

GreenMined Environmental (Pty) Ltd
Unit MO1, No 37 AECI site,
Baker Square, Paardevlei
De Beers Avenue
Somerset West,
7130

Name: Gerhard Botha
Cell: 084 207 3454
E-mail: gerhard@nkurenkuru.co.za
Date: 5 October 2020
Ref: Driefontein Aggregate Quarry

Attention: Sonette Smit

Dear Madam,

PEER-REVIEW OF BOTANICAL IMPACT ASSESSMENT REPORT & RESPONSE TO DEA&DP COMMENTS - PROPOSED EXPANSION OF AN EXISTING ROCK QUARRY ON THE FARM DRIEFONTEIN 243, MOSSEL BAY DISTRICT, WESTERN CAPE PROVINCE.

Nkurenkuru Ecology and Biodiversity (Pty) Ltd. was requested, on behalf of GreenMined Environmental and Enviro-Niche Consulting, to:

- » conduct a peer-review of the Botanical Specialist Impact Assessment; and
- » to respond to the comments received from DEA&DP (Department of Environmental Affairs and Development Planning – Western Cape Province) relating to the Botanical Specialist Impact Assessment.

Dr. Johann du Preez was appointed by GreenMined Environmental (Pty) Ltd. to conduct a botanical survey and impact assessment for the proposed expansion of the existing aggregate quarry on the farm Driefontein 243 in the Mossel Bay district, Western Cape Province. Typically, the aim/outcome of such a botanical report is to determine floral composition, structure, important ecological drivers and factors (determining floral patterns), present ecological condition (naturalness) of the vegetation, current disturbances and impacts and the presence of any sensitive features (sensitive habitat types/features, presence of species of conservation concern, endangered and threatened vegetation types etc.). Then based on personal knowledge on the potential impacts associated with such developments, the specialist must determine the nature, magnitude, duration, extent and significance of impacts on the potentially affected vegetation as well as on sensitive plant taxa. Cumulative impacts of similar developments within the area should also be considered as well as the residual impacts associated with such developments. Following such an impacts assessment, mitigation measures, including the recommendation of no-go areas, buffer areas and monitoring, should be provided in order to avoid such impacts from occurring on the local vegetation or to minimise the impact to an acceptable level. Finally, based on the results of such a survey and impact

assessment, a reasoned opinion should be provided by the specialist, whether the development may/or may not be authorised.

1.1. Compliance with Appendix 6 - GN R326 EIA Regulations of 7 April 2017

In order to determine whether the report complies with the specification set out in Appendix 6 - GN R326 EIA Regulations of 7 April 2017, a compliance checklist has been compiled and is provided as Table 1 below:

Table 1: Requirements of Appendix 6 and sections within the report wherein these requirements have been addressed.

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	Sections where this is addressed in the Specialist Report
1. (1) A specialist report prepared in terms of these Regulations must contain- a) details of- i. the specialist who prepared the report; and ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;	» Details of Specialist: Page 1 » Expertise of the specialist and CV was not initially included in the report; however, this information will be provided separately to the relevant authorities.
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	A declaration of independence was not included in the initial botanical assessment; however, a declaration of independence will be submitted separately to the relevant authorities.
c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.2 (page 5)
(cA) an indication of the quality and age of base data used for the specialist report;	Section 1.4 (page 8-9), Section 3.1.6 (page 14), 4.1.1 – 4.1.2 (page 15 – 16) and 4.2 (page 19)
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 2 (page 12), Section 4.1.2.3 (page 17), Section 4.3 (page 19) and Section 5 (page 26)
d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 1.4.3 (page 8): Month and year of inspection. Information regarding the exact date, duration and relevance thereof to the outcome of the assessment was not included.
e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 1.4 (page 8 -12)
f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 4.3 (page 19 – 20)
g) an identification of any areas to be avoided, including buffers;	Section 4.3.2 (page 20), Section 6 (page 26 - 27) and Section 7. No Buffers have been provided
h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	No sensitivity map included.

	Figure 4.2 (page 18) also represents a sensitivity map.
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.5 & 1.6 (page 12)
j) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment or activities;	Section 5 (page 20 – 26)
k) any mitigation measures for inclusion in the EMPr;	Section 5 (page 20 – 26)
l) any conditions for inclusion in the environmental authorisation;	Section 7 (page 27 – 28)
m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 7 (page 27 – 28)
n) a reasoned opinion- i. as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Abstract (page 2 – 3), Section 6 (page 26 – 27)
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	N/A
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/A
q) any other information requested by the competent authority.	N/A
2) Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

From the table above the following information is outstanding:

- » Information on the expertise of the specialist as well as a Curriculum Vitae
 - Nkurenkuru Ecology and Biodiversity was informed by the appointed EAP that this information will be provided separately to the relevant authorities.
- » A declaration that the specialist is independent:
 - Nkurenkuru Ecology and Biodiversity was informed by the appointed EAP that a declaration of independence will be provided separately to the relevant authorities.
- » Duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;
 - The site was visited on the 21st of November 2019. This is probably the most appropriate month/season for fieldwork as November coincides with the rainy season, with October typically receiving the highest amount of precipitation. Most of the geophytes and fynbos species in the region tend to flower between September and January.
 - Even though a single inspection comprising a single day may be regarded as a bit too short to obtain a full ecological perspective of the area, such a short inspection for this specific project can be regarded as merely acceptable due to the fact that the development will be restricted to the disturbed footprint of the “old” mining area, avoiding all natural areas.
- » An identification of any areas to be avoided, including buffers;
 - Within the report all natural areas surrounding the “old” mining area was recommended to be avoided, however no buffers around sensitive features were recommended. Buffers around CBAs and ESA were not deemed necessary as all of these sensitive features were located well outside of the proposed mining footprint. Other sensitive features identified

by the specialist (northern slope and southern face of the Kleinberg ridge) where also not awarded any buffer areas as the development will be restricted to the already disturbed area and all natural areas surrounding these disturbed areas should be avoided. Furthermore, there is no intention, by the mining company, to extend the mining area into the natural areas.

