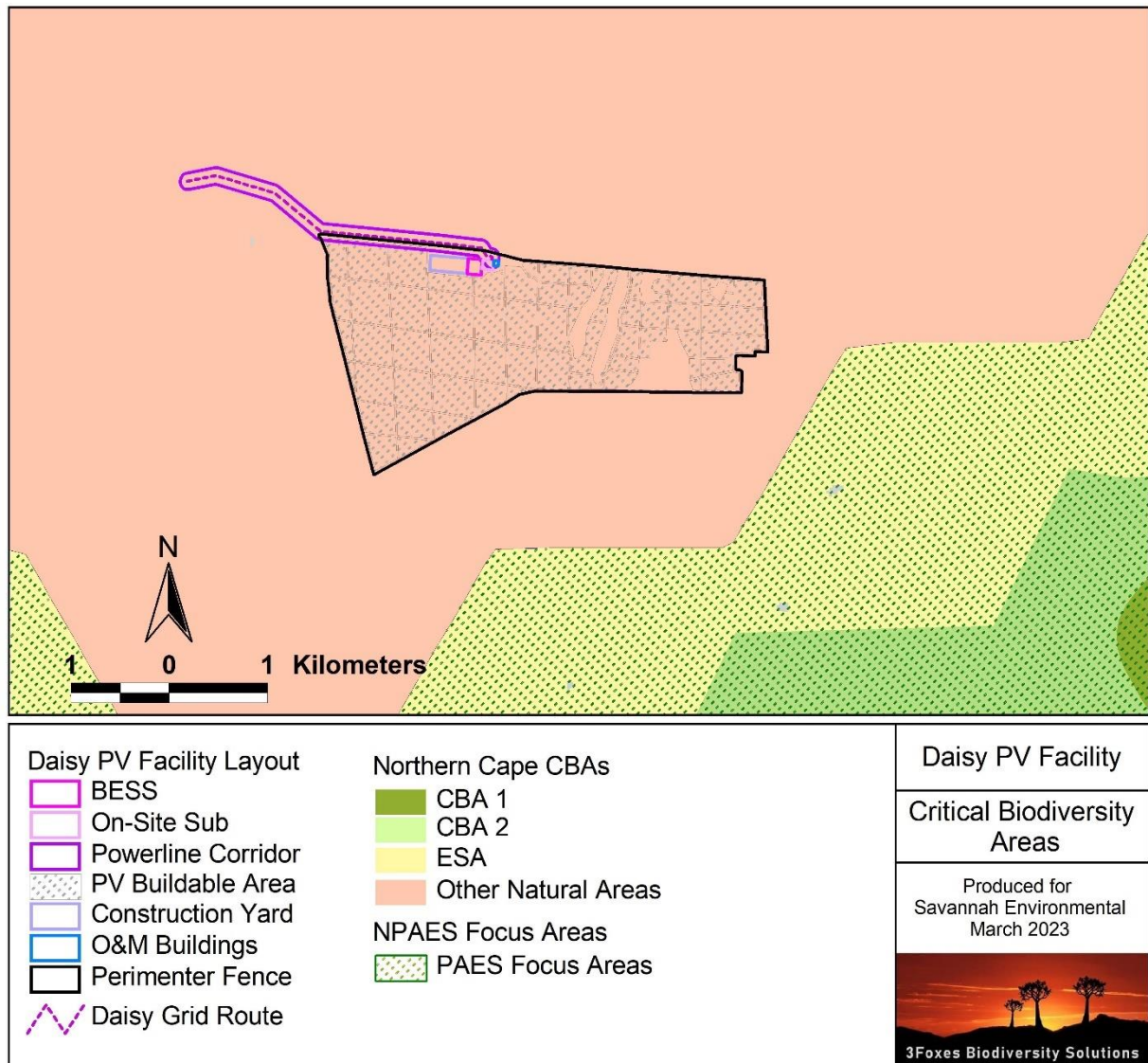


Figure 6. The Daisy Solar PV Facility falls outside of any ESA's, CBA's and NPAES Focus Areas.

