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# **PLANT RESCUE AND PROTECTION PLAN FOR THE 132KV OVERHEAD POWERLINE BETWEEN EXISTING BON ESPIRANGE AND KOMSBERG SUBSTATIONS IN THE WESTERN AND NORTHERN CAPE PROVINCES**

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**Prepared for:**

**Kuduskop Wind Farm (Pty) Ltd**

**Prepared by:**



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**May 2025**

## Details of Company

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## Contributors

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### **Tarryn Martin (Botanical Specialist) (*Pri. Sci. Nat.* 008745)**

*Role: Site Assessment, Co- Author, and Report Review*

Tarryn has over thirteen years of experience working as a botanist, twelve of which are in the environmental sector. She has worked as a botanical specialist and project manager on projects within South Africa, Mozambique, Lesotho, Zambia, Tanzania, Cameroon, and Malawi.

She has extensive experience writing botanical impact assessments, critical habitat assessments, biodiversity management plans, biodiversity monitoring plans, and rehabilitation and restoration plans to South African and International Standards such as those of the International Finance Corporation (IFC). Her experience includes working on large renewable energy projects in South Africa as well as large mining projects in Mozambique, including multiple graphite mines and a heavy mineral mine, all of which were to international lenders standards.

Tarryn holds a BSc (Botany and Zoology), a BSc (Hons) in African Vertebrate Biodiversity, and an MSc with distinction in Botany from Rhodes University. Tarryn's Master's thesis examined the impact of fire on the recovery of C<sub>3</sub> and C<sub>4</sub> Panicoid and non-Panicoid grasses within the context of climate change for which she won the Junior Captain Scott-Medal (Plant Science) for producing the top MSc of 2010 from the South African Academy of Science and Art as well as an Award for Outstanding Academic Achievement in Range and Forage Science from the Grassland Society of Southern Africa. Tarryn is a professional member of the South African Council for Natural Scientific Professionals (since 2014).

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## Glossary of Terms

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**Alien Invasive Species** refers to an exotic species that can spread rapidly and displace native species causing damage to the environment.

**Biodiversity** is the term that is used to describe the variety of life on Earth and is defined as “*the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems*” (Secretariat of the Convention on Biological Diversity, 2005).

**Critical Biodiversity Areas (CBAs)** are areas of high biodiversity and ecological value that are required to meet biodiversity targets for species, ecosystems or ecological processes and infrastructure. These include:

- All areas required to meet biodiversity pattern (e.g. species, ecosystems) targets;
- Critically Endangered (CR) ecosystems (terrestrial, wetland and river types);
- All areas required to meet ecological infrastructure targets, which are aimed at ensuring the continued existence and functioning of ecosystems and delivery of essential ecosystem services; and
- Critical corridors to maintain landscape connectivity (WCBSP, 2017).

**Development footprint** refers to the actual area/land in which infrastructure will be located.

**Natural Habitat** refers to habitats composed of viable assemblages of plant and/or animal species of largely native origin and/or where human activity has not essentially modified an area’s primary ecological function and species composition.

**Project Area** refers to the erf or farm portion on which the development is proposed and that will be directly impacted by project infrastructure such as the roads, houses, etc.

**Species of Conservation Concern (SCC)** are all species that are assessed according the IUCN Red List Criteria as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Data Deficient (DD) or Near Threatened (NT), as well as range-restricted species which are not declining and are nationally listed as Rare or Extremely Rare [also referred to in some Red Lists as Critically Rare]. For the purpose of this report, protected species are also considered SCC.

## Abbreviations

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<b>CBA</b>	Critical Biodiversity Area
<b>CR</b>	Critically Endangered
<b>DD</b>	Data Deficient
<b>DENC</b>	Department of Environment and Nature Conservation
<b>EA</b>	Environmental Authorisation
<b>ECO</b>	Environmental Control Officer
<b>EIA</b>	Environmental Impact Assessment
<b>EMPr</b>	Environmental Management Programme
<b>EN</b>	Endangered
<b>IUCN</b>	International Union for Conservation of Nature
<b>LC</b>	Least Concern
<b>NEM:BA</b>	National Environmental Management Biodiversity Act
<b>NT</b>	Near Threatened
<b>PNCO</b>	Provincial Nature Conservation Ordinance
<b>SANBI</b>	South African National Biodiversity Institute
<b>SCC</b>	Species of Conservation Concern
<b>VU</b>	Vulnerable
<b>WEF</b>	Wind Energy Facility

# 1. INTRODUCTION

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## 1.1. PROJECT BACKGROUND AND PURPOSE OF THIS REPORT

In order for Kuduskop Wind Farm Pty Ltd to evacuate power from the authorised Kuduskop North and Kuduskop Wind Energy Facilities (WEFs), a 132kV Overhead Powerline (OHPL) is proposed to be constructed between the existing Bon Espirange and Komsberg substations, as well as additions to the transmission infrastructure within the Komsberg substation property (Figure 1.1 and 1.2).

The proposed project infrastructure is situated within the Witzenberg Local Municipality in the Cape Winelands District Municipality, Western Cape, and the Karoo Hoogland Local Municipality in the Namakwa District Municipality, Northern Cape, South Africa (Figure 1.1).

The purpose of this Plant Rescue and Protection Plan is to provide a practical methodology for the identification (search) and translocation (rescue) of threatened and/or protected plant Species of Conservation Concern (SCC) that would be impacted by the development of the OHPL. This Plant Rescue and Protection Plan forms part of the Environmental Management Programme (EMPr) and should be read and implemented in conjunction with the Revegetation and Habitat Rehabilitation Plan.

## 1.2. PLANT SEARCH AND RESCUE PRINCIPLES

*In situ* conservation entails the preservation of a species/subpopulation in its original natural habitat where it has been found, whilst *ex situ* conservation entails the removal/translocation of a species/subpopulation from its original natural habitat to an alternative/artificial environment. *In situ* conservation is far more preferable in comparison to *ex situ* conservation, as *ex situ* conservation often results in the loss of genetic diversity and evolutionary adaption traits, which subsequently increases a species' risk of extinction. Moreover, often only a sample set of the species/subpopulation which have undergone *ex situ* conservation survive.

*Ex situ* conservation also has significant impacts on the receiving environment. Translocated individuals/subpopulations could:

- Increase competition and thus the survival of 'native' species/subpopulations.
- Alter ecosystem dynamics and habitat structure.
- Result in genetic pollution through hybridization.
- Increase the spread of invasive species.
- Introduce pathogens and/or parasites into the receiving environment.

