



CEDAR TOWER
SERVICES

CURRICULUM VITAE



Jenna Lavin

Tel: 083 619 0854 (c); 013 0131 (w)
E-mail address: jenna.lavin@cedartower.co.za
ID number: 8512050014089

EDUCATION:

Tertiary

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

Secondary

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



CEDAR TOWER
SERVICES

EMPLOYMENT HISTORY:

PROFESSIONAL DEVELOPMENT

Environmental and Heritage Management:

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

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

Acting Deputy Director from April to December 2015.

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

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

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

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



CEDAR TOWER
SERVICES

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

Other

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


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

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

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

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

Short CV/Summary of Expertise – Simon Todd

 <p>SIMON TODD CONSULTING</p> <p>ECOLOGICAL SPECIALIST SERVICES</p> <p>Assessment/Management/Research</p>	<p>Simon Todd Pr.Sci.Nat</p> <p>C: 082 3326502 O: 021 782 0377 Simon.Todd@3foxes.co.za</p> <p>60 Forrest Way Glencairn 7975</p>	<p>Ecological Solutions for People & the Environment</p>
--	---	--

Professional Profile

Simon Todd has extensive experience in biodiversity management and ecological assessment, having provided assessments for more than 100 different developments. This includes a large number of power lines and associated infrastructure distributed widely across South Africa. In addition, Simon Todd was the contributing ecologist on the Strategic Environmental Assessment (SEA) for both the Eskom Grid Infrastructure, as well as the Renewable Energy Development Zones. Simon Todd is a recognised ecological expert and is a past chairman of the Arid-Zone Ecology Forum and has 18 years' experience working throughout the country. Simon Todd is registered with the South African Council for Natural Scientific Professions (No. 400425/11).

Recent notable studies include the following:

- Eskom Grid Infrastructure Strategic Environmental Assessment (EGI-SEA) - Terrestrial and Aquatic Biodiversity – Specialist contribution to report. CSIR 2015.
- National Wind and Solar PV SEA Specialist Report - Terrestrial and Aquatic Biodiversity. Specialist Report produced for the CSIR on behalf of DEA for the Strategic Environmental Assessment of the Renewable Energy Development Zones (REDZs). CSIR 2014.
- Proposed Juno-Aurora 765KV Power Line in the Western Cape: Fauna & Flora Specialist Report for Impact Assessment. Nzumbulolo Heritage Solutions 2015.

Abbreviated CV

- Profession: Independent Ecological Consultant - Pr.Sci.Nat 400425/11
- Specialisation: Plant & Animal Ecology
- Years of Experience: 18 Years

Skills & Primary Competencies

- Research & description of ecological patterns & processes in Nama Karoo, Succulent Karoo, Thicket, Arid Grassland, Fynbos and Savannah Ecosystems.
- Ecological Impacts of land use on biodiversity

- Vegetation surveys & degradation assessment & mapping
- Long-term vegetation monitoring
- Faunal surveys & assessment.
- GIS & remote sensing

Tertiary Education:

- 1992-1994 – BSc (Botany & Zoology), University of Cape Town
- 1995 – BSc Hons, Cum Laude (Zoology) University of Natal
- 1996-1997- MSc, Cum Laude (Conservation Biology) University of Cape Town

Employment History

- 1997 – 1999 – Research Scientist (Contract) – South African National Biodiversity Institute
- 2000-2004 – Specialist Scientist (Contract) - South African National Biodiversity Institute
- 2004-2007 – Senior Scientist (Contract) – Plant Conservation Unit, Department of Botany, University of Cape Town
- 2007 Present – Senior Scientist (Associate) – Plant Conservation Unit, Department of Botany, University of Cape Town.

General Experience & Expertise

- Conducted a large number of fauna and flora specialist assessments distributed widely across South Africa. Projects have ranged in extent from <50 ha to more than 50 000 ha.
- Widely-recognized ecology specialist. Published numerous peer-reviewed scientific publications based on various ecological studies across the country. Past chairman of the Arid Zone Ecology Forum and current executive committee member.
- Extensive experience in the field and exceptional level of technical expertise, particularly with regards to GIS capabilities which is essential with regards to producing high-quality sensitivity maps for use in the design of final project layouts.
- Strong research background which has proved invaluable when working on several ecologically sensitive and potentially controversial sites containing some of the most threatened fauna in South Africa.
- Published numerous research reports as well as two book chapters and a large number of papers in leading scientific journals dealing primarily with human impacts on the vegetation and ecology of the arid and semi-arid parts of South Africa.
- Maintain several long-term vegetation monitoring projects distributed across Namaqualand and the karoo.
- Guest lecturer at two universities and have also served as an external examiner.
- Reviewed papers for more than 10 international ecological journals.
- Past chairman and current committee member of the Arid Zone Ecological Forum.
- SACNASP registered as a Professional Natural Scientist, (Ecology) No. 400425/11.

A selection of recent work is as follows:

Specialist Assessments:

Power Lines/Grid Connections:

Proposed Juno-Aurora 765kV Power Line in the Western Cape: Fauna & Flora Specialist Report for Impact Assessment. Nzumbulolo Heritage Solutions 2015.

The proposed Mookodi Integration Phase 2 132kV Power Lines and Ganyesa Substation near Vryburg, North West Province: Fauna & Flora Specialist Basic Assessment Report. Sivest 2014.

