

## **CURRICULUM VITAE**

**KAREN JODAS (nee KÜCK)**

### **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; renewable energy projects, hydrology and water management

Work experience : Twelve (12) 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 electricity generation and transmission projects (with a strong focus in renewable energies), linear developments (roads and powerlines), bulk infrastructure and supply (e.g. WTWs, pipelines, landfills), 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
- Key experience in the assessment of impacts associated with renewable energy projects
- 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

WindFarmer Wind Farm Design course , *Garrad Hassan*, 2009

### **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)

---

**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.

---

**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)

### ***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)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Wind Energy Facility at Cookhouse, Eastern Cape (for African Clean Energy Developments)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Flagging Trees Wind Energy Facility at Middelburg, Eastern Cape (for African Clean Energy Developments)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Wind Energy Facility on the West Coast, Western Cape (for Moyeng Energy)
- Environmental Impact Assessment and Environmental Management Plan for the proposed Wind Energy Facility near Sutherland, Northern and Western Cape (for Moyeng Energy)
- Basic Assessments for wind monitoring masts at various sites and locations in the Western and Northern Cape Provinces (for AIIM and Investec Bank Limited)
- Regional Assessments for several wind energy Developers across the Western and Northern Cape
- Regional Assessment as a siting tool for CSP projects in Limpopo Province

#### *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)

#### ***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)

#### ***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, environmental permitting, public participation, Environmental Management Plans and Programmes, environmental policy, strategy and guideline formulation, and integrated environmental management. Key focus on integration of the specialist environmental studies and findings into larger engineering-based projects, strategic assessment, and providing practical and achievable 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; review of specialist studies; 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 environmental legislation and policy requirements. Recent projects have been undertaken for both the public- and private-sector, including compliance advice and monitoring, electricity generation and transmission projects, various types of linear developments (such as National Road, local roads and power lines), waste management projects (landfills), mining rights and permits, 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 and specialist studies*
- *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).

---

## **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*

---

## **PROJECT EXPERIENCE**

Current projects include:

### ***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 proposed transmission lines from the Koeberg-2 Nuclear Power

Station site, Western Cape Province (for Eskom Transmission)

- Project manager for the proposed Tshwane strengthening project, Phase 1, Gauteng 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)
- 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)

#### ***Compliance Monitoring***

- Audit of environmental compliance for Salberg Concrete Products
- 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

#### ***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

### ***Infrastructure Projects***

- Project manager for the EIA and EMP for the proposed bridge across the Ngotwane River located on the border of South Africa and Botswana

### ***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

- Detailed Environmental Scoping Study and public participation for the proposed Capacity Increase Project at Arnot Power Station, Mpumalanga 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
- 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**  
**RAVISHA AJODHAPERSADH**

Profession : Environmental Consultant  
Specialisation : Environmental Management  
Years experience : Three

**KEY RESPONSIBILITIES**

- Providing consulting services to clients for Environmental-related matters.
- Conducting Environmental Impact Assessment (EIA) processes.
- Preparation of EIA reports.

---

**SKILLS BASE AND CORE COMPETENCIES**

- Report Writing
- Site Investigation
- Environmental Auditing
- Co-ordination and management of project teams
- Co-ordinating and conducting Public Involvement processes.
- Preparing maps (using GIS)
- Administrative tasks (minutes of meetings)
- Research

---

**EDUCATION AND PROFESSIONAL STATUS**

***Degrees:***

- B Soc Sci (Environmental Management) obtained from the University of Natal in 2005.
- (Hons) (BSc) (Environmental Management) obtained from the University of South Africa in 2010.

***Courses:***

- Attended an EIA training course conducted by Dekra Norisko in 2008.
- Attended a Wetlands Course by the WESSA and the Department of Water Affairs and Forestry in 2008.

