

Noblesfontein Wind Energy Facility – Basic Assessment Application – Site Sensitivity Verification Report

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1 INTRODUCTION AND BACKGROUND

This Site Sensitivity Verification Report relates to a Basic Assessment process being undertaken for specific infrastructure as part of an existing Environmental Authorisation (EA) for the Noblesfontein Wind Energy Facility (WEF), hereinafter referred to as the “Project”, with the Department Forestry, Fisheries and the Environment (DFFE) Reference: 12/12/20/1993/1.

The Project was originally included in the larger proposed Karoo Renewable Energy Facility (Northern and Western Cape Province, DEA: 12/12/20/1993), as shown in Figure 1. A Final Environmental Impact Assessment Report (EIA) was concluded in May 2011, following the regulations (NEMA, Act No. 107 of 1988), and EA was granted to the Karoo Renewable Energy Facility on 13 October 2011.

The authorisation was amended to split the project into three project development phases, with amended EA issued for each (Noblesfontein WEF, Modderfontein WEF, and the Noblesfontein solar PV site) on 22 February 2012 (Refer to Figure 1).

The Project is authorised for 44 turbines up to 3MW each, for a total capacity of 132MW. Currently only 41 turbines have been installed, each with an output of 2MW.

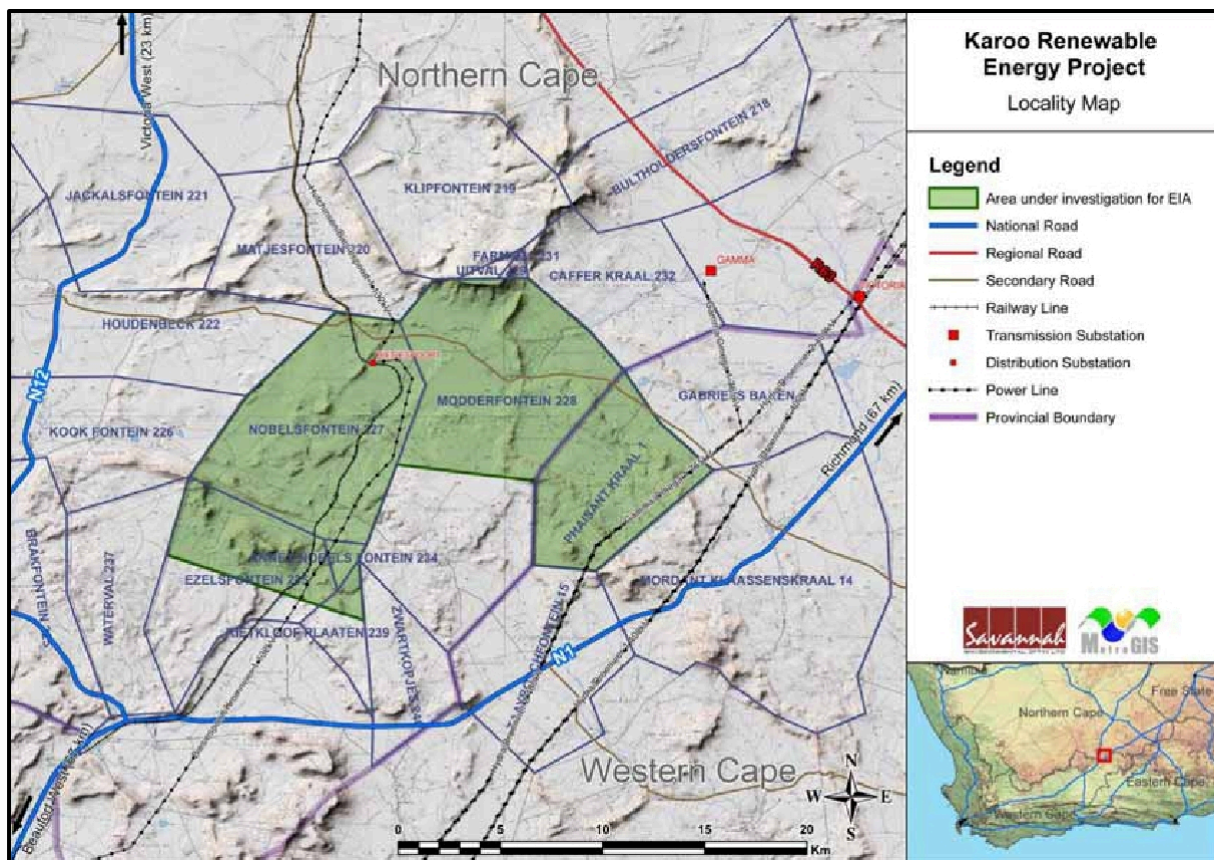


Figure 1: Locality map illustrating the location of the development site as part of the historic Karoo Renewable Energy Facility, as well as the Noblesfontein property (On the left).

The applicant and holder of the existing EA, CORIA (PKF) INVESTMENTS 28 (PTY) LTD, wishes to construct two turbines with a technical specification upgrade to ensure that an additional 10MW is added to the Project (i.e., up to 5MW per turbine). The Applicant also proposes to add a 132kV overhead powerline (OHPL) and second substation to service these 2 turbines as part of the existing development.

While the 2 turbines will be a larger version of the currently authorised turbines and hence could be upgraded by a Part 2 Amendment process, as can the OHPL, the DFFE has advised that they believe that the description authorised does not in fact adequately cover a second substation which triggers Listed Activity 11 (GNR 327, Listing Notice 1, 7 April 2017)¹ and is therefore a change that ***“on its own, constitute a listed or specified activity.”*** (GNR 326 EIA Regulations, Section 3.1, April 2017). DFFE has therefore indicated that both a Part 2 amendment application and a Basic Assessment Process will be required and that it would be simpler to include all of the above as part of a single Basic Assessment process, which is the same timeframe as a Part 2 Amendment Application and is now being undertaken.

To guide the level of assessment and reporting when applying for EA the Procedures for the assessment and minimum criteria for reporting on identified environmental themes² were gazetted in March 2020 and came into effect in May 2020. The Procedures are based on the outputs of the web-based DFFE Screening Tool, which is obligatory in all Environmental Impact Assessment (EIA) processes as of 4 October 2019. The National Web based Environmental Screening Tool developed by the DFFE aims is to provide readily available spatial datasets to fast track the environmental assessment process.

This tool identifies environmental sensitivities on a site and/or development footprint and accordingly produces a site or development footprint environmental sensitivity report which is required in terms of Section 16(1)(b)(v) of the 2014 EIA Regulations. This section states that “an application for EA must be accompanied inter alia by a report, generated by a National Web based Environmental Screening Tool once it is developed”.

The National Development Plan (NDP) calls for an efficient and effective environmental legislative process including the EIA process. The development of the tool forms part of ensuring this ongoing improvement of the EIA process for efficiency and effectiveness in

¹ Listed Activity 11 (GNR 327, Listing Notice 1, 7 April 2017)

- The development of facilities or infrastructure for the transmission and distribution of electricity—
- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or
 - (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more;

excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is—

- (a) temporarily required to allow for maintenance of existing infrastructure;
- (b) 2 kilometres or shorter in length;
- (c) within an existing transmission line servitude; and
- (d) will be removed within 18 months of the commencement of development.

² In terms of Section 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998.

terms of balancing economic development and conservation of our resources for generations to come on a sustainable foundation.

To add to this focus, the responsibility for the provision of a safe and healthy environment is outlined in different sections of the Constitution. Section 24 of the Constitution provides that everyone has a right to an environment that is not harmful to their health and well-being; and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

2 ENVIRONMENTAL ASSESSMENT PRACTITIONER

In terms of NEMA (as amended), an independent environmental assessment practitioner must be appointed in terms of section 12 to 14 of the EIA Regulations. Terramanzi Group (Pty) Ltd (TMG) has been appointed to undertake this Basic Assessment process on behalf of the Applicant.

TMG hereby declares that they have no conflicts of interest related to the work of this Report. Specifically, TMG declares that they have no personal financial interests in the property and/or activity being assessed in this report, and that they have no personal or financial connections to the relevant property owners, developers, planners, financiers or consultants of the property or activity, other than fair remuneration for professional services rendered for this Report to the Competent Authority. TMG declares that the opinions expressed in this Report are independent and a true reflection of their professional expertise.

TMG is a Level 4 Broad Based Black Economic Empowerment Company and is professionally accredited with several relevant industry bodies..

3 DESCRIPTION OF THE SITE AND PROPOSED ACTIVITY

3.1 SITE DESCRIPTION

The Project is located in the Ubuntu Local Municipality, within the Pixley ka Seme (NC) District Municipality of the Northern Cape Province. The WEF is located due South of Victoria West, and North West of Beaufort West, with the N12 highway running to the West, and the N1 highway to the South and East (See Figure 2). The development spans a number of farms, as given in Table 1 below, which will cumulatively be referred to as the 'Site'.

Table 1: Property details for all farms forming part of the Noblesfontein Wind Energy Facility.

Farm Name	Portion	Erf No.
Noblesfontein Farm	Remainder of Farm 227)	RE/227
Noblesfontein Farm	Portion 3 of Farm 227	P3/227
Noblesfontein Farm Annex	Remaining extent of Farm Annex 234	P2/235
Noblesfontein Farm Annex	Portion 1 of Farm Annex 234	P3/235
Ezelsfontein Farm	Portion 2 of Farm 235	P4/235
Ezelsfontein Farm	Portion 3 of Farm 235	RE/234
Ezelsfontein Farm	Portion 4 of Farm 235	P1/234
Rietkloofplaaten Farm	Portion 1 of Farm 239	RP1/239

The Site consists of dry natural veld and low open scrubland, classified by Mucina & Rutherford (2006) as Eastern Upper Karoo. Being the most extensive vegetation type in South Africa, this vegetation is classified as Least Threatened. The natural vegetation is primarily in good condition, covering undulating plains, low hills and rocky ridgelines. No surface water is present, though non-perennial drainage lines are evident. The Site is sensitive to erosion. Surrounding land use is natural areas, agricultural, and both a railway line and Eskom overhead power lines run through the Site. The surrounding geography is interspersed with mountains, koppies and ridges.

The site is currently zoned for Agriculture, and is being used as an existing Wind Farm.

3.2 DESCRIPTION OF THE PROPOSED ACTIVITY

The holder of the existing EA, CORIA (PKF) INVESTMENTS 28 (PTY) LTD, proposes a technical specification upgrade to two turbines, increasing their size and output. This will necessitate larger temporary laydown areas, the construction of an additional 132kV OHPL as well as an additional substation to service these upgraded turbines. Access roads are already authorised in the original Noblesfontein EA.

GPS Locations:

Proposed Turbine 1:	31°43'24.37"S	23°11'23.45"E
Proposed Turbine 2:	31°43'20.81"S	23°11'24.95"E
OHPL start:	31°43'12.48"S	23°11'27.80"E
OHPL end:	31°43'25.62"S	23°11'36.76"E
Substation:	31°43'36.63"S	23°11'34.11"E

The authorised infrastructure associated with the Noblesfontein WEF includes:

- Up to 44 wind turbines with a total generating capacity of 132MW using turbines with a generating capacity of up to 3MW;
- 22.07 hectares (ha) of the proposed site will be permanently transformed for the installation of the turbines and related infrastructure;
- Each turbine will be a steel tower (between 80m and 125m in height) nacelle (gear box) and three rotor blades with a rotor diameter of between 90m and 110m (i.e. each blade up to 55m in length);
- 44 temporary laydown areas of 50m x 25m (55 000m²);
- 44 Concrete foundations to support the turbine towers (15m x 15m x 2.5m in depth);
- A temporary laydown area with a footprint of 0.66km² (66ha);
- Underground cabling between the project components;
- One new overhead 132kV power line of 1km, turning into the existing Hutchinson/Biesiespoort-1 132kV line;
- Internal access roads (5m wide and 40km long) linking the wind turbines and the infrastructure on the site; and
- Operations and maintenance building including a storage facility with a footprint of 40m x 20m (800m²) for maintenance and storage purposes.

