

# CURRICULUM VITAE

## KAREN JODAS

### SAVANNAH ENVIRONMENTAL (PTY) LTD

Profession : Environmental Consultant  
Specialisation : Strategic environmental assessment and advice; project management and co-ordination of environmental projects; environmental compliance monitoring; Environmental Impact Assessment; environmental management; peer review; policy, strategy and guideline formulation; hydrology and water management; general ecology  
Work experience : Eleven (11) years in the environmental field

### VOCATIONAL EXPERIENCE

Provide technical input for projects in the environmental management field, specialising in strategic evaluation, Environmental Impact Assessment studies, Environmental Management Plans, integrated environmental management, environmental compliance monitoring (ECO role); peer review of EIA reports and processes, strategy and guideline development, and public participation. Key focus on overall Project Management, integration of environmental studies and environmental processes into larger engineering-based projects, strategic assessment, and the identification of environmental management solutions and mitigation/risk minimising measures.

Undertaking studies requiring all environmental-related disciplines has allowed for considerable experience to be gained in the environmental assessment and management fields. A specialist area of focus is on management and assessment of multi-faceted projects, including the establishment of linear developments (national and provincial roads and powerlines), bulk infrastructure and supply (e.g. WTWs, pipelines, landfills), electricity generation and transmission, the mining industry, urban, rural and township developments, environmental aspects of IDPs, EMFs, SoERs, as well as environmental planning, development and management.

Working knowledge of environmental legislation, strategies, guidelines and policies. Compilation of the reports for environmental studies are in accordance with the all relevant environmental legislation, including the National Environmental Management Act, EIA Regulations and the Minerals and Petroleum Resources Development Act.

### SKILLS BASE AND CORE COMPETENCIES

- Eleven years experience in the environmental management and impact assessment field
- Nine years experience in Project Management - Project management of large environmental assessment and management projects
- Strategic and compliance advise for all aspects of environmental assessment and management
- External and peer review of EIA reporting and EIA process
- Working knowledge of environmental planning processes, policies, regulatory frameworks and legislation
- Experienced in the identification and assessment of potential environmental impacts & benefits
- Experienced in the development of practical and achievable mitigation measures and management plans and evaluation of risk
- Experienced in environmental compliance monitoring and reporting for construction projects
- Compilation and review of the reports in accordance with all relevant environmental legislation
- Public participation/involvement and stakeholder consultation
- Environmental strategy, policy and guidelines development
- Experienced in assessments for both linear developments and nodal developments
- Wide range of experience for public and private sector projects - completed more than 70 environmental projects for a wide variety of Clients
- Completed projects in all nine Provinces of South Africa, as well as Zambia and Lesotho

## EDUCATION AND PROFESSIONAL STATUS

### Degrees:

- B.Sc Earth Sciences, majoring in Geography and Zoology, *Rhodes University, Grahamstown*, 1993
- B.Sc Honours in Geography (in Environmental Water Management), *Rhodes University, Grahamstown*, 1994. Major subjects included Water Resources Management, Streams Ecology, Fluvial Geomorphology and Geographic Information Systems.
- M.Sc in Geography (Geomorphology), *Rhodes University, Grahamstown*, 1996

### Short Courses:

Water Quality Management, *Potchefstroom University*, 1998  
Environmental Law Course, *Aldo Leopold Institute*, 2002

### Professional Society Affiliations:

Registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist: *Environmental Scientist (400106/99)*

### Other Relevant Skills:

Xtrack Extreme – Advanced Off-Road Driving Course (2003)

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## EMPLOYMENT

*Current:* Director of *Savannah Environmental (Pty) Ltd.* Independent specialist environmental consultant and advisor

*Jan 1997 – September 2005:* Associate of *Bohlweki Environmental (Pty) Ltd.* Environmental Management Unit: Manager; Principle Environmental Scientist focussing on Environmental Management and Project Management.

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## PROJECT EXPERIENCE

Experience includes projects associated with property development, electricity generation and transmission, wastewater treatment facilities, mining and prospecting activities, and national roads, as well as strategy and guidelines development. Current and recently concluded projects include:

### **Strategic Advice**

- Review the effectiveness and efficiency of the environmental impact management (EIA) system in South Africa, and formulate an environmental impact management strategy and action plan for National DEAT
- Drafting a Position Paper: Project Financing and Environmental Risk Management (considering IFC Performance Standards & Equator Principles) for Standard Bank Group Limited
- Advice regarding environmental compliance of existing and future development at Tiffindell Ski, Eastern Cape Province (for Tiffindell Ski (Pty) Ltd)
- Advice regarding environmental compliance for operations at Salberg Concrete Products factory, Gauteng (for Salberg Concrete Products)

### **Peer/external EIA review**

- Review of 13 EIAs submitted in terms of the ECA for the Northern Cape Department of Tourism, Environment and Conservation (for DEAT) – acting as an agent for Northern Cape DTEC
- Peer Review of EIA process and reporting for the Malelane Substation and Komatipoort-Marathon 275kV Transmission Line turn-in (for SiVEST / Eskom Transmission)

### **Environmental Management Tools**

- Compilation of a comprehensive site-specific Environmental Management Plan (EMP) for the construction and operation of the Eskom Braamhoek Integration Project, Free State and KwaZulu-Natal Provinces (for Eskom Transmission)
- Development of an Environmental Impact Management System for Water Services-related projects for Limpopo Province (for DWAF Limpopo Province)
- Environmental Risk Analysis for Salbro-owned properties, Gauteng (for Salbro Property Holdings)
- Compilation of Provincial Guidelines for off-road routes in the Western Cape (for WC DEA&DP)
- Project integration and compilation of a Strategy for Sustainable Development for Gauteng

Province (for GDACE)

### ***Site Development and Construction Projects***

- Environmental Impact Assessment and Environmental Management Plan for the proposed Groot Letaba River Water Resource Development Project (EIA drafting team for Iliso Consulting)
- Basic Assessment for the proposed Stormwater Outfall from Zones 1 and 2 of the Coega IDZ, Eastern Cape Province (for Coega Development Corporation)
- Environmental risk analysis and compliance advice for Leopard's View guest lodge, Mpumalanga

### ***Compliance Monitoring***

- ECO compliance monitoring for the construction of the De Hoop Dam (ORWRDP) as well as the diversion of the R555, Limpopo Province (5-year contract for DWAF)
- Environmental Management Plan and ECO for existing and future development at Tiffindell Ski, Eastern Cape Province (for Tiffindell Ski (Pty) Ltd)
- Environmental Management Plan and ECO for construction for the upgrade of Prince Alfred Park Stadium, Nelson Mandela Bay, Eastern Cape (for Nelson Mandela Metropolitan Municipality)

### ***Energy Sector Projects***

#### *Renewable power generation projects*

- Environmental Impact Assessment and Environmental Management Plan for the proposed Wind Energy Facility in the Western Cape (for Eskom Generation)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Wind Energy Facility at Hopefield, Western Cape (for Umoya Energy)

#### *Power generation projects*

- Environmental Impact Assessment and Environmental Management Plan for the proposed Ankerlig OCGT to CCGT Conversion project, and the associated 400 kV transmission power line between Ankerlig and the Omega Substation, Western Cape (for Eskom Generation)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Gourikwa OCGT to CCGT Conversion project, and the associated 400 kV transmission power line between Gourikwa and the Proteus Substation, Mossel Bay (for Eskom Generation)
- Basic Assessment for a new raw water reservoir and pipeline for the Medupi Power Station, Limpopo Province (for Eskom Generation)

#### *Transmission line projects*

- Environmental Impact Assessment and Environmental Management Plan for the proposed Steelpoort Integration Project, Limpopo Province (for Eskom Transmission)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Kyalami/Midrand Substation and 3 Transmission lines, Gauteng (for Eskom Transmission)

### ***Mining Sector Projects***

- Environmental Impact Assessment and Environmental Management Programme in terms of the MPRDA for the proposed Elitheni Coal Mine near Indwe, Eastern Cape Province (for Elitheni Coal)

Projects listed below include those projects undertaken at when employed at *Bohlweki Environmental*.