- » A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;
 - Such a map was not included within the report. Based on the description of sensitive features as provided by the author, a sensitivity map has been compiled (see Figure 1 and 2) below and, should be incorporated into the Basic Assessment Report.

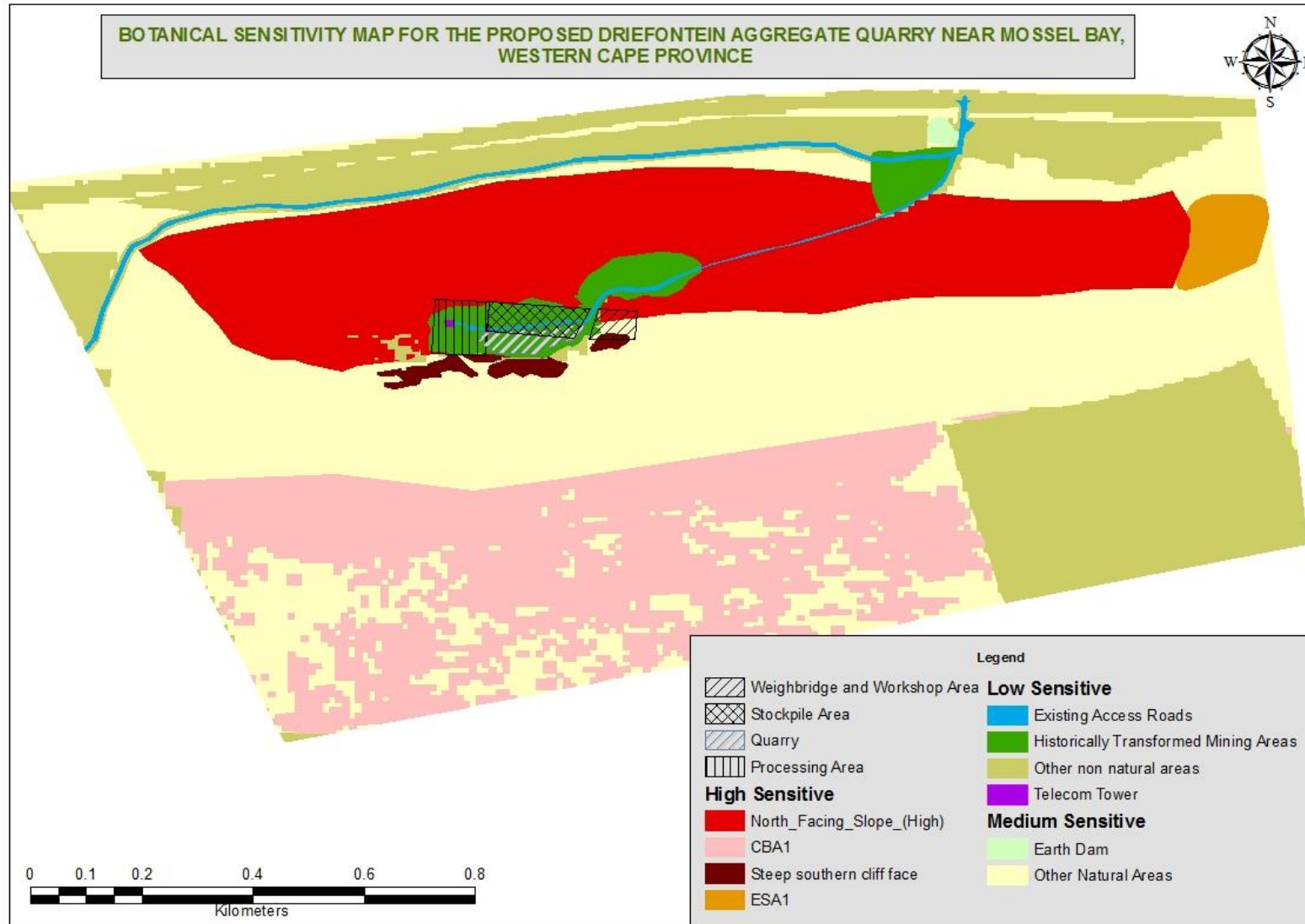


Figure 1: Botanical Sensitivity Map for the proposed Driefontein Aggregate Quarry near Mossel Bay, Western Cape.

