



Leave a future behind

Rehabilitation and Alien Invasive Species Management Plan

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

October 2018

Compiled for:



Compiled by:

Rikus Lamprecht

Ecological Specialist (Pr.Sci.Nat)

EcoFocus Consulting

072 230 9598

ajhlamprecht@gmail.com

EcoFocus Consulting (Pty) Ltd

Registration : 2017/223847/07

7 Edenglen, Waterberg Street, Langenhovenpark, Bloemfontein, 9330

T 072 230 9598

E ajhlamprecht@gmail.com

Leave a future behind

Table of Content

1. Introduction.....	1
2. Management Plan Rational	2
3. Objectives of the Rehabilitation and Alien Invasive Species Management Plan.....	4
4. Study Area	5
4.1. Climate.....	7
4.2. Geology and Soils	7
4.3. Vegetation and Conservation Status	7
5. Ecological Rehabilitation Management Process	10
5.1. Growth Medium/Soil Preparation and Amelioration	11
5.2. Grass seeding.....	12
6. Potential Problematic Alien Invasive Species on Site	14
7. Alien Invasive Species Management Process.....	23
7.1. Construction Phase.....	23
7.1.1. Physical Control.....	23
7.1.2. Chemical Control.....	24
7.2. Operational Phase	25
7.2.1. Physical Control.....	25
7.2.2. Chemical Control.....	26
8. Conclusion	27
9. References	28
10. Details of the Specialist.....	29

List of Figures

Figure 1: Locality map illustrating the assessment area (see A3 sized map in the Appendices).....	6
Figure 2: Vegetation map illustrating the vegetation type associated with the assessment area (see A3 sized map in the Appendices).....	8
Figure 3: Sensitivity map illustrating the conservation status associated with the assessment area (see A3 sized map in the Appendices)	9

Abbreviations

BA	Basic Assessment
CBA	Critical Biodiversity Area
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
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. Management Plan Rational

Environmental rehabilitation mainly constitutes the reparation of a previously disturbed area in order to attempt to re-establish the necessary ecosystem processes and restore ecological functionality, productivity and services. Depending on the level of disturbance, it is most often not possible to immediately restore a previously disturbed area to its original ecological and functional state but active artificial intervention assists in paving the way for- and accelerating the natural ecological succession and restoration processes.

Best rehabilitation practice is usually based on rehabilitating areas concurrently and as soon as practicably possible after the disturbance has ceased. This approach assists in preventing significant deterioration of important growth medium/soil physical, chemical and biological qualities and characteristics which are ultimately required to support the re-establishment of vegetation and ecological functionality associated with the area.

Delays and the lack of concurrent rehabilitation processes will also promote the undesired establishment and spreading of opportunistic alien invasive plant species. Alien species are either non-indigenous plant, animal or invertebrate species which were introduced to the country in the past or they can even be indigenous species which have been translocated to outside its natural distribution range due to human intervention. Invasive species constitute such alien species as described above which cause or have the potential to cause environmental, economic or harm to human health. Such invasive species have the potential to rapidly establish themselves at the cost of indigenous species. This results in damage to ecosystems and habitats, loss of biodiversity and often in the case of plant species, excessive water consumption in a country already classified as semi-arid.

The National Environmental Management: Biodiversity Act (Act 10 Of 2004); Alien and Invasive Species Regulations, 2014 & Lists, 2016 legally governs the management of alien invasive species. It lists 383 invasive plant species into four categories that must be managed, controlled or eradicated from areas where they may cause harm to the indigenous environment. These four categories are:

- Category 1a: Invasive species which must be combated and eradicated. Any form of trade or planting is strictly prohibited.
- Category 1b: Invasive species which must be controlled and wherever possible, removed and destroyed. Any form of trade or planting is strictly prohibited.

- Category 2: Invasive species or species deemed to be potentially invasive, in that a permit is required to carry out a restricted activity. Category 2 species include commercially important species such as pine, wattle and gum trees. Plants in riparian areas are Cat 1b
- Category 3: Invasive species which may remain in prescribed areas or provinces. Further planting, propagation or trade is however prohibited. Plants in riparian areas are Cat 1b.

The historic centre pivot land footprint is completely dominated/infested by the legally declared invasive species *Prosopis spp.* (Category 3). The legally declared invasive species *Argemone mexicana* (Category 1b) is also sparsely scattered throughout the area. These individuals will in fact be removed during the construction phase which will prove to be beneficial to the environment.