### ***Electricity Sector projects***

#### **Power Generation Projects**

- Project Manager for the environmental impact assessment for the site selection for a new coal-fired power station (Matimba B) in the Limpopo Province
- Project Manager for the Public Participation Process for the proposed Return-to-Service of the Komati Power Station, Mpumalanga Province
- Project Manager for the Public Participation Process for the proposed Return-to-Service of the Grootvlei Power Station, Mpumalanga Province
- Project Manager for the Detailed Environmental Scoping Study for the proposed Capacity Increase Project at Arnot Power Station, Mpumalanga Province
- Project Manager for the Public Participation Process for the proposed Return-to-Service of the Camden Power Station, Mpumalanga Province
- Project Manager for the Environmental Pre-Scoping Study for the proposed Solar Thermal Power Plant, in the Northern Cape Province

#### **Electricity Transmission Projects**

- Project Director for the EIA for the proposed 765kV Transmission Powerline between Hydra Substation (near De Aar) and the proposed Gamma Substation (near Victoria West), Northern

Cape Province

- Project Manager for the Environmental Impact Assessment for the 3<sup>rd</sup> 400 kV Transmission line between the Poseidon and Grassridge Substations in the Eastern Cape Province
- Project Manager for the Environmental Impact Assessment for the proposed new 400 kV Transmission line between Matimba and Witkop Substations, Limpopo Province
- Project Manager for the Environmental Impact Assessment for the proposed new Ikaros Substation and associated 400 kV Transmission line infrastructure, North West Province
- Project Manager for the Detailed Environmental Scoping Study for the Redhill Strengthening Project: proposed new Redhill Substation and associated new 132 kV Distribution line
- Project Manager for the Detailed Environmental Scoping Study for the Breyten Strengthening Project: proposed new Breyten Substation and associated 88 kV Distribution line
- Project Manager for the Environmental Impact Assessment for nine new 132 kV powerlines between the Grassridge Substation and the Coega Industrial Development Zone, Eastern Cape
- Project Manager for the Environmental Impact Assessment and Environmental Management Plan for the proposed Eiland Rural Substation, and the associated 132 kV distribution line, North West Province
- Project Manager for the detailed Environmental Scoping Study and EMP for the proposed Everest Substation, and the 132 kV powerline between Simplon and Everest Substations, Mpumalanga
- Environmental scoping study and environmental management plan for the proposed establishment of Eskom infrastructure for the C-Cut Project at Premier Mine, Cullinan
- Project Manager for the Environmental Impact Assessment for the proposed Eskom 2<sup>nd</sup> 400 kV Transmission line between Grassridge and Poseidon Substations, Eastern Cape

### ***Specialist projects***

- Development of an Integrated Environmental Policy for the City of Tshwane Metropolitan Municipality (CTMM)
- Ad hoc advice to ERWAT regarding the implementation of Module 4 at the Waterval Wastewater Treatment Works, Gauteng Province.
- Review of the State of the Environment Report for the North West Province
- Development of a Flood Warning System and Flood Notification Procedures for No 7 Dam at Premier Mine, Cullinan for De Beers.
- Detailed specialist environmental impact assessment of water supply and liquid waste disposal infrastructure options associated with a proposed hotel development site at the Victoria Falls, Zambia for Sun International
- Contributing to the drafting of the draft White Paper on Integrated Pollution Control and Waste Management for the Department of Environment Affairs and Tourism (DEAT) and the Department of Water Affairs and Forestry (DWAF), as well as being Project Committee Secretary for the project
- Acting as Project Committee Secretary for the inception phase of the formulation of the National Waste Management Strategy funded by DANCED
- Preparation of a summary document for a Ministerial Briefing for the rehabilitation of the Pomfret Military Base areas polluted by Asbestos
- Monitoring landfill gas at Pretoria-North landfill for final rehabilitation of the site

### ***Environmental Management Plans***

- Environmental Management Plan for the proposed N2 Wild Coast Toll Road between East London (Eastern Cape) and Durban (KwaZulu-Natal)
- Environmental Management Plan for repairs of portions of the N3 and N1, Gauteng
- Environmental Management Plan for the Proposed C-Cut Development at Premier Mine, Cullinan
- Environmental Management Plans for various Eskom Distribution powerlines within South Africa

### ***Property development projects***

- Environmental Scoping Study for upgrading and extensions at Tiffindell Ski Resort, Eastern Cape
- Exemption application for the establishment of a township development at Eden Park, for Alberton Town Council
- Detailed Environmental Scoping Study for the Thaba ya Batswana Development on portions of the Farm Rietvlei 101 IR, Gauteng

### ***EIAs for Technology projects***

- Project Manager for the Environmental Impact Assessment for the proposed Alternative Fuels and Resources Project at the Holcim South Africa Plant in Dudfield, North West Province
- Project Manager for the Environmental Impact Assessment for the establishment of a Waste Blending Platform within the Gauteng Province to produce alternative fuels for use by cement

kilns (a Holcim South Africa and EnviroServ Joint Venture)

- Project Manager for the Environmental Impact Assessment for the proposed Alternative Fuels and Resources Project at the Holcim South Africa Ulco Plant near Kimberley in the Northern Cape Province

#### ***Water Resources projects***

- Project Manager for the Environmental Impact Assessment for the establishment of three new DWAF gauging weirs at 1 site on the Vaal River and 2 sites on the Orange River, Northern Cape Province
- Environmental exemption application for the construction of an emergency water supply pipeline from Mamelodi to Ekandustria via Cullinan, Gauteng Province for Rand Water
- Environmental Scoping Report for the construction of a water reclamation plant at Southern Wastewater Treatment Works, Durban for OTV France
- Environmental impact assessment of new regional water care infrastructure in the DD5A sub-drainage district in Eastern Gauteng (adjacent to the Blesbokspruit Ramsar Site) for the East Rand Water Care Company (ERWAT)
- Environmental impact assessment of the old Klipspruit and Goudkoppies Wastewater Treatment Works and the Goudkoppies Landfill Site for the Greater Johannesburg Metropolitan Council
- Environmental evaluation of six preferred wastewater disposal options for Durban Metropolitan Council Wastewater Management Department, as well as contributing to the integrated assessment of these preferred options
- Department of Water Affairs & Forestry Water License Applications for operations at the Holcim South Africa Dudfield Plant, North West Province
- Preparation of a Water Quality Management Report (WQMR) and an Environmental Scoping Assessment for the proposed extension to Dassenhoek Wastewater Treatment Works, Durban
- Assisting in the final preparation of the Water Management Plan for the Free State Goldfields and Lower Vet River Catchment for DWAF

#### ***Mining sector projects***

- Mining license application and EMPR for the Majuba Power Station underground coal gasification site, Mpumalanga Province for Eskom TSI
- Project Manager for a Social Impact Assessment for Kimberley Mines, for De Beers
- Environmental Management Programme Report (EMPR) for the proposed formalisation of small-scale clay mining for a brick-making enterprise pilot project in QwaQwa, Free State Province for Mintek
- Environmental Management Programme Reports (EMPR) for the proposed formalisation of seven small-scale sandstone mining sites in QwaQwa, Free State Province for Mintek
- Environmental Management Programme Report (EMPR) for prospecting activities within the Premier Mine Game Farm, Cullinan for De Beers Consolidated Mines Limited
- Project Manager for the environmental studies for the C-Cut Development at Premier Mine, Cullinan for De Beers Consolidated Mines Limited: Environmental Scoping Report (ESS); Environmental Impact Assessment (EIA); Environmental Management Plan (EMP); and Environmental Management Programme Report (EMPR)

