

# Appendix B

## **SPECIALIST CVS**





## Eugeshin Naidoo

Mine Engineering, BU Lead, Water Engineer



### CAREER SUMMARY

Eugeshin is experienced Professional Civil Engineer with a background in design, planning and Water Resource Management on water infrastructure projects in the Mine Engineering Business Unit. In his role as the Business Unit Manager, he oversees multi-disciplinary teams in the execution of civil engineering and environmental projects.

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#### *2 years with WSP*

#### *13 years of experience*

##### *Area of expertise*

Development, Calibration & Running Water Balance Models

Flood Line Delineation

Dam Yield Analysis

Detailed and Conceptual Design of Storm Water Management Plans

Rainfall Monitoring

Surface Water Flow

Water Quality

##### *Language*

English – Fluent

Afrikaans - Fluent

### EDUCATION

BSc Eng. Civil, University of the Witwatersrand, Johannesburg

2009

### PROFESSIONAL MEMBERSHIPS

South African Institute of Civil Engineers, Member No. 201600424

2016

Engineering Council of South Africa, Member No.: 20190664

2019



## PROFESSIONAL HISTORY

WSP Group Africa (Pty) Ltd	2021 - present
Golder Associates Africa (Pty) Ltd	2019 – 2021
Knight Piesold (Pty) Ltd	2016 – 2019
GCS (Pty) Ltd	2014 – 2016
Golder Associates Africa (Pty) Ltd	2011 – 2014
DSE Structural Engineers and Contractors	2010 - 2011

## PROFESSIONAL EXPERIENCE – DAM ENGINEERING

### **Impala Platinum, Detailed Design of Sludge Ponds and Storm Water Management Dams for 6 Platinum Mines, Rustenburg, South Africa**

**Year:** 2020 to 2022

**Role:** Design Engineer

Storm water dam detailed design and construction supervision for 6 Impala Platinum Shaft areas.

### **Ferroglobe Silicone Smelters, Storm Water Dam Design, Mpumalanga, South Africa**

**Year:** 2018

**Role:** Design Engineer

Storm water dam detailed design and construction supervision.

### **SGZ Cononish Limited, Cononish Storm Water and Settlement Pond Design, Scotland**

**Year:** 2018

**Role:** Lead Design Engineer

Storm water system and settlement pond detailed design for a Cononish Mine located in the Scotland Highlands.

## PROFESSIONAL EXPERIENCE – WATER RESOURCES

### **Alfred Nzo District Municipality, Ntabankulu Bulk Water Supply, Kwa-Zulu Natal, South Africa**

**Year:** 2018

**Role:** Design engineer

Technical feasibility of multiple water supply schemes. Involved yield analysis and conceptual dam design.

### **Rio Tinto, Design of culverts and Bridges Simandou, Guinea, Simandou, Guinea**

**Year:** 2014

**Role:** Design Engineer

Design of culverts and bridges for railway crossings. Hydrological and hydraulic analysis for river flood peak determination, flood line derivation. Unsteady analysis was used to size the major streams traversing the project area.

### **Richards Bay Industrial Development Zone (Pty.) Ltd., Richards Bay Industrial Development Zone Floodline Study: Kwazulu-Natal Province, South Africa, Kwazulu-Natal, South Africa**

**Year:** 2012

**Role:** Design Engineer

Calculated flood peaks, flood lines and sized culverts for road crossings on several water courses in the Industrial Development Zone

### **Platreef Resources Pty. Ltd., Platreef Water Study, Limpopo, South Africa**

**Year:** 2011 to 2014

**Role:** Design Engineer



Designed, installed, and monitored a network of specialized hydrological and meteorological monitoring stations. This involved site selection, measuring the river cross section and measuring surface water flow. Hydrological and hydraulic analysis for river flood peak determination and flood line delineation.

**Exxaro Coal Pty (Ltd.), Storm Water Management Plans Grootegeluk Coal Mine, Limpopo, South Africa**  
**Year:** 2014

**Role:** Design Engineer

Design of mine storm water management plans, including design of channels, sumps, return water dams, weirs, and culverts.

**Ruighoek Chrome Mine, Storm Water Management Plans Ruighoek Chrome Mine, Northwest Province, South Africa**

**Year:** 2015

**Role:** Design Engineer

Design of mine storm water management plans, including design of channels, sumps, return water dams, weirs and culverts.

**Anglo American, Storm Water Management Plans Greenside Collieries, Mpumalanga, South Africa**

**Year:** 2012

**Role:** Design Engineer

Hydrological and hydraulic analysis for river flood peak determination and flood line derivation. Design of mine storm water management plans, including design of channels, sumps, return water dams, weirs, culverts.

**ACSA, King Shaka International Airport, Kwa-Zulu Natal, South Africa**

**Year:** 2016

**Role:** Design Engineer

Storm Water Management Compliance Audit carried out to determine any areas of concern and recommendations made to achieve compliance.

## **PROFESSIONAL EXPERIENCE – CIVIL ENGINEERING**

**Eskom Holdings, Kusile Stormwater Management Capacity Check, Mpumalanga, South Africa**

**Year:** 2017

**Role:** Design Engineer

Determined the capacity of the existing Kusile coal stockpile area stormwater management plan as a concrete liner has been implemented on the contributing catchments

**Eskom Holdings, Medupi FGD Retrofit Project, Limpopo, South Africa**

**Year:** 2017

**Role:** Design Engineer

This conceptual design of the new gypsum off-take infrastructure slab, stormwater management system (including water balance), sewage system and access roads specifically between the Boiler edge slab and Road 3 (Ring Road West) in the main FGD area.

**Rio Tinto, Design of Site-wide Storm Water management Infrastructure, Guinea, Simandou, Guinea**

**Year:** 2022 to 2023

**Role:** Drainage Discipline Lead

Managed and co-ordinated the site-wide storm water management infrastructure, this includes the erosion protection and management systems.

## Sarah Skinner

Mine Water – Groundwater, Director, Team Lead

### CAREER SUMMARY

Sarah Skinner is a professional hydrogeologist (Pr Sci Nat). She has 25 years' work experience providing technical expertise and guidance towards improved water management. She has technical expertise in hydrogeology and water chemistry with experience in the chemical, explosive manufacturing, and mining sectors. She carries out specialist reporting in hydrogeology, site assessment for contaminated land, water use licence implementation, water monitoring program implementation and assessment, IWWMP, RSIPs, characterisation of waste and isotopic hydrogeology.



Sarah's passion lies in project and programme management for numerous projects involving the management of a team of scientists, sub-consultants, and contractors for consolidation of hydrogeological reports. Sarah has depth of expertise in environmental reports, water specialist studies, WULA geohydrology specialist studies, groundwater source development and assessment, including source identification, interpretation of aqueous geochemistry, waste characterisation and soil characterisation. Team Lead in the fields of remediation option assessments for groundwater contamination, development of water sampling protocols and methodologies for evaluation of large datasets using GIS tools, mentorship, training, and capacity building.

Countries of experience gained include South Africa and Madagascar.

#### <1 years with WSP

#### 25 years of experience

#### Area of expertise

Hydrogeology & Water Chemistry – Chemical, Explosive Manufacturing & Mining Sectors

Specialist Hydrogeology Reporting

Contaminated Land Site Assessments

Water Use Licence Implementation, Water Monitoring Implementation & Assessments

IWWMP, RSIPs & Characterisation of Waste & Isotopic Hydrogeology

#### Language

English – Fluent

Afrikaans – Understand

### EDUCATION

MSc, Water Utilisation, Pretoria University	2003
BSc (Hons), Water Utilisation/ Waste management, Pretoria University	2001
BSc (Hons), Geology & Hydrogeology, Rhodes University, Upper second	1996
BSc, Geology & Chemistry, Rhodes University	1995

### ADDITIONAL TRAINING

Hazard Identification and Risk Assessment (HIRA) - NOSA	2021
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## Sarah Skinner

Mine Water – Groundwater, Director, Team Lead

International Women in Resources Mentoring Programme (IWRMP)	2021
DWS Hydropedology	2019
Hydropedology Specialist Training – TerraSoil	2018

### PROFESSIONAL MEMBERSHIPS

South African Council for Scientific Professions - Pr. Sci. Nat Geology, 400016/01	2001
GWSA - Ground Water Association of South Africa	2022
IMWA - International Mine Water Association	2020
NICOLA - Network for Industrially Contaminated Land in South Africa	2020

### PROFESSIONAL HISTORY

WSP Group Africa (Pty) Ltd	May 2022 – present
SRK Consulting (Pty) Ltd	January 1997 – April 2022

### PROFESSIONAL EXPERIENCE

#### Hydrogeology

**Rio Tinto, Mandena Hydrogeological System, Madagascar**  
**2022**

**Hydrogeologist**  
QMM Hydrogeological Investigation - Phase 1 Desktop Study

**Genmin (Pty) Limited, Baniaka Iron Ore Project, Gabon**  
**2022**

**Hydrogeologist**  
Pre-feasibility Hydrogeological study. Report Review.

**BlackEarth Minerals NL, Maniry Graphite Project, Madagascar**  
**2022**

**Reviewer**  
Hydrogeological Investigation

**Kamoa Copper SA, Groundwater Study, DRC**  
**2022**

**Report Review**  
Kamoa Pre-Feasibility and Groundwater Study

**AECI Limited, Various projects, Johannesburg, South Africa**  
**1997 – 2022**

**Hydrogeologist**  
Various projects for AECI Ltd and other AECI Business Pillars (Explosives, Property and Water). Services provided included, water monitoring and water quality assessments, radionuclide monitoring, IWWMP and RSIP preparation, source studies, Isotopes, Database management, Risk modelling, Hydrogeology specialist studies, Project Value R500 000 – +R1 million / annum.

**Marula Platinum (Pty) Ltd, Various projects, Mpumalanga, South Africa**  
**2005 - 2008, 2010 – 2019**  
**Project lead**



## **Sarah Skinner**

### **Mine Water – Groundwater, Director, Team Lead**

Services provided included, specialist studies for WULA, Groundwater Monitoring, Isotopic and hydro chemical assessment of potential groundwater contaminant plume. Project Value +R800 000/annum.

#### **Sasol, Nitrates Source study for a platinum mine, Rustenburg**

**2018**

##### **Project Management**

Hydrochemistry and isotope assessment and report compilation.

#### **Impala Platinum (Pty) Ltd, Annual Review, Rustenburg, SA.**

**2017 – 2019**

##### **Reviewer**

Annual review of monitoring data.

#### **Royal Bafokeng Platinum (Pty) Ltd, Styldrift Shaft 2 Complex, Rustenburg, Northwest Province**

**2016**

##### **Project Lead**

Integrated Environmental Authorisation Process for the: Environmental Impact Assessment (EIA) and Amendment of the existing Environmental Management Programme (EMPR), hydrogeological specialist study and review of IWWMP and EMP.

#### **Bafokeng Rasimone Platinum Mine, Rustenburg**

**2016**

##### **Hydrogeology**

Groundwater specialist studies for proposed new TSF

#### **Modikwa Platinum Mine, Hydrogeology assessment, Mpumalanga Province, South Africa**

**2016**

##### **Hydrogeologist**

Nitrogen Contamination Source Assessment at, isotopic studies, and chemistry. Project Value <R200 000.

#### **Mogalakwena Local Municipality, Groundwater availability, Mokopane, South Africa**

**2010**

##### **Hydrogeologist**

Overview of groundwater availability and use in and around Mokopane

#### **Department of Water Affairs and Forestry Development of water reconciliation strategies, All towns, Northern Region, South Africa**

**2009**

##### **Task Leader for Groundwater**

Water Reconciliation Strategies for All Towns in the Northern Region

#### **Contaminated Land**

#### **Total Energies Marketing Moçambique, SA. Figaro Project: Phase 1&Phase 2, Mozambique**

**2022**

##### **Report Review & Phase 2 reporting**

Environmental Due Diligence Assessments

#### **Confidential Project in Durban**

**2022**

SAR Reporting for a manufacturing plant

#### **Confidential Project in Gquberha**

**2023**

Phase 2 SAR for Due diligence assessment

#### **AECI Limited, Various projects, Johannesburg, South Africa**

**1997 – 2022**



## Sarah Skinner

Mine Water – Groundwater, Director, Team Lead

### Technical expertise, planning and assessment

Various projects for AECI Ltd and other AECI Business Pillars (Explosives, Property and Water). Services provided including the Remediation Strategy, various Contaminant Land Assessments, Pilot studies for remediation activities, Waste characterisation and classification etc. Project Value R500 000 – +R1 million / annum.

### AWARDS

Long service awards – 25 years (2022) – SRK Consulting

SRK Cheers award – 2001, 2013 – SRK Consulting

### PUBLICATIONS

Modern Mining (August 2021) Fostering a working environment that is attractive to woman. (Article with Mr V Reddy and S Skinner).

Mining Weekly, 8 December 2017 & Borehole Water Association. Helping mines find the real source of nitrates in Water by Nadine James.

IMWA: Risk to Opportunity (September 2018). Platinum Tailings Review.

Nicola (31 October 1 November 2017). Where is it? A case study to demonstrate the use of field tests in assessing nitrogen contamination.

IMWA: Mine Water and Circular Economy (June 2017). Tracking Nitrate Sources at a Platinum Mine – Putting the puzzle together.

International Conference of Groundwater: Our Source of Security in an Uncertain Future (September 2011). Eye Spy, Groundwater Monitoring.

International Conference of Groundwater: Our Source of Security in an Uncertain Future (19- 21 September 2011). Poster Presentation. Oops! What Now? Using risk analyses to prioritise impacts.