No significant alien invasive species establishments were found to be present within the north-eastern portion of the assessment area. The small confined local area surrounding the old cement dam, has however been infested by the legally declared invasive species *Prosopis spp.* (Category 3) & *Argemone mexicana* (Category 1b) due to livestock trampling activities over time.

The assessment area and surrounding areas could potentially be prone to significant continued alien invasive species establishment due to initial and continual disturbances caused by vegetation clearance as well as soil preparation and cultivation activities during the construction and operational phases.

In order to ensure legislative compliance, disturbed areas should be adequately rehabilitated and alien invasive species which may establish on the assessment area during the construction and operational phases, need to be sufficiently managed in accordance with the requirements of the legal categories into which they fall. Adequate planning and a structured, systematic approach to alien invasive species management forms a crucial aspect in ensuring the success of the process. Poor planning can significantly increase the cost involved as well as negatively impact on the desired success of the process. It is therefore imperative that a structured and practically implementable management plan be followed.

3. Objectives of the Rehabilitation and Alien Invasive Species Management Plan

- Provide management and monitoring guidelines for ecological rehabilitation of disturbed areas as well as prevention of significant alien invasive species establishment and spreading during the construction and operational phases of the proposed development.

4. 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 road and subsequent dirt road from the south-east.

See locality map below.

