

**KLEINZEE SOLAR PV FACILITY
SITE SENSITIVITY VERIFICATION**



PRODUCED FOR SAVANNAH ENVIRONMENTAL

ON BEHALF OF ENERGY TEAM (PTY) LTD



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SHORT CV/SUMMARY OF EXPERTISE – SIMON TODD

 <p>3Foxes Biodiversity Solutions ECOLOGICAL SPECIALIST SERVICES Assessment/Management/Research</p>	<p>Simon Todd Pr.Sci.Nat Director & Principle Scientist C: 082 3326502 Simon.Todd@3foxes.co.za</p> <p>23 De Villiers Road Kommetjie 7975</p>	<p>Ecological Solutions for People & the Environment</p>
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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.

Recent Specialist Ecological Studies in the Vicinity of the Current Site

Environmental Impact Assessment for the Proposed Komsberg East and Komsberg West Wind Farms and Associated Grid Connection Infrastructure: Fauna & Flora Specialist Impact Assessment. Arcus Consulting 2014.

Proposed Rietkloof & Brandvallei Wind Farms and Associated Grid Connection Infrastructure: Fauna & Flora Specialist Impact Assessment Report. EOH 2016.

Proposed Gunstfontein Wind Farm and Associated Grid Connection Infrastructure: Fauna & Flora Specialist Impact Assessment Report. Savannah Environmental 2016.

Mainstream South Africa Dwarsrug Wind Energy Facility: Fauna & Flora Specialist Impact Assessment Report. Sivist 2014.


Phezukomoya and San Kraal Wind Energy Facilities and associated grid connection. Fauna and Flora specialist studies. Arcus Consulting 2018.

Kokerboom Wind Energy Facilities (1-4) and associated grid connections. Fauna and Flora specialist studies. Aurecon 2017.

SPECIALIST DECLARATION

I, ..Simon Todd....., as the appointed independent specialist, in terms of the 2014 EIA Regulations, hereby declare that I:

- I act as the independent specialist in this application;
- I 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;
- 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, 2014 and any specific environmental management Act;
- 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 have no vested interest in the proposed activity proceeding;
- 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;
- I have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- I have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- all the particulars furnished by me in this specialist input/study 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:  _____

Name of Specialist: ____Simon Todd_____

Date: ____20 February 2023_____

1 INTRODUCTION

Energy Team (Pty) Ltd is proposing the development of a solar photovoltaic (PV) facility with a contracted capacity of up to 200 MW on a site located located approximately 20km west of the town of Komaggas, and 24km southeast of Kleinzee. The solar PV development will be known as the Kleinzee 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 Biodiversity inputs for the proposed Kleinzee PV Facility as part of the EIA application.

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (4 December 2014, Government Notice (GN) R982, R983, R984 and R985, as amended), various aspects of the proposed development may have an impact on the environment and are considered to be listed activities. These activities require authorisation from the National Competent Authority (CA), namely the Department of Forestry, Fisheries and the Environment (DFFE), prior to the commencement thereof. In accordance with GN 320 and GN 1150 (20 March 2020) ¹ of the NEMA EIA Regulations of 2014, prior to commencing with a specialist assessment, a site sensitivity verification must be undertaken to confirm the current land use and environmental sensitivity of the proposed project area as identified by the National Web-Based Environmental Screening Tool (Screening Tool). 3Foxes Biodiversity Solutions has been commissioned to verify the sensitivity of the Kleinzee PV Facility project site under these specialist protocols.

2 RELEVANT ASPECTS OF THE DEVELOPMENT

The Kleinzee Solar PV Facility site is located located 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 200 MW 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

¹ GN 320 (20 March 2020): Procedures for The Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation

- 132kV power line to connect to the grid at Zonnequa Collector Substation within a 300m wide and approximately 8.2 km 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 Kleinzee PV Project is illustrated in Figure 1 below.

