

# EZELSJACHT SOLAR ENERGY FACILITY SITE SENSITIVITY VERIFICATION REPORT



**PRODUCED FOR SLR CONSULTING (SOUTH AFRICA) PTY LTD ON BEHALF OF  
SOUTH AFRICA MAINSTREAM RENEWABLE POWER DEVELOPMENTS**



[Simon.Todd@3foxes.co.za](mailto:Simon.Todd@3foxes.co.za)

**November2022**

**CONTENTS**

**CONTENTS** ..... 2

**1. INTRODUCTION** ..... 3

**2. TECHNICAL DETAILS FOR THE PROPOSED DEVELOPMENT** ..... 6

**3. SITE SENSITIVITY VERIFICATION METHODOLOGY** ..... 7

**Site Visit** ..... 7

**4. OUTCOME OF SITE SENSITIVITY VERIFICATION** ..... 8

**Animal Species Theme** ..... 8

**Plant Species Theme** ..... 10

**Terrestrial Biodiversity Theme** ..... 12

**5. CONCLUSION** ..... 13

## 1. INTRODUCTION

South Africa Mainstream Renewable Power Developments (Pty) Ltd (“Mainstream”) is proposing the construction and operation of one (1) Solar photovoltaic (PV) Energy Facility (SEF), Battery Energy Storage System (BESS), and associated infrastructure with a generation capacity of up to 110 megawatts.

In order to evacuate the energy generated by the SEF to supplement the national grid, Mainstream is also proposing an electrical grid infrastructure/ grid connection project which will be assessed in a separate Basic Assessment Processes (i.e. EGI for SEF).

The proposed SEF site is located approximately 13 km south-east of the town De Doorns, within the Cape Winelands District Municipality of the Western Cape Province. The site proposed for the SEF component falls entirely within the Breede Valley Local Municipality.

Applicant	Project Name	Capacity (MW)	Affected Property
South Africa Mainstream Renewable Power Developments (Pty) Ltd	Ezelsjacht Solar PV Energy Facility (SEF)	110 MW <sub>ac</sub>	Portion 6 of the Farm Ratelbosch No. 149

The overall objective of the proposed development is to generate electricity by means of renewable energy technologies capturing solar energy to feed into the national grid.

The proposed SEF will consist of PV Panels, internal and access roads (with a width of up to 12 m during construction), a construction laydown area/camp, Operation and Maintenance (O&M) Building and Independent Power Producer (IPP) portion of Substation, amongst other associated infrastructure. The solar PV energy facility will have a generation capacity of up to 110 MW. In addition to the infrastructure mentioned above, the SEF will also include energy storage infrastructure if it is deemed economically feasible to do so. This will consist of an area for a Battery Energy Storage System (BESS) covering an extent of up to approximately 5 hectares (ha). Currently, the battery technologies being considered are either Solid State Batteries or Redox Flow Batteries.

The findings of the respective specialist studies will be used to inform the location of the Solar PV arrays. All identified sensitive and/or no-go areas (including their respective buffers) will be avoided accordingly, as required. However, as part of the proposed application / Scoping & Environmental Impact Assessment (EIA) process for the SEF project, various site area / location alternatives may be assessed for the associated infrastructure such as the O&M Buildings, IPP Substations and BESS.

The site areas / location alternatives for the associated infrastructure such as the O&M Buildings, IPP Substations and BESS, will also need to be assessed against the ‘no-go’ alternative. The ‘no-go’ alternative is the option of not constructing the respective projects, where the status quo of the current status and/or activities on the site would prevail.