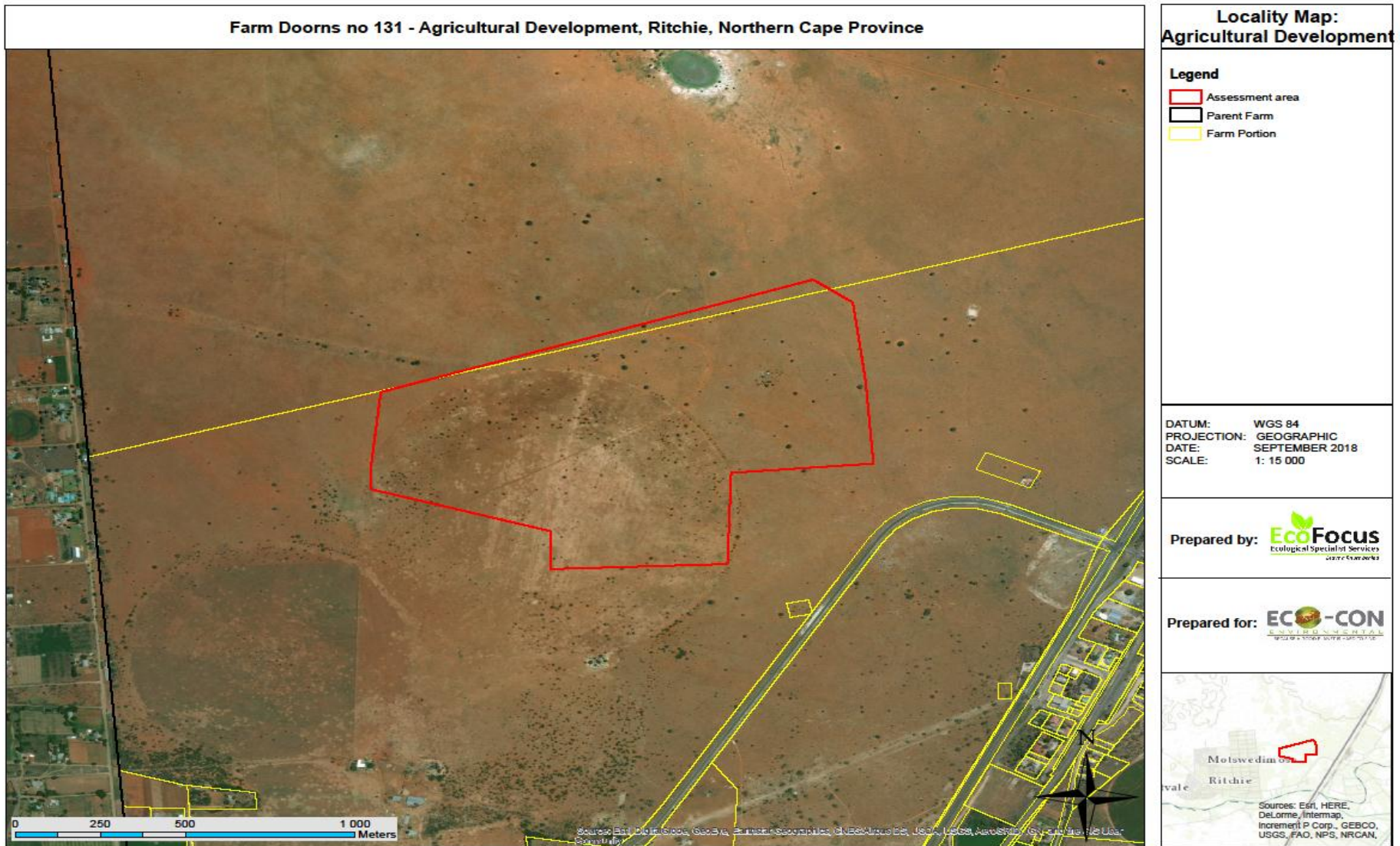


Figure 1: Locality map illustrating the assessment area (see A3 sized map in the Appendices)

4.1. 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.

4.2. 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.

4.3. 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.

