

Appendix K

BIODIVERSITY OFFSET: TECHNICAL MEMOR-
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ABO Uvemvane Wind Energy Facility 1

BIODIVERSITY OFFSET TECHNICAL MEMORANDUM

DFFE Reference Number: 14/12/16/3/3/2/2803





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BIODIVERSITY OFFSET TECHNICAL MEMORANDUM

DFFE Reference Number: 14/12/16/3/3/2/2803

REPORT (FINAL) CONFIDENTIAL

PROJECT NO. 41106304

OUR REF. NO. 41106304

DATE: AUGUST 2026



ABO Uvemvane Wind Energy Facility 1

BIODIVERSITY OFFSET TECHNICAL MEMORANDUM

DFFE Reference Number: 14/12/16/3/3/2/2803

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SPECIALIST DECLARATION

1 INTRODUCTION

WSP Group Africa (Pty) Ltd (WSP) was appointed by ABO Energy South Africa (Pty) Ltd, on behalf of ABO Uvemvane Wind Energy Facility 1 (Pty) Ltd (the Applicant), to undertake an Environmental Impact Assessment (EIA) for the proposed ABO Uvemvane Wind Energy Facility 1, located near Heidelberg and Balfour in Gauteng and Mpumalanga, respectively. The EIA is being undertaken in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the applicable EIA Regulations, as amended.

ABO Uvemvane Wind Energy Facility 1 (Pty) Ltd proposes to develop the ABO Uvemvane Wind Energy Facility 1 (WEF 1) (the Project), comprising of up to 20 wind turbines with a total generating capacity of up to 170 MWac, together with associated infrastructure.

In the South African environmental authorisation context, biodiversity offsetting is a measure of last resort and not a substitute for appropriate project planning or impact avoidance. The National Biodiversity Offset Guideline, published under section 24J of NEMA in June 2023, provides a nationally consistent basis for identifying, designing and implementing offsets for terrestrial and freshwater biodiversity. It requires the mitigation hierarchy to be applied sequentially: impacts must first be avoided, then minimised and rehabilitated or restored, with an offset considered only where significant residual impacts remain. The purpose of an offset is to secure measurable, additional and enduring biodiversity gains that counterbalance those residual losses, with the offset outcome directed towards appropriate biodiversity priorities and secured through enforceable implementation, management and monitoring arrangements.

Against this framework, this technical memorandum considers and provides a reasoned statement on whether residual biodiversity impacts associated with the current Project layout are of a nature and significance that would trigger a biodiversity offset. The review is based on the Terrestrial Biodiversity, Plant, Animal (excluding avifaunal, bat and butterflies) and Aquatic, Specialist Assessments, all completed in support of the EIA process for the Project and considers the extent to which avoidance, minimisation and rehabilitation have been incorporated through Project design and subsequent micro-siting. Sensitive areas as indicated by these specialists are depicted in Figure 1-2, avifaunal, bat and butterfly sensitivities are indicated but not part of this scope. This report summarises the receiving environment and key biodiversity sensitivities, reviews the residual impacts identified by the specialist studies, and sets out the outstanding matters that must be closed before the offset determination can be regarded as final. Any ultimate offset requirement remains subject to the competent authority's consideration through the environmental authorisation process.

1.1 PROJECT LOCATION AND SETTING

The Project is located approximately 9 km west of Balfour in the Dipaleseng Local Municipality, Gert Sibande District Municipality, Mpumalanga, and approximately 14 km south-east of Heidelberg in the Lesedi and Midvaal Local Municipalities, Sedibeng District Municipality, Gauteng (Figure 1-1). The proposed development footprint is up to 67.2 ha, equivalent to approximately 1.12% of the total affected property area.