Basic Assessment Process for the Proposed Construction of the Transnet 7km 50 kV Power Line from Eskom Juno Substation to the proposed new Transnet Juno Traction Feeder Substation. Nsovo Environmental Consulting. 2014.

Basic Assessment Process for the Proposed Construction of the Transnet 5km 50 kV Power Line from Eskom Aries Substation to the proposed new Transnet Aries Traction Feeder Substation. Nsovo Environmental Consulting. 2014.

Basic Assessment Process for the Proposed Construction of the Transnet 15km 50 kV Power Line from Eskom Helios Substation to the proposed new Transnet Helios Traction Feeder Substation. Nsovo Environmental Consulting. 2014.

Burchell-Caprum-Mooidraai 132kV Power Line - Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2014.

Proposed Re-Alignment Of The Koeberg – Ankerlig VPower Line: Fauna & Flora Specialist Report For Basic Assessment. Savannah Environmental 2014.

Grid Connection for Redstone Solar Thermal Energy Plant- Redstone Solar Thermal to Olien Mts: Fauna & Flora Specialist Basic Assessment Report. SiVest 2014.

Grid Connection for Mainstream South Africa Perdekraal Wind Energy Facility. Fauna & Flora Specialist Report for Basic Assessment. ERM 2014.

Karoshhoek Grid Integration Infrastructure. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Garob to Kronos Power Line - Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Loeriesfontein Wind Energy Facility – Substation & Grid Connection. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Gouda Wind Energy Facility – Grid Connection. Walk-Through of Overhead Power Line - Gouda WEF to Eskom Windmill Substation. Specialist Report for Savannah Environmental. 2012.

Proposed Kappa-Omega 765 kV Transmission Line. Fauna, Flora & Ecology Walk-Through Report. Specialist Report for ACER Africa. 2013.

Strategy/Conceptual Documents:

Renewable Energy Sector Spatial Planning Tool for the Namakwa District: To Form Part of the NDM Green Economy Strategy. Conservation South Africa, 2013.

Terrestrial Environment: Characteristics and Categorization. Contribution to the development of standards for EIA processes on behalf of the DEA. Anchor Environmental 2012.

National Wind and Solar PV SEA Specialist Report - Terrestrial and Aquatic Biodiversity. Specialist Report produced for the CSIR on behalf of DEA for the Strategic Environmental Assessment of the Renewable Energy Development Zones (REDZs). CSIR 2014.

Eskom Grid Infrastructure Strategic Environmental Assessment (EGI-SEA) - Terrestrial and Aquatic Biodiversity – Specialist contribution to report. CSIR 2015.

Infrastructure & Mining Developments:

Environmental Impact Assessment for the Proposed Putsberg Open Cast Mine Near Pofadder, Northern Cape. Fauna & Flora Specialist Report for EIA. Ecopartners 2013.

Proposed Establishment of the Gamsberg Zinc Mine, Concentrator Plant and Associated Infrastructure near the Town of Aggeneys, Northern Cape. Fauna & Flora Specialist Report For ESIA. ERM 2013.

Pella Water Board – Infrastructure Upgrade. Fauna & Flora Specialist Report for Basic Assessment. Environmental Resources Management 2012.

Transnet Manganese Ore Line Upgrade. Fauna & Flora Specialist Report for Basic Assessment. Environmental Resources Management 2012.

Proposed Vryburg Wastewater Treatment Works: Terrestrial Fauna & Flora Specialist Study for Basic Assessment. Endemic Vision 2013.

Proposed Mamatwane Compilation Yard, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. Environmental Resources Management 2013.

Rare Earth Separation Plant Near Vredendal, Western Cape Province. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Proposed Mocke Poultry Farm: Fauna & Flora Specialist Report for Basic Assessment. Enviroworks 2015.

Basic Assessment for proposed Neotel Fibre Optic Cable Route 1 from George to Oudtshoorn. Fauna & Flora Specialist Report for Basic Assessment. Enviroworks 2015.

Basic Assessment for proposed Neotel Route 2 Fibre Optic Cables from Prince Albert Road to Oudtshoorn via the N12. Enviroworks 2015.

Basic Assessment for proposed Neotel Route 3 Fibre Optic Cables from Oudtshoorn to George via R328 and R102. Enviroworks 2015.

Basic Assessment for proposed Neotel Route 4 Fibre Optic Cables from Laingsburg to Oudtshoorn via Ladismith along the R323 and R62. Enviroworks 2015.

Improvements to the Ou Kaapse Weg / Silvermine Road Intersection. Specialist Faunal Study For Basic Assessment. Khula Environmental Consultants, 2012.

Upgrading of Tourism Facilities at Goegap Nature Reserve. Specialist Ecological Assessment. Van Zyl Environmental Consultants. 2012.

Plant Sweeps on Portion 2 of the Farm Demaneng 546, Kuruman District, Northern Cape Province for SA Manganese. 2011.

Solar Energy Developments:

Environmental Impact Assessment for the Proposed Wolmarransstad Solar Energy Facility North West Province. Fauna & Flora Specialist Report for EIA. Savannah Environmental 2015

Environmental Impact Assessment for the proposed Humansrus Solar PV Energy Facility 1 Near Copperton, Northern Cape: Fauna & Flora Specialist Report for EIA. CapeEAPrac 2015.