***Professional Society Affiliations:***

None

## EMPLOYMENT

1. June 2007 – April 2009

Name of Employer: Nemai Consulting

Position: Environmental Consultant

2. May 2009 – August 2009

Name of Employer: Environmental Impact Management Services

Position: Environmental Control Officer

3. September 2009 – Present

Name of Employer: Savannah Environmental

Position: Environmental Consultant

---

## PROJECT EXPERIENCE

1. Undertook the Basic Assessment Process for the Proposed Wind Monitoring Mast, near Britannia Bay, Western Cape Province.
2. Undertook the Basic Assessment Process for the Proposed Amakhala Emoyeni Wind Monitoring Masts, between Bedford and Cookhouse, Eastern Cape Province.
3. Undertook the Basic Assessment Process for the Proposed Wind Monitoring Masts, near Vredenburg, Western Cape Province.
4. Prepared **Scoping Report** for the Proposed Flagging Trees Wind Energy Facility, near Middelburg, Eastern Cape Province.
5. Prepared **Scoping Report** for the Proposed Suurplaat Wind Energy Facility, near Sutherland Western and Northern Cape Provinces.
6. **Environmental Control Officer** undertaking environmental monitoring for the Waterval Water Care Works on behalf of ERWAT.
7. **Environmental Control Officer** for Transnet's New Multi-Product Pipeline, duties include environmental auditing, preparing daily reports, weekly reports and monthly reports.
8. Prepared EIA reports on the Bus Rapid Transit System, for the City of Johannesburg (2008-2009).
3. Prepared **Environmental Management Plans (EMP)** for road upgrades in the Inner City and Soweto, for the Johannesburg Development Agency (2008 – 2009).
4. Assisted in conducting the EIA for the Neptune-Poseidon 300KV Transmission Lines, for Eskom (2008-2009).
5. Conducted the **public participation process** for the Fischer-Tropsch Wax Expansion Project, for Sasol (Ltd) (2007-2008).
6. Implemented and managed the Klipspruit River and Wetlands Cleanup, for the Gauteng Department of Agriculture Conservation and Environment. Responsibilities included managing 87 employees, preparation of annual, quarterly and monthly reports, and hosting monthly community and stakeholder meetings (2007 – 2008).
7. Implemented and managed the Bertrams Environmental Education Programme, for the

Johannesburg Development Agency. Responsible for the project operations, report writing, event co-ordination, training and capacity building of employees, conducting waste audits and stakeholder engagement (2007- 2008).

8. Implemented and managed the Rehabilitation of illegal dumpsites: **Waste Education Programme** in Soweto, for Pikitup. Duties entailed training and managing the waste awareness team, conducting site visits, dumpsite rehabilitation monitoring and mapping on GIS (2009).
9. Conducted a **feasibility study** for the development of a recycling centre in Alexandra, Jhb for Pikitup. Duties entailed extensive research, conducting a survey, waste audit, analyzing social and environmental dimension of the proposed project and compiling the report. (2008-2009).
10. Assisted in the **Development and Implementation of the Integrated Environmental Management Series**, for the Department of Water Affairs and Forestry (DWAF). Project included developing training manuals, user friendly documents, presentations and launching an environmental decision support system for DWAF (2007- 2009).
11. Undertook the **public participation** for the Sasol's Integrated Waste Management Programme (2008). Key responsibilities included co-ordination of an Open day event, preparation of presentations, invitations, minute taking and technical aspects of the events and compiling a Public Participation report (2007).