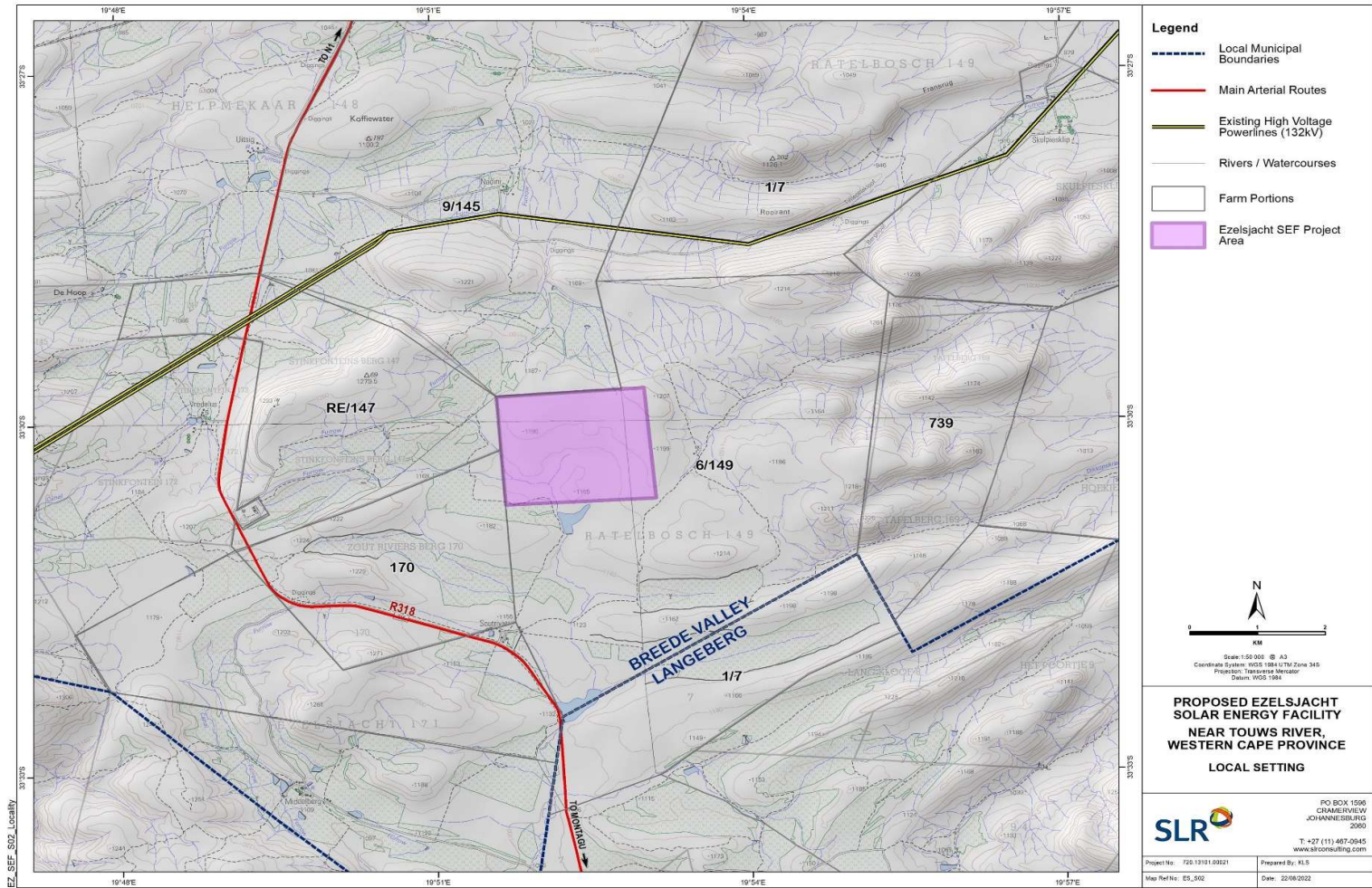


Figure 1: Locality Map of the Ezelsjacht SEF

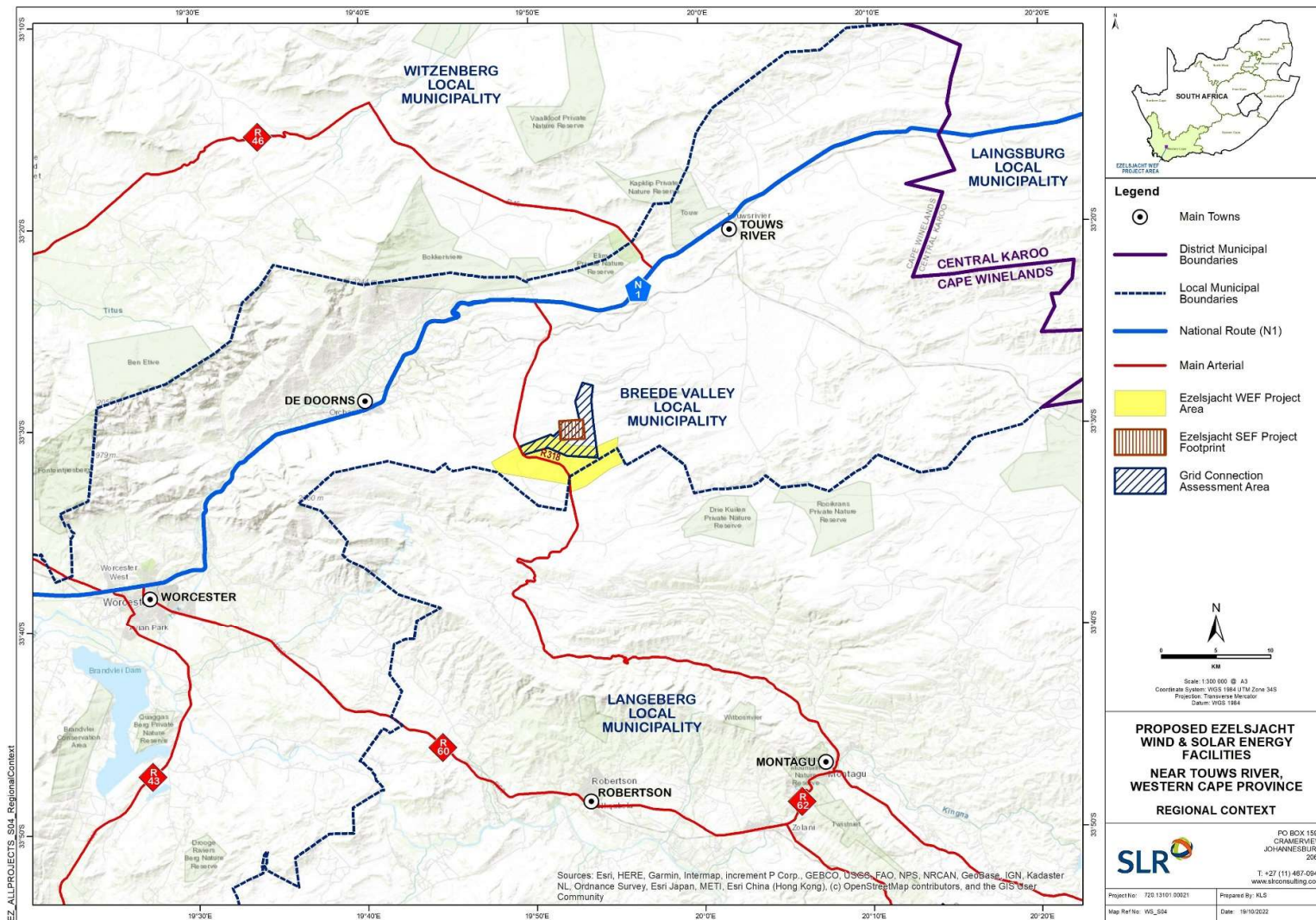


Figure 2: Regional Context of the Ezelsjacht SEF in relation to other projects proposed for Ezelsjacht (separate applications)

## 2. TECHNICAL DETAILS FOR THE PROPOSED DEVELOPMENT

<b>Ezelsjacht SEF infrastructure</b>	
Location of the site (centre point)	33°30'21.04"S 19°53'33.22"E
Application site area	+/- 370 hectares
Affected Farm Portions	Portion 6 of the Farm Ratelbosch No. 149
SG Codes	C0850000000014900006
Export Capacity	110 MW
Height of PV panels	Up to 5m
<b>33kV/132kV IPP portion of onsite substation</b>	<ul style="list-style-type: none"> <li>The 33kV/132kV IPP portion of the onsite substation will be located adjacent to the 132kV Eskom portion of the substation (EGI for WEF EA Application) within the 25ha Infrastructure Area that has been assessed.</li> <li>33kV/132kV IPP portion of the onsite substation will cover an area of approx. 120m x 120m</li> </ul>
<b>Battery Energy Storage System (BESS)</b>	<ul style="list-style-type: none"> <li>BESS storage of up to 500 MWh will be located within the 25ha Infrastructure Area that has been assessed and will cover an area of approx. 5 ha.</li> </ul> <p>A Battery Energy Storage System (BESS) will be located next to the IPP portion / yard of the shared onsite 33/132kV substation and will cover an area of 5 ha. The storage capacity and type of technology would be determined at a later stage during the development phase, but will most likely be either solid state or redox flow.</p>
<b>Roads</b>	Internal roads will be constructed between turbines, existing roads will be utilized as far as possible. The width of the internal roads will be up to 12m wide
<b>Associated Infrastructure</b>	<ul style="list-style-type: none"> <li>Operations and Maintenance Building of approx. 5ha within the 25ha infrastructure area that has been assessed. Temporary laydown or staging area, approximately 3ha.</li> <li>Underground 33kV cables, buried along internal access roads where feasible; and</li> </ul>