Environmental Impact Assessment for the proposed Humansrus Solar PV Energy Facility 2 Near Copperton, Northern Cape: Fauna & Flora Specialist Report for EIA. CapeEAPrac 2015.

Environmental Impact Assessment for the proposed Dyasonsklip Solar Energy Facility 1 Near Upington, Northern Cape: Fauna & Flora Specialist Report for EIA. CapeEAPrac 2015.

Environmental Impact Assessment for the proposed Postmasburg Solar PV Energy Facility 2 and Associated Grid Connection Infrastructure, Postmasburg, Northern Cape. Fauna & Flora Specialist Report for EIA. CapeEAPrac 2015.

Environmental Impact Assessment for the proposed Joram Solar Vryheid PV Project, Northern Cape. Fauna & Flora Specialist Report for EIA. CapeEAPrac 2015.

Environmental Impact Assessment for the proposed Richtersveld Solar Farm and Associated Grid Connection Infrastructure. Fauna & Flora Specialist Report for EIA. CapeEAPrac 2015.

Environmental Impact Assessment for the Proposed Re Capital 3 Solar Energy Facility and Associated Grid Connection Infrastructure, Dyason's Klip, Northern Cape. Fauna & Flora Specialist Report for EIA. CapeEAPrac 2013.

Environmental Impact Assessment for the Proposed Richtersveld Solar Farm and Associated Grid Connection Infrastructure. Fauna & Flora Specialist Report for EIA. CapeEAPrac 2014.

Environmental Impact Assessment for the Proposed Bosjesmansberg Solar Energy Facility East of Copperton, Northern Cape Province. Fauna & Flora Specialist Report for EIA. Savannah Environmental 2013.

Specialist Vegetation Assessment for EIA. The Proposed Commercial Concentrated Solar Power Tower Facility and Concentrated Photovoltaic Facility at Van Roois Vley Near Upington. WSP 2012.

Proposed Les Marais \ Buitenfontein 5MW Solar Energy Facility in the Free State: Terrestrial Fauna & Flora Specialist Study for Basic Assessment. Savannah Environmental 2013.

Proposed Stella Helpmekaar Solar Energy Facility in the North West Province: Terrestrial Fauna & Flora Specialist Study for Basic Assessment. Savannah Environmental 2013.

Proposed Wolmaransstad Municipality 5MW Solar Energy Facility in the North West Province: Terrestrial Fauna & Flora Specialist Study for Basic Assessment. Savannah Environmental 2013.

Proposed Heuningspruit PV1 and PV2 Solar Energy Facilities Near Koppies, Free State Province: Terrestrial Fauna & Flora Specialist Study for Basic Assessment. Savannah Environmental 2013.

Proposed Hibernia PV Solar Energy Facility near Lichtenburg: Terrestrial Fauna & Flora Specialist Study For Basic Assessment. Savannah Environmental 2013.

Proposed Steynsrus PV1 And PV2 Solar Energy Facilities: Terrestrial Fauna & Flora Specialist Study for Basic Assessment. Savannah Environmental 2013.

Proposed Photovoltaic Solar Energy Facility on Konkoonsies, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.

Proposed Padrooi 13 Photovoltaic Solar Energy Facility, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.

Adams Photovoltaic Solar Energy Facility, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.

Proposed Photovoltaic Solar Energy Facility on Klein Swart Bast, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.

Proposed Khoi-Sun Solar Facility. Fauna & Flora Specialist Report for Impact Assessment. Cape EAPrac 2012.

Suurwater 62, Boesmanland 75mw Solar Farm, Aggeneys. Fauna & Flora Specialist Report for Impact Assessment. Cape EAPrac 2012.

Karoshhoek Solar Valley Development, Upington: Fauna & Flora Specialist Impact Assessment Report. Savannah Environmental. 2012.

O’Kiep 3 PV Solar Energy Facility on a Site In O’kiep Near Springbok, Northern Cape Province. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Photovoltaic Solar Energy Facility on Voëlklip, South of Springbok. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Namaqua Photovoltaic Solar Energy Facility on a Site North of Kamieskroon. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Inca Graafwater Photovoltaic Solar Energy Facility, Graafwater, Western Cape Province. Faunal Ecology Specialist Report for Impact Assessment. Savannah Environmental 2012.

Aberdeen Solar Facility. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Venetia Solar Facility. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Southern Cross Solar Energy Facility: Southern Farm 425. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Tutwa Solar Energy Facility: Portion 4 of Narries 7. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Valleydora Photovolataic Solar Power Plant, Free State. Fauna & Flora Specialist Report. CSIR, 2012.

Reddersburg Solar Facility - Fauna & Flora Specialist Assessment. CSIR, 2012.

Melkvei Photovolataic Solar Power Plant. Fauna & Flora Specialist Report for Basic Assessment. Specialist report for ERM. 2012.

Ruinte Photovolataic Solar Power Plant. Fauna & Flora Specialist Report for Basic Assessment. Specialist report for ERM. 2012.

Genoegsaam Solar Park. Fauna & Flora Specialist Report for Basic Assessment. Specialist report for ERM. 2012.

Genoegsaam Solar Park. Fauna & Flora Specialist EIA Report. Specialist report for ERM. 2012.

Graspan Solar Facility. Fauna & Flora Specialist Report for Impact Assessment. Specialist report for ERM. 2012.