**CURRICULUM VITAE**  
**ZAMA S DLAMINI**

Profession : Environmental Consultant  
Specialisation : EIA, Project Management, Environmental Monitoring and Water Quality Monitoring  
Years experience : Over **7 years** in the environmental management field

**KEY RESPONSIBILITIES**

- Conducting and management of Environmental Impact Assessments (EIAs) and other environmental investigations according to South African environmental legislation
- Conducting Strategic Environmental Assessments (SEAs) and other environmental investigations according to the new EIA legislation such as Environmental Management Frameworks
- Providing input for strategic assessment, policy development and reporting
- Interpreting and applying Environmental Legislation
- Development, planning, co-ordinating and facilitating Public Participation Processes (PPP)
- Client and Authority liaison
- Compiling, reviewing and approving project proposals and environmental reports
- Developing and implementing Environmental Management Plans/Programmes (EMP's/EMPR)
- Conducting environmental monitoring, reviews and audits
- Mentoring of Junior Staff
- Provision of ongoing assistance and support to the Organisation's Directors, Site ECO and rest of the environmental and engineering team

**SKILLS BASE AND CORE COMPETENCIES**

- Project Management
- Technical Report Writing
- Water Quality Monitoring and Analysis
- Public Participation
- Geographic Information Systems
- MS Word and MS Project
- Environmental Legal Compliance Appraisal and Auditing
- Environmental Training

## **CURRICULUM VITAE**

### **LOURENS MARTINUS DU PLESSIS**

*MetroGIS (Pty) Ltd*

*Visual Assessment and Geographic Information Systems Specialist*

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

- More than 17 years experience in the application of Geographical Information Systems (GIS) in Environmental Planning and Management.
- Extensive practical knowledge in spatial analysis, environmental modelling and digital mapping.
- Experience in applying GIS in EIAs, State of the Environment Reports and Environmental Management Plans.

#### **TERTIARY EDUCATION**

- BA (University of Pretoria) Geography and Anthropology (Malors), 1993

#### **EMPLOYMENT HISTORY**

1999-present: MetroGIS, Director

1997-1999: GISBS, Project Manager

1990-1997: GisLAB c, Project Manager / Member

#### **SELECTED RELAVANT PROJECT EXPERIENCE**

- Visual Impact Assessments and Viewshed Analysis for various types of developments, including telecommunications structures, mining activities and tourism accommodation in National Parks and other environmentally sensitive areas. Some recent and current projects include:
  - \* Proposed Altantis Open Cycle Gas Turbine power station.
  - \* Matimba B proposed coal-fired power station.
  - \* Zues to Mercury transmission line (comparative viewshed analysis)
  - \*Mercury-Ferrum-Garone transmission line intergration
  - \*Mmamambula (Botswana) transmission line and power station viewshed analysis Kynoch Gypsum Tailings dam extension
  - \*N1 Western Bypass Shell service station
  - \*Coega regional hazardous waste processing facility.
  - \*Robinson Deep landfill extension
  - Concentrating Solar Power (CSP) plant
- EIAs for the utilisation of GIS based systems to determine and manage environmental impacts. Various projects in South Africa.

## **CURRICULUM VITAE**

### **TIMOTHY JG HART**

*Archaeological Contracts Office (ACO) cc*

*Partner*

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

- Assessment, excavation or conservation of pre-colonial sites such as shell middens, stone artefact scatters, rock art, cave deposits dating to the Early, Middle and Late Stone Age as well as late Pleistocene fossil bone accumulations.
- Exhumation of cemeteries.
- Analysis of building sequences, industrial structures, historic landscapes and features.
- Development of conservation and management plans for historic features and areas.
- Working on EIA projects as a specialist member of multi-disciplinary teams.

#### **TERTIARY EDUCATION**

- MA (Archaeology), University of Cape Town

#### **EMPLOYMENT HISTORY**

- 1984: RSA, Spatial Archaeology Research Unit, UCT, Field Archaeologist
- 1884-1985: RSA, Zeekoe Valley Archaeological Project, Southern Methodist University. Field Archaeologist. World's largest archaeological survey.
- 1986-1987: RSA, UCT Archaeology. Part-time teachings while a student.
- 1987-1991: RSA, ACO Project Manager, archaeological rescue work, course tutor.
- 1991- present: RSA, ACO UCT co-director, heritage management, contracted research both local, international, academic and commercial.

#### **SELECTED RELAVANT PROJECT EXPERIENCE**

1991-2008: Survey and mitigation of heritage resources – mining operations of De Beers.