International Conference of Groundwater: Our Source of Security in an Uncertain Future (September 2011). Looking for the Last drop.

WISA (April 2010). Applying Comparative Risk Analyses for Determining Best Options for Remediation

Groundwater 2009 Conference (November 2009): The Challengers in Developing Reconciliation Strategies for DWA All Towns Northern Region Study – The Good, the bad and the beautiful & Curious and Curiouser – Isotopes Suggest and Answer.

IMW Conference, (October 2009): Groundwater Clean-up: Assessing Mining Impacts and Rehabilitation/Management Alternatives.

Water SA (April 2005): The feasibility of a permeable reactive barrier to treat acidic sulphate and nitrate contaminated groundwater, University of Pretoria.

### MENTORSHIP / TRAINING

Nicola Mentorship program (2022) - Mentor

SACNASP Referee – A Rudman, C Terrell, S Mahlangu, C Kessopersadh.

Short Course in Aqueous Geochemistry, Data presentation and Analyses: Wits MSc Course – 2008, De Beers 2006.





**herewith certifies that**  
**Sarah Jane Wolfe Skinner**  
Registration Number: 400016/01  
**is a registered scientist**

in terms of section 20(3) of the Natural Scientific Professions Act, 2003  
(Act 27 of 2003)  
in the following field(s) of practice (Schedule 1 of the Act)  
Geological Science (Professional Natural Scientist)

Effective    **16 March 2001**

Expires      **31 March 2023**



A handwritten signature in black ink, appearing to read 'Botha'.

Chairperson

A handwritten signature in black ink, appearing to read 'M. J. ...'.

Chief Executive Officer





## KAREN KING, M.Sc., Pr.Sci.Nat.

*Senior Associate (Hydrologist & Soil Scientist), Environment & Energy*

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### Years with the firm

5.5

### Years of experience

16.5

### Professional qualifications

*Pri.Sci.Nat (Earth Science)*

### Areas of expertise

*Soil Science*

*Hydrology*

### Languages

*English*

*Afrikaans*

*Italian (learning)*

### CAREER SUMMARY

Ms King is a professional soil scientist and hydrologist (Pr.Sci.Nat, M.Sc.) with WSP Engineering and Environmental Consultants in Johannesburg. She has 16+ years' work experience and specialises in local and international soil classification systems, soil capability and suitability assessments, land use assessments and associated risk and mitigation assessments and monitoring plans, as well as agricultural studies. She also specialises in mining/development hydrology, water resources planning, catchment-scale hydrological modelling, flood studies, storm water management planning, wetland delineation, water research, and related risk assessments and management plans. She has been primarily involved in the environmental and engineering hydrology and soil science fields, initially as a soil science lecturer at UKZN for 3 years, and then as a soil scientist and hydrologist in various engineering and environmental consultancies both in South Africa and in the United Kingdom.

### EDUCATION

Master of Science, University of KwaZulu-Natal, South Africa	2004
Bachelor of Science (Honours), University of Natal, South Africa	2002
Bachelor of Science, Hydrology and Soil Science, University of Natal, South Africa	2001

### SELECTIONS AND AWARDS

Golder Technical Conference Abstract Selection	2022
WSP Group Unity Award	2019
WSP Environmental Collaboration Award	2018
Golden Key Honour Society Selection	2002
A series of academic and sports scholarships	1994-2003

### PROFESSIONAL MEMBERSHIPS

South African Council for Scientific Professions – Professional Natural Scientist (Earth Scientist) (Reg. No. 400035/11)	SACNASP
Water Institute of South Africa (member 23404)	WISA
The Golden Key Honour Society (member 1264480)	-
International Water Association (member 01053990)	IWA

### MODEL PROFICIENCY

SAPWAT Crop Irrigation Model

HYDRUS Soil-Water Interaction Model

Agricultural Catchments Research Unit (ACRU) Model

Pitman Water Resources Assessment Model

#### SOIL SCIENCE PROFESSIONAL EXPERIENCE

- Richbay Chemicals South Africa Extension Project – Soils Study (2021-2022). Project Director. Client: Richbay Chemicals.  
Assessment of any potential agricultural and social uses of an area of land earmarked for industry extension in a light industrial/residential area of KwaZulu-Natal.
- Ghana Genser Power Project – Soils Study (2021-2022). Project Soils Specialist. Client: Genser Power.  
Agricultural Soils Classification, Capability and Impacts Assessment, and Mitigation Measures Recommendations for a Power Plant and Pipeline in Ghana.
- Liberia Gold Mine Biomass Project – Soils Study (2021-2022). Project Soils Specialist. Client: MNG Lebetse Gold Mine.  
Agricultural Soils Classification, Capability and Impacts Assessment, and Mitigation Measures Recommendations for a proposed biomass project in Liberia.
- Guinea Project – Interdisciplinary Soils Study (2021-2022). Project Soils Specialist. Client: Confidential.  
Multidisciplinary Potential Impacts and Mitigation Measures Assessment under very difficult conditions
- Lebombo Cape Soils Study. Soils Compliance Study for Fruit Export – Physical and Chemical Assessments (2021-2022). Project Director. Client: Lebombo Cape.  
Classification of soil forms according to the South African taxonomic system, soil capability and impact assessment, and mitigation recommendations.
- DRC Kamoia Copper Mine ESIA – Soils Study (2021). Project Soils Specialist. Client: Ivanhoe Mines.  
Agricultural soils study according to IFC standards that involved World Resource Base classification of lateritic and non-lateritic soils across developed and undeveloped areas of Kamoia Copper Mine. The soil agricultural capability and suitability were assessed and management plans for top- and sub-soil stripping and for soil erosion were developed.
- Etihad Rail Saudi Arabia to Oman Rail - Desert Soils Study (2020-2021). Project Director. Client: Etihad Rail.  
Soils study centred on the establishment of soil properties and thus Curve Numbers to inform desert soil hydrological processes.
- Swaziland Nondvo Dam Morphodynamic and River Basin Specialist Studies – (2018-2021): Project Director and Reviewer. Client: Swaziland DWS  
Soil-centred studies that assessed the potential for landscape changes due to soil erosion and sedimentation associated with the development and raising of dam walls in Swaziland.
- Calodex Soils and Hydrological Assessments (2021). Project Director. Client: Calodex.  
Soils study centred on the agricultural classification of a number of local soils. Potential effects of soil-water movement on local wetlands was established.
- Jet Park Soils and Hydrological Assessment (2021). Project Director. Client: Abbeydale Construction.

- Soils study centred on the agricultural classification of a number of local soils. Potential effects of soil-water movement on local wetlands was established.
- Sasol Soils and Hydropedological Study (2021). Project Director. Client: Sasol. Soils study centred on the agricultural classification of a number of local soils. Potential effects of soil-water movement on local wetlands was established.
- Sapref Soils and Hydropedological Study (2019-2020). Project Manager. Client: Sapref. Soils study centred on the agricultural classification of a number of local soils. Potential effects of soil-water movement on local wetlands was established.
- Ethiopia Agri-Industrial Zone ESIA. Soils Classification, Land Use, Land Capability, Risk Assessment and Management Plan Study (2017-2018). Client: UNOPS. Agricultural soils study according to IFC standards that involved World Resource Base classification of a wide range of soil forms. Agricultural soil capability and suitability was established, an impact assessment was undertaken and mitigation and management plans recommended.
- Richards Bay Minerals Sokhulu Remediation Plan, South Africa (2017). Soil Assessment. Client: Rio Tinto. Soils were classified by form according to a local agricultural taxonomic system.
- Zambia Olam Soils Study (2016): Project Manager. Soil Classification, Land Use and Land Capability Study. Client: NCCL. Agricultural soils study according to IFC standards that involved World Resource Base classification of a range of soil forms. Land capabilities were established.
- Glisa Soils Study, Gauteng, South Africa (2015): Project Manager. Soil Classification, Land Use and Land Capability and Suitability Study. Client: Exxaro Resources.
- Philippi Sand Mine Soils Study, Western Cape, South Africa (2015): Project Manager. Hydrology, Storm Water Management Plan, Risk Assessment, Reporting and Project Management. Client: Consol Glass.
- Madagascar Molo Graphite Mine Soils Study. (2014): Project Manager. Soil Classification, Land Use and Land Capability Study with Management Plan and Staff Capability Outputs. Client: Energiser Resources.
- Wits Gold Mine Soils Study, Gauteng, South Africa (2014): Project Manager. Soil Classification, Land Use and Land Capability Study. Client: Wits Gold.
- Soil Monitoring Study, Gauteng, South Africa (2013-2014). Project Manager. Client: Total Coal South Africa.
- Kangra Coal specialist input – soils. (2013). Project Manager. Soil Classification, Land Use and Land Capability and Suitability Study. Client: Kangra Coal.
- Two Rivers Platinum EIA specialist input – soils. (2012). Project Manager. Soil Classification, Land Use and Land Capability and Suitability Study. Client: Two Rivers Platinum.
- Witkop EIA specialist input – soils. Witkop Exploration and Mining (2012). Project Manager. Soil Classification, Land Use and Land Capability and Suitability Study. Client: Witkop Mine.
- Matimba EIA specialist input – soils. (2012). Project Manager. Soil Classification, Land Use and Land Capability and Suitability Study. Client: SiVest.

- Sasol Fuel Department Due Diligence (2011). Project Manager. Establishing whether the soil in one of Sasol's tank farms was contaminated. This required soil sampling and analysis, as well as report writing. Client: Exxaro Coal.

#### HYDROLOGY PROFESSIONAL EXPERIENCE

- Lebombo Cape Water Study. Surface Water Fruit Export Compliance Assessment (2021-2022). Project Director. Client: Lebombo Cape.
- Etihad Rail Saudi Arabia to Oman Railway Line - Desert Hydrology Study (2020-2021). Project Director. Client: Etihad Rail.
- De Wittekrans WULA, IWWMP and specialist studies (2019). Project Director. Client: Canyon Coal.
- Trans-Alloys WULA, IWWMP and specialist studies (2019). Project Director and Reviewer. Client: Eskom.
- Eskom Lethabo WULA and IWWMP Amendment (2019). Project Director and Reviewer. Client: Eskom.
- Kimberly Clark WULA (2019). Project Director. Kimberly Clark.
- Sappi Ngodwana WULA Advisory Services (2019). Project Director. Client: Sappi.
- Sapref WULA, IWWMP and specialist studies including Storm Water Management Plan, Groundwater and wetland studies (2019). Project Director and Reviewer. Client: Sapref.
- Southern Cross Foundry WULA, IWWMP and specialist studies including a Storm Water Management Plan and Groundwater Study (2018-2019). Project Director and Reviewer. Client: Southern Cross.
- Nondvo Dam Morphodynamic and River Basin Specialist Studies – Swaziland (2018-2019): Project Director and Reviewer. Client: Swaziland DWS
- Transnet Monthly Surface Water Monitoring (2018-2019). Project Director and Reviewer. Client: TPT
- AMSA Stormwater Dam Complex Assessment (2018-2019). Report Reviewer. Client: Arcelor Mittal SA
- Alliance Mining Commodities Guinea Mine Water Study (2018-2019): Report Reviewer. Client: AMC.
- Yanfolila Mali Gold Mine Water Study (2018-2019): Project Reviewer. Client: Hummingbird Resources.
- Thabametsi Coal-fired power station water study (2017-2019). Water Use License Application and Storm Water Management Planning specialist advisors. Client: Marubeni.
- Turfontein Underground Mine WULA and IWWMP (2017-2019). Project Manager and Reviewer. Client: Samancor Chrome.
- Kalgold Mine Surface Water Assessment (2018): Project Director. Client: EIMS
- Tau Lekoa Gold Mine Surface Water Assessment (2018): Project Director. Client: EIMS
- Sappi Ngodwana WUL and IWWMP study (2018). Project Reviewer. Client: Sappi.
- Agriprotein Storm Water Management Plan (2018): Project Reviewer. Client: Agriprotein Industries.
- Sundumbili Wastewater Treatment Works upgrade potential water quality changes calculations (2018). Project Reviewer. Client: RHDHV.