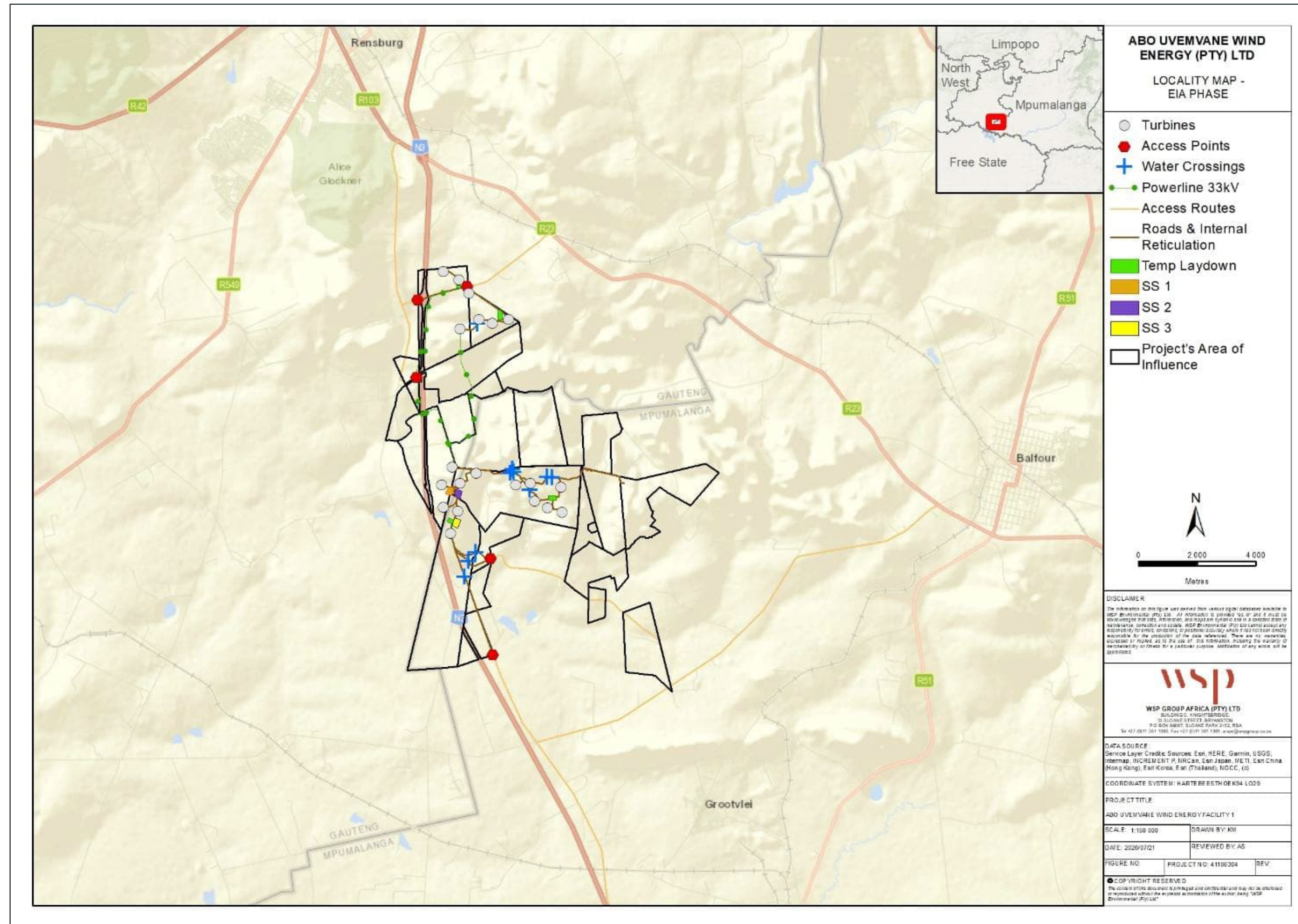


Figure 1-1 - Location and layout of the project area

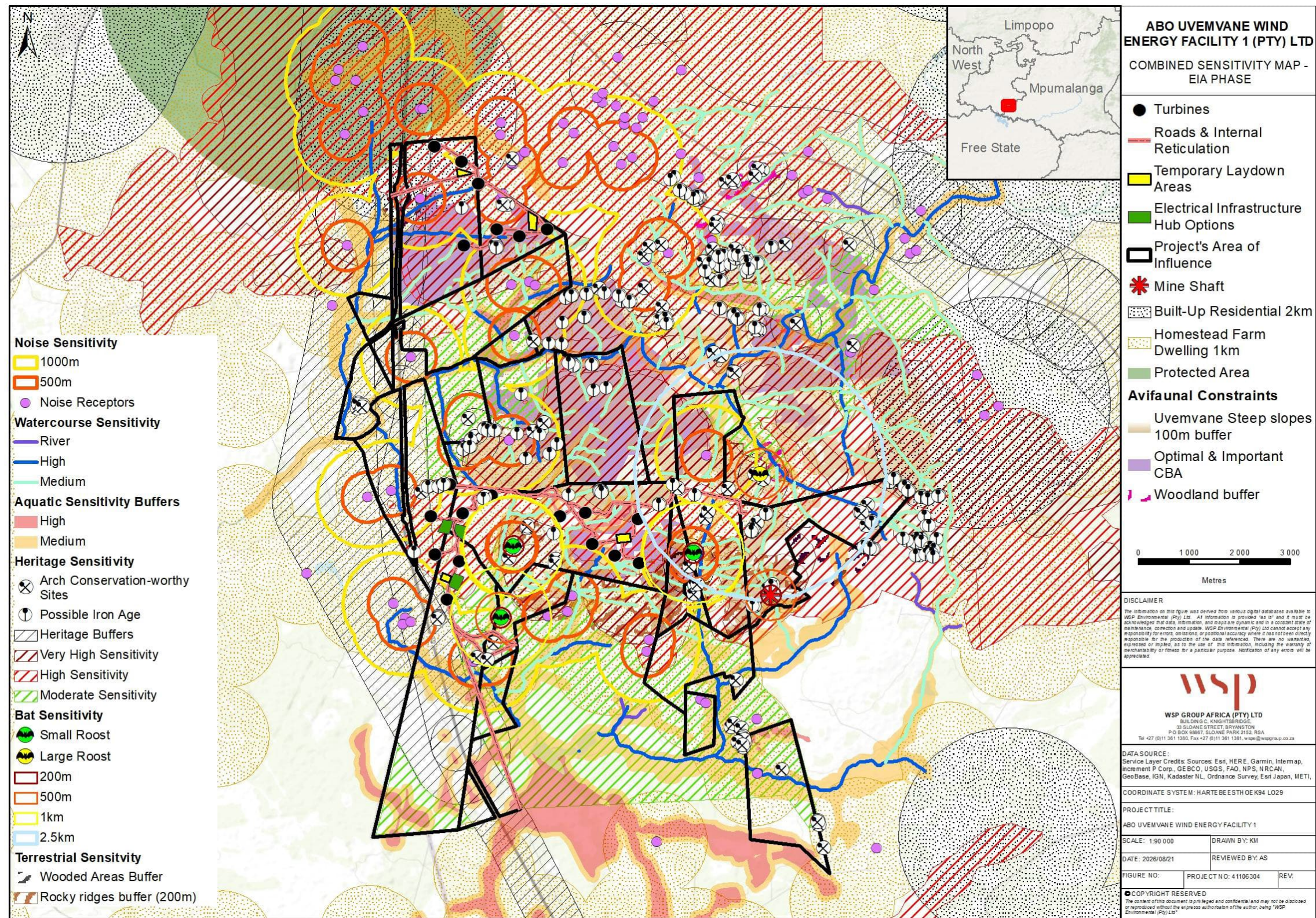


Figure 1-2 - Sensitivity Map

1.2 APPLICABLE LEGISLATION, POLICY AND GUIDELINES

The proposed ABO Uvemvane Wind Energy Facility 1 is subject to South African environmental legislation governing biodiversity conservation, environmental impact assessment and biodiversity offsetting. The Project is being assessed as part of an Environmental Impact Assessment (EIA) process undertaken in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), including the Environmental Impact Assessment Regulations. NEMA establishes the environmental management principles that require disturbance of ecosystems and loss of biodiversity to be avoided, minimised and remedied where possible, and provides the basis for applying the mitigation hierarchy during project planning and decision-making.

The **National Environmental Management: Biodiversity Act**, 2004 (Act No. 10 of 2004) (NEMBA) provides the legislative framework for the management and conservation of South Africa's biodiversity. Relevant provisions include the **National List of Threatened Ecosystems, Threatened or Protected Species (ToPS) Regulations**, and the management of alien and invasive species. Biodiversity features identified within and surrounding the Project Area of Influence, including threatened ecosystems, species of conservation concern, Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), were considered in accordance with NEMBA and associated biodiversity planning tools.

The **National Biodiversity Offset Guideline** (Government Gazette 48841, Notice 3569 of 23 June 2023), published under Section 24J of NEMA, provides the primary policy framework for determining whether biodiversity offsets are required. The Guideline stipulates that biodiversity offsets are a measure of last resort and may only be considered once all reasonable and feasible avoidance, minimisation, rehabilitation and restoration measures have been applied. Biodiversity offsets are intended to address significant* residual impacts on biodiversity that remain after application of the mitigation hierarchy and must secure measurable, additional and enduring conservation outcomes.

Provincial biodiversity planning instruments were also considered in the assessment. These include the **Mpumalanga Biodiversity Sector Plan (MBSP)** and the **Gauteng Conservation Plan (Gauteng C-Plan)**, which identify CBAs, ESAs and biodiversity process areas required to achieve provincial conservation targets and maintain ecological functioning. These spatial biodiversity plans informed the assessment of biodiversity sensitivity, habitat condition and potential residual impacts associated with the Project.

In addition, the **National Web-Based Environmental Screening Tool and the associated Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity and Aquatic Biodiversity** were considered during the specialist assessment process. These instruments provide standardised approaches for identifying sensitive biodiversity features and evaluating project-related impacts. Relevant specialist studies, including terrestrial biodiversity, fauna, flora, aquatic biodiversity, avifauna and bat assessments, form the basis of the biodiversity offset screening presented in this memorandum.

* significance is determined with reference to the type and sensitivity of the biodiversity affected, the extent and duration of the loss, reversibility, irreplaceability, ecological context and cumulative effects.

1.3 ASSUMPTIONS AND LIMITATIONS

Any subsequent layout changes or specialist finding that results in a significant residual loss of priority biodiversity, ecological function or connectivity must trigger a renewed offset screening before construction proceeds.

1.4 PRIORITY BIODIVERSITY

The spatial relationship between the Project Area of Influence (PAOI), the Mpumalanga Biodiversity Sector Plan (MBSP, 2024) and the Gauteng Conservation Plan (Gauteng C-Plan, 2024) is shown in Figure 1-3. Field observations and aerial imagery indicate that portions of mapped Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) have been modified by historical or ongoing cultivation. The mapped classification must therefore be considered alongside field-confirmed habitat condition and ecological function when assessing Project risk.

The Mpumalanga Biodiversity Sector Plan (MBSP) delineations indicate that portions of the east and centre of the PAOI are classified as CBA Irreplaceable, with smaller areas designated as CBA Optimal and ESAs. The remaining areas are categorized as “other natural areas” or “modified habitats.” The statuses of the MBSP CBA delineated habitat patches in the PAOI and surrounding landscape are predicated on a combination of the following attributes, as per data received from the Mpumalanga Parks and Tourism Agency (MPTA) (M. Lötter):

- Vegetation:
 - Andesite Mountain Bushveld;
 - Soweto Highveld Grassland;
 - Tsakane Clay Grassland;
 - Gold Reef Mountain Bushveld;
- Wetlands:
 - Central Bushveld Group One;
- Amphibians:
 - Giant Bullfrog (*Pyxicephalus adspersus*);
- Invertebrates:
 - *Chrysoritis aureus* buffer;
 - *Chrysoritis aureus* (GDARD model);
- Plants:
 - *Brachycorythis conica* subsp. *transvaalensis*;
- Process:
 - Escarpment south;
 - Climate change refugia;
 - Macro-corridor connecting to Gauteng Climate Change corridor;
 - Critical linkages; and
 - Core corridor.



The Gauteng C-Plan identifies extensive ESAs within the Gauteng portion of the PAOI, together with smaller areas of CBA 1 and CBA 2. The mapped triggers include Red List plant, bird and invertebrate habitat, Orange List plant habitat, bioclimatic zones, priority quaternary catchments and primary vegetation.

CBAs are required to meet provincial biodiversity targets and maintain ecological processes and connectivity. Transformation within these areas should therefore be avoided.

The Project layout, including the associated infrastructure was revised during the draft EIA Phase based on the specialist assessment and recommendation. The turbine layout was further revised in order to avoid sensitive features and buffer areas, which has resulted in a reduced development footprint (from 110ha to 67.2ha) and resulted in a reduction in the number of turbines from 27 to 20