#### ***Transportation projects***

- Project Manager for the Environmental Impact Assessment and Environmental Management Plan for the proposed N2 Wild Coast Toll Road between East London (Eastern Cape) and Durban (KwaZulu-Natal) (approximately 550km)
- Environmental Impact Assessment for the proposed Platinum Highway from Warmbaths via Pretoria to Skilpadhek (on the South Africa-Botswana border), including the application for all relevant permits, for the Bakwena Consortium
- Environmental Management Plan for repairs of portions of the N3 and N1, Gauteng
- Environmental Opportunities and Constraints Assessment for the Wonderboom Airport
- Considerations of environmental aspects for the Denneboom Local Integrated Transport Plan

## **CURRICULUM VITAE**

### **JO-ANNE THOMAS**

Profession : Environmental Consultant  
Specialisation : Environmental Management; Strategic environmental advice;  
Environmental compliance advice & monitoring; Environmental Impact Assessments; Policy, strategy & guideline formulation; Project Management; General Ecology  
Years experience : Eleven (11) years in the environmental field

#### **KEY RESPONSIBILITIES**

Provide technical input for projects in the environmental management field, specialising in Strategic environmental advice, Environmental Impact Assessment studies, public participation, Environmental Management Plans, environmental policy, strategy and guideline formulation, and integrated environmental management. Key focus on integration of the environmental studies and environmental processes into larger engineering-based projects, strategic assessment, and providing environmental management solutions and mitigation measures. Responsibilities for environmental studies include project management; review and manipulation of data; identification and assessment of potential negative environmental impacts and benefits; and the identification of mitigation measures. Compilation of the reports for environmental studies is in accordance with all relevant environmental legislation.

Undertaking of numerous environmental management studies has resulted in a good working knowledge of the Environmental Impact Assessment (EIA) process for various projects. Recent projects have assessed impacts associated with both public- and private-sector projects, and various types of linear developments (such as National Road, local roads and power lines), waste management projects (landfills), electricity generation and transmission, the mining industry, policy, strategy and guideline development, as well as general environmental planning, development and management.

#### **SKILLS BASE AND CORE COMPETENCIES**

- Project management for a range of projects
- Identification and assessment of potential negative environmental impacts and benefits through the review and manipulation of data
- Identification of practical and achievable mitigation and management measures and the development of appropriate management plans
- Compilation of environmental reports in accordance with relevant environmental legislative requirements
- External and peer review of environmental reports & compliance monitoring
- Formulation of environmental policies, strategies and guidelines
- Public participation processes for a variety of projects
- Strategic environmental advice to a wide variety of clients both in the public and private sectors
- Working knowledge of environmental planning processes, policies, regulatory frameworks and legislation

## EDUCATION AND PROFESSIONAL STATUS

### **Degrees:**

B.Sc Earth Sciences, *University of the Witwatersrand, Johannesburg*, 1993

B.Sc Honours in Botany, *University of the Witwatersrand, Johannesburg*, 1994

M.Sc in Botany, *University of the Witwatersrand, Johannesburg*, 1996

### **Courses:**

Environmental Impact Assessment, *Potchefstroom University*, 1998

Environmental Law, *Morgan University*, 2001

### **Professional Society Affiliations:**

Professional Natural Scientist (Registration No 400024/00).

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## EMPLOYMENT

*Current:* Director of Savannah Environmental (Pty) Ltd. Independent specialist environmental consultant

*October 1997-November 2005:* Bohlweki Environmental (Pty) Ltd: Senior Environmental Scientist; Environmental Management and Project Management

*January to July 1997:* Junior Science Teacher, Sutherland High School, Pretoria

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## PROJECT EXPERIENCE

Current projects include:

### **Compliance Monitoring**

- ECO compliance monitoring for the construction of the De Hoop Dam and the diversion of the R555, Limpopo Province
- ECO compliance monitoring for the Mine Water Recovery Project at Duvha Power Station, Mpumalanga Province
- Compilation of an Environmental Management Plan and ECO compliance monitoring for existing and future development at Tiffindell Ski, Eastern Cape Province
- ECO compliance monitoring for construction of the Nelson Mandela Bay 2010 Soccer Stadium

### **Electricity Sector Projects**

- Project manager for the EIA and EMP for the proposed Mokopane Integration Project, Limpopo Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed Kyalami Strengthening Project, Gauteng Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed Steelpoort Integration Project, Limpopo Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed conversion of the existing Open Cycle Gas Turbine (OCGT) Ankerlig Power Station (located in Atlantis Industria) to a Combined Cycle Gas Turbine (CCGT) power station, and the associated 400 kV transmission power line between Ankerlig Power Station and the Omega Substation (for Eskom Generation)

- Project manager for the proposed transmission lines from the Koeberg2 Nuclear Power Station site, Western Cape Province (for Eskom Transmission)
- EIA and EMP for the proposed conversion of the existing Open Cycle Gas Turbine (OCGT) Gourikwa Power Station (located near Mossel Bay) to a Combined Cycle Gas Turbine (CCGT) power station, and the associated 400 kV transmission power line between Gourikwa Power Station and the Proteus Substation (for Eskom Generation)
- EIA and EMP for the proposed wind energy facility and associated infrastructure at a site within the Western Cape (for Eskom Generation)
- EIA and EMP for the proposed wind energy facility and associated infrastructure at a site near Hopefield, Western Cape Province (for Umoya Energy)
- Basic Assessment for proposed wind monitoring masts on a site near Beaufort West, Western Cape Province (for Umoya Energy)
- Basic Assessment for proposed wind monitoring masts on a site near Laingsburg, Western Cape Province (for Umoya Energy)

### ***Environmental Management Tools***

- Review the effectiveness and efficiency of the environmental impact management (EIA) system in South Africa on behalf of the Department of Environmental Affairs and Tourism
- Development of a comprehensive site-specific EMP for the construction and operation of the Eskom Braamhoek Integration Project, Free State and KwaZulu-Natal Provinces
- Compilation of Provincial Guidelines for off-road routes within the Western Cape Province
- Water use permit applications for water use at Tiffindell Ski Resort, Eastern Cape Province
- Water use permit applications for various properties within the Olifants West Game Reserve, Limpopo Province
- Environmental Risk Analysis for Salbro Property Holdings, Gauteng Province
- Project integration and compilation of a Strategy for Sustainable Development for Gauteng Province
- Advice regarding environmental compliance of existing and future development at Tiffindell Ski, Eastern Cape Province
- Advice regarding environmental compliance at Salberg factory, Gauteng Province

### ***Peer Review***

- Review of EIAs submitted in terms of the ECA for the Northern Cape Department of Tourism, Environment and Conservation, including:
  - \* EIA for a new wastewater treatment works in Warrenton
  - \* EIA for chicken layer houses in Kimberley
  - \* EIAs for the upgrading of petrol stations in Kimberley
  - \* EIA for a new up-market residential development in Kathu
  - \* EIA for residential development in Kimberley
- Review of EIA and EMP for the proposed Waterfall Wedge development, Gauteng Province

### ***Mining Sector Projects***

- Environmental Impact Assessment and Environmental Management Programme in terms of the MPRDA for the proposed Elitheni Coal Mine near Indwe, Eastern Cape Province
- Environmental Management Programmes for three borrow pits associated with the proposed Groot Letaba River Development Project, Limpopo Province

### ***Water resources projects***

- Project manager for the EIA and EMP for the proposed modification of the existing Hartebeestfontein Water Care Works, Gauteng Province (for ERWAT)
- Project manager for the EIA and EMP for the proposed expansion of the existing Welgedacht Water Care Works, Gauteng Province (for ERWAT)

Projects undertaken on behalf of Bohlweki Environmental include:

### ***Specialist projects***

- Development of an Environmental Policy for the Ekurhuleni Metropolitan Municipality
- Development of an Integrated Environmental Policy for the City of Tshwane Metropolitan Municipality Environmental Opportunities and Constraints Assessment for the Wonderboom Airport
- Review of the State of the Environment Report for the North West Province

### ***Transport sector projects***

- Environmental Impact Assessment and Environmental Management Plan for the proposed N2 Wild Coast Toll Road between East London (Eastern Cape) and Durban (KwaZulu-Natal)
- Environmental input to the Denneboom Local Integrated Transport Plan
- Environmental input to the Ekurhuleni transportation corridors study
- Environmental Impact Assessment for the proposed Platinum Highway from Warmbaths via Pretoria to Skilpadhek (on the South Africa-Botswana border), including obtaining all environmental permits required.
- Environmental Scoping Study and public participation process for the upgrading of Provincial Main Road 100 between the intersection with Main Road 521 and Ndwedwe
- Environmental Management Plan for repairs of portions of the N3 and N1, Gauteng
- Environmental Scoping Study and public participation process for the Kingsway Relief Road in Maseru, Lesotho

### ***Electricity Sector projects***

- Project manager for the undertaking of an EIA and compilation of an EMP for the proposed Open Cycle Gas Turbine (OCGT) Power Station and associated 400 kV Transmission lines and substation at Atlantis, Western Cape Province
- Environmental Scoping Study for a new coal-fired power station in the Lephalale area, Limpopo Province
- Project manager for the undertaking of Environmental Scoping Study and compilation of an Environmental Management Plan for various 132 kV Sub-Transmission lines and substations within the Mpumalanga Province
- Project manager for the undertaking of an EIA for the proposed 765 kV Transmission line between the existing Hydra Substation (near De Aar) and the proposed Gamma Substation (near Victoria West), Northern Cape Province
- Project manager for the undertaking of an Environmental Scoping Study and EMP for the proposed 132 kV sub-Transmission line between the GaRankuwa and Dinaledi substations, North West Province
- Detailed Environmental Scoping Study and public participation for the proposed Capacity Increase Project at Arnot Power Station, Mpumalanga Province

- EIA & public participation for the proposed new Ikaros Substation and associated 400 kV Transmission line infrastructure, North West Province
- Environmental Scoping Study public participation for the Establishment of Eskom Infrastructure for Power Supply to the C-Cut Development at Premier Mine, Cullinan, Gauteng Province
- EIA & public participation for the proposed 3<sup>rd</sup> 400 kV Transmission line between the Poseidon and Grassridge Substations in the Eastern Cape Province
- EIA & public participation for the proposed new 400 kV Transmission line between Matimba Substation (near Lephalale) and Witkop Substation (near Polokwane), Limpopo Province
- Detailed Environmental Scoping Study and public participation for the Breyten Strengthening Project: proposed new Breyten Substation and associated 88 kV Distribution line, Mpumalanga Province
- Public Participation Process for the proposed Return-to-Service of the Camden Power Station, Mpumalanga Province
- Environmental Impact Study and public participation for the proposed 2<sup>nd</sup> 400 kV Transmission line between the Grassridge Substation and the Poseidon Substation in the Eastern Cape.
- Environmental Pre-Scoping Study for the proposed Concentrating Solar Plant, in the Northern Cape Province
- Environmental Impact Assessment public participation for the proposed new nine 132 kV power lines between the Grassridge Substation and the Coega Industrial Development Zone, Eastern Cape Province

#### ***Pipelines***

- Environmental Impact Assessment for the proposed Petronet New Multi-Products Pipeline (NMPP) between Durban and Gauteng Province
- Exemption application for the construction of a gas pipeline between Majuba Mine and Majuba Power Station, Mpumalanga Province.
- Exemption application for the construction of an emergency water supply pipeline from Mamelodi to Ekandustria via Cullinan, Gauteng Province.
- Environmental Scoping Study for the installation of a new water supply pipeline from Centurion to Diepsloot, Gauteng Province.

#### ***EIAs for Technology projects***

- Environmental Impact Assessment for the proposed Alternative Fuels and Resources Project at Alpha's ULCO Plant near Kimberley in the Northern Cape Province
- Environmental Impact Assessment for the proposed Alternative Fuels and Resources Project at Dudfield Plant, North West Province
- Environmental Impact Assessment for the proposed Blending Platform to be established within the Gauteng Province
- Investigation of possible alternative Scrap tyre collection and disposal strategies in Gauteng, South Africa

#### ***Mining sector projects***

- Environmental Management Programme Report (EMPR) for the proposed small-scale kaolin clay mine near Ndwedwe, KwaZulu-Natal Province
- Environmental Management Programme Report (EMPR) for prospecting activities within the Premier Mine Game Farm, Cullinan for De Beers Consolidated Mines Limited
- Environmental Management Plan for the Proposed C-Cut Development at Premier Mine, Cullinan

- Environmental Management Programme Report for the Proposed C-Cut Development at Premier Mine, Cullinan
- Environmental Impact Assessment and public participation process for the Proposed C-Cut Development at Premier Mine, Cullinan

***Development projects***

- A detailed Environmental Scoping Study and public participation process for the Thaba ya Batswana Development on portions of the Farm Rietvlei 101 IR, Gauteng
- Environmental Scoping Report and public participation process for the development of a Community Safety Centre in Khutsong-South, Carletonville

***Water resources projects***

- A detailed Environmental Impact Assessment of new regional water care infrastructure in the DD5A sub-drainage district in Eastern Gauteng (adjacent to the Blesbokspruit Ramsar Site) for the East Rand Water Care Company (ERWAT)

## **CURRICULUM VITAE**

### **ZAMA DLAMINI**

Profession : Environmental Consultant  
Specialisation : Environmental Management; Strategic environmental advice;  
Environmental compliance advice & monitoring; Environmental Impact Assessments; Policy, strategy & guideline formulation; Project Management; General Ecology  
Years experience : Seven (7) years in the environmental field

#### **KEY RESPONSIBILITIES**

Provide technical input for projects in the environmental management field, specialising in Strategic environmental advice, Environmental Impact Assessment studies, public participation, Environmental Management Plans, environmental policy, strategy and guideline formulation, and integrated environmental management. Key focus on integration of the environmental studies and environmental processes into larger engineering-based projects, strategic assessment, and providing environmental management solutions and mitigation measures. Responsibilities for environmental studies include project management; review and manipulation of data; identification and assessment of potential negative environmental impacts and benefits; and the identification of mitigation measures. Compilation of the reports for environmental studies is in accordance with all relevant environmental legislation.

Undertaking of numerous environmental management studies has resulted in a good working knowledge of the Environmental Impact Assessment (EIA) process for various projects. Recent projects have assessed impacts associated with both public- and private-sector projects, and various types of linear developments (such as National Road, local roads and power lines), waste management projects (landfills), transmission, the mining industry, policy, strategy and guideline development, as well as general environmental planning, development and management.

#### **SKILLS BASE AND CORE COMPETENCIES**

- Project management for a range of projects
- Identification and assessment of potential negative environmental impacts and benefits through the review and manipulation of data
- Identification of practical and achievable mitigation and management measures and the development of appropriate management plans
- Compilation of environmental reports in accordance with relevant environmental legislative requirements
- Analysis and compilation of surface and groundwater quality
- Formulation of environmental policies, strategies and guidelines
- Public participation processes for a variety of projects
- Strategic environmental advice to a wide variety of clients both in the public and private sectors
- Working knowledge of environmental planning processes, policies, regulatory frameworks and legislation

## EDUCATION AND PROFESSIONAL STATUS

### **Degrees:**

B.A Soc Sc Geography, *University of Durban Westville, Durban, 1998*

B.A Soc Sc Honours in Geography, *University of Durban Westville, Durban, 1999*

M.Sc Environmental Management, *University of Natal, Durban, 2004*

### **Courses:**

Mine Water and Groundwater Management, Free State *University, 2008*

Environmental Law, Potchefstroom *University, 2008*

### **Professional Society Affiliations:**

International Association of Impact Assessment, SA.