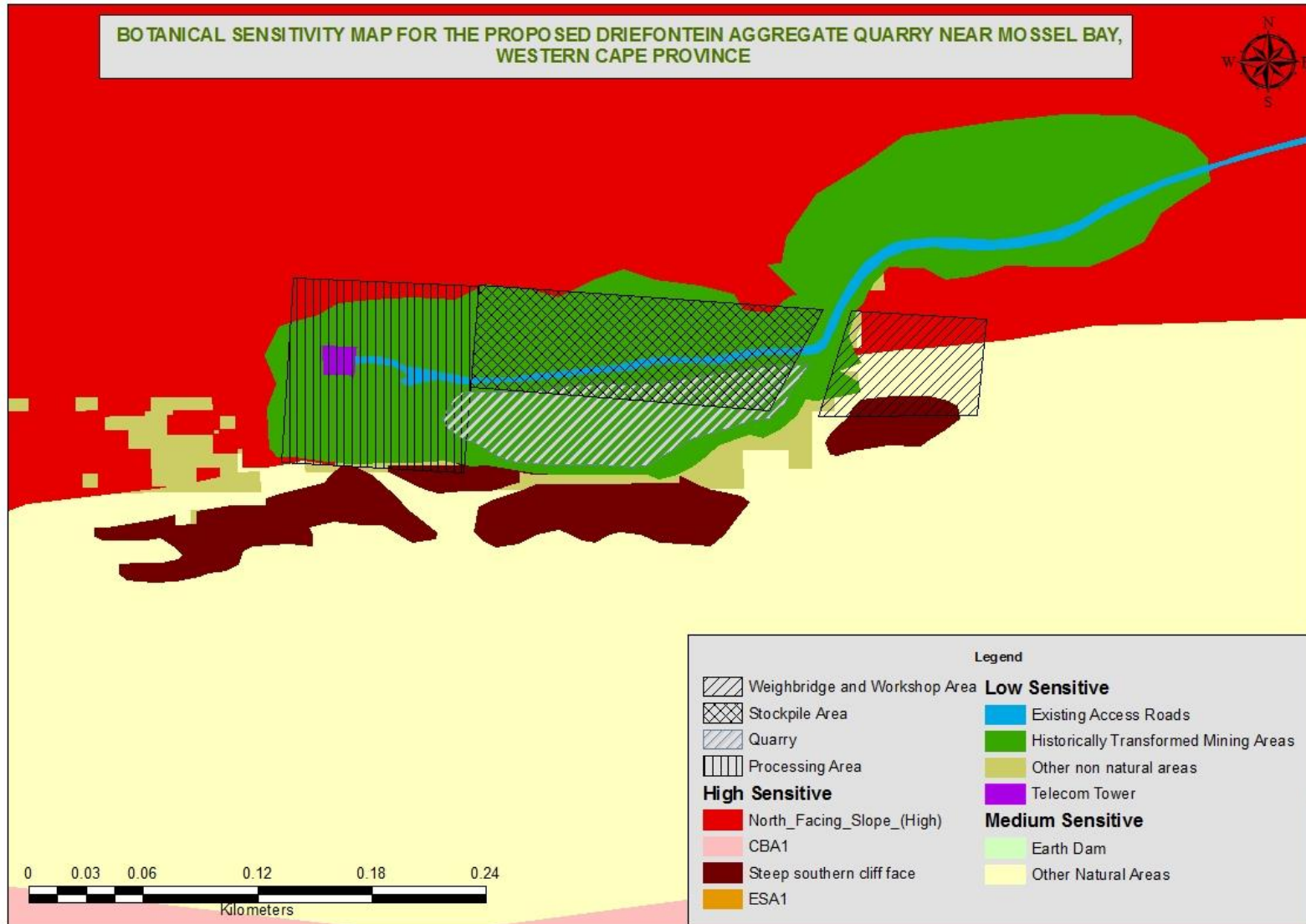


Figure 2: Botanical Sensitivity Map: Close up illustrating the proposed mining layout relative to the sensitive features.

1.2. Overall impression

The Botanical Specialist Report compiled in November 2019 by Dr. P.J du Preez can be described as more of a summary of the findings of a survey and an impact assessment rather than a detailed, comprehensive report.

The author was vague about the mining activities and in what way they will expand and this may result in confusion. It was only later in the report that it was mentioned that aggregate will be obtained through mining down into the existing quarry without expanding into the natural surrounding habitats. Furthermore, limited information is provided on the surrounding natural habitats and their ecological drivers. However, a short list of the dominant and keys species within the "old mining area" and areas fringing this transformed area is provided within the report, as well as a preliminary list of plant species recorded within the region (Annexure B). A brief mention of conservation important plant species as well the prominent alien invasive plants have been made within the report. In terms of the Critical Biodiversity Areas located within the area, limited information is provided on these CBAs, ESAs and "Other Natural Areas" and why they have been classified as such. Finally, the sensitive features as identified within the report have not been delineated and mapped and as such the location, extent and proximity of these features to the development footprint is unclear (refer to Figure 1 above for Sensitivity Map).

Ultimately, the main aim of such a report is to provide sufficient information in order to guide the relative authority in making an informed decision on whether to authorise the development or not and what conditions to include in the Environmental Authorisation. I am of the opinion that, due to the fact that this proposed development is solely restricted to an already highly transformed area, avoiding impact on the natural areas surrounding this transformed/disturbed area, this report fulfil the bare minimum in order for the relevant authority to make an informed decision, provided that the mining contractor will only mine downwards without extending into the surrounding natural areas and the authority is provided with the specialist's professional work experience, declaration of independence, and the sensitivity map provided with this letter. If the mining contractor wishes to extend, in the future, into the natural surrounding areas, a significantly more detailed ecological study and impact assessment, in accordance with the new protocols/procedures in terms of Section 24(5)(a) and (h) of the National Environmental Management Act, 1998.

1.3. Final remarks and Conclusion

To conclude, I am furthermore in agreement with the author of the original Botanical Study and Impact Assessment Report that no objective or motives (identification of impacts of high ecological significance etc.) were identified which would hinder the development. Mining activities within the already transformed "old" mining area will be acceptable from a botanical perspective and will not cause detrimental impacts to the botanical features located within the affected and surrounding

properties. Therefore, in agreement with the author, the development may be authorised, subject to the implementation of the recommended mitigation measures as set out within the Botanical Study and Impact Assessment Report.



