

## CURRICULUM VITAE OF MMAKOENA MMOLA

<b>Profession :</b>	Environmental Assessment Practitioner
<b>Specialisation:</b>	Environmental Permitting, Environmental Assessments, and Compliance
<b>Work Experience:</b>	4 years

### VOCATIONAL EXPERIENCE

Mmakoena is an Environmental Consultant with 4 years of experience in the environmental field. She holds a B.Sc. (Hons) in Geochemistry from the University of the Witwatersrand and is currently completing her B.Sc. (Hons) in Environmental Management with the University of South Africa.

Mmakoena's experience includes undertaking environmental permitting and environmental authorisation applications, compiling basic assessment reports, scoping and environmental impact assessment reports and environmental management programmes, executing the public participation process, undertaking environmental compliance audits, providing environmental control officer services, conducting environmental screening assessments, managing sub-consultants, project management and preparing proposals and budgets in response to requests for quotations.

### SKILLS BASE AND CORE COMPETENCIES

- Well-developed communication and report writing skills
- Adaptability and ability to handle pressure
- Organisational skills
- Ability to build and maintain client relationships
- Loyalty, dedication and dependability
- Ability to coordinate and synthesize environmental information
- Ability to work to tight deadlines and on multiple projects
- Thorough knowledge of environmental legislation and the environmental impact assessment process
- Quality focus and attention to detail
- Ability to deliver high quality work to agreed budgets
- MS Office Package (Word, PowerPoint and Excel)
- Adobe Acrobat
- Google Earth
- ArcGIS (basic)

## EDUCATION AND PROFESSIONAL STATUS

### Degrees:

- Bachelor of Science (Hons) Environmental Management, in progress, University of South Africa
- Bachelor of Science (Hons) Geochemistry, 2016, University of the Witwatersrand
- Bachelor of Science Geology, 2015, University of the Witwatersrand

### Short Courses:

- Environmental Management and Regulations, 2018, Kuvimbika
- Research Methodology and Report Writing, 2017, Imsimbi Training

### Professional Society Affiliations:

- Candidate Natural Scientist, Environmental Science, South African Council for Natural and Scientific Professions – Registration Number: 126748

## EMPLOYMENT

Date	Company	Roles and Responsibilities
<b>2021 - Current:</b>	Savannah Environmental (Pty) Ltd	<p><i>Environmental Assessment Practitioner</i></p> <p><u>Tasks include:</u></p> <ul style="list-style-type: none"> <li>• Undertake environmental screening assessments, environmental permitting and environmental authorisation applications.</li> <li>• Undertake water use authorisation applications on the e-WULAA system.</li> <li>• Complete Part 1 and Part 2 EA amendment applications and prepare motivation reports in support of applications for Part 2 EA amendments.</li> <li>• Undertake environmental compliance audits and provide ECO services.</li> <li>• Efficient and quality report writing to execute and manage the delivery of environmental impact assessment (EIA) reports and Environmental Management Programmes in line with the requirements of the National Environmental Management Act and EIA Regulations.</li> <li>• Liaison with relevant environmental authorities.</li> <li>• Execution of the public participation process.</li> <li>• Professional client liaison.</li> <li>• Project management.</li> <li>• Manage third parties or sub-consultants to which functions have been outsourced.</li> <li>• Preparation of proposals and budgets.</li> </ul>
<b>2019 - 2020</b>	Golder Associates Africa (Pty) Ltd	<p><i>Junior Environmental Consultant</i></p> <p><u>Tasks included:</u></p> <ul style="list-style-type: none"> <li>• Water use license applications</li> <li>• Environmental compliance and water use license audits</li> </ul>

Date	Company	Roles and Responsibilities
		<ul style="list-style-type: none"> <li>• Environmental control officer services</li> <li>• Annual integrated water and waste management plan updates</li> <li>• Assist with wetland assessments</li> <li>• Assist with mine closure and rehabilitation plans</li> <li>• Liaise with clients and competent authorities</li> <li>• Provide assistance on local environmental and social impact assessments</li> <li>• Undertake site visits</li> <li>• Compile environmental reports</li> <li>• Generate environmental screening reports</li> <li>• Undertake administrative tasks</li> </ul>
2017 - 2019	Shango Solutions	<p>Junior Consultant</p> <p><u>Tasks included:</u></p> <ul style="list-style-type: none"> <li>• Conduct environmental compliance and financial provision audits for prospecting sites as per the MPRDA</li> <li>• Environmental authorisation applications</li> <li>• Prospecting right and mining permit applications</li> <li>• Basic assessment reports</li> <li>• Environmental management programmes/plans</li> <li>• Execute the public participation process</li> <li>• Section 102 amendment applications as per the MPRDA</li> <li>• Prepare maps</li> <li>• Liaise with sub-consultants/specialists</li> <li>• Undertake administrative tasks</li> </ul>

## PROJECT EXPERIENCE

### RENEWABLE POWER GENERATION PROJECTS: SOLAR ENERGY FACILITIES AND WIND ENERGY FACILITIES

#### Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
700MW (7x 100MW) Mutsho Solar PV, Limpopo Province	CRI Eagle	EAP
Angora Wind Energy Facility, Northern Cape Province	Great Karoo Renewable Energy (Pty) Ltd	EAP
Merino Wind Energy Facility, Northern Cape Province	Great Karoo Renewable Energy (Pty) Ltd	EAP
Vrede and Rondavel Solar PV Facilities, Free State Province	Mainstream Renewable Energy Developments (Pty) Ltd	Assistant EAP
400MW (4x 100MW) Pixley Park Solar PV, Northern Cape Province	Mulilo Energy Holdings	EAP

#### Basic Assessments

Project Name & Location	Client Name	Role
Northam Solar Photovoltaic (PV) Facility, Limpopo Province	Northam Platinum Limited	EAP

Hamlett Wind Energy Facility, Eastern Cape Province (project in progress)	Hamlett (Pty) Ltd	EAP
Becrux Solar PV Facility, Mpumalanga Province	The SOLA Group	EAP

#### Screening Studies

Project Name & Location	Client Name	Role
Environmental Screening for the Proposed Secunda and Sasolburg Solar PV Facilities, Free State Province and Mpumalanga Province	The SOLA Group	EAP

#### Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Biodiversity Permitting and General Authorisation Applications for the Harmony Tshepong, Nyala and Eland Solar PV Facilities, Free State Province	Nyala Photovoltaic (Pty) Ltd Tshepong Photovoltaic (Pty) Ltd Eland Photovoltaic (Pty) Ltd	EAP
General Authorisation Application for the Northam Solar PV Facility, Limpopo Province	Northam Platinum Limited	EAP

#### Environmental Authorisation Amendment Applications

Project Name & Location	Client Name	Role
Part I Amendment: Proposed 75MW Sannaspos PV Plant (Phase 1) and its associated infrastructure, Free State Province	ENGIE BU Africa	EAP
Part I Amendment: Construction of the 140MW Korana Wind Energy Facility, Northern Cape Province	Mainstream Renewable Energy Developments (Pty) Ltd	EAP
Part I Amendment: Construction of the 75MW Korana Solar Energy Facility, Northern Cape Province	Mainstream Renewable Energy Developments (Pty) Ltd	EAP
Part I Amendment: Construction of the 140MW Khai-Ma Wind Energy Facility, Northern Cape Province	Mainstream Renewable Energy Developments (Pty) Ltd	EAP

#### GRID INFRASTRUCTURE PROJECTS

##### Basic Assessments

Project Name & Location	Client Name	Role
Electrical Grid Infrastructure for the Kolkies and Sadawa PV clusters, Western Cape Province	Mainstream Renewable Energy Developments (Pty) Ltd	EAP
Electrical Grid Infrastructure for the Vrede and Rondavel Solar PV Facilities, Free State Province	Mainstream Renewable Energy Developments (Pty) Ltd	EAP
Sadawa Collector Substation, Western Cape Province	Mainstream Renewable Energy Developments (Pty) Ltd	EAP
Main Transmission Substation (MTS) associated with the Choje Wind Farm cluster, Eastern Cape Province (project in progress)	Wind Relic (Pty) Ltd	EAP

### **Environmental Authorisation Amendment Applications**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Part I Amendment: Construction of a 132kV power lines associated with the Poortjies Wind Energy Facility, Northern Cape Province</i>	<i>Mainstream Renewable Energy Developments (Pty) Ltd</i>	<i>EAP</i>
<i>Part I Amendment: Construction of a 132kV power lines associated with the Khai-Ma Wind Energy Facility, Northern Cape Province</i>	<i>Mainstream Renewable Energy Developments (Pty) Ltd</i>	<i>EAP</i>

### **GAS EXPLORATION PROJECTS**

#### **Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Kroonstad Gas Exploration Right and Environmental Authorisation, Free State Province</i>	<i>Western Allen Ridge Gold Mines (Pty) Ltd</i>	<i>Assistant EAP and Public Participation Consultant</i>

### **MINING PROJECTS**

#### **Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Pure Source Mine Mining Right Application, Free State Province</i>	<i>Monte Cristo Commercial Park (Pty) Ltd</i>	<i>Assistant EAP and Public Participation Consultant</i>

#### **Basic Assessments**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Basic Assessment for the Western Margin Gap West Prospecting Right, Free State Province</i>	<i>White Rivers Exploration (Pty) Ltd</i>	<i>Assistant EAP</i>
<i>Basic Assessment for the Ventersburg Consolidated Prospecting Right, Free State Province</i>	<i>White Rivers Exploration (Pty) Ltd</i>	<i>Assistant EAP</i>
<i>Basic Assessment for the Nkuzana Prospecting Right, KwaZulu-Natal Province</i>	<i>WRE Base Metals (Pty) Ltd</i>	<i>Junior EAP</i>
<i>Basic Assessment for the Kroonstad North Prospecting Right, Free State Province</i>	<i>White Rivers Exploration (Pty) Ltd</i>	<i>Junior EAP</i>
<i>Basic Assessment for the Vredefort West Extension Prospecting Right, Free State Province</i>	<i>White Rivers Exploration (Pty) Ltd</i>	<i>Junior EAP</i>
<i>Basic Assessment for the Beisa North Prospecting Right, Free State Province</i>	<i>Sunshine Mineral Reserves (Pty) Ltd</i>	<i>EAP</i>
<i>Basic Assessment for the Palmietfontein Mining Permit, North-West Province</i>	<i>Palm Chrome (Py) Ltd</i>	<i>Assistant EAP</i>