Olyven Kolk Solar Power Plant, Northern Cape: Botanical and Faunal Specialist Assessment. Specialist Report for Environmental Resources Management (ERM). 2011.

Skuitdrift Solar Facility. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Cape EAPrac. 2012.

Beaufort West Solar Facility, Erf 7388 - Fauna & Flora Specialist Assessment. Specialist Report for Cape EAPrac. 2012.

Khoi-Sun Solar Facility. Fauna & Flora Specialist Scoping Report. Specialist Report for Cape EAPrac. 2012.

Boesmanland Solar Farm. Fauna & Flora Specialist Scoping Study. Specialist Report for Cape EAPrac. 2012.

Bitterfontein Solar Plant - Fauna & Flora Specialist Assessment. Specialist Report for Cape EAPrac. 2012.

Wind Farm Developments:

Mainstream South Africa Dwarsrug Wind Energy Facility: Fauna & Flora Specialist Impact Assessment Report. Sivist 2014.

Proposed Spitskop Wind Energy Facility near Cookhouse: Fauna & Flora Specialist Study for Impact Assessment. Savannah Environmental 2013.

Environmental Impact Assessment for the Proposed Roggeveld Wind Energy Facility and Associated Grid Connection Infrastructure: Fauna & Flora Specialist Report for EIA. Savannah Environmental 2013.

Proposed Mainstream South Africa Springfontein Wind Energy Facility: Terrestrial Fauna & Flora Specialist Study for EIA. Savannah Environmental 2012.

Environmental Impact Assessment for the Establishment of the Wolseley Wind Farm, Western Cape Province. Fauna & Flora Specialist Report. Arcus Gibb 2012.

Proposed Eskom 300MW Kleinsee Wind Energy Facility. Fauna Specialist Report For Impact Assessment. Savannah Environmental 2012.

Proposed Inca Energy Swellendam Wind Energy Facility: Fauna Specialist Report For Impact Assessment. Savannah Environmental 2012.

Proposed Moorreesburg Wind Energy Facility: Fauna & Flora Specialist EIA Report For Impact Assessment. Savannah Environmental 2014.

Terrestrial Ecology Specialist Study for the Proposed Establishment of a Renewable Energy Facility near Sutherland, Western and Northern Cape Provinces. Environmental Resources Management (ERM) 2011.

Roggeveld Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management (ERM). 2011.

Zen Wind Energy Facility. Fauna & Flora Specialist Impact Assessment Report. Savannah Environmental. 2012.

Proposed Project Blue Wind and Solar Energy Facility, Near Kleinsee. Fauna Specialist Report For Impact Assessment. Savannah Environmental 2012.

Garob Wind Farm: Fauna & Flora Specialist Report for Impact Assessment. Savannah Environmental 2012.

Loeriesfontein Wind Energy Facility – Substation & Grid Connection. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Noblesfontein Wind Energy Facility, Victoria West. Ecological Walk-Through Report. Savannah Environmental 2012.

Gouda Wind Energy Facility. Fauna And Flora Walk Through Report. Savannah Environmental 2012.

Klawer Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management. 2011.

Lambert's Bay Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management. 2011.

Richtersveld Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management (ERM). 2011.

Witberg Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management (ERM). 2011.



ENVIRONMENTAL PLANNING AND DESIGN

Name JONATHAN MARSHALL
Nationality British
Year of Birth 1956
Specialisation Landscape Architecture / Landscape & Visual Impact Assessment / Environmental Planning / Environmental Impact Assessment.

Qualifications

Education Diploma in Landscape Architecture,
Gloucestershire College of Art and Design,
UK (1979)
Environmental Law, University of KZN
(1997)

Professional Registered Professional Landscape Architect (South Africa)
Chartered Member of the Landscape Institute (UK)
Certified Environmental Assessment Practitioner of South Africa.
Member of the International Association of Impact
Assessment, South Africa

Languages

<u>English</u> -	Speaking	-	Excellent
-	Reading	-	Excellent
-	Writing	-	Excellent

Contact Details

Post: PO Box 2122
Westville
3630
Republic of South Africa

Phone: +27 31 2668241, Cell: +27 83 7032995

Key Experience

Jon qualified as a Landscape Architect at Cheltenham (UK) in 1979. He has been a Chartered Member of the Landscape Institute (UK) since 1986. He is also a registered Landscape Architect and Environmental Assessment Practitioner of South Africa.

During the early part of his career (1981 – 1990) he worked with Clouston (now RPS) in Hong Kong and Australia. During this period he was called on to undertake visual impact assessment input to numerous environmental assessment processes for major infrastructure projects. This work was generally based on photography with line drawing superimposed to illustrate the extent of development visible.

He worked in the United Kingdom (1990 – 1995) for major supermarket chains including Sainsbury's and prepared CAD based visual impact assessments for public enquiry for new store development. He also prepared the VIA input to the environmental statement for the Cardiff Bay Barrage for consideration by the UK Parliament in the passing of the Barrage Bill.

His more recent VIA work in Africa (1995 to present) includes a combination of CAD and GIS based work for a new international airport to the north of Durban, new heavy industrial operations, overhead electrical transmission lines, mining operations, a number of commercial and residential developments as well as numerous renewable energy projects.

VIA work undertaken during the last twelve months includes assessments for several proposed Eskom power lines / substations and numerous solar and wind energy projects.