Gerhard Botha (SACNASP Reg. No 400502/14)
05/10/2020

* Refer to Appendix A for a declaration of independence and Appendix B for the Mr. GA Botha's CV and Work Experience

Appendices:

1.1. Declaration of Consultant's Independence

I, Gerhard Botha, as the appointed specialist hereby declare that I:

- » act/ed as the independent specialist in this application;
- » regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- » do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- » have and will not have no vested interest in the proposed activity proceeding;
- » have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- » am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 (specifically in terms of regulation 13 of GN No. R. 326) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- » have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- » am aware that a false declaration is an offence in terms of regulation 48 of GN No. R. 326.



Gerhard Botha Pr.Sci.Nat 400502/14 (Botanical and Ecological Science)
September 2019

Field of expertise:

Wetland ecology, aquatic and wetland fauna & flora, terrestrial biodiversity, aquatic biomonitoring and wetland habitat evaluations. BSc (Hons) Zoology and Botany, MSc Botany (Phytosociology) from 2011 to present.

1.2. Declaration of Consultant's Independence

CURRICULUM VITAE:



Gerhard Botha

Name: : Gerhardus Alfred Botha
Date of Birth : 11 April 1986
Identity Number : 860411 5136 088
Postal Address : PO Box 12500
Brandhof
9324
Residential Address : 3 Jock Meiring Street
Park West
Bloemfontein
9301
Cell Phone Number : 084 207 3454
Email Address : gabotha11@gmail.com
Profession/Specialisation : Ecological and Biodiversity Consultant
Nationality: : South African
Years Experience: : 8
Bilingualism : Very good – English and Afrikaans

Professional Profile:

Gerhard is a Managing Director of Nkurenkuru Ecology and Biodiversity (Pty) Ltd. He has a BSc Honours degree in Botany from the University of the Free State Province and is currently completing a MSc Degree in Botany. He began working as an environmental specialist in 2010 and has since gained extensive experience in conducting ecological and biodiversity assessments in various development field, especially in the fields of conventional as well as renewable energy generation, mining and infrastructure development. Gerhard is a registered Professional Natural Scientist (Pr. Sci. Nat.)

Key Responsibilities:

Specific responsibilities as an Ecological and Biodiversity Specialist include, inter alia, professional execution of specialist consulting services (including flora, wetland and fauna studies, where required), impact assessment reporting, walk through surveys/ground-truthing to inform final design, compilation of management plans, compliance monitoring and audit reporting, in-house ecological awareness training to on-

site personnel, and the development of project proposals for procuring new work/projects.

Skills Base and Core Competencies

- Research Project Management
- Botanical researcher in projects involving the description of terrestrial and coastal ecosystems.
- Broad expertise in the ecology and conservation of grasslands, savannahs, karroid wetland and aquatic ecosystems.
- Ecological and Biodiversity assessments for developmental purposes (BAR, EIA), with extensive knowledge and experience in the renewable energy field (Refer to Work Experiences and References)
- Over 3 years of avifaunal monitoring and assessment experience.
- Mapping and Infield delineation of wetlands, riparian zones and aquatic habitats (according to methods stipulated by DWA, 2008) within various South African provinces of KwaZulu-Natal, Mpumalanga, Free State, Gauteng and Northern Cape Province for inventory and management purposes.
- Wetland and aquatic buffer allocations according to industry best practice guidelines.
- Working knowledge of environmental planning policies, regulatory frameworks and legislation
- Identification and assessment of potential environmental impacts and benefits.
- Assessment of various wetland ecosystems to highlight potential impacts, within current and proposed landscape settings, and recommend appropriate mitigation and offsets based on assessing wetland ecosystem service delivery (functions) and ecological health/integrity.
- Development of practical and achievable mitigation measures and management plans and evaluation of risk to execution
- Qualitative and Quantitative Research
- Experienced in field research and monitoring
- Working knowledge of GIS applications and analysis of satellite imagery data
- Completed projects in several Provinces of South Africa and include a number of projects located in sensitive and ecological unique regions.

Education and Professional Status

Degrees:

- 2015: Currently completing a M.Sc. degree in Botany (Vegetation Ecology), University of the Free State, Bloemfontein, RSA.
- 2009: B.Sc. Hons in Botany (Vegetation Ecology), University of the Free State, Bloemfontein, RSA.
- 2008: B.Sc. in Zoology and Botany, University of the Free State, University of the Free State, Bloemfontein, RSA.

Courses:

- 2013: Wetland Management (ecology, hydrology, biodiversity and delineation) – University of the Free State accredited course.
- 2014: Introduction to GIS and GPS (Code: GISA 1500S) – University of the Free State accredited course.

Professional Society Affiliations:

- The South African Council of Natural Scientific Professions: Pr. Sci. Nat. Reg. No. 400502/14 (Botany and Ecology).