#### **Specialist Studies**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>New Largo Mine Closure and Rehabilitation Plan, Mpumalanga Province</i>	<i>Seriti Coal</i>	<i>Junior Environmental Consultant</i>
<i>Smarty Minerals Integrated Environmental Authorisation: Wetland Impact Assessment Report, Limpopo Province</i>	<i>Smarty Minerals Investment (Pty) Ltd</i>	<i>Junior Environmental Consultant</i>
<i>Glencore Water Treatment Plant Pipeline: Wetland Monitoring, Mpumalanga Province</i>	<i>Glencore</i>	<i>Junior Environmental Consultant</i>

**Environmental Compliance, Auditing and ECO**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Glencore Merafe Wonderkop Smelter, Regulation 34 Audit, North West Province	Glencore	Auditor
Tshipi Borwa Mine Water Use Licence Audit, Northern Cape Province	Tshipi Borwa Mine	Auditor
Samancor Middelburg Ferrochrome: Construction of ore dryer, Mpumalanga Province	Samancor Middelburg Ferrochrome	ECO
Various Annual Financial Provision and Environmental Compliance Audits for prospecting sites as per the MPRDA, Free State and KwaZulu-Natal Province	White River's Exploration (Pty) Ltd	Auditor
Impala Platinum Limited – Springs annual external Water Use Licence Audit, Gauteng Province	Impala Platinum Limited	Auditor

**INFRASTRUCTURE DEVELOPMENT PROJECTS (BRIDGES, PIPELINES, ROADS, WATER RESOURCES, STORAGE, ETC)****Specialist Studies**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Closure cost model estimate and closure cost report for the Proposed Surface Pipeline and Associated Infrastructure, Gauteng Province	AngloGold Ashanti	Junior Environmental Consultant
Wetland Impact Assessment report for Proposed Surface Pipeline and Associated Infrastructure, Gauteng Province	AngloGold Ashanti	Junior Environmental Consultant

**Environmental Compliance, Auditing and ECO**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
MWCAP-2A Environmental Management Audit, Limpopo Province	Nexia SAB&T	Auditor

**AGRICULTURE PROJECTS****Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Dew Crisp Water Use Licence Application, Gauteng Province	Dew Crisp (Pty) Ltd	Junior Environmental Consultant (providing assistance)

**OTHER****Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Anglo African Metals Zero Waste Recovery Solution, Mpumalanga Province	Anglo African Metals (Pty) Ltd	EAP
Eskom Majuba Landfill, Mpumalanga Province (project in progress)	Eskom	EAP
Expansion of Recreational and Sports Facilities at the Country Club Johannesburg	Country Club Johannesburg	EAP

## CURRICULUM VITAE OF TEBOGO MAPINGA

<b>Profession :</b>	Business Operations Manager and EAP
<b>Specialisation:</b>	Environmental Impact Assessments, Water Use Licencing, Waste Licencing, Environmental Permitting
<b>Work Experience:</b>	14 years' experience in Environmental Management, National Water Act, Mineral and Petroleum Resources Development Act, Project Management, Compliance Auditing, Stakeholder Engagement, Policy and Legislation Advisory and Peer Review.

### VOCATIONAL EXPERIENCE

Tebogo is an experienced professional with 14 years across the fields of Environment, Permitting, Project Management, Contract Management and Business Development, within the built infrastructure and most recently renewable energy sectors. I have an excellent track record and across-the-board proficiency within the following business environments: Business Development | Tender Management | Environmental Regulations & Compliance (Renewable Energy, Power, Infrastructure, Mining, ect) | Project Finance Environmental Due Diligence | Project Management (including contract management) | Design, Execution and management Project Permitting Processes | Team Management | Stakeholder Interfaces | Policy and Legislation Advisory.

I'm an assertive individual with a passion for renewable energy industry and power markets. I am a self-motivated and results orientated individual, able to effectively and expediently learn and absorb the nuances of new markets and take on strong leadership roles accordingly. I possess a strong business development, environmental and permitting acumen which also comes with the ability to cultivate significant synergies between stakeholders and authorities; and maintaining those relationships.

### SKILLS BASE AND CORE COMPETENCIES

- Renewable Energy Permitting;
- Environmental Management;
- Environmental Due Diligence and Analysis;
- Tender and Bid Management;
- Project Management and client liaison;
- Contract Management;
- Report Writing, drafting proposals and tenders;
- Review of ECO Monitoring Reports and External Audit Reports
- Financial management and marketing;
- Understanding and Implementation of all Environmental Regulations and all other relevant legislation;
  - Water Use Licence Applications (NWA)
  - General Authorisations (NWA)
- Ability to work independently and in a team;
- Good verbal, writing and presentation skills;
- Time management and workload management; and
- Facilitation and Training skills.

## EDUCATION AND PROFESSIONAL STATUS

### Degrees:

BSc (Zoology and Physiology), The University of Limpopo

### Short Courses:

- MS WORD- Computer Course (University of Limpopo (2006)
- Environmental Assessment Administration (2012)

### Professional Society Affiliations:

- South African Council for Scientific Natural Professionals (SACNASP): Certified Natural Scientist – Pr.Sci.Nat. (Membership No.: 115518)
- IAAsa Member

### Other Relevant Skills:

- GPS use, spatial data capturing and ground truthing

## EMPLOYMENT

Date	Company	Roles and Responsibilities
April 2021 - Current:	Savannah Environmental (Pty) Ltd	Business Operations Manager & EAP  <u>Tasks include:</u> Undertaking environmental impact assessments, basic assessments, environmental management programmes (EMPrs), environmental amendments, water use license applications, general authorisations, and permit applications, environmental compliance officer audits and reporting, Ensuring environmental compliance on permitting processes, project management, staff management and co-ordination, client liaison and relationship management.
February 2018 – March 2021	Zitholele Consulting (Pty) Ltd	Senior Environmental Consultant  <u>Tasks included:</u> Undertaking environmental impact assessments, basic assessments, environmental management programmes (EMPrs), environmental amendments, water use license applications, general authorisations, mining rights and permit applications, environmental compliance officer audits and reporting, Ensuring environmental compliance on permitting processes, client liaison and relationship management, public participation processes for environmental authorisations and conducting peer reviews. Conducted Rain Readiness Assessments for Eskom.



Date	Company	Roles and Responsibilities
<p><b>April 2014 – December 2017</b></p>	<p>Savannah Environmental (Pty) Ltd</p>	<p>Senior Environmental Consultant &amp; Principal Environmental Consultant</p> <p><u>Tasks included:</u> Undertaking environmental impact assessments, basic assessments, environmental management programmes (EMPrs), environmental amendments, water use license applications, general authorisations, mining rights and permit applications, environmental compliance officer audits and reporting, Ensuring environmental compliance on permitting processes, client liaison and relationship management, public participation processes for environmental authorisations and environmental screening reports..</p>
<p><b>April 2013 – March 2014</b></p>	<p>GIBB Engineering and Science</p>	<p>Senior Environmental Scientist</p> <p><u>Tasks included:</u> Undertaking environmental impact assessments, basic assessments, environmental management programmes (EMPrs), environmental amendments. Ensuring environmental compliance on permitting processes, client liaison and relationship management, public participation processes for environmental authorisations and environmental screening reports.</p>
<p><b>April 2010 – March 2013</b></p>	<p>Department of Forestry, Fisheries and the Environment</p>	<p>Environmental Officer Specialised Production:</p> <p><u>Tasks included:</u> The review of BARs, EIRs, EMPr's and Environmental Authorisations mainly for Parastatal projects (Eskom projects, SANRAL projects, Rand Water Project), Renewable energy projects and National Projects; and Drafting recommendations for EIA submissions.</p>
<p><b>April 2008 – March 2010</b></p>	<p>Strategic Environmental Focus</p>	<p>Environmental Consultant</p> <p><u>Tasks included:</u> Undertaking environmental impact assessments, basic assessments, environmental management programmes (EMPrs), environmental amendments. Ensuring environmental compliance on permitting processes, client liaison, project management and relationship management, public participation processes for environmental authorisations and environmental screening reports.</p>
<p><b>January 2007 – March 2008</b></p>	<p>Phaki Phakanani Environmental Consultants</p>	<p>Environmental Consultants</p> <p><u>Tasks included:</u> Undertaking environmental impact assessments, basic assessments, environmental management programmes</p>

Date	Company	Roles and Responsibilities
		(EMPrs), environmental amendments. Ensuring environmental compliance on permitting processes, client liaison, project management and relationship management, public participation processes for environmental authorisations and environmental screening reports.

## PROJECT EXPERIENCE

Project experience includes project management, EIA, BA and EMPr documentation development, integrated water use license applications, general authorisations, and impact assessments, compliance auditing and monitoring, vegetation rehabilitation and monitoring plans, integrated waste management plans and waste licencing.

Industry experience includes conduction Rain Readiness Assessments for Eskom Power Stations, the waste sector (IWMP's and waste licencing), road infrastructure (BAR, S&EIR, WUL/GA, Waste Licence), Filling station applications for Shell SA and BP, private sector clients across varying industries (various permits), mining sector (BAR & S&EIR), conservation sector (biodiversity plans), renewable energy industry (BAR, S&EIR) as well as the gas industry.

## RENEWABLE POWER GENERATION PROJECTS: WIND & SOLAR ENERGY FACILITIES

### Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Thabametsi Coal Fired Power Station	G7 Renewable Energy (Pty) Ltd	Environmental consultant
Richards Bay CCPP Power Project	Eskom SOC Ltd	Project Manager Environmental consultant
Gunstfontein Wind Energy Facility	Ginstfontein Wind Farm (Pty) Ltd	Project Manager Environmental consultant
Pofadder 3 Wind and 1 solar Energy Facilities	Mainstream Renewable Power South Africa	Project Manager Environmental consultant
Solar Reserve Kotulo Tsatsi PV 2 Facility	Solar Reserve Pty (Ltd)	Project Manager Environmental consultant

### Environmental Permitting, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Klawer Wind Farm FC Permitting	Building Energy and G7	Project Manager, Environmental consultant, Public Participation
Karusa Wind Farm FC Permitting (GA and Biodiversity Permit)	Karusa Wind Farm (Pty) Ltd	Project Manager, Environmental consultant, Public Participation
Roggeveld Wind Farm FC Permotting	Building Energy and G7	Project Manager, Environmental consultant, Public Participation
Soetwater Wind Farm FC Permitting (GA and Biodiversity Permit)	Soetwater Wind Farm (Pty) Ltd	Project Manager, Environmental consultant, Public Participation

Nxuba Wind Farm FC Permitting (GA and Biodiversity Permit)	Nxuba Wind Farm (Pty) Ltd	Project Manager, Environmental consultant, Public Participation
Adams PV Facility Upgrading of Charles Street FC Permitting	Aurora Power Solutions (Pty)	Project Manager, Environmental consultant, Public Participation
Bellatrix PV Facility FC Closure	Aurora Power Solutions (Pty)	Project Manager, Environmental consultant, Public Participation