Relevant Landscape & Visual Impact Assessment (LVIA) Projects

1. **Paulputs CSP Power Tower project** – LVIA for a 200MW CSP power tower facility near Pofadder in the Northern Cape.
2. **Karoshoek Solar Valley** – LVIA for nine CSP projects including power tower and parabolic trough projects in the Karoshoek Solar Valley near Upington in the Northern Cape.
3. **Noupoort CSP** – LVIA for two CSP parabolic trough facilities close to Noupoort in the Northern Cape.
4. **Sol Invictus Solar** – LVIA for four 150MW photovoltaic solar arrays near Aggeneys in the Northern Cape for a private client
5. **Tshivhaso Power Station** – LVIA for a proposed new 600MW power station including associated infrastructure and dumps near Lephale in the Limpopo Province for a private client.
6. **Woodhouse Solar** – LVIA for two 100MW photovoltaic solar arrays near Vryburg in the North West Province for a private client.
7. **Saldanha Eskom Network Strengthening Project** – LVIA for major improvements to Eskom's electrical infrastructure between Langebaan and Saldanha in the Western Cape for Eskom.
8. **Albany Solar Array** – LVIA for two 75MW photovoltaic solar arrays near Upington in the Northern Cape.
9. **Mpophomeni Shopping Centre** – LVIA for a proposed new shopping center to the south of Midmar Dam in KwaZulu Natal for a private client.
10. **Gunstfontein Wind Farm** – LVIA for a 200MWnd farm near Sutherland in the Northern Cape for a private client.
11. **Hennenman Solar Array** – LVIA for a proposed solar array in the Free State for a private client.
12. **Moorreesburg Wind Farm** – LVIA for a proposed wind energy project in the Western Cape for a private client.
13. **Lethabo Solar Array** – LVIA for a proposed solar array at the Lethabo Power Station in the Free State for Eskom.
14. **Tutuka Solar Array** – LVIA for a proposed solar array at the Tutuka Power Station in Mpumalanga for Eskom.
15. **Majuba Solar Array** – LVIA for a proposed solar array at the Majuba Power Station in Mpumalanga for Eskom.
16. **Isundu 765 / 400Kv Sub Station** - LVIA for a proposed major substation in KwaZulu Natal for Eskom.
17. **Bhangazi Lake Tourism Development** – Visual impact assessment for a proposed lodge development within the Isimangaliso Wetland Park World Heritage Site. This work is ongoing.
18. **Quarry Development for the Upgrade of Sani Pass** – Visual Impact Assessments for two proposed quarry developments on the edge of the uKhalamba-Drakensburg World Heritage Site.
19. **Mtubatuba to St Lucia Overhead Power Line** – Visual Impact Assessment for a proposed power line bordering on the Isimangaliso Wetland Park World Heritage Site for

Eskom.

20. **St Faiths 400/132 kV Sub-Station and Associated Power Lines** - Visual Impact Assessment for a proposed new major sub-station and approximately 15km of overhead power line for Eskom.
21. **Clocolan to Ficksburg Overhead Power Line** – Visual Impact Assessment for a proposed power line for Eskom.
22. **Solar Plant Projects including Photovoltaic and Concentrating Solar Power Plants** – Numerous projects for Eskom and private clients in the Northern Cape, Limpopo, Mpumalanga and the Free State.
23. **Moorreesburg Wind Farm.** Visual impact assessment for a proposed new wind farm in the Western Cape.
24. **AngloGold Ashanti, Dokyiwa (Ghana)** – Visual Impact Assessment for proposed new Tailings Storage Facility at a mine site working with SGS as part of their EIA team.
25. **Camperdown Industrial Development** - Visual Impact Assessment for proposed new light industrial area to the north of Camperdown for a private client.
26. **Wild Coast N2 Toll Highway** – Peer review of VIA undertaken by another consultant.
27. **Gamma to Grass Ridge 765kv transmission line** – Peer review of LVIA undertaken by another consultant.
28. **Gateway Shopping Centre Extension (Durban)** – Visual Impact Assessment for a proposed shopping centre extension in Umhlanga, Durban.
29. **Kouroussa Gold Mine (Guinea)** – Visual impact assessment for a proposed new mine in Guinea working with SGS as part of their EIA team.
30. **Mampon Gold Mine (Ghana)** - Visual impact assessment for a proposed new mine in Ghana working with SGS as part of their EIA team.
31. **Telkom Towers** – Visual impact assessments for numerous Telkom masts in KwaZulu Natal
32. **Dube Trade Port, Durban International Airport** – Visual Impact Assessment for a new international airport.
33. **Sibaya Precinct Plan** – Visual Impact Assessment as part of Environmental Impact Assessment for a major new development area to the north of Durban.
34. **Umdloti Housing** – Visual Impact Assessment as part of Environmental Impact Assessment for a residential development beside the Umdloti Lagoon to the north of Durban.
35. **Tata Steel Ferrochrome Smelter** - Visual impact assessment of proposed new Ferrochrome Smelter in Richards Bay as part of EIA undertaken by the CSIR.
36. **Diamond Mine at Rooipoort Nature Reserve near Kimberley** – Visual impact assessment for a proposed diamond mine within an existing nature reserve for De Beers.
37. **Durban Solid Waste Large Landfill Sites** – Visual Impact Assessment of proposed development sites to the North and South of the Durban Metropolitan Area. The project utilised 3d computer visualisation techniques.
38. **Hillside Aluminium Smelter, Richards Bay** - Visual Impact Assessment of proposed extension of the existing smelter. The project utilised 3d computer visualisation techniques.
39. **Estuaries of KwaZulu Natal Phase 1 and Phase 2** – Visual character assessment and GIS mapping as part of a review of the condition and development capacity of eight