- Glendale Distillery Water Use License Application study (2017 - 2018). Project Reviewer. Client: Illovo.
- GDC Wastewater Treatment Works Water Use License Application study (2017). Project Reviewer. Client: Illovo.
- Hwange District Plant Drain System Study, Zimbabwe (2017): Project Manager. Water Balance and Storm Water Management Plan review and recommendations. Client: ZimPower and the African Development Bank.
- Ethiopia Agri-Industrial Zone ESIA (2017): Project Manager, reviewer and soil scientist. Surface and groundwater, wetlands and soils assessment and risk and mitigation assessment. Client: UNOPS.
- Zambia Coal-fired power station Water Assessment (2017): Project Reviewer. Water Availability Assessment. Client: Black Rhino.
- Richards Bay Water Quality Monitoring Study (2017): Report reviewer. Compliance assessment. Client: Transnet Port Terminals.
- Oranjemund Mine Conjunctive Water Use Study (2016): Project Manager. Strategic Surface Water and Groundwater Assessment, Desalination, Project Management. Client: Freedthinkers.
- SKA Antennae Extensive Flood Lines Assessment (2016): Project Reviewer. Client: SKA.
- Avondale Housing Estate Hydrology and Flood Lines (2016): Project Reviewer. Client: Triplo4.
- Avon Power Plant Surface Water Assessment (2016): Project Reviewer. Client: Triplo4.
- Molopo Gas Study (2016): Project Reviewer. Sensitivity Assessment, Risk Assessment, Surface Water Assessment and Project Management. Client: EIMS.
- City of Johannesburg Open Spaces Study (2016): Project Reviewer. An assessment of any potential risks to and from surface water and offering general advice about maintenance of Johannesburg's open spaces. Client: CoJ.
- Open Spaces Study, Johannesburg, Gauteng, South Africa (2015): Project Manager. General Hydrological Risks Assessment. Client: CoJ.
- Philippi Sand Mine Surface Water Study, Western Cape, South Africa (2015): Project Manager. Hydrology, Storm Water Management Plan, Risk Assessment, Reporting and Project Management. Client: Consol Glass.
- Glisa Mine Surface Water Study, Gauteng, South Africa (2015): Project Manager. Hydrology, Storm Water Management Plan, Risk Assessment, Water and Salt Balance, Reporting and Project Management. Client: Exxaro Resources.
- Surface Water Assessment, Richards Bay, KwaZulu-Natal, South Africa (2015): Project Manager. Flood Lines and Project Management. Client: GIBB.
- Unconventional Gas Study, Gauteng, South Africa (2015). Flood Lines, Storm Water Management Plan, Water Balance, Review, Project Management. Client: RHDHV.
- Pumpi Mine Integrated Water Management Study, Mozambique (2015): Project Manager. Flood Lines, Storm Water Management Plan, Review, Project Management. Client: Lamikal.
- Molo Graphite Mine Surface Water Study, Madagascar (2014). Project Manager. Hydrology, Yield Analysis, Storm Water Management Plan, Water Quality Assessment, Risk Assessment, Water and Salt Balance, Reporting and Project Management with Management Plan and Staff Capability Outputs. Client: Energizer Resources.



- De Wittekrans Surface Water Study, Mpumalanga, South Africa, (2014): Project Manager. Hydrology, Storm Water Management Plan, Risk Assessment, Reporting and Project Management. Client: EIMS.
- Wits Gold Mine Surface Water Study, Gauteng, South Africa (2014): Project Manager. Hydrology, SWMP, Water Balance, Reporting, Project Management. Client: Wits Gold.
- Olam Zambia Surface Water Study, Zambia. (2014): Project Manager. Hydrology, Water Availability Assessment, Water Quality, Water resource Planning, Reporting, Project Management. Client: NCCL.
- Angola AEMR Area 5 Surface Water Study, Angola. (2014): Project Manager. Hydrology, Yield Analysis, Storm Water Management Plan, Water Balance, Reporting and Project Management. Client: Tenova Bateman.
- EnviroServ Water Facility Integrated Water Resources Study (2013). Project Manager. Hydrology, Water Balance, Salt Dilution Recommendations, Project Management. Client: EnviroServ.
- Surface Water Quantity and Quality Management Planning Study, King Shaka Airport, Durban, South Africa (2013-2016). Project Manager: Hydrology, SWMP, Water Quality Assessment, Bio-monitoring, Water Quality Monitoring Planning, Reporting, Project Management. Client: ACSA.
- Kangra Coal specialist input – hydrology. (2013). Project Manager. Hydrology, Storm Water Management Plan, Flood Lines, Water Quality Assessment, Water Balance, Monitoring Programme, Reporting and Project Management. Client: Kangra Coal.
- Angola AEMR Areas 2 and 3 Surface Water Study, Angola (2013). Project Manager. Hydrology, Yield Analysis, Storm Water Management Plan, Water Balance, Reporting and Project Management. Client: SMP.
- Kakanda-Luita Mine Project (2012). Project Manager. Hydrological modelling of mine areas to determine peak flows at various points, preparation of water balances for the respective mines and a flood line report. Client: ENRC Management South Africa (Pty) Ltd.
- Marikana Water Balance (2012). Hydrologist. An Excel-based process flow diagram and water balance was set up and verified for the mine. Client: Marikana Platinum Mine.
- Volspruit Platinum Mine Flood line calculations and berm design (2012). Project Manager. 1:50- and 1:100-year flood lines were calculated using Hec-RAS software for the watercourses running through the mine and flood protection berms were designed for these return periods. Client: Pan Palladium (Pty) Ltd.
- Marula Platinum Mine Flood Lines Project. (2012). Project Manager. 1:50- and 1:100-year flood lines were calculated using Hec-RAS software for the watercourses running through the mine and the risks associated with flooding identified. Client: Marula Platinum Mine.
- Marampa Iron Ore Flood Line Project (2012). Project Manager. 1:50- and 1:100-year flood lines were calculated using Hec-RAS software for the watercourses running through the mine and the risks associated with flooding identified. Client: Marula Platinum Mine.
- Two Rivers Platinum EIA specialist input – hydrology (2012). Project Manager. Hydrology, Storm Water Management Plan, Flood Lines, Water Quality Assessment, Risk Assessment, Water and Salt Balance, Monitoring Programme, Reporting and Project Management. Client: Two Rivers Platinum.
- Witkop EIA specialist input – hydrology. (2012). Project Manager. Hydrology, Storm Water Management Plan, Flood Lines, Water Quality Assessment, Risk

- Assessment, Water and Salt Balance, Monitoring Programme, Reporting and Project Management. Client: Witkop Exploration and Mining.
- Matimba EIA specialist input – hydrology (2012). Project Manager. Hydrology, Storm Water Management Plan, Flood Lines, Water Quality Assessment, Risk Assessment, Water and Salt Balance, Monitoring Programme, Reporting and Project Management. Client: SiVest.
- Mulepe Diamond Mine Project (2011). Project Manager. Flood Lines Calculation and reporting study. Client: De Beers Anglo Prospecting.
- Impala Tailings Dam Weirs (2011). Project Manager. PH and EC monitoring equipment were investigated and the best of these was recommended to the client. Client: Impala Platinum.
- New Clydesdale Coal Water Balance Study (2011). Project Manager. An Excel-based process flow diagram and water and salt balance was calculated for the mine. Client: Exxaro Coal.
- Nkomati Integrated Water and Waste Management Plan. (2012). Hydrologist. Client: African Rainbow Minerals Limited.
- Rus Ter Vaal Residential Development (2012). Project Manager. Water resources Availability Study, Water Balance and Project Management. Client: Arengo 6.
- Progressive Realisation of the IncoMaputo Agreement (PRIMA) Study. Tripartite Permanent Technical Committee (TPTC) between Mozambique, Swaziland and South Africa (2011). Developing and running a model to determine the water availability in the Maputo and Incomati catchments and their sub-catchments for a range of scenarios. Writing reports and giving presentations based on these findings at international meetings. Hydrologist. Client: PRIMA.
- Development of a Reconciliation Strategy for the Olifants River Water Supply System. (2011). Hydrologist. Client: DWA.
- Projected Impacts of Climate Change on water quality and quantity in the Mngeni Catchment (2011). Hydrologist. Client: The Water Research Commission.
- CSIR Regional Water infrastructure Project (2011). Hydrologist. Client: CSIR.
- uMgungundlovu Municipality Integrated Waste Management Plan (2010). Collection and analysis of solid waste collection, removal and disposal data for the 7 local municipalities making up uMgungundlovu District Municipality, and writing an integrated waste management plan for the area, based on this data. Client: uMgungundlovu District Municipality.
- Ugu District Municipality Disaster Management Plan. (2010). Hydrologist. Writing methodologies for air, soil and water pollution disaster mitigation and calculating preliminary timeframes and budgets for overall disaster management in the district. Client: Ugu District Municipality.
- eThekweni District Municipality Sandton Sanitation Project (2010). Hydrologist. Writing reports at various stages explaining what work has been done and what was still due to be done, on an area-by-area basis. Client: eThekweni District Municipality.
- SADC Climate Change Study. (2009). Hydrologist. Setting up the HEC-HMS modeling system to run various hydrological scenarios. Client: Pegasus.
- Bitou Stormwater and Flood Study. (2009). Hydrologist. Hydrological and hydraulic model development, flood hazard mapping and dam break analysis. Client: Bitou Local Municipality.
- SANRAL Bridge Study. (2009). Running the HDYP01 and HEC-HMS models and reporting on the findings. Client: Pegasus.



- EA Toddbrook Reservoir Rapid Impact Assessment. (2008). Hydrologist. Reports based on Toddbrook Reservoir were used in conjunction with a risk assessment modelling tool to produce a rapid impact assessment of the potential damage caused by a dam break at Toddbrook Reservoir. Client: The Environment Agency.
- SEW Ouse Cuckmere Control Lines. (2008). Flood control lines were produced using 1996 and 2005 simulation results and these were compared to identify how and why they differ. Client: South East Water.
- SEW NR09 Northern Region Development Options. (2007-2008). Hydrologist. The potential yield at these sites was assessed at various storage and pumping levels, and the sites were evaluated based on their potential yields and positions. Client: South East Water.
- West Sussex Strategic Flood Risk Assessment. (2006-2007). Hydrologist. Flood Risk mapping according to local climatic conditions, soils and populations, as well as surface water flood risk report writing. Client: The Environment Agency.
- Water Resources of South Africa, 2005 Study (2005). Hydrologist. The Water Research Commission. Setting up, simulating and calibrating water resources networks, including climatic, soils and vegetation data, and running scenarios for the whole of the Orange catchment, plus testing of the WRSM2005 model used for this exercise. Client: WRC.
- Assessment of Water Availability in the Olifants Catchments, South Africa. (2005). Hydrologist. Water resources Modelling. Client: SATAC.
- Development of a Reconciliation Strategy for the Amatole Bulk Water Supply Systems, South Africa. (2005). Hydrologist. Climate change and desalination studies made up a part of the project. Client: DWAF.
- Feasibility Study of Utilisation of the Low Level Storage at Vanderkloof Dam. (2005). Hydrologist. A feasibility study into utilisation of low level dam storage, accounting for the hydrological, economic, sociological, soils and environmental aspects thereof. Client: DWAF.

## **PUBLICATIONS AND PRESENTATIONS**

### **Publications**

- Engineering News – Crisis Proofing Water Preservation a SA Priority. January 2019. King, KN and A. Groves.
- SA Mining – Proactive, Long-Term Solutions for AMD Remain Critical. King, KN.
- Crown Publications – Women in STEM Share Career Advice. August 2018. King, KN, J Nhlapo, F A’Bear and H Manthose.
- Facing the Acid Mine Water Menace Squarely. African Mining. March 2018. King, KN.
- Sustainable Solutions Possible for AMD Treatment. Mining Weekly May 4 2018. King, KN.
- Shared Accountability Needed to Solve SA’s Water Issues. News24. May 2017.
- Understanding Climate Effects. Mail and Guardian February 10-16 2017. King, KN, F Engelbrecht and J Weir.
- Water Management Crucial for Ensuring Economic Viability. Engineering News March 3 2017. King, KN and G Matthews.
- Effects of Land Use Changes on the Cape Flats. Environmental Sciences. King, KN and Janse van Rensburg, RT. 2016.

- Storm Water Management Involving the ‘First Flush’ Principle. Environmental Management November/December 2015. King, KN and E Naidoo.
- Exploring Water Resources Sustainability in a Trans-Boundary Context. Water and Sanitation Africa. May/June 2012. King, KN and Dr K Winter. 2012.
- Study Shows Not all Answers in Science. Published in the January/February 2006 Water Wheel. Volume 5. No.1. WRC, Pretoria, South Africa. King, KN. 2006.
- The analysis of 74 years of rainfall recorded by the Irwins on two farms south of Potchefstroom. SD Lynch, JT Zulu, KN King, DM Knoesen. WaterSA Vol.27 (4) 2001: 559-564. 2001.

#### ***Presentations***

- Development of Alternative Soil Risk Assessment Methods. Golder Technical Excellence Conference (GTEC) April 2022. San Diego, California. King, KN.
- Yanfolila Gold Mine Open Pit Slope Depressurisation. ICARD IMWA 2018. CSIR International Conference Centre in Pretoria. September 2018. Lottreaux, G, King, KN and J McStay.
- Effects of Land Use Changes on the Cape Flats. The Combined Congress. 18-21 January 2016. University of the Free State, Bloemfontein. King, KN and Janse van Rensburg, RT
- A Combined Water Quality–Water Quantity Assessment for King Shaka International Airport. WISA Biennial Conference – Durban ICC – May 2016 – Paper Accepted August 2015. King, KN and Pickering, C
- Soil and Mine Water Assessment for Proposed Community Agricultural Projects. The Combined Congress. 20-23 January 2014. Rhodes University, Grahamstown. King, KN and Wuite, M. 2014
- Assessment of Water Resources Sustainability in a Trans-Boundary Context. WISA Youth Conference. July 2013. King, KN and Dr. K Winter. 2013
- Approaches to Sustainability Assessment in Trans-Boundary Basins. The International Conference on Water Security, Risk and Society. Oxford University, England. 16-18 April, 2012. King, KN. 2012
- Exploring Water Resources Sustainability in a Trans-Boundary Context. 15th South African National Hydrology Symposium (SANCIAHS), 2011. King, KN. And K. Winter. 2011
- Characteristics of Gravity Waves presentation at the Faculty of Science and Agriculture Post-Graduate Research Symposium, UKZN. 20th September, 2005. Durban, Howard College. 2005
- SANCIAHS (South African National Hydrological Symposia). 12th set of Proceedings – Pietermaritzburg, 2001. Floods and Droughts. Lynch, SD, Knoesen, DM and King, KN. 2001

# HAWKHEAD CONSULTING

Andrew Zinn – Terrestrial Ecologist

B.Sc. (Hons.), M.Sc., Pr.Sci.Nat.