4.4 Site Sensitivity Assessment

In order to inform the planning and layout of the development, an ecological sensitivity map for the full project site was developed in order to guide the developer and aid in reducing the overall impact of the development. The sensitivity map is illustrated below in Figure 7 and illustrates areas that are considered to represent more sensitive areas from a general ecological perspective which should be avoided by the development. Areas demarcated as no-go areas for the PV development and associated grid connection includes the areas of dune habitat within the site and to the west of the site, the inter-dune valley that occurs in this area. Under the layout assessed, the areas of dune habitat within the site have been avoided. The layout is thus considered acceptable from this point of view.

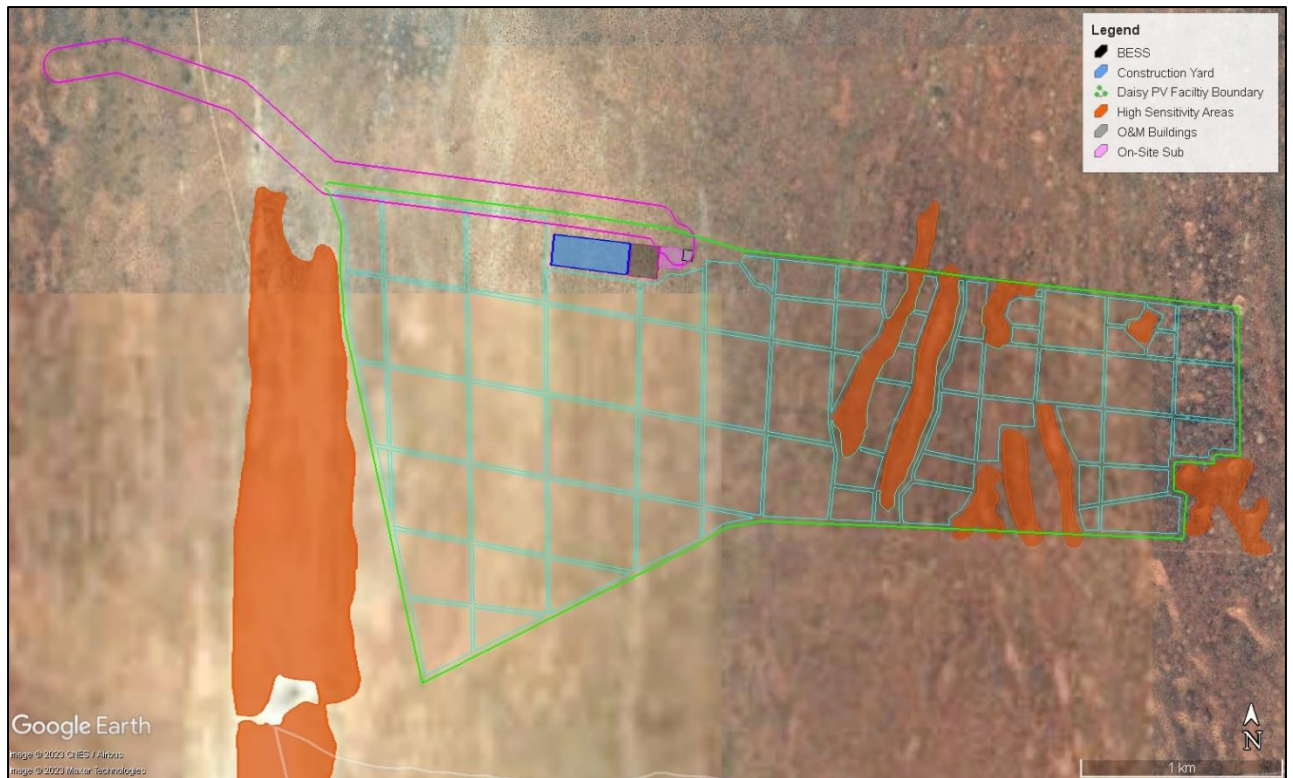


Figure 7. Sensitivity map for the Daisy Solar PV Facility, illustrating habitats of higher sensitivity that should be avoided as much as possible by the development.

4.5 Cumulative Impacts

In terms of cumulative impacts, there are several approved wind energy facilities in the immediate area. This includes the following approved wind energy facilities: Gromis, Namas, Zonnequa, Komas and Kap Vlei WEFs, which would each have a development footprint of less than 100ha each. The additional contribution of the current Daisy Solar PV Facility at 600ha is therefore considered significant and is similar to the total footprint of all other developments combined. The nature of this impact is however not the same as the wind energy facilities have a dispersed footprint with a significant edge effect for fauna due to turbine noise and associated disturbance, while the PV facility would have a high but very localised impact with little edge effect beyond the direct footprint of the facility.

