EcoFocus
Ecological Specialist Services
Leave a future behind

Protected Species Relocation Management Plan

Farm Doorns no 131 Agricultural Development, Ritchie, Northern Cape Province

October 2018

Compiled for:

ECO-CON ENVIRONMENTAL
BECAUSE A GOOD PLANET IS HARD TO FIND

Compiled by:

Rikus Lamprecht

Ecological Specialist (Pr.Sci.Nat)

EcoFocus Consulting

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Abbreviations

BA	Basic Assessment
CBA	Critical Biodiversity Area
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Ecological Support Area

Declaration of Independence

I, Adriaan Johannes Hendrikus Lamprecht, ID 870727 5043 083, declare that I:

- am the Director and Ecological Specialist of EcoFocus Consulting (Pty) Ltd
- act as an independent specialist consultant in the field of botany and ecology
- am assigned as the Ecological Specialist consultant by the EAP, Eco-Con Environmental, for the proposed project
- do not have or will not have any financial interest in the undertaking of the proposed project activity other than remuneration for work as stipulated in the Purchase Order terms of reference
- confirm that remuneration for my services relating to the proposed project is not linked to approval or rejection of the project by the competent authority
- have no interest in secondary or subsequent developments as a result of the authorisation of the proposed project
- have no and will not engage in any conflicting interests in the undertaking of the activity
- undertake to disclose to the applicant and the competent authority any information that has or may have the potential to influence the decision of the competent authority
- will provide the applicant and competent authority with access to all relevant project information in my possession whether favourable or not

AJH Lamprecht

Signature

1. Introduction

The project applicant, Sorgvry Landgoed BK proposes to develop a single cultivated centre pivot land of approximately 34 ha in size on a portion of land located on Portion 34 of the Farm Doorns no 131. The farm is situated approximately 800 m west of the town of Ritchie, Northern Cape Province. The purpose of the cultivation will be for commercial rotational planting and harvesting of maize and Lucerne. An irrigation pipeline required for the centre pivot land, will tie into the existing pump and piping network which is used for irrigation of other centre pivot lands in the area. The existing piping network extracts water from the Riet River which is situated approximately 1.2 km south of the assessment area.

The assessment area is approximately 80 ha in size. The majority of the assessment area is situated on a historic centre pivot land footprint while only the north-eastern portion is situated on natural virgin soil.

Eco-Con Environmental was appointed by the applicant as the independent Environmental Practitioner (EAP) to conduct the Environmental Impact Assessment (EIA) process.

Due to the nature of the potential impacts of the proposed development on the local ecology, an Ecological study is required. This is required in order to determine the potential presence of ecologically significant species, habitats or wetland areas within the proposed project footprint which may be affected by the proposed development.

EcoFocus Consulting was therefore subsequently appointed by the applicant as the independent ecological specialist to conduct the required Ecological study for the proposed project.

A site visit/assessment for the proposed development footprint area was conducted on 6 September 2018 and the final Ecological Assessment Report was subsequently completed and submitted on 22 October 2018.

2. Objectives of the Protected Species Relocation Management Plan

- Provide management and monitoring guidelines for the relocation process of any Red Data Listed- , provincially- or nationally protected plant species which were found to be present within the assessment area as per the Ecological Assessment Report.

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3. Study Area

The assessment area consists of a single footprint area of approximately 80 ha in size of which only a single approximately 34 ha cultivated centre pivot land will be developed. The area is situated on Portion 34 of the Farm Doorns no 131 (SG 21 Digit Code: C03700000000131000034). The farm is situated approximately 800 m west of the town of Ritchie which forms part of the Sol Plaatjie Local Municipality. This in turn, forms part of the Frances Baard District Municipality, Northern Cape Province. Access to the assessment area is obtained via the N 12 national rad and subsequent dirt road from the south-east.

See locality map below.