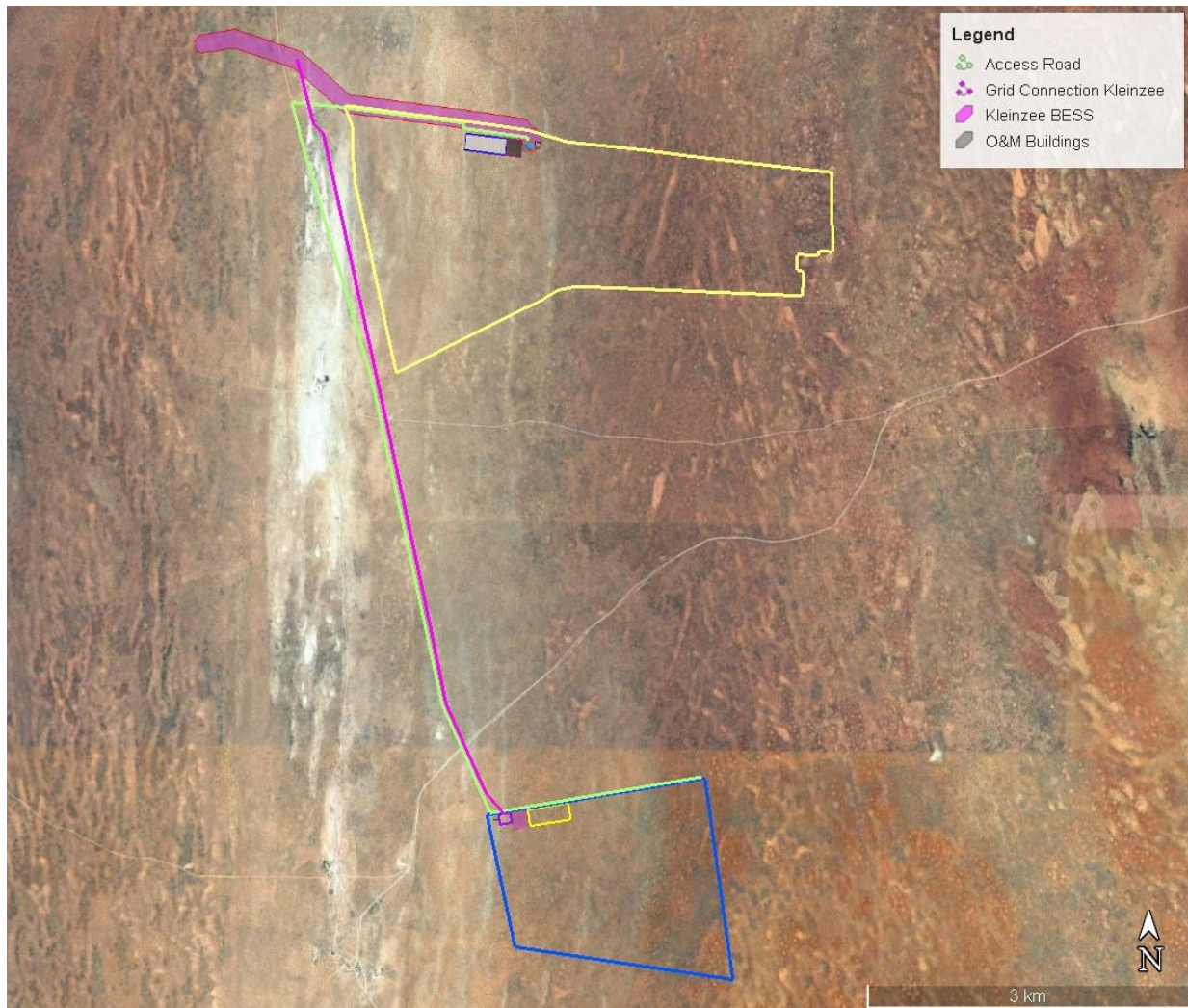


Figure 1. Satellite image showing the location of the proposed Kleinzee PV Facility (in blue) and grid connection which runs from the site northwards towards the Daisy PV Facility.