## Details

Email: andrew@hawkhead.com  
Mobile: +27 83 361 0373  
Address: 58 Central Rd, Linden Ext.,  
Johannesburg, 2195  
South Africa

Date of birth: 14 July 1982  
Nationality: South African



## Education & Qualifications

**University of the Witwatersrand**  
M.Sc. Resource Conservation  
Biology (2013).

**University of KwaZulu-Natal**  
BSc. Hons. Ecology and  
Conservation Biology (2005).

Published thesis: *Inducible defences  
in Acacia sieberiana in response to  
giraffe browsing.*

**University of KwaZulu-Natal**  
BSc. Zoology and Grassland Science  
(2004).

**Bryanston High School,  
Johannesburg**  
Matric Exemption  
(2000).



## Profile

I am an ecologist with an M.Sc. Degree in Resource Conservation Biology and 15 years of experience working in biodiversity consulting and ecological research. I am registered with the South African Council of Natural Scientific Professions as a Professional Natural Scientist. I currently work as an independent consulting ecologist, with Hawkhead Consulting. During my career I have worked on projects in remote areas in several African countries including South Africa, Botswana, Democratic Republic of the Congo, Ethiopia, Ghana, Mozambique, Tanzania and Zambia. I have also previously worked in the United Kingdom and the United Arab Emirates.



## Work Experience

**Independent Ecologist**  
**Hawkhead Consulting, South Africa**  
**September 2020 – Present**

Consulting ecologist focusing on terrestrial ecology. I specialise in conducting baseline flora and fauna surveys, ecological impact assessments, and developing mitigation and management programmes for projects and operations in various industry sectors. Core services and responsibilities include, amongst others:

- ☐ Biodiversity study design and implementation;
- ☐ Biodiversity baseline and impact assessment reporting;
- ☐ Mitigation measure design and application;
- ☐ Vegetation surveys and vegetation community mapping;
- ☐ Fauna surveys for mammals, birds, reptiles and amphibians;
- ☐ Development of biodiversity management plans;
- ☐ Development of rehabilitation and revegetation plans; and
- ☐ Alien invasive species control and eradication plans.

**Ecologist**  
**Golder Associates Africa, South Africa**  
**June 2011 – September 2020**

Ecologist responsible for the management and implementation of baseline biodiversity studies and ecological impact assessments for development projects in the mining, power generation, transport, land development and industrial development sectors throughout sub-Saharan Africa.

Role responsibilities included project management, technical review, biodiversity study design and implementation, flora and fauna surveys, biodiversity baseline and impact assessment reporting, development of biodiversity management plans, rehabilitation plans and alien invasive species control and eradication plans. These studies were conducted to satisfy national environmental regulations and/or international financing requirements, including the International Finance Corporation's Performance Standard 6.



## Affiliations

Member of the South African  
Wildlife Management Association

Member of the South African  
Council of Natural Scientific  
Professions – Professional Natural  
Scientist (400687/15).



## Work Experience (continued)

### Independent Ecologist

**Subcontracted to KPMG, United Arab Emirates**

**March – April 2011**

Subcontracted to KPMG as a subject matter expert (ecology) on the internal audit of Sir Bani Yas Island's Conservation Department (United Arab Emirates). The audit focused on evaluating the efficacy of the island's various conservation practices, including game management, feed provisioning, carnivore breeding and monitoring, veterinary care and vegetation maintenance.

### Environmental Consultant

**WSP Environment and Energy, South Africa**

**August 2008 – March 2011**

Environmental consultant, responsible for a range of environmental projects and services including managing environmental authorisation processes (BAs and EIAs), facilitating stakeholder engagement processes, conducting compliance audits, developing environmental management programmes and conducting specialist ecological studies.

### Research Technician

**Yale University, Kruger National Park, South Africa**

**October 2007 – May 2008**

Research technician on the Savanna Convergence Experiment (SCE). The SCE project was a long-term cross-continental study that investigated the role of mega-herbivores in fire-grazing interactions and their influence on vegetation dynamics. Responsible for collecting and analysing vegetation composition and productivity data, as well as herbivore distribution data.



## Publications

- ☐ Zinn, A.D., D.E., Burkepile and D.I. Thompson (In prep). Impacts of fire and herbivores on tree seedling establishment in a South African savanna.
- ☐ Burkepile, D.E., C.E. Burns, E. Amendola, G.M. Buis, N. Govender, V. Nelson, C.J. Tambling, D.I. Thompson, A.D. Zinn and M.D. Smith (2013). Habitat selection by large herbivores in a southern African savanna: the relative roles of bottom-up and top-down forces. *Ecosphere*, 4(11):139.
- ☐ Knapp, A.K., D.L. Hoover, J.M. Blair, G. Buis, D.E. Burkepile, A. Chamberlain, S.L. Collins, R.W.S Fynn, K.P. Kirkman, M.D. Smith, D. Blake, N. Govender, P. O'Neal, T. Schreck and A. Zinn (2012). A test of two mechanisms proposed to optimize grassland aboveground primary productivity in response to grazing. *Journal of Plant Ecology*, 5, 357-365.
- ☐ Zinn, A.D., D. Ward and K. Kirkman (2007). Inducible defences in *Acacia sieberiana* in response to giraffe browsing. *African Journal of Range and Forage Science*, 24, 123-129.



## Publications (continued)

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- ❑ Zinn, A.D. (2007). Exploitation vs. Conservation: A Burgeoning Fifth Column. *African Wildlife*, 61, 9-11.
- ❑ Andrew Zinn (2006). Conflict Resolution. *Africa Birds and Birding*. Vol. 11, No. 5, 12-13.

## Lufuno Nemakhavhani

Earth & Environment – Planning & Advisory, Wetland Ecologist

### CAREER SUMMARY

Lufuno Nemakhavhani is a Wetland Ecologist with ten years of working experience in the Environmental Sciences field. She holds a Masters degree in Environmental Management focusing on Wetland health and rehabilitation.

Lufuno has completed a number of wetland-related projects, including wetland delineation and baseline assessment, wetland health monitoring and wetland rehabilitation monitoring, and wetland impact assessment and mitigation management for mining, transport, land development, renewable energy, and power generation sectors. She has also conducted ecosystem services assessments, terrestrial ecology assessments, and biodiversity management surveys leading to the development of biodiversity management plans, to international and local standards.

Lufuno has also been involved in a number of environmental permitting projects such as basic assessments and environmental and social impact assessments. She also has experience with conducting environmental compliance audits against environmental authorisations during the construction and/or operational phases of a project.

Countries of work experience gained include South Africa, Ghana and Gabon.



#### 1 year with WSP

##### Area of expertise

Wetland Assessment  
Biodiversity Assessments  
Environmental Impact Assessments  
Environmental Compliance Audits  
Terrestrial Biodiversity Assessment  
Aquatic Biomonitoring Assessments

#### 10 years of experience

##### Language

Tshivenda – Fluent  
English – Fluent  
Zulu – Fluent

### EDUCATION

Master of Environmental Management Environmental Management, University of the Free State	2020
BSc (Hons) Environmental Management, University of South Africa, Johannesburg	2016
BSc Life & Environmental Science Geography & Environmental, University of Johannesburg	2012

### ADDITIONAL TRAINING

Introduction to Tools for Wetland Assessment	2021
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## Lufuno Nemakhavhani

Earth & Environment – Planning & Advisory, Wetland Ecologist

Introduction to Wetland Delineation and Assessment	2017
Standard ARC GIS Mapping	2015

### PROFESSIONAL MEMBERSHIPS

SAWS – South African Wetland Society – Member No. 394374	2019
SACNSP – South African Council of Natural Scientist Professional – Member No. 116461	2016

### PROFESSIONAL HISTORY

WSP Group Africa (Pty) Ltd	July 2021 – present
Golder Associates Africa (Pty) Ltd	2017 – June 2021
Sazi Environmental Consulting	2015 - 2017
Earth Life Africa	2014 - 2014
Seбата Group of Companies	2013 – 2014

### PROFESSIONAL EXPERIENCE

#### Biodiversity

**Genmin / Reminac – Baniaka Iron Ore Project, Gabonese Republic**  
2023

#### Wetland Ecologist

Biodiversity Baseline Investigation for The Baniaka Iron Ore Project Freshwater Ecology Impact Assessment

**Pelelani, Calcining plant and tailings facility Development, Northwest, South Africa**

2022

#### Wetland Ecologist

Aquatic Biodiversity (wetland systems) Specialist Assessment - Baseline Report

**Enertrag, Dalmanutha Wind Energy Facility, Mpumalanga, South Africa**

2022

#### Wetland Ecologist

Dalmanutha Wind Energy Facility - Aquatic Biodiversity (wetland systems) Specialist Assessment

**Eskom, Solar Energy development at Komati Power Station, Mpumalanga, South Africa**

2022

#### Wetland Ecologist

Aquatic Biodiversity (riparian and wetland systems) Specialist Assessment

**Genser Ghana, Phase II Biodiversity Impact Assessment and Action Plan, Ghana**

2021

#### Biodiversity specialist

Biodiversity Baseline, Impact Assessment and Action Plan

**Glencore iMpunzi, Mpumalanga, South Africa**

2018

#### Wetland Ecologist

Ecological screening study for the proposed haul road at iMpunzi complex mine



## **Lufuno Nemakhavhani**

Earth & Environment – Planning & Advisory, Wetland Ecologist

### **Nooitgedacht 406KQ, portion 2 and 10, Limpopo, South Africa**

**2018**

#### **Wetland Ecologist**

Conducting a wetland delineation and assessment of Portion 2 and 10 of the Nooitgedacht 406 KQ Property associated with the Nooitgedacht Mine as part of a Water Use License Application.

### **Mafube, LifeX Project, Mpumalanga, South Africa**

**2018**

#### **Wetland Ecologist**

Conducting a wetland audit of the wetland crossings within the Mafube LifeX site against the approved WUL conditions.

### **Exxaro Belfast Implementation Project, Mpumalanga, South Africa**

**2018-current**

#### **Wetland Ecologist**

Conducting a wet season wetland assessment to monitor changes within each identified Belfast wetland HGM unit against the baseline results obtained prior to the Belfast Implementation Project.

### **Environmental Impact Assessment**

### **Glencore iMpunzi, Paddocks and Venture Dump Facilities, Mpumalanga, South Africa**

**2018**

#### **EAP**

Conducting environmental Impact Assessment and compiling the scoping report for the integrated regulatory process associated with the proposed expansion of the iMpunzi paddocks and venture dump facilities

### **Bushveld Vametco, Basic Impact Assessment, Brits, Northwest, South Africa**

**2019**

#### **EAP**

Conducting Basic Impact Assessment for the Development of solar panels and a Vanadium Redox Flow Battery storage within a mining right area at Vametco Mine in Brits, Northwest.

### **Transnet, Vanderbijlpark service road along Houtheuvel and Potchefstroom railway line Gauteng, South Africa**

**2015**

#### **EAP**

Environmental Assessment Practitioner for a basic assessment and Water Use Licence of the reconstruction of the Transnet Collapsed bridge in Vanderbijlpark service road along Houtheuvel and Potchefstroom railway line.

### **Environmental Audit**

### **GoodRock Chemworks, Installation of a Ball Mill: EA and EMP Compliance Assessment, Northern Cape, South Africa**

**2021**

#### **ECO**

External Environmental Control Officer for the installation of a Ball Mill. Undertaking quarterly environmental compliance audits in accordance with the approved EA and EMP at Goodrock Chemworks.

### **Universal Coal, North Block Complex, Paardeplaats Mine Mpumalanga, South Africa**

**2019**

#### **ECO**

External Environmental Control Officer for NBC Paardeplaats Mine. Undertaking weekly environmental compliance audits in accordance with the approved EMP and authorised WUL at the Paardeplaats Mine.

### **Vopak South Africa Developments, Lesedi, Gauteng, Heidelberg, South Africa**

**2019-2021**





## **Lufuno Nemakhavhani**

Earth & Environment – Planning & Advisory, Wetland Ecologist

### **EAP**

Environmental Control Officer for the VSAD Lesedi Project. Conducting environmental compliance audits for the construction phase of the VSAD Lesedi which entails the construction of hydrocarbon storage tanks.

**Eskom, Ariadne-Eros Powerline, Kwazulu-Natal, South Africa**

**2016**

### **EO**

Environmental Control Officer for the Eskom Ariadne-Eros Powerline Conducting environmental compliance and enforcement audits on a full-time basis during the construction of the Eskom Powerline.

**Dr. Pieter Pretorius**  
Pr Eng, MITE, MCIT, MSAICE



**PERSONAL INFORMATION:**

**Name:** Dr Pieter Pretorius  
**Date and Place of Birth:** 25 February 1971, Mokopane, South Africa

**Qualifications:**

- B.Eng. (Civil) (Cum Laude), University of Pretoria, South Africa, 1992
- B.Eng. (Hons)(Transportation) (Cum Laude), University of Pretoria, South Africa, 1993
- M.Eng (Transportation) (Cum Laude), University of Pretoria, South Africa, 1994
- Ph.D. (Engineering), Queensland University of Technology, Brisbane, Australia, 2001

**PROFESSIONAL REGISTRATION:**

- Registered Professional Engineer (South Africa – 980205)
- Member of the Institute of Transportation Engineers, Washington, D.C, USA (Member No 27755)
- Member of the South African Institution of Civil Engineering (Member No 090556)

**LANGUAGES**

English - Speak, read, and write excellent  
Afrikaans - Speak, read, and write excellent

**Name of Current Employer**

Innovative Transport Solutions: Director – June 2001 - To date

**Employment Record**

- July 1994 – May 2001: V3 Consulting Engineers, Pretoria, South Africa, Head of Transportation Engineering Department.
- June 1995 – 2016: Part-time Senior Lecturer, Department of Civil and Biosystems Engineering, University of Pretoria
- January 1993 – June 1994: VIAED Transportation Research Institution, Pretoria, Research Associate.