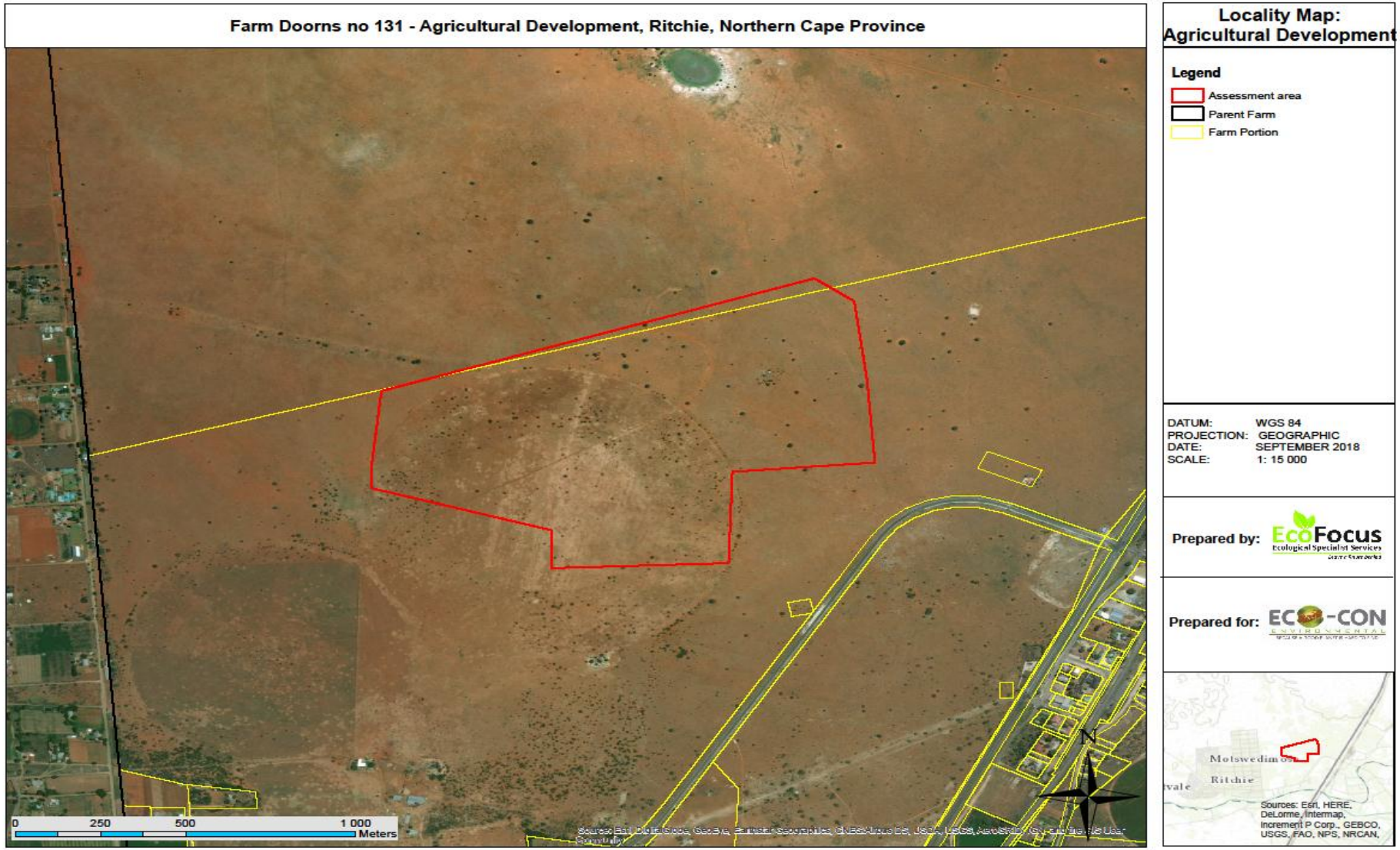

Figure 1: Locality map illustrating the assessment area (see A3 sized map in the Appendices)

3.1. Climate

The rainfall of the region peaks during the summer months and the Mean Annual Precipitation (MAP) of the area is approximately 453 mm (www.climate-data.org). The maximum average monthly temperature is approximately 24.6°C in the summer months while the minimum average monthly temperature is approximately 9.1°C during the winter. Maximum daily temperatures can reach up to 32.6°C in the summer months and dip to as low as -0.2°C during the winter.

3.2. Geology and Soils

According to Mucina & Rutherford (2006) the geology of the landscape and associated vegetation type can be described as the following:

The flat to slightly undulating plains are characterised by Andesitic lavas of the Allanridge formation in the northern and western sections of the vegetation type. Deep sandy to loamy soils of the Hutton soil form are mainly present.

3.3. Vegetation and Conservation Status

According to SANBI (2006-), the entire assessment area falls within the Kimberley Thornveld vegetation type (SVk 4) which is characterised by slightly irregular plains with a well-developed woody component (tree and shrub layer). The herbaceous layer is usually open with much uncovered soils. This vegetation type is classified as least threatened because of its broad distributions and it being mostly excluded from being utilised for intensive agricultural cultivation activities (SANBI, 2006-).

The entire assessment area is categorised as a Critical Biodiversity Area two (CBA 2) in accordance with the Northern Cape Provincial Spatial Biodiversity Plan 2016 (NCPSBP), which sets out biodiversity priority areas in the province. Critical Biodiversity Areas are areas that are irreplaceable or near-irreplaceable (CBA 1), or reflect an optimum configuration (CBA 2) for reaching provincial biodiversity targets for ecosystem types, species or ecological processes (Collins, 2017). Such an area must be maintained in a natural or near-natural state in order to meet biodiversity targets (Collins, 2017).

The mechanical clearance of vegetation and soil preparation associated with the proposed agricultural development will in all probability completely transform the majority of the existing natural surface vegetation on the assessment area.

See vegetation and sensitivity maps below.