3 DFFE SITE VERIFICATION

Government Notice No. 320, dated 20 March 2020, includes the requirement that an Initial Site Sensitivity Verification Report must be produced for a development footprint. The outcomes of the Site Verification Report determine the level of assessment required for the site. The outputs

of the Screening Tool are illustrated and briefly discussed below for each theme as relevant to the current study and related to the results of the field assessment and associated site verification.

4 SITE VISIT AND FIELD ASSESSMENT

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 after the typical wet season and the conditions were relatively dry. During the second field assessment, conditions were considered near-optimal for the field assessment with the vegetation in a green and growing and a high level of faunal activity. In terms of actual sampling, transects were walked across the PV footprint area, amounting to a sampling track within the development footprint of over 20km (Figure 2).

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.

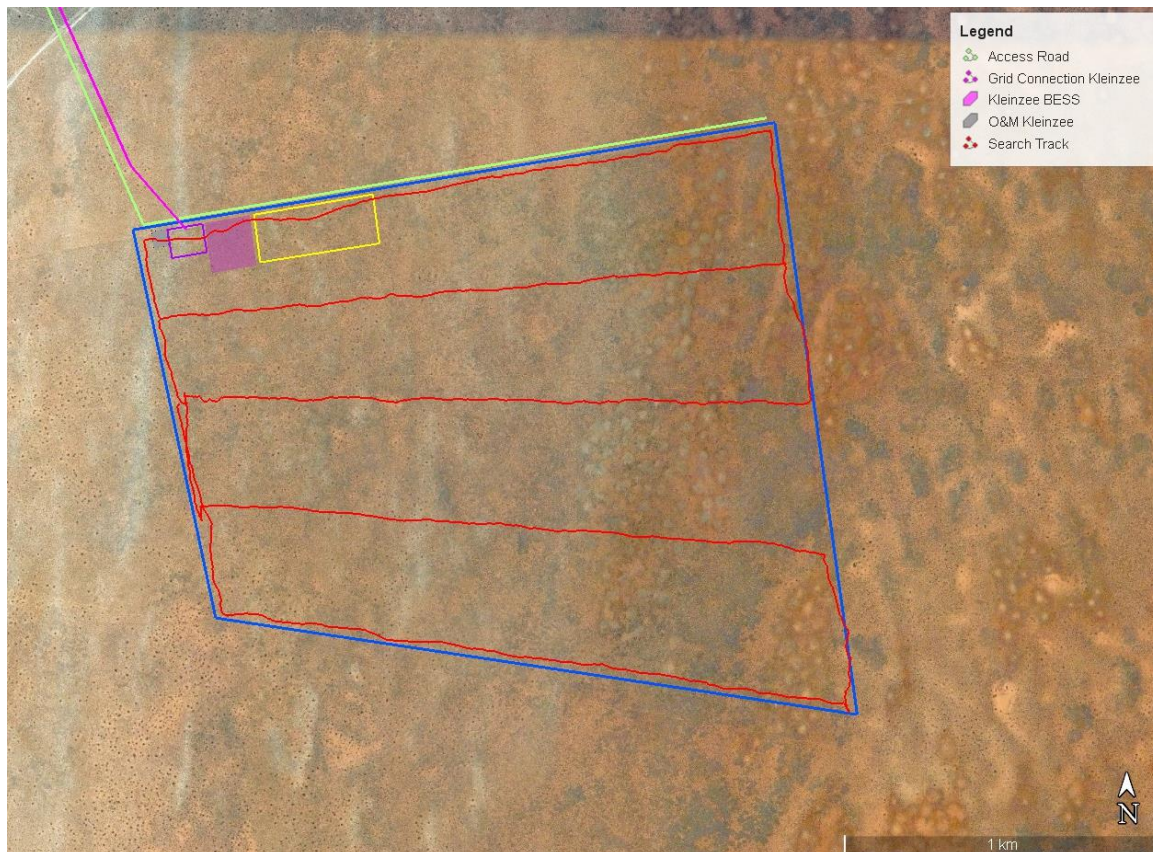


Figure 2. Figure showing the search track (red line) that was walked across the Kleinzee Solar PV Facility footprint area.