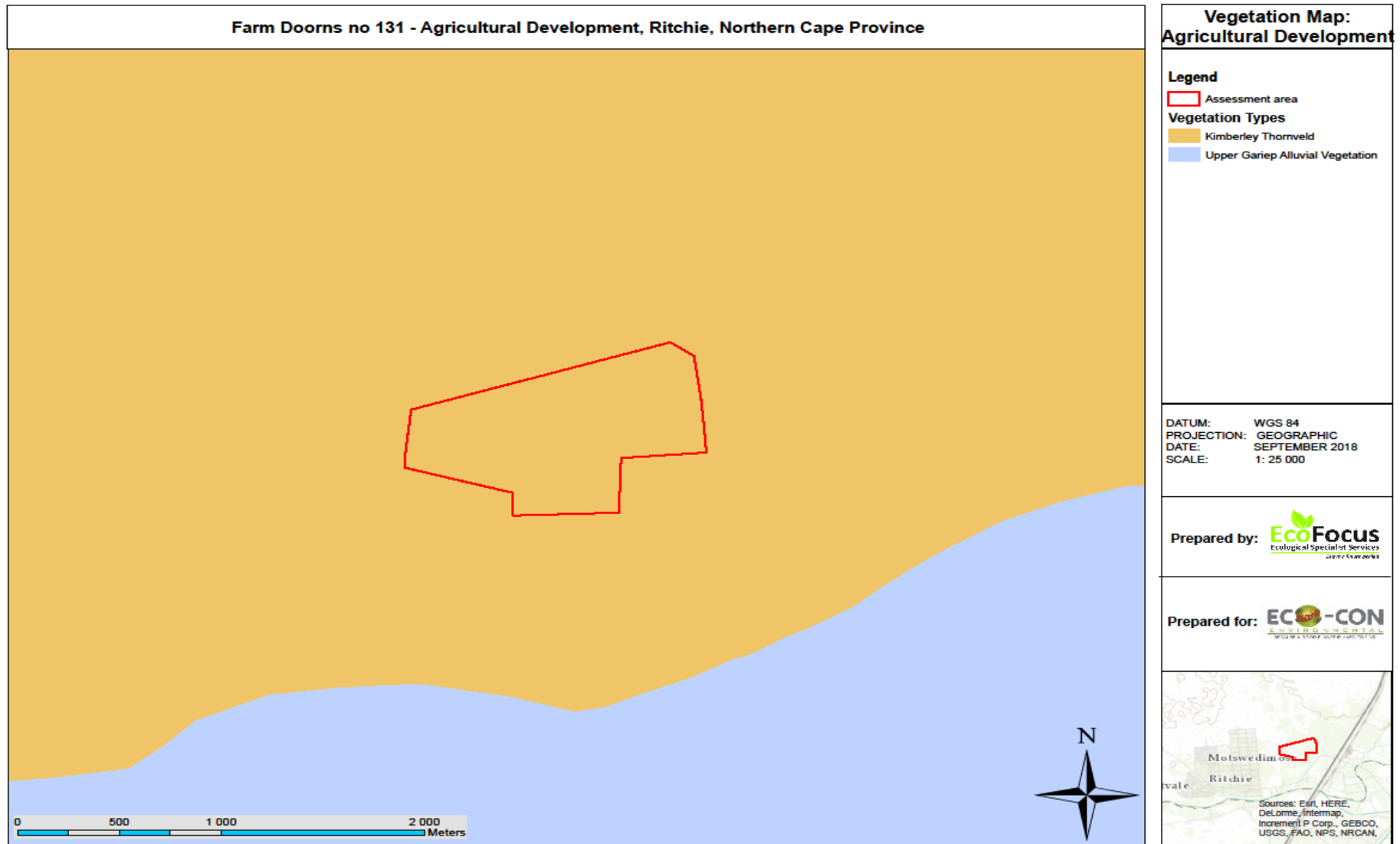


Figure 2: Vegetation map illustrating the vegetation type associated with the assessment area (see A3 sized map in the Appendices)

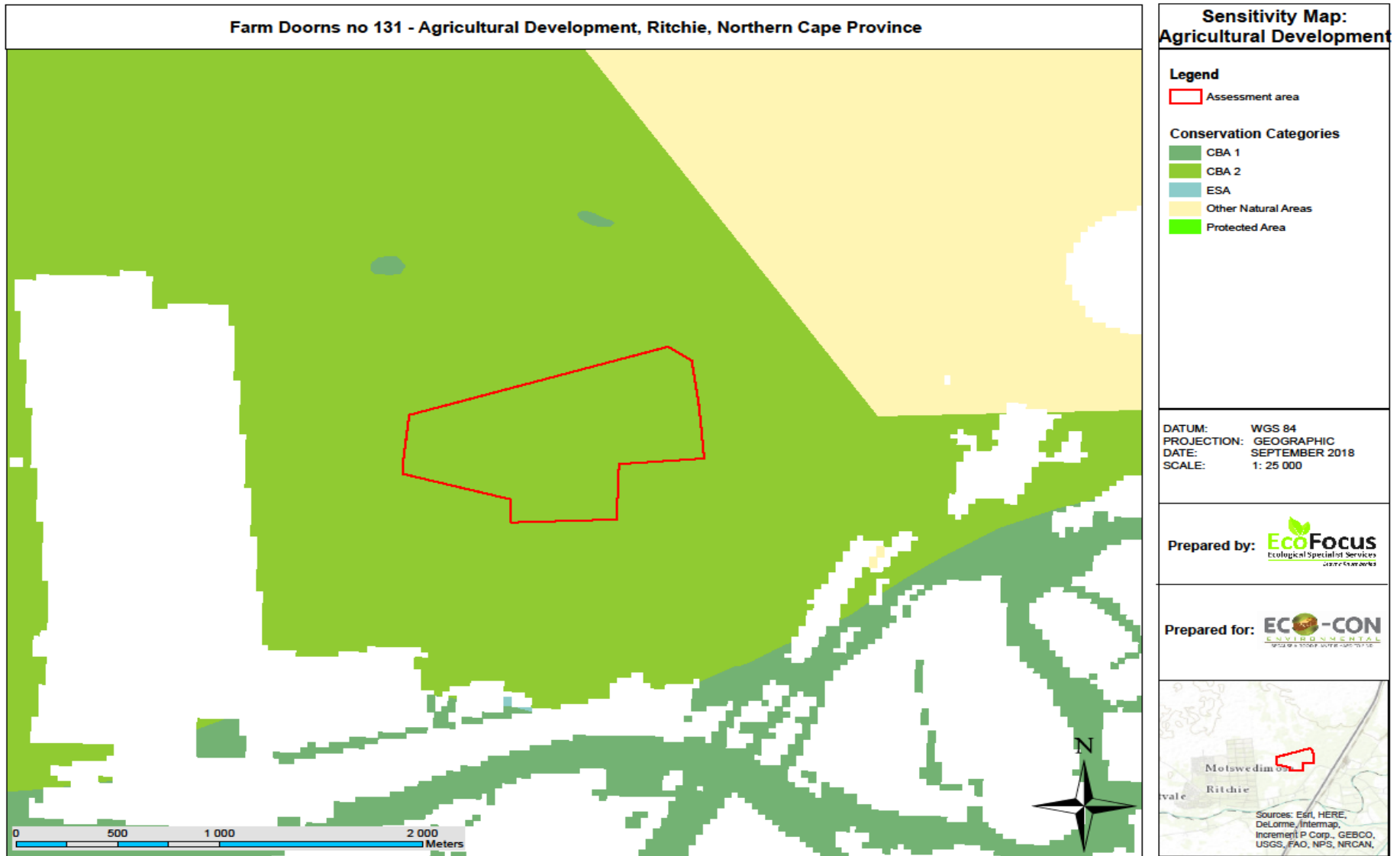


Figure 3: Sensitivity map illustrating the conservation status associated with the assessment area (see A3 sized map in the Appendices)