In some cases, *in situ* conservation is not always possible. During the Environmental Impact Assessment (EIA) Process, the mitigation hierarchy (avoid, minimise, restore) was applied to reduce the significance of impacts associated with the development of the project. Where feasible, the design of project infrastructure has been amended to avoid sensitive areas such as Critical Biodiversity Areas (CBAs), important faunal habitat, and aquatic surface water features, amongst others. However, due to the density and wide distribution of protected plant species throughout the project area and surrounds, it was not possible to avoid all protected species. As such, to minimise the residual impacts

associated with the development of the project and restore impacted areas that do not form part of the operational footprint, a Plant Rescue and Protection Plan has been compiled. In essence, the Plant Search and Rescue is the last resort to conserve individual plant species, genetic diversity and variation, and biodiversity.



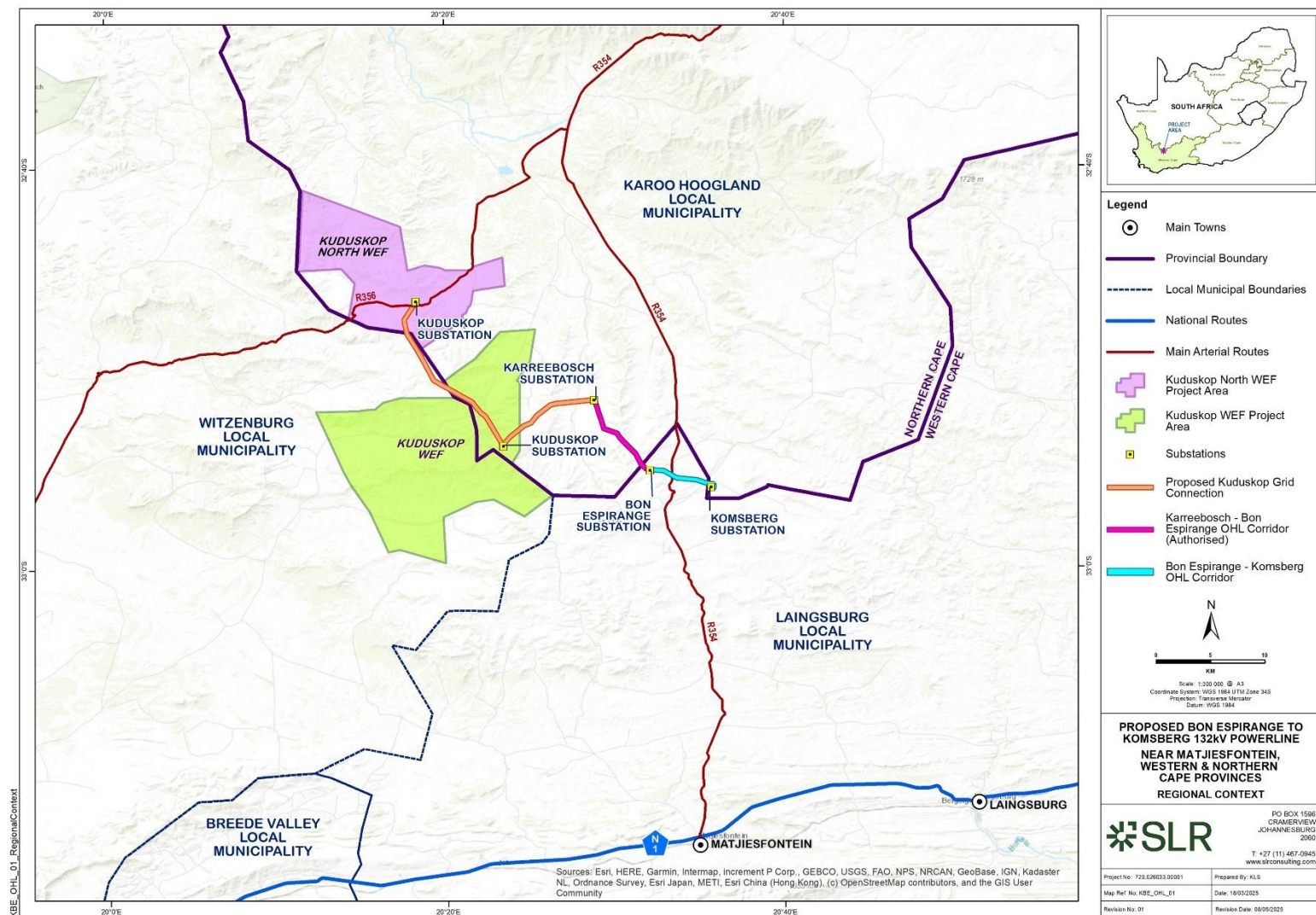


Figure 1.1: Map illustrating the location of the project area in relation to Matjiesfontein, Laingsburg and the R34.