1993: Survey and mitigation of heritage resources – Namakwa Sands mining, Brandsebaai

2004: Eskom Cape Strengthening Project

2004: Eskom: Bacchus sub-station expansion, Omega sub-station EIA project

2005: Eskom: Kudu Integration project (Namaqualand)

2005-2006: Atlantis Open Cycle Gas Turbine project, Mossel Bay OCGT project

2007-2008: EskomNuclear 1 EIA programme (ongoing)

2007: Eskom Proposed Wind Energy Facility (WEF) and Transmission Line, Vredendaal

2009: Hopefield WEF

2009: Cookhouse WEF

## **CURRICULUM VITAE**

### **TONY BARBOUR**

*Environmental Consultant and Researcher*

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

- More than 18 years experience in the field of environmental management.
- Undertaken 20 Social Impact Assessments (SIA) for EIAs commissioned by the Department of Environmental Affairs and Development Planning (DEA&DP).
- Developed SIA guidelines for DWAF.
- Worked experience in South Africa, Botswana, Namibia, Zambia, Lesotho and Swaziland.

#### **TERTIARY EDUCATION**

- BSc (Geology and Economics) Rhodes, 1984
- BEcon (Hons) Rhodes, 1985
- MSc (Environmental Science) University of Cape Town, 1992

#### **EMPLOYMENT HISTORY**

Private consultant: November 2004 – present

UCT: August 1996- October 2004. Environmental Evaluation Unit, Senior Environmental Consultant and Researcher.

1991-1996: Ninham Shand Consulting, Cape Town. Senior Environmental Scientist

1996-2000; SRK Consulting, Associate Director, Cape Town

1990- Current: Lecturer, UCT and Cape Technikon, Environmental Economics, SIA, SEA, EIA and Waste Management.

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

- SIA for the Darling Wind Farm, Western Capr (2001-2002).
- Portnet Saldanha, EIA for the expansion of a bulk iron ore exporting facility at the Port of Saldhana (2000).
- SIA for road upgrade between Gansbaai and Bredadorp (2005)
- SIA for Zeekoevlei Golf Estate, Somerset West (2005)
- SIA for Silwersand Golf and Resort Estate, Robertson, Western Cape (2003)
- Internal Review consultant for Golder Associates on Namakwa Sands Heavy Mineral Mining EIA (current).
- Review of EIA for Zeekoevlei Golf Course Estate, Somerset West (2005)
- Review of EIA for Oostenberg Waste Transfer Station, Brackenfell, Western Cape (2004)
- Review of EIA for N7 Road upgrade, Clanwilliam, Western Cape (2002).

## **CURRICULUM VITAE**

### **SHAWN JOHNSTON**

*Sustainable Futures ZA*

*Process Facilitator*

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

- Facilitator, Mediator and Trainer
- Planning, Process Design and Conceptualising
- Facilitation, Public and Stakeholder Liaison
- Process co-ordination, problem-solving and negotiation skills.

#### **TERTIARY EDUCATION**

- B.Tech Environmental Management – Cape Peninsula University of Technology, Cape Town
- National Diploma in Horticulture, Cape Technikon, Cape Town
- Certificate in Conflict Resolution and Environmental Mediation, Partnership Lifeskills Centre/ Global Future Links- Washington DC, USA

#### **EMPLOYMENT HISTORY**

- Leadership South Programme
- FutureLinks South Africa
- Common Ground Consulting
- Sustainable Futures ZA