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## EMPLOYMENT

*Current:* Savannah Environmental (Pty) Ltd. Senior Environmental Consultant

*May 2007-December 2008:* Knight Piesold (Pty) Ltd: Environmental Scientist, Environmental Management, Rivonia, Gauteng

*April 2003 to March 2007:* Environmental Planner, eThekweni Municipality, Durban

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## PROJECT EXPERIENCE

Current projects include:

### **Compliance Monitoring**

- ECO compliance monitoring for the construction of the De Hoop Dam and the diversion of the R555, Limpopo Province
- ECO compliance monitoring for the N1 Upgrade

### **Electricity Sector Projects**

- Environmental Consultant for the EIA and EMP for the proposed Mokopane Integration Project, Limpopo Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed Tshwane Strengthening Project, Gauteng Province (for Eskom Transmission)
- Environmental Consultant for the EIA and EMP for the proposed conversion of the existing Open Cycle Gas Turbine (OCGT) Gourikwa Power Station (located in Mossel Bay) to a Combined Cycle Gas Turbine (CCGT) power station, and the associated 400 kV transmission power line between Gourikwa Power Station and the Proteus Substation (for Eskom Generation)
- Project manager for the undertaking of Basic Assessment and compilation of an EMP for the proposed 88 kV power line between Groovlei Power Station and the new Burnstone Mine, Mpumalanga Province
- EIA & public participation for the proposed new 400 kV Transmission line between Matimba Substation (near Lephalale) and Witkop Substation (near Polokwane), Limpopo Province
- Detailed Environmental Scoping Study and public participation for the Breyten Strengthening Project: proposed new Breyten Substation and associated 88 kV Distribution line, Mpumalanga

Province

- Project Manager for the proposed Ulindi hydropower scheme for the Twangiza Gold Mine in the East of DRC

- EIA and EMP for the proposed wind energy facility and associated infrastructure at a site within the Western Cape (for Eskom Generation)
- Basic Assessment for proposed wind monitoring masts on a site near Mossel Bay, Western Cape Province (for SARGE)

***Mining Sector Projects***

- Environmental Impact Assessment and Environmental Management Programme in terms of the MPRDA for the proposed Burnstone Gold Mine near Balfour, Mpumalanga Province
- Environmental Management Programmes for three borrow pits associated with the proposed DWAF 7 Dams Rehabilitation, Eastern Cape Province
- Baseline surface and groundwater monitoring for the proposed Leeuwkop Platinum Mine in North West Province
- Baseline surface and ground water monitoring for the proposed Sedibelo Platinum Mine, North West
- Baseline surface and groundwater monitoring for the new Burnstone Gold Mine, Balfour, Mpumalanga Province

***Water resources projects***

- Environmental Consultant for the EIA and EMP for the proposed modification of the existing Hartebeestfontein Water Care Works, Gauteng Province (for ERWAT)
- Environmental Consultant for the EIA and EMP for the proposed expansion of the existing Welgedacht Water Care Works, Gauteng Province (for ERWAT)

***Transport sector projects***

- Environmental Impact Assessment and Environmental Management Plan for the proposed N2 Wild Coast Toll Road between East London (Eastern Cape) and Durban (KwaZulu-Natal)
- Environmental Scoping Study and public participation process for the upgrading of Provincial Main Road 100 between the intersection with Main Road 521 and Ndwedwe
- Basic Assessment and Environmental Management Plan for the widening of Brakfontein N4 and Louis Botha Avenue, Gauteng

**CURRICULUM VITAE  
NICO-RONALDO RETIEF**

Profession : Environmental Consultant  
Specialisation : Zoology  
Environmental Compliance Monitoring  
Environmental Impact Assessment  
Environmental Management  
Guideline development & Preparation  
Years experience : **Two years in the Environmental Field**

**KEY RESPONSIBILITIES**

- Project Reporting
- Public Participation

**SKILLS BASE AND CORE COMPETENCIES**

- Published scientific research in international journals "Physics and Chemistry of the Earth" and "Water SA";
- Attended international conferences during M.Sc study in Swaziland, Bloemfontein and Namibia, and abstracts were published in international journals "Suid Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie" and "Journal of the South African Veterinary Association"
- Identification and the assessment of potential environmental impacts and benefits;
- The development of Environmental Management Plans (EMPs) for various projects;
- Environmental Compliance monitoring and reporting for construction and development projects;
- Compilation and review of reports in accordance with all relevant environmental legislation;
- Involved in carrying out Public Participation for a variety of projects, as well as stakeholder consultation and Focus Group Consultation;
- Worked in Johannesburg on various projects, as well as in Rustenburg, Ledig, Sun City and the KwaZulu-Natal Midlands.

**EDUCATION AND PROFESSIONAL STATUS**

**Degrees:**

- B.Sc Natural Environmental Sciences – Rand Afrikaans University (2001-2003);
- B.Sc Honours in Zoology – Rand Afrikaans University (2004);
- M.Sc in Zoology - University of Johannesburg (2005-2007)

**Scientific Publications:**

- Retief, N.-R., Avenant-Oldewage, A., du Preez, H.H. 2006. The use of cestode parasites from the largemouth yellowfish, *Labeobarbus kimberleyensis* (Gilchrist and Thompson, 1913) in the Vaal Dam, South Africa as indicators of heavy metal bioaccumulation. *Physics and Chemistry of the Earth* 31, 840-847.
- Retief, N.-R., Avenant-Oldewage, A., du Preez, H.H. 2007. Ecological aspects of the occurrence of Asian tapeworm, *Bothriocephalus acheilognathi* Yamaguti, 1934 infection in the Largemouth yellowfish, *Labeobarbus kimberleyensis* Gilchrist and Thompson, 1913 in the Vaal Dam, South Africa. *Physics and Chemistry of the Earth* 32(15-18), 1384-1390.

- RETIEF N.-R., AVENANT-OLDEWAGE A, DU PREEZ HH (2009). Seasonal study on *Bothriocephalus* as indicator of metal pollution in yellowfish, South Africa. *Water SA* **35** (3) 315-322.

**Abstracts published:**

- Retief, N.-R., Avenant-Oldewage, A., du Preez, H.H., 2007. Aspekte van die ekologie van *Bothriocephalus acheilognathi* besmetting in die Vaaldam. *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* 26(1), 72. The abstract was presented at the Akademie vir Wetenskap en Kuns. Afdeling Biologiese Wetenskappe Kongres. Universiteit van die Oranje-Vrystaat. 8 September 2006.
- Retief, N.-R., Avenant-Oldewage, A., du Preez, H.H. 2007. Ecological aspects of *Bothriocephalus acheilognathi* in the Vaal Dam. *Journal of the South African Veterinary Association* 78(2), 111-112. The abstract was presented at the 35th Annual Congress of the Parasitological Society of Southern Africa (PARSA), 24–26 September 2006, Ministry of Mines and Energy, Windhoek, Namibia.

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**EMPLOYMENT**

- October 2007 to April 2009: Nemaï Consulting CC: Environmental consultant
- May 2009 to current: Savannah Environmental (Pty) Ltd: Environmental consultant

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**PROJECT EXPERIENCE**

**1. NEMAI CONSULTING:**

**A. Environmental Impact Assessments:**

1. Upgrade of Doornfontein Railway Station for the 2010 Soccer World Cup.
2. Upgrade of Charles Street in Pretoria for the 2010 Soccer World Cup.
3. Zuikerbosch Pump Station: Central Sludge Pipeline.
4. Kempton Park Eastern Outfall Sewer.
5. Upgrade of the R103 between Johannesburg and Heidelberg.
6. Upgrade of Parks in the Soweto area (Along the Klipspruit and Klip River).
7. Upgrade of Moore Street.
8. Replacement of main water lines at the Signal Hill reservoir in Bedfordview.
9. Rehabilitation of the Bruma Lake.
10. Waterkloof 305 Rezoning portion 37.
11. Sun City Recreational dam spillway Rising Public Participation.
12. Ledig Water Supply EIA in the North West Province.