Employment History

- December 2017 – Current: Nkurenkuru Ecology and Biodiversity (Pty) Ltd
- 2016 – November 2017: ECO-CARE Consultancy
- 2015 - 2016: Ecologist, Savannah Environmental (Pty) Ltd
- 2013 – 2014: Working as ecologist on a freelance basis, involved in part-time and contractual positions for the following companies
 - Enviroworks (Pty) Ltd
 - GreenMined (Pty) Ltd
 - Eco-Care Consultancy (Pty) Ltd
 - Enviro-Niche Consulting (Pty) Ltd
 - Savannah Environmental (Pty) Ltd
 - Esicongweni Environmental Services (EES) cc
- 2010 - 2012: Enviroworks (Pty) Ltd

Publications

Publications:

- Botha, G.A. & Du Preez, P.J. 2015. A description of the wetland and riparian vegetation of the Nxamasere palaeo-river's backflooded section, Okavango Delta, Botswana. *S. Afr. J. Bot.*, **98**: 172-173 .

Congress papers/posters/presentations:

- Botha, G.A. 2015. A description of the wetland and riparian vegetation of the Nxamasere palaeo-river's backflooded section, Okavango Delta, Botswana. 41st Annual Congress of South African Association of Botanists (SAAB). Tshipise, 11-15 Jan. 2015.
- Botha, G.A. 2014. A description of the vegetation of the Nxamasere floodplain, Okavango Delta, Botswana. 10th Annual University of Johannesburg (UJ) Postgraduate Botany Symposium. Johannesburg, 28 Oct. 2014.

Other

- Guest speaker at IAIA Free State Branch Event (29 March 2017)
- Guest speaker at the University of the Free State Province: Department of Plant Sciences (3 March 2017):

References:

- Christine Fouché
Manager: GreenMined (Pty) LTD
Cell: 084 663 2399
- Professor J du Preez
Senior lecturer: Department of Plant Sciences
University of the Free State
Cell: 082 376 4404

WORK EXPERIENCES

&

References

Gerhard Botha

ECOLOGICAL RELATED STUDIES AND SURVEYS

Date Completed	Project Description	Type of Assessment/Study	Client
2019	Sirius Three Solar PV Facility near Upington, Northern Cape	Ecological Assessment (Basic Assessment)	Aurora Power Solutions
2019	Sirius Four Solar PV Facility near Upington, Northern Cape	Ecological Assessment (Basic Assessment)	Aurora Power Solutions
2019	Lichtenburg 1 100MW Solar PV Facility, Lichtenburg, North-West Province	Ecological Assessment (Scoping and EIA Phase Assessments)	Atlantic Renewable Energy Partners
2019	Lichtenburg 2 100MW Solar PV Facility, Lichtenburg, North-West Province	Ecological Assessment (Scoping and EIA Phase Assessments)	Atlantic Renewable Energy Partners
2019	Lichtenburg 3 100MW Solar PV Facility, Lichtenburg, North-West Province	Ecological Assessment (Scoping and EIA Phase Assessments)	Atlantic Renewable Energy Partners
2019	Moeding Solar PV Facility near Vryburg, North-West Province	Ecological Assessment (Basic Assessment)	Moeding Solar
2019	Expansion of the Raumix Aliwal North Quarry, Eastern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	GreenMined
2018	Kruisvallei Hydroelectric 22kV Overhead Power Line, Clarens, Free State Province	Faunal and Flora Rescue and Protection Plan	Zevobuzz
2018	Kruisvallei Hydroelectric 22kV Overhead Power Line, Clarens, Free State Province	Fauna and Flora Pre-Construction Walk-Through Assessment	Zevobuzz
2018	Proposed Kruisvallei Hydroelectric Power Generation Scheme in the Ash River, Free State Province	Ecological Assessment (Basic Assessment)	Zevobuzz
2018	Proposed Zonnebloem Switching Station (132/22kV) and 2X Loop-in Loop-out Power Lines (132kV), Mpumalanga Province	Ecological Assessment (Basic Assessment)	Eskom
2018	Clayville Thermal Plant within the Clayville Industrial Area, Gauteng Province	Ecological Comments Letter	Savannah Environmental
2018	Iziduli Emoyeni Wind Farm near Bedford, Eastern Cape Province	Ecological Assessment (Re-assessment)	Emoyeni Wid Farm Renewable Energy
2018	Msenge Wind Farm near Bedford, Eastern Cape Province	Ecological Assessment (Re-assessment)	Amakhala Emoyeni Renewable Energy
2017	H2 Energy Power Station near Kwamhlanga, Mpumalanga Province	Ecological Assessment (Scoping and EIA phase assessments)	Eskom