## **HOUSING AND URBAN PROJECTS**

### **Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Proposed Housing Development on Portion 237 of the Farm Hartebeestpoort 328 in Koedoespoort, Gauteng Province	Housing Development Agency	Project Manager, Environmental consultant, Public Participation

### **Basic Assessments**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Pienaarspoort Wind Energy Facility, Northern Cape Province	ABO Wind renewable energies (Pty) Ltd	Environmental consultant
Doornkop Maize Mill EIA, Mpumalanga Province	Department of Rural Development and Land Reform	Project Manager, Environmental consultant, Public Participation
Proposed Housing Development on Portion 237 of the Farm Hartebeestpoort 328 in Koedoespoort, Gauteng Province	Housing Development Agency	Project Manager, Environmental consultant, Public Participation
Karusa Wind Energy Facility Grid Connection BAR	Karusa Wind Farm (Pty) Ltd	Project Manager, Environmental consultant, Public Participation
Soetwater Wind Energy Facility Grid Connection BAR	Soetwater Wind Farm (Pty) Ltd	Project Manager, Environmental consultant
Gunstfontein Wind Energy Facility Grid Connection	Gunstfontein Ind Farm (Pty) Ltd	Project Manager, Environmental consultant
Great Fish River Watercourse Crossing BAR	African Clean Energy Developers (Pty) Ltd (ACED)	Project Manager, Environmental consultant

### **Screening Studies**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Bobididi Solar Facility	Environmental Screening-Root 60FOUR Energy (Pty) Ltd	Project Manager, EAP
Hazelwood Stormwater Environmental Screening	Johannesburg Water	Project Manager, Environmental consultant

### **Environmental Compliance, Auditing and ECO**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
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Transnet Depot and Siding compliance auditing programme, Johannesburg, Gauteng & Rustenburg, North-West Province	Transnet SOC Ltd	ECO
Environmental compliance monitoring for the office complex development within the Pretoria National Botanical Gardens, Pretoria, Gauteng	South African National Biodiversity Institute (SANBI)	Project Manager, Environmental consultant, Public Participation, ECO

#### **Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
EIA, WULA and waste variation for the retrofitting of the FGD at Medupi Power Station	Eskom SOC Ltd	Project Manager, Environmental consultant, Public Participation

#### **SPECIALIST STUDIES**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Rain Readiness Assessments for the Matla, Kriel, Majula and Kusile Substations	Eskom SOC Ltd	Environmental specialist

## CURRICULUM VITAE OF LEHLOGONOLO MASHEGO

(Comprehensive CV)

**Profession:** Public Participation and Environmental Consultant  
**Specialisation:** Environmental Assessment Practitioner  
**Work Experience:** Four (4) years and ten (10) months

### VOCATIONAL EXPERIENCE

Professional experience lies mainly in the environmental consulting field specialising in environmental impact assessments, public participation processes and facilitation, environmental planning, environmental research, environmental training, rehabilitation. Having served the mining, construction and infrastructure industries.

### SKILLS BASE AND CORE COMPETENCIES

- Project management,
- Microsoft Office,
- Interpersonal and communication skills,
- Presenting,
- Report writing and formatting,
- Environmental legislative interpretation,
- Planning and organising, • Leading, coaching and mentoring,
- Research,
- Networking and marketing,
- Data analysis, interpretation and management, and
- Quality management systems and document control.

### EDUCATION AND PROFESSIONAL STATUS

#### Degrees:

- Master's in environmental science, University of Witwatersrand, 2021
- BSocSci Hons in Geographical and Environmental Science, University of Pretoria, 2016
- BA Geography, University of Johannesburg, 2015

#### Short Courses:

- Rethinking Integrated Environmental Management in Pursuit of the Sustainable Development Goals, IAIAsa National Conference, 2021
- Proposed Amendments to the Financial Provisioning Regulations 2015, IAIAsa, 2021
- Towards Sustainable and Responsible Mine Closure, IAIAsa, 2021
- Comprehensive Safety File Compilation Training Course, MAB Consultancy, 2019

- Monitor the Application of Health, Safety and Environmental Protection Procedures OHS Act 85 of 1993, Shesha Management Services, 2019
- Project Management, Africa International Advisors, 2017

**Professional Society Affiliations:**

- International Association of Impact Assessment – South Africa (IAIASa); 5579

**EMPLOYMENT**

<b>Date</b>	<b>Company</b>	<b>Roles and Responsibilities</b>
<b>Jan 2022 - Current:</b>	Savannah Environmental (Pty) Ltd	<i>Public Participation and Environmental Consultant</i> <u>Tasks include:</u> <ul style="list-style-type: none"> <li>• <i>Public participation</i></li> <li>• <i>Technical writing</i></li> <li>• <i>Research</i></li> </ul>
<b>Apr 2019 – Current</b>	International Association of Impact Assessment – South Africa	<i>Branch Committee Member – Students and Young Professionals</i> <u>Tasks include:</u> <ul style="list-style-type: none"> <li>• <i>Marketing</i></li> <li>• <i>Strategic development</i></li> <li>• <i>Events management</i></li> <li>• <i>Stakeholder engagement</i></li> <li>• <i>Student empowerment</i></li> <li>• <i>Risk Assessment</i></li> </ul>
<b>Jan 2020 – Dec 2021</b>	GCS Water and Environmental Consultants	<i>Environmental Liaison Officer</i> <u>Tasks included:</u> <ul style="list-style-type: none"> <li>• <i>Public participation and facilitation</i></li> <li>• <i>Authority and client liaison</i></li> <li>• <i>Report writing</i></li> <li>• <i>Environmental authorisation applications</i></li> <li>• <i>Marketing</i></li> <li>• <i>Tendering and proposal compilation</i></li> <li>• <i>Project administration</i></li> <li>• <i>Project management</i></li> <li>• <i>Application of environmental management systems</i></li> <li>• <i>Maintenance of ISO systems</i></li> <li>• <i>Environmental control officer, auditing and compliance monitoring</i></li> <li>• <i>Internal and external training</i></li> <li>• <i>Health and safety, risk identification and risk management</i></li> <li>• <i>Project management</i></li> <li>• <i>Project organisation and planning</i></li> <li>• <i>Human Resources Management and marketing</i></li> <li>• <i>Mentoring and coaching</i></li> <li>• <i>Team continual development representative with the duty of assigning fundamental tasks for continuous growth and development</i></li> </ul>
<b>April 2018 – Dec 2019</b>	Myezo Environmental Management Services	<i>Junior Environmental Consultant</i> <u>Tasks included:</u>

Date	Company	Roles and Responsibilities
		<ul style="list-style-type: none"> <li>• Project assistance</li> <li>• Project administration</li> <li>• Project support</li> <li>• Report writing</li> <li>• Research</li> <li>• Document control</li> <li>• Quality management system management</li> </ul>
<b>April 2017 – Mar 2018</b>	Myezo Environmental Management Services	<i>Environmental Intern and Project Assistant</i> <u>Tasks included:</u> <ul style="list-style-type: none"> <li>• Project assistance</li> <li>• Project administration</li> <li>• Project support</li> <li>• Report writing</li> <li>• Research</li> <li>• Document control</li> <li>• Quality management system management</li> </ul>
<b>2016</b>	University of Pretoria – Department of Geography and Environmental Sciences	<i>Student mentor</i> <u>Tasks included:</u> <ul style="list-style-type: none"> <li>• Academic mentoring and coaching</li> <li>• Academic support and guidance</li> <li>• Academic recommendations</li> <li>• Research assistance</li> <li>• Personal guidance</li> </ul>
<b>Oct 2013 – Sep 2014</b>	University of Johannesburg – Annirand Dayhouse	<i>Hawker/Leader</i> <u>Tasks included:</u> <ul style="list-style-type: none"> <li>• Head of Communication</li> <li>• Secretary</li> <li>• Head of Community Service</li> <li>• Mentoring and academic guidance</li> <li>• Overseeing all administration tasks</li> <li>• In-charge of social media platforms</li> </ul>

## PROJECT EXPERIENCE

Project experience primarily lies in the mining industry having worked extensively in Mpumalanga, North West and Gauteng Province with an averaged four (4) and a half work experience acquired. Construction and housing development projects in and around the Gauteng Province with an averaged three (3) years work experience acquired.

## RENEWABLE POWER GENERATION PROJECTS: SOLAR ENERGY FACILITIES

### **Environmental Impact Assessments and Environmental Management Programmes**

Project Name & Location	Client Name	Role
Lephalale Solar Project – Limpopo Province	Grootgeluk Mine – Exxaro Coal	Public Participation Lead

## **CONVENTIONAL POWER GENERATION PROJECTS (COAL)**

### **Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>EMPr Amendment Application for Voorspoed Coal Mine, Free State</i>	<i>De Beers Consolidated Mines</i>	<i>Public Participation Lead</i>

## **GRID INFRASTRUCTURE PROJECTS**

### **Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Proposed Donatello Substation, Gauteng Province</i>	<i>MDT Environmental</i>	<i>Junior PPP</i>

## **MINING SECTOR PROJECTS**

### **Screening Studies**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Feasibility Study of Pitlakes as a Mine Closure Option.</i>	<i>Coaltech Research Association</i>	<i>Public participation lead</i>

### **Environmental Compliance, Auditing and ECO**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Annual Environment Performance Assessment for Tharisa Mine, North West Province</i>	<i>Tharisa Minerals</i>	<i>ECO</i>
<i>Monthly Audit for Arbor Railway Siding, Mpumalanga Province</i>	<i>Gijima Supply Chain Management</i>	<i>ECO</i>
<i>Monthly Audit for Forfar Railway Siding</i>	<i>Aplorox (Pty) Ltd</i>	<i>ECO</i>
<i>Annual EMPr and IWUL Audit for Hawerklip Railway Siding</i>	<i>Brazen Alger</i>	<i>ECO</i>

### **Due Diligence Reporting**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Annual Rehabilitation Strategy and Implementation Programme (RSIP) for Mafube Mine, Mpumalanga Province</i>	<i>Exxaro Coal, Mpumalanga</i>	<i>Junior EAP and report writer</i>
<i>Annual Rehabilitation Strategy and Implementation Programme (RSIP) for Belfast Mine, Mpumalanga Province</i>	<i>Exxaro Coal, Mpumalanga</i>	<i>Junior EAP and report writer</i>
<i>Annual Rehabilitation Strategy and Implementation Programme (RSIP) for Rietkuil Siding, Mpumalanga Province</i>	<i>Exxaro Coal, Mpumalanga</i>	<i>Junior EAP and report writer</i>
<i>Annual Rehabilitation Strategy and Implementation Programme (RSIP) for Tharisa Mine, North West Province</i>	<i>Tharisa Minerals</i>	<i>Junior EAP and report writer</i>