5 ANIMAL SPECIES THEME

The DFFE Screening Tool identified the entire site as having a medium animal sensitivity theme due to the potential presence of the Black Harrier, which is not dealt with here as well as Sensitive Species 32 and the orthopteran *Brinckiella mauerbergerorum*. Refer to Table 1 and Figure 2 below for the Animal Theme results.

In terms of the site verification, the presence of the Sensitive Species 32 can definitively be excluded from the site as this species shows a particular 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. Since no other fauna of concern were observed on the site, the Kleinsee Solar PV Facility site is considered low sensitivity for fauna generally and in terms of the regulations, a faunal compliance statement would be the appropriate level of study for the Basic Assessment.

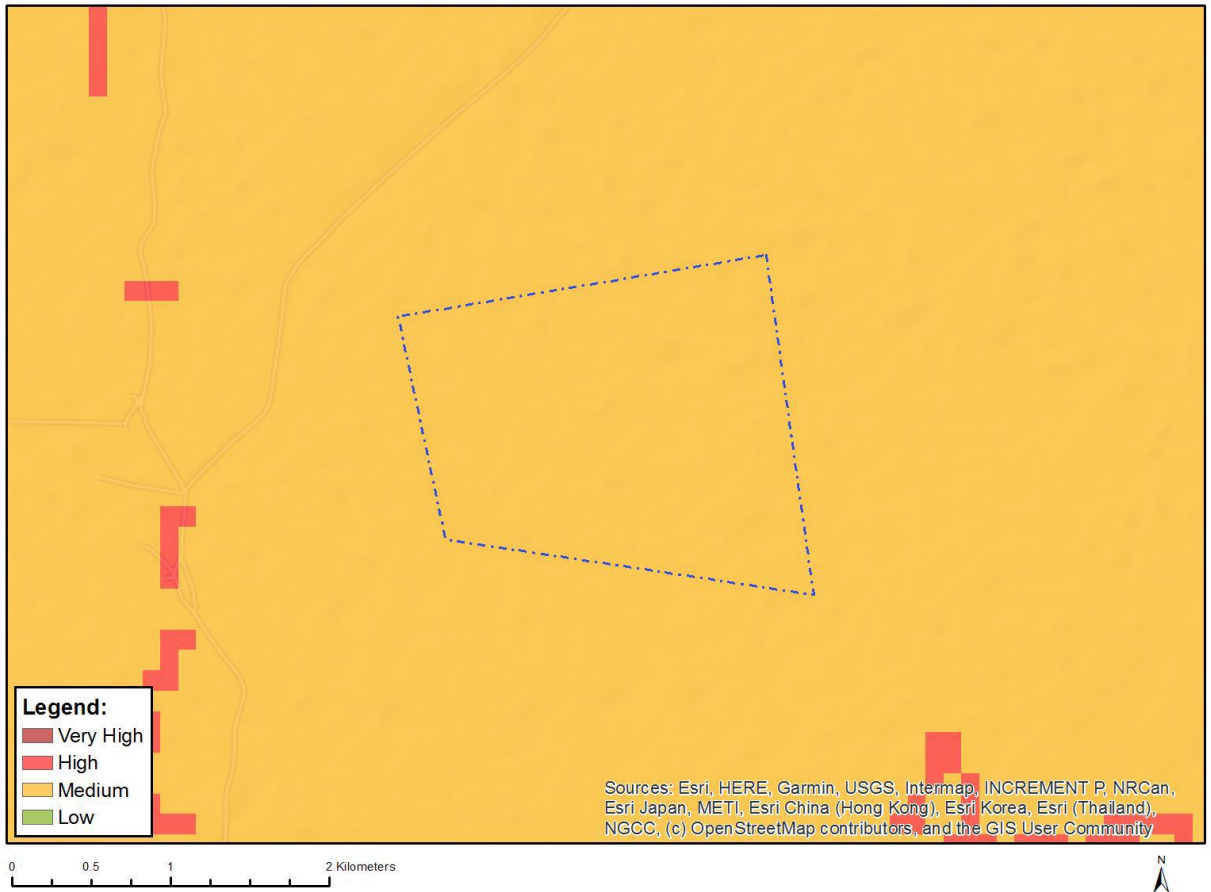


Figure 2. Animal Species Theme Sensitivity Map for the Kleinzee PV Facility site and surrounds.