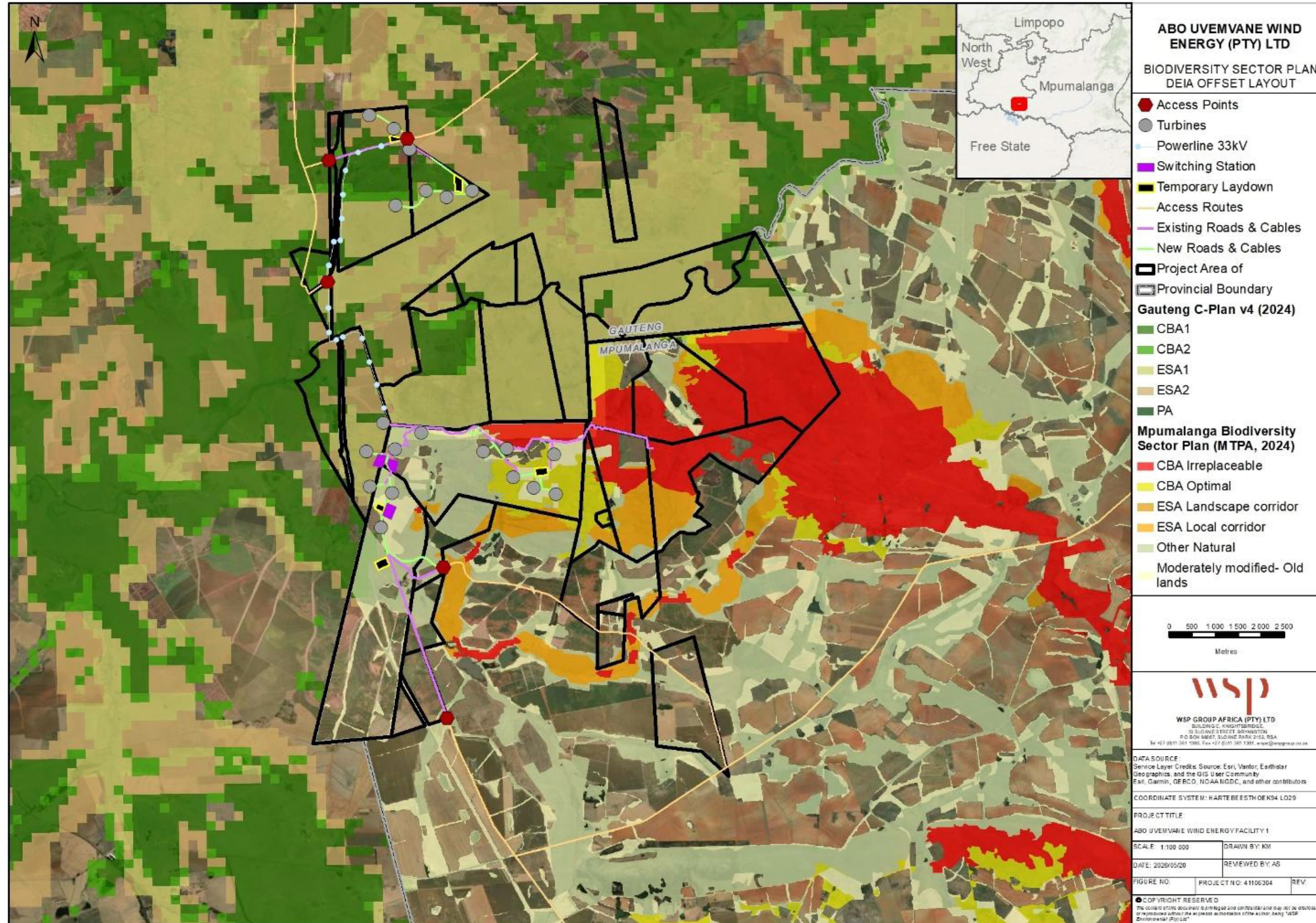


Figure 1-3 - PAOI in relation to mapped Protected Areas, CBAs and ESAs, as per the Gauteng C-Plan (2024) and the MBSP (2024).

1.4.1 LANDSCAPE CONTEXT AND EXISTING IMPACTS ON TERRESTRIAL BIODIVERSITY

The following notes summarise the general landscape context and current impacts observed in the PAOI during the field programme Zinn 2026):

The field programme comprised two field surveys; a dry-season field survey, which was conducted from the 29th July to 2nd August 2024; and a wet-season field survey, which was conducted from the 20th to 24th January 2025. (Zinn 2026).

- The PAOI is large and encompasses a series of rocky ridges and hills, bisected by the Suikerbosrand River and numerous small water courses and streams;
- Most of the land in the centre of the PAOI remains natural and under wildlife or livestock management, with isolated cultivated fields also present. Cultivated fields are more prevalent along the flat and open periphery of the PAOI;
- Stands of alien invasive trees including *Acacia dealbata*, *Acacia mearnsii*, *Eucalyptus camaldulensis* and *Populus x canescens* are present in the PAOI, but are not currently abundant or widespread;
- Game/livestock fences typically delineate farm boundaries and numerous internal fences further partition farms into smaller game or grazing camps. The PAOI is also fragmented by many farm roads/tracks, as well as larger district and national roads, such as the N3 Highway, which intersects the PAOI along its western boundary; and
- Agricultural land uses (i.e., crop production and livestock farming) dominate most of the land surrounding the PAOI, and accordingly large areas are modified by cultivated fields.

1.4.1.1 Habitat Units in the PAOI

Seven habitat units were identified within the PAOI during the terrestrial biodiversity field surveys (Zinn 2026), comprising four natural habitat units and three modified habitat units:

Natural Habitats

- Mountain Bushveld;
- Rocky Shrubland and Grassland;
- Watercourses (Rivers and Wetlands);
- Natural Dry Grassland;

Modified Habitats

- Secondary Grassland;
- Alien Tree Stands; and
- Cultivated Fields.

These habitat units are mapped for the PAOI and shown in Figure 1-4 below. The infield assessments completed by Zinn 2026, were used to field truth sensitive areas as they intersect with CBA areas. The results indicate that certain CBA areas have been transformed and are no longer representative of their natural or near natural state. Furthermore, these results confirmed all sensitive areas that must be avoided.

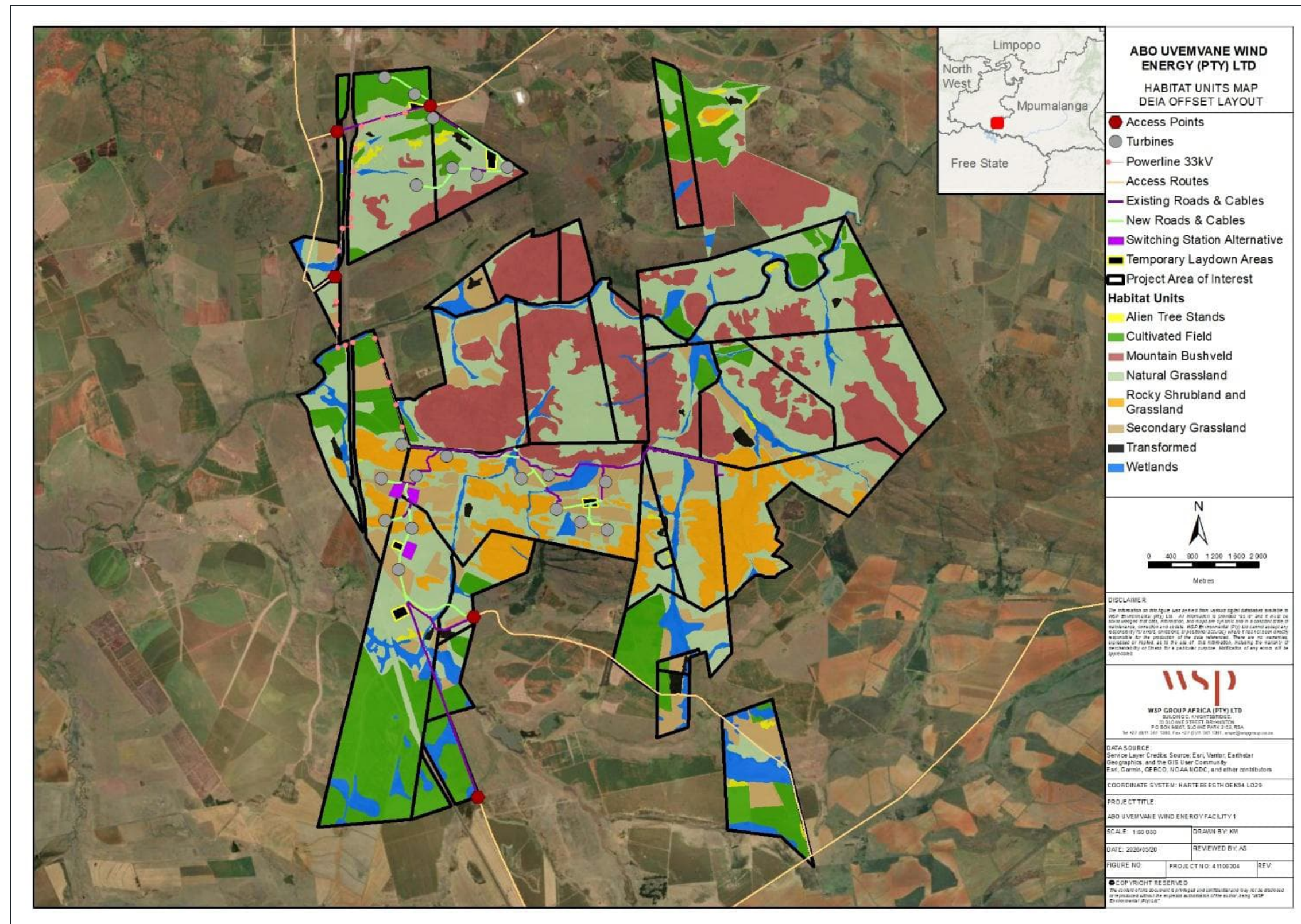


Figure 1-4 - Habitat units in the project area, their associated SEI (Site Ecological Importance) and field observation points

2 BIODIVERSITY OFFSETTING

2.1 OFFSET GUIDELINES

The National Biodiversity Offset Guideline was published for implementation on 23 June 2023 under section 24J of NEMA (Government Gazette 48841, Notice No. 3569). The Guideline must be applied within the mitigation hierarchy established by section 2(4)(a)(i) of NEMA. A biodiversity offset is considered only where significant residual impacts remain after reasonable and feasible avoidance, minimisation and rehabilitation measures have been applied and medium or higher residual impact remain (Figure 2-1). The Guideline supports, but does not replace, the environmental authorisation process or the competent authority's decision-making function.