## **INFRASTRUCTURE DEVELOPMENT PROJECTS (BRIDGES, PIPELINES, ROADS, WATER RESOURCES, STORAGE, ETC)**

### **Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
<i>Basic Assessment Report for the proposed development of the K11 Road, Gauteng Province</i>	<i>Vuka-Afrika Consulting Engineers and Project Managers</i>	<i>Junior EAP</i>
<i>Decommissioning of a Transnet pipeline running from Durban to Johannesburg</i>	<i>Hydro Science</i>	<i>Junior EAP</i>



**Environmental Compliance, Auditing and ECO**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
12 <sup>th</sup> Avenue Bridge Rehabilitation, Gauteng Province	E-Square Engineering	ECO
Oxford Road Road Rehabilitation, Gauteng Province	E-Square Engineering	ECO
Chaplin Stormwater Infrastructure Rehabilitation, Gauteng Province	E-Square Engineering	ECO

**HOUSING AND URBAN PROJECTS****Environmental Impact Assessments and Environmental Management Programmes**

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Gauteng Rapid Land Release Programme, Unitas Park and Evaton West, Gauteng Province	Department of Human Settlements	Junior EAP
Matsulu Waste Transfer Station, Mpumalanga Province	Zethu Consulting Services	Junior EAP

# Andrew Husted

## M.Sc Aquatic Health (Pr Sci Nat)

Cell: +27 81 319 1225

Email: [andrew@thebiodiversitycompany.com](mailto:andrew@thebiodiversitycompany.com)

Identity Number: 7904195054081

Date of birth: 19 April 1979

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### Profile Summary

Extensive experience with many mining projects in South Africa, parts of Africa and also Europe, providing specialist input into ESHIAs and EMPs.

Considerable experience with the project management of national and international multi-disciplinary projects.

Specialist guidance, support and facilitation for the compliance with legislative processes, in South Africa as well as with IFC and the Equator principles.

Expertise with Instream Flow and Ecological Water Requirements.

Provide specialist and technical input for faunal, aquatic ecology and wetland studies.

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### Areas of Interest

Mining, Renewable Energy & Infrastructure Development Projects, Sustainability and Conservation.

Publication of scientific journals and articles.

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### Key Experience

- Familiar with World Bank, Equator Principles and the International Finance Corporation requirements
- Environmental, Social and Health Impact Assessments (ESHIA)
- Environmental Management Programmes (EMP)
- Ecological Water Requirement determination experience
- Fish population structure assessments
- The use of macroinvertebrates to determine water quality
- Aquatic Ecological Assessments
- Aquaculture
- Monitoring Programmes

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### Countries worked in

Botswana  
Cameroon  
Democratic Republic of Congo  
Ghana  
Ivory Coast  
Liberia  
Mali  
Mozambique  
Republic of Armenia  
Senegal  
Sierra Leone  
South Africa

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### Nationality

South African

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### Qualifications

- MSc (University of Johannesburg) – Aquatic Health.
  - BSc Honours (Rand Afrikaans University) – Aquatic Health
  - BSc Natural Science
  - Pr Sci Nat (400213/11)
  - Certificate of Competence: Mondri Wetland Assessments
  - Certificate of Competence: Wetland WET-Management
  - SASS 5 Accredited – Department of Water Affairs and Forestry for the River Health Programme
  - EcoStatus application for rivers and streams
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## RELEVANT PROJECT EXPERIENCE

**Project Name: The ecological constraints mapping and Critical Habitat re-evaluation for the Anadarko LNG project: Specialist Consultant to conduct Ecological Studies (Fauna and Habitat) and the delineation of wetland systems.**

Client: Anadarko.

Personal position / role on project: Wetland Specialist.

Location: Afungi, Mozambique (2015).

Main project features: To identify and map the ecological constraints is to support contractor activities. To redefine the critical habitats within the project area

**Project Name: A Joint Basin Survey of the Upper Orange, Lower Orange and Vaal catchments to determine the current status of the systems: Specialist Consultants to conduct Ecological Studies (Fish, Macroinvertebrate, Diatoms, Water Quality and Habitat) and report on the current status (defining system trends).**

Client: ORASECOM.

Personal position / role on project: Specialist Ichthyologist.

Location: South Africa (including Namibia, Botswana & Lesotho) (2015).

Main project features: To determine the current status of the catchments and to discuss the temporal and spatial trends of the monitoring reaches.

**Project Name: Ecological baseline assessment of local river systems for the Ntem Iron Ore Mine: Specialist Consultants to Undertake Baseline Studies (Fish, Macroinvertebrate, Water Quality and Habitat).**

Client: IMIC.

Personal position / role on project: Senior Ichthyologist.

Location: Cameroon (2013).

Main project features: Establishment of the ecological baseline status and functioning assessment of the local river systems.

**Project Name: Instream Flow Requirement determination study for the Kibali River hydropower project: Specialist Consultants to Undertake Baseline Studies (Flow, Water Quality and Geomorphology) and Instream Flow Requirement (IFR) Assessment.**

Client: Randgold Resources.

Personal position / role on project: Ichthyologist and IFR.

Location: DRC (2012).

Main project features: Establishment of the ecological flow requirements of fishes within the Kibali River.

**Project Name: Cost analysis, including the current and potential earning potential of an aquaculture facility: Specialist Consultants to determine the Cost (Current & Potential Earnings) and the Construction of an identical facility (Physical Costs).**

Client: Goldstone Resources.

Personal position / role on project: Ichthyologist.

Location: Ghana (2012).

Main project features: Conduct a detailed costs analysis of an aquaculture facility for the compensation for the removal of the operation.

**Project Name: Instream Flow Requirement determination study for the Nzoro River hydropower project: Specialist Consultants to Undertake Baseline Studies (Flow, Water Quality and Geomorphology) and Instream Flow Requirement (IFR) Assessment.**

Client: Randgold Resources.

Personal position / role on project: Ichthyologist and IFR.

Location: DRC (2011).

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Main project features: Establishment of the ecological flow requirements of fishes within the Nzoro River.

**Project Name: Environmental study to establish the baseline biological and physical conditions of the Letsibogo Dam.**

Client: European Union

Personal position / role on project: Ichthyologist.

Location: Selebi-Phikwe, Botswana (2007 - 2009).

Main project features: Evaluation of the existing fish communities within the Letsibogo Man-made lake with specific consideration of the threats of alien invasive fishes in the lake. The study resulted in the publication of two peer-reviewed papers titled: Comparative behavioural assessment of an established and a new Tigerfish *Hydrocynus vittatus* population in two man-made lakes in the Limpopo (O'Brien et al., 2013) and First observation of Africa Tigerfish (*Hydrocynus vittatus*) predating on Barn Swallows (*Hirundo rustica*) in flight (O'Brien et al., in press).

**Project Name: Environmental and Social Impact Assessment of the Kazungula Bridge on the Zambezi River.**

Client: Loci on behalf of the Government of Botswana.

Personal position / role on project: Ichthyologist.

Location: Botswana, Zambia, Namibia and Zimbabwe (2009-2010).

Main project features: Evaluation of the current ecological integrity status of various living and non-living components of the Zambezi River ecosystem and the potential ecological and social consequences of the construction and use of the Kazungula Bridge. The study showed that although water quality and habitat modification impacts will occur as a result of the construction and use of the bridge the long term impacts associated with the operation of the bridge should not result in any major impacts to the local aquatic ecosystem.

## ACHIEVEMENTS

- Co-founded The Biodiversity Company in 2015 to provide scientific technical services and policy advice to various sectors.
- Successfully tasked by Digby Wells Environmental to establish and develop a company presence in the United Kingdom. This included the staffing and development of offices in London and Jersey.
- Designed and implemented numerous "specific" turnkey items for clients, these have included the design of plant nurseries, aquaculture projects, search and rescue of select flora, re-introduction of fish species into systems and tree marking and counting.
- Managed and developed the Biophysical Department at Digby Wells Environmental to consist of four specialist units, namely: Fauna & Flora, Pedology, Wetlands & Aquatics as well as Rehabilitation.
- The establishment and growth of the Rehabilitation Unit at Digby Wells Environmental which now offers specialist services for all levels of rehabilitation, from management plans, off-set strategies to implementation.

## OVERVIEW

An overview of the specialist technical expertise include the following:

- Aquatic ecological state and functional assessments of rivers and dams.
  - Instream Flow Requirement or Ecological Water Requirement studies for river systems.
  - Ecological wetland assessment studies, including the integrity (health) and functioning of the wetland systems.
  - Wetland offset strategy designs.
  - Wetland rehabilitation plans.
  - Monitoring plans for rivers and other wetland systems.
  - Toxicity and metal analysis of water, sediment and biota.
  - Bioaccumulation assessment of fish communities.
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- Fish telemetry assessment that included the translocation of fish as well as the monitoring of fish in order to determine the suitability of the hosting system.
  - Faunal surveys which includes mammals, birds, amphibians and reptiles.
  - The design, compilation and implementation of Biodiversity and Land Management Plans and strategies.

## TRAINING

Some of the more pertinent training undergone include the following:

- Wetland and Riparian Delineation Course for Consultants (Certificate of Competence) – DWAF 2008
- The threats and impacts posed on wetlands by infrastructure and development: Mitigation and rehabilitation thereof – Gauteng Wetland Forum 2010
- Ecological State Assessment of Lentic Systems using Fish Population Dynamics – University of Johannesburg/Rivers of Life 2010
- Soil Classification and Wetland Delineation – Terra Soil Science 2010
- Wetland Rehabilitation Methods and Techniques - Gauteng Wetland Forum 2011
- Application of the Fish Response Assessment Index (FRAI) and Macroinvertebrate Response Assessment Index (MIRAI) for the River Health Programme 2011
- Tools for a Wetland Assessment (Certificate of Competence) – Rhodes University 2011

## EMPLOYMENT EXPERIENCE

### **CURRENT EMPLOYMENT: The Biodiversity Company (December 2014 – Present)**

I co-founded The Biodiversity Company in 2015, consisting of experienced ecologists who provide technical expertise and policy advice to numerous sectors, such as mining, agriculture, construction and natural resources. The team at The Biodiversity Company have conducted stand-alone specialist studies, and provided overall guidance of studies with a pragmatic approach for the management of biodiversity that takes into account all the relevant stakeholders, most importantly the environment that is potentially affected. We manage risks to the environment to reduce impacts with practical, relevant and measurable methods.