2017	Karusa Wind Farm (Phase 1 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province)	Ecological Assessment (Re-assessment)	ACED Renewables Hidden Valley
2017	Soetwater Wind Farm (Phase 2 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province)	Ecological Assessment (Re-assessment)	ACED Renewables Hidden Valley
2017	S24G for the unlawful commencement or continuation of activities within a watercourse, Honeydew, Gauteng Province	Ecological Assessment	Savannah Environmental
2016 - 2017	Noupoort CSP Facility near Noupoort, Northern Cape Province	Ecological Assessment (Scoping and EIA phase assessments)	Cresco
2016	Buffels Solar 2 PV Facility near Orkney, North West Province	Ecological Assessment (Scoping and EIA phase assessments)	Kabi Solar
2016	Buffels Solar 1 PV Facility near Orkney, North West Province	Ecological Assessment (Scoping and EIA phase assessments)	Kabi Solar
2016	132kV Power Line and On-Site Substation for the Authorised Golden Valley II Wind Energy Facility near Bedford, Eastern Cape Province	Ecological Assessment (Basic Assessment)	Terra Wind Energy
2016	Kalahari CSP Facility: 132kV Ferrum-Kalahari-UNTU & 132kV Kathu IPP-Kathu 1 Overhead Power Lines, Kathu, Northern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	Kathu Solar Park
2016	Kalahari CSP Facility: Access Roads, Kathu, Northern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	Kathu Solar Park
2016	Karoshhoek Solar Valley Development – Additional CSP Facility including tower infrastructure associated with authorised CSP Site 2 near Upington, Northern Cape Province	Ecological Assessment (Scoping Assessment)	Emvelo
2016	Karoshhoek Solar Valley Development –Ilanga CSP 7 and 8 Facilities near Upington, Northern Cape Province	Ecological Assessment (Scoping Assessment)	Emvelo
2016	Karoshhoek Solar Valley Development –Ilanga CSP 9 Facility near Upington, Northern Cape Province	Ecological Assessment (Scoping Assessment)	Emvelo
2016	Lehae Training Academy and Fire Station, Gauteng Province	Ecological Assessment	Savannah Environmental
2016	Metal Industrial Cluster and Associated Infrastructure near Kuruman, Northern Cape Province	Ecological Assessment (Scoping Assessment)	Northern Cape Department of Economic Development and Tourism
2016	Semonkong Wind Energy Facility near Semonkong, Maseru District, Lesotho	Ecological Pre-Feasibility Study	Savannah Environmental
2015 - 2016	Orkney Solar PV Facility near Orkney, North West Province	Ecological Assessment (Scoping and EIA phase assessments)	Genesis Eco-Energy
2015 - 2016	Woodhouse 1 and Woodhouse 2 PV Facilities near Vryburg, North West Province	Ecological Assessment (Scoping and EIA phase assessments)	Genesis Eco-Energy
2015	CAMCO Clean Energy 100kW PV Solar Facility, Thaba Eco Lodge near Johannesburg, Gauteng Province	Ecological Assessment (Basic Assessment)	CAMCO Clean Energy
2015	CAMCO Clean Energy 100kW PV Solar Facility, Thaba Eco Lodge near Johannesburg, Gauteng Province	Ecological Assessment (Basic Assessment)	CAMCO Clean Energy



2015	Sirius 1 Solar PV Project near Upington, Northern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	Aurora Power Solutions
2015	Sirius 2 Solar PV Project near Upington, Northern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	Aurora Power Solutions
2015	Sirius 1 Solar PV Project near Upington, Northern Cape Province	Invasive Plant Management Plan	Aurora Power Solutions
2015	Sirius 2 Solar PV Project near Upington, Northern Cape Province	Invasive Plant Management Plan	Aurora Power Solutions
2015	Sirius 1 Solar PV Project near Upington, Northern Cape Province	Plant Rehabilitation Management Plan	Aurora Power Solutions
2015	Sirius Phase 2 Solar PV Project near Upington, Northern Cape Province	Plant Rehabilitation Management Plan	Aurora Power Solutions
2015	Sirius 1 Solar PV Project near Upington, Northern Cape Province	Plant Rescue and Protection Plan	Aurora Power Solutions
2015	Sirius Phase 2 Solar PV Project near Upington, Northern Cape Province	Plant Rescue and Protection Plan	Aurora Power Solutions
2015	Expansion of the existing Komsberg Main Transmission Substation near Sutherland, Northern Cape Province	Ecological Assessment (Basic Assessment)	ESKOM
2015	Karusa Wind Farm near Sutherland, Northern Cape Province)	Invasive Plant Management Plan	ACED Renewables Hidden Valley
2015	Proposed Karusa Facility Substation and Ancillaries near Sutherland, Northern Cape Province	Ecological Assessment (Basic Assessment)	ACED Renewables Hidden Valley
2015	Eskom Karusa Switching Station and 132kV Double Circuit Overhead Power Line near Sutherland, Northern Cape Province	Ecological Assessment (Basic Assessment)	ESKOM
2015	Karusa Wind Farm near Sutherland, Northern Cape Province)	Plant Search and Rescue and Rehabilitation Management Plan	ACED Renewables Hidden Valley
2015	Karusa Wind Energy Facility near Sutherland, Northern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	ACED Renewables Hidden Valley
2015	Soetwater Facility Substation, 132kV Overhead Power Line and Ancillaries, near Sutherland, Northern Cape Province	Ecological Assessment (Basic Assessment)	ACED Renewables Hidden Valley
2015	Soetwater Wind Farm near Sutherland, Northern Cape Province)	Invasive Plant Management Plan	ACED Renewables Hidden Valley
2015	Soetwater Wind Energy Facility near Sutherland, Northern Cape Province	Fauna and Flora Pre-Construction Walk-Through Assessment	ACED Renewables Hidden Valley
2015	Soetwater Wind Farm near Sutherland, Northern Cape Province	Plant Search and Rescue and Rehabilitation Management Plan	ACED Renewables Hidden Valley
2015	Expansion of the existing Scottburgh quarry near Amandawe, KwaZulu-Natal	Botanical Assessment (for EIA)	GreenMined Environmental
2015	Expansion of the existing AFRIMAT quarry near Hluhluwe, KwaZulu-Natal	Botanical Assessment (for EIA)	GreenMined Environmental
2014	Tshepong 5MW PV facility within Harmony Gold's mining rights areas, Odendaalsrus	Ecological Assessment (Basic Assessment)	BBEnergy
2014	Nyala 5MW PV facility within Harmony Gold's mining rights areas, Odendaalsrus	Ecological Assessment (Basic Assessment)	BBEnergy
2014	Eland 5MW PV facility within Harmony Gold's mining rights areas, Odendaalsrus	Ecological Assessment (Basic Assessment)	BBEnergy
2014	Transalloys circulating fluidised bed power station near Emalahleni, Mpumalanga Province	Ecological Assessment (for EIA)	Trans-Alloys
2014	Umbani circulating fluidised bed power station near Kriel, Mpumalanga Province	Ecological Assessment (Scoping and EIA)	Eskom