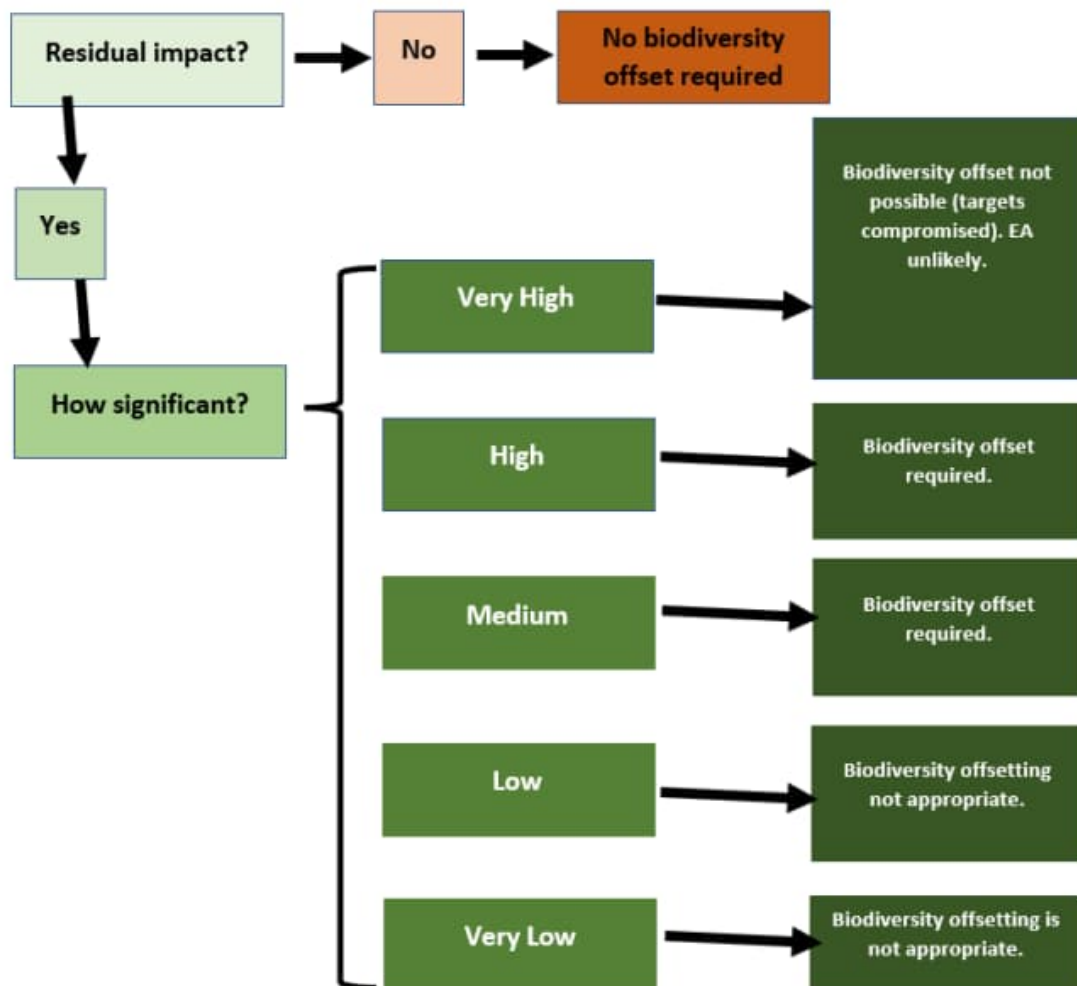


Figure 2-1 - Flow Diagram: When a Biodiversity Offset is Required) Biodiversity Offset Guideline (2023)

2.2 APPLICATION OF THE MITIGATION HIERARCHY

Biodiversity offsets are the final step in the mitigation hierarchy (Figure 2-1). The offset screening must therefore be based on the residual impacts that remain after avoidance, minimisation and rehabilitation have been applied to the final Project layout. The design measures incorporated into the Project are summarised in Section 2.2.1, while the residual impact findings and outstanding layout close-out matters are addressed in Section 3.

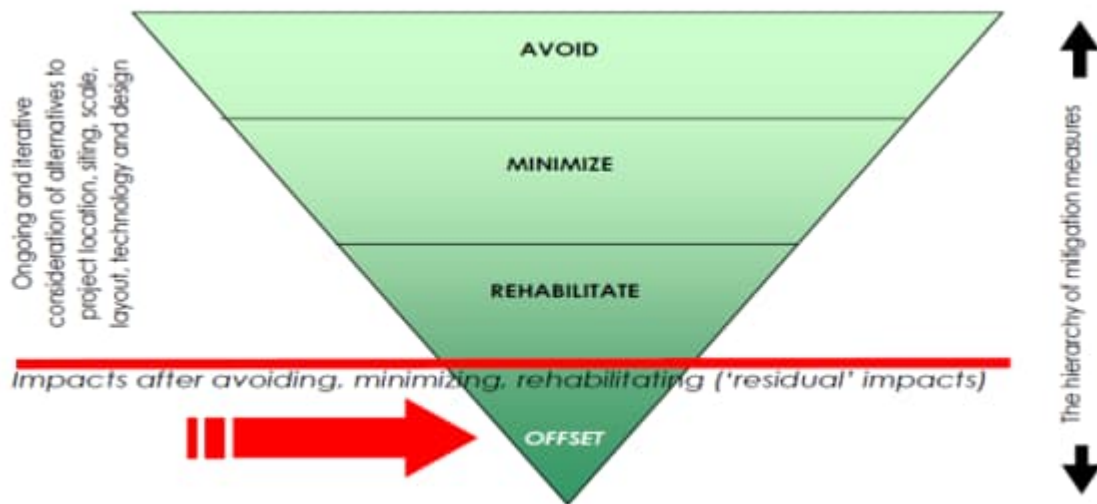


Figure 2-2 - Mitigation Hierarchy (Biodiversity Offset Guideline (2023))

2.2.1 INCORPORATED ENVIRONMENTAL MEASURES

Given the sensitive nature of much of the Project area as described by specialist studies, a number of environmental mitigation measures were incorporated into the Project design per phase, to avoid, minimise and rehabilitate potential effects to biodiversity, offsets were not contemplated. These demonstrate alignment with the mitigation hierarchy and are included below.

As with the assessment of potential impacts/risks, the impact management actions have been arranged according to the following main Project phases:

- Pre-Construction and Construction;
- Operational; and
- Decommissioning

For each impact management action, the following information is provided:

- Category: The category within which the potential impact/risk occurs;
- Potential impact/risk: Identified potential impact/risk resulting from the pre-construction, construction, operation, and decommissioning of the proposed Project;
- Description: Description of the possible impact management action;

- Prescribed standards or practices: Prescribed environmental standards or practices with which the impact management action must comply. Note that only key standards or practices have been listed;
- Mitigation type: The type of mitigation measure. This includes the following:
 - Avoidance;
 - Minimisation;
 - Rehabilitation or restoration;
 - Offsetting;
- Time period: The time period when the impact management actions must be implemented; and
- Responsible persons: The persons who will be responsible for the implementation of the impact management actions.

2.2.1.1 Pre – Construction and Construction Phase

Terrestrial Biodiversity Plants and Animals

Avoidance:

- As far as possible, proposed Project infrastructure should be located outside of land designated CBA 1 and CBA 2 and natural habitat classified as Vulnerable and Endangered;
 - The maintenance road in the east of PAOI that intersects CBA Irreplaceable land must not be upgraded. It should be used in its current condition, with all vehicle related disturbance strictly controlled and rehabilitated to avoid negative impacts;
 - Wind Turbines 05, 06 and 07 should be oriented in a manner that ensures the majority of their disturbance footprints are contained within the designated ridge buffer;
 - If feasible, the two existing farm roads that provide access to the facility from the south, should be formalised and upgraded rather than establishing the proposed new route to the north of these that requires the development of a water-crossing
- As far as possible proposed permanent Project infrastructure should be located in areas of modified habitat (i.e., Cultivated Fields and Secondary Grassland);
 - It is recommended that Substation Site 2 is selected as the preferred site. This site is entirely located within Secondary Grassland (old lands).
- All temporary construction footprints, (e.g., construction camps, laydown areas), should only be located in areas of modified habitat:
 - It is recommended that Temporary Laydown Area 2 should be relocated to a nearby cultivated field or confined entirely within the Secondary Grassland patch that comprises the northern portion of its current footprint;
- A pre-construction walkdown of the approved development footprints should be conducted during the wet/growing season to identify sensitive biodiversity and inform the micro-siting of Project infrastructure to already disturbed sites and other relevant management measures.
- All temporary construction footprints, (e.g., construction camps, laydown areas), should only be located in areas of modified habitat.

Minimisation:

- All vegetation clearing for the Project should be restricted to the proposed Project footprints only, with no clearing permitted outside of these footprints;
- The footprints to be cleared of vegetation should be clearly demarcated prior to construction, to prevent unnecessary clearing outside of these areas;
- No heavy vehicles should travel beyond the marked/demarked work zones;
- Removed topsoil should be stockpiled and used to rehabilitate all disturbed areas.

Rehabilitation

A rehabilitation/ landscaping protocol should be developed and implemented to stabilise and revegetate all non-operational sites that have been disturbed by construction activities. The protocol should include:

- The correct stockpiling of topsoil that was cleared from development footprints during site preparation;
- The correct contouring of the post-construction landform to limit potential erosion;
- Compacted soils should be ripped and loosened to facilitate vegetation establishment;
- Topsoil removed during construction should be applied to all non-operational sites that were disturbed during construction and require revegetation; and
- Active revegetation should be conducted using grass species that are indigenous, locally occurring and perennial.