### **EMPLOYMENT: Digby Wells Environmental (October 2013 – December 2014)**

Digby Wells assigned me to the role of Country Manager for the United Kingdom. This was a new endeavour for the company as the company's global footprint continues to increase. The primary responsibilities for the role included the following:

- **Clint liaison** to be able to interact more efficiently and personally with current mining clients, mining industry service providers, legal firms and banking institutions in order to introduce Digby Wells as a services provider with the aim of securing work.
- **Project management** for international projects which may require a presence in the United Kingdom, this was dependent on the location and needs of the client. These projects would mostly be based on the Equator Principles (EP) and International Finance Corporation (IFC) Performance Standards.
- **Technical input** to provide specialist technical expertise for projects, this included fauna, aquatic ecology, wetlands and rehabilitation. Continued with the design and implementation of Biodiversity and Land Management Plans to assist clients with managing the natural resources. Responsibilities also included the mentorship and management (including reviewing and guiding) other expertise such as flora, fauna and pedology.

### **EMPLOYMENT: Digby Wells Environmental (March 2012 – September 2013)**

Manager of a multi-disciplinary department of scientists providing specialist services in support of national and international requirements as well as best practice guidelines, primarily focussing on the mining sector. In addition to managing the department, I was also expected to contribute specialist services, most notably focusing on water resources. Further responsibilities also included the management of numerous projects on a national or international scale. A general overview of the required responsibilities are as follows:

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- **Project management** for single as well as multi-disciplinary studies on a national and international scale. This included legislation and commitments for the respective country being operated in, as well as included the World Bank (WB), EP and IFC requirements.
  - **Individual and/or team management** in order to provide mentoring and supportive structures for development and growth in support of the company's strategic objectives.
  - **Scientific report writing** to ensure that the relevant standards and requirements have been attained, namely local country legislation, as well as WB, EP and IFC requirements.
  - **Report reviewing** in order to ensure compliance and consideration of relevant legislation and guidelines and also quality control.
  - **Specialist management** to facilitate the collaboration and integration of specialist skills for the respective projects. This also included the development of Biodiversity and Land Management Plan for clients.
  - **Client Resource Manager** for numerous clients in order to establish as well as maintain working relationships.

An overview of the tenure working with the company is provided below:

- **October 2013 – December 2014: London Operations Manager** – Deployed to establish a presence for the company (remote office) in the United Kingdom by means of generating project work to support the employment of staff and operation of a business structure.
- **March 2012 – September 2013: Biophysical Department Manager** – Responsible for the development and growth of the department to consist of four specialist units. This included the development of a new specialist unit, namely Rehabilitation.
- **January 2011 - February 2012: Ecological Unit Manager** – In addition to implementing aquatic and wetland specialist services, the role required the overall management of additional specialist services which included fauna & flora.
- **June 2010 - December 2010: Aquatic Services Manager** – This required the marketing and implementation of specialist programmes for the client base such as biomonitoring and wetland off-set strategies. In addition to this, this also included expanding on the existing skill set to include services such as toxicity, bioaccumulation and ecological flow assessments.
- **August 2008: Aquatic ecologist** – Employed as a specialist to establish the aquatic services within the company. In addition to this, wetland specialist services were added to the existing portfolio.

**PREVIOUS EMPLOYMENT: Econ@UJ (University of Johannesburg)**

- June 2007 – July 2008: Junior aquatic ecologist
  - Researcher
  - Technical assistant for fieldwork
  - Reporting writing
  - Project management

**GENERAL SKILLS**

<b>Literacy</b>	Read, write and speak English fluently. Read, write and speak Afrikaans. Basic German.
<b>Generic</b>	Advanced user of Microsoft Office applications.
<b>Mapping</b>	Introductory skill level for ArcGIS and Quantum GIS.

**ADDITIONAL EXPERIENCE**

<b>Compliance audits</b>	Conducting site investigations in order to determine the level of compliance attained, ensuring that the client maintains an appropriate measure of compliance with environmental regulations by means of a
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	legislative approach
<b>Control officer</b>	Acting as an independent Environmental Control Officer (ECO), acting as a quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts
<b>Screening studies</b>	Project investigations in order to determine the level of complexity for the environmental and social studies required for a project. This is a form of risk assessment to guide the advancement of the project.
<b>Public consultation</b>	The provision of specialist input in order to communicate project findings as well as assist with providing feedback if and when required.
<b>Water use licenses</b>	Consultation with the relevant authorities in order to establish the project requirements, as well as provide specialist (aquatics/wetland) input for the application in order to achieve authorisation.
<b>Closure</b>	Primarily the review of closure projects, with emphasis on the closure cost calculations. Support was also provided by assisting with the measurements of structures during fieldwork.
<b>Visual</b>	The review of visual studies as well as the collation of field data to be considered for the visual interpretation for the project.

## ACADEMIC QUALIFICATIONS

**University of Johannesburg, Johannesburg, South Africa (2009):** MAGISTER SCIENTIAE (MSc) - Aquatic Health:

**Title:** *Aspects of the biology of the Bushveld Smallscale Yellowfish (Labeobarbus polylepis): Feeding biology and metal bioaccumulation in five populations.*

**Rand Afrikaans University (RAU), Johannesburg, South Africa (2004):** BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Zoology

**Rand Afrikaans University (RAU), Johannesburg, South Africa (2001 - 2004):** BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Zoology and Botany.

## PUBLICATIONS

Tate RB and Husted, A. 2015. Aquatic Biomonitoring in the upper reaches of the Boesmanspruit, Carolina, Mpumalanga, South Africa. African Journal of Aquatic Science.

Tate RB and Husted A. 2013. Bioaccumulation of metals in *Tilapia zillii* (Gervai, 1848) from an impoundment on the Badeni River, Cote D'Ivoire. African Journal of Aquatic Science.

O'Brien GC, Bulfin JB, Husted A. and Smit NJ. 2012. Comparative behavioural assessment of an established and new Tigerfish (*Hydrocynus vittatus*) population in two manmade lakes in the Limpopo catchment, Southern Africa. African Journal of Aquatic Science.

Tomschi, H, Husted, A, O'Brien, GC, Cloete, Y, Van Dyk C, Pieterse GM, Wepener V, Nel A and Reisinger U. 2009. Environmental study to establish the baseline biological and physical conditions of the Letsibogo Dam near Selebi Phikwe, Botswana. EC Multiple Framework Contract Beneficiaries.8 ACP BT 13 – Mining Sector (EDMS). Specific Contract N° 2008/166788. Beneficiary Country: Botswana. By: HPC HARRESS PICKEL CONSULT AG

Husted A. 2009. Aspects of the biology of the Bushveld Smallscale Yellowfish (*Labeobarbus polylepis*): Feeding biology and metal bioaccumulation in five populations. The University of Johannesburg (Thesis).

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# Ivan Baker

M.Sc Environmental Science and  
Hydropedology (*Pr Sci Nat pending*)

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Email: [ivan@thebiodiversitycompany.com](mailto:ivan@thebiodiversitycompany.com)

Identity Number: 9401105251087

Date of birth: 10 January 1994



## Profile Summary

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Working experience throughout Southern Africa

Working experience in West-Africa

Specialist experience with mining, construction and agriculture.

Specialist expertise include hydropedology, pedology, land contamination, agricultural potential, land rehabilitation, rehabilitation management and wetlands resources.

Experience hydropedological modelling (HYDRUS model)

## Areas of Interest

Mining, Oil & Gas, Renewable Energy & Bulk Services Infrastructure Development, Farming, Land contamination, Sustainability and Conservation.

## Key Experience

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- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Soil-and rock classification
- Level 1, 2 and 3 hydropedology assessments
- Agriculture potential assessments
- Land contamination assessments
- Modulation of surface- and subsurface flows (HYDRUS model)

## Country Experience

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South Africa	Mozambique
Swaziland	Zimbabwe
Guinea	Zambia

## Nationality

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South African

## Languages

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English – Proficient

Afrikaans – Proficient

## Qualifications

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- MSc (North-West University of Potchefstroom) – Hydropedology
- BSc Honours (North-West University of Potchefstroom) – Environmental geology- Pedology and rehabilitation
- BSc Environmental sciences
- Cand Sci Nat (Pr Sci Nat Pending)
- Certificate of Competence: Fertiliser Society of South Africa
- Certificate of Competence: Tools for Wetland Assessments



## **SELECTED PROJECT EXPERIENCE**

### **Project Name: Environmental impact assessment for the construction of Road DR08606 leading to Mlamli Hospital, Sterkspruit**

Personal position / role on project: Wetland ecologist

Location: Sterkspruit, Eastern Cape Province, South Africa

Main project features: To conduct a wetland assessment, as a component of the environmental authorisation process and Water Use Licence Application (WULA) for the construction of Road DR08606 leading to Mlamli Hospital

### **Project Name: Biodiversity Baseline & Impact Assessment Report for the proposed Nondvo Dam Project**

Personal position / role on project: Wetland ecologist

Location: Mbabane, Swaziland

Main project features: To conduct various assessments according to IFC standards in regard to delineation of wetlands and assessing ecosystem services.

### **Project Name: Agricultural Potential Assessment - Proposed Kalabasfontein Coal Mining Project Extension**

Personal position / role on project: Project Manager and Soil Specialist.

Location: Bethal, Mpumalanga, South Africa

Main project features: To conduct a soil assessment to identify any sensitive resources that might be affected by the proposed mining activities and associated infrastructure as part of an environmental impact assessment.

### **Project Name: Soil assessment for the closure of the St Helena Shaft, Harmony**

Personal position / role on project: Soil specialist

Location: Welkom, Free State, South Africa

Main project features: To conduct a thorough soil and fertility assessment to recommend relevant mitigation and rehabilitation measures to finalise closure at the relevant mine

### **Project Name: Wetland Functionality Assessment for the Environmental, Health and Socio-Economic Baseline Studies for Block 2 at Siguiri Gold Mine**

Personal position / role on project: Wetland ecologist

Location: Siguiri, Guinea, West-Africa

Main project features: To conduct various assessments according to IUCN standards in regard to delineation of wetlands and assessing ecosystem services.

### **Project Name: Level 3 Hydropedological Assessment for the Sara Buffels Mining Project**

Personal position / role on project: Hydropedologist

Location: Ermelo, Mpumalanga, South-Africa

Main project features: To conduct various assessments to determine the hillslope hydrology and to acquire information relevant to the vadose zone's hydraulic properties to quantify sub-surface flows by means of modelling.