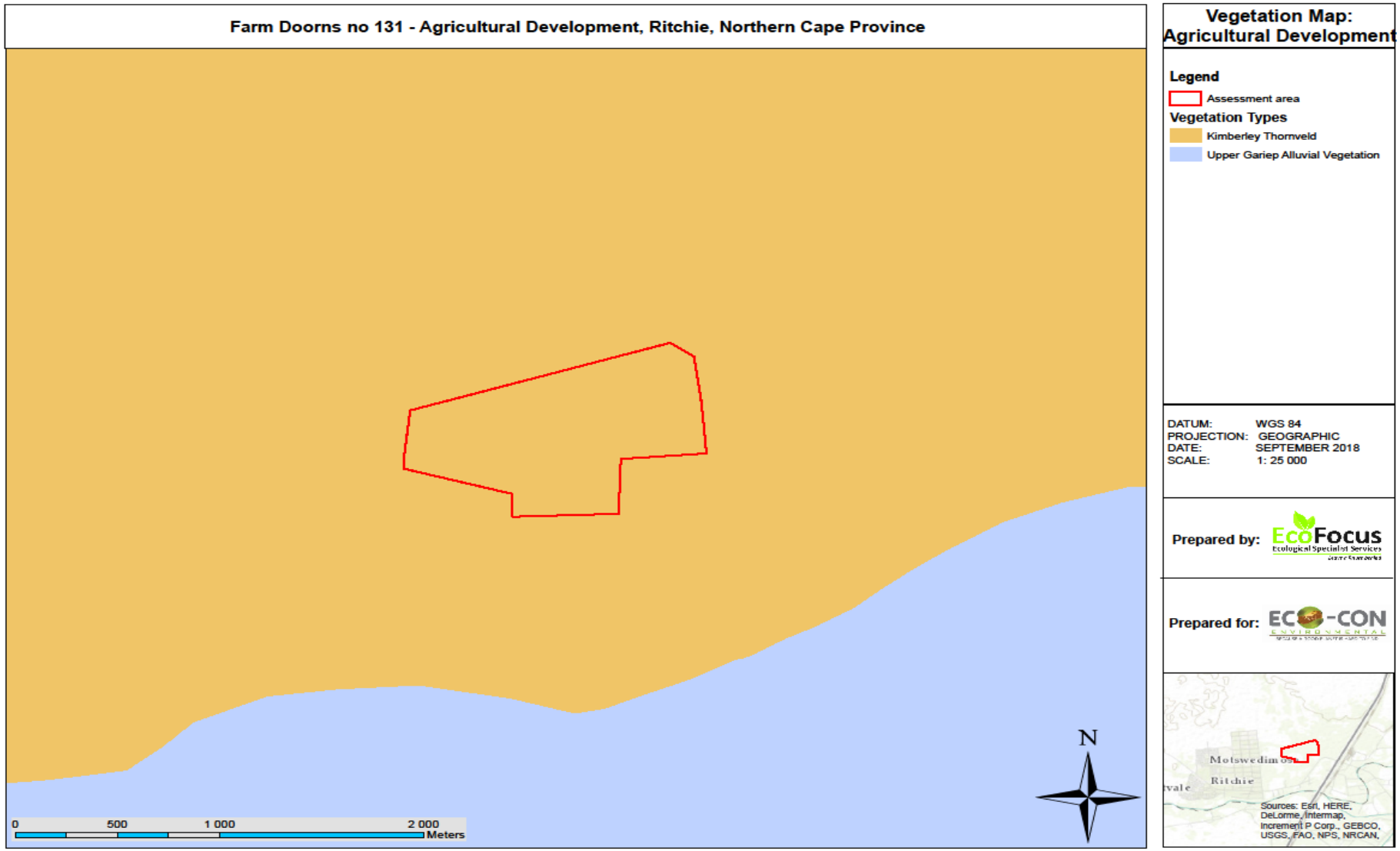

Figure 2: Vegetation map illustrating the vegetation type associated with the assessment area (see A3 sized map in the Appendices)