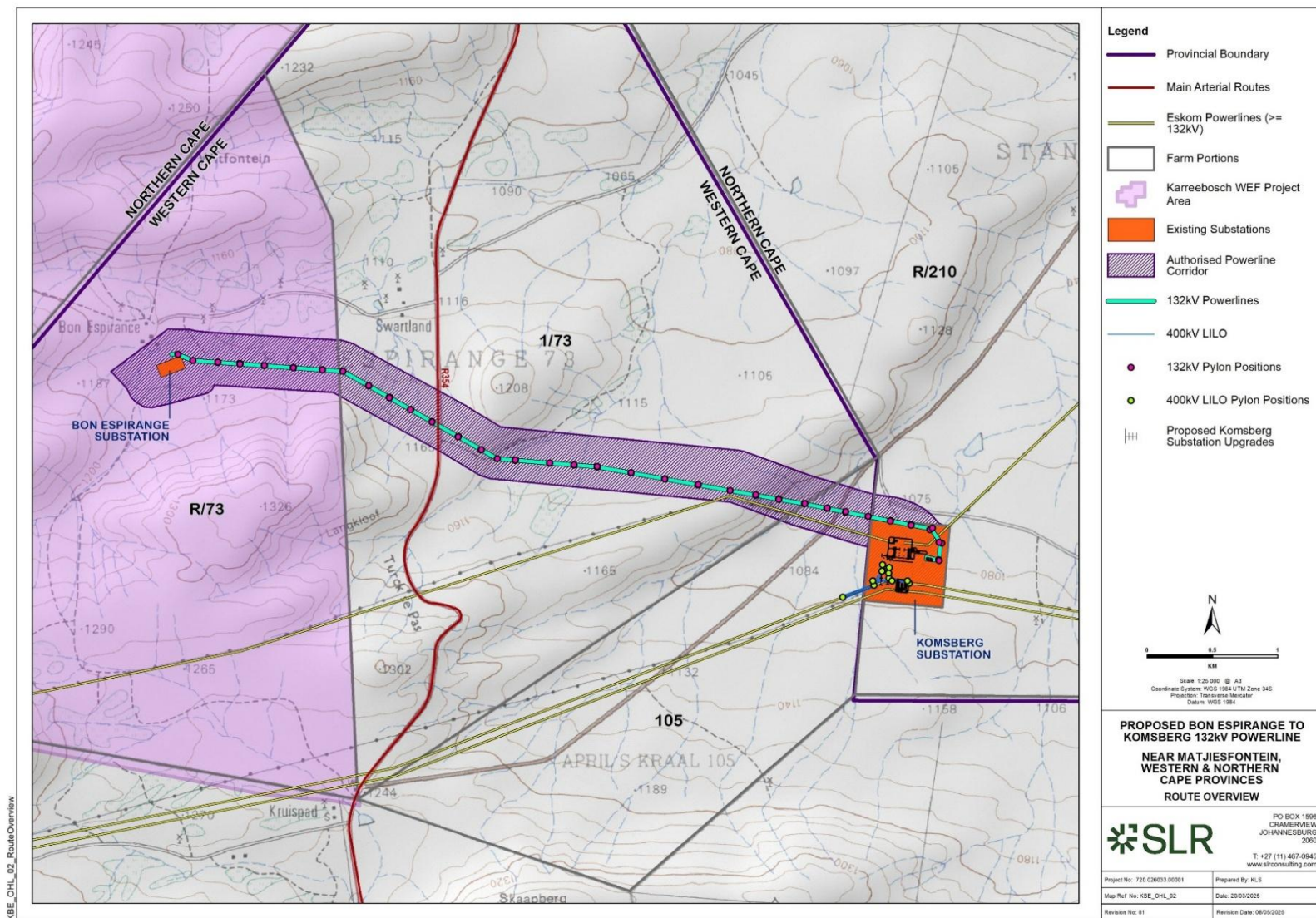


Figure 1.2: Infrastructure map of the proposed OHPL.

## 2. LEGAL REQUIREMENTS

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SANBI (2020) defines a Species of Conservation Concern (SCC) as all species that are assessed according to the International Union for Conservation of Nature (IUCN) Red List Criteria as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Data Deficient (DD) or Near Threatened (NT), as well as range-restricted species which are not declining and are nationally listed as Rare or Extremely Rare [also referred to in some Red Lists as Critically Rare].

Protected species are not necessarily threatened but in this instance are also regarded as SCC. The National Environmental Management: Biodiversity Act (NEM:BA) (Act No. 10 of 2004) defines protected species as '*indigenous species of high conservation value or national importance*'. These species are either evaluated as NT according to the IUCN 2001 Red List System AND threatened by direct use, or in need of regulation/management as current utilisation may result in a significant decline in wild populations of the species (Least Concern). In South Africa, plant species are protected nationally or provincially, or both.

### 2.1. NATIONAL LEGISLATION

Plant Species listed in terms of the NEM:BA List of Threatened or Protected Species (TOPS) (GN R. 151 of 2005 and the subsequent 2015 and 2023 amendments) are nationally protected and require permits for their removal and/or translocation from the Minister of the Department of Environmental Affairs (DEA), now referred to as the Department of Forestry, Fisheries and the Environment (DFFE). The Minister is the issuing authority for a permit and registration relation to the carrying out of restricted activities involving any TOPS listed species.

The DFFE also released the Notice of the List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998) in 2021. No person may cut, disturb, damage or destroy any protected tree or possess collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree except under a license granted by the Minister.

### 2.2. PROVINCIAL LEGISLATION

Every province in South Africa has a Provincial Nature Conservation Ordinance (PNCO) which provides a list of protected species and specifies restricted activities involving protected species. These species may or may not be nationally protected. The Bon Espirange OHPL is primarily located within the Western Cape province with a small portion entering the Komsberg substation within the Northern Cape. As such, the Western Cape Nature Conservation Laws Amendment Act (Act No. 3 of 2000) applies as well as the Northern Cape Nature Conservation Act (No. 9 of 2009). Any species protected in terms of the act, require permits for their removal and/or translocation from the Cape Nature.

In instances where a species is protected in terms of both national and provincial legislation, the national legislation supersedes provincial legislation, and permits must be obtained from the Minister.

### 3. SPECIES OF CONSERVATION CONCERN PRESENT ON SITE

The project area is characterised by a high species diversity and a high level of endemism. Within the Project Area of Influence (PAOI), one hundred and three species (103) from twenty-one (21) families have been recorded (Biodiversity Africa, 2025). No SCC were recorded within the project area during the 2022 and 2023 survey. However, a previous survey by Hoare (2019) recorded one VU species (*Lachenalia alba*) in the PAOI.

No species are nationally protected in terms of the NEM:BA TOPS List (2023) and no protected trees were recorded in the project area. It should be noted that *Lachenalia alba* (VU) and *Hoodia gordonii* (DD) although recorded by Hoare (2019) within the broader PAOI, these two species were not recorded during the ecological impact assessment undertaken by Biodiversity Africa (2022/2024).

Plant Species protected in terms of the Western Cape Nature Conservation Laws Amendment Act (Act No. 3 of 2000) and the Northern Cape Nature Conservation Act (Act No. 9 of 2009) require permits for removal/translocation from the Cape Nature and the Department of Environment and Nature Conservation respectively. Six Schedule 4 and eight Schedule 2 species requiring permits were recorded within the project area (Table 3.1).

**Table 3.1: Plant SCC recorded within the project area.**

Family	Species	Red List	Western Cape Nature Conservation Laws (2000)	Northern Cape Nature Conservation Act (Act No. 9 of 2009)
AIZOACEAE	<i>Ruschia intricata</i>	LC	Schedule 4	schedule 2
AIZOACEAE	<i>Ruschia pungens</i>	DDT	Schedule 4	Schedule 2
AIZOACEAE	<i>Ruschia spinosa</i>	LC	Schedule 4	Schedule 2
AIZOACEAE	<i>Ruschia multiflora</i>	LC	Schedule 4	Schedule 2
AIZOACEAE	<i>Cheiridopsis namaquensis</i>	LC	Schedule 4	schedule 2
EUPHORBIACEAE	<i>Euphorbia rhombifolia</i>	LC	N/A	schedule 2
CRASSULACEAE	<i>Tylecodon wallichii</i> subsp. <i>wallichii</i>	LC	N/A	schedule 2
AIZOACEAE	<i>Leipoldtia schultzei</i>	LC	Schedule 4	Schedule 2



## 4. GUIDELINES AND METHODS FOR THE PLANT SEARCH AND RESCUE

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Section 4.1 to 4.4 below provides guidelines and details on the methods required for the Search and Rescue of Plant SCC present within the project area.