5. Ecological Rehabilitation Management Process

The proposed cultivated centre pivot land development will in all probability completely transform the majority of the existing surface vegetation on the assessment area. Areas immediately surrounding the proposed development footprint will however also be impacted upon by the construction phase of the proposed development. Such areas must be adequately rehabilitated as soon as practicably possible after construction.

No site construction camps to be established within the surrounding natural areas outside the project footprint area. Natural veld situated around the proposed centre pivot land must not be impacted upon and must be left in situ.

The construction area must be adequately cordoned off and it must ensure that no construction activities, machinery or equipment operate or impact within the natural surrounding areas outside the cordoned off area.

The rehabilitation management process for areas immediately surrounding the proposed development footprint is divided into two progressively following sections for practical implementation purposes namely:

- Growth Medium/Soil Amelioration
- Grass Seeding

Each section will be discussed separately.

5.1. Growth Medium/Soil Preparation and Amelioration

Due to the disturbance and compaction caused by construction activities on the areas immediately surrounding the proposed development footprint, it is recommended that such areas be adequately ripped to a minimum depth of approximately 30 cm and disced in order to alleviate the undesired compaction.

An adequate fertiliser mixture must then be manually top-dressed over the prepared areas, as this will ensure that the macro-nutrients required for sufficient plant growth are made available. This must be conducted as soon as practicably possible after disturbance has taken place and at the commencement of the new growing season in September.

- **2:3:4 (33) + Zn fertiliser** must be evenly distributed/spread over the disturbed surface area. This must be done manually by hand at a **ratio of 100 kg/ha**.
 - It is recommended that industrial buckets be filled with fertilisers and used for the amelioration and spreading process.
 - Buckets must be weighed to ensure the desired fertiliser volumes are achieved over the areas.
 - If the areas are unnecessarily over-fertilised, it could have a negative financial implication on the applicant.
 - If the areas are under-fertilised, the macro-nutrients required for sufficient plant growth might not be provided to the disturbed areas which could result in lower seed germination and grass establishment success.

5.2. Grass seeding

A suitable seed mixture of indigenous grass species needs to be planted on the ameliorated areas. The correct selection of species tolerant to the specific conditions is essential to ensure successful establishment on the modified growth medium. It is also important that a good combination of pioneer (annual) as well as sub-climax and climax (perennial) species be used. The seeding process must be conducted as soon as practicably possible and concurrently with the fertilising of the shaped areas at the commencement of the new growing season in September. If the seeding process is delayed, it will provide an opportunity for undesired alien invasive species to obtain a germination and establishment 'head-start' above the desired grasses. This will subsequently complicate the invasive species management process as significantly more weeds will establish than would have been the case if grass seeding was done immediately and concurrently with fertilising.

- It is recommended that the following seed mixture be evenly distributed/spread, manually by hand, over the ameliorated areas.
 - *Eragrostis teff* (Teff) (uncoated seed) 2 kg/ ha
 - *Chloris gayana* (Rhodes grass) (coated seed) 3 kg/ ha
 - *Digitaria eriantha* (Smutsfinger grass) (coated seed) 5 kg/ ha
 - *Cenchrus ciliaris* (Foxtail buffalo grass) (coated seed) 5 kg/ ha
 - *Cynodon dactylon* (Couch grass) (coated seed) 3 kg/ ha
 - *Medicago sativa* (inoculated Lucerne) (coated seed) 2 kg/ ha
- *Eragrostis teff* (Teff) is an annual pioneer species which forms part of the seed mixture as a nurse crop to initially stabilise the soil and provide more favourable conditions for the other perennial species to germinate and establish. Teff germinates rapidly and therefore provides quick, sufficient initial cover to combat erosion and dust emissions.
- Couch as well as Rhodes grass are perennial species which spread runners (stolons) on the soil surface to further colonise and cover bare areas. Such stolons can shoot new roots on their nodes and develop an entirely new tuft on an area where no seed was present. This process is known as vegetative reproduction and it renders them important components of the seed mixture due to the fact that they tend to cover bare areas relatively quickly with this process and induce broad surface contact which in turn reduces the likelihood of erosion. Couch grass also spreads via rhizomes which are underground runners with a similar function to stolons. They also assist in below surface soil stabilisation.