- estuary landscapes for the Town and Regional Planning Commission. The project was extended to include all estuaries in KwaZulu Natal.
40. **Signage Assessments** – Numerous impact assessments for proposed signage developments for Blast Media.
 41. **Signage Strategy** – Preparation of an environmental strategy report for a national advertising campaign on National Roads for Visual Image Placements.
 42. **Zeekoegatt, Durban** - Computer aided visual impact assessment. Acted as advisor to the Province of KwaZulu Natal in an appeal brought about by a developer to extend a light industrial development within a 60 metre building line from the National N3 Highway.
 43. **La Lucia Mall Extension** - Visual impact assessment using three dimensional computer modelling / photo realistic rendering and montage techniques for proposed extension to shopping mall for public consultation exercise.
 44. **Redhill Industrial Development** - Visual impact assessment using three dimensional computer modelling / photo realistic rendering and montage techniques for proposed new industrial area for public consultation exercise.
 45. **Avondale Reservoir** - Visual impact assessment using three dimensional computer modelling / photo realistic rendering and montage techniques for proposed hilltop reservoir as part of Environmental Impact Assessment for Umgeni Water.
 46. **Hammersdale Reservoir** - Visual impact assessment using three dimensional computer modelling / photo realistic rendering and montage techniques for proposed hilltop reservoir as part of Environmental Impact Assessment for Umgeni Water.
 47. **Southgate Industrial Park, Durban** - Computer Aided Visual Impact Assessment and Landscape Design for AECI.
 48. **Sainsbury's Bryn Rhos (UK)** - Computer Aided Visual Impact Assessment/ Planning Application for the development of a new store within the Green Wedge North of Swansea.
 49. **Ynyston Farm Access (UK)** - Computer Aided Impact Assessment of visual intrusion of access road to proposed development in Cardiff for the Land Authority for Wales.
 50. **Cardiff Bay Barrage (UK)** - Concept Design, Detail Design, Documentation, and Visual Input to Environmental Statement for consideration by Parliament in the debate prior to the passing of the Cardiff Bay Barrage Bill. The work was undertaken for Cardiff Bay Development Corporation.
 51. **A470, Cefn Coed to Pentrebach (UK)** - Preparation of frameworks for the assessment of the impact of the proposed alignment on the landscape for The Welsh Office.
 52. **Sparkford to Ilchester Bye Pass (UK)** - The preparation of the landscape framework and the draft landscape plan for the Department of Transport.
 53. **Green Island Reclamation Study (Hong Kong)** - Visual Impact Assessment of building massing, Urban Design Guidelines and Masterplanning for a New Town extension to Hong Kong Island.
 54. **Route 3 (Hong Kong)** - Visual Impact Assessment for alternative road alignments between Hong Kong Island and the Chinese Border.
 55. **China Border Link (Hong Kong)** - Visual Impact Assessment and initial Landscape Design for a new border crossing at Lok Ma Chau.
 56. **Route 81, Aberdeen Tunnel to Stanley (Hong Kong)** - Visual Impact Assessment for alternative highway alignments on the South side of Hong Kong Island.

CURRICULUM VITAE
Gerhardus Alfred Botha

Profession : Ecologist and Environmental Consultant
Specialisation : Ecological studies including flora, wetland and fauna studies
Years experience : 6 Years

KEY RESPONSIBILITIES

- Specific responsibilities as an Ecological Specialist and Environmental Consultant include, inter alia, professional execution of specialist consulting services (including flora, wetland and fauna studies, where required), impact assessment reporting, walk through surveys/ground-truthing to inform final design, compilation of management plans, compliance monitoring and audit reporting, in-house ecological awareness training to on-site personnel, and the development of project proposals for procuring new work/projects.

SKILLS BASE AND CORE COMPETENCIES

- Research Project Management
- Ecological assessments for developmental purposes (BAR, EIA)
- Working knowledge of environmental planning policies, regulatory frameworks and legislation
- Identification and assessment of potential environmental impacts and benefits.
- Development of practical and achievable mitigation measures and management plans and evaluation of risk to execution
- Qualitative and Quantitative Research
- Experienced in field research and monitoring
- Working knowledge of GIS applications and analysis of satellite imagery data
- Completed projects in several Provinces of South Africa and include a number of projects located in sensitive and ecological unique regions.