### 4.1. ECOLOGICAL WALKTHROUGH (PLANT SEARCH)

Responsible Person: Botanical Specialist / Horticulturalist

The first step in the Plant Search and Rescue process is to determine the SCC present by undertaking an ecological walkthrough of the project infrastructure/development footprint before construction commences. During the ecological walkthrough, data on the SCC present, their location and densities are collected. Where necessary/feasible, the design of project infrastructure is amended to avoid sensitive areas and/or threatened SCC.

An Ecological Impact Assessment of the project area was undertaken by Biodiversity Africa (2025). The report lists all the plant species confirmed or likely to occur within the project area.

### 4.2. ACQUISITION OF PLANT REMOVAL PERMITS

Responsible Person: Applicant and Contractor

Once data on the SCC present within the development footprint has been collected, the relevant permits for the removal and/or translocation of these species must be obtained from the relevant issuing authority. Permits must be obtained prior to any vegetation clearance or the removal and/or translocation of SCC. No SCC may be removed and/or translocated prior to obtaining the relevant permits.

- The issuing authority for plant species protected in terms of the Western Cape Nature Conservation Laws Amendment Act (Act No. 3 of 2000) is Cape Nature and in Terms of the Northern Cape Nature Conservation Act (Act No. 9 of 2009) is the Department of Environment and Nature Conservation.
- The issuing authority for plant species protected in terms of the NEM:BA List of Threatened or Protected Species (TOPS) (GN R. 151 of 2005 and the subsequent 2015 and 2023 amendments) is the Minister of the Department of Environmental Affairs (DEA), now referred to as the Department of Forestry, Fisheries and the Environment (DFFE).
- The issuing authority for any protected tree species is the Department of Agriculture, Forestry and Fisheries (DAFF), a department of the DFFE. In addition, the Northern Cape Department of Environmental Affairs and the Western Cape Department of Environmental Affairs and Development Planning may require permits for the removal of protected species or SCC.

### 4.3. NURSERY ESTABLISHMENT

Responsible Person: Contractor's Environmental Site Officer (ESO) and ECO together with Horticulturalist

If the transplanting of individuals occurs outside of the rainy season, it is a best practice recommendation, that an onsite nursery be established prior to the rescue of any plant species. The onsite nursery should be located within a previously disturbed area near to the site office or temporary laydown area. The nursery must have a water source and storage area of adequate capacity. The nursery must be fenced off from herbivores to avoid loss of species. Alternatively, an already established nursery may also be used for this purpose.

The horticulturalist appointed to undertake the plant search and rescue must provide input on the establishment of the on-site nursery.

### 4.4. PLANT RESCUE

Responsible Person: Independently appointed Horticulturalist

The following guidelines must be considered:

- An experienced horticulturalist must be appointed to undertake the plant rescue and manage the establishment and operation of the onsite nursery.
- The appointed horticulturalist must establish the resource requirements in terms of the workforce required to undertake the plant rescue and compile a species-specific methodology for the removal and/or translocation of SCC. The plant rescue methodology should consider overall genetic variability and alternatives to preserving genetic variability (i.e. in addition to transplanting whole plants, plants can be propagated from seed and/or cuttings).
- The plant rescue must be undertaken during the flowering season, preferably at the start of flowering season, to ensure the correct identification and rescue of the relevant SCC. If this is not feasible, SCC must be staked and their locations recorded by a botanist during the flowering season. The details of their location must be captured in a report and made available to the Contractor, so that these species can be identified and removed outside of the flowering season.
- Data on the original location of rescued plants, survival success, and relocation site (i.e. GPS co-ordinates, soil type, slope, aspect, etc) must be collected and stored in the site environmental file. This file must be maintained by the holder of the EA for a period of 5 years post-construction, or as specified in the EA.
- The rescue and translocation of Data-Deficient (DD) species must be prioritised.
- Individuals must be dug up carefully ensuring the root ball remains intact.
- Where feasible, and only if undertaken at the start of the rainy season, plants should be immediately transplanted to other disturbed/transformed sites within the project area but outside of the permanent development footprint. These individuals must be protected from construction activities (e.g. areas should be delineated using painted pegs or danger tape) and monitored, and where necessary watered, to ensure survival. Individuals of the same species must be grouped together to form colonies to ensure cross pollination can occur rather than scattered individually throughout the re-vegetated site.
- Where direct transplanting of plants is not possible, rescued plants must be stored within the onsite nursery. Rescued plants should be placed into a container labelled with the species

name and date of rescue. The growing medium should be sourced from the original location at which the individual plant was rescued.

- Rescued plants within the nursery must be utilised for the revegetation and rehabilitation of impacted areas that do not form part of the operational footprint (e.g. laydown areas and construction site camp). If there is a surplus of plants, these should be donated to a nursery once the disturbed sites have been successfully re-vegetated. Revegetation and habitat rehabilitation is recommended to commence at the start of the rainy season to give individuals the highest chance of survival (refer to Revegetation and Habitat Rehabilitation Report).
- Individuals must be planted out in similar habitat to which they were harvested (e.g. plants from mountain slopes should be planted at the same altitude and within the same habitat).
- Rescued plants cannot be transplanted into intact areas that fall outside of the project area (i.e. adjacent properties).
- Intact areas within the project area (but outside of the development footprint) should be avoided as receiving sites for rescued plants as rescued plants could outcompete the naturally occurring indigenous species, introduce pathogens and viruses, disrupt ecological processes leading to the degradation of the vegetation within these areas.