**EXECUTIVE SUMMARY:**

Specialist Transportation and Traffic Engineer, holds a Ph.D. in Engineering from the Queensland University of Technology (QUT), Brisbane, Australia. He also completed a master's degree in Transportation Engineering (Cum Laude) with the University of Pretoria. Pieter Pretorius was with V3 Consulting Engineers in Pretoria from 1994 to 2001 where he headed the Transportation and Traffic Engineering Departments. He has been extensively involved in Road Capacity and Economic Evaluations, including software packages such as SATURN, PARAMICS, CORSIM and the HIGHWAY CAPACITY SOFTWARE. He has been a part-time senior lecturer with the Department of Civil and Biosystems Engineering at the University of Pretoria for several years and is also a member of the Institute of Transportation Engineers. Pieter is also a member of the Transportation Division Committee of SAICE.

**Projects where Dr. Pretorius was involved in are summarized in the table appended to this CV:**

The CV is dated January 2023.

Dr. Pieter Pretorius: PROJECT EXPERIENCE					
Client	Project Description	Project Start to Project End	Value	Position Held	Brief Description
Johannesburg Development Agency Thabelo Ratshilumela 011 688 7800	Ivory Park to Sandton Feasibility Study	2021/01 - current	R5 759 088	Project Leader	Feasibility Study for the Bus Rapid Transport (Integrated Public Transport System) for the Ivory Park- Sandton CBD and Ivory Park – Johannesburg CBD in the City of Johannesburg
Department of Transport Joyce Moabi 012 309 3231	Capricorn Integrated Public Transport Network (IPTN)	2020/03 - 2022	R1 349 939	Project Leader	Appointment of a Service Provider to Develop Integrated Public Transport Network in Capricorn District Municipality
Department of Transport Ledile Nong 012 309 3108	DoT National Freight Databank	2019/08 – 2022	R7 490 027	Project Leader	Updating and enhancement of the National Freight Databank
Gauteng Department of Roads and Transport Olamigoke Akinnusi 011 355 7178	West Rand District Integrated Transport Plan	2017 - 2020	R 1 482 593	Project Leader	Professional Services to Draft West Rand District Integrated Plan
Gauteng Department of Roads and Transport: Olamigoke Akinnusi 011 355 7178	Sedibeng District integrated Transport Plan	2017 - 2021	R1 365 122	Project Leader	Professional Services to Draft Sedibeng District Integrated Transport Plan

Dr. Pieter Pretorius: PROJECT EXPERIENCE					
Client	Project Description	Project Start to Project End	Value	Position Held	Brief Description
City of Polokwane Malose Lamola 081 746 8867/ 015 290 2212	City of Polokwane Transport Operational and Systems Planning of the IRPTN Project including APTMS	2013 - 2019	R 21 million	Project Leader	Development of Transport Operational and Systems Planning of the IRPTN Project with the Polokwane Municipality
eThekweni Metropolitan Municipality Robin Chetty 031 311 7403	eThekweni Metropolitan Municipality IRPTN Phase 1, Route C1B	2014 - 2015	R 4 053 153	Project Leader	Project Management, Conceptual, Preliminary, Detailed Design, Preparation of Contract Document and Site Supervision for the eThekweni IRPTN Phase 1, Rout C1B: Inanda Road across Umgeni River along Felix Dlamini Road to Centrum site
City of Polokwane Molatelolo Rapetsoa 015 290 2212	Polokwane CIP and IRTP Plans	2012 - 2013	R 7 490 027	Project Leader	Development of a Comprehensive Integrated Transport Plan as well as Integrated Rapid Transport Plan for the Polokwane Local Municipality
City of Tshwane Lutz Johannes 012 358 7732	Menlyn Transportation Study	2011 – 2016	R 600 000	Technical Project Leader	A comprehensive Transportation plan was developed for Menlyn for the City of Tshwane. This plan entailed all aspects such as capacity, NMT, Public Transport, Road's master planning and other elements. Traffic modelling was an essential part of the study
City of Tshwane Lutz Johannes 012 358 7732	Hatfield Transportation Study	2011 – 2016	R 114 000	Technical Project Leader	A comprehensive Transportation plan was developed for Menlyn for the City of Tshwane. This plan entailed all aspects such as capacity, NMT, Public Transport, Road's master planning and other elements. Traffic modelling was an essential part of the study
City of Tshwane Lutz Johannes 012 358 7732	Brooklyn Transportation Study	2011 – 2016	R 300 000	Technical Project Leader	A comprehensive Transportation plan was developed for Menlyn for the City of Tshwane. This plan entailed all aspects such as capacity, NMT, Public Transport, Road's master planning and other elements. Traffic modelling was an essential part of the study

Dr. Pieter Pretorius: PROJECT EXPERIENCE					
Client	Project Description	Project Start to Project End	Value	Position Held	Brief Description
Rustenburg Municipality Nic Pretorius 014 590 3035	Rustenburg ITP & Roads Master Plan	2009 - 2010	R 2.7 million	Technical Project Leader	DOT PTIS funding applications were also prepared as part of the ITP Project. Rustenburg IRPTN as formulated in this project and 2010 investigations was also performed

### **Awards**

- D.W de Vos Bronze Medal for final year results, University of Pretoria, 1992.
- Co-author of the Best Paper by a Young Engineer, South African Transport Conference, 2001, Pretoria.
- Supervisor for several undergraduate thesis reports at the University of Pretoria.
- Co-supervisor for a master's degree project report at the University of Pretoria.

### **Publications/Professional Activities / Awards**

- P. Pretorius, Y. Mashilwane, I. Udoyen, S. Maréchal, Soccer World Cup 2010: Lessons Learnt from the Johannesburg Park & Ride System, SATC 2011.
- G. Botha, H.S Joubert, P. Pretorius, The New South African Road Traffic Signs Manual, IMIESA Magazine, 1993
- P. Pretorius, S.C van As, "Curb turn radii at urban intersections, Annual Transportation Convention, Vol. 3A, Pretoria, 1994.
- J.C de Vries, P. Pretorius & P.G.W Oosthuizen, Vehicle Queue Storage Guidelines for Accesses to Private Developments in Centurion, South African Transport Conference, July 2001, CSIR, Pretoria
- Ph.D. Seminar: Queensland University of Technology, Brisbane, 2001, Delay in Networks of Signalised Intersections.
- Member of the SAICE Transportation Engineering Division Committee, 2000 – date
- Chair: SAICE Transportation Engineering Division Committee, 2010 & 2011.
- Vice-Chairman: SAICE Transportation Engineering Division Committee 2008 & 2009.
- D.W de Vos Bronze Medal for final year results, University of Pretoria, 1992.
- Co-author of the Best Paper by a Young Engineer, South African Transport Conference, 2001, Pretoria.
- Supervisor for a number of undergraduate thesis reports at the University of Pretoria.
- Co-supervisor for a master's degree project report at the University of Pretoria.
- Member of the Organising Committee and Convenor of the Traffic Engineering Session at the South African Transport Conference, 2004 to date.



### Personal Information:

- Date of Birth: 1969-11-13
- Marital Status: Married
- Nationality: South African
- Contact no: 082 922 9019
- Email: lourens@logis.co.za
- Web: logis.co.za

### Years of Industry Experience

- 31 years'

### Countries of Experience

- South Africa; Lesotho; Swaziland; Mozambique; Botswana; Zimbabwe; Namibia; Angola; Guinea; Ghana; Uganda; Madagascar

### Qualifications and Memberships

- BA (University of Pretoria) Geography and Anthropology (Majors), 1993
- Professional Geo-Information Sciences (GISc) Practitioner registered with the South African Geomatics Council (SAGC). Membership no. PGP0147
- Member: Geo-Information Society of South Africa (GISSA)

### Key Skills and Competencies

- Arc/Info and ArcGIS
- Arcview
- QGIS
- Postflight Terra 3D
- PlanetGIS
- Vistapro
- Various GIS support applications
- Microsoft (Word/Excel/Access)

### Professional Overview

Lourens provides professional **Geographical Information Systems (GIS)** services to a wide range of clients that require the processing, analysis and presentation of geospatial data. His overarching function is the application of GIS in environmental management and planning, impact assessments and spatial modelling, but his services often extend to a much broader range of business sectors. These include the application of GIS in:

- Agriculture
- Bulk service providers and utilities
- The renewable energy sector
- Electricity generation and distribution
- Mining and exploration
- Urban and rural development planning
- Conservation and tourism
- Strategic integrated planning
- Environmental education and social awareness
- Engineering, transport and infrastructure development

He is an accomplished **Visual Impact Assessment (VIA)** specialist who has successfully undertaken over a 100 visual impact assessments for a wide variety of developments, ranging from mining, renewable energy facilities, power lines to roads and lodges.

Lourens has a multi-disciplinary approach to projects and therefore specialises in creating synergy between planning professionals and project specialists (regardless of the type of project) in order to provide uniform, quality spatial data products, solutions and services.

### Experience and Expertise

- Data sourcing and acquisition
- Data capture and processing
- Data evaluation, conversion and transfer
- Geodatabase development/implementation/maintenance
- System design and development
- Spatial analysis/modelling (visibility, slope, aspect, etc.)
- Digital terrain modeling
- Terrain evaluation and site screening
- Image processing and analysis
- Impact assessment and impact management
- Environmental management
- GIS-based decision support systems development
- Project management and report writing
- Map production, display, queries and reporting
- Environmental sciences expertise
- Process development
- Visual impact assessment
- GPS fieldwork and aerial surveys
- Drone data processing

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## Project Experience

### Miscellaneous projects *(A brief description of some prominent and relevant projects)*

GIS mapping and database for Black Eagle habitats and flight patterns in the Karoo National Park

Environmental planning and development control schemes for the Drakensberg Babangibone, Cathkin Peak and Garden Castle development nodes

Goukou River (Stilbaai) Environmental Structure Plan

Conservation and open space proposals for the Umhlanga Forest

Grootvlei mine water pumping operation (Blesbokspruit sub-catchment)

GIS services for the Saldanha steel plant

ENPAT Provincial (1:250,000 scale GIS decision support systems) based on an inventory of environmental and socio-economic geographical data

- ENPAT Northern Province (Limpopo Province)
- ENPAT Mpumalanga
- ENPAT North-West

ENPAT Metropolitan (1:50,000 scale GIS decision support systems) containing environmental and socio-economic geographical data that were evaluated for conservation opportunities, development constraints and agricultural constraints

- ENPAT Gauteng
- ENPAT Cape Town
- ENPAT Durban Functional Region (DFR)
- ENPAT Bloemfontein/Botshabello
- ENPAT Port Elizabeth

ENPAT National (1:1,000,000 scale GIS decision support system) and ENPAT publication

Environmental Management Frameworks (EMF). Frameworks of spatially represented information connected to environmental management parameters designed to aid in the pro-active identification of potential conflict between development proposals and critical and/or sensitive environments

- EMF Northern Province (Limpopo Province)
- EMF Mpumalanga
- EMF North-West

Spatial Development Initiatives (SDI). The fast tracking of the EMF concept for priority SDI's

- Lubombo Corridor SDI
- Coega Industrial Development Zone (IDZ)
- Wild Coast SDI
- West Coast Investment Initiative

Sigma colliery: North-West strip operation

Development masterplan for the Tswaing Crater Museum



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Conservation plan for the Rietvlei Nature Reserve

GIS services for the planning and management of the Chobe National Park (Botswana)

GIS services for an environmental overview of South Africa

Demarcation/delineation of regions in South Africa

Orange-Vaal (ORVAAL) transfer scheme - Caledon cascades scheme

ENPAT Provincial (1:250,000 scale GIS decision support systems) based on an inventory of environmental and socio-economic geographical data

- ENPAT Eastern Cape
- ENPAT Free State
- ENPAT Kwa-Zulu Natal

Environmental Management Frameworks (EMF). Frameworks of spatially represented information connected to environmental management parameters designed to aid in the pro-active identification of potential conflict between development proposals and critical and/or sensitive environments

- EMF Eastern Cape
- EMF Free State
- EMF Kwa-Zulu Natal

Hennops River EMF (environmental inventory and management proposals in Centurion)

The Important Bird Areas (IBA) of South Africa map and database

Centurion Metropolitan Substructure Environmental Management Framework (EMF)

Alexandra renewal project EMF

Carbon Sinks and Sequestration - Eastern Cape Wild Coast. Information maps for the "Carbon Sinks - A Rehabilitation Option for South Africa's Natural Environment" report

Prince Edward and Marion Islands. Maps for the World Heritage Site (WHS) bid document

Theewaterskloof and Genadendal - Integrated spatial data management system

Gauteng Communication Network Strategy (GAUCONS). Environmental zones for the control of the construction of telecommunication structures

Gauteng Industries Buffer Zones. The mapping of industrial and mining activities, the creation of buffer control zones and the development of a GIS-based decision support system for the Gauteng Province

Limpopo National Park (LNP) Mozambique. Base maps for fieldwork and planning

Schmidtsdrift Environmental Management Program Report (EMPR)

Loch Vaal Environmental Management Framework (EMF)