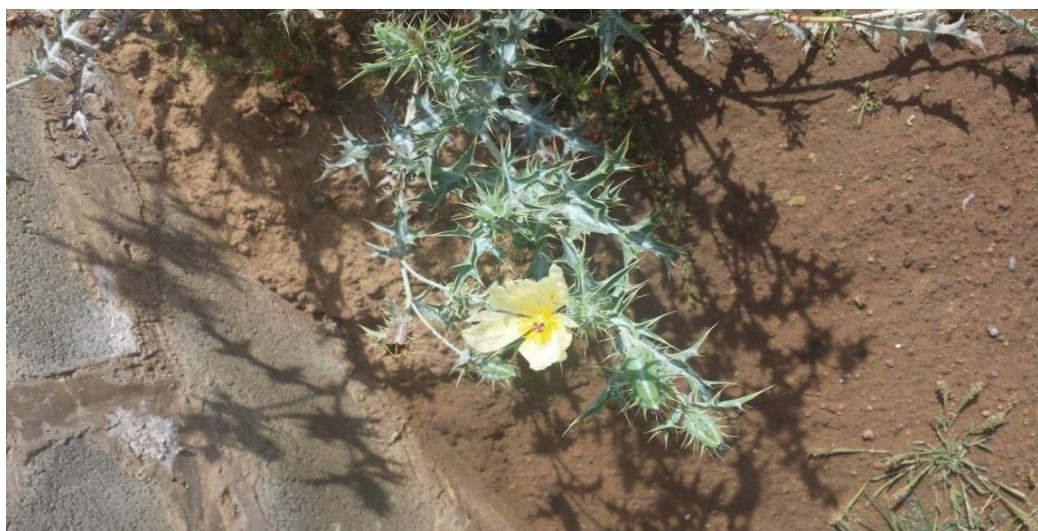
- Lucerne is a perennial species and is known as a legume which is a plant that can fix nitrogen from the atmosphere into the soil for use by itself and other plants. It therefore forms an important component of the seed mixture to ensure the continued cycling and availability of nitrogen in the soil which is an essential macro-nutrient for plant survival.
- Smutsfinger and Blue buffalo grass are two strong growing perennial climax species which should eventually dominate the rehabilitated areas after a few seasons once a stabilised ecological state is reached. They produce good surface cover with broad leaves and large dense tufts which in turn assist in combating surface erosion and dust emissions.
- It is recommended that industrial buckets be filled with seeds and used for the spreading process.
- Buckets must be weighed to ensure the desired seed volumes are achieved over the areas.
- If the areas are unnecessarily over-seeded, it could have a negative financial implication on the applicant.
- If the areas are under-seeded, it could result in lower seed germination and grass establishment success.

As time goes on, it is expected that native grass species from the surrounding natural areas will start to infiltrate and establish within these rehabilitated areas.

6. Potential Problematic Alien Invasive Species on Site

The historic centre pivot land footprint is completely dominated/infested by the legally declared invasive species *Prosopis spp.* (Category 3). The legally declared invasive species *Argemone mexicana* (Category 1b) is also sparsely scattered throughout the area.