Fauna Species of Conservation Concern

The fauna SCC identified during the field work were: Mountain Reedbuck, Grey Rhebok, Serval, Cape Clawless Otter, Southern African Hedgehog, Vlei Rat.

Avoidance and Minimisation Fauna

- An Environmental Control Officer (ECO) should be on-site during vegetation clearing to monitor and manage any wildlife-human interactions;
- As appropriate, temporary barriers should be erected around construction trenches and excavations to prevent fauna becoming trapped;
- Any fauna species trapped in construction areas, should be safely and correctly relocated to an adjacent area of natural habitat;
- A low-speed limit (recommended 20-40 km/h) should be enforced on site to reduce wildlife collisions;
- No fauna may be intentionally killed or injured by on-site contractors and workers. Handling, poisoning, snaring and killing of on-site fauna by contractors and workers must be strictly prohibited;
- Access to the WEF's interior access road network should be strictly controlled to limit the potential for illegal hunters to gain easy access to the area;
- General noise abatement equipment should be fitted to all construction machinery and vehicles;

- Dust suppression using water bowzers should be undertaken on all roads and other sites where dust entrainment occurs;
- The rules and regulations concerning fauna should be communicated to contractors through on-site signage and awareness training; and
- An incidence register should be maintained throughout all phases of the Project detailing any fauna mortalities/injuries caused by on-site activities. The register should be used to identify additional biodiversity management requirements.

Avoidance and Minimisation Flora

- Additional targeted walkdown surveys of the proposed development footprints should be conducted during the pre-construction planning phase in both the wet/summer season and the dry/winter season to confirm the presence/absence of any potentially impacted flora SCC and protected flora species;
- Data from the walkdown surveys should then be used to inform:
 - Additional micro-siting requirements for proposed Project infrastructure, including avoiding a 200 m buffer around Red List species locations, as prescribed by SANBI (2026); and.
 - The need for, and scope of, an Flora SCC Management Plan. If a plan is required, it should be developed during the pre-construction planning phase and include:
 - Species-specific management and monitoring actions for any flora SCC recorded on-site; and
 - Procedure for rescuing and relocating provincial Protected flora species occurring within infrastructure footprints
- An AIS control and eradication plan must be developed for the Project that focuses on controlling and eradicating AIS occurring at sites disturbed by proposed Project activities. It is recommended that the plan should be developed with input and guidance from an invertebrate specialist regarding the management of threatened butterfly species. Operationally, the plan should include:
 - Identification of AIS management units
 - Prioritisation of sites and species requiring control;
 - Targets and indicators of success;
 - Scheduling of AIS control;
 - Species-specific control methods, using a combined approach of both chemical and mechanical control methods; and
 - Provision for follow-up treatments, as informed by regular AIS monitoring

Avoidance and Minimisation Terrestrial Biodiversity

See mitigation measures for Direct loss and disturbance of natural habitat, and

- All proposed access roads and powerlines should be aligned, as far as possible, with existing linear infrastructure (roads/tracks), and wherever possible micro-sited to already disturbed sites.

Rehabilitation

See rehabilitation measures for Direct loss and disturbance of natural habitat.

Aquatic Biodiversity

- A buffer of 50m from the delineated edge of larger watercourses and wetland corridors should be maintained to protect these aquatic habitats.
- Clearing of indigenous vegetation should be avoided and should not take place within the aquatic features and the recommended buffers.
- Any disturbed areas should be revegetated with suitable vegetation to minimise the risk of erosion and sedimentation of aquatic habitats following rainfall events.
- The existing road infrastructure should be utilised as far as possible to minimise the overall disturbance. There are 10 watercourse crossings associated with the internal roads for the final proposed layout. Six of these crossings are associated with existing informal farm roads, and four will be new watercourse crossings. One crossing is over a minor watercourse in the northern section and the other three crossings are on an unnamed stream with a wider associated wetland habitat. Efforts should be made to avoid making these additional road crossings if possible.
- During the construction phase, proper site management must be undertaken to address on-site stormwater management and prevention of pollution from any potential pollution sources during construction activities, such as hydrocarbon spills. Any stormwater that does arise within the construction site must be handled appropriately to trap sediments and reduce flow velocities. Where feasible, the water supply, sanitation services, as well as solid waste management services required for the proposed Project should preferably be provided by an off-site service provider.

2.2.1.2 Operational Phase

Terrestrial Biodiversity

- Active alien invasive species (AIS) control should continue throughout the operational phase, as per the approved AIS control and eradication programme.
- The Project proponent should engage all relevant farmers and the local Fire Protection Association (FPA) to explore the development of a coordinated Grassland Burning Management Programme. This programme should be informed by specialist guidance concerning maintaining and protecting habitat for the threatened butterfly species;
- As required, firebreaks should be maintained around infrastructure that are susceptible to faults/shorts that may cause accidental wildfires;
- Construction- and maintenance workers should be trained on the dangers of wildfire and the need to actively prevent unplanned/accidental fires.
- The Project proponent must keep actively informed about new research in the field of vibration impacts on fauna and potential mitigation options; and
- Based on the findings of new research, the biodiversity management plan for the proposed Project should be updated to include additional mitigation measures and these should be implemented on-site.
- All sites disturbed by construction activities should be contoured, stabilised and actively revegetated, as per the rehabilitation/ landscaping protocol; and
- Erosion and sedimentation prevention and control measures (e.g., brush-packing, gabions and silt-traps) should be implemented at any sites of erosion or sedimentation

The Terrestrial Biodiversity specialist report concluded: *The infrastructure layout has undergone a series of revisions in line with the mitigation hierarchy to avoid and minimise potential negative impacts on sensitive biodiversity features. These have inter alia, prioritised where possible the*

placement of wind turbines in areas of modified habitat and the alignment of proposed access roads with existing district gravel roads and farms tracks. Nonetheless, potential negative impacts on terrestrial biodiversity remain, and these have been identified and assessed for the proposed Project for both pre- and post-mitigation scenarios. Several management measures have been recommended in this report to further minimise and rehabilitate negative impacts, and if successfully implemented these will effectively reduce impact significance. It is recommended that all relevant mitigation and management measures for the proposed Project should be incorporated into an integrated Biodiversity Management/Action Plan.

Flora SCC

Mitigation measures applied during the construction phase correctly would negate operational phase mitigation measures apart from:

- Active alien invasive species control should continue throughout the operational phase, as per the approved AIS control and eradication programme

The Flora specialist report concludes: *Several mitigation/management measures have been recommended to reduce potential negative impacts on flora SCC. Included amongst these is the prioritisation of development footprints to disturbed sites, confinement of the disturbance footprints to the minimum areas required for construction purposes, and completion of additional targeted walkdown surveys of the final approved development footprints during both the wet/summer and dry/winter seasons to verify the presence/absence of flora SCC and to inform micro siting recommendations and any species-specific management and monitoring requirements. The successful implementation of all the recommended mitigation measures presented in this report can effectively manage the identified impacts on flora SCC.*

Fauna SCC

Avoidance and Minimisation

- No off-road driving is permitted for vehicles and mobile machinery used during operations and for maintenance purposes.
- A low-speed limit (recommended 20-40 km/h) should be enforced on site to reduce wildlife collisions.
- Access to the WEF's interior access road network should be strictly controlled to limit the potential for illegal hunters to gain easy access to the area;
- No fauna may be intentionally killed or injured by on-site contractors and workers. Handling, poisoning, snaring and killing of on-site fauna by contractors and workers must be strictly prohibited.
- The rules and regulations concerning fauna should be communicated to maintenance personnel through on-site signage and awareness training.

The fauna impact study concluded that impacts can be effectively avoided and mitigated through the successful implementation of the mitigation measures recommended in the report. It is also recommended that all relevant mitigation and management measures for the proposed Project should be incorporated into an integrated Biodiversity Management/Action Plan.

Aquatic Biodiversity

- The recommended buffer of at least 50m from the larger watercourse and wetland corridors along the western and eastern proposed development area boundaries and the proposed project activities should be maintained.