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

- LEAD FACILITATOR, OLIFANTS/ DORING RIVER WATER USER ASSOCIATION CAPACITY BUILDING PROJECT. (Current). Facilitation and co-ordinator of the Olifant/ Doring Water User Association Capacity Building for commercial farmers and emerging black farmers.
- ESKOM PROCESS FACILITATOR. ESKOM ANKERLIG CLOSED CYCLE GAS TURBINE CONVERSATION PROJECT AND ASSOCIATED PROJECT, ATLANTIS, CAPE TOWN. (Current) Responsible for facilitating the public participation process for the Eskom Ankerlig gas turbine conversion from OCTG to CCGT and associated EIA studies.
- ESKOM PUBLIC PARTICIPATION PROCESS, ESKOM WIND ENERGY FACILITY, WEST COAST OF SOUTH AFRICA (Current) Responsible for facilitating the public participation process for the EIA process near Koekenaap in the Matzikama Municipality, Cape West Coast.
- PART TIME LECTURER, WATER AND CONFLICT, INTERGRATED WATER RESOURCES MANAGEMENT PROGRAMME AT THE UNIVERISTY OF THE WESTERN CAPE (2006-current). Assisted with establishing the first water and conflict resolution module in the MSc Integrated Water Resource Management degree course.



## **CURRICULUM VITAE**

### **MORNE DE JAGER**

*M2 Environmental Connections cc*

*Founding member of the Closed Corporation*

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

- Water monitoring programme design
- Water Quality Analysis and Modelling
- Environmental Auditing,
- Noise Monitoring, Modelling and Control
- Biological Monitoring
- Environmental Impact Assessment and Management
- IT skills (software as well as hardware)
- Conflict resolution and stakeholder facilitation.

#### **TERTIARY EDUCATION**

B.Eng (Chem) (University of Pretoria)

#### **EMPLOYMENT HISTORY**

- Department of Water Affairs and Forestry (1998 – 2001; Pollution Control Officer)
- EcoSat (2001 – 2002; Environmental Monitoring, Control and Management)
- Menco (2002 – current; See above)
- 

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

- Noise Impact Assessment for Skychrome (Pty) Ltd (A Ferro-chrome mine)
- Noise Impact Assessment for Mooinooi Chrome Mine (Western Chrome Mines)
- Noise Impact Assessment for Buffelsfontein East and West (Western Chrome Mines)
- Noise Impact Assessment for Elandsdrift (Sylvania)
- Noise Impact Assessment for Jagdlust Chrome Mine (Eastern Chrome Mines),
- Noise Impact Assessment Apollo Brick (Pty) Ltd (Clay mine and brick manufacturer).

## **CURRICULUM VITAE**

**IAIN PATON**

*Geologist*

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

Engineering and Geology.

### **TERTIARY EDUCATION**

Rhodes University, Grahamstown, South Africa

- 1993: Bachelor of Science Degree in Geology and Economics
- 1994: Bachelor of Science with Honours Degree in Geology

### **WORK EXPERIENCE**

- 1995 to 1996 Mine Geologist – Western Areas Gold Mine (JCI Limited), Johannesburg
- 1996 to 1997 Senior Geologist – Western Areas Gold Mine (JCI Limited), Johannesburg
- 1997 to 1998 Logging Geologist - Halliburton Energy Services (Drilling Systems), Aberdeen, Scotland
- 2000 - 2006 Construction Site Manager – Progex, Knysna
- 2006 to 2008 Engineering Geologist & Member - Siyakhula Lab cc, Knysna Civil Laboratory & Geotechnical Services
- 2008 to date Engineering Geologist & Member - Outeniqua Geotechnical Services cc (Formerly Siyakhula Lab cc), Knysna

## CURRICULUM VITAE

### LUKE STRUGNEL

**Qualifications:** BSC –Zoology (Hons)

Rhodes University- Grahamstown

*Pri. Sci.Nat (Zoology- 400181/09)*

**Occupation:** Field Biologist – Endangered Wildlife Trust –Wildlife and Energy Interaction group)

**Duties:** Conduct investigations, impact assessments, studies, research on wildlife interactions with power line infrastructure.