The proposed technical specification upgrade to two previously authorised wind turbines:

- Technical specification upgrade of 2 turbines from 3MW (with a total output of 6MW) to 2 wind turbines of between 4MW and 5.6MW (with a total output up to 10MW);
- Each turbine will be a steel tower with a maximum height of up to 137.5m and will include a nacelle (gear box) with three rotor blades;
- Each rotor blade will have a maximum length of up to 82m in length with a total rotor diameter of up to 165m;
- The total swept rotor area is a maximum of 21382.5m²;
- The total turbine height (including blade) will be a maximum of up to 220m;
- Maximum sound output will be up to 104.9dB.

The proposed addition of supporting infrastructure for the upgraded turbines includes:

- 2 larger temporary laydown areas of 75m x 25m (3750m²);
- 2 Concrete foundations to support the turbine towers (15m x 15m x 2.5m in depth);
- Underground cabling between the project components;
- Addition of a second substation, adjacent to the existing substation on the site; and
- Construction of an additional 132kV OHPL of approximately 500m, linking the two wind turbines to the new substation and existing Hutchinson/Biesiespoort-1 132kV line;

The positions of the proposed road, OHPL, upgraded turbines and second substation can be seen in Figure 3.



Figure 2: Site Locality Map – Noblesfontein Wind Energy Facility



Figure 3: Layout for the proposed road, OHPL and two upgraded wind turbines, showing the Noblesfontein Site's Northern boundary, completed turbines to the South West, and the position of the proposed second substation adjacent to the existing authorised and constructed substation.

4 SITE SENSITIVITY VERIFICATION METHODOLOGY

To inform the SSV Report, data and information was gathered and reviewed by the EAP from various sources. These sourced included:

- The original Environmental Impact Assessment Report (dated May 2011) along with its associated Specialist Studies.
- Specialist statements from 2016 that formed part of a Part 1 Amendment Application.
- The Screening Tool Report for the proposed activity which revealed the associated environmental themes (refer to Appendix A).
- Maps from Google Earth.
- Multiple site visits conducted over a period of time within the last 12 months.
- Specialist inputs and studies for the current Basic Assessment Application.

5 IDENTIFIED THEME SENSITIVITIES FOR THE PROPOSED SITE/ACTIVITY

Prior to commencing any specialist assessment, the current use of the land and the Agricultural sensitivity of the site under consideration, identified by the screening tool, must be confirmed by undertaking a Site Sensitivity Verification Report.

The Screening Tool Report has identified the following environmental sensitivities for the site:

Theme	Sensitivity			
	Very High	High	Medium	Low
Agricultural			X	
Animal Species		X		
Aquatic Biodiversity				X
Archaeological and Cultural Heritage Theme			X	
Avian (Wind) Theme				X
Civil (Wind) Aviation				X
Defence (Wind) Theme				X
Flicker Theme	X			
Landscape (Wind) Theme	X			
Palaeontology Theme	X			
Noise Theme	X			
Plant Species			X	
RFI (Wind) Theme	X			
Terrestrial Biodiversity				X

5.1 SITE SENSITIVITY VERIFICATION

Protocols for the assessment and reporting of environmental impacts on environmental themes, published in Government Notice No. 43110 on 20 March 2020, specify the requirements for the assessment related to the level of environmental sensitivity (Low, Medium, High or Very High).

5.1.1 Agricultural Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a **Medium agricultural sensitivity**.

How the project site relates to identified theme

The climate of the Site area is semi-arid (mean annual precipitation = 237 mm and annual evaporation = 2379 mm), with severe frost during the winter months. The grazing capacity is low at ± 25 ha per large stock unit (DAFF, 2018) while the soils are predominantly very shallow or rocky and non-arable. There is no available surface water on the Site. This limits any agricultural uses to extensive stock farming (mostly sheep) or possibly very limited irrigated agriculture (using groundwater), neither of which will be meaningfully impacted by the proposed development.

The Noblesfontein WEF is already authorised for 44 wind turbines. The proposed turbine upgrades (Two larger turbines, as opposed to the three remaining authorised smaller turbines) will also result in a smaller footprint and therefore decreased impact relating to this theme. All turbines will be constructed on rocky ridgelines exposed to high levels of wind, making them unlikely sites for any agricultural applications. Furthermore, the access road follows a section of old (unused) railway line, while the overhead powerline and sub-station are situated on low potential agricultural land. Overall, the full Noblesfontein footprint has a negligibly small land usage and therefore negligible impact on agricultural ground usage.

EAP Recommendation

It is the EAP's opinion that the "Medium sensitivity" would be correct if the development footprint covered a larger portion of the site, and climatic conditions were more favourable to agricultural uses. Less than 1% of the site will be affected by the proposed turbines, road, powerline and substation and the Site is unlikely to ever be suitable or productive enough for large scale agriculture. The EAP believes a **Very Low Sensitivity** is more accurate. There is, therefore, no need for any additional information to be obtained from an Agricultural Specialist. An Agricultural Specialist has nevertheless been consulted to confirm these findings.

Appointed Specialist

Agri Informatics C/O Francois Knight
Email: francois@agriinformatics.co.za

5.1.2 Animal Species Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**High animal species sensitivity**”.

How the project site relates to identified theme

The Screening tool highlighted the three species of concern listed in Table 2 below:

Table 2: Noblesfontein Sensitivity Features highlighted by the Screening Tool for the Animal Species Theme.

Sensitivity	Common Name	Scientific Name	Conservation Status
High	Verreaux's eagle	<i>Aquila verreauxii</i>	Vulnerable
Medium	Riverine rabbit	<i>Bunolagus monticularis</i>	Critically Endangered
Medium	Ludwig's bustard	<i>Neotis ludwigii</i>	Endangered

Aves (Birds) - *Aquila verreauxii* (Verreaux's eagle)
Verreaux's Eagle has a wide distribution throughout Africa, stretching from Eritrea and Ethiopia in the north, southward to South Africa. Within the region, the species is distributed across five biomes: Fynbos, Grassland, Savannah, Nama-Karoo and Succulent Karoo. Within these biomes, it is mainly restricted to mountainous terrain because of its hunting and breeding biology. Verreaux's eagle is confirmed to exist on the site with known nesting sites to the South and South West. These concerns were addressed in the original application and will be re-examined by an Avifaunal Specialist.

The main threat to Verreaux's Eagle is direct persecution of birds and their prey by stock farmers. The species is somewhat susceptible to collisions with and resultant electrocution from powerlines and related infrastructure. Development of wind farms, especially in mountainous areas, poses a future threat to this species, which may prove to be highly significant.



Figure 4: *Aquila verreauxii* (Verreaux's eagle).

Source: <http://www.africanraptors.org/>

Mammalia (Mammals) - *Bunolagus monticularis* (Riverine rabbit)

This species is endemic to the central Karoo region of South Africa. It is associated with the dense, discontinuous vegetation (Nama-Karoo shrubland) fringing the seasonal rivers. It is the only indigenous burrowing rabbit in Africa and is dependent on soft and deep alluvial soils along the river courses for constructing stable breeding stops. As there does not appear to be any suitable alluvial habitats, it is unlikely that this species occurs within the Noblesfontein Site. Furthermore, the construction of a road and turbines along a ridgeline would be unlikely to have any significant impact on a riverine species.



Figure 5: *Bunolagus monticularis* (Riverine rabbit). Source: <https://www.inaturalist.org/>

Aves (Birds) - *Neotis ludwigii* (Ludwig's bustard)

Ludwig's Bustard is near endemic to the Western regions of Namibia and South Africa, occurring predominantly in the dry Karoo region of western South Africa (Herholdt 1988), extending eastwards into Free State, southwards into Eastern Cape and Western Cape provinces and northwards into Northern Cape. Mortalities originating from collisions with distribution and telephone lines is the main threat to the regional Ludwig's Bustard population. Ludwig's Bustard is also impacted upon by hunting, poisoning and disturbance (Anderson 2000).



Figure 6: *Neotis ludwigii* (Ludwig's bustard) Source: <https://www.birdlife.org.za/>

Other key terrestrial faunal species potentially in the area includes various reptiles. The rocky outcrops and dolerite ridges may represent the preferred habitat for many reptiles, and roosting sites for bats.

EAP Recommendation

It is the EAP's opinion that the **"High sensitivity"** rating is accurate, and that care should be taken to minimise the potential of bird (and bat) related collisions with both power lines and the wind turbines themselves. The current Basic Assessment for the two upgraded wind turbines, overhead powerline and additional substation is being undertaken with extensive specialist input.

Appointed Specialists:

Terrestrial Fauna Specialist

Nick Helme Botanical Surveys C/O Nick Helme
botaneek@iafrica.com

Avifaunal (birds) Specialist

Arcus C/O Owen Davies
OwenD@arcusconsulting.co.za

Bat Specialist

Arcus C/O Ashlin Bodasig
AshlinB@arcusconsulting.co.za

5.1.3 Aquatic Biodiversity Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Low sensitivity**”.

How the project site relates to identified theme

Despite being listed as a potential site sensitivity by the Screening Tool Report, Noblesfontein has no surface water, with only a few eroded drainage lines, which do not constitute any form of watercourse or riverine systems. These are dry for almost the entirety of every year. The closest aquatic systems are located distant from the Site borders, as indicated by the Screening Tool in Figure 7 below.



Figure 7. Aquatic Biodiversity Sensitivity map – Screening Tool Report

EAP Recommendation

Accordingly, the finding of the SSV for the aquatic biodiversity theme is that the site is of **no sensitivity** and no further specialist input is necessary.

5.1.4 Archaeological and Cultural Heritage Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Medium sensitivity**” on account of the Site possessing a “mountain or ridge” (Sensitivity features).

How the project site relates to identified theme

The Noblesfontein Site has been previously assessed during the initial Scoping and EIA (2011). The Site and neighbouring farms are considered an area of high fossil sensitivity, with exposed fossils and disturbed scatters of Middle Stone Age (MSA) artefacts being found primarily in the lower, flat floodplain areas. These disturbed artifacts are likely exposed as a result of erosion and water runoff and therefore possibly originate higher up on the ridges and koppies. MSA artifacts have been found on some ridges and koppies. There is also a limited occurrence of Later Stone Age (LSA) artefacts, and early 20th century artifacts known from the site. Documented areas containing rock art and engravings on boulders are present on Site but have been avoided during layout planning. Lastly stone structures of LSA and unknown origin, as well as relatively modern human remains, have been found, but are not located near the proposed turbines, road, OHPL or substation. (Figure 8)