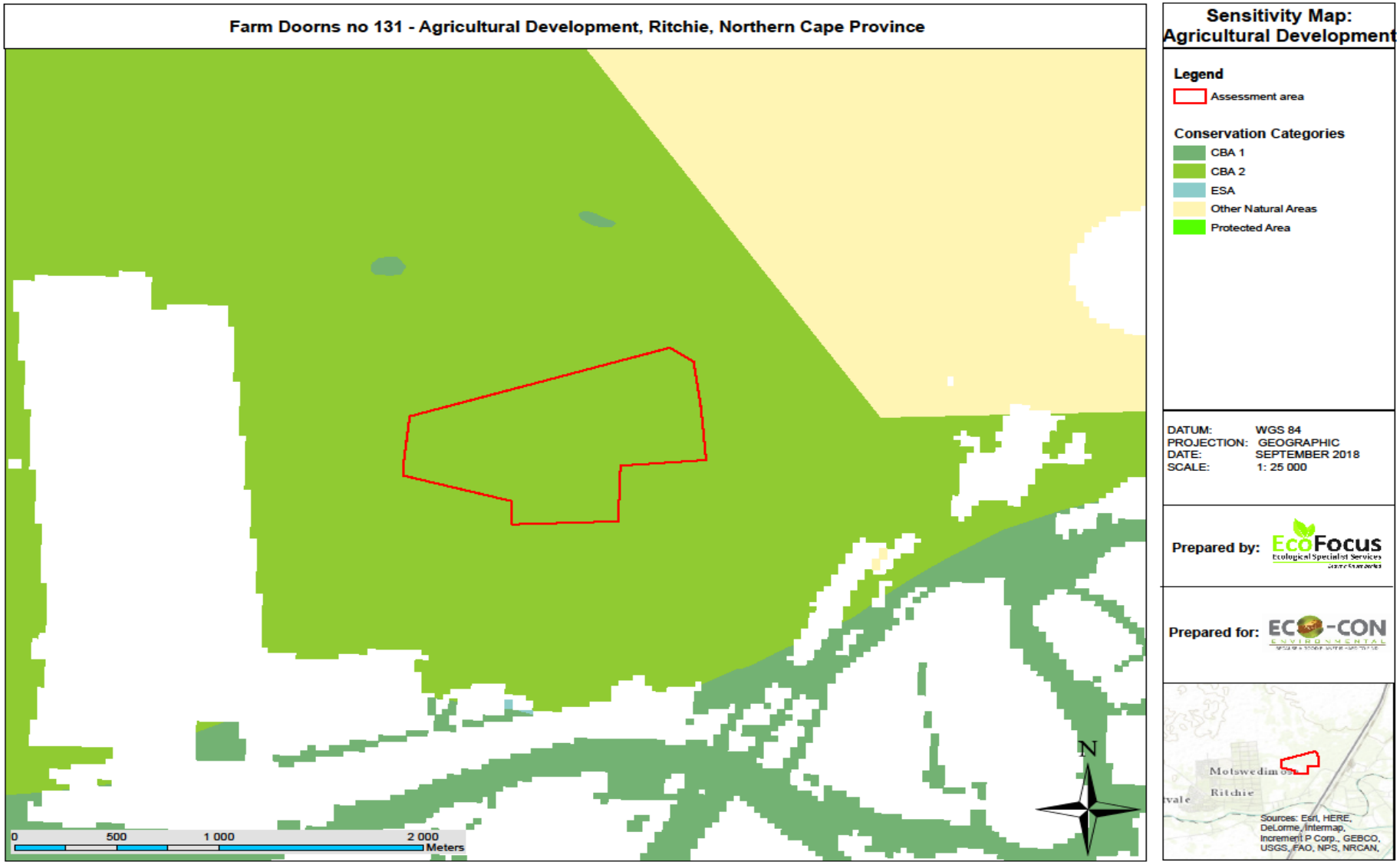

Figure 3: Sensitivity map illustrating the conservation status associated with the assessment area (see A3 sized map in the Appendices)

4. Findings of the Ecological Assessment Report

No Red Data Listed, provincially- or nationally protected or any other species of conservational significance were found to be present within the entire historic centre pivot land footprint. It must however be noted that the time of the assessment was not necessarily favourable for successful identification of all plant species individuals.

The woody component of the north-eastern portion of the assessment area is mainly dominated by tree and shrub individuals of the nationally protected species *Vachellia erioloba.* Approximately 53 individuals of this species are present of which 7 are large mature individuals (≥ 7 m in height) with broad tree canopies. These broad tree canopies house significant numbers of Cape Sparrow (*Passer melanurus*) nests and possibly also Great Sparrow (*Passer motitensis*) nests, which is provincially a protected species. Two individuals of the provincially protected forb species *Boophone disticha* and a single individual of the provincially specially protected species *Harpagophytum sp.* were also found to be present within the north-eastern portion of the assessment area. It is however highly likely that there could be more individuals of these species present.

If the recommended Alternative 1 for the proposed development is approved by the competent authority, it will only impact on 19 of the 53 identified *Vachellia erioloba* individuals as well as on one of the two identified *Boophone disticha* individuals. Alternative 1 will not impact on the identified *Harpagophytum sp.* individual.

Figure 4: Image illustrating the presence of the provincially protected species *Boophone disticha*

Figure 5: Image illustrating the presence of the provincially specially protected species *Harpagophytum sp.*