#### **1) Wildlife interactions with power lines**

*Bird Impact Assessment Studies for Electrical infrastructure:*

Johannesburg Strengthening 400KV Power lines

Appollo- Verwoerdburg 400KV Power line

Phoebus- Kwagga 400KV Power line

Ariadne-Eros 400KV Power line

Mogwase- 400KV Power line

Malelane- Boulders 132KV Power line

Nondabuyo-Ndumo 132KV Power line

Randfontein 132KV Power line

Sasol Intergration 132KV Power line

Marathon- Kiepersol 132KV Power line

Dumasi- 132KV Power line

Invubu-Melmoth 132KV Power Line

NMPP Electrical Infrastructure

Graceview- Slagment 88KV Power line

Graceview- Eyestone 88KV Power line

Honingklip 88KV Power line

Randjiesfontein 88KV Power line

Cookhouse Wind Energy facility

Port Elizabeth Wind Energy facility

*Avifaunal "walk thoughts" (EMP's):*

Zeus- Mercury 765KV EMP

Bravo-132KV EMP

Grassridge Poseidon 400KV EMP

*Research projects:*

Rhino and Lion Park camera risk assessment

Carcass detection using dogs under power lines

## **CURRICULUM VITAE**

### **DAVID HOARE**

*Ecologist*

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

Ecological consultant since 1995. Author of over 200 specialist ecological consulting reports. Wide experience in botanical studies within grassland, savanna and fynbos, as well as riparian, coastal and wetland vegetation.

#### **Main areas of specialization:**

- Vegetation ecology, primarily in grasslands, thicket, coastal systems, wetlands
- Plant biodiversity and threatened species specialist
- Remote sensing, analysis and mapping of vegetation
- Specialist consultant for environmental management projects

#### **TERTIARY EDUCATION**

- Matric - Graeme College, Grahamstown, 1984
- B.Sc (majors: Botany, Zoology) - Rhodes University, 1991-1993
- B.Sc (Hons) (Botany) - Rhodes University, 1994 with distinction
- M.Sc (Botany) - University of Pretoria, 1995-1997 with distinction
- PhD (in progress) – Nelson Mandela Metropolitan University, Port Elizabeth, "Patterns and determinants of plant biodiversity in temperate, mesic grasslands of South Africa" under supervision of Prof. Richard Cowling

#### **EMPLOYMENT HISTORY**

- 1 February 1998 – 30 November 2004, Researcher, Agricultural Research Council, Range and Forage Institute, Private Bag X05, Lynn East, 0039. Duties: project management, general vegetation ecology, remote sensing image processing.
- 1 December 2004 – present, Member, David Hoare Consulting cc no. 2001/034446/23. Consultant, specialist consultant contracted to a number of existing companies and organisations.
- 1 January 2009 – 30 June 2009, Lecturer, University of Pretoria, Botany Dept.

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

- Vegetation pattern in Pilanesberg National Park using digital photogrammetric data preparation techniques, 1 August – present.
- VegMap digital mapping and description of vegetation units of Eastern Cape for new national vegetation map (Dept. of Environmental Affairs and Tourism/National Botanical Institute) and contributions to text and vegetation descriptions in accompanying booklet.
- Classification and mapping of the savanna biome of South Africa using remote sensing techniques, 1 February 1998 – 20 November 1999.

- Natural resource survey of nodes O R Tambo and Maputoland, using remote sensing techniques, 1 November 2001 – December 2003.
- Field data collection for National Land Cover Change Project, Dec 2003 – March 2004.
- Vegetation survey of KwaMhlanaga Landcare site, March 2004.
- Scale physiognomic survey of Suikerbosrand Nature Reserve, 1 March 1998 – 1 April 1998.
- Natural resource survey of Mpumalanga, South Africa, using remote sensing techniques, 1 November 1998 – 2000.
- Vegetation of the corridor of the proposed ESKOM powerline from Port Elizabeth to Bedford. September 2000.

National land cover change mapping and monitoring – development of guidelines, protocols and recommendations for a national mapping project, 1 June 2000 – 30 November 2000.