## 5. MONITORING PLAN

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### 5.1. MONITORING REQUIREMENTS

Monitoring is required to ensure that the recommendations contained within this report are effective and successful. Indicators that should be monitored are outlined below and in Table 5.1. The following general monitoring requirements are recommended to ensure maximum success of the Plant Search and Rescue Operation:

- All plants housed within the on-site nursery should be inspected monthly for pathogens and viruses. Any diseased or infested plants should be treated appropriately and where required, isolated. If plants do not respond to treatment, plant material must be disposed of in the same manner as any cleared Alien and Invasive Plant Species (see Alien Invasive Plant Management Plan).
- An appropriately experienced botanist with Succulent / Nama Karoo botanical knowledge must be appointed during the construction phase to oversee and lead all search and rescue operations.
- Prior to construction commencing, the botanist should oversee a wider attempt to search and rescue plants and keep them alive by marking them properly and temporarily storing them under nursery conditions until they can be transplanted at or near the site where they had originally been removed from as part of the restoration and rehabilitation plan.
- The botanist should also oversee the translocation of plants. The restoration of the Project site must be undertaken in accordance with the approved Environmental Management Programme/s as well as the Terrestrial Ecology Walk-through Report and associated management plans. An Environmental Control Officer must be contracted to audit the compliance with all authorisations.
- Every effort should be made to search and rescue as many of the localised and succulent species as possible and to replant them at sites with a similar microclimates and geological condition.
- It should be noted that after succulent species have been exhumed, they need to be kept in a shaded place until their damaged parts have dried/sealed before they are planted back in the field. When they have been planted, they will need to be watered properly after being placed in the soil and not before, to give them a fair chance of survival.
- Translocation of plants during the full summer in arid karoo areas is not advisable as the chances of survival are very slim. Translocation should take place in the cool autumn and winter months for best results.
- The areas where the search and rescued plants are planted must be marked properly with visible stakes to facilitate monitoring and evaluation of the successes and challenges of the translocation work. Detailed photographic records with GPS coordinates must be kept.
- A report must be submitted to the relevant authorities documenting all the translocated plants including a list of the species and number of each that had been relocated. This report must be completed 6 to 9 months after the translocation had commenced with follow-up reports for two years.
- It is recommended that post-relocation monitoring is undertaken at least every four (4) months until the botanist/horticulturalist is satisfied that the individuals are established (whichever comes first). A brief report should be compiled following each monitoring event. Each report should be stored in the site environmental file. This file must be maintained by



the holder of the EA for a period of 5 years post-construction, or as specified in the EA. The monitoring reports should include the following:

- Fixed-point photographs illustrating the receiving sites over time.
- Survival and/or death rates of each species.

Specific monitoring actions required are outlined in Table 5.1 below.

**Table 5.1: Monitoring Actions, indicators, and timeframes for the implementation of the Plant Rescue and Protection Plan**

Monitoring Action	Indicator	Timeframe	Responsible
Inspect nursery grown plants for pathogens and viruses.	Evidence of pathogens and viruses on nursery grown plants.	Monthly	Contractor/ESO
Inspect translocated plants until established.	Evidence of success of establishment of translocated plants.	Year 1: Every 4 months Year 2: Annually	Contractor/ESO
Monitoring report indicating survival and death rates for each translocated species. This must be done during the flowering season.	Clear, documented record of survival and death rates of individual species.	Annually Year 2: Annually	Contractor/ ESO
Fixed point photographs of the re-vegetated sites. This must be done during the flowering season.	Evidence showing progression of re-vegetation through increased canopy cover.	Annually	Contractor and ESO

## 5.2. STORAGE OF DATA

All monitoring data must be collected and stored electronically on a central database that is easily accessible to all parties.

Data from each monitoring event must be entered into a spreadsheet so that this can be easily analysed at any given time.

All photographs must be labelled with the date taken and location in which they were taken.

## 5.3. REPORTING

Management measures implemented and success achieved should be clearly documented. Compliance with the Plant Rescue and Protection Plan must be documented by the ECO and all reports should be maintained within the site office and for a period of 5 years post construction.

This plan must be seen as a working document and must be updated as and when required or if any of the recommended measures need to be revised.

A detailed annual report should be submitted to the managing authority/holder of the EA. If the management plan needs to be adjusted, it is recommended that the monitoring report is reviewed by an ecologist who can make recommendations on adjustments that are required.

## 6. ROLES AND RESPONSIBILITIES

The holder of the EA, the Contractors and the ECO are responsible for ensuring the Plant Search and Protection Plan is implemented. The roles and responsibilities for each of them are outlined in Table 6.1 below.

**Table 6.1: Roles and responsibilities associated with implementing the Plant Rescue and Protection Plan.**

Role	Responsibility
Applicant (Holder of EA)	<p>The Applicant (holder of Environmental Authorisation (EA)) bears the overarching responsibility for ensuring compliance with the conditions outlined within the EA.</p> <p>Furthermore, they are responsible for appointing appropriately qualified Contractors to co-ordinate and supervise the different tasks outlined in this plan, ensuring the appointed contractor has sufficient resources to implement the plan and to appoint an independent and suitably qualified ECO to perform the responsibilities outlined in this report.</p>
Contractor/Horticulturalist	<p>The Contractor together with the appointed Horticulturalist is responsible for implementing the Plant Rescue and Protection Plan during the construction phase of the project.</p> <p>Specific actions for which the contractor and horticulturalist are responsible for include the following (this is not a comprehensive list, but only indicative of the duties to be carried out in this regard):</p> <ul style="list-style-type: none"> <li>• Identifying and demarcating sensitive areas.</li> <li>• Implementing this management plan.</li> <li>• Ensuring all personnel comply with the requirements of the plan.</li> <li>• Reporting on the effectiveness of the implementation and monitoring of the re-vegetated sites.</li> <li>• Monitoring the site.</li> <li>• Analysing the data.</li> <li>• Making recommendations on remedial action when required.</li> <li>• Writing progress and annual reports.</li> </ul>
ECO	<p>The ECO is responsible for auditing and verifying the implementation of the management plan during the relevant phases of the project. This includes the following:</p> <ul style="list-style-type: none"> <li>• Inspecting the re-vegetated areas and reporting on these findings throughout the construction phase to the developer and environmental authorities.</li> <li>• Keeping a photographic record of the re-vegetation progress.</li> </ul>

	<ul style="list-style-type: none"> <li>• Reviewing and approving construction method statements related to re-vegetation of the site.</li> <li>• Reviewing and inspecting Contractor's written records that illustrate compliance with the Environmental Management Plan (EMPr).</li> <li>• Recommending and/or developing corrective actions when there is non-compliance or when the measures to re-vegetate the disturbed area is not working.</li> <li>• The ECO must sign off on when the re-vegetated areas have successfully reached a state where no further monitoring and interventions are required.</li> </ul>
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## 7. REFERENCES

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Biodiversity Africa (2025). Terrestrial Biodiversity, Plant and Animal Themes Impact Assessment for the Proposed Kuduskop 132kV Overhead Powerlines and Associated substations between Matjiesfontein and Sutherland in the Western and Northern Cape Provinces.