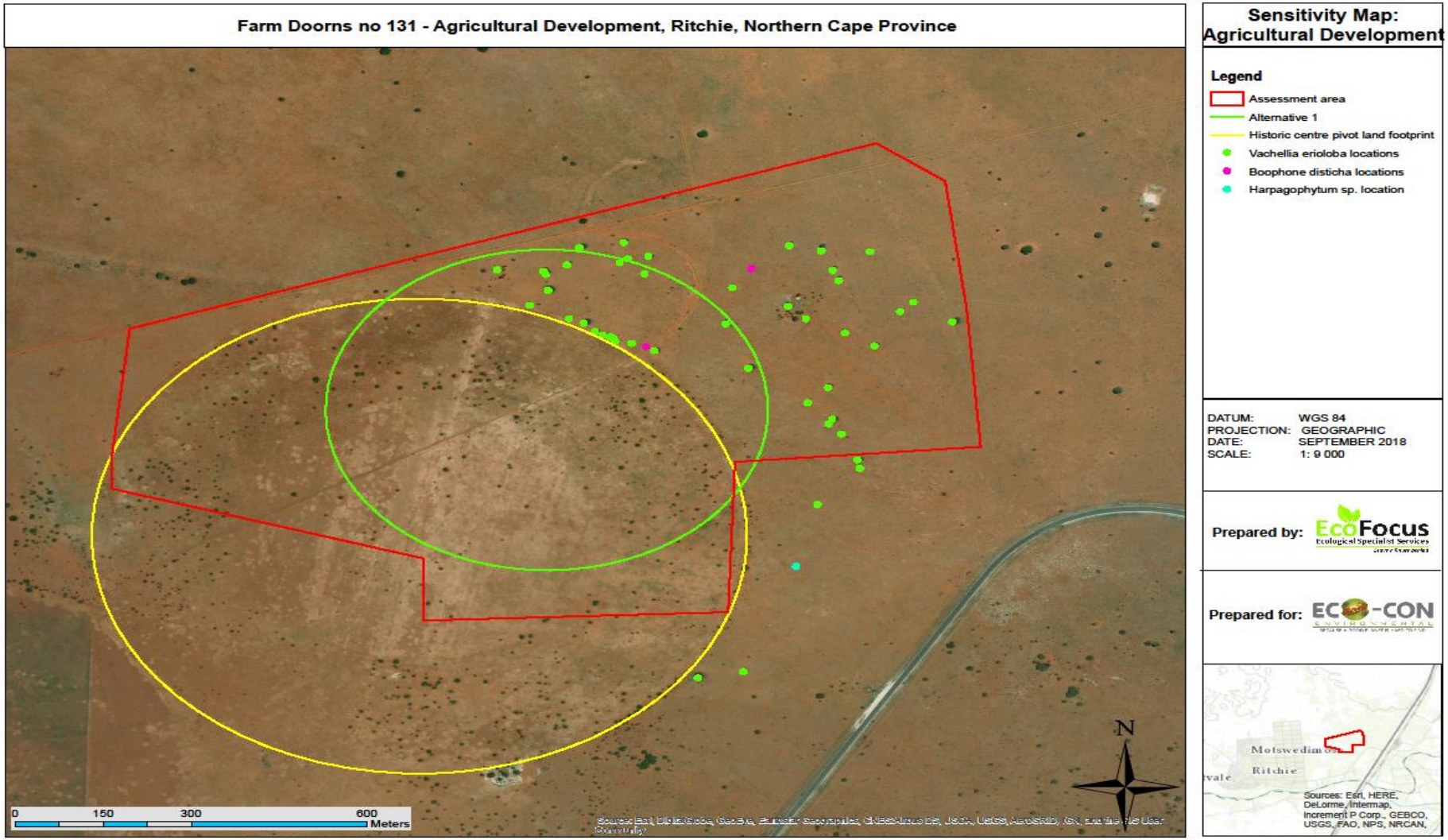

Figure 6: Sensitivity map illustrating the locations of the nationally protected tree species *Vachellia erioloba* individuals as well as the locations of the two provincially protected species individuals (see A3 sized map in the Appendices)

5. Removal, Relocation and Re-establishment Process

Once a positive Environmental Authorisation is received for the proposed development, a Provincial Flora Permit- as well as a National Protected Tree License application must be submitted to the relevant competent authorities prior to commencement of any construction activities or removal of any protected species individuals.

The Provincial Flora Permit application must apply for the removal and relocation of the single individual of the provincially protected species *Boophone disticha* which will be impacted by the development of Alternative 1. The National Protected Tree License application must apply for the removal/destruction of the 19 individuals of the nationally protected species *Vachellia erioloba* which will be impacted by the development of Alternative 1.

Only once a Provincial Flora Permit and National Protected Tree License are received, can the removal and relocation process commence and only once the relocation process is completed can any construction activities commence.

The relocation process of the single individual of the provincially protected species *Boophone disticha* is divided into three steps for reporting purposes namely Removal, Relocation and Re-establishment. Each of these steps will be discussed separately.

5.1. Removal

- Sufficiently soak the soil around the single *Boophone disticha* individual in order to soften the soil. This will assist with the easing of the excavation process.
- Carefully, manually excavate the soil around the individual at a minimum distance of approximately 40 cm away from the aboveground material with the use of a garden hand-shovel.
- Carefully, manually excavate the soil around and under the individual to a minimum depth of approximately 40 cm in order to ensure as far as practicably possible, that the ventrally located adventitious rooting system does not get significantly damaged during the physical removal process.
- Carefully, manually remove the individual from the soil by keeping its ventrally located adventitious rooting system intact and as far as practicably possible, not breaking off any significant root portions.

- The relevant person removing the individual must wear sterile rubber garden gloves throughout the process in order to prevent any potential contamination or transmission of any sorts to the removed individual.

- Photographs must be taken of all the individual steps.

5.2. Relocation

- An adequate area for relocation must be determined by a suitably qualified and experienced ecological specialist prior to commencement of the relocation process.
- The following criteria must be used to identify a suitable relocation area in accordance with the relevant area from where the single *Boophone disticha* individual was initially removed.
    - An area in relatively close proximity is required in order to ensure similar climatic conditions were maintained for the species individual.
    - A flat to slightly sloping (gradient of ≤ 1:10), open savannah/grassland area associated with the Kimberley Thornveld vegetation type (SVk 4) is required.
    - The area must not fall within a wetland or watercourse 1:100 year floodline.
    - Sufficiently draining soil is required.
    - It is recommended that the individual be relocated to within close proximity of the second identified *Boophone disticha* individual which is situated approximately 200 m north-east of the current individual. This area has already proven suitable for the establishment of the species. This would also ensure beneficial cross-pollination and genetic exchange between the individuals. The chances of future development or transformation being authorised by a competent authority within that CBA 2 is also less likely and it is anticipated that the area should stay relatively undisturbed over time.
- Carefully transport the removed individual to the new re-establishment location. Its ventrally located adventitious rooting system must be kept elevated as far as practicably possible in order to prevent any significant damage to the roots during transport.
- Photographs must be taken of this step.