	<p>outside of the road footprints and where there are topography and environmental concerns.</p> <ul style="list-style-type: none"> <li>• Overhead 33kV power lines will be constructed, using monopole structures where burying is not possible due to technical, geological, environmental or topographical constraints. 33kV overhead power lines supported by 132 kV pylons of approximately 22 m high will be required, as well as tracks for access to the pylons.</li> <li>• Galvanized steel fencing of approx. 1.8 m in height.</li> <li>• Other associated infrastructure, stores, workshops,.</li> </ul>
--	---

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 environmental authorisation (EA) from the National Competent Authority (CA), namely the Department of Forestry, Fisheries and the Environment (DFFE), prior to the commencement thereof. One (1) application for EA for the proposed development will be submitted to the DFFE, in the form of a Scoping & EIA process in terms of the NEMA EIA Regulations of 2014 (as amended).

In accordance with GN 320 and GN 1150 (20 March 2020)<sup>1</sup> of the NEMA EIA Regulations of 2014 (as amended), 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 (i.e., Screening Tool). 3Foxes Biodiversity Solutions have been commissioned to verify the terrestrial ecological sensitivity of the Ezelsjacht SEF site under these specialist protocols.

### 3. SITE SENSITIVITY VERIFICATION METHODOLOGY

#### Site Visit

The site was visited over two full days for the current Site Verification, on the 1st and 2nd of October 2022. During the field assessment, the full site was investigated and the primary aim was to survey the ecological features of the broader site in order to inform a sensitivity map of the whole farm property which can be used to guide the final development footprint for the SEF and associated infrastructure. Walked surveys were conducted at points of interest across the site which included

---

<sup>1</sup> 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

rocky outcrops, drainage features, wetlands and any areas of quartz pebbles or gravel that may be home to SCC plant species. Specific attention was paid to the presence of plant SCC, sensitive faunal or botanical habitats and direct or indirect signs of fauna.

Since Riverine Rabbits are a potential concern at the site, camera traps were also put out across the site during the field assessment and will be used to confirm the presence of Riverine Rabbits and other fauna of concern at the site for the EIA Phase of the project.

Given the extent of the site and the relatively favourable conditions at the time of the site visit, there are few limitations and assumptions required with regards to the vegetation of the site. In terms of fauna, the habitats present within the site were well investigated and it is unlikely that there are any features of concern present that have not been observed.

#### 4. OUTCOME OF SITE SENSITIVITY VERIFICATION

The outputs of the Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool Report 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.