- Clearing of indigenous vegetation should be avoided and should not take place within the aquatic features and the recommended buffers. Any disturbed areas should be revegetated with suitable vegetation to minimise the risk of erosion and sedimentation of aquatic habitats following rainfall events. The existing road infrastructure should be utilised wherever possible to minimise overall disturbance.
- There are 9 watercourse crossings associated with the internal roads for the final proposed layout. Six of these crossings are associated with existing informal farm roads, and three new watercourse crossings are proposed. In terms of the proposed new crossings:
- The crossing to WT08 is over a minor seasonal watercourse in the northern section. A small low-water crossing over this small watercourse would be acceptable
- There are two proposals for a crossing to WT14 and WT17. Both crossings are on a small stream, located between an upstream and downstream dam. There is an existing road crossing near the upstream point. It is recommended that this road and crossing be realigned to the new proposed road. This crossing would have less impact than the downstream one as it is close to the existing disturbance at the road and a fenceline. The downstream road alignment alternative is in a wider wetland area.
- Two alternative crossings are proposed over a small watercourse to access WT 24. The downstream (southern) one aligns with an existing road over a small dam wall but will need upgrading. Use of this road alignment is preferred as the watercourse is already disturbed at this location.
- During the construction phase, proper site management must be undertaken to address on-site stormwater management and prevention of pollution measures from any potential pollution sources during construction activities, such as hydrocarbon spills. Any stormwater that arises within the construction site must be managed appropriately to trap sediment and reduce flow velocities. Any water supply, sanitation, and solid waste management services required for the proposed project should preferably be provided by an off-site service provider.
- Any disturbance during the operation phase should be limited to the approved footprint and disturbance of the soil and natural vegetation cover should be avoided.
- Stormwater run-off infrastructure must be designed to mitigate both the flow and water quality impacts of any stormwater leaving the developed areas. The runoff should rather be dissipated over a broad area covered by natural vegetation or managed using appropriate channels and swales.
- Invasive alien plant growth and signs of erosion within the project area should be monitored on an ongoing basis to ensure that the disturbed areas do not become infested with invasive alien plants. Should any erosion features develop, they should be stabilised as soon as possible.
- With regard to the 33kV overhead/underground line to connect the northern and southern parts of the facility, disturbance of the watercourse/wetland corridor crossings must be minimised and disturbance of the wetland habitats avoided as far as possible. It may be necessary to use overhead lines where disturbance of wetland habitat cannot be avoided.
- During decommissioning, disturbance to the freshwater ecosystems should be limited as far as possible. Disturbed areas may need to be rehabilitated and revegetated.
- Proper site management must be undertaken during decommissioning to address on-site stormwater management and prevention of pollution measures from any potential pollution sources during decommissioning activities, such as hydrocarbon spills. Any stormwater that arises within the works must be managed appropriately to trap sediment and reduce flow velocities.

- Mitigation and follow-up monitoring of residual impacts (alien vegetation growth and erosion), post-decommissioning, may be required.

The findings of the aquatic assessment largely agree with the DFFE screening tool for aquatic biodiversity sensitivity mapping, in that most of the site has low aquatic sensitivity. The watercourses are, however, considered to be of high sensitivity and should be avoided by the proposed WEF facilities.

3 IMPACT SUMMARY AND COMMENT ON RESIDUAL IMPACT

The Project is situated within a landscape of high biodiversity value that includes natural habitat, mapped terrestrial and aquatic CBAs and ESAs, watercourses, and habitat for plant and animal (excluding Avifauna and bats) species of conservation concern. The layout has, however, been refined to reduce interaction with these receptors. The specialist assessments confirm that residual (post-mitigation) impacts on terrestrial biodiversity, plant species, fauna and aquatic ecosystems are low or very low after mitigation. This was achieved by systematically implementing the mitigation hierarchy.

Table 3-1 – Impact Summary

Aspect	Impact Description	Phase	Character	Without Mitigation	With Mitigation
Terrestrial Biodiversity	Direct loss and disturbance of natural habitat.	C	(-)	High	Low
	Fragmentation reducing natural habitat connectivity and integrity	C	(-)	Moderate	Low
	Establishment and spread of alien invasive species	C/O/D	(-)	Moderate	Low
	Increased soil erosion and sedimentation	C/D	(-)	Moderate	Low
	Increase in wildfires from Project workers or faulty infrastructure	O	(-)	Moderate	Very Low
Plant Species	Direct loss and disturbance of natural habitat	C	(-)	High	Low
	Fragmentation reducing natural habitat connectivity and integrity	C	(-)	Moderate	Low
	Loss of flora of conservation concern	C	(-)	Moderate	Low
	Establishment and spread of alien invasive species	C/O/D	(-)	Moderate	Low
Animal Species	Direct loss and disturbance of natural habitat	C	(-)	High	Low
	Fragmentation reducing natural habitat connectivity and integrity	C	(-)	Moderate	Low
	Loss of fauna species of conservation concern - Mountain Reedbuck	C	(-)	Moderate	Low

Aspect	Impact Description	Phase	Character	Without Mitigation	With Mitigation
	Loss of fauna species of conservation concern - Grey Rhebok	C	(-)	Moderate	Low
	Loss of fauna species of conservation concern - Serval	C	(-)	Low	Very Low
	Loss of fauna species of conservation concern - Cape Clawless Otter	C	(-)	Low	Very Low
	Loss of fauna species of conservation concern - Southern African Hedgehog	C	(-)	Low	Very Low
	Loss of fauna species of conservation concern - Vlei Rat	C	(-)	Low	Very Low
	Direct impact on fauna SCC from operating wind turbines	O	(-)	Moderate	Low
	Direct impact on fauna SCC from supporting operational activities	O	(-)	Moderate	Low
	Injury and mortality of fauna, including SCC	D	(-)	Moderate	Low
Aquatic ecosystems	Disturbance of riparian/wetland vegetation and water quality impacts (largely sedimentation)	C	(-)	Low	Very Low
	Disturbance of riparian/wetland vegetation	O	(-)	Low	Very Low
	Modification of surface water runoff and alien vegetation invasion in aquatic features	O	(-)	Low	Very Low
	Disturbance of aquatic habitats and water quality impacts.	D	(-)	Low	Very Low

Table 3-1 shows that all post-mitigation impacts are rated Low or Very Low. This means the identified impacts have been reduced through layout avoidance, micro-siting, footprint reduction, use of existing roads, watercourse buffers and prescribed rehabilitation and operational controls. In particular, no Medium or High residual impacts remain for terrestrial biodiversity, plant species, animal species or aquatic ecosystems.

Under the National Biodiversity Offset Guideline, an offset is a last-resort response to significant residual biodiversity loss after reasonable avoidance, minimisation and rehabilitation measures have been exhausted. The Low and Very Low ratings in Table 3-1 indicate that the remaining effects are limited in extent and magnitude, do not cause material loss of priority biodiversity or ecological function, and can be managed through the EMPr and ongoing monitoring. The offset threshold is therefore not triggered.

3.1 LAYOUT REVISION AND MICRO SITING

From a biodiversity perspective, a key focus of the mitigation strategy has been the spatial avoidance of sensitive habitats, particularly CBAs and threatened vegetation types. Accordingly, most proposed Project infrastructure has been located in patches of modified habitat, such as Secondary Grassland (olds lands) and Cultivated Fields, or to within natural habitat that is not classified as CBAs or a threatened ecosystem. The proposed access road network has also been aligned, wherever feasible, with existing district roads and farm tracks to limit the extent of new disturbance and fragmentation. Nonetheless, it is noted that natural habitat loss and disturbance will still occur as a result of construction activities, such as vegetation clearing and earth works.

In line with the application of the mitigation hierarchy, the infrastructure layout has undergone a series of revisions to reduce potential negative impacts on biodiversity, amongst other environmental and social sensitivities.

Micro-siting generally provides the final design-stage opportunity to apply additional avoidance and minimisation by refining the Project layout around CBAs, watercourses, intact natural habitat and habitat for species of conservation concern. In addition to adhering to various special recommendations, these considerations have been applied in the refined layout (i.e. from Scoping to DEIR phase) in several ways. The items listed below demonstrates the biodiversity benefit achieved through the adjustments to the proposed layout which have already been made and presented in the DEIR. The micro siting discussed here has also informed the post mitigation ratings (and this been assessed by the various specialists and also in this report) as described in Table 3-1, specifically for the CBA associated ratings.

3.1.1 WIND TURBINE GENERATORS (WTG)

- Removal of seven WTGs 25–31 with a footprint of up to 7ha
This is an improvement, particularly in reducing impacts on CBA/ESA (MBSP) areas, watercourse buffers and secondary grassland. This change alone significantly lowers the overall disturbance footprint and habitat fragmentation risk.
- WTG 5 micro-siting (outside 50 m from cultivated land)
This is a minor positive refinement; however, it is not a key driver of biodiversity impact significance.
- WTG 14 shift to avoid CBA1 (MBSP) swept area
This is critical and well-aligned with avoidance principles. WTG14 swept area is now outside of any sensitivities, hardstand and swept area still within secondary grassland as delineated infield (low impact).

Conclusion – turbines: The turbine revisions eliminated habitat loss and interaction with CBA 1 as delineated in the MBSP.

3.1.2 ELECTRICAL INFRASTRUCTURE HUBS

- Removal of Electrical Infrastructure Hub Option 4

Positive reduction in permanent footprint of 6ha, and associated habitat disturbance within secondary grasslands.

Conclusion – electrical infrastructure hubs: The revisions produce a benefit through reduced permanent footprint.

3.1.3 TEMPORARY LAYDOWN AREAS

- Removal of two temporary laydown areas, one linked to WTGs 25–31 and one to the southwest of WTG24

Positive reduction in footprint of approximately 5ha within secondary grasslands.

Conclusion – laydown areas: The revisions produce a benefit through reduced permanent footprint.

3.1.4 ROADS (INTERNAL, ACCESS AND MAINTENANCE) AND INTERNAL RETICULATION CABLES

- Removal of approximately 6km of proposed roads linked to WTGs 25–31 (incl. two associated watercourse crossings).

Significant positive amendment – reduces both habitat loss and aquatic interface risk.

- Re-routing of roads between WTGs 5–8 and WTGs21–23 with a disturbance footprint of approximately 1.5ha within a CBA (MBSP) area.

Positive, particularly where avoiding CBA optimal (MBSP) areas.