5.3. Re-establishment

- The Geographic Information System (GIS) coordinates of the new location where the single *Boophone disticha* individual is to be re-established must be captured.
- Sufficiently soak the soil at the new location in order to soften the soil. This will assist with the easing of the excavation process.
- Manually excavate a hole of approximately 30 cm wide and 15 cm deep with the use of a hand-shovel. This must done in order to ensure that the entire ventrally located adventitious rooting system can be sufficiently placed under ground-level, as was the case at the initial location from where the individual was removed.
- Manually incorporate a small amount of sufficiently decomposed compost into the bottom of the excavated hole in order to provide sufficient nutrients, organic carbon and water retention for the recovery of the individual after the relocation process.
- Carefully place the individual inside the excavated hole. It must be placed with its adventitious rooting system pointing directly downwards in a ventral direction, as was the case at the initial location from where the individual was removed.
    - The relevant person re-establishing the individual must wear sterile rubber garden gloves throughout the process in order to prevent any potential contamination or transmission of any sorts to the removed individual.
- Fill up the hole around the placed individual with the previously excavated soils and carefully pat down manually to consolidate the growth medium. The soil must only be slightly patted down in order to avoid compaction and potential damage to the placed individual.
- Adequately wet the soil after completion of the re-establishment process (only once off).
- Photographs must be taken of all the individual steps.

6. Conclusion

If the removal, relocation and re-establishment process is adequately followed and completed as per this report, it is anticipated that this should be sufficient to ensure the continued growth and persistence of the single *Boophone disticha* individual at the commencement of the new growing season.

A short description of the process followed and all the photographs of the individual steps must be provided to the specialist upon completion in order to provide final feedback to the competent authority.

Follow up photographs must be taken 3 months after completion of the re-establishment process in order to determine the condition of the single *Boophone disticha* individual and whether it has adequately recovered from the relocation process.

7. References

Collins, N.B. 2017. Free State Province Biodiversity Plan: Technical Report v1.0. Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs. Internal Report.

Mucina, L. & Rutherford, M.C. (eds.) 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

Northern Cape Nature Conservation Act (Act 9 of 2009)

Northern Cape Provincial Spatial Biodiversity Plan 2016 (NCPSBP) http://bgis.sanbi.org/Projects/Detail/203

South African National Biodiversity Institute (2006-). The Vegetation Map of South Africa, Lesotho and Swaziland, Mucina, L., Rutherford, M.C. and Powrie, L.W. (Editors), Online, http://bgis.sanbi.org/SpatialDataset/Detail/18, Version 2012.*

www.climate-data.org

8. Details of the Specialist

Adriaan Johannes Hendrikus Lamprecht (Pr.Sci.Nat)

M.Env.Sci. Ecological remediation and sustainable utilisation (NWU: Potchefstroom)

South African Council for Natural Scientific Professions (SACNASP): Professional Ecological Scientist (No 115601)

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Abbreviated Curriculum Vitae

Qualifications

- M.Env.Sci Ecological Remediation and Sustainable Utilisation/Vegetation Ecology
  - 2010 - North West University Potchefstroom
- B.Sc Botany and Zoology (Cum Laude)
  - 2008 - North West University Potchefstroom

Accredited courses completed

- Implementing Environmental Management Systems ISO 14001
  - 2011 - North West University Potchefstroom
- Environmental Law for Environmental Managers
  - 2011 - North West University Potchefstroom
- SASS 5 Aquatic Biomonitoring Training Course
  - 2017 – GroundTruth Consulting

Professional registrations

- South African Council for Natural Scientific Professions **(SACNASP)**
  - Professional Ecological Scientist Registration number 115601

- International Association for Impact Assessment **(IAIA)**
    - Registration number 5232
- South African Green Industries Council (**SAGIC**) Invasive Species training
    - Registration number 2405/2459

Employment and Experience Background

Upon completion of his studies, Rikus started his career in 2011 as an **Environmental Professional in Training (PIT) at Anglo American Thermal Coal: Environmental Services.** He received environmental training and practical implementation experience in all environmental facets of the mining industry with the focus on: Environmental rehabilitation, land management (biodiversity and invasive species eradication), waste & water-, air quality-, game reserve-, environmental management and legislation, as well as corporate reporting. He was also appointed as the Biodiversity management custodian at Anglo American Thermal Coal collieries.

He was subsequently employed by **Fraser Alexander Tailings from October 2011 to the end of November 2015 as an Environmental Contracts Manager,** where he was responsible for the technical and operational management of all Fraser Alexander Tailings' mining environmental rehabilitation work. He was responsible for all facets of project management, as well as implementation of rehabilitation and environmental strategies, by planning activities, organising physical, financial and human resources, delegating task responsibilities, leading people, controlling risks and providing technical support.

He conducted a significant amount of quantitative and qualitative ecological vegetation monitoring during his employment period with the company. Such monitoring mainly included environmentally rehabilitated mining areas in the open-cast coal-, gold-, platinum- and chrome mining industries situated in the Free State, Gauteng, Mpumalanga, North-West and Limpopo Provinces. He was involved with analysis, processing and interpretation of environmental monitoring data and compilation of high quality technical/scientific environmental monitoring reports for clients. He was subsequently further involved with providing adequate ecological management and maintenance recommendations for rehabilitated areas. He also provided technical/scientific environmental rehabilitation support to mining clients, with regards to sufficient soil preparation and amelioration, grassing processes, as well as grass species mixtures and ratios.