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Rustenburg - Strategic Environmental Assessment (SEA). The creation of environmental control zones, a GIS-based decision support system and information poster

Faerie Glen Nature Reserve Strategic Environmental Assessment (SEA)

Willow Quarries - Environmental Impact Assessment (EIA). Modeling of mining expansion plan and the potential impact on Golden Mole habitats

Ekurhuleni Metropolitan Municipality (EMM) Environmental Management Framework (EMF)

Limpopo - State of the Environment Report (SoER)

Windhoek (Namibia) - Environmental Structure Plan (ESP)

Gauteng Supplementation and Implementation of EIA Regulations Project (EIA SIP)

Siyanda District Municipality Environmental Management Framework (EMF)

Olifants and Letaba River Catchments Environmental Management Framework (EMF)

Barberton Nature Reserve environmental sensitivity mapping and land use zoning plan

Kapama Private Game Reserve map

Gauteng EMF and landscape character assessment

Majuba CCGT environmental screening

MTPA Nature Reserves (Manyeleti, Mthethomusha, Mkombo, Mdala, Mabusa and Loskop) Integrated Management Planning (IMP)

Ugu District Municipality EMF and landscape character assessment

Greater Lakenvlei Protected Environment resource mapping

North West (Coetzersdam, Pomfret, Buxton, Taung Station, Pudimoe, Lotlhakane Village and Delareyville) environmental sensitivity mapping for PV facilities

Bayside Aluminium Smelter Water Use License Application

CESVI (African Ivory Route) resource mapping for Nthubu, Blouberg, Mutale Falls, Funduze, Modjadji, Baleni, Mtomeni, Mafefe and Manyeleti Camps

Master Plan for Kaloum and Loose Islands, Conakry, Guinea

Ekurhuleni Open Space mapping

Kumba Heuningkranz and Kolomela mines concept study

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Joburg Property Company land strategy – inner city transformation roadmap

Bioregional Plan for the Mopani District

N2 Corridor Strategic Corridor Development Plan and landscape character assessment

Polokwane outfall sewer route and waste water treatment works

Ghana Northern Regions environmental overview

Rand Water disaster risk assessment

Redstone Solar Thermal Power Plant environmental sensitivity mapping

Landscape/Land use character maps for Ladysmith and Estcourt, Durban and Pietermaritzburg, Newcastle and Dundee

Oil and Gas Industrial Park, Hoima District, Uganda

Waterberg District EMF

Boegoebaai Port Development environmental screening

Lonmin Marikana Mining Operations environmental overview

Moses Kotane Local Municipality Integrated Environmental Management Plan

Vhembe District Bioregional Plan

Capricorn District Bioregional Plan

Sekhukhune District Bioregional Plan

Tourist maps for 12 provincial nature reserves in Limpopo

Afgri Grain Management spatial database

Eskom land cover and Isopleths (SO<sub>2</sub>)

Gamma-Kappa transmission line corridors GIS and mapping

Nseleni Independent Floating Power Plant GIS and mapping

### **Regional Strategic Environmental Assessments (Regional Assessments)**

Regional assessment for the Eskom Wind Energy Facility (Sere) in the Western Cape

Regional assessments for the Eskom Wind Integration Project (WIP)

- Area 1: West Coast (Saldanha to Garies)
- Area 2: Overberg Region

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- Area 3: Beaufort West region
  - Area 4: Eastern Cape (Tsitsikamma to Port Elizabeth)
  - Area 5: Northern Cape (Hondeklipbaai to Port Nolloth)

Sandveld Wind Energy Regional Assessment

West Coast National Park (Saldanha area) Regional Assessment

Regional Assessment for the Theewaterskloof Municipal area

Brand-se-Baai (Exxaro) wind energy regional assessment

Overberg (BioTherm) wind energy regional assessments

- Area 1: Gordons Bay to Pearly Beach
- Area 2: Napier RA (Agulhas NP/Swellendal region)

Suurplaat/Sutherland (Investec Wind Energy Development) Regional Assessment

Waterberg (Limpopo) Concentrating Solar Power (CSP) Regional Assessment (Exxaro)

Western Cape Province Regional SEA for Wind Energy Facility developments

ISS Global Mining Regional SEA for Power Station Developments in Mpumalanga Province

Northern Cape Province Regional SEA for Wind Energy Facility developments

Bosjesmansberg Regional SEA for solar PV projects

Delmas Regional SEA for Power Station Developments in Mpumalanga

Limpopo Regional SEA for solar PV projects

Slangkop Regional SEA for Wind Energy Facility developments

Bakenskop, Trouberg and Harpuisberg Regional SEA for WEFs

Wolf Wind (Addo Elephant NP) regional assessment

Nelson Mandela Bay Metropolitan Municipality SEA for WEFs

Umuziwabantu Local Municipality SEA

### **Visual Impact Assessments (VIA), viewshed analyses and visual assessments**

- Coal strip mining in Zimbabwe viewshed analyses
- Viewshed analyses and sensitivity mapping for telecommunication masts in the northern provinces (Limpopo, Mpumalanga and North-West)
- Siemens 3rd license cellular communications infrastructure EIAs. Viewshed analyses and sensitivity mapping for over 4,000 telecommunication mast sites in all major metropolitan areas of South Africa.
- CSIR high mast viewshed analysis and sensitivity mapping

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- Atlantis Open Cycle Gas Turbine power station VIA
  - Kynoch Gypsum Tailings dam extension VIA
  - N1 Western Bypass Shell service station VIA
  - Coega regional hazardous waste processing facility VIA
  - Robinson Deep landfill extension VIA
  - Hazardous waste blending platform VIA
  - Mercury-Ferrum-Garona transmission line integration VIA
  - Matimba B (Medupi) coal-fired power station VIA
  - Concentrating Solar Power (CSP) plant in Upington VIA
  - Zeus to Mercury transmission line (comparative viewshed analyses)
  - Mmamabula (Botswana) transmission line and power station viewshed analyses
  - Petronet new multi-products pipeline VIA
  - Wind energy facility (Sere) in the Western Cape province VIA
  - Ankerlig power station conversion and transmission line VIA
  - Gourikwa power station conversion and transmission line VIA
  - Kyalami strengthening project VIA
  - Steelpoort integration project VIA
  - Medupi reservoir and telecommunication mast VIA
  - VIA's for Basic Assessment Reports (wind monitoring masts)
    - Cookhouse, Hopefield, Amakhala, Caledon, Worcester, Tulbach, Overberg, Britannia Bay, Brand-se-Baai, Deep River, Happy Valley, River Bank, Uiekraal, Beaufort West, Laingsburg, Rheboksfontein, Suurplaat and West Coast
  - Cookhouse wind energy facility VIA
  - Hopefield wind energy facility VIA
  - Mokopane Integration Project VIA
  - Cradle of Humankind World Heritage Site (WHS) viewshed protection zone, visual character assessment and visual zonation plan
  - Indwe wind energy facility VIA
  - Amakhala wind energy facility VIA
  - Boontjieskraal wind energy facility VIA
  - Britannia Bay wind energy facility VIA
  - Brand-se-Baai wind energy facility VIA
  - Upington and Pofadder solar thermal facilities VIAs
  - Dorper wind energy facility VIA
  - Flagging Trees wind energy facility VIA
  - Rheboksfontein, Suurplaat and West Coast wind energy facilities VIAs
  - Riverbank wind energy facility VIA
  - Waterberg photovoltaic plant VIA
  - Eskom wind intergration projects VIAs
  - Welgedacht water care works VIA
  - Aberdeen wind energy facility
  - Aggeneis-Oranjemund power line intergration
  - Project Blue wind energy facility
  - Inca De Aar solar energy facility
  - Aced De Aar solar energy facility
  - Exxaro Lephalale solar energy facility
  - Happy Valley wind energy facility
  - Hendrina power station ash dam extension
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- Hidden Valley wind energy facility
  - Kakamas photovoltaic plant
  - Karoo renewable energy facility
  - Ilanga (Karoskraal) solar thermal power plant
  - Keimoes photovoltaic plants (Sonnenberg, Ofir and Geelkop)
  - Kimberley photovoltaic solar plant
  - Kleinbegin photovoltaic plant
  - Kleinzee wind energy facility
  - Koingnaas wind energy facility
  - Kabi Vaalkop (Orkney) PV solar energy facility
  - Oyster Bay wind energy facility
  - Ilanga Lethemba (Paardevelei) PV solar energy facility
  - Uppington photovoltaic solar facility
  - Ramphela (Ritchie) PV solar energy facility
  - Rodicon PV solar energy facility
  - Ruukie (Mpumalanga) coal fired power station
  - Saldanha Steel wind energy facility
  - Kathu, Sishen and San Solar PV solar energy facilities
  - Christiana, Morgenzon and Hertzogville PV solar energy facilities
  - Namaqua and Voëlkip PV solar energy facilities
  - Denhami (Struisbaai) wind energy facility
  - Spitskop wind energy facility
  - Tsitsikamma community wind energy facility
  - Uyekraal wind energy facility
  - Veldrift and Saldanha wind energy facilities
  - Vredendal photovoltaic solar energy facility
  - Wag'nBiekiespan solar energy facility
  - Walker Bay wind energy facility
  - Riemvasmaak (Augrabies) hydro electric facility
  - Bosjesmansberg solar energy facility
  - Everest, Grootkop, Watershed and Oryx PV solar energy facilities
  - Garob to Kronos power line
  - Graafwater PV solar energy facility
  - Kgabalatsane solar energy facility
  - Kheis solar park project
  - Gihon and Kison solar energy facilities
  - New Dimensions PV solar park in Mafikeng
  - Goereesoe (Outeniqua) wind farm
  - Burchell, Cuprum to Mooidraai power line
  - Rheboksfontein WEF power line
  - Ruuki power station
  - Sirius Solar PV projects
  - Tiger solar energy facility
  - Uyekraal WEF
  - Velddrif WEF
  - Zen WEF
  - Zoutpan (Olifants River) WEF
  - Gunsfontein and Stormberg WEFs

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- Aberdeen WEF
  - Albertinia WEF
  - Exxaro Baseload Power Station Lephalale
  - Blue Wave (Wolmaransstad) PV SEF
  - Castle WEF
  - East Power Line (Hotazel)
  - Elliot WEF
  - Exheredo Renewable Energy projects
  - Kareebosch WEF
  - Koeberg to Ankerlig Power Line
  - Mainstream Pofadder renewable energy facility
  - Stuart Coal Weltevreden coal mine
  - Transalloys Coal-fired power plant
  - Colenso Power Station and Mine
  - Lonmin Mooinooi landfill extension
  - Metsimatala Concentrating Solar Power facility
  - Matjhabeng PV Solar Energy Facility
  - Modderfontein Solar Thermal PV Plants (Ekhurhuleni)
  - iSimangaliso Wetland Park viewshed analysis
  - Melkspruit substation to Rouxville substation power line
  - Muhlava mine
  - Tina Falls hydropower project
  - Boulders Wind Farm
  - Allepad PV 1- 4 SEFs
  - Licthenburg PV 1 - 3 SEFs
  - Namas and Zonnequa WEFs and overhead power lines
  - Wobben wind energy converter
  - Haga Haga WEF
  - Hyperion power line
  - Jagdlust overhead power lines and substation
  - Ilanga (Karoshoek) Solar Park
  - Calodex PV SEF
  - Kolkies and Sadawa PV SEFs
  - Kotulo Tsatsi PV SEFs
  - CBE WEF near Toalagnaro in Madagascar
  - Richards Bay Gas to Power Project
  - Grid connection infrastructure for the Frontier Power Gas to Power Project
  - Vrede and Rondavel PV SEFs
  - Vygenhoek Platinum Mine
  - Various comparative viewshed analyses and reviews for Part 2 Amendments

### Professional History

**4/2017:** Professional GISc and VIA Practitioner (sole proprietor/self employed)

**1/2016 – 3/2017:** SMEC South Africa, Pretoria – Technical Specialist

**11/1999 – 12/2015:** MetroGIS (Pty) Ltd, Pretoria – Director

**10/1997 – 10/1999:** GISBS (GIS Business Solutions - Q Data Consulting) – Project Manager

**4/1990 - 9/1997:** GisLAB CC (GIS Laboratory - University of Pretoria) – Member / Project Manager

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### Courses & Conferences attended