**B. Research projects:**

1. Wetlands guideline incorporating previous literature, Wise Use of Wetlands and Best Management practises of Wetlands for DWAF.
2. DWAF Agricultural Research Project, including the topics wineries, eutrophication, agricultural strategies and Communication framework in agriculture.
3. Assisting in preparing user-friendly material for Resource Directed Measures including Spatial and Time Series Information Modelling Software (SPATSIM), Groundwater Resources Directed Measures (GRDM) and Teacha (Tool for Ecological Aquatic Chemical Habitat Assessment) software packages.
4. Prepared Posters for Resources Directed Measures;
5. Prepared a Layman's pocket guide summarizing Resources Directed Measures;

**C. Water Resource Monitoring and Biomonitoring:**

1. Biomonitoring of numerous urban rivers (e.g. Jukskei River, Harrington Spruit and Klip River) for Johannesburg Water. This includes the Northern Wastewater treatment works, Goudkoppies Wastewater Treatment Works, Bushkoppie Wastewater Treatment Works and Olifantsvlei Wastewater Treatment Works as well as Bruma Lake.

2. Biomonitoring of the Mhlabatshane River in the KwaZulu-Natal midlands.
3. Northern Wastewater Treatment Works investigation.
4. Investigation for the Zandspruit Pump Station Sewage Spill. Biomonitoring in the Klein Jukskei River.
5. Sustainable Urban River Management Plan for the upper Klipspruit Catchment.

**D. Environmental Control Officer (ECO work):**

1. Tembisa Bulk Reservoir pipeline construction.
2. Upgrade of Klipspruit Parks – Dube, Dhlamini-Kliptown and Mofolo South and Klipspruit Valley Road North.

**E. Training**

1. Attended a Basic Wetlands training course on 14, 15 April 2008 at Clumy farm near Sandton;
2. Assisted in Department of Water Affairs and Forestry Resource Quality Objectives training for DWAF on 25 March 2009 at DWAF Head Office in Pretoria;

**2. SAVANNAH ENVIRONMENTAL:**

**A. Environmental Impact Assessments:**

1. Part of a team for undertaking the EIA for a nuclear power plant next to the existing Koeberg nuclear power station in Cape Town. An Eskom Project.
2. Assisting with the EIA for the Tshwane Strengthening Project (Apollo Substation to Verwoerdburg and Kwagga to Phoebus substation). An Eskom project.
3. Part of a team for undertaking the Mulilo wind monitoring project on the border of the Northern- and Western Cape.
4. Involved in the siting of Solar Energy facilities near Lephalale (Ellisras), Limpopo Province. An Exxaro project.
5. Part of a team for undertaking the upgrade of the road link between South Africa and Botswana at the Swartkopfontein Border Post.
6. Involved with the Richards Bay Harbour Staging Area in the Richards Bay Small Craft Harbour. An Eskom Project.

# CURRICULUM VITAE

## Riaan A.J. Robbeson (Pr.Sci.Nat)

*Bathusi Environmental Consulting cc*

*Member*

- **SKILLS BASE AND CORE COMPETENCIES**

Environmental Scientist

Ecologist

Botanist

- **TERTIARY EDUCATION**

B.Sc (1990), Main subjects: Botany and Zoology, additional subjects: Chemistry, Genetics and Geography;

B.Sc. (Hons) at the University of Pretoria (1991), Introductory Botany (Distinction), Plant Ecology (Distinction), Plant Physiology, Plant Morphology;

M.Sc. (Plant Ecology) at the University of Pretoria (1994-1998).

- **EMPLOYMENT HISTORY**

1994 – 1997 – University of Pretoria, Research Assistant

1997 – 2000 – EkoInfo cc – Member, Specialist Ecologist, Botanist

2000 – current – BEC – Member, Specialist Consultant, Ecologist, Botanist

- **SELECTED RELEVANT PROJECT EXPERIENCE**

- Ecological Impact Evaluation of the proposed GOPE Mine, Botswana
- Environmental Monitoring Committee (Ecological Division) for the new Medupi Power Station, Lephalale
- Ecological Impact Evaluation of the proposed Epsilon Substation, North-West Province
- Implementation of ecological monitoring programme for the new Gautrain Rail development, Gauteng Province
- Ecological Impact Evaluation of the proposed Greenfields Expansion Project, Mpumalanga Province
- Ecological Impact Evaluation of the proposed Marathon Delta and Boulders Malelane 132kV lines, Mpumalanga Province
- Ecological Impact Assessment of the Matimba – Marang Power lines
- Ecological Impact Assessment of the Matimba – Dinaledi Power lines
- Ecological Impact Assessment of the Mmamabula – Delta Power lines
- Ecological Impact Assessment of the proposed Steelpoort Pumped Storage Scheme
- Ecological Scoping and Impact Evaluations of the proposed Delta Epsilon Power Lines
- Red Data species location and relocation for the Gautrain Development
- Floristic Surveys of the proposed Nu-Largo coal mine
- Floristic Surveys of the proposed Mmamabula coal mine
- Floristic Impact Assessment of the proposed Underground Gasification Concept mining
- Biodiversity Impact Assessment of the Matimba B Power Station
- Biodiversity Scoping assessment of the proposed Matimba Integration
- Floristic sampling of Lula, Mozambique
- Management Guidelines and Impact Assessment of Quelea control activities in wetlands, Free State Province
- Floristic sampling of the Kgalagadi Transfrontier Park, Botswana
- Biodiversity assessment of selected sites in the Okavango Delta for limited lodge development and hunting concessions, Botswana
- Vegetation structure analysis around permanent waterpans in the Chobe National Park, Botswana
- Floristic sampling and development of a GIS remote sensing tool for the assessment of natural degradation of vegetation in the Gauteng Province
- Floristic sampling and development of a GIS remote sensing tool for the assessment of natural degradation of vegetation in the Mpumalanga Province

# JONATHAN JAMES SMALLIE

## Curriculum Vitae

- Date of birth:** 20 October 1975
- Qualifications:** BSC – Agriculture (Hons)  
University of Natal - Pietermaritzburg
- Occupation:** Field Biologist – Endangered Wildlife Trust –  
Industries Partnership (a working group of  
Endangered Wildlife Trust)
- Duties:** Conduct investigations, impact assessments, studies,  
research on wildlife interactions with power line  
infrastructure and wildlife hazards at airports.

The following projects have been completed since 2000.