He was then employed by **Enviroworks Consulting from January 2016 to the end of May 2017 as a Senior Ecological Specialist** where he was responsible for virtually all Ecological, Aquatic and Wetland specialist assessments and reporting related to Environmental Impact Assessment (EIA) and Basic Assessment (BA) projects. He also completed numerous EIA and BA projects as the main project Environmental Assessment Practitioner (EAP).

Rikus then subsequently established the company EcoFocus Consulting (Pty) Ltd, which provides high quality professional environmental and ecological specialist services and solutions to the industrial development-, construction-, mining-, agricultural and other sectors, at the end of May 2017.

He possesses significant qualifications, vast knowledge, skills and practical experience in the specialist field of ecological and environmental management. This, coupled with his disciplined, determined and goal-driven mind-set, as well as his high level of personal standards, ensure high quality, timely and outcomes based outputs and service delivery relating to any project.

Ecological Specialist Report Completion

2018

- Completion of a specialist ecological assessment and report for the proposed 30 ha Portion 30 of the Farm Lilyvale no 2313 Residential development project in Bloemfontein, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 20 ha Luckhoff Waste Facility development project in Luckhoff, Free State Province.
- Completion of a specialist ecological assessment and report for a proposed 19 ha agricultural development project outside Griekwastad, Northern Cape Province.
- Completion of a specialist ecological assessment and report for a proposed 135 ha agricultural development project outside Griekwastad, Northern Cape Province.
- Completion of five specialist ecological assessments and reports for the proposed Dawid Kruiper Local Municipality Residential Developments around Upington, Northern Cape Province.
- Completion of a specialist Grazing and Erosion Management Plan for the Retiefs Nek no 123, outside Bethlehem, Free State Province.
- Completion of a specialist Grazing and Erosion Management Plan for the Dekselfontein no 317, outside Bethlehem, Free State Province.

- Completion of a specialist ecological assessment and report for a proposed 12 ha agricultural development project in Petrusville, Northern Cape Province.
- Completion of a specialist ecological and wetland assessment and report for a proposed 270 ha industrial park development project in Secunda, Mpumalanga Province.
- Completion of a specialist ecological and wetland assessment and report for a proposed 233 ha industrial park development project in Sabie, Mpumalanga Province.
- Completion of a specialist ecological assessment and report for the proposed Dawid Kruiper Local Municipality Residential Development around Upington, Northern Cape Province.
- Completion of two specialist ecological assessments and reports for two proposed 15 ha agricultural development projects outside Hopetown, Northern Cape Province.
- Completion of two Alien Invasive Species Management Plans for two proposed 15 ha agricultural development projects outside Hopetown, Northern Cape Province.
- Completion of a Protected Species Relocation Management Plan for a proposed 15 ha agricultural development project outside Hopetown, Northern Cape Province.
- Completion of a specialist ecological and wetland assessment and report for a proposed 169 ha industrial park development project in Sabie, Mpumalanga Province.
- Completion of a specialist Grazing and Erosion Management Plan for the Farm Barnea no 231, outside Bethlehem, Free State Province.
- Compilation of a GIS locality, vegetation and sensitivity map for the proposed 7.13 ha Karoo Hoogland Local Municipality Residential Development project in Sutherland, Northern Cape Province.
- Completion of a specialist Erosion and Rehabilitation Monitoring Report for the Farms Die Kranse no 1174 and De Rotsen no 52 outside Vrede, Free State Province.
- Drafting of an official Environmental Policy for Teambo Facilitators (Pty) Ltd in Bloemfontein, Free State Province.
- Completion of a specialist ecological assessment and report for a proposed 11.6 ha COGHSTA NEMA Section 24G residential development project in Douglas, Northern Cape Province.
- Completion of a specialist ecological assessment and report for a proposed 3.26 ha COGHSTA NEMA Section 24G residential development project in Strydenburg, Northern Cape Province.
- Completion of a specialist ecological assessment and report for a proposed 25.6 ha COGHSTA NEMA Section 24G residential development project in Loxton, Northern Cape Province.
- Completion of a specialist biodiversity offset feasibility assessment and report for a proposed 805 ha agricultural development project outside Douglas, Northern Cape Province.