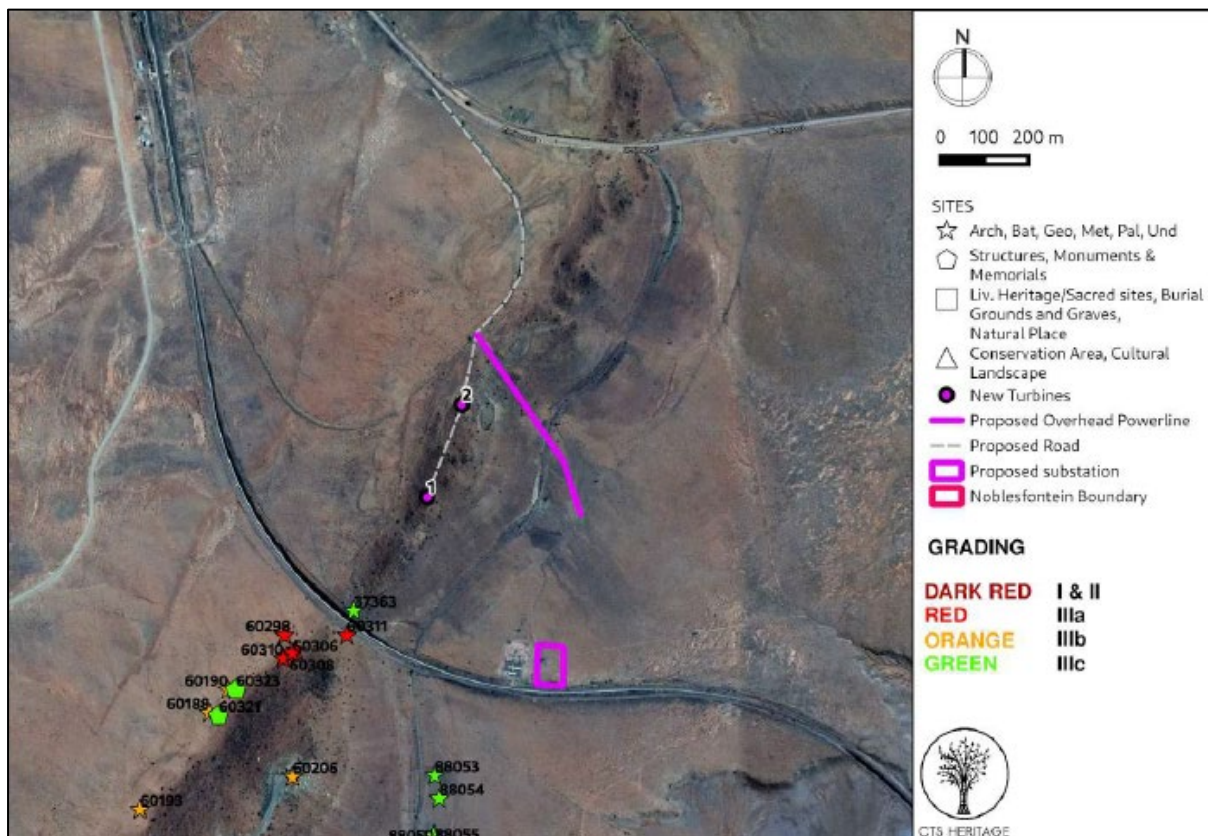


Figure 8: Heritage Resource Map of the area around the proposed upgraded turbines, OHPL, road and substation.

The proposed site for the upgraded turbines is already authorised, is located on a small dolerite koppie and is unlikely to impact on any palaeontological heritage. There is a possibility that the development of the two new turbines, proposed road and overhead line

will negatively impact on significant archaeological heritage in the form of unknown rock art or engravings associated with the dolerite outcrop.

EAP Recommendations

It is the EAP's opinion that the "**Medium sensitivity**" Site rating is accurate, but it is unlikely that the proposed structures will have any significant impact on palaeontological or archaeological heritage. Nevertheless, care should be taken to avoid and existing stone structures or rock art/engravings, as well as to be aware of any artifacts or remains that may be discovered during construction. The EAP can confirm that the current Basic Assessment process for the two upgraded wind turbines, overhead powerline and additional substation is being undertaken with assessment and input from a relevant specialist.

Appointed Specialists:

CTS Heritage C/O Jenna Lavin

Email: jenna.lavin@ctsheritage.com

5.1.5 Avian (Wind) Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Low sensitivity**”.

How the project site relates to identified theme

The Avian (Wind) theme is relevant to Wind farm related impacts on avifaunal species, primarily through collisions with turbine blades and OHPLs. While the Noblesfontein Site falls outside any areas of mapped sensitivity, it is known to have Verreaux's eagle (*Aquila verreauxii*) present on the Site. These are listed as Vulnerable. While they nest on the far Southern side of the Site, and the proposed turbine upgrades, OHPL and substation are located close to the Northern Boundary, Verreaux's eagles have very large ranges and may likely pass through or over the Northern edge of the property. Furthermore, the endangered Ludwig's bustard (*Neotis ludwigii*) may be present. These are both discussed in Section 5.1.2 (Animal Species Theme).

EAP Recommendation

Based on the sensitivity of the site in terms of the Avian Theme, the EAP is of the opinion that the “**Low sensitivity**” rating is correct for the two upgraded turbines and OHPL, though a Medium or High rating might be more appropriate for the Noblesfontein WEF as a whole.

The current Basic Assessment for the two upgraded wind turbines, overhead powerline and additional substation has been assessed and is being undertaken with input from an Avian Specialist.

Appointed Specialists:

Avifaunal (birds) Specialist
Arcus C/O Owen Davies
OwenD@arcusconsulting.co.za

5.1.6 Civil Aviation (Wind) Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Low sensitivity**”.

How the project site relates to identified theme

This theme is rated as having a “Low sensitivity” being outside of any demarcated, dangerous, or restricted airspace. The Site is remote, not located near any airports, and likely to see little to no air traffic. Furthermore, all structures should be well visible from the air, and will not possess any large reflective surfaces that may interfere with navigation.

EAP Recommendation

There is no reason to believe that the proposed development will interfere with any aspects of Civil Aviation safety or security and therefore it is the EAP’s recommendation that this theme be rated as having a **low sensitivity/ insignificant**.

As such no specialist has been appointed. The South African Civil Aviation Authority (CAA) will however be contacted for comment as part of the PPP.

5.1.7 Defence (Wind) Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Low sensitivity**”.

How the project site relates to identified theme

The proposed development of two upgraded wind turbines, road, OHPL and second substation in no way pose a risk from a Defence theme point of view. The area surrounding proposed structures is open natural and agricultural land, remote from any major features of Defence interest.

EAP Recommendation

Accordingly, the finding of the SSV for the defence theme is that the site is of **no sensitivity**.

5.1.8 Flicker Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a **“Very High Sensitivity”**. This is due to the Screening Tool indicating the presence of “Potential temporarily or permanently inhabited residence” (As indicated in Figure 9 below).

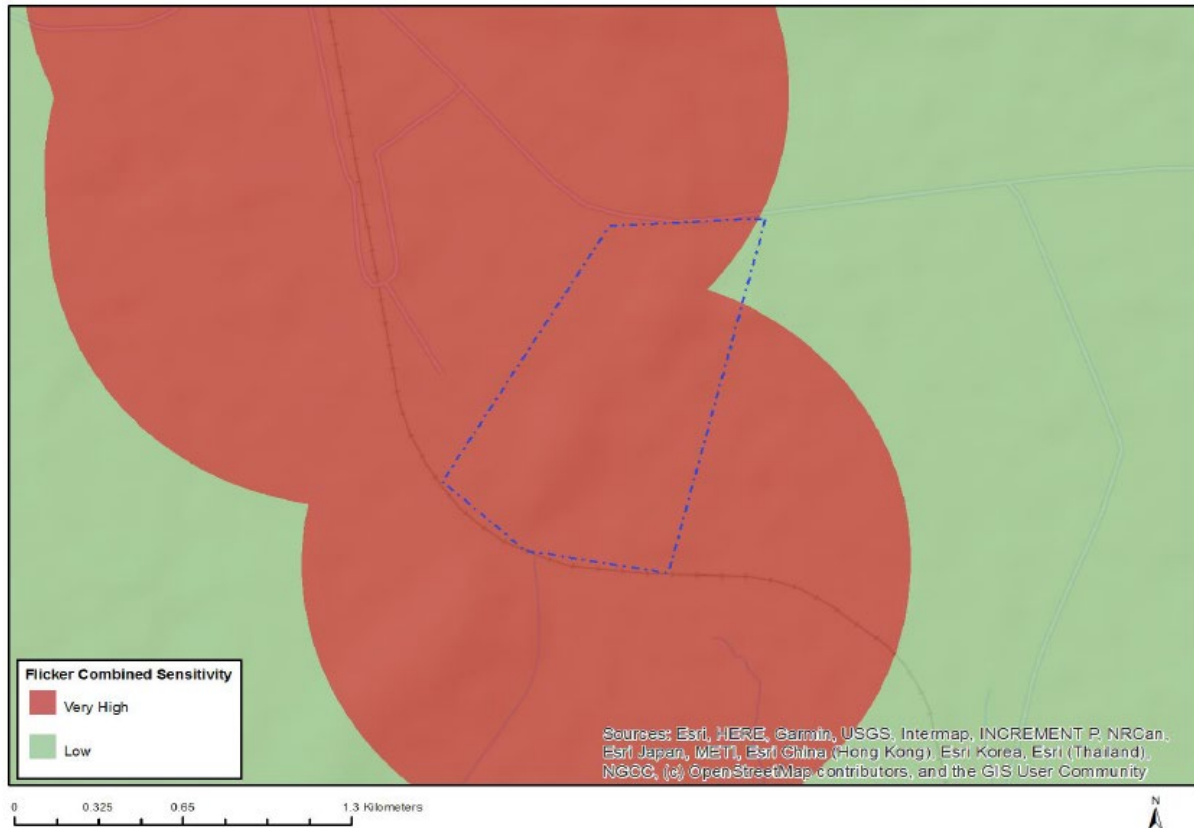


Figure 9. Flicker (Wind) and Noise (Combined) Sensitivity Map – Screening Tool Report

How the project site relates to identified theme

The proposed upgraded turbines, OHPL, road and substation are all to be located on the Northern portion of the Noblesfontein Site. Several potentially inhabited structures are present on the property (Figure 10) with no other potentially impacted structures in the wider vicinity.

Of these structures only a single structure is occupied, with the other structures having been deserted for an extended period and unlikely to be reoccupied. This existing homestead is approximately 1.13km from the proposed turbines, and the occupant has been consulted.

The larger turbines being proposed will likely result in increased visibility and flicker.

EAP Recommendation

It is the EAP's opinion that a "**High sensitivity**" rating of the receiving environment is likely appropriate as a result of the single occupied residential dwelling present on the Site. The impact of the two upgraded turbines is likely Low relative to the three authorised turbines. As a residential dwelling is affected, a specialist has been appointed to assess the impact of the proposed turbine upgrade.

Appointed Specialists:

Environmental planning and Design C/O Jon Marshal

Email: jon@enviroconsult.co.za

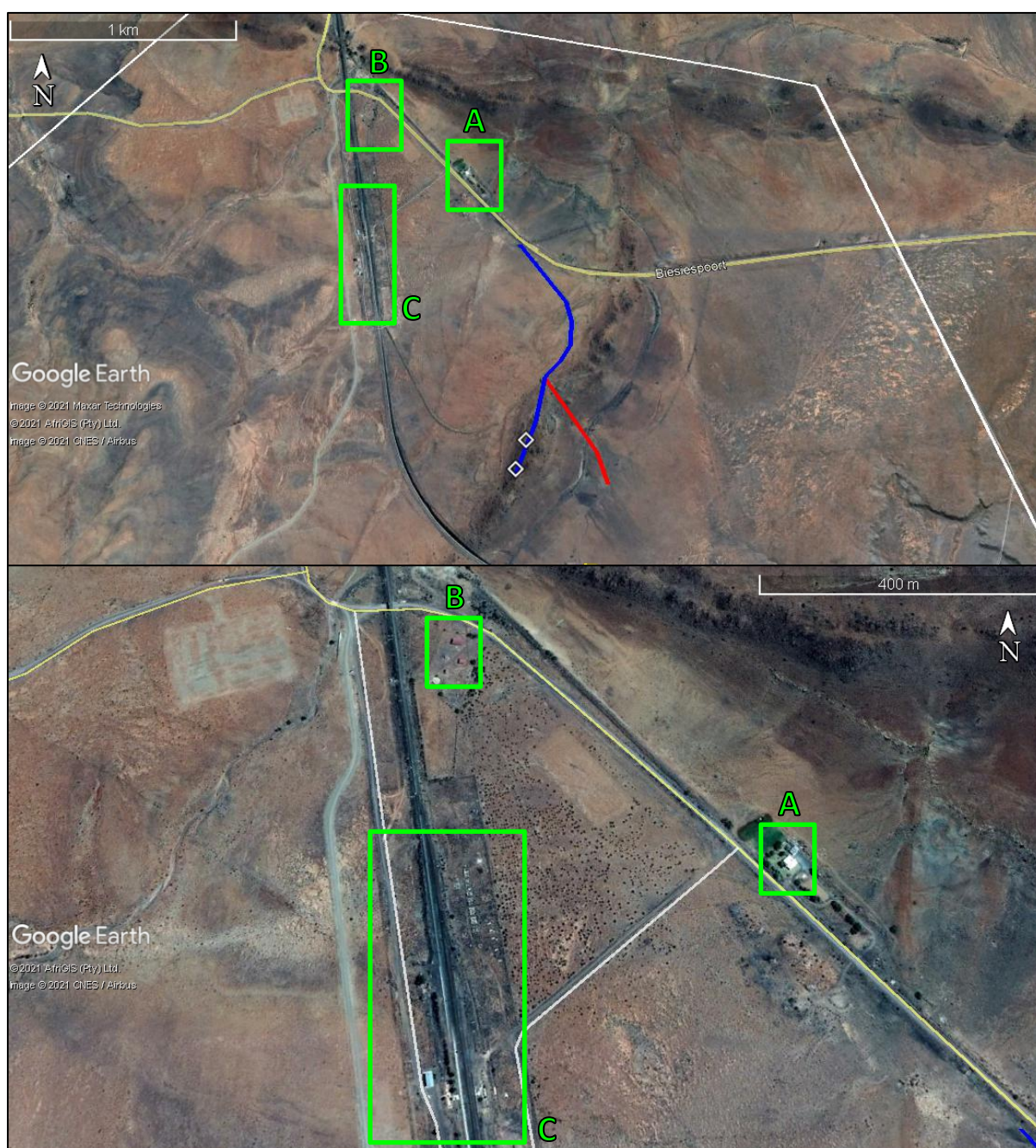


Figure 10: Positions of both occupied (A) and deserted (B and C) structures that represent potential dwellings within the vicinity of the proposed layout.

5.1.9 Landscape (Wind) Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Very High Sensitivity**”.

Table 3: Landscape (Wind) Theme Sensitivity features for the Noblesfontein Site as listed in the Screening Tool Report.

Feature(s)	Sensitivity
Slope between 1:4 and 1:10	High
Slope less than 1:10	Low
Slope more than 1:4	Very High
Mountain tops and high ridges	Very High

How the project site relates to identified theme

The proposed upgraded turbines will be built on a Ridgeline above and visible from the surrounding areas, including a single occupied residential dwelling and the Biesiespoort Road, both approximately 1.13km to the North. The upgraded turbines are up to 220m in height (previously 180m) and therefore visible from a great distance.

EAP Recommendation

It is the EAP’s opinion that the “**Very High sensitivity**” rating is likely accurate, and a visual specialist has been appointed to assess the visual impacts.

Appointed Specialists:

Environmental planning and Design C/O Jon Marshal
Email: jon@enviroconsult.co.za

5.1.10 Palaeontology Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Very High Sensitivity**”, due to features with a Very High paleontological sensitivity.

How the project site relates to identified theme

The presence of paleontological features is discussed in Section 5.1.4 (Archaeological and Cultural Heritage Theme).

EAP Recommendations

It is the EAP’s opinion that the “**Medium sensitivity**” rating is likely accurate, but it is unlikely that the proposed structures will have any significant impact on palaeontological or archaeological heritage. The EAP can confirm that the current Basic Assessment process for the two upgraded wind turbines, overhead powerline and additional substation is being undertaken with assessment and input from a relevant specialist.

Appointed Specialists:

CTS Heritage C/O Jenna Lavin
Email: jenna.lavin@ctsheritage.com

5.1.11 Noise Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Very High Sensitivity**”, due to the Screening Tool indicating the presence of “Potential temporarily or permanently inhabited residence”(s) in the near vicinity.

The Noise (Wind) Theme has the same receptors as the Flicker (Wind) theme, with both being represented by the Sensitivity Map in given in Figure 9.

How the project site relates to identified theme

The Noise Theme therefore relates to the site in the same manner as discussed in Section 5.1.8 (Flicker Theme).

The proposed upgraded turbines, OHPL, road and substation are all to be located on the Northern portion of the Noblesfontein Site. Several potentially inhabited structures are present on the property (Figure 10) with no other potentially impacted structures in the wider vicinity. Of these structures only a single structure is occupied, with the other structures having been deserted for an extended period and unlikely to be reoccupied. This existing homestead is approximately 1.13km from the proposed turbines, and the occupant has been consulted. Several existing turbines are also already present in the direct vicinity.

The larger turbines will have a maximum sound output of up to 104.9dB, with the proposed upgrade representing a decrease in the number of turbines and noise output.

EAP Recommendation

It is the EAP’s opinion that a “**Very High sensitivity**” rating of the receiving environment is likely appropriate as a result of the single occupied residential dwelling present on the Site. The two upgraded turbines likely represent a decreased noise output. As a residential dwelling is affected, a specialist has been appointed to assess the impact of the proposed turbine upgrade.

Appointed Specialists:

Enviro Acoustic Research C/O Morne De Jager
menco.morne.dejager@gmail.com

5.1.12 Plant Species Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Medium sensitivity**”.

The following sensitivity features are noted by the Screening Tool as possibly being present on the Site.

Table 4: Botanical Sensitivity features for the Noblesfontein Site as listed in the Screening Tool Report.

Feature	Sensitivity
<i>Isolepis expallescens</i>	Medium
<i>Hereroa concava</i>	Medium
Sensitive species 945	Medium

How the project site relates to identified theme

The study area lies within the Nama Karoo biome and the Upper Karoo bioregion (Mucina & Rutherford 2006) and is outside the Greater Cape Floristic Region (GCFR). The Nama Karoo is a large biome (19% of the country) but is relatively species poor with very few local few endemics (Mucina & Rutherford 2006). All vegetation types present on the property are gazetted as a Least Threatened (DEA 2011).

EAP Recommendation

It is the EAP’s opinion that the “**Medium Sensitivity**” rating is correct. The proposed structures will require the removal of indigenous vegetation and a botanical specialist will be appointed to identify any sensitive species present on the site.

Appointed Specialists:

Nick Helme Botanical Surveys C/O Nick Helme
botaneek@iafrica.com

5.1.13 RFI (Wind) Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “Very High Sensitivity”.

Table 5: RFI sensitivity features for the Noblesfontein Site as listed in the Screening Tool Report.

Feature	Sensitivity	Area of Site
Low sensitivity for telecommunications; None; More than 60 km from a Weather Radar installation	Low	Southern
Within 5 km of a Sentech High Power Terrestrial Broadcasting Facility; None; More than 60 km from a Weather Radar installation	Very High	Northern

How the project site relates to identified theme

The proposed turbines, OHPL and substation are on the Northern Edge of the Site, and therefore fall into the “Very High” sensitivity area as indicated by the Screening Tool. Noblesfontein is remotely situated and not located near the Square Kilometre Array (SKA) project or any major broadcasting centres.

EAP Recommendation

It is the EAP’s opinion that the “**Very High Sensitivity**” rating can only be confirmed once nearby mobile network and broadcaster operators are contacted during the public consultation process, as is standard practice for wind energy facilities.

Appointed Specialists:

All mobile phone operators in the area will be contacted and given the opportunity to provide comment.

5.1.14 Terrestrial Biodiversity Theme

Screening Tool categorisation

According to the Screening Tool Report this theme is rated as having a “**Low Sensitivity**”.

How the project site relates to identified theme.

The Noblesfontein Site falls within the Nama Karoo and Upper Karoo biomes, which are both relatively species poor. The site is dry, with sparse vegetation and no riverine habitats or above ground water.

EAP Recommendation

It is the EAP’s opinion that the “**Low Sensitivity**” rating is correct. Furthermore, the Terrestrial Biodiversity theme will be well assessed by specialists for other sensitivity themes.

Appointed Specialists:

Terrestrial Fauna and Botanical Specialist

Nick Helme Botanical Surveys C/O Nick Helme
botaneek@iafrica.com

Avifaunal (birds) Specialist

Arcus C/O Owen Davies
OwenD@arcusconsulting.co.za

6 CONCLUSION AND WAY FORWARD

The SSV has found that the site is not associated with all the sensitivities as set out by the DFFE Screening Tool Report. Based on this Site Sensitivity Report and the available information, we suggest it is reasonable to conclude the following:

Theme	Sensitivity			
	Very High	High	Medium	Low
Agricultural				X
Animal Species		X		
Aquatic Biodiversity				N/A
Archaeological and Cultural Heritage Theme			X	
Avian (Wind) Theme				X
Civil (Wind) Aviation				X
Defence (Wind) Theme				N/A
Flicker Theme		X		
Landscape (Wind) Theme	X			
Palaeontology Theme			X	
Noise Theme	X			
Plant Species			X	
RFI (Wind) Theme	X			
Terrestrial Biodiversity				X

According to the SSV Report findings the following specialist inputs are deemed adequate and acceptable to inform the Basic Assessment process:

- Agricultural
- Avifaunal (Birds)
- Bat
- Ecological (Terrestrial and Botanical)
- Heritage
- Noise
- Traffic
- Visual (Landscape)

The following specialists have been appointed to inform the Basic Assessment process:

Specialist Study	Specialist Name	Company	Contact	Email
Agri	Francois Knight	Agri Informatics	082 658 7776	francois@agriinformatics.co.za
Bat	Ashlin Bodasig	Arcus	076 340 8914	AshlinB@arcusconsulting.co.za
Birds	Owen Davies	Arcus	072 558 0080	OwenD@arcusconsulting.co.za
Ecological	Nick Helme	Nick Helme Botanical Surveys	082 823 8350	botaneek@iafrica.com
Heritage	Jenna Lavin	CTS	083 619 0854	jenna.lavin@ctsheritage.com
Noise	Morne De Jager	Enviro Acoustic Research	012 004 0362	menco.morne.dejager@gmail.com
Traffic	Pieter Arangie	ITS	082 318 5061	pietera@itsglobal.co.za
Visual	Jon Marshal	Environmental planning and Design	083 703 2995	jon@enviroconsult.co.za

We thereby conclude that the above specialists adequately address the relevant sensitivities indicated in the Screening Tool Report and satisfy all requirements of the regulations. We will therefore proceed accordingly with the Basic Assessment Process as indicated unless otherwise instructed in writing by the DFFE.

Appendix A:

Screening Tool Report

**SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS
REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE
ENVIRONMENTAL SENSITIVITY**

EIA Reference number: NA

Project name: SARGE - Part 2 AA

Project title: SARGE - Part 2 AA

Date screening report generated: 16/02/2021 10:14:24

Applicant: SARGE

Compiler: TMG

Compiler signature:
.....