### **Project Name: Level 3 Hydropedological Assessment for the Buffalo Coal Mining Project**

Personal position / role on project: Hydropedologist

Location: Dundee, KwaZulu-Natal, South-Africa

Main project features: To conduct various assessments to determine the hillslope hydrology and to acquire information relevant to the vadose zone's hydraulic properties to quantify sub-surface flows by means of modelling

### **Project Name: Biodiversity Baseline & Impact Assessment for the proposed Tereane 15MW Solar PV Plant**

Personal position / role on project: Ecosystem Services Specialist

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Location: Cuamba, Mozambique, Southern-Africa

Main project features: To conduct various assessments according to IUCN standards in regard to ecosystem services

**Project Name: Land contamination assessment for the proposed Fleurhof Development**

Personal position / role on project: Soil Specialist

Location: Fleurhof, South Africa

Main project features: To conduct assessments relevant to the determination of land contamination, including recommendations, mitigations and risk assessments.

**OVERVIEW**

An overview of the specialist technical expertise include the following:

- Ecological wetland assessment studies, including the integrity (health) and functioning of the wetland systems.
- Wetland offset strategy designs.
- Wetland rehabilitation plans.
- Monitoring plans for wetland systems.
- Soil classification and agricultural assessments.
- Stripping and stockpiling guidelines.
- Soil rehabilitation plans.
- Soil and stockpile monitoring plans.
- Hydropedological assessments.

**TRAINING**

Some of the more pertinent training undergone includes the following:

- Tools for a Wetland Assessment (Certificate of Competence) – Rhodes University 2018; and
- Workshop on digital soil mapping.

**EMPLOYMENT EXPERIENCE**

**Internship at SRK consulting (January 2017-August 2017)**

- **Field assistant** for SRK consulting during 2017 included the sampling of surface and groundwater as well as on site tests, the accumulation of various different data sets from field loggers, presenting and arranging the relevant data and ultimately using it for my own personal post-graduate studies.

**Internship at The Biodiversity Company (August 2017-December 2017)**

Employed as an intern (wetland and soil scientist) during the last few months of 2017. During this period, I was part of a variety of soil- and wetland projects, both as report writer and/or field assistant.

**CURRENT EMPLOYMENT: The Biodiversity Company (January 2018 – Present)**

- **Scientific report writing** to ensure that the relevant standards and requirements have been attained, namely local country legislation, as well as WB, EP and IFC requirements.

**ACADEMIC QUALIFICATIONS**

**North-West University of Potchefstroom: MAGISTER SCIENTIAE (MSc) - Hydropedology:**

**Title:** *Characterisation of vadose zone processes in a tailings facility*

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**North-West University of Potchefstroom (2016):** BACCALAUREUS SCIENTIAE HONORIBUS (Hons) – Environmental Geology- Pedology and rehabilitation

**North-West University of Potchefstroom (2015):** BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Geology and Geography

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CEDAR TOWER  
SERVICES

## CURRICULUM VITAE



**Jenna Lavin**

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E-mail address: jenna.lavin@cedartower.co.za  
ID number: 8512050014089

### **EDUCATION:**

#### **Tertiary**

- 2014 - M.Phil in Conservation of the Built Environment (University of Cape Town)  
Ongoing - expected to graduate in 2015
- 2011 Continued Professional Development Course in Urban Conservation Management (University of Cape Town) Part I and Part II
- 2010 M.Sc. with Distinction in Archaeology (University of Cape Town)  
Title: *Palaeoecology of the KBS member of the Koobi Fora Formation: Implications for Pleistocene Hominin Behaviour.*
- 2007 B.Sc. Honours in Archaeology (University of Cape Town)  
Title: *The Lost Tribes of the Peninsula: An Investigation into the historical distribution of Chacma baboons (*Papio ursinus*) at the Cape Peninsula, South Africa.*  
Koobi Fora Field School, Rutgers University (U.S.A.)/ National Museums of Kenya
- 2006 B.Sc. Archaeology (University of Cape Town)  
B.Sc. Environmental and Geographic Science (University of Cape Town)

#### **Secondary**

- 1999-2003 Rustenburg High School for Girls  
Firsts in English, Afrikaans, Mathematics HG, Biology HG, History HG, Entrepreneurship.



CEDAR TOWER  
SERVICES

## **EMPLOYMENT HISTORY:**

### **PROFESSIONAL DEVELOPMENT**

#### **Environmental and Heritage Management:**

- Head of Heritage Operations for Heritage CTS Consultants and member of OpenHeritage NPC.  
*July 2016 to present*
- Assistant Director for Policy, Research and Planning at Heritage Western Cape.  
*August 2014 to June 2016*

Responsibilities include drafting of new heritage related policy, the grading and declaration of Provincial Heritage Sites, the development of Conservation Management Plans, facilitating the development of inventories of heritage resources through local authorities as well as managing the development of the Western Cape's Heritage Information Management System (HIMS).

Acting Deputy Director from April to December 2015.

- Heritage Officer for Palaeontology and for the Mpumalanga Province at the South African Heritage Resources Agency (SAHRA).  
*January 2013 to June 2014*

Responsibilities include dealing with palaeontological permit applications in terms of Section 35 of the NHRA and development applications in terms of Section 38 of the NHRA. Projects included the development of a National Palaeotechnic Report identifying significant palaeontological deposits throughout SA, as well as developing professional relationships between SAHRA and the Palaeontological Society of South Africa (PSSA) and the Geological Society of South Africa (GSSA). During this time, I was part of the team that developed the digitised National Palaeontological Sensitivity Map (<http://www.sahra.org.za/about/news/nov2013/palaeosensitivitymap>), the first of its kind in the world.

- Heritage Officer for Archaeology, Palaeontology and Meteorites at Heritage Western Cape (HWC).  
*September 2010 to December 2012*

HWC is a Public Entity that forms part of the Heritage Resource Management Component of the Provincial Governments' Department of Cultural Affairs and Sport (DCAS). Projects included the declaration of Pinnacle Point and the West Coast Fossil Park as Provincial Heritage Sites (PHS), the management of the development of the Baboon Point PHS Conservation Management Plan as well as an educational outreach program as part of the DCAS MOD Centre Project.



CEDAR TOWER  
SERVICES

- Heritage Officer for the Archaeology, Palaeontology and Meteorites Unit of the South African Heritage Resources Agency (SAHRA) as part of a three month contract.  
*January 2010 to March 2010*
- Environmental Control Officer, Amathemba Environmental Management Consulting  
*Part time: 2007 to 2009*

### **Other**

My private experience as a traveler in South Africa, Tanzania, Kenya, Namibia, Zambia, Malawi and Mozambique has inspired a passion for the conservation of environmental and heritage resources. I am passionate about sustainable living, with my Bachelor of Science in Environmental and Geographical Science providing a framework on which to base my values.

With a friend, I established the fundraising initiative, Chicks4Change, through which we managed to organize a number of successful events and raise R40 000 for Project Rhino to assist with anti-poaching initiatives.

In 2013 I was asked to join the panel of judges for the Ministerial awards for Heritage in the Western Cape. From 2013 to July 2014, I was a member of the Heritage Western Cape Archaeology, Palaeontology and Meteorites Committee. In July 2014, I presented at the Conference for the Palaeontological Society of South Africa on the use of GIS in the management of palaeontological resources in the face of increased development pressures. In April 2015 I participated in a conference on Landscape Archaeology hosted by the Leakey Foundation in San Fransisco, presenting on the management of archaeological landscapes in South Africa. In April 2016, I presented at the ICAHM Conference in Salalah, Oman on the management of archaeological heritage in South Africa.

In November 2013, I was awarded a bursary from the Department of Arts and Culture to complete the Masters in Philosophy in Conservation of the Built Environment through the UCT Faculty of Engineering and the Built Environment in 2014 and 2015.

I am a paid up member of the Association for Southern African Professional Archaeologists (ASAPA), the Association of Professional Heritage Practitioners (APHP), the Palaeontological Society of South Africa (PSSA) and ICOMOS South Africa, for which I am Vice-President of the Board. I am also a member of the International Committee for Archaeological Heritage Management (ICAHM).

# CURRICULUM VITAE LOURENS DU PLESSIS

## PERSONAL INFORMATION AND CONTACT DETAILS

Name: Lourens Martinus du Plessis  
Date of birth: 1969-11-13  
Marital status: Married  
Nationality: South African  
Profession/specialisation: Geographer/environmental GIS specialist  
Company: MetroGIS (Pty) Ltd  
Years with firm: 11 years  
Position: Director  
Experience: 20 years  
Postal address: PO Box 384, La Montagne, 0184  
Telephone/fax: 012 349 2884/5 (w) 082 922 9019 (cell) 012 349 2880 (fax)  
E-mail: lourens@metrogis.co.za

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## KEY QUALIFICATIONS AND EXPERIENCE

### Primary function

The application of Geographic Information Systems (GIS) in environmental planning and management, impact assessments and spatial modeling.

### Experience and expertise

- Data sourcing and acquisition
- Data capture
- Data evaluation
- Data conversion and transfer
- GIS database development, implementation and maintenance
- Spatial analysis/modelling (visibility, slope, aspect, shadow, surface, raster, proximity, etc.)
- Digital terrain/elevation modeling
- Terrain evaluation
- Image processing
- Impact assessment and impact management
- Environmental management
- Decision support systems interface development
- Project management
- Map production, display, queries and reporting
- Environmental sciences expertise
- Process development
- Visual impact assessment

### Technological (software) expertise

- Arc/Info and ArcGIS
- ArcView
- PlanetGIS
- Vistapro (virtual landscape rendering software)
- Various GIS support software packages and applications
- Range of Microsoft standard applications (including Microsoft Word/Excel/Access, etc.)