- Completion of a specialist ecological assessment and report for a proposed 2 ha Rouxville Waste Water Treatment Works expansion project in Rouxville, Free State Province.
- Completion of a specialist ecological exemption letter for the proposed Vanderkloof Tegnologie Chicken Abattoir development project in Petrusville, Northern Cape Province.
- Completion of a Protected Species Relocation Management Plan for a proposed 2 ha Rouxville Waste Water Treatment Works expansion project in Rouxville, Free State Province.
- Completion of a Rehabilitation and Alien Invasive Species Management Plan for a proposed 2 ha Rouxville Waste Water Treatment Works expansion project in Rouxville, Free State Province.
- Completion of a Stormwater and Erosion Management Plan for a proposed 2 ha Rouxville Waste Water Treatment Works expansion project in Rouxville, Free State Province.
- Completion of a Water Use License Application (WULA) Risk Assessment for a proposed 2 ha Rouxville Waste Water Treatment Works expansion project in Rouxville, Free State Province.
- Completion of a revised specialist ecological assessment and report for the proposed 17.7 ha Luckhoff Waste Facility development project in Luckhoff, Free State Province.
- Completion of a specialist ecological assessment and report for a proposed 113.3 ha Dawn Valley Estate development project in Bloemfontein, Free State Province.
- Completion of a specialist Grazing and Invasive Species Management Plan for the Farm Klipfontein no 71, outside Lindley, Free State Province.
- Completion of a specialist Grazing and Invasive Species Management Plan for the Farm Meyerskop no 1801, outside Bethlehem, Free State Province.
- Completion of a specialist ecological assessment and report for a proposed 2.24 ha Mullerstuine Cemetery development project in Vanderbijlpark, Gauteng Province.
- Completion of a specialist Species of Special Concern & Alien Invasive Species assessment and report for all the Transnet Engineering Group 5 Free State Province Sites.
- Completion of a specialist Species of Special Concern & Alien Invasive Species assessment and report for all the Transnet Engineering Group 6 Northern Cape Province Sites.
- Completion of a specialist ecological assessment and report for a proposed 80 ha agricultural development project outside Ritchie, Northern Cape Province.
- Completion of a specialist ecological and wetland assessment and report for a proposed 545 ha residential development project in Leandra, Mpumalanga Province.

2017

- Completion of a specialist ecological assessment and report for the proposed Phethogo Consulting filling station development project in Bloemfontein, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 132 kV CENTLEC Harvard transmission line development project in Bloemfontein, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed Zevenfontein filling station development project in Johannesburg, Gauteng Province.
- Completion of a specialist ecological assessment and report for the proposed Olifantsvlei Curro School development project in Johannesburg, Gauteng Province.
- Completion of a specialist ecological assessment and report for the proposed 23 ha Babereki Agricultural development project in Hartswater, Northern Cape Province.
- Completion of a specialist ecological assessment and report for the proposed Eikenhof Curro School development project in Johannesburg, Gauteng Province.
- Completion of a specialist ecological assessment and report for the proposed 40 ha CoGHSTA residential development project in Norvalspont, Northern Cape Province.
- Completion of a specialist ecological assessment and report for the proposed 9 ha CoGHSTA residential development project in Williston, Northern Cape Province.
- Completion of a specialist ecological and wetland assessment and report for the proposed 100 ha Musgrave residential and commercial development in Bloemfontein, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 15 ha BVI Engineering Waste Water Treatment Works and associated pipeline development project in Britstown, Northern Cape Province.
- Completion of a specialist ecological walkthrough assessment and report and relocation of provincially protected species *Eucomis autumnalis* individuals for the Bloemwater 33.6 km Brandkop Bypass water supply pipeline in Bloemfontein, Free State Province.
- Completion and execution of a Species Relocation and Re-establishment Plan for 13 individuals of the provincially protected species, *Eucomis autumnalis,* for the Bloemwater 33.6 km Brandkop Bypass water supply pipeline in Bloemfontein, Free State Province.
- Completion of a specialist ecological exemption letter for the proposed Siloam Crematorium development in Welkom, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 0.5 ha Vuna Afrika Agricultural feedmill pelletizing plant development project outside Wepener, Free State Province.

- Completion of a specialist ecological assessment and report for the proposed 0.4 ha Olympic Flame filling station development project in Welkom, Free State Province.
- Completion of a specialist ecological assessment and report for a proposed 3000 ha agricultural development project outside Douglas, Northern Cape Province.
- Completion of a specialist ecological assessment and report for the proposed 46.04 ha University, Industrial and Residential development project in Orania, Northern Cape Province.
- Completion of a specialist ecological assessment and report for a proposed 482 ha Piet Louw NEMA Section 24G agricultural development project outside Hopetown, Northern Cape Province.
- Completion of a specialist ecological assessment for a proposed 500 ha Wolfkop Valley Estate development project outside Bloemfontein, Free State Cape Province.
- Completion of a specialist Erosion and Rehabilitation Management Plan for the Farms Die Kranse no 1174 and De Rotsen no 52 outside Vrede, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 4.1 ha Plot 31 Spitskop Residential development project in Bloemfontein, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 26.8 ha Oxidation Dam development project in Orania, Northern Cape Province.

2016

- Completion of a specialist ecological assessment and report for the proposed 3 km Olifantshoek Bulk Water Supply and reservoir development project in Olifantshoek, Northern Cape Province.
- Completion of two specialist ecological and wetland assessments and reports for the proposed respective 16 ha and 6 ha N8 highway gravel quarries development project near Ladybrand, Free State Province.
- Completion of a specialist ecological assessment and report for the proposed 100 ha De Eelt vineyard development project near Prieska, Northern Cape Province.
- Completion of two specialist ecological and wetland assessments and reports for the Lafarge cement production facility and quarry, respectively near Lichtenburg, North-West Province.
- Completion of a specialist ecological assessment and report for the proposed 12 ha Nooitgedacht Retirement Estate development project near Nelspruit, Mpumalanga Province.
- Completion of a specialist ecological assessment and report for the proposed 42 km Ventersburg Bulk Water Supply and reservoir development project between Ventersburg and Riebeeckstad, Free State Province.