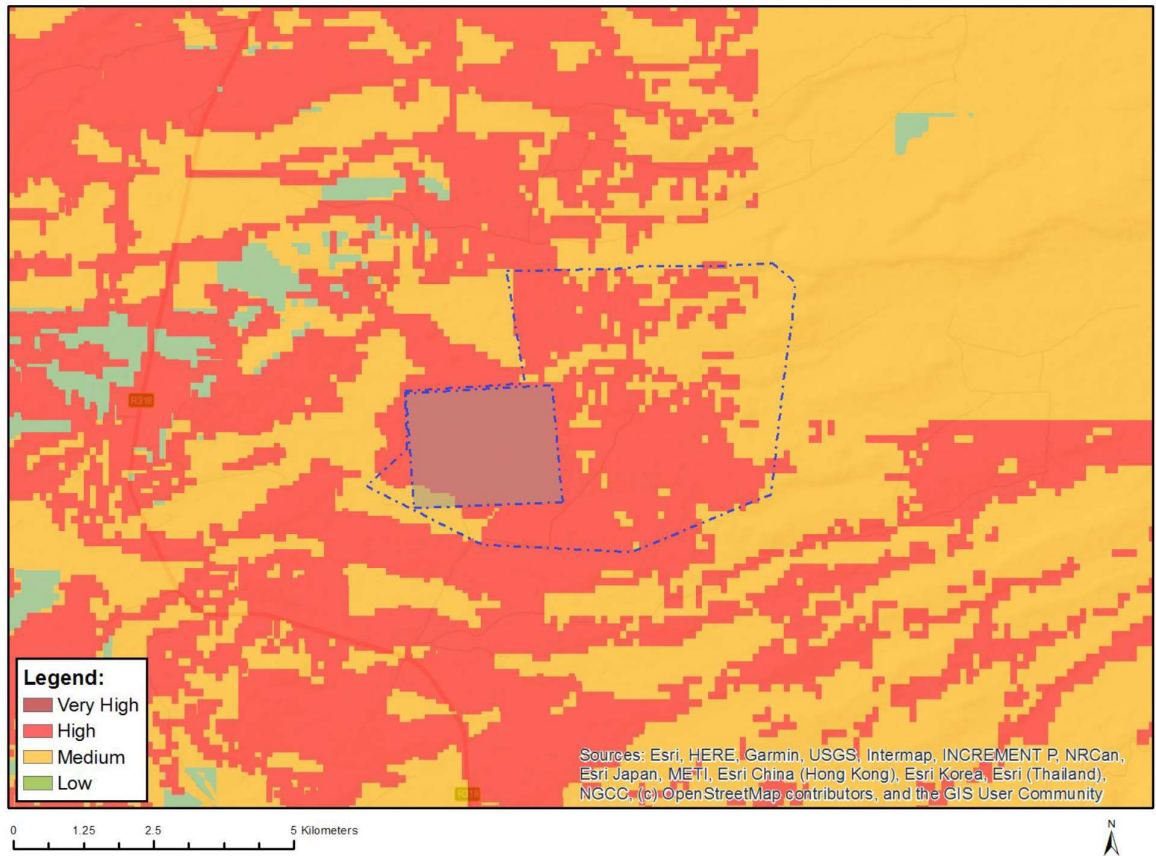
##### Animal Species Theme

The animal species theme sensitivity map is illustrated below in Figure 3 and shows that the majority of the site is classified as **High** sensitivity. However, Table 1 indicates that this is due to the presence of several bird species of concern and that in terms of terrestrial fauna, it is only the Riverine Rabbit (*Mammalia-Bunolagus monticularis*) and the butterfly *Aloeides caledoni* that are listed as of concern, with Medium sensitivity. There are observations from the broader area of Riverine Rabbits and the landowner confirmed that this species has been observed on the property. Camera traps have been placed at the site to confirm the presence of this species. But based on the habitat within the PV area (**Figure 4**) and the general habitat within the broader site, there is a high probability that this species is present within the PV area. *Aloeides caledoni*, the Caledon Copper is associated with summits and slopes of rocky mountains from Caledon in the east to Nieu-Bethesda in the west. Although this species is classified as Rare its' conservation status is Least Concern. Given the habitat associated with this species, it is highly unlikely that this species is present within the SEF site. Apart from the above two species, the only other fauna SCC that is likely present within the site is the Grey Rhebok which is confirmed present and appears to be relatively common on the site (**Figure 5**). Based on the results of the site verification, the site is confirmed **High** sensitivity for the Riverine Rabbit and the Grey Rhebok and low sensitivity for the Caledon Copper.

Table 1. Animal Species Theme features for the Ezelsjacht SEF project area.

Sensitivity	Feature(s)
High	Aves-Circus maurus
High	Aves-Afrotis afra
Medium	Aves-Circus maurus
Medium	Insecta-Aloeides caledoni