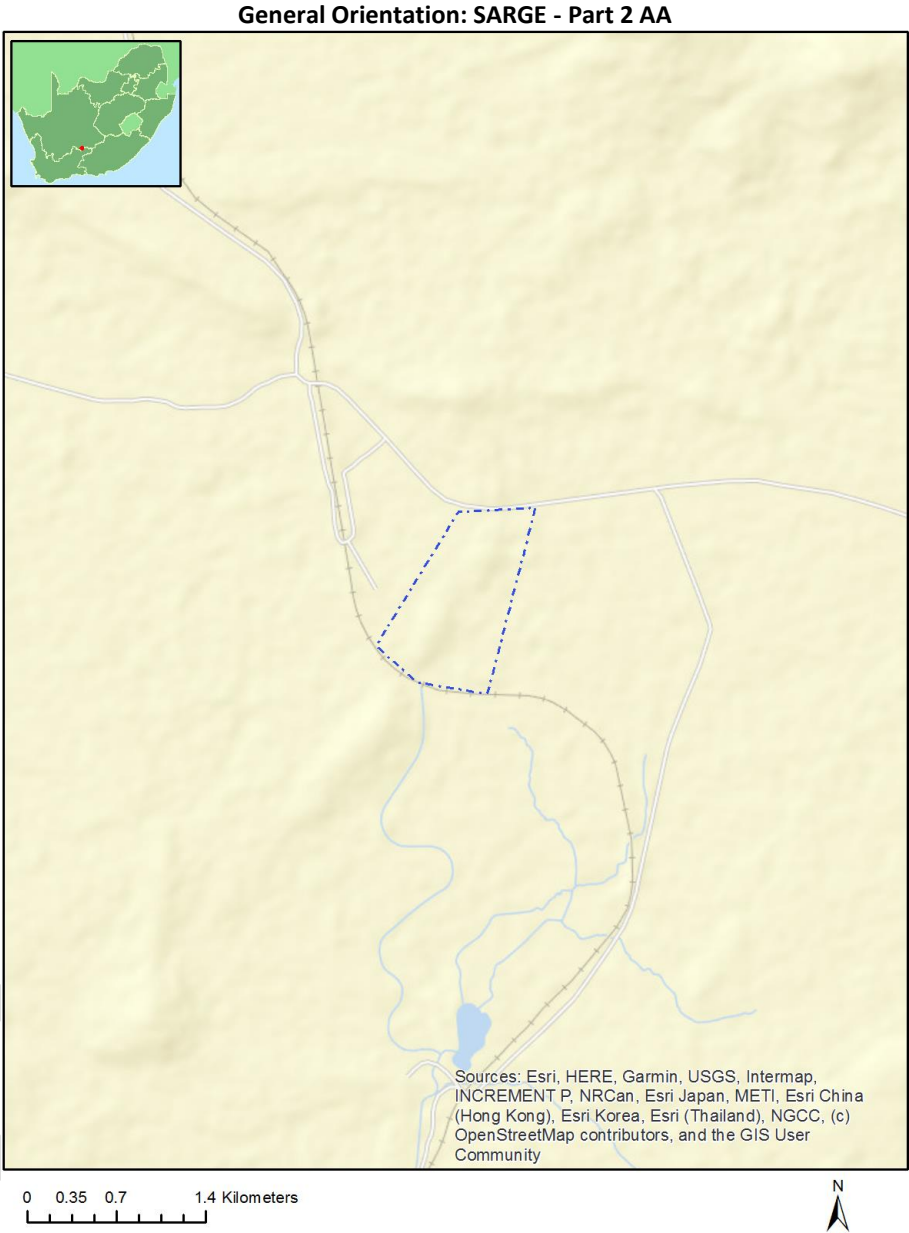
Application Category: Utilities Infrastructure | Electricity | Generation | Renewable | Wind

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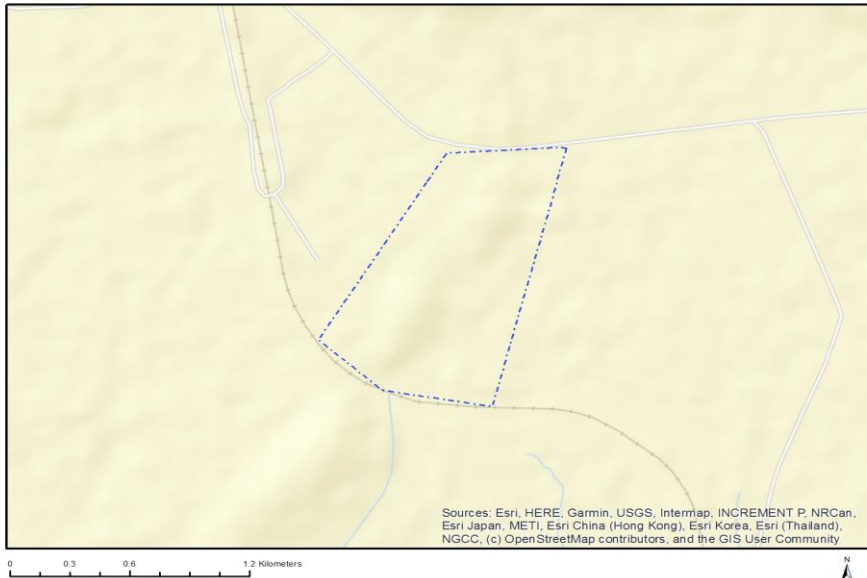
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	NOBELSFONTEIN	248	0	31°45'23.63S	23°10'5.96E	Farm
2	NOBELSFONTEIN	248	10	31°43'36.43S	23°11'31.22E	Farm Portion
3	NOBELSFONTEIN	248	3	31°45'31.09S	23°11'34.5E	Farm Portion
4	NOBELSFONTEIN	248	4	31°43'3.45S	23°11'0.52E	Farm Portion

Development footprint¹ vertices:

No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	12/12/20/2428	Solar PV	Approved	22.1
2	14/12/16/3/1/2	Solar PV	Approved	1

¹ "development footprint", means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

Utilities Infrastructure | Electricity | Generation | Renewable | Wind.

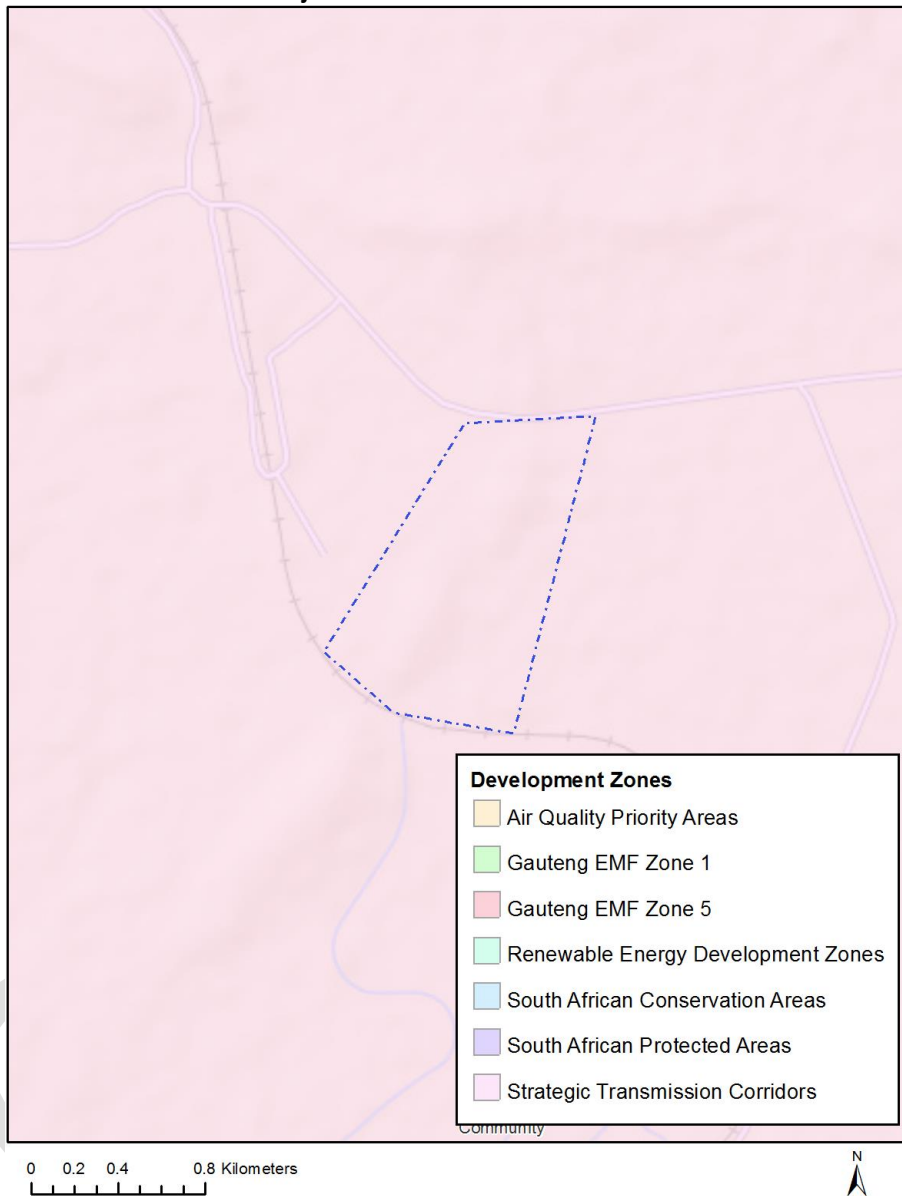
Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-Central corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/GN11316February2018.pdf

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

Project Location: SARGE - Part 2 AA



Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme			X	
Animal Species Theme		X		

Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme			X	
Avian (Wind) Theme				X
Civil Aviation (Wind) Theme				X
Defence (Wind) Theme				X
Flicker Theme	X			
Landscape (Wind) Theme	X			
Paleontology Theme	X			
Noise Theme	X			
Plant Species Theme			X	
RFI (Wind) Theme	X			
Terrestrial Biodiversity Theme				X

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

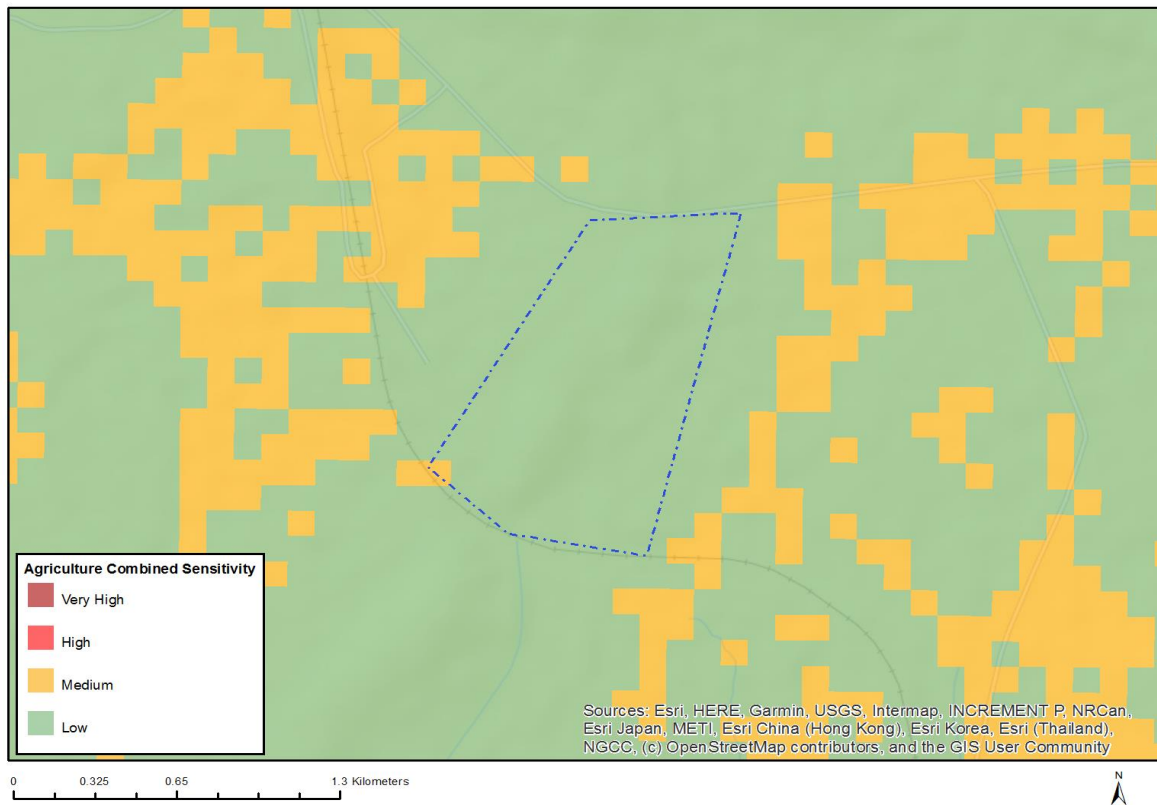
N o	Special ist assess ment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_WindAndSolar_Agriculture_Assessment_Protocols.pdf
2	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
5	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
6	Aquatic	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols

	Biodiversity Impact Assessment	/Gazetted Aquatic Biodiversity Assessment Protocols.pdf
7	Avian Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Avifauna Assessment Protocols.pdf
8	Civil Aviation Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Civil Aviation Installations Assessment Protocols.pdf
9	Defense Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Defence Installations Assessment Protocols.pdf
10	RFI Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
11	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Noise Impacts Assessment Protocol.pdf
12	Flicker Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
13	Traffic Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
14	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
15	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
16	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Plant Species Assessment Protocols.pdf
17	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Animal Species Assessment Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

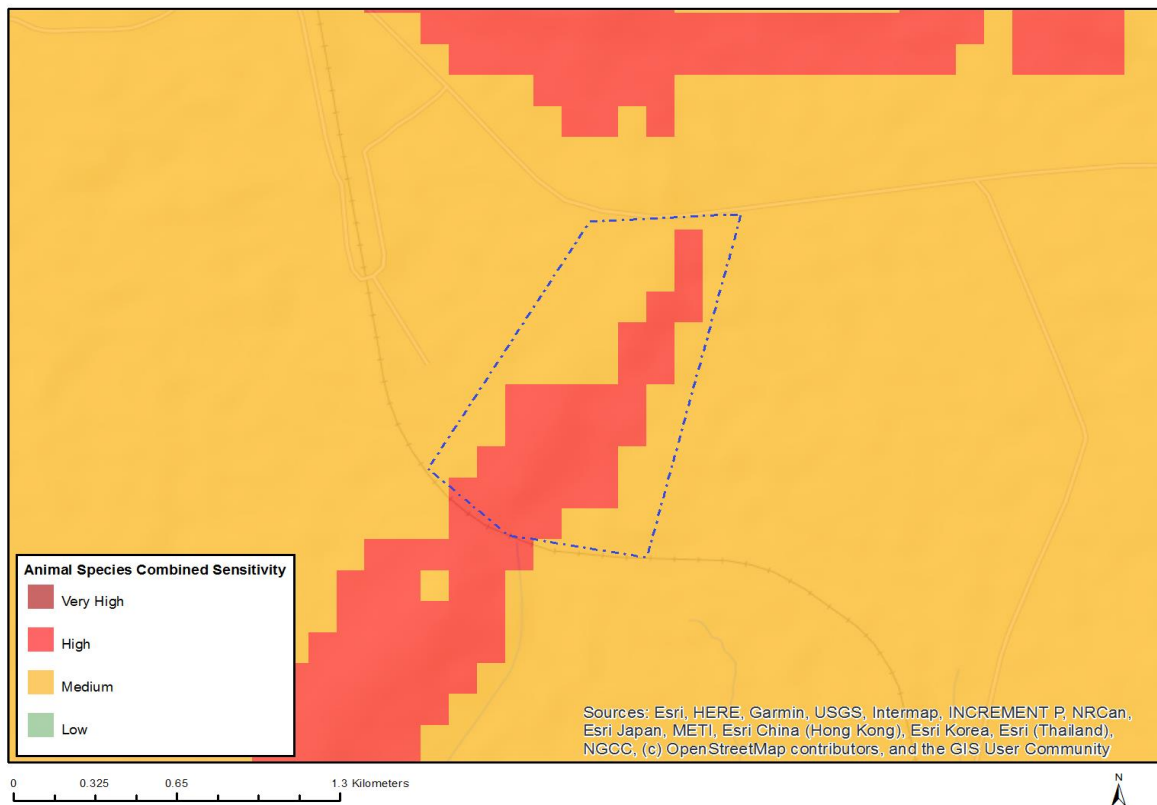


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Aquila verreauxii
Medium	Mammalia-Bunolagus monticularis
Medium	Aves-Neotis ludwigii