1997 ESRI International User Conference – United States of America

### Publications & Papers presented

**Name:** Gateway to Kruger Map and Guide

**Authors:** Andy Tinker Photography

**Publisher:** ATP Publishing

**Date:** 2010

**Name:** Kruger National Park Map and Photographic Guide

**Authors:** Andy Tinker Photography

**Publisher:** ATP Publishing

**Date:** 2007

**Name:** Lowveld and Kruger Guide

**Authors:** High Branching Team

**Publisher:** Jacana Media (Pty) Ltd

**Date:** 2004

**Name:** Heights to Homes to Oceans (H2O) Water Wise information poster

**Authors:** Rand Water

**Publisher:** Rand Water

**Date:** 2004

**Name:** Garden Route - Still Bay to Storms River (Discover the Magic)

**Authors:** Jacana

**Publisher:** Jacana Media (Pty) Ltd

**Date:** 2003

**Name:** KwaZulu-Natal - A celebration of biodiversity

**Authors:** Jacana

**Publisher:** Jacana Media (Pty) Ltd

**Date:** 2001

**Name:** Pilanesberg Official Map and Park Guide

**Authors:** North-West Parks & Tourism Board and Jacana

**Publisher:** Jacana Media (Pty) Ltd

**Date:** 2001

**Name:** ESRI Map Book (Volume 13)

**Authors:** Various

**Publisher:** Environmental Systems Research Institute (ESRI)

**Date:** 1998

**Name:** Environmental Potential Atlas for South Africa

**Authors:** W. van Riet, J. van Rensburg, P. Claassen, L. du Plessis and T. van Viegen

**Publisher:** J.L. van Schaik

**Date:** 1997



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## Awards

**Award:** Best South African Environmental Technical Paper

**Awarded for:** Environmental Potential Atlas for South Africa (Publication)

**Awarded by:** Environmental Planning Professions Interdisciplinary Committee (EPPIC)

**Date:** 1998

**Award:** QDC Performance Award

**Awarded for:** ENPAT Development

**Awarded by:** Q Data Consulting

**Date:** 1998

**Award:** Best Cartographic Map Gallery Competition - 3rd Place

**Awarded for:** Environmental Potential Atlas for South Africa (Publication)

**Awarded by:** Environmental Systems Research Institute (ESRI)

**Date:** 1998 International ESRI User Conference

**Award:** Map Gallery Most Analytical Competition - 3rd Place

**Awarded for:** Environmental Potential Atlas for South Africa

**Awarded by:** Environmental Systems Research Institute (ESRI)

**Date:** 1997 International ESRI User Conference

**Award:** Best South African Environmental Technical Paper

**Awarded for:** National Environmental Potential Atlas (ENPAT National)

**Awarded by:** Environmental Planning Professions Interdisciplinary Committee (EPPIC)

**Date:** 1995

## Language Skills

**Mother Tongue:** Afrikaans

Languages	Speak	Read	Write
English	Good	Good	Good
Afrikaans	Good	Good	Good



THE SOUTH AFRICAN COUNCIL FOR  
PROFESSIONAL AND  
TECHNICAL SURVEYORS



DIE SUID AFRIKAANSE RAAD VIR  
PROFESSIONELE EN  
TEGNIESE OPMETERS

## CERTIFICATE OF REGISTRATION SERTIFIKAAT VAN REGISTRASIE

This is to certify that

Hiermee word gesertifiseer dat

*Laurens Martinus du Plessis*

was registered as a

geregistreer is as 'n

PROFESSIONAL GISc PRACTITIONER

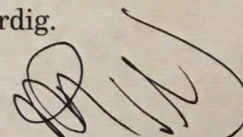
on the 11<sup>th</sup> day of July 2011

op die 11<sup>de</sup> dag van Julie 2011

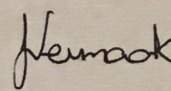
in accordance with the provisions of the Professional and Technical Surveyors' Act, 1984 (Act No 40 of 1984) and is entitled to carry on his/her profession or calling in any part of the Republic of South Africa in terms of the said Act and rules framed thereunder.

ingevolge die bepalings van die Wet op Professionele en Tegniese Opmeters, 1984 (Wet nr 40 van 1984) en geregtig is om sy/haar beroep of nering in enige deel van die Republiek van Suid-Afrika te beoefen ingevolge die genoemde Wet en reëls daarvolgens uitgevaardig.

Issued under the Seal of the Council  
Uitgereik onder die Seël van die Raad

  
President

Registration Number  
Registrasienommer **PGP 0147**

  
Registrar  
Registrateur

## ***CURRICULUM VITAE – ANTON PELSER***

**2023-06-05**

### ***Mr. A.J.Pelser***

Anton Johan Pelser  
Born: 23 December 1971  
Divorced, three children  
Bilingual

### **Academic Qualifications**

BA (UNISA) 1995  
BA (HONS) Archaeology WITS 1997  
MA Archaeology WITS 2003

### **Employment History**

*1991 – 30 September 2006*

#### **National Cultural History Museum (now Ditsong).**

February 1991 to October 1994: Assistant in Collections Management Department.

1994 to 1998: Assistant Museum Scientist in the Research Department (Archaeology).

1998 to September 2006: Museum Scientist (Researcher: Archaeology) in the same department. Was the Curator of the Archaeology Collection at the Museum during this period.

Anton resigned in September 2006 to conduct Cultural Heritage Consultancy work and research on a full-time basis.

### **Publications**

Anton Pelser has published more than 30 articles in scientific and popular journals on archaeology and history, and has also been the author and co-author of more than 1500 unpublished reports on Heritage Impact Assessments and archaeological work. Anton contributed a chapter on Archaeology in a book on the geology and history of the Vredefort Dome, compiled by the Geology Department of WITS University. This book was published and launched in conjunction with the proclamation of the Dome as a SA World Heritage Site during July/August 2005.

A complete list of publications and reports can be supplied.

### **References**

Dr. Johnny van Schalkwyk – 076 790 6777

Prof. Marlize Lombard – UJ Anthropology and Development Studies – (011) 559 2859

### **CRM Accreditations (Association of Southern African Professional Archaeologists)**

Principal Investigator for graves  
Principal Investigator for Iron Age and Colonial Period Archaeology

Field Director for Stone Age

Professional Member of ASAPA (Association of Southern African Professional Archaeologists)  
Registered at Amafa (Kwa-Zulu Natal Heritage Authority) as CRM Practitioner

A handwritten signature in black ink, appearing to be 'J. P. ...' or similar, with a stylized, cursive script.



## ***Curriculum vitae***

**Heidi Fourie**

Title: Dr

Surname: Fourie

Name: Heidi

Citizenship: South African

Email: heidicindy@yahoo.com

Identity number: 6502020080080

Disability: High-frequency neural sensory deafness.

Contact: 012 942 0110 X 1057 (h) 079 940 6048 (after hours)

Employment: Curator of Palaeontology Collections, Ditsong: National Museum of Natural History. Collections include Invertebrates, Plants, Reptiles, Amphibia, Fish, Dinosaurs and Therapsid. Ditsong: National Museum of Natural History also houses a large Type Collection.

Highest qualification: Ph.D Palaeontology (B.Sc in Geology and Zoology).

Member of: Palaeontological Society of South Africa and International Congress of Vertebrate Morphologists.

Field work: Mapped fossil localities around the Groot Brak River between Steynsburg and Middelburg in the Eastern Cape Province. Also done field work in Gauteng, Limpopo, Mpumalanga, Eastern Cape, Northern Cape, Western Cape, North West, Kwazulu-Natal and Free State Provinces.

Knowledge: Fossil preparation, collection management, occupational, health and safety, curation principles and archival practises. Worked in the field of palaeontology since 1994 and during this period has curated the fossil collections. Attended several National and International Conferences.

Assessments: Involved in Palaeontological Impact Assessments since 2012. Amongst others, I did the field studies for the Dorper Wind Energy Project, Greenside Colliery, Ngululu Opencast mine, Lesotho Border Road and Benicon Park Phase 1 Palaeontological Impact Assessments.

### **Publications:**

Fourie, H 1993. A detailed description of the cranial morphology of *Emydops* (Therapsida: Dicynodontia). *Palaeontologia Africana*, **30**: 1-5.

Thackeray, J.F., Bellamy, C.L., Bellars, D., Bronner, G., Bronner, L., Chimimba, C., **Fourie, H.**, Kemp, A., Krüger, M., Plug, I., Prinsloo, S., Toms, R., van Zyl, A.J., and Whiting, M.J. 1997. Probabilities of conspecificity: application of a morphometric technique to modern taxa and fossil specimens attributed to *Australopithecus* and *Homo*. *South African Journal of Science*, **93**: 195-196.

Fourie, H. 2007. The postcranial skeletal anatomy of the therocephalian *Regisaurus* (Therapsida: Regisauridae) and its utilisation for biostratigraphic correlation. *Palaeontologia Africana*, **42**: 1-16.

Fourie, H. 2008. Science at the Transvaal Museum – Palaeontology 1897-1994. *Annals of the Transvaal Museum*, **45**: 16-20.

Fourie, H. 2009. The postcranial skeleton of the basal therocephalian *Glanosuchus macrops* (Scylacosauridae) and comparison of morphological and phylogenetic trends amongst the Theriodontia. *Palaeontologia Africana*, **44**: 27-39.

Fourie, H. 2013. The postcranial description of *Ictidosuchoides* (Therapsida: Therocephalia: Baurioidea). *Annals of the Ditsong National Museum of Natural History*, **3**: 1-10.

Fourie, H. 2013. Radon detection in Karoo fossil material at the Ditsong: National Museum of Natural History, Pretoria. *Ditsong: National Museum of Cultural History, Research Journal*, **8**: 24-32.

**Methodology:**

The type of scope is determined by the geological formation and its palaeontological sensitivity ranking determined through the Fossil Heritage Layer Browser (SAHRA).

Palaeontological Exemption Letter: Sensitivity of Insignificant to *Zero/ Very Low*.

Protocol for a Chance Find: *Low Sensitivity*.

Desktop Study: *Moderate* and *High Sensitivity*.

Field Assessment: *High* and *Very High* Sensitivity.

The report aims to provide comment and recommendations on the potential impacts that the proposed development could have on the fossil heritage of the area and to state if any mitigation or conservation measures are necessary.

Most fossil containing geological formations will be ranked as Moderate, High to Very High.

The Environmental Assessment Practitioner must map the location of the proposed development on SAHRIS, once mapped, they will be able to switch on the palaeontological sensitivity layer to determine whether or not a Palaeontological Impact Assessment is necessary.



## Tumelo Mathulwe

Earth & Environment - Environmental Planning and Advisory, Consultant

### CAREER SUMMARY

Tumelo is part of the environmental planning and advisory team focused on the permitting division where he conducts stakeholder engagement as well as the compilation of social and environmental permitting reports.

Countries of experience gained include South Africa.



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#### >1 year with WSP

##### Area of expertise

Stakeholder Engagement  
Social & Environmental Permitting Reports

#### 4 years of experience

##### Language

Setswana – Fluent  
English – Fluent  
Sotho – Fluent  
Sepedi – Fluent

### EDUCATION

BSc Geography, University of Pretoria, Pretoria

2016

### PROFESSIONAL HISTORY

WSP Group Africa (Pty) Ltd

2022 – present

Savannah Environmental - Woodmead

July 2021 – December 2021

Nemai Consulting – Randburg

February 2021 – July 2021

Golder Associates Africa (Pty) Ltd

2019 – 2020

Nemai Consulting – Randburg

2017 - 2018

### PROFESSIONAL EXPERIENCE

#### Environmental Assessments

**Kamoa Copper SA, Health Impact Assessment, Democratic Republic of Congo**  
2022

##### Social Researcher

A health baseline assessment.

**Shell Downstream South Africa, Section 24G Application for Various Service Stations, South Africa**  
2021 - current

##### Role

Compiling Section 24G applications and EIAs as well as the on-site information gathering



## Tumelo Mathulwe

Earth & Environment - Environmental Planning and Advisory, Consultant

**Solaire Direct, Sannaspos Solar Park, near Bloemfontein, South Africa**

**2021**

**Public Participation Practitioner**

A Basic Assessment for a Solar Photo Voltaic facility.

**AngloGold Ashanti, Surface Water Pipeline and Associated Infrastructure, Carletonville, South Africa**  
**2019**

**Environmental Assessment Practitioner**

Basic Assessment and General Authorisation for the dewatering of a defunct mine shaft through a surface pipeline to a dam.

### **Water Use License Application**

**Anglo American, Water Use License Application, near Ogies, South Africa**  
**2019**

**Water Use License Practitioner**

Assisted in the Water Use License Application for the establishment of an underground mine **Sasol, Water Use License Application, Secunda, South Africa**

**2019 - 2020**

**Role**

Assisted in the Water Use License Application for the establishment of an open cast pit and underground mining.

**Anglo American, Water Use License Amendment, Ogies, South Africa**  
**2020**

**Water Use License Practitioner**

Amendment of a water use license

**Grindrod Terminals, Water Use License Audit, Richards Bay, South Africa**  
**2019**

**Water Use License Practitioner**

Auditing compliance of the site against the conditions provided in the Water Use License

**Sasol, Water Use License Renewal, Secunda, South Africa**  
**2020**

**Water Use License Practitioner**

Renewal of a mining complex Water use License.

**Glencore Operations South Africa, Lakenvlei Wetland Off-set, near Belfast, South Africa**  
**2019 - 2020**

**Water Use License Practitioner**

General Authorisation for the implementation of a wetland rehabilitation strategy.

### **Data Collection and Reporting**

**Gauteng Department of Roads and Transport, Rabie Ridge, South Africa**  
**2021**

**Data Collection and Reporting**

A baseline assessment of the baseline Socio-Economic conditions of 5 communities near Tembisa and Rabie Ridge in Johannesburg

**Water Research Council, Stakeholder Perception Study, South Africa**  
**2021**

**Interviewer**

Collecting information on the sanitation facilities of Mining, Industrial, Commercial and Public workplaces in South Africa





## Tumelo Mathulwe

Earth & Environment - Environmental Planning and Advisory, Consultant

**Petra Diamonds, Crack Survey, Cullinan, South Africa**

**2020**

**Data Collector**

Conducted a crack survey on 30+ houses

### **Public Participation**

**Mining Right Application Public Meeting, Zamdela, South Africa**

**2018**

**Presenter**

Presentation of a public meeting for the mining right application of an underground coal mine.

**Genesis Eco-Energy Developments, Woodhouse Solar 1 PV & Woodhouse Solar 2 PV Facilities Grid Infrastructure, Vryburg, South Africa**

**2021**

**Public Participation Practitioner**

A Basic Assessment for grid connection infrastructure associated with a solar photo voltaic facility

**Eskom, Majuba PV Solar Energy Facility, Amersfoort, Amersfoort, South Africa**

**2021**

**Public Participation Practitioner**

A Basic Assessment for a general waste disposal facility.