Nkurenkuru

ECOLOGY & BIODIVERSITY
SACNASP REG: 400502/14

+27 (0) 84 207 3454 • 3 Jock Meiring Street, Park West, Bloemfontein, 9301 • PO Box 12500, Brandhof 9324

2014	Gihon 75MW Solar Farm: Bela-Bela, Limpopo Province	Ecological Assessment (for EIA)	NETWORX Renewables
2014	Steelpoort Integration Project & Steelpoort to Wolwekraal 400kV Power Line	Fauna and Flora Pre-Construction Walk-Through Assessment	Eskom
2014	Audit of protected <i>Acacia erioloba</i> trees within the Assmang Wrenchville housing development footprint area	Botanical Audit	Eco-Care Consultancy
2014	Rehabilitation of the N1 National Road between Sydenham and Glen Lyon	Peer review of ecological report	EKO Environmental
2014	Rehabilitation of the N6 National Road between Onze Rust and Bloemfontein	Peer review of ecological report	EKO Environmental
2011	Illegally ploughed land on the Farm Wolwekop 2353, Bloemfontein	Vegetation Rehabilitation Plan	EnviroWorks
2011	Rocks Farm chicken broiler houses	Botanical Assessment (for EIA)	EnviroWorks
2011	Botshabelo 132 kV line	Ecological Assessment (for EIA)	CENTLEC
2011	De Aar Freight Transport Hub	Ecological Scoping and Feasibility Study	EnviroWorks
2011	Proposed establishment of the Tugela Ridge Eco Estate on the farm Kruisfontein, Bergville	Ecological Assessment (for EIA)	EnviroWorks
2010 - 2011	National long-haul optic fibre infrastructure network project, Bloemfontein to Beaufort West	Vegetation Rehabilitation Plan for illegally cleared areas	NEOTEL
2010 - 2011	National long-haul optic fibre infrastructure network project, Bloemfontein to Beaufort West	Invasive Plant Management Plan	NEOTEL
2010 - 2011	National long-haul optic fibre infrastructure network project, Bloemfontein to Beaufort West	Protected and Endangered Species Walk-Through Survey	NEOTEL
2011	Optic Fibre Infrastructure Network, Swartland Municipality	Botanical Assessment (for EIA) - Assisted Dr Dave McDonald	Dark Fibre Africa
2011	Optic Fibre Infrastructure Network, City of Cape Town Municipality	Botanical Assessment (for EIA) - Assisted Dr Dave McDonald	Dark Fibre Africa
2010	Construction of an icon at the southernmost tip of Africa, Agulhas National Park	Botanical Assessment (for EIA)	SANPARKS
2010	New boardwalk from Suiderstrand Gravel Road to Rasperpunt, Agulhas National Park	Botanical Assessment (for EIA)	SANPARKS
2010	Farm development for academic purposes (Maluti FET College) on the Farm Rosedale 107, Harrismith	Ecological Assessment (Screening and Feasibility Study)	Agri Development Solutions
2010	Basic Assessment: Barcelona 88/11kV substation and 88kV loop-in lines	Botanical Assessment (for EIA)	Eskom Distribution
2011	Illegally ploughed land on the Farm Wolwekop 2353, Bloemfontein	Vegetation Rehabilitation Plan	EnviroWorks

WETLAND DELINEATION AND HYDROLOGICAL ASSESSMENTS

Date Completed	Project Description	Type of Assessment/Study	Client
In progress	Steynsrus PV 1 & 2 Solar Energy Facilities near Steynsrus, Free State Province	Wetland Assessment	Cronimet Mining Power Solutions
2019	Lichtenburg 1 100MW Solar PV Facility, Lichtenburg, North-West Province	Surface Hydrological Assessment (Scoping and EIA Phase)	Atlantic Renewable Energy Partners
2019	Lichtenburg 2 100MW Solar PV Facility, Lichtenburg, North-West Province	Surface Hydrological Assessment (Scoping and EIA Phase)	Atlantic Renewable Energy Partners
2019	Lichtenburg 3 100MW Solar PV Facility, Lichtenburg, North-West Province	Surface Hydrological Assessment (Scoping and EIA Phase)	Atlantic Renewable Energy Partners
2019	Moeding Solar PV Facility near Vryburg, North-West Province	Wetland Assessment (Basic Assessment)	Moeding Solar

2018	Kruisvallei Hydroelectric 22kV Overhead Power Line, Clarens, Free State Province	Wetland Assessment (Basic Assessment)	Zevobuzz
2017	Nyala 5MW PV facility within Harmony Gold's mining rights areas, Odendaalsrus	Wetland Assessment	BBEnergy
2017	Eland 5MW PV facility within Harmony Gold's mining rights areas, Odendaalsrus	Wetland Assessment	BBEnergy
2017	Olifantshoek 10MVA 132/11kV Substation and 31km Power Line	Surface Hydrological Assessment (Basic Assessment)	Eskom
2017	Expansion of the Elandspruit Quarry near Ladysmith, KwaZulu-Natal Province	Wetland Assessment	Raumix
2017	S24G for the unlawful commencement or continuation of activities within a watercourse, Honeydew, Gauteng Province	Aquatic Assessment & Flood Plain Delineation	Savannah Environmental
2017	Noupoort CSP Facility near Noupoort, Northern Cape Province	Surface Hydrological Assessment (EIA phase)	Cresco
2016	Wolmaransstad Municipality 75MW PV Solar Energy Facility in the North West Province	Wetland Assessment (Basic Assessment)	BlueWave Capital
2016	BlueWave 75MW PV Plant near Welkom Free State Province	Wetland Delineation	BlueWave Capital
2016	Harmony Solar Energy Facilities: Amendment of Pipeline and Overhead Power Line Route	Wetland Assessment (Basic Assessment)	BBEnergy