**Figure 3.** Animal Species Theme sensitivity map for the Ezelsjacht SEF project area.



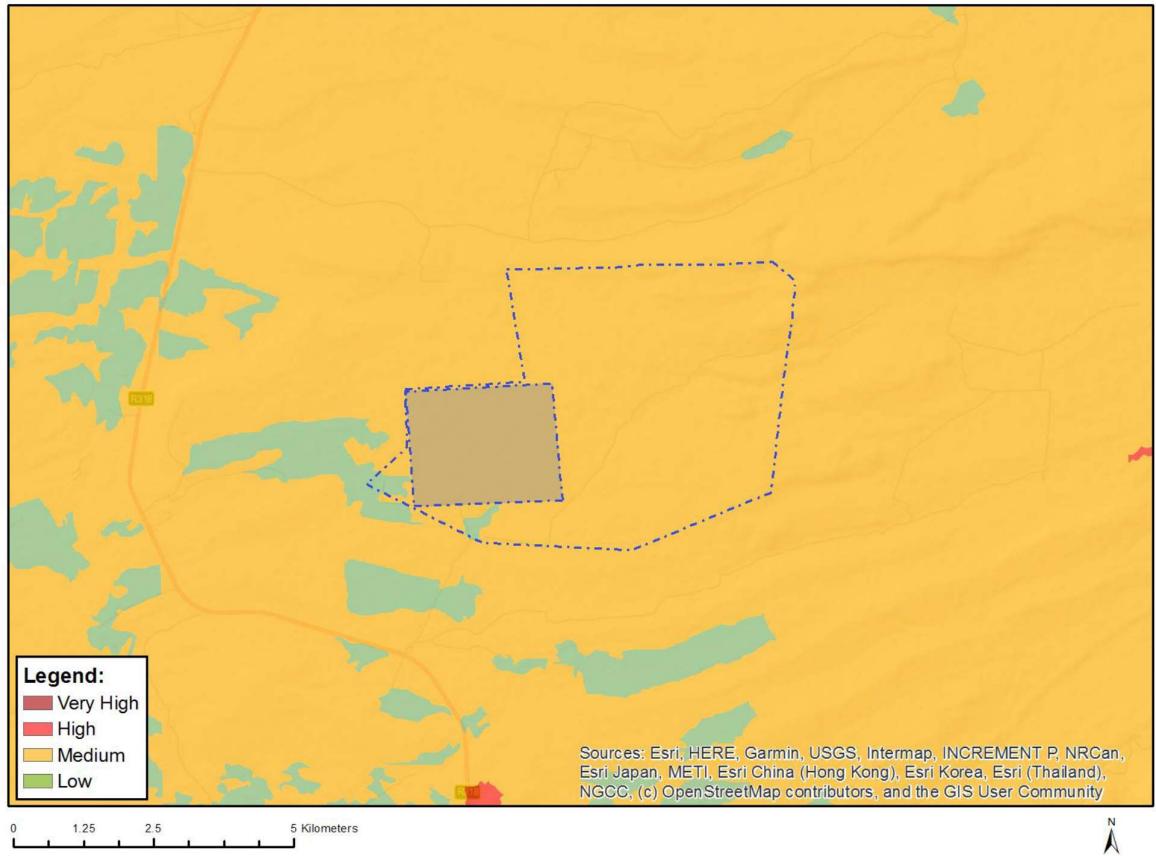
**Figure 4.** There are parts of the Ezelsjacht SEF project area that contain suitable habitat for the Riverine Rabbit and there is a high probability that this species is present on the site.



**Figure 5.** The Grey Rhebok is confirmed present on the Ezelsjacht SEF site.

### Plant Species Theme

The plant species theme sensitivity map is illustrated below in Figure 6 and shows that the whole of the site is classified as **Medium** sensitivity with some low sensitivity pockets. The theme features table indicates the possible presence of eight plant species of concern. Of these at least one, *Amphithalea spinosa* (VU) can be confirmed present at the site (**Figure 7**). While it is possible that some of the plant SCC are present within the site, no other SCC were observed during the field assessment. Additional plant surveys in the SEF area will be conducted to ascertain the abundance and distribution of *Amphithalea spinosa* within the SEF area as well as the abundance and presence of any other plant SCC that are observed. Based on the site verification, the **medium** sensitivity of the SEF can be confirmed and if any additional SCC are located within the SEF footprint, the sensitivity is likely to be elevated to **High**.