### 1) Wildlife interactions with power lines

#### *Bird Impact Assessment Studies for Electrical infrastructure:*

##### Transmission lines:

- Mercury – Perseus 400kV
- Eros – Neptune – Grassridge 400kV
- Kudu-Juno 400kV
- Garona Aries 400kV
- Perseus Hydra 765kV
- Tabor – Witkop 275kV
- Tabor Spencer 400kV
- Moropule Orapa 220kV (Botswana)
- Coega Electrification
- Gamma Grassridge 765kV

##### Distribution lines:

- Kanoneiland 22kV
- Hydra-Gamma 765kV
- Komani-Manzana 132kV
- Rockdale-Middelburg 132kV
- Irenedale 132 kV
- Zandfontein 132kV
- Venulu-Makonde 132 kV

- Spencer-Makonde 132 kV
- Dalkeith-Jackal Creek 132kV
- Glen Austin 88kV
- Bulgerivier 132kV
- Ottawa-Tongaat 132kV
- Disselfontein 132kV
- Voorspoed Mine 132kV
- Wonderfontein 132kV
- Kabokweni Hlau Hlau 132kV
- Hazyview Kiepersol 132kV
- Mayfern Delta 132kV
- VAAL Vresap 88kV
- Arthursview Modderkuil 88kV
- Orapa, AK6, Lethakane substations and 66kV lines (Botswana)
- Dagbreek Hermon 66kV
- Uitkoms Majuba 88kV
- Pilanesberg Spitskop 132kV
- Qumbu PG Bison 132kV
- Louis Trichardt Venetia 132kV
- Rockdale Middelburg Ferrochrome 132kV

Generation projects:

- Eskom Concentrated Solar Power Plant
- West Coast Wind Energy Facility

Substations:

- Nooitgedacht distribution
- Pilanesberg distribution
- Gamma Transmission

*Risk Assessments on existing power lines:*

- Hydra-Droerivier 1,2 & 3 – 400kV
- Hydra-Poseidon 1,2 – 400kV
- Butterworth – Ncora 66kV
- Nieu-Bethesda 22kV
- Maclear 22kV (Joelshoek Valley Project)
- Wodehouse 22kV (Dordrecht district)
- Burgersdorp - Aliwal North - Jamestown 22kV
- Cradock 22kV
- Colesberg area 22kV
- Loxton self build 11kV
- Kanoneiland 22kV

- Stutterheim Municipality 22kV
- Majuba-Venus 400kV
- Chivelston-Mersey 400kV
- Marathon-Prairie 275kV
- Delphi-Neptune 400Kv
- Ingagane – Bloukrans 275kv
- Ingagane – Danskraal 275kv
- Danskraal – Bloukrans 275kv

*Bird mortality investigations & other studies:*

- Bird Impact Assessment for Lizzard Point Golf Estate - Vaaldam
- Bird Impact Assessment for Lever Creek Estates housing development
- Investigation into rotating Bird Flapper saga – Aberdeen 22kV
- Investigation of in excess of 80 separate incidents of bird mortalities on power line networks from August 1999 to present
- Investigation of bird mortalities at 3 separate substations
- Special investigation into faulting on Ariadne-Eros 132kV
- Special investigation into Bald Ibis faulting on Tutuka Pegasus 275kV
- Special investigation into bird related faulting on 22kV Geluk Hendrina line
- Special investigation into bird related faulting on Camden Chivelston 400kV line

*Avifaunal “walk thoughts” (EMP’s):*

- Beta Delphi 400kV
- Mercury Perseus 765kV

*Research projects:*

- Southern Region Proactive GIS Blue Crane collision project

*Conferences attended:*

- September 2000: 5<sup>th</sup> World Conference on Birds of Prey in Seville, Spain.
- 2003: Presented a talk on “Birds & Power lines” at the 2003 AGM of the Amalgamated Municipal Electrical Unions – in Stutterheim - Eastern Cape

- June 2005: IASTED Conference at Benalmadena, Spain – presented a paper entitled “Impact of bird streamers on quality of supply on transmission lines: a case study”
- March 27 – 30 2006: International Conference on Overhead Lines, Design, Construction, Inspection & Maintenance, Fort Collins Colorado USA. Presented a paper entitled “Assessing the powerline network in the Kwa-Zulu Natal Province of South Africa from a vulture interaction perspective”.

*Courses & training:*

- Successfully completed a 5 day course in High Voltage Regulations (modules 1 to 10) conducted by Eskom – Southern Region
- Successfully completed training on, and obtained authorization for, live line installation of Bird Flappers

*Papers:*

- Smallie, J. & Van Rooyen, C. 2003. Risk assessment of bird interaction on the Hydra-Droërvier 1 and 2 400kV. Unpublished report to Eskom Transmission Group. Endangered Wildlife Trust. Johannesburg. South Africa
- Van Rooyen, C. Jenkins, A. De Goede, J. & Smallie J. 2003. Environmentally acceptable ways to minimise the incidence of power outages associated with large raptor nests on Eskom pylons in the Karoo: Lessons learnt to date. Project number 9RE-00005 / R1127 Technology Services International. Johannesburg. South Africa
- Smallie, J. & Van Rooyen, C. 2005. Impact of bird streamers on quality of supply on transmission lines: a case study. Proceedings of the Fifth IASTED International Conference on Power and Energy Systems, Benalmadena, Spain.

## **2) Wildlife hazards at airports**

*Risk assessments:*

Assessments of the bird strike hazard posed to aircraft have been conducted at the following airports:

- Kigali International Airport - Rwanda
- Port Elizabeth Airport – specialist study as part of the EIA for the proposed Madiba Bay Leisure Park
- Manzini International Airport (Swaziland)
- Polokwane International Airport
- Mafekeng International Airport
- Lanseria Airport

*Courses and training:*

- One day course in Airside Induction & Safety successfully attended

*Conferences attended:*

- May 2005: International Bird Strike Committee 27<sup>th</sup> meeting – Athens, Greece. Presented a paper entitled Bird Strike Data analysis at SA airports 1999 to 2004.

*Papers:*

- Smallie, J. & Froneman, A. 2005. Bird Strike data analysis at South African Airports 1999 to 2004. Proceedings of the 27<sup>th</sup> Conference of the International Bird Strike Committee, Athens Greece.

## **BRIEF CURRICULUM VITAE:**

### **JULIUS CORNELIUS CHRISTIAAN PISTORIUS**

#### **PROFESSION**

Archaeologist, Museologist (Museum Scientists), Lecturer, Heritage Guide  
Trainer and Heritage Management Consultant

#### **QUALIFICATIONS**

BA (Archaeology, Anthropology and Psychology) (UP, 1976)

BA (Hons) Archaeology (distinction) (UP, 1979)

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

Post Graduate Diploma in Museology (Museum Sciences) (UP, 1981)

#### **WORK EXPERIENCE**

Museum curator and archaeologist in Rustenburg (1980-1983)

Museum curator and archaeologist in Phalaborwa (1984)

Head and senior museum scientist in the Department of Archaeology, National  
Cultural History Museum in Pretoria (1988-1989)

Lecturer and senior lecturer in the Department of Anthropology and Archaeology,  
University of Pretoria (1990-2003)

Independent Archaeologist and Heritage Management Consultant (2003-)

#### **RESEARCH PROJECTS**

Excavate mega Late Iron Age Tswana complex (Molokwane) in Rustenburg in  
North- West Province

Regional survey in the Baphalaborwa and Bashai's sphere of influence in the  
Letaba District of the Mpumalanga and Limpopo Provinces. Excavate eleven  
settlements in the Phalaborwa metal working complex

Regional survey and extended excavations of approximately 20 Late Iron Age  
settlements in Brits, Marikana and Rustenburg in the North-West Province

Discover, excavate and map Late Iron Age Matabele (Ndebele) sites in North-West Province

Initiate regional survey and excavation program of Late Iron Age (Ndzundza-Ndebele sites in Roossenekal in the Mpumalanga Province

Currently surveying and mapping the mountain Ga-Nape, Late Iron Age and historical stronghold of *kgosi* Nape of the Bafokeng (AD1650-1880).

## **ACADEMIC PUBLICATIONS**

### **Books**

Pistorius, JCC 1992. *Molokwane a Late Iron Age Bakwena village. Early Tswana settlement in the Western Transvaal*. Perskor: Johannesburg

Pistorius, JCC 1995. *The rise and decline of the Bamalatji metal working chiefdoms in Phalaborwa*. Unpublished manuscript. University of Pretoria: Pretoria

### **Guide**

Pistorius, JCC 1994. *Eskom archaeological site identification guide*. Eskom: Megawattpark

### **Articles**

Twenty refereed articles (South African Journal of Ethnology, African Archaeological Review, Archaeological Bulletin and Southern African Field Archaeology).