EDUCATION AND PROFESSIONAL STATUS

Degrees:

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

Courses:

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

Professional Society Affiliations:

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

EMPLOYMENT HISTORY

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

PROJECT EXPERIENCE

ECOLOGICAL RELATED STUDIES AND SURVEYS

- Barcelona 88/11kV substation and 88kV loop-in lines – Botanical Study (for Eskom).
- Farm development for academic purposes (Maluti FET College) on the Farm Rosedale 107, Harrismith – Ecological Study (for Agri Development Solutions).
- New boardwalk from Suiderstrand Gravel Road to Rasperpunt, Agulhas National Park – Botanical Survey (for SANPARKS).
- New boardwalk linking the southern most tip of Africa to the Cape Agulhas Lighthouse, Agulhas National Park – Botanical Survey (for SANPARKS)
- Construction of an icon at the southern most tip of Africa, Agulhas National Park – Botanical Survey (for SANPARKS).
- Optic Fibre Infrastructure Network, City of Cape Town Municipality – Assisted in botanical field work (for Dark Fibre Africa (Pty) Ltd).
- Optic Fibre Infrastructure Network, Swartland Municipality – Assisted in botanical field work (for Dark Fibre Africa).
- National long haul optic fibre infrastructure network project, Bloemfontein to Beaufort West – Protected and Endangered Species Walk-Through Survey & Invasive Plant Management Plan (for NEOTEL Ltd).
- National long haul optic fibre infrastructure network project, Bloemfontein to Beaufort West – Vegetation Rehabilitation Plan for illegally cleared areas (for NEOTEL Ltd).
- Proposed establishment of the Tugela Ridge Eco Estate on the farm Kruisfontein, Bergville – Ecological Study (for Envioworks (Pty) Ltd).
- De Aar Freight Transport Hub – Ecological Scoping and Feasibility Study (for Envioworks (Pty) Ltd).
- Construction of Botshabelo 132 kV line – Ecological Study (for Envioworks (Pty) Ltd).
- Establishment of Rocks Farm chicken broiler houses – Botanical study (for Rocks Farm (Pty) Ltd).
- Illegally ploughed land on the Farm Wolwekop 2353 – Vegetation Rehabilitation Study (for Envioworks (Pty) Ltd).
- Proposed Gihon Solar Farm - Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed expansion of the existing Afrimat quarry near Hluhluwe – Botanical Study (for GreenMined (Pty) Ltd).

- Audit of protected *Acacia erioloba* trees within the Assmang Wrenchville housing development footprint area – Botanical Audit (for Eco-Care Consultancy (Pty) Ltd).
- Rehabilitation of the N1 National Road between Sydenham and Glen Lyon – Peer Review of Ecological Report (for EKO Environmental (Pty) Ltd)
- Rehabilitation of the N6 National Road between Onze Rust and Bloemfontein – Peer Review of Ecological Report (for EKO Environmental (Pty) Ltd)
- Proposed expansion of the existing Scottburgh quarry near Amandawe – Botanical Study (for GreenMined (Pty) Ltd).
- Steelpoort Integration Project & Steelpoort to Wolwekraal 400kV Power Line – Botanical Walk Through Survey (for Savannah Environmental (Pty) Ltd).
- Proposed Transalloys circulating fluidised bed power station near Emalahleni – Ecological Impacts Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed Umbani circulating fluidised bed power station near Kriel – Scoping Ecological Impact Assessment & Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed Tshepong 5MW PV, Nyala 5MW and Eland 5MW facilities within Harmony Gold's mining rights areas between Odendaalsrus and Welkom – Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed Noupoot CSP Facility near Noupoot, Northern Cape Province – Ecological Scoping Assessment & Ecological Impacts Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Buffels Solar 1 PV Facility near Orkney, North West Province – Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Buffels Solar 2 PV Facility near Orkney, North West Province – Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Kalahari CSP Facility: 132kV Ferrum–Kalahari–UNTU & 132kV Kathu IPP–Kathu 1 Overhead Power Lines, Kathu, Northern Cape Province – Fauna and Flora Pre-Construction Walk Through Survey & Report (for Savannah Environmental (Pty) Ltd.).
- Kalahari CSP Facility: Access Roads, Kathu, Northern Cape Province – Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Karoshoek Solar Valley Development – Additional CSP Facility including tower infrastructure associated with authorised CSP Site 2 near Upington, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Karoshoek Solar Valley Development – Proposed Ilanga CSP 7 and 8 Facilities near Upington, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Karoshoek Solar Valley Development – Proposed Ilanga CSP 9 Facility near Upington, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Karusa Wind Farm (Phase 1 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Proposed Karusa Facility Substation and Ancillaries near Sutherland, Northern Cape Province – Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Eskom Karusa Switching Station and 132kV Double Circuit Overhead Power Line near Sutherland, Northern Cape Province – Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Karusa Wind Farm (Phase 1 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Plant Search and Rescue and Rehabilitation Management Plan (for Savannah Environmental (Pty) Ltd.).
- Authorised Karusa Wind Energy Facility near Sutherland, Northern Cape Province – Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).