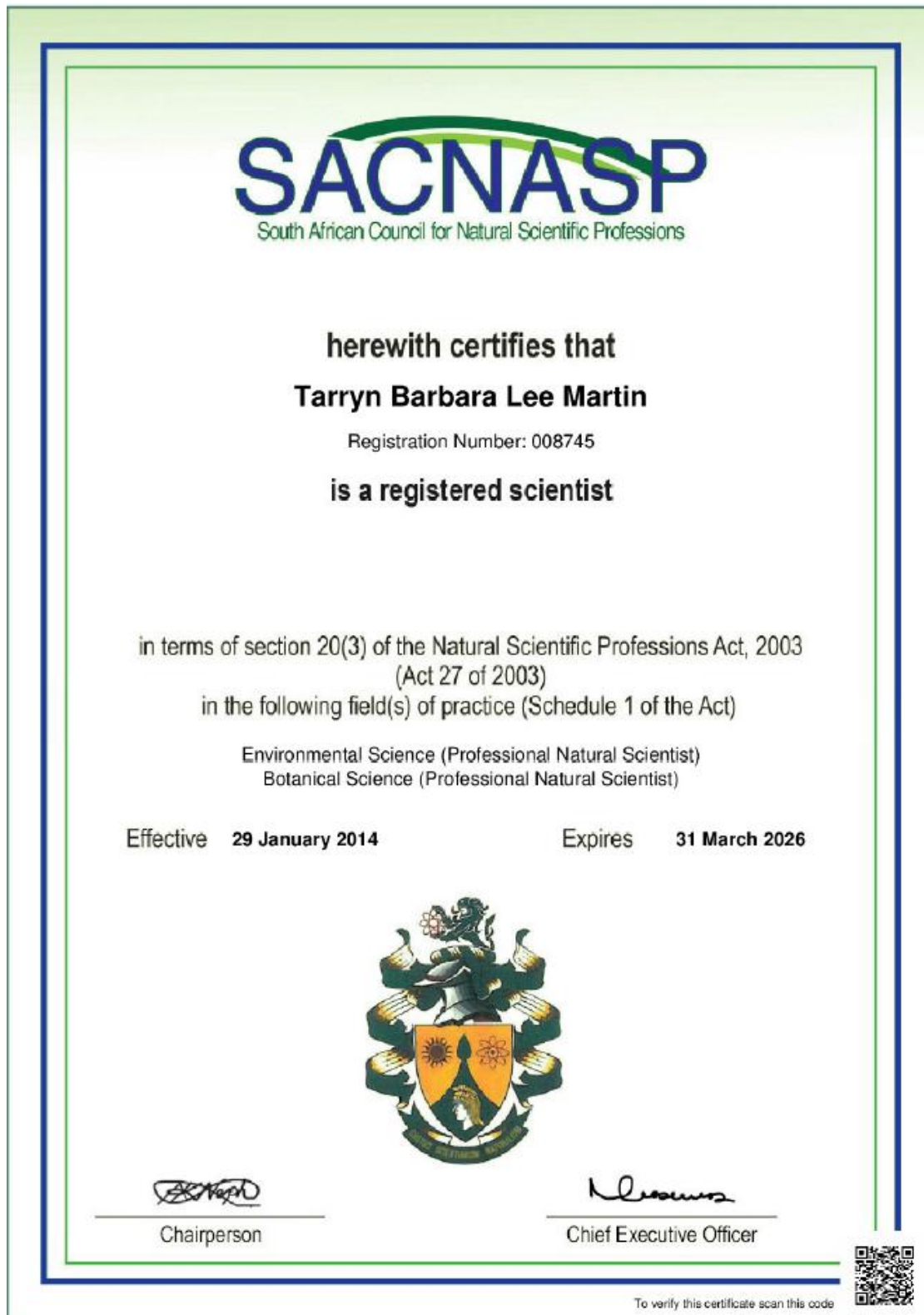
Hoare, D (2019). Ecological Impact Assessment study on the potential impacts of the proposed Rondekop 325MW Wind Energy Facility between Matjiesfontein and Sutherland in the Northern Cape Province. Prepared for SiVEST SA (Pty) Ltd on behalf of Rondekop Wind Far (Pty) Ltd.

South African National Biodiversity Institute (SANBI). 2020. Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa. South African National Biodiversity Institute, Pretoria. Version 1.2020.

Biodiversity Africa (2024). Ecological Walkthrough Report for The Proposed Rondekop Wind Energy Facility and Associated Infrastructure. Prepared for G7 Renewable Energies.

# APPENDIX 1: PROOF OF SACNASP REGISTRATION AND HIGHEST QUALIFICATION

Ms Tarryn Martin (Botanical Specialist) (Pri. Sci. Nat. 008745) – Role: Author and Report Review





# RHODES UNIVERSITY

THIS IS TO CERTIFY THAT

TARRYN BARBARA LEE MARTIN

WAS THIS DAY AT A CONGREGATION OF THE UNIVERSITY  
ADMITTED TO THE DEGREE OF


**MASTER OF SCIENCE**

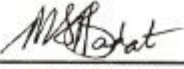
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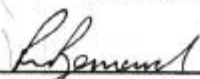
**BOTANY**


**WITH DISTINCTION**

GRAHAMSTOWN  
10 APRIL 2010



  
VICE CHANCELLOR

  
DEAN OF THE FACULTY OF SCIENCE

  
REGISTRAR

## APPENDIX 2: CV

### **Ms Tarryn Martin**

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<b>Office number</b>	+27 (0)71 332 3994
<b>Education</b>	2010: Master of Science with distinction (Botany) 2004: Bachelor of Science (Hons) in African Terrestrial Vertebrate Biodiversity 2003: Bachelor of Science
<b>Nationality</b>	<b>South African</b>
<b>Professional Body</b>	<b>SACNASP:</b> South African Council for Natural Scientific Profession: Professional Natural Scientist (400018/14) <b>SAAB:</b> Member of the South African Association of Botanists  <b>IAIASa:</b> Member of the International Association for Impact Assessments South Africa  Member of Golden Key International Honour Society
<b>Key areas of expertise</b>	<ul style="list-style-type: none"><li>• Biodiversity Surveys and Impact Assessments</li><li>• Environmental Impact Assessments</li><li>• Critical Habitat Assessments</li><li>• Biodiversity Management and Monitoring Plans</li></ul>

### **PROFILE**

Tarryn has over ten years of experience working as a botanist, nine of which are in the environmental sector. She has worked as a specialist and project manager on projects within South Africa, Mozambique, Lesotho, Zambia, Tanzania, Cameroon and Malawi.