## **POPULAR PUBLICATIONS**

17 popular articles

## **HERITAGE IMPACT ASSESSMENT PUBLICATIONS**

Archaeological Site Identification Guide for Eskom 1994 (see below)

Heritage Guide Training course notes for Theta accredited 'Nature College'

Approximately 500 heritage impact assessment reports for numerous environmental companies such as: Ground Water Consulting Services (GCS), Steffen Robertson and Kirsten (SRK), Walmsley, Landscape Dynamics, Envirovision, Jarrod Ball, Prime Resources, Pulles Howard and De Lange (PHD), SRK Consulting Engineers, Clean Stream, Metago Environmental Engineers, EIM, Golder Associates, PBA International, Tswelopele (EIMS), etc.

Compiled the Heritage Chapter for the State of the Environmental Report for Ekurhuleni with SRK.

Compiled the Heritage Chapter for the State of the Environmental Report for the Hartbeespoort Dam with Tswelopele.(EIMS)

Busy compiling heritage chapter for a management plan for the Magaliesberg Protected Area in conjunction with K2 Technologies.

## **MEMBERSHIP**

Member of the Association of Southern African Professional Archaeologists (ASAPA)

Member of the South African Archaeological Society.

## **HERITAGE WORK**

Heritage Impact Assessment studies (Phase 1 and Phase II) for numerous Environmental Companies

Long standing working relationship with Eskom (published: 'Eskom's Archaeological Site Identification Guide' in 1994)

Long standing working relationship with Rio Tinto (PMC and Rio Tinto EXPL). (Cultural heritage management program implemented for PMC serves as case study for the Rio Tinto Group).

Establish and maintain heritage management programs for granite industry in the North-West Province and in Mpumalanga

Present heritage and field guide course in collaboration with Theta accredited 'Nature College' and Palabora Mining Company

Developed North-West Heritage Resources Information System (NW-HRIS) in collaboration with SRK for the South African Heritage Resources Agency (SAHRA) in North-West

Working with Bafokeng Royal Resources in order to establish the Nape Heritage Park and Wilderness Area as part of a conceptualized Master Plan for the Bafokeng (Rustenburg) District.

Collaborate with Anglo Exploration and Compagnie Générale de Géophysique with heritage education and monitoring of a seismic survey in the Rustenburg District.

Collaborate with Impala Platinum and Compagnie Générale de Géophysique with heritage education and monitoring a seismic survey in the Rustenburg District.

Collaborate with Lonminand Compagnie Générale de Géophysique with heritage education and monitoring a seismic survey in the Marikana area.

Collaborate with Rio Tinto EXPL with heritage education and monitoring exploration activities in the Soutpansberg.

### **Summary**

Dr Julius CC Pistorius is a qualified archaeologists and a cultural heritage management specialist who has extended experience as a university lecturer, museum scientist, researcher and heritage consultant. He has done extensive research on the Late Iron Age Tswana, Lowveld-Sotho (particularly the Iron Age Malatji metal workers of Phalaborwa), the Ndzudza-Ndebele of Roosenekal/Dullstroom as well as other Iron Age communities in the Steelpoort area.

Dr Pistorius has published a book on early Tswana settlement in the North-West Province and has written an unpublished manuscript for a book based on the rise of Malatji metal workings spheres in Phalaborwa during the last 1 200 years. He has written a field guide for Eskom personnel on heritage management and has published twenty scientific papers in academic journals and numerous popular articles on archaeology and heritage matters. He also collaborated with various

environmental companies in completing cultural heritage assessment and management plans for mines, residential areas and other development projects.

Julius Pistorius participated in compiling State of the Environmental Reports for Ekurhuleni, Hartbeespoort and with a management plan for the Magaliesberg Protected Area.

Since acting as an independent consultant he has done more than 500 heritage impact assessment reports for numerous environmental companies and has a longstanding working relationship with Eskom, Rio Tinto and Impala Platinum. He is currently involved with cultural heritage management programs for Rio Tinto (PMC, EXPL), Angloplats (Rustenburg), Bafokeng Royal Resources (BRR) and Kelgran and Kudu Granite.

# CURRICULUM VITAE

## Lourens Martinus du Plessis

*MetroGIS (Pty) Ltd.*

*Director*

### SKILLS BASE AND CORE COMPETENCIES

- Data Sourcing and Acquisition
- Data Capture
- Data Evaluation
- Data Conversion and Transfer
- GIS Database Development, Implementation and Maintenance
- Spatial Analysis (Visibility, Slope, Aspect, etc.)
- Digital Elevation Modeling
- Terrain Evaluation
- Image Processing
- Visual 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
- Arc/Info, ArcGIS, ArcView and PlanetGIS software
- Various GIS support software packages
- Range of Microsoft standard applications

### TERTIARY EDUCATION

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

### EMPLOYMENT HISTORY

**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

### SELECTED RELEVANT PROJECT EXPERIENCE

- Proposed 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 proposed coal-fired power station VIA
- Concentrating Solar Power (CSP) plant VIA
- Zeus to Mercury transmission line (comparative viewshed analyses)
- Mmamabula (Botswana) transmission line and power station viewshed analyses
- Petronet new multi-products pipeline VIA

## **CURRICULUM VITAE**

### **NONKA BYKER**

*MasterQ Research*  
*Research Executive*

#### **SKILLS BASE AND CORE COMPETENCIES**

- Social Impact Assessments
- Community based training and development facilitation
- Data processing and analysis

#### **TERTIARY EDUCATION**

University of Pretoria: B.Psych (Adult Mental Health) (2003)  
Institute for People Development: NQF Assessor (2005)

#### **EMPLOYMENT HISTORY**

January 2007 – current: MasterQ Research (Research Executive)  
July 2004 – December 2006: Independent Consultant  
February 1998 – June 2004: Afrosearch (Public Participation consultant)  
April 1997 – January 1998: Social Dimension (Administrative Assistant)

#### **SELECTED RELEVANT PROJECT EXPERIENCE**

- Social Impact Assessment with cognisance of any potential tourism impacts for the proposed Vryburg 400kV substation (Client: Eskom Generation, Project Manager: Bohlweki Environmental)
- Social Impact Assessment for the proposed Thyspunt Integration Project (Client: Eskom Transmission, Project Manager: Sivist)
- Social Impact Assessment for the proposed Evander South Gold Mine (Client: Harmony Gold Mining Company Limited, Project Manager: Turgis Consulting).
- Baseline social and land use assessment for the proposed Medupi Water Reservoir (Client: Eskom Generation, Project Manager: Savannah Environmental).
- Social Impact Assessment for the proposed Combined Cycle Gas Turbine (CCGT) plant in the Amersfoort area, Mpumalanga Province (Client: Eskom Generation, Project Manager: Bohlweki Environmental)
- Social Impact Assessment for the proposed new regional general and hazardous waste processing facility in the Eastern Cape (Client: Coega Development Corporation/Nelson Mandela Bay Metropolitan Municipality, Project Manager: Bohlweki Environmental)
- Social Impact Assessment for the proposed establishment of a tourist access facility and associated infrastructure in the Greater Limpopo Transfrontier Park (Client: SANParks, Project Manager: Triviron)
- Social Impact Assessment for the proposed New Multi-Product Pipeline (NMPP) northern routes: Jameson Park to Langlaagte and Kendal to Waltloo (Client: Transnet Pipelines, Project Manager: Bohlweki Environmental)
- Social Impact Assessment for the proposed Zonk'izizwe Mixed Use Development in Midrand, Gauteng (Client: Old Mutual Properties, Project Manager: EIMS)
- Social Impact Assessment for the proposed Steelpoort Integration Project (Client: Eskom Generation/Transmission, Project Manager: Savannah Environmental)