Table 1. Animal Species Theme Features for the Kleinzee PV Facility site.

Sensitivity	Feature(s)
Medium	<i>Aves-Circus maurus</i>
Medium	Sensitive species 32
Medium	Invertebrate- <i>Brinckiella mauerbergerorum</i>



Figure 3. The open sandy plains of the Kleinzee PV Facility are not considered suitable for Sensitive Species 32 as this species is associated with rocky outcrops, which are not present in or near the site.

5.1 PLANT SPECIES THEME SENSITIVITY

The DFFE Screening Tool indicates that there are several potential botanical sensitivities from the Kleinzee PV Facility study area (Figure 4, Table 2), with the result that the whole of the site is mapped as Medium Sensitivity for the Plant Species Theme. Although the majority of these species were not observed within the site, several additional species of concern were confirmed present within the site (Table 3). Although the conditions at the time of the field assessment were good, this followed an extended drought in the region and effects of this were visible in the field with large amounts of dead shrubs present and a low cover of annuals and geophytes in the open spaces between the perennials (Figure 5). As a result, it is possible that some of the plant species of concern are present at the site, but were only represented in the seed bank and were not visible at the time of the field assessment. However, for those species which are present, the site was very well covered and if any species were missed, these would have had a very low abundance. As such, the results of the site verification are considered reliable and the assessment of the presence or absence of a species at the site is considered to have a relatively high confidence.

Based on the presence of *Nemesia saccata* (VU) and *Wahlenbergia asparagoides* (NT) within the site, a full species assessment for each of these species would be required.