She has extensive experience writing botanical impact assessments, critical habitat assessments, biodiversity management plans, biodiversity monitoring plans and Environmental Impact Assessments to International Standards, especially to those of the International Finance Corporation (IFC). Her experience includes working on large mining projects such as the Kenmare Heavy Minerals Mine, where she monitored forest health, undertook botanical impact assessments for their expansion projects and designed biodiversity management and monitoring plans. She has also project managed Environmental Impact Assessments for graphite mines in northern Mozambique and has a good understanding of the Mozambique Environmental legislation and processes.

Tarryn holds a BSc (Botany and Zoology), a BSc (Hons) in African Vertebrate Biodiversity and an MSc with distinction in Botany from Rhodes University. Tarryn's Master's thesis examined the impact of fire on the recovery of C<sub>3</sub> and C<sub>4</sub> Panicoid and non-Panicoid grasses within the context of climate change for which she won the Junior Captain Scott-Medal (Plant Science) for producing the top MSc of 2010 from the South African Academy of Science and Art as well as an Award for Outstanding Academic Achievement in Range and Forage Science from the Grassland Society of Southern Africa. Tarryn is a professional member of the South African

**EMPLOYMENT  
EXPERIENCE**

**Director and Botanical Specialist, Biodiversity Africa**

*July 2021 - present*

- Botanical and ecological assessments for local and international EIAs in Southern Africa
- Identifying and mapping vegetation communities and sensitive areas
- Designing and implementing biodiversity management and monitoring plans
- Designing rehabilitation plans
- Designing alien management plans
- Critical Habitat Assessments
- Large ESIA studies
- Managing budgets

**Principal Environmental Consultant, Branch Manager and Botanical Specialist,  
Coastal and Environmental Services**

*May 2012-June 2021*

- Botanical and ecological assessments for local and international EIAs in Southern Africa
- Identifying and mapping vegetation communities and sensitive areas
- Designing and implementing biodiversity management and monitoring plans
- Designing rehabilitation and biodiversity offset plans
- Designing alien management plans
- Critical Habitat Assessments
- Large ESIA studies
- Managing budgets
- Cape Town branch manager
- Coordinating specialists and site visits

**Accounts Manager, Green Route DMC**

*October 2011- January 2012*

- Project and staff co-ordination
- Managing large budgets for incentive and conference groups travelling to southern Africa
- Creating tailor-made programs for clients
- Negotiating rates with vendors and assisting with the ground management of inbound groups to ensure client satisfaction.

**Camp Administrator and Project Co-ordinator, Windsor Mountain International  
Summer Camp, USA**

*April 2011 - September 2012*

- Co-ordinated staff and camper travel arrangements, main camp events and assisted with marketing the camp to prospective families.

**Freelance Project Manager, Green Route DMC**

*November 2010 - April 2011*



- Project and staff co-ordination
- Managing large budgets for incentive and conference groups travelling to southern Africa
- Creating tailor-made programs for clients
- Negotiating rates with vendors and assisting with the ground management of inbound groups to ensure client satisfaction.

**Camp Counselor**, Windsor Mountain Summer Camp, USA

*June 2010 - October 2010*

**NERC Research Assistant**, Botany Department, Rhodes University, Grahamstown in collaboration with Sheffield University, Sheffield, England

*April 2009 - May 2010*

- Set up and maintained experiments within a common garden plot experiment
- collected, collated and entered data
- Assisted with the analysis of the data and writing of journal articles

**Head Demonstrator**, Botany Department, Rhodes University

*March 2007 - October 2008*

**Operations Assistant**, Green Route DMC

*September 2005 - February 2007*

- Project and staff co-ordination
- Managing large budgets for incentive and conference groups travelling to southern Africa
- Creating tailor-made programs for clients
- Negotiating rates with vendors and assisting with the ground management of inbound groups to ensure client satisfaction

**PUBLICATIONS**

- Ripley, B.; Visser, V.; Christin, P.A.; Archibald, S.; Martin, T and Osborne, C. Fire ecology of C<sub>3</sub> and C<sub>4</sub> grasses depends on evolutionary history and frequency of burning but not photosynthetic type. *Ecology*. 96 (10): 2679-2691. 2015
- Taylor, S.; Ripley, B.S.; Martin, T.; De Wet, L-A.; Woodward, F.I.; Osborne, C.P. Physiological advantages of C<sub>4</sub> grasses in the field: a comparative experiment demonstrating the importance of drought. *Global Change Biology*. 20 (6): 1992-2003. 2014
- Ripley, B; Donald, G; Osborne, C; Abraham, T and Martin, T. Experimental investigation of fire ecology in the C<sub>3</sub> and C<sub>4</sub> subspecies of *Alloteropsis semialata*. *Journal of Ecology*. 98 (5): 1196 - 1203. 2010
- South African Association of Botanists (SAAB) conference, Grahamstown. Title: Responses of C<sub>3</sub> and C<sub>4</sub> Panicoid and non-Panicoid grasses to fire. January 2010
- South African Association of Botanists (SAAB) conference, Drakensberg. Title: Photosynthetic and Evolutionary determinants of the response of selected C<sub>3</sub> and C<sub>4</sub> (NADP-ME) grasses to fire. January 2008

**COURSES**

- Rhodes University and CES, Grahamstown
- EIA Short Course 2012
- Fynbos identification course, Kirstenbosch, 2015.
- Photography Short Course, Cape Town School of Photography, 2015.

## CONSULTING EXPERIENCE

- Using Organized Reasoning to Improve Environmental Impact Assessment, 2018, International IAIA conference, Durban