- Proposed Soetwater Facility Substation, 132kV Overhead Power Line and Ancillaries, near Sutherland, Northern Cape Province - Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Soetwater Wind Farm (Phase 2 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Authorised Soetwater Wind Energy Facility near Sutherland, Northern Cape Province - Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Soetwater Wind Farm (Phase 2 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Plant Search and Rescue and Rehabilitation Management Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius Phase 1 Solar PV Project near Upington, Northern Cape Province- Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Sirius Phase 2 Solar PV Project near Upington, Northern Cape Province- Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 1) Solar PV Facility near Upington, Northern Cape Province Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 2) Solar PV Facility near Upington, Northern Cape Province - Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 1) Solar PV Facility near Upington, Northern Cape Province – Rehabilitation and Revegetation Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 2) Solar PV Facility near Upington, Northern Cape Province – Rehabilitation and Revegetation Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 1) Solar PV Facility near Upington, Northern Cape Province - Plant Rescue and Protection Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 2) Solar PV Facility near Upington, Northern Cape Province - Plant Rescue and Protection Plan (for Savannah Environmental (Pty) Ltd.).
- Proposed Expansion of the existing Komsberg Main Transmission Substation near Sutherland, Northern Cape Province - Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Semonkong Wind Energy Facility near Semonkong, Maseru District, Lesotho – Ecological Pre-Feasibility Study (for Savannah Environmental (Pty) Ltd.).
- Proposed Metal Industrial Cluster and Associated Infrastructure near Kuruman, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Proposed Woodhouse 1 and Woodhouse 2 PV Facilities near Vryburg, North West Province – Ecological Scoping Report & Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed CAMCO Clean Energy 100kW PV Solar Facility, Thaba Eco Lodge near Johannesburg, Gauteng Province: Ecological and Ridge Basic Assessment Report (for Savannah Environmental (Pty) Ltd.).
- Proposed Orkney Solar PV Facility near Orkney, North West Province - Ecological Scoping Report & Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed 132kV Power Line and On-Site Substation for the Authorised Golden Valley II Wind Energy Facility near Bedford, Eastern Cape Province - Ecological Basic Assessment Report (for Savannah Environmental (Pty) Ltd.).

WETLAND DELINEATION AND HYDROLOGICAL ASSESSMENTS

- Proposed Nyala 5MW PV facility within Harmony Gold's mining rights areas between Odendaalsrus and Welkom – Wetland Assessment & Delineation (for Savannah Environmental (Pty) Ltd).
- Proposed Eland 5MW PV facility within Harmony Gold's mining rights areas between Odendaalsrus and Welkom – Wetland Assessment & Delineation (for Savannah Environmental (Pty) Ltd).
- Proposed BlueWave 75MW PV Plant near Welkom Free State Province – Wetland Delineation and compilation of Map (for BlueWave Capital)
- Proposed Wolmaransstad Municipality 75MW PV Solar Energy Facility in the North West Province – Wetland Delineation Assessment (for Savannah Environmental (Pty) Ltd.).

AVIFAUNAL ASSESSMENTS

- Proposed TEWA Solar 1 Facility, east of Upington, Northern Cape Province – Avifaunal Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed TEWA Solar 2 Facility, east of Upington, Northern Cape Province – Avifaunal Impact Assessment (for Savannah Environmental (Pty) Ltd).

ENVIRONMENTAL IMPACT ASSESSMENT

- Barcelona 88/11kV substation and 88kV loop-in lines – BA (for Eskom).
- Thabong Bulk 132kV sub-transmission inter-connector line – EIA (for Eskom).
- Groenwater 45 000 unit chicken broiler farm – BA (for Areemeng Mmogo Cooperative).
- Optic Fibre Infrastructure Network, City of Cape Town Municipality – BA (for Dark Fibre Africa (Pty) Ltd).
- Optic Fibre Infrastructure Network, Swartland Municipality – BA (for Dark Fibre Africa).
- Construction and refurbishment of the existing 66kV network between Ruigtevallei Substation and Reddersburg Substation – EMP (for Eskom).
- Lower Kruisvallei Hydroelectric Power Scheme (Ash river) – EIA (for Kruisvallei Hydro (Pty) Ltd).
- Construction of egg hatchery and associated infrastructure – BA (For Supreme Poultry).
- Construction of the Klipplaatdrif flow gauging (Vaal river) – EMP (DWAF).

ENVIRONMENTAL COMPLIANCE AUDITING AND ECO

- National long haul optic fibre infrastructure network project, Bloemfontein to Laingsburg – ECO.
- National long haul optic fibre infrastructure network project, Wolmaransstad to Klerksdorp – ECO.
- Construction and refurbishment of the existing 66kV network between Ruigtevallei Substation and Reddersburg Substation – ECO.
- Construction and refurbishment of the Vredefort/Nooitgedacht 11kV power line – ECO
- Environmental compliance audit and botanical account of Afrisam's premises in Bloemfontein – Environmental Compliance Auditing.

OTHER PROJECTS:

- Keeping and breeding of lions (*Panthera leo*) on the farm Maxico 135, Ficksburg – Management and Business Plan (for Enviroworks (Pty) Ltd.)
- Keeping and breeding of lions (*Panthera leo*) on the farm Mooihoek 292, Theunissen – Management and Business Plan (for Enviroworks (Pty) Ltd.)
- Keeping and breeding of wild dogs (*Lycaon pictus*) on the farm Mooihoek 292, Theunissen – Management and Business Plan (for Enviroworks (Pty) Ltd.)
- Existing underground and aboveground fuel storage tanks, TWK AGRI: Pongola – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks on Erf 171, TWK AGRI: Amsterdam – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 14 000 L of fuel (diesel) aboveground on Erf 32, TWK AGRI: Carolina – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 23 000 L of fuel (diesel) above ground on Portion 10 of the Farm Oude Bosch, Humansdorp – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 16 000 L of fuel (diesel) aboveground at Panbult Depot – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks, TWK AGRI: Mechanisation and Engineering, Piet Retief – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks on Portion 38 of the Farm Lothair, TWK AGRI: Lothair – Environmental Management Plan (for TWK Agricultural Ltd).