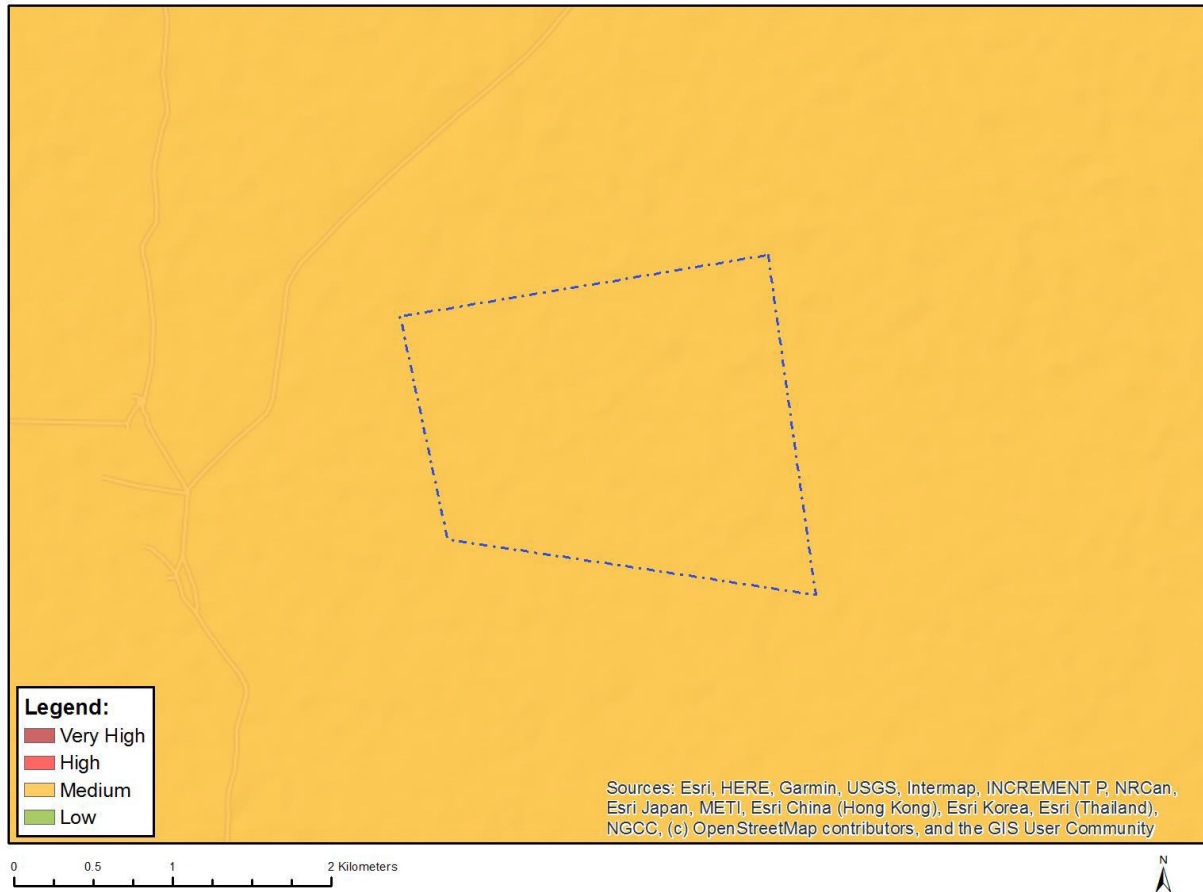


Figure 4. Plant Species Theme Sensitivity Map for the Kleinzee PV Facility site and surrounds.

Table 2. Plant species theme sensitivities for the Kleinzee PV Facility site.

Sensitivity	Feature(s)
Medium	<i>Manulea cinerea</i>
Medium	<i>Tetragonia pillansii</i>
Medium	Sensitive species 233
Medium	<i>Ifloga lerouxiae</i>
Medium	<i>Leucoptera nodosa</i>
Medium	Sensitive species 169
Medium	Sensitive species 463
Medium	<i>Nemesia saccata</i>



Figure 5. Conditions at the time of the field assessment were considered good for the assessment, with few limitations in this regard as the vegetation was green with an abundance of annuals and geophytes. The effects of the preceding drought are however still apparent as can be seen from the abundance of dead shrubs in the middle- and foreground.

Table 3. Plant species of conservation concern that are known to occur in the vicinity of the Kleinzee PV Facility site according to the DFFE Screening Tool as well as additional species of concern identified during the field assessment.

Species	Presence on the Kleinzee Site
<i>Manulea cinerea</i> (VU)	Not Present – High Confidence
<i>Tetragonia pillansii</i> (VU)	Not Present – Moderate Confidence
Sensitive species 233 (Rare)	Not Present – High Confidence
<i>Ifloga lerouxiae</i> (Rare)	Not Present – Moderate Confidence
<i>Leucoptera nodosa</i> (VU)	Not Present – High Confidence
Sensitive species 169 (VU)	Not Present – High Confidence
Sensitive species 463 (Rare)	Not Present – High Confidence
<i>Nemesia saccata</i> (VU)	Not Present – Low Confidence
<i>Helichrysum tricostatum</i> (NT)	Not Present – Moderate Confidence
<i>Wahlenbergia asparagoides</i> (NT)	Present – Common

6 TERRESTRIAL BIODIVERSITY THEME SENSITIVITY.

The overall combined Terrestrial Biodiversity theme indicates that the site consists entirely of Very High sensitivity areas due to the presence of CBAs, ESAs and PAES Focus Areas within the site (Figure 6 and Table 4). Given the presence of these features within the site, a full terrestrial biodiversity assessment would be required in the Basic Assessment.