AVIFAUNAL ASSESSMENTS

Date Completed	Project Description	Type of Assessment/Study	Client
2019	Sirius Three Solar PV Facility near Upington, Northern Cape	Avifauna Assessment (Basic Assessment)	Aurora Power Solutions
2019	Sirius Four Solar PV Facility near Upington, Northern Cape	Avifauna Assessment (Basic Assessment)	Aurora Power Solutions
2019	Moeding Solar PV Facility near Vryburg, North-West Province	Avifauna Assessment (Basic Assessment)	Moeding Solar
2018	Proposed Zonnebloem Switching Station (132/22kV) and 2X Loop-in Loop-out Power Lines (132kV), Mpumalanga Province	Avifauna Assessment (Basic Assessment)	Eskom
2017	Olifantshoek 10MVA 132/11kV Substation and 31km Power Line	Avifauna Assessment (Basic Assessment)	Eskom
2016	TEWA Solar 1 Facility, east of Upington, Northern Cape Province	Wetland Assessment (Basic Assessment)	Tewa Isitha Solar 1
2016	TEWA Solar 2 Facility, east of Upington, Northern Cape Province	Wetland Assessment	Tewa Isitha Solar 2

ENVIRONMENTAL IMPACT ASSESSMENT

- Barcelona 88/11kV substation and 88kV loop-in lines – BA (for Eskom).
- Thabong Bulk 132kV sub-transmission inter-connector line – EIA (for Eskom).
- Groenwater 45 000 unit chicken broiler farm – BA (for Areemeng Mmogo Cooperative).
- Optic Fibre Infrastructure Network, City of Cape Town Municipality – BA (for Dark Fibre Africa (Pty) Ltd).



- Optic Fibre Infrastructure Network, Swartland Municipality – BA (for Dark Fibre Africa).
- Construction and refurbishment of the existing 66kV network between Ruigtevallei Substation and Reddersburg Substation – EMP (for Eskom).
- Lower Kruisvallei Hydroelectric Power Scheme (Ash river) – EIA (for Kruisvallei Hydro (Pty) Ltd).
- Construction of egg hatchery and associated infrastructure – BA (For Supreme Poultry).
- Construction of the Klipplaatdrif flow gauging (Vaal river) – EMP (DWAf).

ENVIRONMENTAL COMPLIANCE AUDITING AND ECO

- National long haul optic fibre infrastructure network project, Bloemfontein to Laingsburg – ECO (for Envioworks (Pty) Ltd.).
- National long haul optic fibre infrastructure network project, Wolmaransstad to Klerksdorp – ECO (for Envioworks (Pty) Ltd.).
- Construction and refurbishment of the existing 66kV network between Ruigtevallei Substation and Reddersburg Substation – ECO (for Envioworks (Pty) Ltd.).
- Construction and refurbishment of the Vredefort/Nooitgedacht 11kV power line – ECO (for Envioworks (Pty) Ltd.).
- Mining of Dolerite (Stone Aggregate) by Raumix (Pty) Ltd. on a portion of Portion 0 of the farm Hillside 2830, Bloemfontein – ECO (for GreenMined Environmental (Pty) Ltd.).
- Construction of an Egg Production Facility by Bainsvlei Poultry (Pty) Ltd on Portions 9 & 10 of the farm, Mooivlakte, Bloemfontein – ECO (for Enviro-Niche Consulting (Pty) Ltd.).
- Environmental compliance audit and botanical account of Afrisam’s premises in Bloemfontein – Environmental Compliance Auditing (for Envioworks (Pty) Ltd.).

OTHER PROJECTS:

- Keeping and breeding of lions (*Panthera leo*) on the farm Maxico 135, Ficksburg – Management and Business Plan (for Envioworks (Pty) Ltd.)
- Keeping and breeding of lions (*Panthera leo*) on the farm Mooihoek 292, Theunissen – Management and Business Plan (for Envioworks (Pty) Ltd.)
- Keeping and breeding of wild dogs (*Lycaon pictus*) on the farm Mooihoek 292, Theunissen – Management and Business Plan (for Envioworks (Pty) Ltd.)
- Existing underground and aboveground fuel storage tanks, TWK AGRI: Pongola – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks on Erf 171, TWK AGRI: Amsterdam – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 14 000 L of fuel (diesel) aboveground on Erf 32, TWK AGRI: Carolina – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 23 000 L of fuel (diesel) above ground on Portion 10 of the Farm Oude Bosch, Humansdorp –



Environmental Management Plan (for TWK Agricultural Ltd).

- Proposed storage of 16 000 L of fuel (diesel) aboveground at Panbult Depot – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks, TWK AGRI: Mechanisation and Engineering, Piet Retief – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks on Portion 38 of the Farm Lothair, TWK AGRI: Lothair – Environmental Management Plan (for TWK Agricultural Ltd).