- Use of existing roads / additional access route

Acceptable as widening of this small section of road in CBA being preferable over the establishment of a new road in an intact area.

- Maintenance road within/adjacent to CBA1 (no widening)

This is a constraint - it was confirmed that no road construction or widening will take place. If the road must be widened or functionally intensified, it will likely result in direct or indirect CBA1 impact, which will not result in low residual impact.

Conclusion – roads: The revised road network has actively attempted to avoid CBA 1 areas and confirmed with relevant specialist.

4 CONCLUSION

The revised layout demonstrates a substantive application of the mitigation hierarchy. Removal of WTGs 25–31 and their associated roads, avoidance of the CBA 1 swept area at WTG 14, removal of SS4, and reduced interaction with intact grassland, watercourses and other sensitive features have reduced habitat loss, fragmentation and disturbance. On the basis of the current layout and available terrestrial biodiversity, plant, animal and aquatic specialist assessments, residual impacts are rated low or very low after mitigation. The Project is therefore not expected to trigger a biodiversity offset under the National Biodiversity Offset Guideline, provided that the remaining layout and construction details do not introduce significant residual impacts.

The final layout and rehabilitation commitments should be incorporated into the EMP, supported by measurable rehabilitation success criteria, alien invasive plant control, erosion management and post-construction monitoring.

5 REFERENCES

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- Gauteng Department of Environment (GDEnv). 2024. *Gauteng Conservation Plan Version 4.0*. Gauteng Province, South Africa.
- Mpumalanga Tourism and Parks Agency (MTPA). 2024. *Mpumalanga Biodiversity Sector Plan: Terrestrial Critical Biodiversity Areas Map*. Mpumalanga Province, South Africa.
- Republic of South Africa. 1998. *National Environmental Management Act, 1998* (Act No. 107 of 1998), as amended. Pretoria: Government Printer.
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- Republic of South Africa. 2014. *Environmental Impact Assessment Regulations, 2014*. Government Notice R982, Government Gazette 38282, 4 December 2014, as amended.
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- Republic of South Africa. 2020. *Alien and Invasive Species Regulations, 2020*, issued under the National Environmental Management: Biodiversity Act, 2004. Government Notice R1020, Government Gazette 43735, 25 September 2020.
- WSP Group Africa (Pty) Ltd. 2026. *Environmental Impact Assessment Report for the Proposed ABO Uvemvane Wind Energy Facility 1*. Draft Environmental Impact Assessment Report, Project No. 41106304. Prepared for ABO Uvemvane Wind Energy Facility 1 (Pty) Ltd, August 2026.
- Zinn, A. 2026a. *Animal Species Specialist Assessment for the Proposed ABO Uvemvane Wind Energy Facility 1*. Unpublished specialist report prepared by Hawkhead Consulting for WSP Group Africa (Pty) Ltd, South Africa.
- Zinn, A. 2026b. *Plant Species Specialist Assessment for the Proposed ABO Uvemvane Wind Energy Facility 1*. Unpublished specialist report prepared by Hawkhead Consulting for WSP Group Africa (Pty) Ltd, South Africa.
- Zinn, A.D. 2026c. *Terrestrial Biodiversity Specialist Assessment for the Proposed ABO Uvemvane Wind Energy Facility 1*. Unpublished specialist report prepared by Hawkhead Consulting for WSP Group Africa (Pty) Ltd and ABO Uvemvane Wind Energy Facility 1 (Pty) Ltd, July 2026.

Appendix A

CURRICULUM VITAE



RUDOLPH GREFFRATH

Terrestrial Biodiversity Specialist

CAREER SUMMARY

Rudolph is a Principal Biodiversity Specialist based in WSP South Africa's Midrand office. He is a SACNASP-registered Professional Natural Scientist in ecology, with extensive experience in terrestrial ecology and biodiversity resource management.

He has 17 years' experience in large-scale projects, ranging from mining to renewable energy developments, specialising in biodiversity resource management, baseline assessments, biodiversity action planning, biodiversity offset design and implementation, biodiversity strategy development, conservation management planning and implementation, IFC Performance Standard 6 good international industry practice, ecological restoration, ecosystem services, environmental and social due diligence, and environmental impact assessments across Africa. He also has extensive experience in biodiversity, fauna and flora, critical habitat, and ecosystem services assessments.

In his role as Project Biodiversity Specialist, he works as part of multidisciplinary teams and has strong insight into environmental and ecosystem services considerations that may affect project schedules and delivery.

Rudolph is also involved in obtaining regulatory permits for clients, including planning relocation strategies for protected and endangered plant species in areas proposed for development. This includes planning and executing data-gathering surveys and thereafter managing engagement with relevant provincial and national authorities to secure the permits required for development to proceed.

Rudolph's technical expertise includes knowledge and working experience in the following:

- Environmental Impact Assessments (EIAs), Basic Assessments and Environmental Management Plans (EMPs) for environmental authorisations in terms of the South African National Environmental Management Act (NEMA), 1998 (Act 107 of 1998);
- Implementation of Government Notice 320 (dated 20 March 2020) and Government Notice 1150 (dated 30 October 2020) in terms of NEMA: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a), 24(5)(h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation";
- Natural capital assessment and accounting, including the identification, assessment, quantification and integration of nature-related assets, risks and dependencies into clients' sustainability frameworks and corporate decision-making processes;
- Environmental pre-feasibility studies for gold tailings reclamation and iron ore and coal mining projects;
- Convention on Biological Diversity, Strategic Planning for Biodiversity, Mechanisms for implementation, Cooperation and Partnerships;
- Business and Biodiversity Offsets Programme standards and guidance on biodiversity offsets;
- International Finance Corporation (IFC)-related projects across Central and West Africa, including the application of IFC Performance Standards, Equator Principles and IFC Environmental, Health and Safety Guidelines;
- International Council for Mining and Metals, Conservation of Biodiversity and Integrated approaches to land use planning;
- European Investment Bank; application of sustainability principles, such as those of the International Finance Corporation (part of the World Bank Group), in particular on biodiversity. Standard 3 on Biodiversity and Ecosystems, as part of the EIB Environmental and Social Standards;
- Environmental and Social Impact Assessments (ESIA) for Environmental Authorisation;



RUDOLPH GREFFRATH

Terrestrial Biodiversity Specialist

- Biodiversity offset studies, including the determination of offset liability and application of the mitigation hierarchy and IFC Performance Standard 6 good international industry practice;
- Large Mammal Monitoring Projects;
- Biodiversity assessments, including mammal, avifauna, herpetofauna and arthropod assessments, and EIA-based assessment of impacts on the terrestrial ecological environment;
- Geographic Information Systems (GIS), including frequent use of ArcGIS and QGIS;
- Biodiversity Action Plan design and implementation;
- Biodiversity and land management programmes;
- Protected plant species management strategies planning and implementation;
- Monitoring of rehabilitation success by means of vegetation establishment;
- Rehabilitation planning;
- Environmental auditing of rehabilitated areas;
- Project management of ecological specialist studies;
- Planning and design of rehabilitation offset strategies.

2.1 years with WSP

17 years of experience

Area of expertise

Terrestrial Ecology

Language

English

EDUCATION

BTech Degree in Nature Conservation, Nelson Mandela Metropolitan University (NMMU)	2005–2006
National Diploma in Nature Conservation, Nelson Mandela Metropolitan University (NMMU)	2001–2004

ADDITIONAL TRAINING

Measurements of Biodiversity, University of the Free State, led by Prof. M. T. Seaman.	September 2008
IFC Performance Standards implementation training, Lee-Ann Joubert	January 2013
Bird identification course led by Ettiene Marais	November 2009
Introduction to VEGRAI and eco-classification, led by Dr James Mackenzie December 2009 and January 2018	
Dangerous snake handling and snakebite treatment with Mike Perry	2011, 2015
Rehabilitation of mine-impacted areas, with Fritz van Oudtshoorn, Dr Wayne Truter and Gustav le Roux	2011



RUDOLPH GREFFRATH

Terrestrial Biodiversity Specialist

First Aid Level 2, School of Emergency and Critical Care, Netcare	2013
First Aid Level 2, National First Aid Academy	2017, 2025
TNFD Natural Capital Accounting Europe,	2025
ICMM Workshop Europe and North America	2025

PROFESSIONAL MEMBERSHIPS

South African Council for Natural Scientific Professions, Professional Natural Scientist in the field of Conservation Science, registration number 400018/17	9 years
IAIA, International Association for Impact Assessment	8 years
Botanical Society of South Africa;	8 years
The Land Rehabilitation Society of Southern Africa, LARSA (Membership No. 0085);	8 years
Grassland Society of Southern Africa.	8 years

PROFESSIONAL HISTORY

WSP Group Africa (Pty) Ltd., Principal Ecologist	2024–Current
Founder, Owner, AES Eco Solutions, Johannesburg.	2021 - 2024
Senior Biodiversity Specialist, ERM, Johannesburg	2020–2021
Digby Wells Environmental, Johannesburg, International Manager: Group Biodiversity	2016–2019
Digby Wells Environmental, Johannesburg, International. Unit Manager: Fauna, Flora and Wetlands	2011-2016
Digby Wells and Associates, Johannesburg, South Africa. Senior Consultant.	2009-2011
Digby Wells and Associates, Johannesburg, South Africa. Consultant	2006-2009
Shamwari Game Reserve, Eastern Cape, South Africa	2002-2003
Kop-Kop Geotechnical Instrumentation Specialists, Johannesburg, South Africa	2001

PROJECT EXPERIENCE

Sibanye Stillwater Natural Capital Accounting, Sibanye Europe, Australia and North America, Biodiversity Author, 2025–2026
Biodiversity Author for Finland Operations

Abosso Goldfields, Damang Gold Mine, Ghana, Biodiversity and Closure documents, 2025-2026
Biodiversity Senior Reviewer

Mulilo Renewable Energy Developments, Verkykerskop Wind Energy Cluster, Free State, 2025–2026,
Biodiversity Offset Report Author.