**Figure 6.** Plant Species Theme sensitivity map for the Ezelsjacht SEF project area.

**Table 2.** Plant Species Theme features for the Ezelsjacht SEF project area.

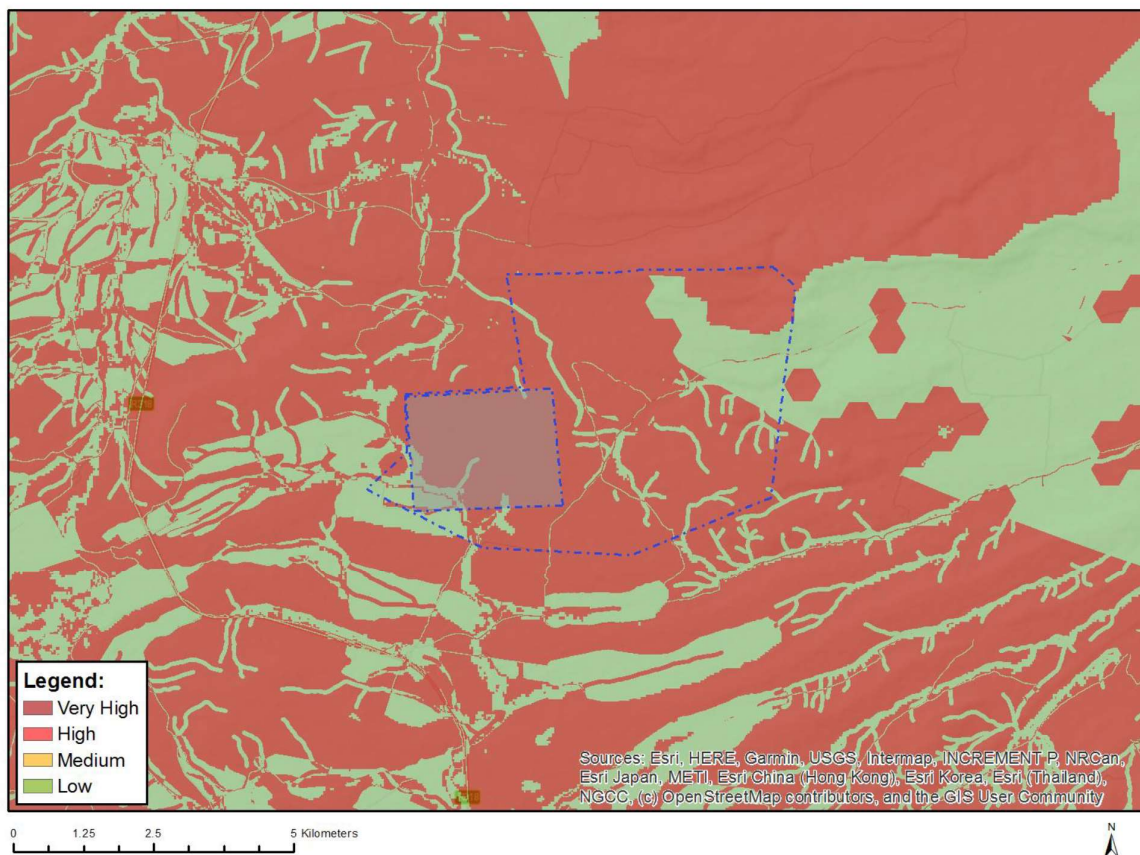
Sensitivity	Feature(s)
Medium	<i>Amphithalea spinosa</i>
Medium	<i>Aspalathus rostrata</i>
Medium	<i>Lotononis argentea</i>
Medium	<i>Romulea malaniae</i>
Medium	<i>Sensitive species 871</i>
Medium	<i>Drosanthemum giffenii</i>
Medium	<i>Asparagus mollis</i>
Medium	<i>Sensitive species 142</i>



**Figure 7.** The plant SCC *Amphithalea spinosa* can be confirmed present at the site.

### Terrestrial Biodiversity Theme

The terrestrial biodiversity theme is illustrated below in **Figure 8** and illustrates that large parts of the site are classified as **Very High** sensitivity for the Terrestrial Biodiversity Theme. This is due to the presence of areas of ESA1 and ESA 2 within the project area. Although some parts of the SEF site are considered to be degraded as a result of previous cropping and excessive livestock grazing, the majority of the site can still be considered to be in a near-natural condition. As such, the ESA status of the site is upheld and cannot be contested. As such a full terrestrial biodiversity assessment of the development will be conducted in the EIA phase.