In terms of specific cumulative impacts of possible concern, there do not appear to be any major concerns for specific fauna species but should all the developments in the area go ahead, this would likely generate significant fragmentation of the landscape for some species and habitat degradation for others. This would however be related largely to the wind energy facilities present and the contribution of the Daisy PV Facility to such cumulative impact is considered likely to be low. The increasing development footprint would also have an impact on the local populations of some flora SCC such as *Wahlenbergia asparagoides* (VU), *Helichrysum tricostatum* (NT) and *Leucoptera nodosa* (NT). However, these species are quite dispersed and the overall footprint in area affected by the above facilities amounts to less than 5% of the landscape, with the result that these species are unlikely to be significantly affected overall.

5. COMPARATIVE ASSESSMENT OF ALTERNATIVES

The site selection and pre-screening process undertaken ensured that all areas not suitable for development were excluded from the footprint considered for this assessment. There are therefore no alternatives to be considered with regards to the PV facility.

5.1 No-Go Alternative

Under the no-go alternative, the current land use consisting of extensive livestock grazing would continue. When applied correctly, such livestock grazing is considered to be largely compatible with long-term biodiversity conservation, although in practice there are some negative effects associated with such land use, such as predator control and negative impacts on habitat availability for the larger ungulates that would historically have utilised the area. Under the current circumstances, the no-go alternative is considered to represent a low long-term negative impact on the environment but has less impact than the loss of habitat resulting from the construction of the PV facility.

6. PROPOSED MITIGATION ACTIONS

The following avoidance and mitigation measures should be included in the EMP for the Daisy Solar PV Facility in order to avoid, reduce and manage impacts on terrestrial biodiversity:

Impact/Aspect	Mitigation/Management Actions	Responsibility	Methodology	Mitigation/Management Objectives and Outcomes	Frequency
Construction Phase disturbance	Demarcate sensitive areas as no-go areas	Environmental Officer	Demarcate sensitive areas with construction tape, shield fencing etc as appropriate.	No excess habitat loss within sensitive areas.	Daily/As required during construction
Construction Phase disturbance	Rehabilitation of disturbed areas	Environmental Officer	Active rehabilitation of temporary use areas after construction with indigenous species.	Revegetation of cleared areas	After construction with annual follow-up to ensure adequate revegetation.
Alien Vegetation Management	Alien vegetation control	Environmental Officer	Walked Surveys of access roads, PV areas and associated infrastructure.	Alien vegetation clearing & control	Annual
Erosion Management	Erosion control and revegetation	Environmental Officer	Walked Surveys of PV perimeter, access roads and other areas adjacent to hard infrastructure.	Remedial action to reduce erosion including wind suppression and revegetation where necessary.	Annual

7. CONCLUSION

The DFFE Screening Tool indicates that the Daisy Solar PV Facility PV project site has a low sensitivity for Terrestrial Biodiversity Theme and does not include any areas of ESA, CBA or NPAES Focus Areas. In terms of sensitive features observed within the site, the current assessment delineated the dune areas within the site as no-go areas as these are vulnerable to disturbance and are also home to several listed plant species and are significant faunal habitats. Under the layout assessed, these areas have been avoided by the development. Two plant species of concern, *Wahlenbergia asparagoides* (VU) and *Helichrysum tricostatum* (NT), can be confirmed present on the site. Impacts on these two species are assessed separately but, in each case, the impact on the development on these species was found to be within acceptable limits.

The contribution of the current project to cumulative impact is considered to be moderate given the relatively large footprint of the development at 600ha. This is however considered to be of a local nature only and is unlikely to have any broader implications. The site lies less than 1km from an NPAES Focus Area, but once constructed, the PV facility is unlikely to generate any significant boundary effects beyond the immediate footprint of the development. The proximity of the development to the Focus Area is therefore considered acceptable.

7.1 Impact Statement

The footprint of the Daisy Solar PV Facility PV Facility is restricted to low sensitivity features and in terms of terrestrial biodiversity is considered acceptable. As such, from a terrestrial ecology perspective there are no reasons to oppose the Daisy Solar PV Facility.

8. REFERENCES

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