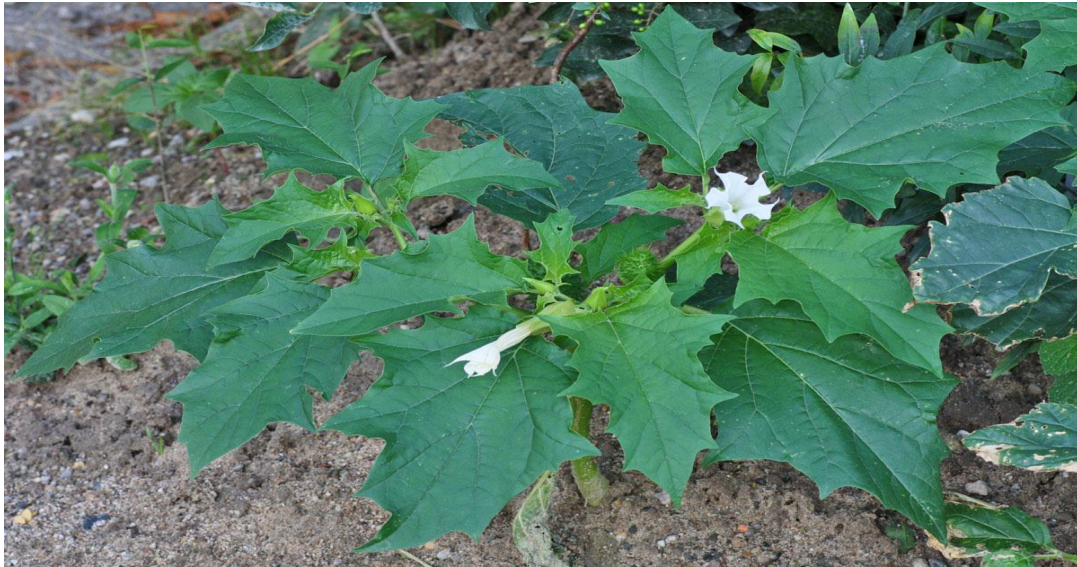
An existing seedbank of invasive species will also be present within the soils. Such alien invasive species are known as opportunistic pioneer species which usually colonise newly disturbed areas. Therefore, once vegetation clearance and disturbance of the development footprints commences, it will create a suitable environment for the emergence and potential establishment of such alien invasive species. Problematic alien invasive species usually associated with such developments and activities include the following (alphabetical order):



Scientific Name	Common Name	Listed Category
<i>Argemone mexicana</i>	Yellow-flowered Mexican poppy	1b



Scientific Name	Common Name	Listed Category
<i>Cirsium vulgare</i>	Spear thistle, Scottish thistle, Skotse dissel	1b



Scientific Name	Common Name	Listed Category
<i>Datura stramonium/ D ferox</i>	Common thorn apple, olieboom	1b



Scientific Name	Common Name	Listed Category
<i>Prosopis sp.</i>	Mesquite, prosopis	3 in the Northern Cape Province



Scientific Name	Common Name	Listed Category
<i>Ricinus communis</i>	Cator oil plant, kasterolieboom	2



Scientific Name	Common Name	Listed Category
<i>Solanum elaeagnifolium</i>	Silver-leaf bitter apple, satansbos	1 b



Scientific Name	Common Name	Listed Category
<i>Solanum sisymbriifolium</i>	Wild tomato, dense throned bitter apple, wilde tamatie	1 b



Scientific Name	Common Name	Listed Category
<i>Verbena bonariensis</i>	Wild verbena, tall verbena, purple top, pers verbena	1 b



Scientific Name	Common Name	Listed Category
<i>Xanthium spinosum/ X strumarium</i>	Spiny cocklebur, large cocklebur, boetebos	1 b

7. Alien Invasive Species Management Process

The alien invasive species management process is divided into two sections namely for the construction phase and operational phase of the proposed development.

7.1. Construction Phase

There are two options which can be implement for the management of alien invasive species on site namely chemical control processes such as herbicide and pesticide application and physical control processes.

7.1.1. Physical Control

- Once the vegetation clearance and construction processes commence, conduct a bi-weekly (every two weeks) walkthrough of the proposed development area as well as a minimum 50 m perimeter around the area, in order to identify all seedlings of any alien invasive species which might start to germinate and establish.
- Physically remove all identified alien invasive species seedlings from the soil by manually pulling them out with as much as possible of their root systems still intact.
- Place all removed alien invasive species seedlings in a metal drum or any other suitable containing unit and close the drum/containing unit in order to isolate the seedlings.
- Place the closed drum/containing unit on a concrete slab or any other suitable impermeable surface in direct sunlight in order to isolate the alien invasive species seedlings from any natural vegetation and prevent spreading of materials.
- Leave the closed drum/containing unit in direct sunlight for a minimum period of one week in order for all alien invasive species seedlings and materials to adequately dry out and die.
- Once all alien invasive species seedlings and materials have adequately dried out and died, remove the material from the drum/containing unit and place the materials in a minimum 1 m deep hole which is isolated from any natural vegetation.
- Safely burn all the dried out and dead alien invasive species seedlings and materials inside the hole and close the hole up again after the fire has died.
- It is recommended that the same hole be utilised for every burning event in order to keep the burnt materials contained and isolated to one location.
- The Geographic Information System (GIS) coordinates of the hole location where the burning is being done must be captured.