## **Awards**

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

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 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: QDC Performance Award  
Awarded for: ENPAT Development  
Awarded by: Q Data Consulting  
Date: 1998

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

## **Publications/maps featured in publications**

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

Name: ESRI Map Book (Volume 13)  
Authors: Various  
Publisher: Environmental Systems Research Institute (ESRI)  
Date: 1998

Name: Pilanesberg Official Map and Park Guide  
Authors: North-West Parks & Tourism Board and Jacana  
Publisher: Jacana Media (Pty) Ltd  
Date: 2001

Name: KwaZulu-Natal - A celebration of biodiversity  
Authors: Jacana  
Publisher: Jacana Media (Pty) Ltd  
Date: 2001

Name: Garden Route - Still Bay to Storms River (Discover the Magic)  
Authors: Jacana  
Publisher: Jacana Media (Pty) Ltd  
Date: 2003

Name: Lowveld and Kruger Guide



Authors: High Branching Team  
Publisher: Jacana Media (Pty) Ltd  
Date: 2004

Name: Heights to Homes to Oceans (H<sub>2</sub>O) Water Wise information poster  
Authors: Rand Water  
Publisher: Rand Water  
Date: 2004

Name: Kruger National Park Map and Photographic Guide  
Authors: Andy Tinker Photography  
Publisher: Andy Tinker Photography  
Date: 2007

## **WORK EXPERIENCE/EMPLOYMENT DETAILS**

**GisLAB CC** (Geographic Information Systems Laboratory - University of Pretoria)  
Period: 4/1990 - 9/1997  
Position: Member / Project Manager

**GISBS** (Geographic Information Systems Business Solutions - Q Data Consulting)  
Period: 10/1997 - 10/1999  
Position: Project Manager

**MetroGIS (Pty) Ltd**  
Period: 11/1999 - to date  
Position: Director / Project Manager

## **EDUCATION/QUALIFICATIONS**

Degree: BA (University of Pretoria) Geography and Anthropology (Majors)  
Other Subjects: Archaeology, Philosophy and Political Science  
Date Received: 1993

## **PROJECTS SUMMARY**

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

### **General 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 Saldannah steel plant

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

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 geographic 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)

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)

### **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
- 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)

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

*Some recent or current projects include:*

- 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 3<sup>rd</sup> 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
- 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
- Cookhouse wind monitoring masts VIA for a Basic Assessment Report
- Hopefield wind monitoring masts VIA for a Basic Assessment Report
- Amakhala wind monitoring masts VIA for a Basic Assessment Report
- Caledon, Worcester and Tulbach wind monitoring masts VIAs for Basic Assessment

## Reports

- Overberg masts VIA for a Basic Assessment Report
- Britannia Bay wind monitoring mast VIA for a Basic Assessment Report
- Brand-se-Baai wind monitoring masts VIA for a Basic Assessment Report
- Deep River wind monitoring masts VIA for a Basic Assessment Report
- Happy Valley wind monitoring masts VIA for a Basic Assessment Report
- River Bank wind monitoring mast VIA for a Basic Assessment Report
- Uiekraal wind monitoring masts VIA for a Basic Assessment Report
- Beaufort West wind monitoring masts VIA for a Basic Assessment Report
- Laingsburg Wind monitoring masts VIA for a Basic Assessment Report
- Rheboksfontein, Suurplaat and West Coast wind monitoring masts VIAs for Basic Assessment Reports
- 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
- Proposed Indwe wind energy facility VIA
- Proposed Amakhala wind energy facility VIA
- Proposed Boontjieskraal wind energy facility VIA
- Proposed Britannia Bay wind energy facility VIA
- Proposed Brand-se-Baai wind energy facility VIA
- Proposed Upington and Pofadder solar thermal facilities VIAs
- Proposed Dorper wind energy facility VIA
- Proposed Flagging Trees wind energy facility VIA
- Proposed Rheboksfontein, Suurplaat and West Coast wind energy facilities VIAs
- Proposed Riverbank wind energy facility VIA
- Proposed Waterberg photovoltaic plant VIA
- Eskom wind intergration projects VIAs (current)
- Welgedacht water care works VIA

## PROFESSIONAL AFFILIATIONS

Application for *Geographical Information Sciences (GISc) Professional Practitioner* submitted to (and currently under review by) The South African Council for Professional and Technical Surveyors (PLATO).

## LANGUAGES

	<b>Reading</b>	<b>Writing</b>	<b>Speaking</b>
Afrikaans	Excellent	Excellent	Excellent
English	Excellent	Excellent	Excellent

## CURRICULUM VITAE OF NONDUMISO BULUNGA

### Comprehensive CV

<b>Profession :</b>	Lead - Social, GIS and Stakeholder Engagement
<b>Specialisation:</b>	Social, GIS and Stakeholder Engagement in the environmental field.
<b>Work Experience:</b>	8 years in the Environmental field.

### VOCATIONAL EXPERIENCE

Nondumiso Bulunga is a Social, GIS and Stakeholder Engagement Specialist at Savannah Environmental. Nondumiso has eight (8) years working experience in project management and facilitation in various industries such as environmental services field including but not limited to recycling, industrial, energy, mining and agriculture.

Working for small and large organisations, Nondumiso has gained exposure in research, collection of data, critical analysis, GIS, and environmental solutions. Nondumiso has worked on projects in South Africa and Malawi.

Nondumiso is very well versed in the IFC Environmental and Social Performance Standards (including IFC PS 2012) and the associated Equator Principles, which have informed the approach and standard for projects regarding ESIA. Nondumiso is skilled at organising and driving effective project teams at a scale relevant to the project's requirements. She has technical experience and can quickly identify the most pertinent issues of a particular project whilst focussing on driving project success by rigorously implementing project management tools.

Nondumiso has experience ranging over several aspects of social research, including the planning and execution of social surveys, participatory rural appraisal, sustainable livelihoods assessments, data management and statistical analysis, capturing and management of spatial data, stakeholder identification and community facilitation. She has worked in local and regional projects taking part in socioeconomic impact assessment, livelihood restoration plans and resettlement plans.

## SKILLS BASE AND CORE COMPETENCIES

- Consultation
- Stakeholder Engagement
- Facilitation
- Social Impact Assessments
- Communication
- Project Management
- Project Coordination
- Research
- Training and Development
- Geographical Information Systems, Remote Sensing
- Stakeholder Engagement Plans
- Stakeholder Analysis and Mapping
- IFC Performance Standards
- Comments and Response Reports
- Grievance Mechanism
- Awareness Campaign

## EDUCATION AND PROFESSIONAL STATUS

### Degrees:

- 2018 : MSC GEOGRAPHICAL INFORMATION SYSTEM and REMOTE SENSING
- 2015 : BAHONS in GEOGRAPHY
- 2013 : BA in GEOGRAPHY AND SOCIOLOGY

### Short Courses:

- 2015 One day information session on Modern Technologies and Pathways for the Energetic Use of Biomass
- 2015 One day Public lecture on Climate Change
- 2017 Accredited facilitation certification
- 2017 One day course on Office Management Training
- 2018 Resettlement as part of Impact Assessment

## EMPLOYMENT

Duration	Position	Company	Roles and Responsibilities
May 2021 – current ●Permanent	Lead Consultant: Social, Stakeholder Engagement and GIS	Savannah Environmental (Pty) Ltd	Build, lead and manage a Stakeholder Consultation and Engagement team. Advance the Social Impact Assessment reporting service offering. Manage an in-house GIS team and upskill to improve and develop new deliverables for the EIA and Compliance teams. New business development, including development and driving the development of new products and/or services as part of the Savannah Environmental service offering. Manage and mentor staff and critically review and edit reporting/deliverables. Provide strategic input to business and project deliverables.

Duration	Position	Company	Roles and Responsibilities
October 2020 – February 2021 ●Contract	Data Analyst	Community Insights Groups (International)	<ul style="list-style-type: none"> <li>Desk review of project documentation to inform data collection tools</li> <li>Contribute to the development of monitoring indicators</li> <li>Develop new databases of indicators and consolidate with existing databases from the client</li> <li>Develop household and focus group questionnaires</li> <li>Develop interview/ focus group guidelines</li> <li>Develop fieldwork plan</li> <li>Set up survey software</li> <li>Train local enumerators in the use of the survey software (over ZOOM)</li> <li>Provide remote support to the field team on the survey software</li> <li>Undertake phone KIs</li> <li>Develop information campaign materials and visual aids for focus groups, KIs</li> <li>Data organization and quality assurance during the field work (remote)</li> <li>Organize, clean and handover raw data to the client</li> <li>Desktop data analysis – qualitative and quantitative</li> <li>Produce and populate pivot and frequency distribution tables</li> <li>Produce narrative and graphic description of the data for the client report</li> <li>GIS Data Management and Handling</li> <li>Map creation and analysis</li> </ul>
November 2019 – March 2021 ●Contract	Policy Coordinator Consultant	International Finance Corporation (International)	<ul style="list-style-type: none"> <li>Support to the Agri-processing resource efficiency program</li> <li>Coordinate public and private stakeholders to propose specific policy</li> <li>Regulatory and procedural measures to promote improved water efficiency</li> <li>Convening a public-private dialogue process to reach consensus</li> <li>Manage partnerships with local authorities</li> <li>Due Diligence and risk assessment</li> </ul>
April 2020 – October 2020 ●Contract	Project Manager	Pax Advisory (Pty) Ltd (South African)	<ul style="list-style-type: none"> <li>Plan and implement projects</li> <li>Define project scope</li> <li>Help define goals</li> <li>Define deliverables</li> <li>Define tasks and required resources</li> <li>Create schedule</li> <li>Project timeline</li> <li>Manage budget</li> <li>Allocate project resources</li> <li>Track deliverables</li> <li>Support and direct team</li> <li>Lead quality assurance</li> <li>Monitor and report on project progress</li> <li>Present to stakeholders reports on progress as well as problems and solutions</li> <li>Implement and manage change</li> <li>Project data management</li> </ul>



Duration	Position	Company	Roles and Responsibilities
March 2017- November 2019 ●Permanent	Environmental Stakeholder Consultant	Digby Wells Environmental (Pty) Ltd (South African)	Addressing issues and needs of communities' Public participation process and communicate Liaise with stakeholders Scientific report writing for social and stakeholder engagement inclusion Assistance is provided in maintaining and updating Interested and Affected database Print / photocopy and the deliver documents to various stakeholders Distribute information (placing posters, posting, mailing, emailing, sending SMS messages, etc.) Assist with the project administration on large and small projects Data collection and inclusion into scientific reports Assist with information material and report compilation material
February 2015 – February 2017 ●Permanent	Environmental Officer	EcoPartners (Pty) Ltd (South African)	Public participation for environmental legal authorisation applications Compiling legal registers and monthly legal update letter Supply all services required for I and APs Write and edit reports Research various environmental aspects. Environmental awareness training Creation of maps for all environmental applications Collection of spatial information Build and Maintain data and information libraries Data collection and analysis Environmental legal authorisation applications
February 2014- September 2014 ●Permanent	Graduate Researcher	Linkd Environmental Services (Pty) Ltd (South African)	Research for projects given as tenders Collecting data from the different forms of information Collecting data for the purpose of controlling it and reporting on it in order to formulate status quo Create reports based on the data, give recommendations for better quality data to be collected Participate in workshop strategy sessions. Help implement policies formulated in strategy sessions and approved by steerco.
October 2014 – December 2014 ●Contract	Researcher and Report Writer	South African Cities Network (Pty) Ltd (South African)	Research Project co-ordination and management Knowledge management Reporting and administrative support GIS support and map analysis Report writing and research gaps