Mulilo Renewable Energy Developments, Stormberg and Newcastle WEFs, KwaZulu-Natal, 2025–2026,
Biodiversity ESDD Reviewer and Lead Author.



RUDOLPH GREFFRATH

Terrestrial Biodiversity Specialist

Mulilo Renewable Energy Developments, Ukuqala and Du Plessis Dam Critical Habitat Assessments, Northern Cape, 2025. Biodiversity Lead Author.

Standard Bank Limited/Merchant Energy, Lenders' Environmental and Social Due Diligence for the Wipoortjie Renewable Energy Project, 2025–2026, Biodiversity Lead Author.

Mingomba Mining Limited, Underground Copper Mine ESIA, Zambia, 2025–2026, Terrestrial Ecology Lead Author.

Transnet National Ports Authority, Port of Richards Bay, Berth 605 Biodiversity Offset Report, 2025–2026, Richards Bay, Lead Author.

Tronox KZN Sands, Port Dunford Mine IEA, Richards Bay, 2025, Biodiversity Offset Report. Lead Author.

Meridiam SAS, Kipeto Wind Energy Facility Due Diligence, Kenya, 2025–2026. Biodiversity Lead Author.

HDF Energy Renewstable Power Plants, Mpumalanga South Africa, 2023-2024

Terrestrial Biodiversity Lead.

Responsible for the Terrestrial Ecology specialist functions from Scoping through to EIA phases.

Khanyazwe Flexpower Gas Power Plant, Malelane, South Africa 2023-2024

Terrestrial Biodiversity Lead.

Responsible for the Terrestrial Ecology specialist functions from Scoping through to EIA phases.

Eskom Distribution Perseus-Zeus walkdown, Free State, Mpumalanga, Gauteng Provinces. 2023-2024

Terrestrial Biodiversity Lead.

Responsible for the Terrestrial Ecology specialist functions from Scoping through to EIA phases.

Everest SPP, Distribution Lines, BESS, Welkom, Free State. 2023-2024

Terrestrial Biodiversity Lead.

Responsible for the Terrestrial Ecology specialist functions from Scoping through to EIA phases.

Client Confidential, Two Solar Power Plants, Kathu, Northern Cape 2023

Terrestrial Biodiversity Lead.

Responsible for the Terrestrial Ecology specialist functions from Scoping through to EIA phases.

Engie SPP, Free State, South Africa 2024

Terrestrial Biodiversity Lead.

Dwarf succulent inventory and relocation strategies.

Randgold Resources Limited, Tongon Off-set project, Ivory Coast, 2012-15

Project Lead Technical Specialist

Applied IFC, BBOP and other good-practice guidelines in designing an offset project for the residual impacts of the Tongon Gold Mine.



RUDOLPH GREFFRATH

Terrestrial Biodiversity Specialist

DPN Direction des Parcs Nationaux du Sénégal, Annual Large Mammal Monitoring in the Niokola Koba National Park, Senegal, 2018/19 Aerial game counter, project specialist

Applied aerial, ground and vehicle-based large mammal monitoring techniques in the National Park.

Barrick Gold, Biodiversity Management for Massawa Gold Mine, Senegal 2015, Project management

Following the discovery of Western Chimpanzees in close proximity to the project area, detailed fieldwork was conducted by internationally recognised experts, leading to the development of various mitigation measures. Completed in accordance with IFC Performance Standard 6.

CIC energy, Mmamabula Energy Project (MEP)., Botswana 2010-2013 Technical Specialist Ecologist,
Construction of a railway, opencast mine, wellfield, conveyors, adits and housing.

Orlight SA, Orlight Solar PV Power Project, South Africa, 2015–2016 Technical Specialist

Ecologist for the Environmental Impact Assessment (EIA) process for five proposed solar photovoltaic (PV) power plants.

CSIR, Twenty Nine Capitol, South Africa, 2018 Technical Specialist

Ecologist for photovoltaic power stations.

Randgold Resources Limited, Tongon Biodiversity Land Management Plan, Ivory Coast

2014 Technical Specialist Ecologist,

Project manager for the design, compilation and implementation of the BLMP. Completed in accordance with IFC Performance Standard 6.

Randgold Resources Limited, Kibali Gold mine, DRC Congo 2010-2017

Technical Specialist Ecologist

Gold mine infrastructure. Completed in accordance with IFC Performance Standard 6.

Randgold Resources Limited, Kibali Gold mine, DRC Congo 2016

Technical Specialist Ecologist

ESIA update. Completed in accordance with IFC Performance Standard 6.

Randgold Resources Limited, Nzoro Hydroelectric station, DRC Congo 2014

Technical Specialist Ecologist

Hydroelectric plant. Completed in accordance with IFC Performance Standard 6.

Randgold Resources Limited, Loulo Biodiversity Land Management Plan, Mali

2015-2017 Technical Specialist Ecologist, Project Manager

Design, compilation and implementation of the BLMP. Completed in accordance with IFC Performance Standard 6.

Koidu Diamond Mine, Mali 2014 Technical Specialist Ecologist, Project Manager

Design, compilation and implementation of the BLMP. Completed in accordance with IFC Performance Standard 6.



PUBLICATIONS

Biodiversity Action Plans for faunal habitat maintenance and expansion in mining. Poster presented at the 48th Annual Grassland Society of Southern Africa (GSSA) conference.

Limpopo Province, South Africa – the biodiversity perspective. Paper presented at the Limpopo Minerals Conference and Trade Show, hosted by the Fossil Fuel Foundation and LEDET, 2015/11/11.

Sustainability and Biodiversity Strategic Planning, Randgold Resources, 2018.

Niokola Koba National Park, Senegal. Annual Census of Large Mammals, contributing author, 2018.

Appendix B

SACNASP



SACNASP

South African Council for Natural Scientific Professions

herewith certifies that
Rudolph Johannes Greffrath

Registration Number: 400018/17

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)

in the following field(s) of practice (Schedule 1 of the Act)

Conservation Science (Professional Natural Scientist)

Effective **25 January 2017**

Expires **31 March 2027**



President of Council

Chief Executive Officer



To verify this certificate scan this code

Appendix C

SPECIALIST DECLARATION





forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: +27 86 625 1042

SPECIALIST DECLARATION FORM – AUGUST 2023

Specialist Declaration form for assessments undertaken for 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)

REPORT TITLE

ABO Uvemvane Wind Energy Facility (WEF) 1 (up to 170MWac)), located in the Dipaleseng Local Municipality within the Gert Sibande District Municipality and the Lesedi Local Municipality within the Sedibeng District Municipality, in the Mpumalanga and Gauteng Province

Kindly note the following:

1. This form must always be used for assessment that are in support of 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 August 2023. 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.dffe.gov.za/documents/forms>.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply with 'the 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 act, when applying for environmental authorisation - GN 320/2020', where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Biodiversity Consultant
Specialist Company Name	WSP Africa
Specialist Name	Rudolph Greffrath
Specialist Identity Number	7804055043085
Specialist Qualifications:	B. Tech Nature Conservation
Professional affiliation/registration:	South African Council for Natural Scientific Professions, Professional Natural Scientist in the field of Conservation Science, registration number 400018/17
Physical address:	Midrand Building 1, Maxwell Office Park Magwa Crescent West, Waterfall City Midrand, 1685 South Africa
Postal address:	Click or tap here to enter text.
Postal address	Click or tap here to enter text.
Telephone	011 361 1300
Cell phone	0741432980
E-mail	Rudolph.Greffrath@WSP.com

SPECIALIST DECLARATION FORM – AUGUST 2023

2. DECLARATION BY THE SPECIALIST

I, Rudolph Greffrath declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements 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 (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- 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 NEMA Act.

 Digitally signed by Greffrath,
Rudolph (ZARG05575)
Location: Pr.Sci.Nat 400018/17
Date: 2026.08.21 11:24:29
+02'00'

Signature of the Specialist

WSP Africa

Name of Company:

21 Aug 2026

Date

SPECIALIST DECLARATION FORM – AUGUST 2023

3. UNDERTAKING UNDER OATH/ AFFIRMATION

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

 Digitally signed by Greffrath, Rudolph (ZARG05575)
Location: Pr.Sci.Nat 400018/17
Date: 2026.08.21 11:25:05 +02'00'

Signature of the Specialist

WSP Africa

Name of Company

2026/08/21

Date

Click or tap here to enter text.

Signature of the Commissioner of Oaths

21 Aug 2026

Date





Building 1, Maxwell Office Park
Magwa Crescent West, Waterfall City
Midrand, 1685
South Africa

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