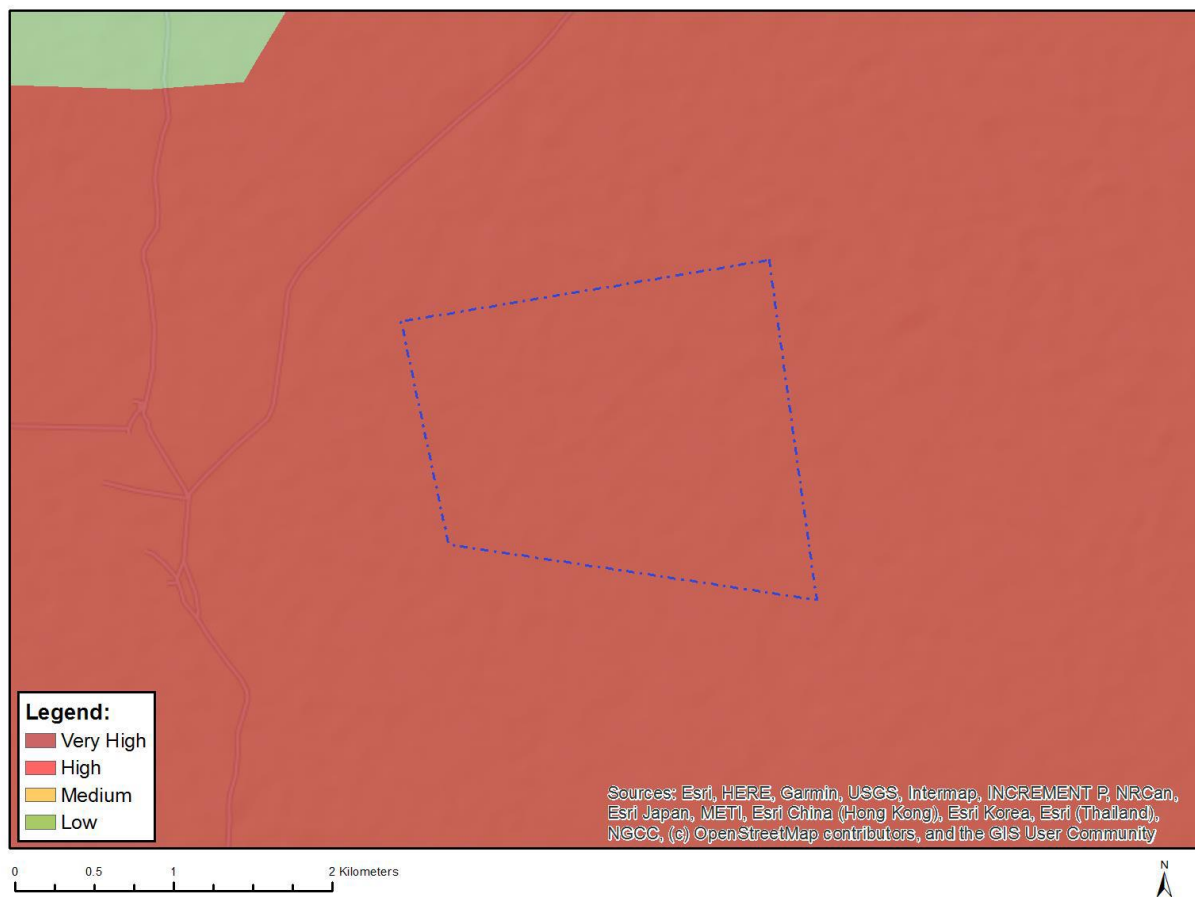


Figure 6. Terrestrial Biodiversity Theme Sensitivity Map of the Kleinzee PV Facility site and surrounds.

Table 4. Terrestrial Biodiversity Theme Features for the Kleinzee PV Facility study area.

Sensitivity	Feature(s)
Very High	Critical biodiversity area 2
Very High	Ecological support area
Very High	Protected Areas Expansion Strategy
Very High	Protected Areas Expansion Strategy: Sanparks

7 CONCLUSIONS & IMPLICATIONS OF THE SITE VERIFICATION

Based on the results of the site verification for the Kleinzee Solar PV Facility, the following studies are required in the Basic Assessment process for terrestrial ecology:

- Fauna Compliance Statement
 - Plant Species Assessment for *Wahlenbergia asparagoides*.
 - Terrestrial Biodiversity Assessment
-