**African Clean Energy Development, Great Karoo Wind Farm, Richmond, South Africa**

**2021**

**Public Participation Practitioner**

A cluster of renewable energy facilities and associated infrastructure.

**MP NRG (PTY) LTD, Nama East and West Solar, Kleinsee, South Africa**

**2021**

**Public Participation Practitioner**

A Basic Assessment for solar energy facilities and associated grid infrastructure.

**Mainstream Renewable Power South Africa, Korana, Pofadder, South Africa**

**2021**

**Public Participation Practitioner**

A substantive amendment of a Wind Energy Facility.

**Mainstream Renewable Power South Africa, Poortjies 2, Pofadder, South Africa**

**2021**

**Public Participation Practitioner**

A substantive amendment of a Wind Energy Facility.

**Wind Relic, Sun Garden and Solaris Fields PV facilities, Somerset, South Africa**

**2021**

**Public Participation Practitioner**

A Basic Assessment for a Cluster of Renewable Energy Facilities between Somerset East and Makhanda.

**ABO Wind, Pienaarspoort 2, Ceres, South Africa**

**2021**

**Public Participation Practitioner**

A Basic Assessment for solar energy facilities and associated grid infrastructure.

**Mainstream Renewable Power South Africa, Vrede PV Facility Grid Infrastructure, Public Participation, Kroonstad, South Africa**

**2021**

**Public Participation Practitioner**



## **Tumelo Mathulwe**

Earth & Environment - Environmental Planning and Advisory, Consultant

A Basic Assessment for electrical grid infrastructure.

**Mainstream Renewable Power South Africa, Rondavel PV Facility Grid Infrastructure, Public Participation, Kroonstad, South Africa**  
2021

**Public Participation Practitioner**

A Basic Assessment for electrical grid infrastructure.

**Northam Platinum, Zondereinde PV Facility, Northam, South Africa**  
2021

**Public Participation Practitioner**

A Basic Assessment for a Solar Photo Voltaic facility.

# LOW DE VRIES

BAT SPECIALIST, ECOLOGIST, RESEARCHER

[www.volantenvironmental.com](http://www.volantenvironmental.com)

## PROFESSIONAL PROFILE

Research scientist with more than 10 years of experience in the field of bat ecology. This includes field work, report writing, team management, data presentation and supervision.

Qualifications include BSc: Zoology, BSc. (Hons) Zoology and PhD: Zoology, completed through the University of Pretoria.

Professionally registered with SACNASP in Zoological Science

Registered Bat Assessment Specialist with SABAA

## Key areas of expertise

- Bat and bird Specialist Conducting surveys on bat and bird diversity and abundance and research on bat ecology.
- Environmental Assessment Practitioner Writing and collating Basic Assessment (BA) for proposed Wind Energy Facilities

## Memberships & Certificates

- SACNASP Registered Professional Natural Scientist in the field of Zoological Science - Registration Number: 124178
- Bat Assessment Specialist with South African Bat Assessment Association (SABAA)

## Other Training

- Multivariate statistical modelling (Cape Town, South Africa)
- Bat handling and identification course (AfricanBats)
- Snake handling (Chameleon Village (South Africa)
- ArcGis online course
- First Aid level 2 (Johannesburg, South Africa)

## Focal Experience Relevant to Current Project

2023 -current – Bat specialist for three wind energy facilities and associated grid connection near Aggeneys, Northern Cape, South Africa

2022 -current – Bat specialist for a wind energy facility and associated grid connection near Warden, Free State, South Africa

2022-current – Bird specialist for a wind energy facility and associated grid connection in Limpopo South Africa

2022 -current – Bat specialist for a wind energy facility and associated grid connection near Doringbaai, Western Cape Province, South Africa

2021 -current – Bat specialist for three wind energy facilities and associated grid connection near Dordrecht, Eastern Cape Province, South Africa

2021-current – Bat specialist for two wind energy facilities and associated grid connection near Postmasburg, Northern Cape Province, South Africa

2021-current – Bat specialist for wind energy facility and associated grid connection near Belfast, Mpumalanga Province, South Africa

2020-2021– Bat specialist for wind energy facility and associated grid connection near Loeriesfontein, Northern Cape Province, South Africa

2020-2021 – Bat specialist for wind energy facility and associated grid connection near Gouda, Northern Cape Province, South Africa

2017 - Biodiversity survey of Bats in Gorongosa National Park, Mozambique

2016 - current – Bat Ecologist for the Centre for Viral Zoonoses at the University of Pretoria



## CONTACT

🏠 Pretoria, Gauteng – South Africa

☎ 0823235475

✉ [low@volantenvironmental.com](mailto:low@volantenvironmental.com)

## EDUCATION

### Matric Certificate

Hoerskool Jeugland  
2002

### BSc: Zoology

University of Pretoria  
2006

### BSc: (Hons) Zoology

University of Pretoria  
2007

- Circadian Rhythms of Mole-rats

### PhD: Zoology

University of Pretoria  
2014

- Ecology of the Aardwolf



## Publications

Markotter, W. **de Vries, J.L.** Pawska, J. Wing tattoos: A method of permanently marking bats. *Acta Chiropterologica*. *In review*

Wood, M., **de Vries, J.L.**, Monadjem, A., Markotter, W. A critical review of factors influencing interspecific variation in home range size of bats. *Mammal Review*. *In review*

Geldenhuys, M., **de Vries, J.L.**, Dietrich, M., Mortlock, M., Epstein, J. H., Weyer, J., Paweska, J. T., Markotter, W. Longitudinal surveillance of diverse coronaviruses within a *Rousettus aegyptiacus* maternal colony towards understanding viral maintenance and excretion dynamics. *In submission*

Markotter, W., Coertse, J., **de Vries, J.L.**, Geldenhuys, M., Mortlock, M. 2020. Bat-borne viruses in Africa: A critical review. *Journal of Zoology*. 311:2. 77-98

**de Vries J.L.**, Marneweck D, Dalerum F, Page-Nicholson S, Mills MGL, Yarnell RW, Sliwa A, Do Linh San E. 2016. A conservation assessment of *Proteles cristata*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.

Dalerum F, Le Roux A, **de Vries J.L.**, Kamler JF, Page-Nicholson S, Stuart C, Stuart M, Wilson B, Do Linh San E. 2016. A conservation assessment of *Otocyon megalotis*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.

Dalerum, F., **de Vries, J.L.**, Pirk, C.W.W., Cameron, E.Z. 2016. Spatial and temporal dimensions to the taxonomic diversity of arthropods in an arid grassland savannah. *Journal of Arid Environments*. 144. 21-30

Kotze, R., Bennett, N., Cameron, E.Z., **de Vries, J.L.**, Marneweck, D.G., Pirk, C.W.W., Dalerum, F. 2012. Temporal patterns of den use suggest polygamous mating patterns in an obligate monogamous mammal. *Animal Behaviour*. 84. 1573-1578

**de Vries, J.L.**, Pirk, C.W.W., Bateman, P.W., Cameron, E.Z., Dalerum, F. 2011. Extension of the diet of an extreme foraging specialist, the aardwolf (*Proteles cristata*). *African Zoology*. 6:1 194-196.

**de Vries, J. L.**, Oosthuizen, M. K., Sichilima, A. M., Bennett, N. C. 2008. Circadian rhythms of locomotor activity in Ansell's mole-rat: are mole-rat's clocks ticking? *Journal of Zoology*. 276:4. 343-349

## Conference Contributions

International Bat Research Conference. Austin, Texas 2022. Small scale movement of *Rousettus aegyptiacus* in Limpopo Province, South Africa and implications for disease risk. **de Vries, J.L.** Wood, M., Markotter, W.

Infectious Diseases of Bats Symposium. Fort Collins, Colorado 2017. Body mass index of the Egyptian fruit bat, *Rousettus aegyptiacus*: An indicator of infection status. **de Vries, J.L.**, Dietrich, M., Paweska, J., Markotter, W.

SASAS 2016. **de Vries, J.L.**, Jonker, M.L., Kriel, D., Kotze, A.K. The Tankwa goat: Phenotypically that different?

De Beers Diamond Route Conference, 2010. **de Vries, J.L.**, Pirk, C.W.W., Bennett, N.C. Is the aardwolf a seasonally influenced optimal forager?

Kimberley biodiversity research symposium, 2009. **de Vries, J.L.**, Bennett, N.C., Pirk, C.W.W., Dalerum, F., Cameron, E.Z. Den and home range use of the aardwolf, *Proteles cristatus*

## SKILLS



Bat assessments

Bird assessments

Ecology and Biological Diversity

Scientific Research & Expertise

Lecturing and Education

Data Management & Reporting

Report and Publication Writing

Scientific Communication

Statistical Analyses

Health and Safety

Presenting Scientific Data

Critical Data Analysis

Software: Microsoft Office, qGIS, ArcGIS, Statistica, R, Anabat Insight, Kaleidoscope



## Employment & work-related experiences

2020 - present	Director and founder of Volant Environmental
2016 - 2022	Postdoctoral fellow, University of Pretoria
2015 - 2016	Postdoctoral fellow, NZG
2014 - 2015	Marion Island field assistant, University of Pretoria
2013	Documentary presenter, Oxford Scientific Films
2010 - 2011	Wildlife Education Trainer, Enviro- Insight
2010 - 2011	Game Ranging Lecturer, Damelin Centurion
2009 - 2018	Lecturer and tutor, University of Pretoria

## Recent Project Experience

For further details please contact me directly at [low@volantenvironmental.com](mailto:low@volantenvironmental.com)

Time span	Nature of project	Capacity	Industry / Sector	Client / Developer	Country (Province)
2023 - current	Hartebees Skeur WEF	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Northern Cape)
2023 - current	Brakputs WEF	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Northern Cape)
2023 - current	Varsputs WEF	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Northern Cape)
2023 - current	Daggakraal WEF	Bat and Bird Specialist	Renewable Energy / Onshore Wind	EDF Renewables	South Africa (Mpumalanga)
2023 - current	Abo SEF	Bat and Bird Specialist	Renewable Energy / Onshore Wind	Nextec	South Africa (KZN)
2023 - current	Steelpoort SEF	Bat and Bird Specialist	Renewable Energy / Onshore Wind	Jones and Wagener	South Africa (Mpumalanga)
2023 - current	Tournee SEF	Bat and Bird Specialist	Renewable Energy / Onshore Wind	WKN Windcurrent SA (Pty) Ltd	South Africa (Mpumalanga)
2022 - current	Dubula SEF	Bat and Bird Specialist	Renewable Energy / Onshore Wind	CEN	South Africa (Eastern Cape)
2022 - current	Dubula Greenfields SEF	Bat and Bird Specialist	Renewable Energy / Onshore Wind	CEN	South Africa (Eastern Cape)
2022	Tuinfontein Scoping survey	Bat and Bird Specialist	Renewable Energy / Onshore Wind	Akuo Energy	South Africa (Northern Cape)
2022	WEF Desktop surveys	Bat Specialist	Renewable Energy / Onshore Wind	Oryx Power	South Africa (Mpumalanga, Northern Cape, Eastern Cape)
2022	Langberg WEF Bat Scoping Survey	Bat Specialist	Renewable Energy / Onshore Wind	Akuo Energy	South Africa (Northern Cape)
2022	Thand Tau Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Free State)
2022	Camden Bird Impact Assessment	Bird Specialist	Renewable Energy / Onshore Wind	EDF Renewables	South Africa (Mpumalanga)
2022	Hotazel WEF Scopin Survey	Bat Specialist	Renewable Energy / Onshore Wind	Jones and Wagener	South Africa (Northern Cape)
2022	Rhenosterkop WEF Scopin Survey	Bat Specialist	Renewable Energy / Onshore Wind	Jones and Wagener	South Africa (Western Cape)
2022- current	Doringbaai WEF Bat Impact assessment	Bat Specialist	Renewable Energy / Onshore Wind	WKN Windcurrent SA (Pty) Ltd	South Africa (Western Cape)
2022	Castle WEF walkthrough	Bat Specialist	Renewable Energy / Onshore Wind	Savannah (Pty) Ltd	South Africa (Northern Cape)
2021	Fraserburg raptor nest survey	Bird specialist	Renewable Energy / Onshore Wind	WKN Windcurrent SA (Pty) Ltd	Renewable Energy / Onshore Wind
2021- 2022	Dordrecht Bat Impact Assessment	Bat Specialist	Renewable Energy /	ACED (Pty) Ltd	South Africa (Eastern Cape)

			Onshore Wind		
2021 - 2022	Indwe Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Jones and Wagener	South Africa (Eastern Cape)
2021 - 2022	Waschbank Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Jones and Wagener	South Africa (Eastern Cape)
2021 - current	Gorachouqua Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Northern Cape)
2021 - current	Khoemana Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Northern Cape)
2021 - 2022	Dalmanutha Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Enertrag SA (Pty) Ltd	South Africa (Mpumalanga)
2020-2021	Bergvriervier Bat Impact Assessment	Bat Specialist	Renewable Energy / Onshore Wind	Genesis Eco-Energy Developments (Pty) Ltd	South Africa (Western Cape)
2020-2021	Botterblom Bat Impact Assessment	Bat Specialist Bird assistant	Renewable Energy / Onshore Wind	Genesis Eco-Energy Developments (Pty) Ltd	South Africa (Northern Cape)
2012	Dangerous snake removal	Herpetologist	Mining (Coal)	Anadarko	Mocimboa da Paia, Mozambique