- If burning and underground burial of dried out and dead materials is not possible, materials will have to be transported and disposed of at a suitable registered bio-hazard waste site. This can however prove to be a very costly exercise.
- Photographs must be taken of all the individual steps.

7.1.2. Chemical Control

- Once the vegetation clearance and construction processes commence, conduct a bi-weekly (every two weeks) walkthrough of the proposed development area as well as a minimum 50 m perimeter around the area, in order to identify all seedlings of any alien invasive species which might start to germinate and establish.
- Apply chemical herbicides to alien invasive species established areas. A suitably qualified and experienced registered pest control officer must be consulted in order to advise on the most suitable chemical herbicide products and doses to use for the relevant species on site as well as the application frequency.
- Photographs must be taken of all the individual steps.

7.2. Operational Phase

There are two options which can be implemented for the management of alien invasive species on site namely chemical control processes such as herbicide and pesticide application and physical control processes.

7.2.1. Physical Control

- The same management process as for the construction phase needs to be implemented during the operational phase.
- During the off/dormant season when no planting is taking place, conduct a monthly walkthrough of the cultivated area as well as a minimum 50 m perimeter around the area, in order to identify all seedlings of any alien invasive species which might start to germinate and establish.
- During the cultivation, planting and harvesting season, conduct a bi-weekly (every two weeks) walkthrough of the cultivated area as well as a minimum 50 m perimeter around the area, in order to identify all seedlings of any alien invasive species which might start to germinate and establish.
- Physically remove all identified alien invasive species seedlings from the soil by manually pulling them out with as much as possible of their root systems still intact.
- Place all removed alien invasive species seedlings in a metal drum or any other suitable containing unit and close the drum/containing unit in order to isolate the seedlings.
- Place the closed drum/containing unit on a concrete slab or any other suitable impermeable surface in direct sunlight in order to isolate the alien invasive species seedlings from any natural vegetation and prevent spreading of materials.
- Leave the closed drum/containing unit in direct sunlight for a minimum period of one week in order for all alien invasive species seedlings and materials to adequately dry out and die.
- Once all alien invasive species seedlings and materials have adequately dried out and died, remove the material from the drum/containing unit and place the materials in a minimum 1 m deep hole which is isolated from any natural vegetation.
- Safely burn all the dried out and dead alien invasive species seedlings and materials inside the hole and close the hole up again after the fire has died.
- It is recommended that the same hole be utilised for every burning event in order to keep the burnt materials contained and isolated to one location.
- The Geographic Information System (GIS) coordinates of the hole location where the burning is being done must be captured.

- If burning and underground burial of dried out and dead materials is not possible, materials will have to be transported and disposed of at a suitable registered bio-hazard waste site. This can however prove to be a very costly exercise.
- Photographs must be taken of all the individual steps.

7.2.2. Chemical Control

- The same management process as for the construction phase needs to be implemented during the operational phase.
- During the off/dormant season when no planting is taking place, conduct a monthly walkthrough of the cultivated area as well as a minimum 50 m perimeter around the area, in order to identify all seedlings of any alien invasive species which might start to germinate and establish.
- During the cultivation, planting and harvesting season, conduct a bi-weekly (every two weeks) walkthrough of the cultivated area as well as a minimum 50 m perimeter around the area, in order to identify all seedlings of any alien invasive species which might start to germinate and establish.
- Apply chemical herbicides to alien invasive species established areas. A suitably qualified and experienced registered pest control officer must be consulted in order to advise on the most suitable chemical herbicide products and doses to use for the relevant species on site as well as the application frequency.
- Photographs must be taken of all the individual steps.

8. Conclusion

If the ecological rehabilitation and alien invasive species management processes are adequately followed and completed as per this report, it is anticipated that this should be sufficient to ensure successful re-establishment of vegetation and prevent the significant establishment or spreading of any legally declared alien invasive species within and around the proposed development area. Other best-practice clearing methods for different alien invasive species can also be obtained from the following website: <http://www.dwaf.gov.za/wfw/Control> if required.

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

9. 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

10. 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)

EcoFocus Consulting (Pty) Ltd

Physical Address: Edenglen number 7
 Waterberg Street
 Langenhovenpark
 Bloemfontein, 9330

Mobile Phone: 072 230 9598

Email Address: ajhlamprecht@gmail.com

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.