**Figure 8.** Terrestrial Biodiversity Theme sensitivity map for the Ezelsjacht SEF project area.

**Table 3.** Terrestrial Biodiversity Theme features for the Ezelsjacht SEF project area.

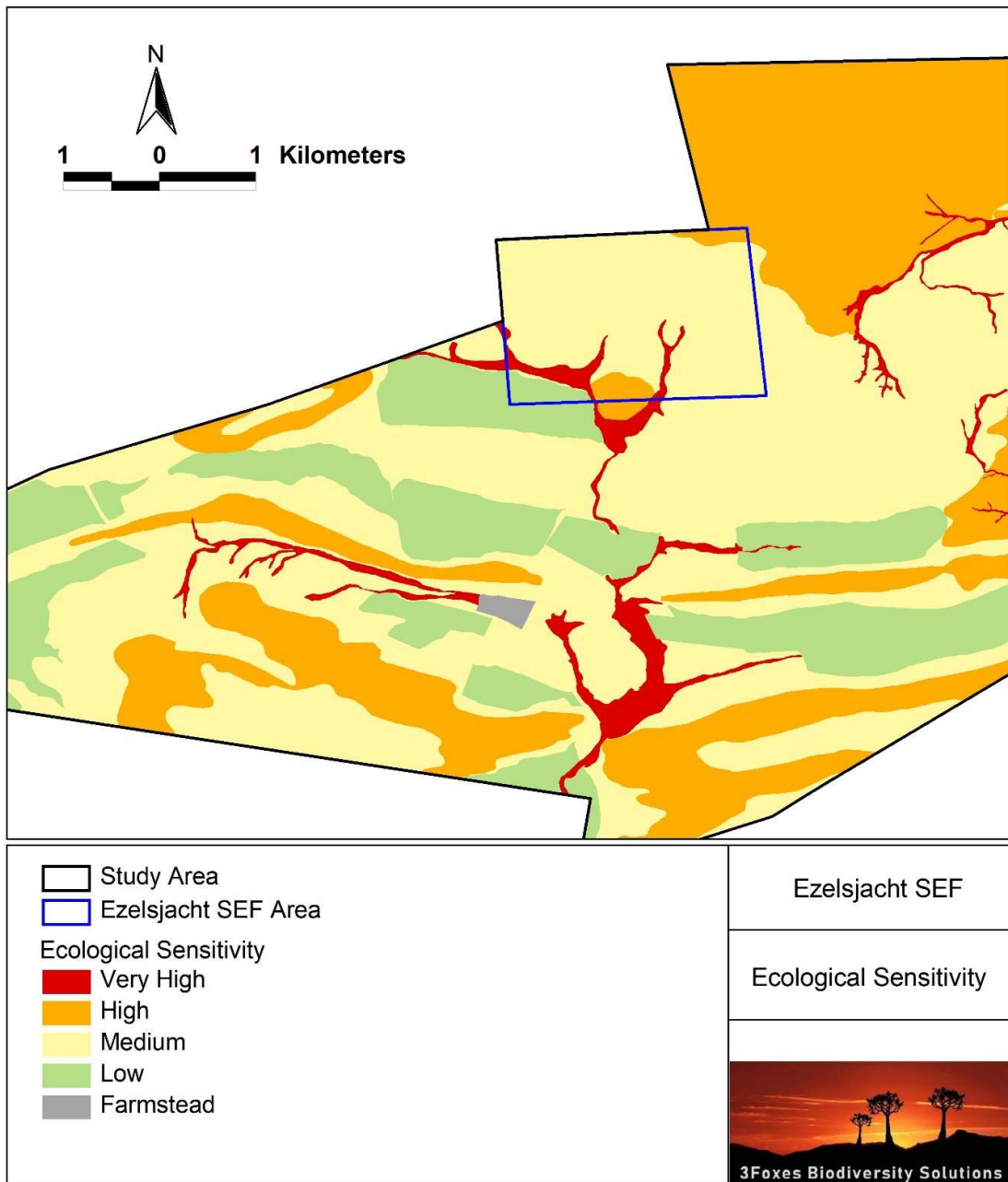
Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Ecological Support Area 1
Very High	Ecological Support Area 2

## 5. CONCLUSION

The Ezelsjacht SEF project area consists of Matjiesfontein Shale Renosterveld on open plains with shallow and gravelly soils. There are areas within the site mapped as **high** sensitivity as a result of the likely presence of the Riverine Rabbit and the presence of at least one plant SCC confirms the **medium** sensitivity of the remainder of the site. There are some parts of the SEF site and a several parts of the wider study area that have been transformed in the past and which are considered low sensitivity (**Figure 9**). Given the availability of such previously transformed areas within the site, the SEF footprint should be relocated to such areas if possible.

Based on these results of the site verification, the following studies are considered appropriate for the EIA phase of the assessment for the Ezelsjacht SEF:

- Faunal Species Assessment for the Riverine Rabbit
- Fauna Species Assessment for the Grey Rhebok
- Plant Species Assessment for *Amphithalea spinosa* as well as any other plant SCC that are detected within the final development footprint.
- Terrestrial Biodiversity Assessment



**Figure 9.** Terrestrial Biodiversity Theme sensitivity map for the Ezelsjacht SEF project area.