## PROJECT EXPERIENCE

Project Name & Location	Client Name	Role
Proposed Grid Connection Infrastructure for the Woodhouse 1 and Woodhouse 2 Solar Energy Facilities	Genesis Eco-Energy Developments (Pty) Ltd	Report Writer Reviewer, Quality Assurance & Project Support
Environmental Impact Assessment And Public Participation Process For The Proposed	Nama Solar East (Pty) Ltd and Nama Solar West (Pty)	Reviewer, Quality Assurance & Project Support

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Development Of The Nama Solar East Facility And Nama Solar West Solar Facility With Associated Infrastructure, Northern Cape	Ltd.	
Proposed Development of a New Waste Disposal Site at the Eskom Majuba Power Station near Amersfoort, Dr Pixley Ka Seme Local Municipality, Mpumalanga Province	Eskom Holdings Ltd	Report Writer, Quality Assurance & GIS Support
The Construction of the 100MW Nku Solar Photovoltaic Facility (PV1), on portion 96 of the Farm Rondavel 85 and Farm Annex Rondavel, near Richmond, Northern Cape Province	Great Karoo Renewable Energy (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Environment, Social & Governance (ESG) Assessment and Development of ESG Policy	Richards Bay Coal Terminal Proprietary Limited	Report Writer and Assessment Practitioner
Environmental Impact Assessment Process for 2X 100MW Solar PV Facilities	Atlantic Energy Partners (Pty) Ltd	Report Writer - Social Impact Assessment Quality Assurance/Reviewer
Moeding Solar PV Facility and Tiger Kloof Solar Facility with nearby settlements	Kabi (Pty) Ltd	Geographical Information Systems Specialist (GIS) & Reviewer/Quality Assurance
Solar PV Screening, Kathu Northern Cape Province	AGV Projects (Pty) Ltd	Report Writer, Researcher & Quality Assurance & GIS Support
Solar PV Screening/and or Wind Projects, Vredendal Western Cape Province	ABO Wind (Pty) Ltd	Report Writer, Researcher & Quality Assurance & GIS Support
Komsberg West Wind Energy Northern and Western Cape Provinces Revised Environmental Management Programme and Final Layout	Gunstfontein Wind Farm (Pty) Ltd,	Reviewer, Quality Assurance & Project Support
Grid Connection Infrastructure for the Namas Wind Farm	Genesis Namas Wind (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Grid Connection Infrastructure for the Zonnequa Wind Farm	Gensis Zonnequa Wind (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Proposed 10mw Northam Solar Pv Facility Near Thabazimbi, Limpopo Province	Northam Platinum Limited	Reviewer, Quality Assurance & Project Support
Amendment of the Environmental Authorisation for the Proposed Construction of The Gunstfontein Switching Station, 132kv Overhead Power Line And Ancillary Infrastructure For The Proposed Gunstfontein Wind Farm	Gunstfontein Wind Farm (Pty) Ltd	Geographical Information Systems Specialist (GIS) & Reviewer/Quality Assurance
Grid Connection Infrastructure, including 132kv Overhead Powerline, Switching Station And Ancillaries, For The Great Karoo Wind Farm, Northern Cape	Great Karoo Wind Farm (Pty) Ltd	Geographical Information Systems Specialist (GIS)
Perdekraal West Wind Energy Facility and Associated Infrastructure, Located in the Witzenburg Local Municipality Within The Western Cape Province	Perdekraal West Wind Farm (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Pienaarspoort Wind Energy Facility 1, Western Cape Province	Pienaarspoort Wind Energy Facility 1 (Pty)	Reviewer, Quality Assurance & Project Support
Environmental Impact Assessment And Public Participation Process Bergriver Wind Farm, Western Cape Province	FE Berg River (Pty) Ltd	Stakeholder Engagement and Reviewer, Quality Assurance
Construction and operation of the 100MW Rondavel PV facility, BESS and associated infrastructure near Kroonstad, Free State Province	South Africa Mainstream Renewable Power Developments (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Kolkies and Sadawa PV and EGI Suite of projects, Western Cape	South Africa Mainstream Renewable Power Developments (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Cluster Of Renewable Energy Facilities And Redz 3 Power Corridor 400 Main Transmission Substation	Wind Relic (Pty) Ltd	Reviewer, Quality Assurance & Project Support

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Between Somerset East And Makhanda, Eastern Cape Province		
Wind Garden Wind Farm And Fronteer Wind Farm Near Makhanda, Eastern Cape Province	Wind Garden (Pty) Ltd & Fronteer (Pty) Ltd	Reviewer, Quality Assurance & Project Support
Environmental Authorisation required for Prospecting Right Application on various Portions of the Farm Schaapkopje 194 HT, 5km North of Vryheid Town in the AbaQulusi Local Municipality, KwaZulu Natal	Tuutuuka Resources Proprietary Limited	Report Writer and Project Administrator, Stakeholder Engagement & GIS Support
Social Impact Assessment for the Proposed Infrastructure Amendments Environmental Authorisation and Water Use License	Seriti Power (Pty) Ltd	Report Writer- Stakeholder Engagement & GIS Support
Social Impact Assessment for the Proposed Middelburg Mining Services (MMS) Boschmanskrans Section Implementation of Wetland Mitigation and Offset Strategy	Seriti Power (Pty) Ltd	Report Writer- Stakeholder Engagement & GIS Support
Environmental Authorisation And Integrated Water Use Licence Application For The Proposed Liquid Mist Trading Beneficiation Plant Expansion Project	Liquid Mist (Pty) Ltd	Report Writer and GIS Support
Basic Assessment Process In Support Of The Proposed The Construction Of Doornpoort Pumping Main And Pumpstation, Emalahleni Local Municipality In The Mpumalanga Province	Lefatshe Infrastructure Services (Pty) Ltd	Report Writer and Project Administrator & GIS Support
Water Use Licence Renewal Application for the Inyanda Coal Wash Plant, on the Portions 2, 20 And 21 Of Farm Kalbasfontein 284 JS & Portion 4 of Farm Mooifontein 285 JS Near Witbank in the eMalahleni Local Municipality, Mpumalanga	Inyanda Mining Holdings	Report Writer and Project Administrator
Social Impact Assessment for the Proposed Ikwezi Vanadium Mining Project	Ikwezi Vanadium (Pty) Ltd	Report Writer – Social Impact & Project Administrator
Environmental Authorisation (EIA) for the proposed Giyani Renewable Energy Solar Photovoltaic Power	Giyani Renewable Energy	Report Writer- Stakeholder Engagement & GIS Support
Environmental Authorisation required for Prospecting Right Application on farm Mooihoek and various farm portions of farm Pivaanspoort	Pivaanspoort (Pty) Ltd	Report Writer
Draft Basic Assessment Report For The Proposed Upgrade Of Weltevreden Wetland Interventions	Seriti Power (Pty) Ltd	Report Writer
Social and Labour Plan for the Straffontein Colliery	Mnambithi Mining (Pty) Ltd	Report Writer – Social Impact and Social Labour Plans & GIS Support
Social and Labour Plan for the existing operational expansion Leeuwfontein Colliery Mining Right Amendment Applications	Zomhlaba Resources (Pty) Ltd	Report Writer – Social Impact and Social Labour Plans & GIS Support
Social and Labour Plan for the existing operational expansion Lakeside Colliery Mining Right Amendment Applications	Zomhlaba Resources (Pty) Ltd	Report Writer – Social Impact and Social Labour Plans & GIS Support
Social Impact Assessment for the Proposed Aangewys Coal Mine Mining Right Application	National Treasure Minerals (Pty) Ltd	Report Writer – Social Impact and Social Labour Plans & GIS Support
Environmental Impact Assessment And Water Use Licence Application In Support Of The Proposed Grootlaagte Open Cast Mining, Mpumalanga – Arnot OpCo (Pty) Ltd	Arnot OpCo	Report Writer- Stakeholder Engagement & GIS Support
Malawi Solar Projects, Livelihood restoration and social performance monitoring and planning	JCM Power	Data Analyst
750 AMPED Campaign	Health Wellness SETA	Project Manager
Integrity Due Diligence Reports	Various ( South African Poultry Industry, Centre of Industrial Scientific Research; SA Milk Producers	Policy Coordinator/ Report Writer

<b>Project Name &amp; Location</b>	<b>Client Name</b>	<b>Role</b>
Policy Component for agri-processing projects	eThekweni Municipality	Policy Coordinator/ Report Writer
Alignment of EIA's and WUL's	South 32	Social Specialist/Report Writer
Environmental Authorisation for Klipspruit Colliery	South 32	Social Specialist/Report Writer
Expansion and Development of Sun City Resorts	Sun International	Social Specialist/Report Writer
Environmental Authorisation for a Regulatory Environmental Process	Blyvoor Gold	Social Specialist/Report Writer
Mooikraal Road Diversion Project	Sasol (Pty) Ltd	Social Specialist/Report Writer
Pretorius Park Housing Development	Luengo Consulting	Social Specialist/Report Writer
Grave Relocation Project	Exxaro Resources	Social Specialist/Report Writer
Syferfontein Housing Development	LTE Consulting	Social Specialist/Report Writer
Leeuwpan Lifex Project	Exxaro Resources	Social Specialist/Report Writer
Environmental Authorisation required for Proposed Palmietkuilen Colliery near Springs	Canyon Resources (Pty) Ltd	Social Specialist/Report Writer
Environmental Authorisation required for the Agnes Gold Mine, Barberton	Galaxy Gold Reefs (Pty) Limited	Social Specialist/Report Writer
Environmental Authorisation for the Proposed Hendrina Underground Coal Mine, Mpumalanga	Glencore Operations South Africa (Pty) Ltd	Social Specialist/Report Writer
Environmental authorisation applications(Waste management, Water use license, EMP)	Various	Social Specialist/Report Writer
Environmental Authorisation Applications related to the Construction of Power Station, Associated Infrastructure, and Coal Mine near Colenso, KZN	Dunrose Investments 244 for Colenso Power (Pty) Ltd	Project Administrator/ Social Specialist
Environmental Awareness Training	Various	Facilitator
Legal register	Various	Report Compiler
Dynamics and Incidence of Child Abuse, Neglect and Exploitation(DICANE)	Department of Social Development	Facilitator
The Alexandra Environment Public Upgrade-management of the public participation process	Johannesburg Development Agency	Project Administrator
Cities Green Transport Programme	South African Cities Network	Project Researcher
Project Management of the EPWP Construction of the Mvoti Regional Landfill	Department of Environmental Affairs	Project Researcher
Development of climate change adaptation and mitigation programme	Department of Agriculture Forestry and Fisheries	Project Researcher
Capacity Building in spatial transformation	South African Cities Network	Project Researcher