### International Projects

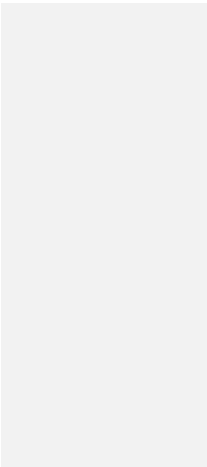
- 2020 – 2021: Project manager for the 2Africa subsea cable ESIA in Mozambique.
- 2020 – 2021: Project manager for the Category B EIA for the Wihinana Graphite Mine, Cabo delgado, Mozambique
- 2020 – 2021: Project manager for the category B exploration ESIA for Sofala Heavy Minerals Mine, Inhambane, Mozambique
- 2020: Critical Habitat Assessment for a graphite mine in Cabo Delgado, Mozambique. This assessment was to IFC standards.
- 2020: Analysed the botanical dataset for Lurio Green Resources and provided comment on the findings and gaps.
- 2020: Biodiversity Management Plan and Monitoring Plan for mine at Pilivilli in Nampula Province, Mozambique. This assessment was to IFC standards.
- 2019: Botanical Assessment for a cocoa plantation, Tanzania. This assessment was to IFC standards.
- 2019: Critical Habitat Assessment, Biodiversity Management Plan and Ecosystem Services Assessment for JCM Solar Farm in Cameroon. This assessment was to IFC standards.
- 2019: Undertook the Kenmare Road and Infrastructure Botanical Baseline Survey and Impact Assessment for an infrastructure corridor that will link the existing mine at Moma to the new proposed mine at Pillivilli in Nampula Province, Mozambique. This assessment was to IFC standards.
- 2012 – Present: Kenmare Terrestrial Monitoring Program Project Manager and Specialist Survey, Nampula Province, Mozambique.
- 2018: Conducted a field survey and wrote a botanical report to IFC standards for the proposed Balama Graphite Mine Environmental and Social Impact Assessment (ESIA) in Cabo Delgado Province, Mozambique.
- 2018: Co-authored the critical habitat assessment chapter for the proposed Kenmare Pilivilli Heavy Minerals Mine.
- 2018: Authored the Conservation Efforts chapter for the Kenmare Pilivilli Heavy Minerals Mine.
- 2017-2018: Co-authored and analysed data for the Kenmare Bioregional Survey of *Icuria dunensis* (species trigger for critical habitat) in Nampula Province, Mozambique. This was for a mining project that needed to be IFC compliant.
- 2017: Conducted a field survey and wrote a botanical report to IFC standards for the proposed Ancuabe Graphite Mine Environmental and Social Impact Assessment (ESIA) in Cabo Delgado Province, Mozambique.
- 2017-2018: Managed the Suni Resources Montepuez Graphite Mine Environmental Impact Assessment. This included the management of ten specialists, the co-ordination of their field surveys, regular client liaison and the writing of the Environmental Impact Assessment Report which summarised the specialists findings, assessed the impacts of the proposed mine on the environment and provided mitigation measures to reduce the impact.  
I was also the lead botanist for this baseline survey and impact assessment and undertook the required field work and analysed the data and wrote the report.
- 2017: Undertook the botanical baseline survey and impact assessment for the proposed Kenmare Pilivilli Heavy Mineral Mine in Nampula Province, Mozambique. This was to IFC Standards.
- 2017: Ecological Survey for the Megaruma Mining Limitada Ruby Mine Exploration License, Cabo Delgado, Mozambique.
- 2016: Undertook the botanical baseline survey and impact assessment, wrote an alien invasive management plan and co-authored the biodeiversity monitoring plan for this farm. The project was located in Zambezia Province, Mozambique.
- 2015-2016: Conducted the Triton Minerals Nicanda Hills Graphite Mine Botanical Survey and Impact Assessment. Was also the project manager and specialist co-

ordinator for this project. The project was located in Cabo Delgado Province, Mozambique.

- 2015: Was part of the team that undertook a Critical Habitat Assessment for the Nhanganzo Coastal Stream site at Inhassora in Mozambique that Sasol intend to establish drill pads at. This project needed to meet the IFC standards.
- 2014: Lurio Green Resources Wood Chip Mill and Medium Density Fibre-board Plant, Project Manager and Ecological Specialist, Nampula Province, Mozambique. 2014-2015.
- 2013-2014: LHDA Botanical Survey, Baseline and Impact assessment, Lesotho.
- 2014: Biotherm Solar Voltaic Ecological Assessment, Zambia.
- 2013-2014: Lurio Green Resources Plantation Botanical Assessment, Vegetation and Sensitivity Mapping, Specialist Co-ordination, Nampula Province, Mozambique.
- 2013: Syrah Resources Botanical Baseline Survey and Ecological Assessment., Cabo Delgado Mozambique.
- 2013-2014: Baobab Mining Ecological Baseline Survey and Impact Assessment, Tete, Mozambique.

### **South African Projects**

- 2021 - Present: Project Manager for the Sturdee Energy Solar PV facility, Western Cape
- 2021: Ecological Assessment for the Sturdee Energy Solar PV facility, Western Cape
- 2021: Rehabilitation plan for a housing development (Hope Village)
- 2020: Ecological Assessment for the Eskom Juno-Gromis Powerline deviation, Western Cape
- 2020: Project Manager for the Basic Assessment for SANSA development at Matjiesfontein (Western Cape). Project received authorization in 2021.
- 2020: Ecological Assessment for construction of satellite antennae, Matjiesfontein, Western Cape
- 2019: Ecological Assessment for a wind farm EIA, Kleinzee, Northern Cape
- 2019: Ecological Assessment for two housing developments in Zeerust, North West Province
- 2019: Botanical Assessment in Retreat, Cape Town for the DRDLR land claim.
- 2019: Cape Agulhas Municipality Botanical Assessment for the expansion of industrial zone, Western Cape, South Africa, 2019.
- 2018: Ecological Assessment for the construction of a farm dam in Greyton, Western Cape.
- 2018: Conducted the Ecological Survey for a housing development in Noordhoek, Cape Town
- 2018: Conducted the field survey and developed an alien invasive management plan for the Swartland Municipality, Western Cape.
- 2017: Undertook the field survey and co-authored a coastal dune study that assesses the impacts associated with the proposed rezoning and subdivision of Farm Bookram No. 30 to develop a resort.
- 2017: Project managed and co-authored a risk assessment for the use of Marram Grass to stabilise dunes in the City of Cape Town.
- 2015-2016: iGas Saldanha to Ankerlig Biodiversity Assessment Project Manager, Saldanha.
- 2015: Innowind Ukomoleza Wind Energy Facility Alien Invasive Management Plan, Eastern Cape Province, South Africa.
- 2015: Savannah Nxuba Wind Energy Facility Powerline Ecological Assessment, ground truthing and permit applications, Eastern Cape South Africa.
- 2014: Cob Bay botanical groundtruthing assessment, Eastern Cape, South Africa.
- 2013-2016: Dassiesridge Wind Energy Facility Project Manager, Eastern Cape, South Africa.

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- 2013: Harvestvale botanical groundtruthing assessment, Eastern Cape, South Africa.
  - 2012: Tsitsikamma Wind Energy Facility Community Power Line Ecological Assessment, Eastern Cape, South Africa.
  - 2012: Golden Valley Wind Energy Facility Power Line Ecological Assessment, Eastern Cape, South Africa.
  - 2012: Middleton Wind Energy Facility Ecological Assessment and Project Management, Eastern Cape, South Africa.
  - 2012: Mossel Bay Power Line Ecological Assessment, Western Cape, South Africa.
  - 2012: Groundtruthing the turbine sites for the Waainek Wind Energy Facility, Eastern Cape, South Africa.
  - 2012: Toliara Mineral Sands Rehabilitation and Offset Strategy Report, Madagascar.