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

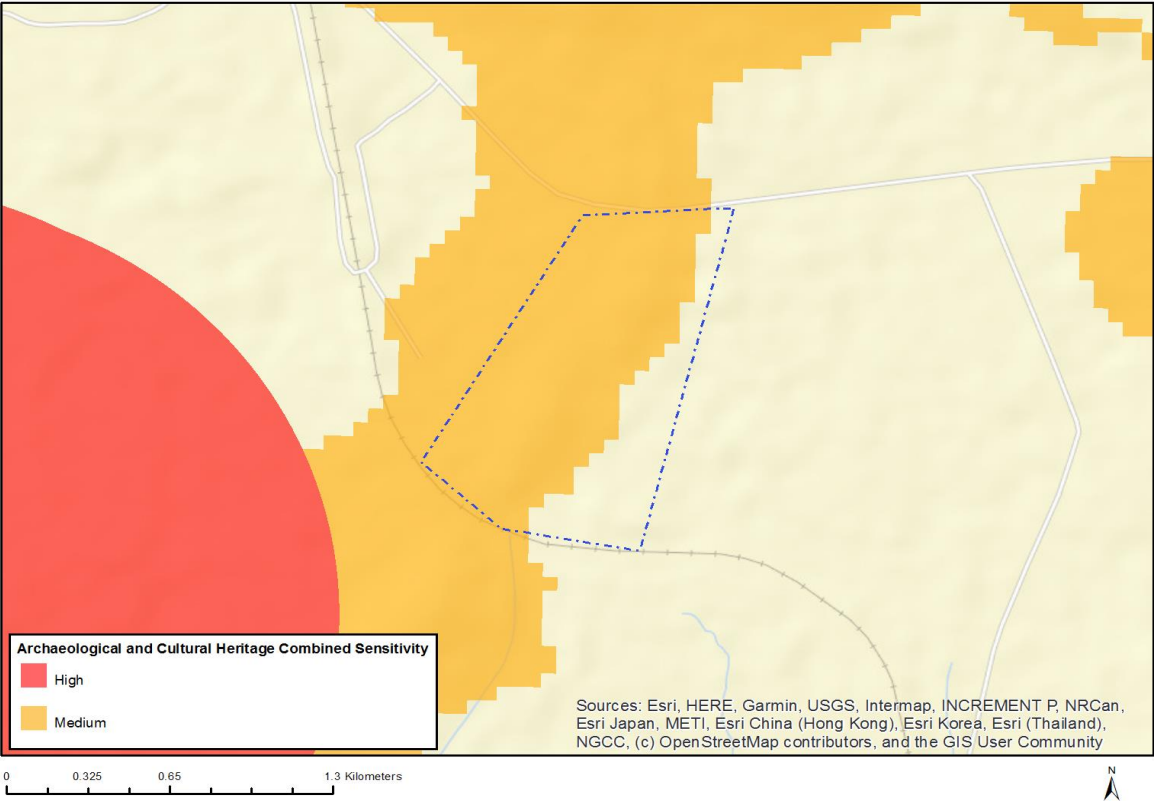


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

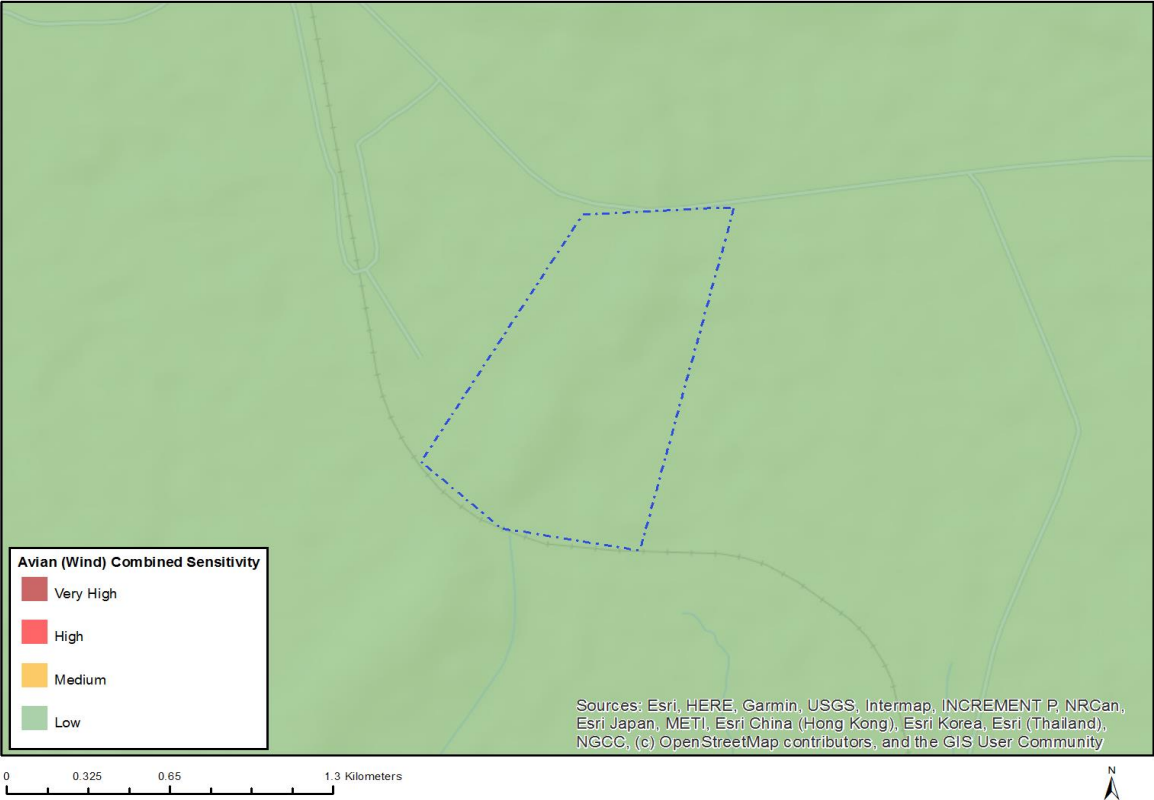


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Mountain or ridge

MAP OF RELATIVE AVIAN (WIND) THEME SENSITIVITY

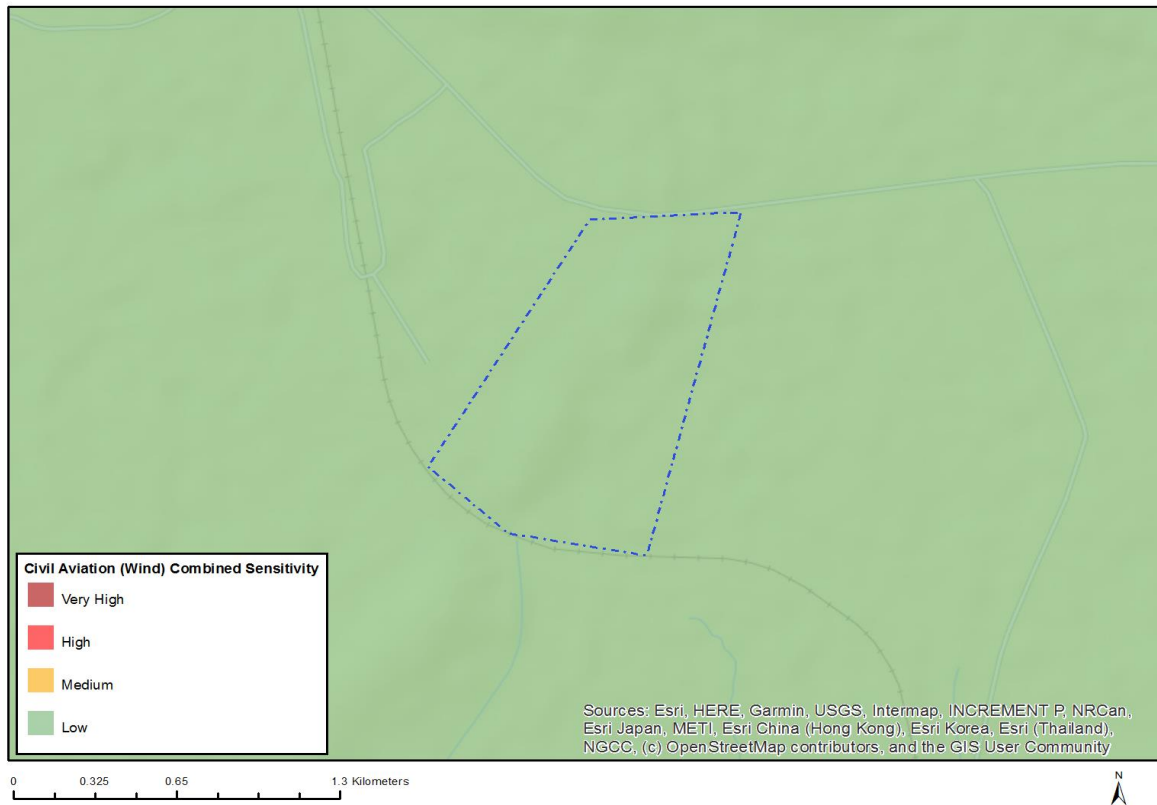


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Area Outside Sensitivities

MAP OF RELATIVE CIVIL AVIATION (WIND) THEME SENSITIVITY

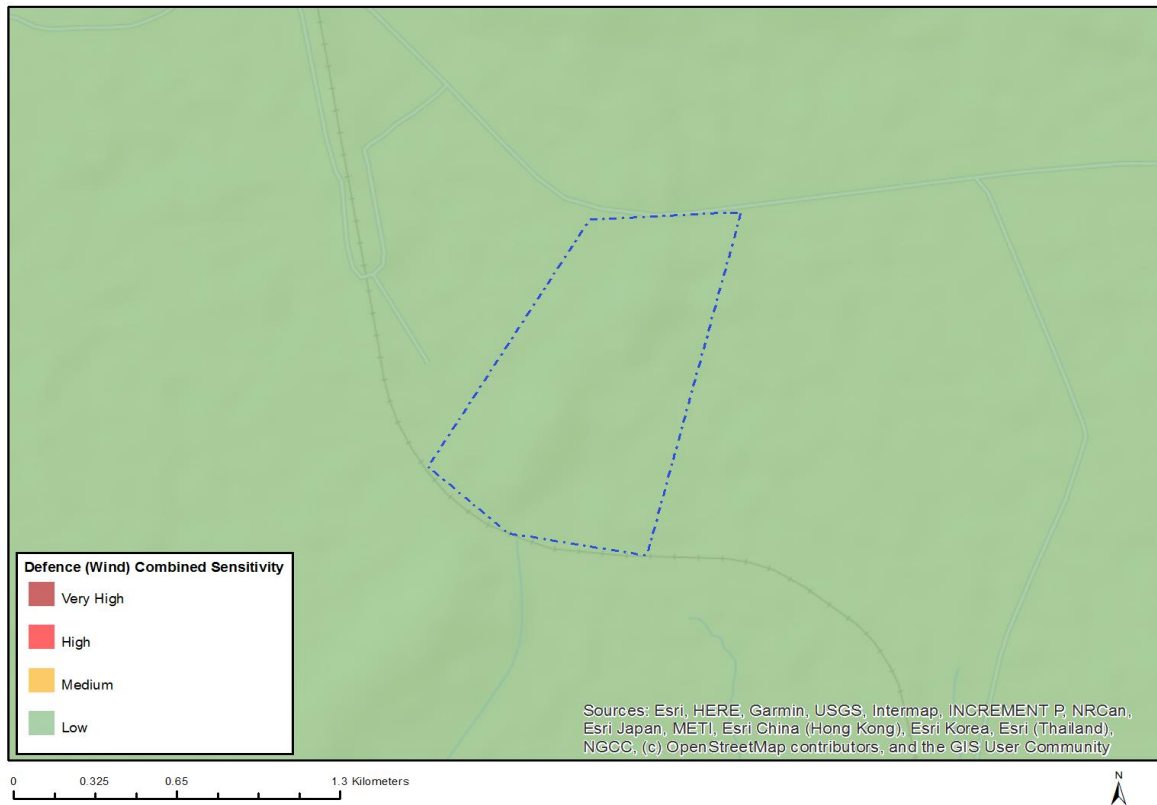


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE DEFENCE (WIND) THEME SENSITIVITY

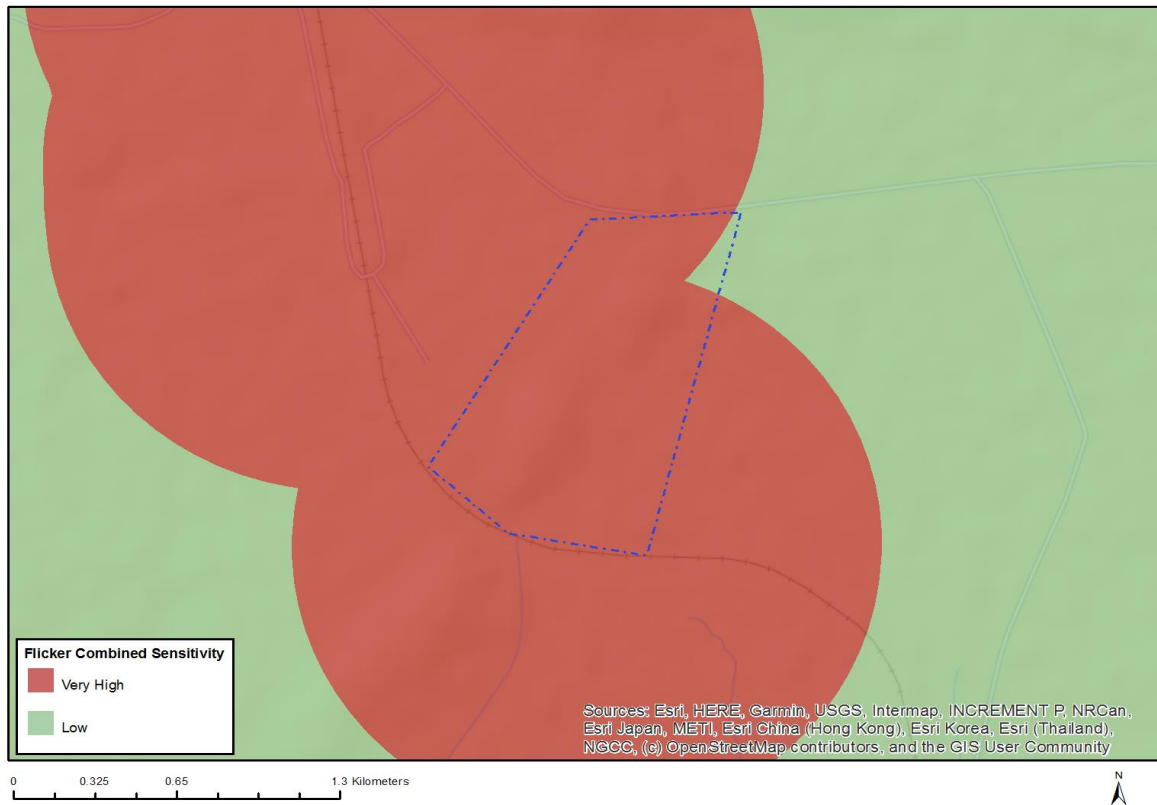


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE FLICKER THEME SENSITIVITY

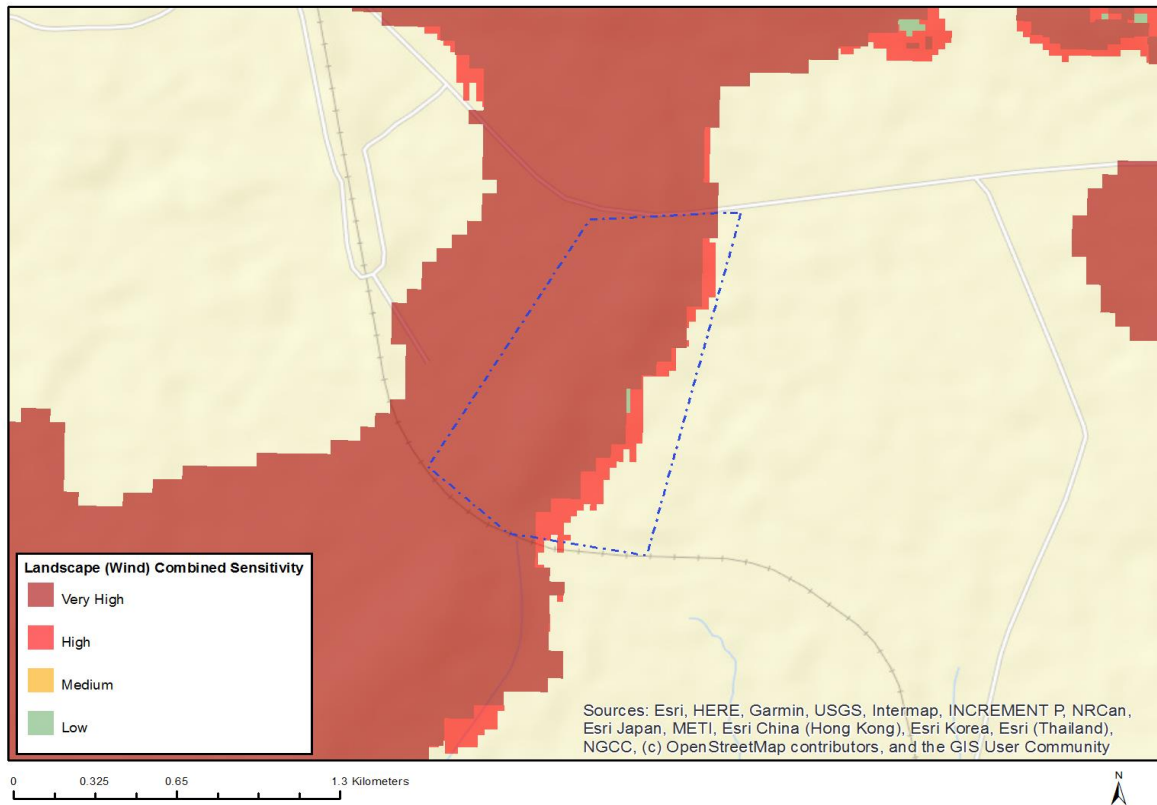


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Area of low sensitivity
Very High	Potential temporarily or permanently inhabited residence

MAP OF RELATIVE LANDSCAPE (WIND) THEME SENSITIVITY

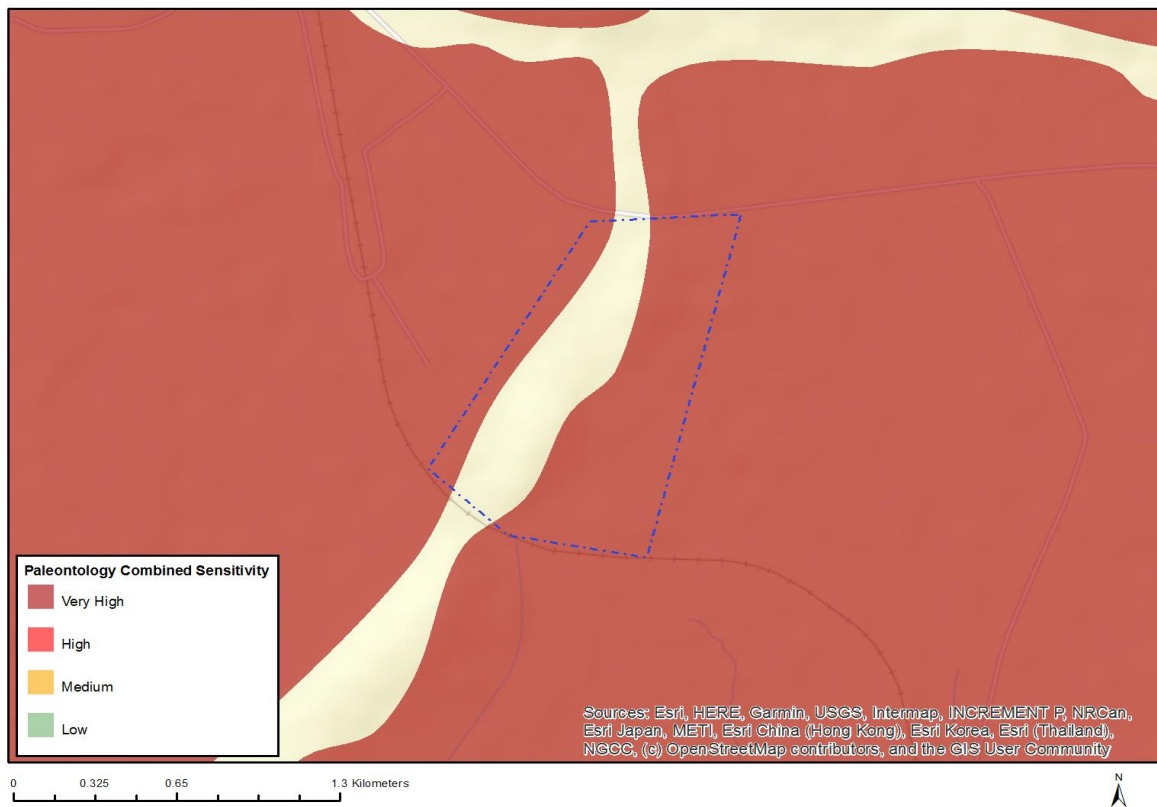


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Slope between 1:4 and 1:10
Low	Slope less than 1:10
Very High	Slope more than 1:4
Very High	Mountain tops and high ridges

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

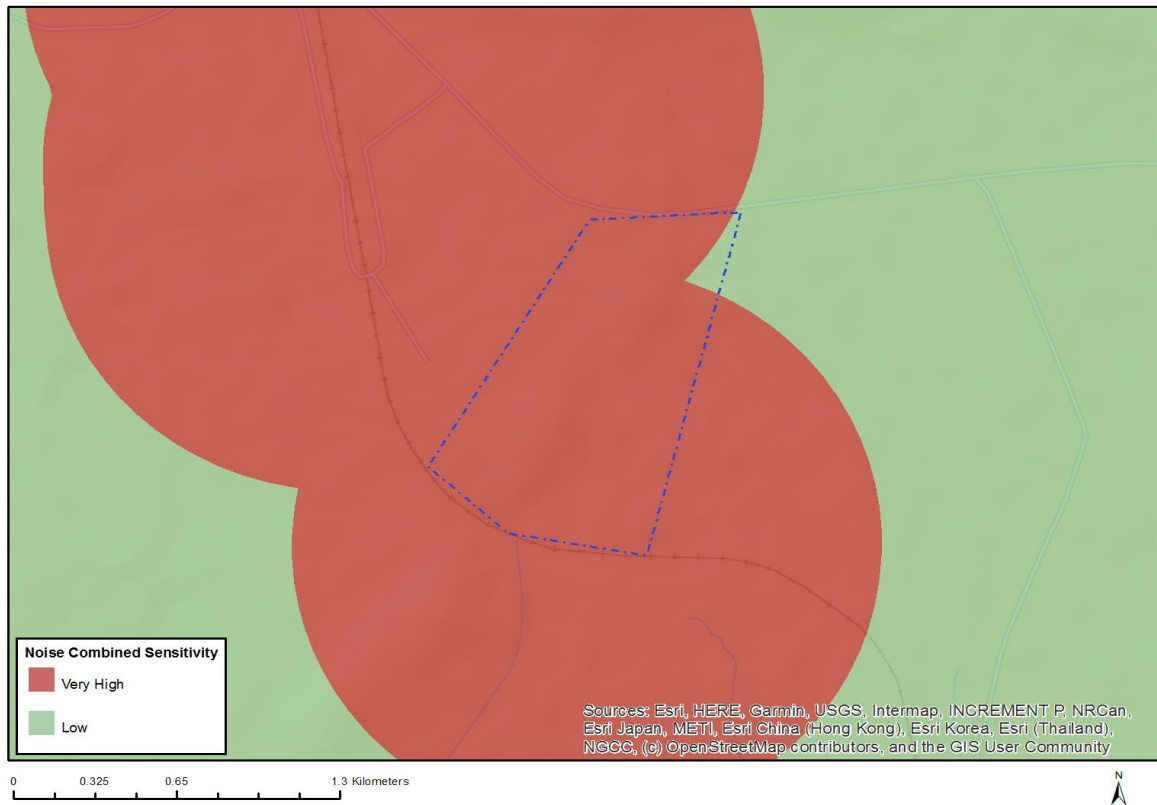


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Features with a Very High paleontological sensitivity

MAP OF RELATIVE NOISE THEME SENSITIVITY

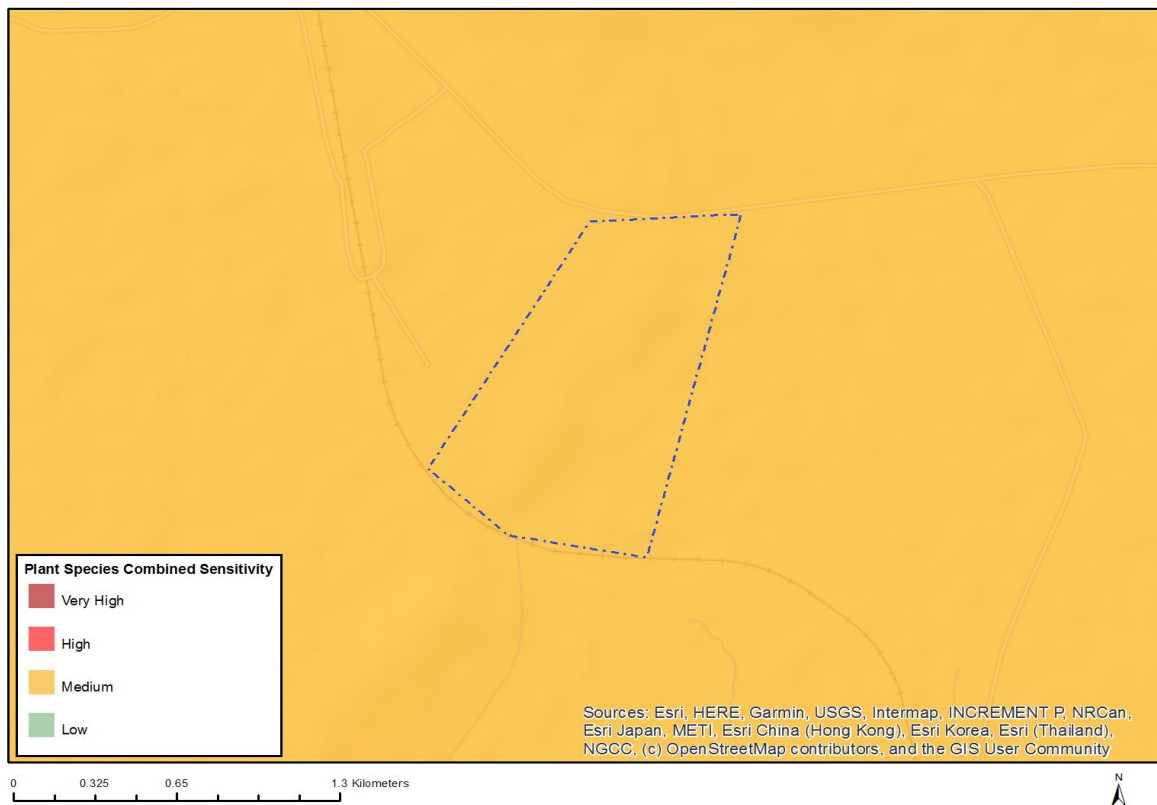


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Area of low sensitivity
Very High	Potential temporarily or permanently inhabited residence

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



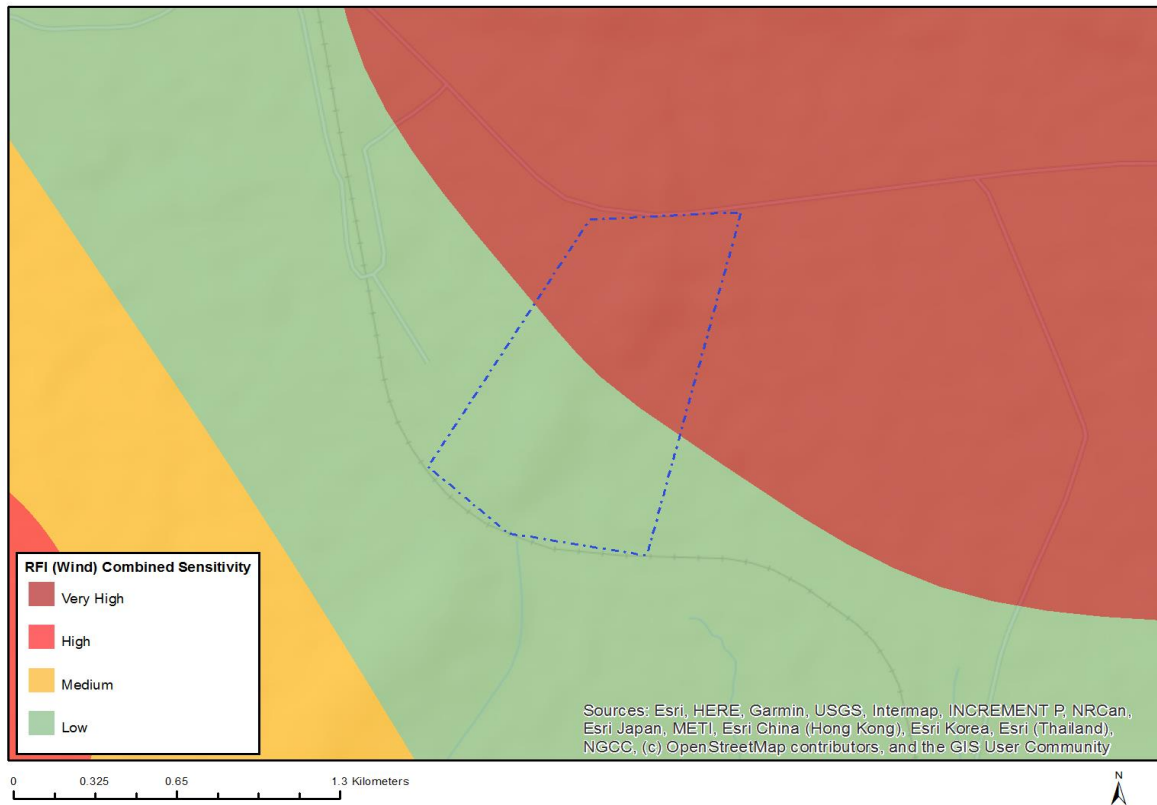
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Isolepis expallescens
Medium	Hereroa concava
Medium	Sensitive species 945

MAP OF RELATIVE RFI (WIND) THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity for telecommunications;None;More than 60 km from a Weather Radar installation
Very High	Within 5 km of a Sentech High Power Terrestrial Broadcasting Facility;None;More than 60 km from a Weather Radar installation

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity