

## APPENDIX 2: PROOF OF SACNASP REGISTRATION AND HIGHEST QUALIFICATION


**SACNASP**  
South African Council for Natural Scientific Professions


**herewith certifies that**  
**Tarryn Barbara Lee Martin**  
Registration Number: 008745  
**is a registered scientist**

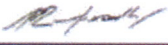
in terms of section 20(3) of the Natural Scientific Professions Act, 2003  
(Act 27 of 2003)  
in the following field(s) of practice (Schedule 1 of the Act)


Environmental Science (Professional Natural Scientist)  
Botanical Science (Professional Natural Scientist)

Effective 29 January 2014 Expires 31 March 2023



  
Chairperson

  
Chief Executive Officer



To verify this certificate scan this code



# RHODES UNIVERSITY

THIS IS TO CERTIFY THAT

TARRYN BARBARA LEE MARTIN

WAS THIS DAY AT A CONGREGATION OF THE UNIVERSITY  
ADMITTED TO THE DEGREE OF

**MASTER OF SCIENCE**

IN

**BOTANY**

**WITH DISTINCTION**

GRAHAMSTOWN  
10 APRIL 2010

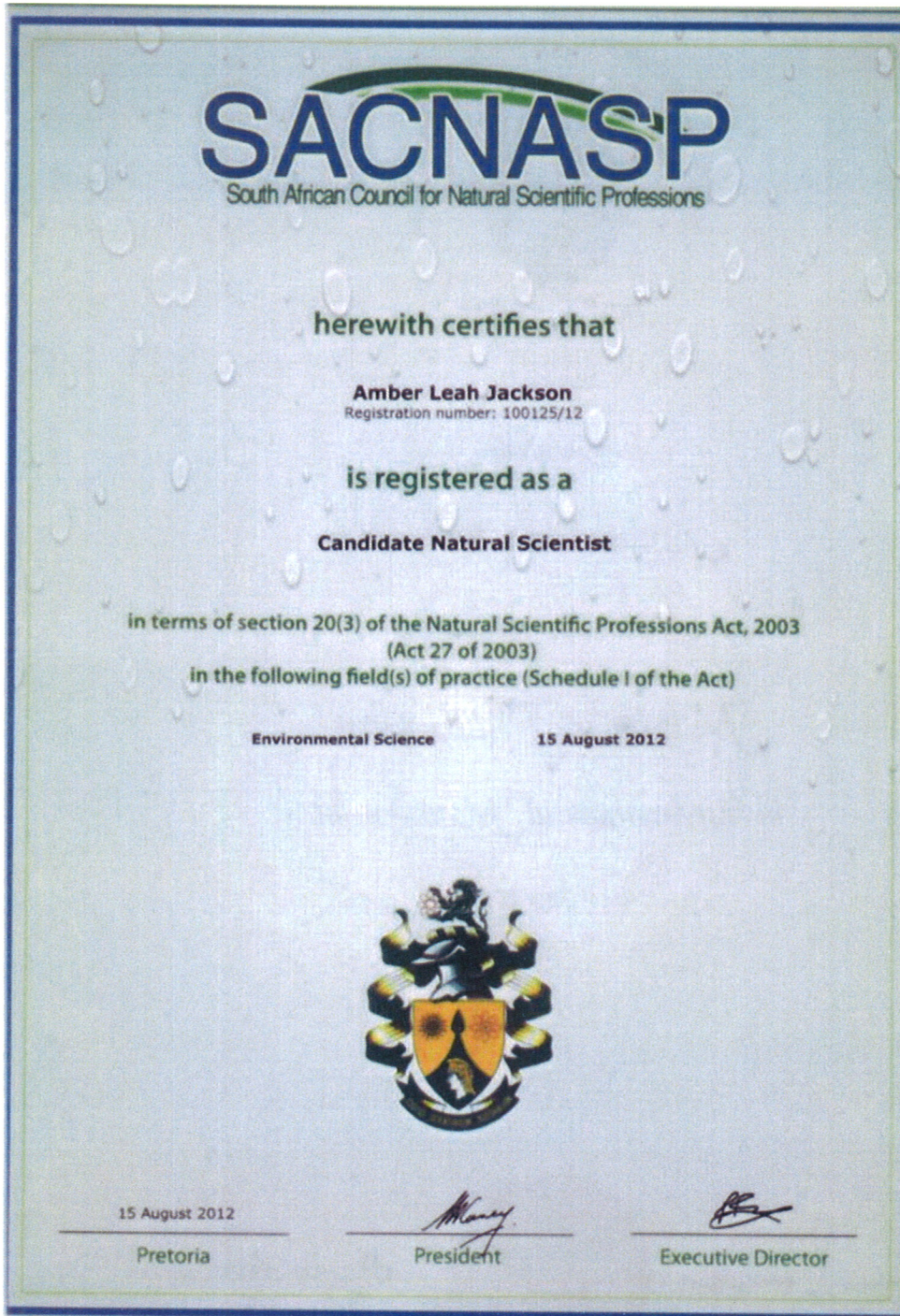


VICE CHANCELLOR

DEAN OF THE FACULTY OF SCIENCE

REGISTRAR

Application for Professional Natural Science in the field of Zoology is currently awaiting approval.





*we certify that*

*Amber Leah Jackson*

*was admitted to the degree of*

*Master of Philosophy  
in Environmental Management*

*on 9 June 2011*

Handwritten signature of Alan Price in black ink.

Vice-Chancellor



Handwritten signature of Hugh Amoore in black ink.

Registrar

## APPENDIX 3: CV

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### CONTACT DETAILS

<b>Name</b>	<b>Tarryn Martin</b>
<b>Name of Company</b>	<b>Biodiversity Africa</b>
<b>Designation</b>	Director
<b>Profession</b>	Botanical Specialist and Environmental Manager
<b>E-mail</b>	<a href="mailto:tarryn@biodiversityafrica.com">tarryn@biodiversityafrica.com</a>
<b>Office number</b>	+27 (0)71 332 3994
<b>Education</b>	2010: Master of Science with distinction (Botany) 2004: Bachelor of Science (Hons) in African Terrestrial Vertebrate Biodiversity 2003: Bachelor of Science
<b>Nationality</b>	<b>South African</b>
<b>Professional Body</b>	<b>SACNASP:</b> South African Council for Natural Scientific Profession: Professional Natural Scientist (400018/14) <b>SAAB:</b> Member of the South African Association of Botanists <b>IAIASa:</b> Member of the International Association for Impact Assessments South Africa Member of Golden Key International Honour Society
<b>Key areas of expertise</b>	<ul style="list-style-type: none"><li>• Biodiversity Surveys and Impact Assessments</li><li>• Environmental Impact Assessments</li><li>• Critical Habitat Assessments</li><li>• Biodiversity Management and Monitoring Plans</li></ul>

### PROFILE

Tarryn has over ten years of experience working as a botanist, nine of which are in the environmental sector. She has worked as a specialist and project manager on projects within South Africa, Mozambique, Lesotho, Zambia, Tanzania, Cameroon and Malawi.

She has extensive experience writing botanical impact assessments, critical habitat assessments, biodiversity management plans, biodiversity monitoring plans and Environmental Impact Assessments to International Standards, especially to those of the International Finance Corporation (IFC). Her experience includes working on large mining projects such as the Kenmare Heavy Minerals Mine, where she monitored forest health, undertook botanical impact assessments for their expansion projects and designed biodiversity management and monitoring plans. She has also project managed Environmental Impact Assessments for graphite mines in northern Mozambique and has a good understanding of the Mozambique Environmental legislation and processes.

Tarryn holds a BSc (Botany and Zoology), a BSc (Hons) in African Vertebrate Biodiversity and an MSc with distinction in Botany from Rhodes University. Tarryn's Master's thesis examined the impact of fire on the recovery of C<sub>3</sub> and C<sub>4</sub> Panicoid and non-Panicoid grasses within the context of climate change for which she won the Junior Captain Scott-Medal (Plant Science) for producing the top MSc of 2010 from the South African Academy of Science and Art as well as an Award for Outstanding Academic Achievement in Range and Forage Science from the Grassland Society of Southern Africa. Tarryn is a professional member of the South African Council for Natural Scientific Professionals (since 2014).

<b>EMPLOYMENT EXPERIENCE</b>	<b>Director and Botanical Specialist, Biodiversity Africa</b> <i>July 2021 - present</i> <ul style="list-style-type: none"><li>• Botanical and ecological assessments for local and international EIAs in Southern Africa</li></ul>
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- Identifying and mapping vegetation communities and sensitive areas
- Designing and implementing biodiversity management and monitoring plans
- Designing rehabilitation plans
- Designing alien management plans
- Critical Habitat Assessments
- Large ESIA studies
- Managing budgets

**Principal Environmental Consultant, Branch Manager and Botanical Specialist,**  
Coastal and Environmental Services

*May 2012-June 2021*

- Botanical and ecological assessments for local and international EIAs in Southern Africa
- Identifying and mapping vegetation communities and sensitive areas
- Designing and implementing biodiversity management and monitoring plans
- Designing rehabilitation and biodiversity offset plans
- Designing alien management plans
- Critical Habitat Assessments
- Large ESIA studies
- Managing budgets
- Cape Town branch manager
- Coordinating specialists and site visits

**Accounts Manager, Green Route DMC**

*October 2011- January 2012*

- Project and staff co-ordination
- Managing large budgets for incentive and conference groups travelling to southern Africa
- Creating tailor-made programs for clients
- Negotiating rates with vendors and assisting with the ground management of inbound groups to ensure client satisfaction.

**Camp Administrator and Project Co-ordinator, Windsor Mountain International Summer Camp, USA**

*April 2011 - September 2012*

- Co-ordinated staff and camper travel arrangements, main camp events and assisted with marketing the camp to prospective families.

**Freelance Project Manager, Green Route DMC**

*November 2010 - April 2011*

- Project and staff co-ordination
- Managing large budgets for incentive and conference groups travelling to southern Africa
- Creating tailor-made programs for clients
- Negotiating rates with vendors and assisting with the ground management of inbound groups to ensure client satisfaction.

**Camp Counselor, Windsor Mountain Summer Camp, USA**

*June 2010 - October 2010*

**NERC Research Assistant, Botany Department, Rhodes University, Grahamstown in collaboration with Sheffield University, Sheffield, England**

*April 2009 - May 2010*

- Set up and maintained experiments within a common garden plot experiment
- collected, collated and entered data

- Assisted with the analysis of the data and writing of journal articles

**Head Demonstrator**, Botany Department, Rhodes University

March 2007 - October 2008

**Operations Assistant**, Green Route DMC

September 2005 - February 2007

- Project and staff co-ordination
- Managing large budgets for incentive and conference groups travelling to southern Africa
- Creating tailor-made programs for clients
- Negotiating rates with vendors and assisting with the ground management of inbound groups to ensure client satisfaction

#### **PUBLICATIONS**

- Ripley, B.; Visser, V.; Christin, P.A.; Archibald, S.; Martin, T and Osborne, C. Fire ecology of C<sub>3</sub> and C<sub>4</sub> grasses depends on evolutionary history and frequency of burning but not photosynthetic type. *Ecology*. 96 (10): 2679-2691. 2015
- Taylor, S.; Ripley, B.S.; Martin, T.; De Wet, L-A.; Woodward, F.I.; Osborne, C.P. Physiological advantages of C<sub>4</sub> grasses in the field: a comparative experiment demonstrating the importance of drought. *Global Change Biology*. 20 (6): 1992-2003. 2014
- Ripley, B; Donald, G; Osborne, C; Abraham, T and Martin, T. Experimental investigation of fire ecology in the C<sub>3</sub> and C<sub>4</sub> subspecies of *Alloteropsis semialata*. *Journal of Ecology*. 98 (5): 1196 - 1203. 2010
- South African Association of Botanists (SAAB) conference, Grahamstown. Title: Responses of C<sub>3</sub> and C<sub>4</sub> Panicoid and non-Panicoid grasses to fire. January 2010
- South African Association of Botanists (SAAB) conference, Drakensberg. Title: Photosynthetic and Evolutionary determinants of the response of selected C<sub>3</sub> and C<sub>4</sub> (NADP-ME) grasses to fire. January 2008

#### **COURSES**

- Rhodes University and CES, Grahamstown
- EIA Short Course 2012
- Fynbos identification course, Kirstenbosch, 2015.
- Photography Short Course, Cape Town School of Photography, 2015.
- Using Organized Reasoning to Improve Environmental Impact Assessment, 2018, International IAIA conference, Durban

#### **CONSULTING EXPERIENCE**

##### **International Projects**

- 2020 – 2021: Project manager for the 2Africa subsea cable ESIA in Mozambique.
- 2020 – 2021: Project manager for the Category B EIA for the Wihinana Graphite Mine, Cabo delgado, Mozambique
- 2020 – 2021: Project manager for the category B exploration ESIA for Sofala Heavy Minerals Mine, Inhambane, Mozambique
- 2020: Critical Habitat Assessment for a graphite mine in Cabo Delgado, Mozambique. This assessment was to IFC standards.
- 2020: Analysed the botanical dataset for Lurio Green Resources and provided comment on the findings and gaps.
- 2020: Biodiversity Management Plan and Monitoring Plan for mine at Pilivilli in Nampula Province, Mozambique. This assessment was to IFC standards.
- 2019: Botanical Assessment for a cocoa plantation, Tanzania. This assessment was to IFC standards.
- 2019: Critical Habitat Assessment, Biodiversity Management Plan and Ecosystem Services Assessment for JCM Solar Farm in Cameroon. This assessment was to IFC standards.
- 2019: Undertook the Kenmare Road and Infrastructure Botanical Baseline Survey and Impact Assessment for an infrastructure corridor that will link the existing mine at Moma to the new proposed mine at Pillivilli in Nampula Province, Mozambique. This assessment was to IFC standards.

- 2012 – Present: Kenmare Terrestrial Monitoring Program Project Manager and Specialist Survey, Nampula Province, Mozambique.
- 2018: Conducted a field survey and wrote a botanical report to IFC standards for the proposed Balama Graphite Mine Environmental and Social Impact Assessment (ESIA) in Cabo Delgado Province, Mozambique.
- 2018: Co-authored the critical habitat assessment chapter for the proposed Kenmare Pilivilli Heavy Minerals Mine.
- 2018: Authored the Conservation Efforts chapter for the Kenmare Pilivilli Heavy Minerals Mine.
- 2017-2018: Co-authored and analysed data for the Kenmare Bioregional Survey of *Icuria dunensis* (species trigger for critical habitat) in Nampula Province, Mozambique. This was for a mining project that needed to be IFC compliant.
- 2017: Conducted a field survey and wrote a botanical report to IFC standards for the proposed Ancuabe Graphite Mine Environmental and Social Impact Assessment (ESIA) in Cabo Delgado Province, Mozambique.
- 2017-2018: Managed the Suni Resources Montepuez Graphite Mine Environmental Impact Assessment. This included the management of ten specialists, the co-ordination of their field surveys, regular client liaison and the writing of the Environmental Impact Assessment Report which summarised the specialists findings, assessed the impacts of the proposed mine on the environment and provided mitigation measures to reduce the impact.  
I was also the lead botanist for this baseline survey and impact assessment and undertook the required field work and analysed the data and wrote the report.
- 2017: Undertook the botanical baseline survey and impact assessment for the proposed Kenmare Pilivili Heavy Mineral Mine in Nampula Province, Mozambique. This was to IFC Standards.
- 2017: Ecological Survey for the Megaruma Mining Limitada Ruby Mine Exploration License, Cabo Delgado, Mozambique.
- 2016: Undertook the botanical baseline survey and impact assessment, wrote an alien invasive management plan and co-authored the biodeiversity monitoring plan for this farm. The project was located in Zambezia Province, Mozambique.
- 2015-2016: Conducted the Triton Minerals Nicanda Hills Graphite Mine Botanical Survey and Impact Assessment. Was also the project manager and specialist co-ordinator for this project. The project was located in Cabo Delgado Province, Mozambique.
- 2015: Was part of the team that undertook a Critical Habitat Assessment for the Nhangonzo Coastal Stream site at Inhassora in Mozambique that Sasol intend to establish drill pads at. This project needed to meet the IFC standards.
- 2014: Lurio Green Resources Wood Chip Mill and Medium Density Fibre-board Plant, Project Manager and Ecological Specialist, Nampula Province, Mozambique. 2014-2015.
- 2013-2014: LHDA Botanical Survey, Baseline and Impact assessment, Lesotho.
- 2014: Biotherm Solar Voltaic Ecological Assessment, Zambia.
- 2013-2014: Lurio Green Resources Plantation Botanical Assessment, Vegetation and Sensitivity Mapping, Specialist Co-ordination, Nampula Province, Mozambique.
- 2013: Syrah Resources Botanical Baseline Survey and Ecological Assessment., Cabo Delgado Mozambique.
- 2013-2014: Baobab Mining Ecological Baseline Survey and Impact Assessment, Tete, Mozambique.

#### **South African Projects**

- 2021 - Present: Project Manager for the Sturdee Energy Solar PV facility, Western Cape
- 2021: Ecological Assessment for the Sturdee Energy Solar PV facility, Western Cape
- 2021: Rehabilitation plan for a housing development (Hope Village)
- 2020: Ecological Assessment for the Eskom Juno-Gromis Powerline deviation, Western Cape



- 2020: Project Manager for the Basic Assessment for SANSA development at Matjiesfontein (Western Cape). Project received authorization in 2021.
- 2020: Ecological Assessment for construction of satellite antennae, Matjiesfontein, Western Cape
- 2019: Ecological Assessment for a wind farm EIA, Kleinzee, Northern Cape
- 2019: Ecological Assessment for two housing developments in Zeerust, North West Province
- 2019: Botanical Assessment in Retreat, Cape Town for the DRDLR land claim.
- 2019: Cape Agulhas Municipality Botanical Assessment for the expansion of industrial zone, Western Cape, South Africa, 2019.
- 2018: Ecological Assessment for the construction of a farm dam in Greyton, Western Cape.
- 2018: Conducted the Ecological Survey for a housing development in Noordhoek, Cape Town
- 2018: Conducted the field survey and developed an alien invasive management plan for the Swartland Municipality, Western Cape.
- 2017: Undertook the field survey and co-authored a coastal dune study that assesses the impacts associated with the proposed rezoning and subdivision of Farm Bookram No. 30 to develop a resort.
- 2017: Project managed and co-authored a risk assessment for the use of Marram Grass to stabilise dunes in the City of Cape Town.
- 2015-2016: iGas Saldanha to Ankerlig Biodiversity Assessment Project Manager, Saldanha.
- 2015: Innowind Ukomoleza Wind Energy Facility Alien Invasive Management Plan, Eastern Cape Province, South Africa.
- 2015: Savannah Nxuba Wind Energy Facility Powerline Ecological Assessment, ground truthing and permit applications, Eastern Cape South Africa.
- 2014: Cob Bay botanical groundtruthing assessment, Eastern Cape, South Africa.
- 2013-2016: Dassiesridge Wind Energy Facility Project Manager, Eastern Cape, South Africa.
- 2013: Harvestvale botanical groundtruthing assessment, Eastern Cape, South Africa.
- 2012: Tsitsikamma Wind Energy Facility Community Power Line Ecological Assessment, Eastern Cape, South Africa.
- 2012: Golden Valley Wind Energy Facility Power Line Ecological Assessment, Eastern Cape, South Africa.
- 2012: Middleton Wind Energy Facility Ecological Assessment and Project Management, Eastern Cape, South Africa.
- 2012: Mossel Bay Power Line Ecological Assessment, Western Cape, South Africa.
- 2012: Groundtruthing the turbine sites for the Waainek Wind Energy Facility, Eastern Cape, South Africa.
- 2012: Toliara Mineral Sands Rehabilitation and Offset Strategy Report, Madagascar.

## **CONTACT DETAILS**

<b>Name</b>	<b>Amber Jackson</b>
<b>Name of Company</b>	<b>Biodiversity Africa</b>
<b>Designation</b>	Director
<b>Profession</b>	Faunal Specialist and Environmental Manager
<b>E-mail</b>	<a href="mailto:amber@biodiversityafrica.com">amber@biodiversityafrica.com</a>
<b>Office number</b>	+27 (0)78 340 6295
<b>Education</b>	2011 M. Phil Environmental Management (University of Cape Town) 2008 BSc (Hons) Ecology, Environment and Conservation (University of the Witwatersrand) 2007 BSc 'Ecology, Environment and Conservation' and Zoology (WITS)
<b>Nationality</b>	<b>South African</b>
<b>Professional Body</b>	<b>SACNASP:</b> South African Council for Natural Scientific Profession (100125/12) <b>ZSSA:</b> Zoological Society of Southern Africa <b>HAA:</b> Herpetological Association of Southern Africa <b>IAIASa:</b> Member of the International Association for Impact Assessments South Africa
<b>Key areas of expertise</b>	<ul style="list-style-type: none"><li>• Biodiversity Surveys and Impact Assessments</li><li>• Environmental Impact Assessments</li><li>• Critical Habitat Assessments</li><li>• Biodiversity Management and Monitoring Plans</li></ul>

## **PROFILE**

Amber has over ten years' experience in environmental consulting and has managed projects across various sectors including mining, agriculture, forestry, renewable energy, housing, coastal and wetland recreational infrastructure. Most of these projects required lender finance and therefore met both in-country, lender and sector specific requirements.

Amber completed the IFC lead and Swiss funded programme in Environmental and Social Risk Management course in 2018. The purpose of the course was to upskill Sub-Saharan African environmental consultants to increase the uptake of E&S standards by Financial Institutions.

Amber specialises in terrestrial vertebrate faunal assessments. She has conducted large scale faunal impact assessments that are to international lender's standards in Mozambique, Tanzania, Lesotho and Malawi. In South Africa her faunal impact assessments comply with the protocols for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity and follows the SANBI Species Environmental Assessment Guideline. Her specialist input goes beyond impact assessments and includes faunal opportunities and constraints assessments, Critical Habitat Assessments, Biodiversity related Management Plans and Biodiversity Monitoring Programmes.

Amber holds a BSc (Zoology and Ecology, Environment & Conservation) and BSc (Hons) in Ecology, Environment & Conservation from WITS University and an MPhil in Environmental Management from University of Cape Town. Amber's honours focused on the landscape effects on Herpetofauna in Kruger National Park and her Master's thesis focused on the management of social and natural aspects of environmental systems with a dissertation in food security that investigated the complex food system of informal and formal distribution markets

## **EMPLOYMENT EXPERIENCE**

**Director and Faunal Specialist, Biodiversity Africa**  
*July 2021 - present*

- Faunal assessments for local and international EIAs in Southern Africa
- Identifying and mapping habitats and sensitive areas
- Designing and implementing biodiversity management and monitoring plans
- Critical Habitat Assessments
- Large ESIA studies
- Managing budgets

**Principal Environmental Consultant and Faunal,**

## Coastal and Environmental Services

*September 2011-June 2021*

- Faunal and ecological assessments for local and international EIAs in Southern Africa
- Identifying and mapping habitat and sensitive areas
- Designing and implementing biodiversity management and monitoring plans
- Critical Habitat Assessments
- Large ESIA studies
- Coordinating specialists and site visits
- Faunal Impact Assessment
- Project Management, including budgets, deliverables and timelines.
- Environmental Impact Assessments and Basic Assessments project
- Environmental Control Officer
- Public/client/authority liaison
- Mentoring and training of junior staff

## COURSES

- **Herpetological Association of Southern Africa Conference- Cape St Frances** September 2019
- **International Finance Corporation Environmental and Social Risk Management (ESRM) Program** January – November 2018
- **IAIA WC EMP Implementation Workshop** 27 February 2018
- **IAIAsa National Annual Conference** August 2017  
Goudini Spa, Rawsonville.
- **Biodiversity & Business Indaba, NBBN** April 2017  
Theme: Moving Forward Together (Partnerships & Collaborations)
- **Snake Awareness, Identification and Handling course, Cape Reptile Institute (CRI)** November 2016
- **Coaching Skills programme, Kim Coach** November 2016
- **Western Cape Biodiversity Information Event, IAIAsa** May 2016  
Theme: Biodiversity offsets & the launch of a Biodiversity Information Tool
- **Photography Short Course** 2015.  
Cape Town School of Photography,
- **Mainstreaming Biodiversity into Business: WHAT, WHY, WHEN and HOW** June 2014 Hosted by Dr Marie Parramon Gurney on behalf of the NBBN at the Rhodes Business School
- **IAIAsa National Annual Conference** September 2013  
Thaba’Nchu Sun, Bloemfontein
- **St Johns Life first aid course** July 2012

## CONSULTING EXPERIENCE

### International Projects

- 2018-Crooks Brothers Post EIA Work- Environmental and Social EMPr, Policies, E&S Management Plans and Monitoring Programmes
- 2018-Triton Ancuabe Graphite Mine (ESHIA), Mozambique. IFC Standards.
- 2016-Bankable Feasibility Study of Simandou Infrastructure Project – Port and Railway Summary of critical habitat, biodiversity offset plan and monitoring and evaluation plan.
- 2016-Lurio Green Resources Forestry Projects ESIA project upgrade to Lender standards including IFC, EIB, FSC and AfDB.
- 2014-Green Resources Woodchip and MDF plant (EPDA).
- 2014-Niassa Green Resources Forestry Projects ESIA to Lender standards including IFC, EIB, FSC and AfDB.

- 2020-Kenmare Faunal Biodiversity Management Plan, Mozambique.
- 2020-Kenmare Faunal Monitoring Programme (year 1)- Baseline, Mozambique.
- 2019-Kenmare addendum ESIA Faunal Impact Assessment, Mozambique.
- 2019-Kenmare infrastructure corridor ESIA Faunal Impact Assessment, Mozambique.
- 2019/20-Olam Cocoa Plantation Faunal Impact Assessment, Tanzania.
- 2019-JCM Solar Voltaic project Faunal desktop critical habitat assessment, Cameroon.
- 2018-Suni Resources Balama Graphite Mine Project Faunal Impact Assessment, Mozambique.
- 2017/18-Battery Minerals Montepuez Graphite Mine Project Faunal Impact Assessment, Mozambique.
- 2017-Triton Minerals Nicanda Hills Graphite Mine Project Faunal Impact Assessment, Mozambique.
- 2017-Sasol Biodiversity Assessment, Mozambique.
- 2014-Lesotho Highlands Water Project Faunal Impact Assessment, Lesotho.
- 2012-Malawi Monazite mine Projects (ESIA) EMP ecological management contribution
- Liberia Palm bay & Butow (ESIA)
- PGS Seismic Project (ESIA), Mozambique.

#### **South African Projects**

- 2018-Port St Johns Second Beach Coastal Infrastructure Project - E&S Risk Assessment
- 2015-Blouberg Development Initiative- E&S Risk Assessment
- 2019-Boulders Powerline BA Faunal desktop impact assessment, WC, SA.
- 2019-Ramotshere housing development BA Faunal desktop impact assessment, NW, SA.
- 2019-Cape Agulhas Municipality Industrial development faunal impact assessment, WC, SA.
- 2019-SANSA Solar PV BA Faunal desktop impact assessment, WC, SA.
- 2019-Wisson Coal to Urea Faunal desktop assessment, Mpumalanga.
- 2019-Assessment Boschendal Estate Faunal Opportunities and Constraints, WC, SA.
- 2019-Ganspan-Pan Wetland Reserve Recreational and Tourist Development Avifaunal Impact Assessment, NC, SA.
- 2018-City of Johannesburg Municipal Reserve Proclamation for Linksfield Ridge and Northcliff Hill Faunal Assessment, South Africa.
- 2017-Augrabies falls hydro-electric project Hydro-SA Faunal Impact Assessment.
- Port St Johns Second Beach Coastal Infrastructure Project (EIA), South Africa.
- Woodbridge Island Revetment checklist.
- Belmont Valley Golf Course and Makana Residential Estate (EIA)
- Belton Farm Eco Estate (BA).
- Ramotshere housing development (BA).
- G7 Brandvalley Wind Energy Project (EIA)
- G7 Rietkloof Wind Energy Project (EIA)
- G7 Brandvalley Powerlines (BA)
- G7 Rietkloof Powerlines (BA)
- Boschendal wine estate Hydro-electric schemes (BA, 24G and WULA)
- Mossel Bay Wind Energy Project (EIA)
- Mossel Bay Powerline (BA) 132kV interconnection
- Inyanda Farm Wind Energy (EIA)
- Middleton Wind Energy (EIA)
- Peddie Wind Energy (EIA)

- Cookhouse Wind Energy Project (EIA)
- Haverfontein Wind Energy Project (EIA)
- Plan 8 Wind Energy Project (EIA)
- Brakkefontein Wind Energy Project (EIA)
- Grassridge Wind Energy Project (EIA) (Coega)
- St Lucia Wind Energy Project (EIA)
- ACSA ECO CT (Lead ECO)
- Enel Paleisheuwel Solar farm (Lead ECO)
- NRA Caledon road upgrade ECO
- Solar Capital DeAar Solar farm annual audits
- Eskom Pinotage substation WUL offset compliance



and Powrie, L. W. (ed.) *The Vegetation Map of South Africa, Lesotho and Swaziland*. Version 20. Available at: <http://bgis.sanbi.org/SpatialDataset/Detail/18>.

Skowno, A. L. et al. (2019) *South African National Biodiversity Assessment 2018 Technical Report Volume 1: Terrestrial Realm*. South African National Biodiversity Institute, Pretoria. <http://hdl.handle.net/20.500.12143/6370>.

South African National Biodiversity Institute (SANBI) (2020) *Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa*. South African National Biodiversity Institute, Pretoria. V.

South African National Biodiversity Institute and Department of Forestry, F. and the E. (2021) *Red List of Terrestrial Ecosystems of South Africa June 2021 – version for public comments*. South African National Biodiversity Institute. Pretoria, South Africa.

## Appendix-1 – CV Jonathan Colville

### CURRICULUM VITAE – JONATHAN F. COLVILLE

#### EDUCATION

**PhD (Zoology):** University of Cape Town, 2009. Thesis title: "*Understanding the evolutionary radiation of the megadiverse monkey beetle fauna (Scarabaeidae: Hopliini) of South Africa*".

**Postdoctoral research fellowship:** South African National Biodiversity Institute, 2009-2010.

#### PRIOR EMPLOYMENT

**National Research Foundation Research Career Advancement Fellow:** South African National Biodiversity Institute (2014-2019).

**Researcher,** South African National Biodiversity Institute, GEF/UNEP/FAO Global Pollination Project – South Africa (2010-2014).

#### PUBLICATIONS

##### Books edited:

- Allsopp, N., **Colville, J.F.**, Verboom, G.T. (2014). *Fynbos: Ecology, Evolution, and Conservation of a Megadiverse Region* (16 chapters; pp 1-377). Oxford University Press.

##### Book chapters:

- Forest F., **Colville J.F.**, Cowling R.M. (2018). Evolutionary diversity patterns in the Cape Flora of South Africa. *In: Phylogenetic Diversity: Applications and challenges in biodiversity science*. R. Scherson, D. Faith (Eds), Springer International Publishing.
- Lebuhn, G., Connor, E.F., Brand, M., **Colville, J.F.**, Keday, D., Resham, B.T., Muo, K., Ravindra, K.J. (2015). Monitoring pollinators around the world. *In: Pollination services to agriculture*. B. Gemmill-Herren (Ed), Routledge.
- Colville, J.F.**, Potts, A.J., Bradshaw, P.L., Measey, G.J., Snijman, D., Picker, M.D., Procheş, Ş., Bowie, R.C.K., Manning, J.C. (2014). Floristic and faunal Cape biochoria: do they exist? *In: Fynbos: Ecology, Evolution, and Conservation of a Megadiverse Region*. N. Allsopp, J.F. Colville, G.A. Verboom (Eds), Oxford University Press.

- Lach, L., Picker, M.D., **Colville, J.F.**, Allsopp, M.H., and Griffiths, C.L. (2002). Alien invertebrate animals in South Africa. In: *Biological invasions: Economic and environmental costs of alien plant, animal, and microbe species*. D. Pimentel (Ed), CRC Press, London.

#### Journal articles:

- Barraclough, D.A., and **Colville, J.F.** (2022). The first species of Nemestrinidae (Diptera) endemic to Madagascar: A remarkable new species of *Atriadops* Wandolleck, 1897. *Zootaxa*. 5196 (1): 145–150.
- Dombrow, H., **Colville, J.F.**, Bowie, R.C.K. (2022). Review of the genus *Amblymelanoplia* Dombrow, 2002 (Coleoptera: Scarabaeidae: Melolonthinae: Hopliini) with the description of ninety-three new species from South Africa and observations on its biogeography and phylogeny. *Zootaxa*. 5163 (1): 1–278.
- Melin, A., and **Colville, J.F.** (2022). Description of the male of *Rediviva steineri* Kuhlmann 2012 (Hymenoptera: Melittidae), an endemic oil-collecting bee species from South Africa. *African Entomology*. 30: e11178.
- Allen-Perkins, A., Magrach, A., Dainese, M., Garibaldi, L., ... **Colville, J.F.**, et al. (2022). CropPol: A dynamic, open, and global database on crop pollination. *Ecology*. 103, 3, e3614.
- Dorchin, N.; van Munster, S.; Klak, C.; Bowie, R.C.K.; **Colville, J.F.** (2022). Hidden diversity – A new speciose gall midge genus (Diptera: Cecidomyiidae) associated with succulent Aizoaceae in South Africa. *Insects*. 13, 75. <https://doi.org/10.3390/insects13010075>
- Cohen, C., Liltved, W.R., **Colville, J.F.**, Shuttleworth, A., Weissflog, J., Svatos, A., Bytebier, B., Johnson, S.D. (2021). Sexual deception of a beetle pollinator through floral mimicry. *Current Biology*. 31: 1–8.
- Krenn, H.W., Karolyi, F., Lampert, P., Melin, A., **Colville, J.F.** (2021). Nectar uptake of a long-proboscid *Prosoeca* fly (Nemestrinidae) – Proboscis morphology and flower shape. *Insects*. 12(371): 1–13.
- McLeod, L., and **Colville, J.F.** (2021). Observations on unusual feeding and mating behaviour of a monkey beetle genus *Amblymelanoplia* Dombrow (Coleoptera: Scarabaeidae: Hopliini). *African Entomology*. 29(1): 301–306.
- **Colville, J.F.**, Beale, C.M., Forest, F., Altwegg, R., Huntley, B., Cowling, R.M. (2020). Plant species richness, turnover and evolutionary diversity track gradients of stability and ecological opportunity in a megadiversity centre. *Proceedings of the National Academy of Sciences (PNAS)*. 117 (33): 20027–20037.
- Dombrow, H. & **Colville, J.F.** (2020). Review of the genus *Beckhoplia* Dombrow with the description of fifteen new species from South Africa and observations on its biogeography (Coleoptera: Scarabaeidae: Melolonthinae: Hopliini). *Zootaxa*. 4823(1): 1–64.
- Melin, A., Altwegg, R., Manning, J.C., and **Colville, J.F.** (2020). Allometric relationships shape foreleg evolution of long-legged oil bees (Melittidae: *Rediviva*). *Evolution*. <https://doi.org/10.1111/evo.14144>.
- Melin, A. & **Colville, J.F.** (2020). A nesting aggregation of *Rediviva intermixta* (Melittinae: Melittidae) with males sleeping together in nests (Namaqualand, South Africa). *The Journal of the Kansas Entomological Society*. 92 (3): 561–568.
- Melin, A., **Colville, J.F.**, Duckworth, G.D.; Altwegg, R.; Slabbert, R.; Midgley, J.J.; Rouget, M.; Donaldson, J.S. (2020). Diversity of pollen sources used by managed honeybees in variegated landscapes. *Journal of Apicultural Research*. [Doi10.1080\00218839.2020.1750757](https://doi.org/10.1080/00218839.2020.1750757).
- Melin, A., Krenn, H.W., Manning, J.C., **Colville, J.F.** (2019). The allometry of proboscis length in Melittidae (Hymenoptera: Apoidea) and an estimate of their foraging distance using museum collections. *PLoS ONE*. 14(6): e0217839.
- Melin, A. & **Colville, J.F.** (2019). A review of 250 years of Southern African bee taxonomy and exploration (Hymenoptera: Apoidea: Anthophila). *Transactions of the Royal Society of South Africa*. 74:1, 86–96. [Featured on Cover Page]



- Rink, A.R., Altwegg, R., Edwards, S., Bowie, R.C.K., **Colville, J.F.** (2019). Contest dynamics and assessment strategies in combatant monkey beetles (Scarabaeidae: Hopliini). *Behavioural Ecology*. 40: 713–723.
- Barraclough, D., **Colville, J.F.**, Karolyi, F., Krenn, H.W. (2018). A striking new species of *Prosoeca* Schiner, 1867 (Diptera: Nemestrinidae): An important pollinator from the Bokkeveld Plateau, Northern Cape Province, South Africa. *Zootaxa* 4497: 411–421.
- **Colville, J.F.**, Picker, M.D., Cowling, R.M. (2018). Feeding ecology and sexual dimorphism in a speciose flower beetle clade (Hopliini: Scarabaeidae). *PeerJ*: 6:e4632.
- Melin, A., Mathieu, R., **Colville, J.F.**, Midgley, J.J., Donaldson, J.S. (2018). Quantifying and evaluating distributed floral resources for managed honeybee pollination using an expanded concept of supporting ecosystem services. *PeerJ*: e5654.
- Cowling, R.M., Bradshaw, P.L., **Colville, J.F.**, Forest, F. (2017). Levyns' Law: Explaining the evolution of a remarkable longitudinal gradient in Cape plant diversity. *Transactions of the Royal Society of South Africa*. 72: 184–201.
- Treurnicht M., **Colville J.F.**, Joppa L.N., Huyser O., Manning J.C. (2017) Counting complete? Finalising the plant inventory of a global biodiversity hotspot. *PeerJ*: 5:e2984.
- Janion-Scheepers, C., Measey, G.J., Braschler, B., Chown, S.L., Coetzee, L., **Colville, J.F.**, Dames, J., Davies, A.B., *et al.* (2016). Soil biota in a megadiverse country: Current knowledge and future research directions in South Africa. *Pedobiologia*. 59: 129–174.
- Karolyi F., Hansal T., Krenn H.W., **Colville J.F.** (2016). Comparative morphology of the mouthparts of the megadiverse South African monkey beetles (Scarabaeidae: Hopliini): Feeding adaptations and guild structure. *PeerJ*: 4:e1597.
- Bradshaw, P.L., **Colville, J.F.**, Linder, H.P. (2015). Optimising regionalisation techniques: Identifying centres of endemism in the extraordinarily endemic-rich Cape Floristic Region. *PLoS ONE*. 10: e0132538.
- Cowling, R.M., Potts, A.J., Bradshaw, P.L., **Colville, J.F.**, Arianoutsou, M., Ferrier, S., Forest, F., Fyllas, N.M., Hopper, S.D., Ojeda, F., Procheş, Ş., Smith, R.J., Rundel, P.W., Vassilakis, E., Zutta, B.R. (2015). Variation in plant diversity in Mediterranean-climate ecosystems: The role of climatic and topographical stability. *Journal of Biogeography*. 42: 552–564.
- Kleijn, D., Winfree, R., Bartomeus, I., Carvalheiro, L.G., Henry, M., Isaacs, R., Klein, A-M., Kremen, C., M'Gonigle, L.K., Rader, R., Ricketts, T., Williams, N.M., Adamson, N-L, Ascher, J.S., Baldi, A., Batary, P., Benjamin, F., Biesmeijer, J.C., Blitzer, E.J., Bommarco, R., Brand, M.R., Bretagnolle, V., Button, L., Cariveau, D.P., Chifflet, R., **Colville, J.F.**, Danforth, B.N., Elle, E., Garratt, M.P.D., Herzog, F., Holzschuh, A., Howlett, B.G., Jauker, F., Jha, S., Knop, E., Krewenka, K.M., Le Feon, V., Mandelík, Y., May, E.M., Park, M.G., Pisanty, G., Reemer, M., Riedinger, V., Rollin, O., Rundlof, M., Sardinias, H.S., Scheper, J., Scilligo, A.R., Smith, H.G., Steffan-Dewenter, I., Thorp, R., Tschamntke, T., Verhulst, J., Viana, B.F., Vaissiere, B.E., Veldtman, R., Westphal, C., Potts, S.G. (2015). Delivery of crop pollination services is an insufficient argument for wild pollinator conservation. *Nature Communications*. 6: 7414.
- Manning, J.C., Goldblatt, P., **Colville, J.F.**, Cupidoa, C.N. (2015). Hopliine beetle pollination in annual *Wahlenbergia* species (Campanulaceae) from western South Africa, and the new species *W. melanops*. *South African Journal of Botany*. 100: 58–62.
- Mecenero, S., Altwegg, R., **Colville, J.F.**, Beale, C.M. (2015). Roles of spatial scale and rarity on the relationship between butterfly species richness and human density in South Africa. *PLoS ONE*. 10: e0124327.
- Forest, F., Goldblatt, P., Manning, J.C., Baker, D., **Colville, J.F.**, Devey, D.S., Jose, S., Kaye, M., Buerki, S. (2014). Pollinator shifts as trigger of speciation in painted petal irises (*Lapeirousia*: Iridaceae). *Annals of Botany*. 113: 357–71.

- Karolyi, F., **Colville, J.F.**, Handschuh, S., Metscher, B.D., Krenn, H.W. (2014). One proboscis, two tasks: Adaptations to blood-feeding and nectar-extracting in long-proboscid horse flies (Tabanidae, *Philoliche*). *Arthropod Structure & Development*. 43: 403-413.
- Karolyi, F., Morawetz, L., **Colville, J.F.**, Handschuh, S., Metscher, B.D., Krenn, H.D. (2013). Time management and nectar flow: Flower handling and suction feeding in long-proboscid flies (Nemestrinidae: *Prosoeca*). *Naturwissenschaften*. 100: 1083-1093. [**Featured on Cover Page**]
- Ryan, P.G., **Colville, J.F.**, Picker, M.D. (2013). Juvenile African Pipit feeding on monkey beetles. *Ornithological Observations*. 4: 6-8.
- Karolyi, F., Szucsich, N.U., **Colville, J.F.**, Krenn, H.W. (2012). Adaptations for nectar-feeding in the mouthparts of long-proboscid flies (Nemestrinidae: *Prosoeca*). *Biological Journal of the Linnean Society*. 107: 414-424.
- Picker, M.D., **Colville, J.F.**, Burrows, M. (2012). A cockroach that jumps. *Biology Letters*. 8: 390-392.
- **Colville, J.F.** (2009). Understanding the evolutionary radiation of the mega-diverse monkey beetle fauna (Scarabaeidae: Hopliini) of South Africa. *Frontiers in Biogeography*. 1: 24-29.
- Bohn, H., Picker, M.D., Klaus-Dieter, K. & **Colville, J.F.** (2010). A jumping cockroach from South Africa, *Saltoblattella montistabularis*, gen. nov., spec. nov. (Blattodea: Blattellidae). *Arthropod Systematics & Phylogeny*. 68: 53-69. [**Featured as a "Top 10 New Species discovery" by the International Institute for Species Exploration**].
- **Colville, J.F.**, Picker, M.D., Cowling, R.M. (2002). Species turnover of monkey-beetles (Scarabaeidae: Hopliini) along environmental and disturbance gradients in the Namaqualand region of the Succulent Karoo, South Africa. *Biodiversity and Conservation*. 11: 243-264.
- Picker, M.D., **Colville, J.F.**, van Noort, S. (2002). Mantophasmatodea now in South Africa. *Science*. 297: 1475.

#### Technical reports:

- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Grace Rock Equestrian Farm. Prepared for Delta Ecology and Legacy Environmental Management Consulting.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Dana Bay Access Road. Prepared for Sharples Environmental Services cc (SES).
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Biodiversity Specialist Assessment. Duyker Eiland Prospecting Rights. Prepared for Elemental Sustainability (Pty) Ltd.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Proposed mixed use housing development. Prepared for EcoSense CC.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Proposed agricultural development. Prepared for McGregor Environmental Services.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Blue Sky's Project Prepared for Doug Jeffery – Environmental Consultants.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Proposed Expansion of Nature's View Dam near Citrusdal. Prepared for Earth Grace Environmental Consultancy.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Proposed enlargement of existing Kleigat Dam. Prepared for Earth Grace Environmental Consultancy.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Moorreesburg Wastewater Treatment Works Upgrade Project. Prepared for Zutari (Pty) Ltd.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Maxnau Citrus Development. Prepared for Charl de Villiers Environmental Consulting.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Gletwyn Estate Mixed Use Development. Prepared for Johan Neethling Environmental Services cc.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Moorreesburg Wastewater Treatment Works Upgrade Project. Prepared for Zutari (Pty) Ltd.

- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Proposed Development of Solar Photo-Voltaic Renewable Energy Power Station. Prepared for Resource Management Services (RMS).
- **Colville, J.F.** & Picker, M.D. (2009-2010). *Invertebrate impact assessment – Oudekraal, Table Mountain*. Prepared for Doug Jeffery Environmental Consultants.
- Picker, M.D. & **Colville, J.F.** (2007). *Invertebrate impact assessment: Worcester Island Development*. SRK Environmental impact report for Consulting Engineers and Scientists, Cape Town.
- Picker, M.D. & **Colville, J.F.** (2006). *Baseline faunal investigation for proposed development at Altona, Worcester, Western Cape Province*. Environmental impact report for SRK Consulting Engineers and Scientists, Cape Town.
- **Colville, J.F.** & Picker, M.D. (2005). *Scoping Phase II: The impact of development of Worcester on the insect and scorpion fauna*. Environmental impact report for Chand Environmental Consultants, Cape Town.
- **Colville, J.F.** (2001) *Scoping and faunal assessment for proposed housing development, Skapenberg, Somerset West*. Prepared for Design consultants CNdV Africa.

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#### MEMBERSHIPS/RESEARCH ASSOCIATE

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- Membership of Entomological Society of Southern Africa (2007-current).
- Membership of Lepidopterists Society of Southern Africa (2014-current).
- Honorary Research Associate (HRA), Statistics in Ecology, Environment and Conservation (SEEC), Department of Statistical Sciences, UCT (2014-current).
- SACNASP registration for Ecological Science (Professional Natural Scientist) (member#: 134759).

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#### PROFESSIONAL SERVICES

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- Editorial board *African Entomology* (2010-current).
  - Editorial board *Metamorphosis* (2017-current).
  - Editorial board *PeerJ* (2019-current).
  - CAPE Invasive Alien Animal (IAA) Working Group (2016-2018).
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## 1. SPECIALIST DETAILS, EXPERTISE AND DECLARATION

### 1.1. QUALIFICATIONS OF SPECIALIST CONSULTANT

**Name:** Antonia Belcher  
**Contact details:** 53 Dummer St, Somerset West, 7130; Phone: 082 883 8055;  
 Email: toni@bluescience.co.za  
**Profession:** Aquatic Scientist (P. Sci. Nat. 400040/10)  
**Fields of Expertise:** Specialist in freshwater assessments, monitoring and reporting  
**Years in Profession:** 30+ years

Toni Belcher worked for the Department of Water Affairs and Forestry for more than 17 years. During this period she worked for the Directorate Water Quality Management, the Institute for Water Quality Studies and the Western Cape Regional Office and has built up a wide skills base on water resource management and water resource quality for rivers, estuaries and the coastal marine environment. Since leaving the Department in 2007, she has been working in her private capacity and was co-owner of BlueScience (Pty) Ltd, working in the field of water resource management and has been involved in more than 500 aquatic ecosystem assessments for environmental impact assessment and water use authorisation purposes. In 2006 she was awarded a Woman in Water award for Environmental Education and was a runner up for the Woman in Water prize for Water Research.

#### Professional Qualifications:

1984 Matriculation Lawson Brown High School  
 1987 B.Sc. – Mathematics, Applied Mathematics University of Port Elizabeth  
 1989 B.Sc. (Hons) – Oceanography University of Port Elizabeth  
 1998 M.Sc. – Environmental Management (cum laude) Potchefstroom University

**Key Skills:** Areas of specialisation: Aquatic ecosystem assessments, Monitoring and evaluation of water resources, Water resource legislation and authorisations, River classification and Resource Quality Objectives, River Reserve determination and implementation, Water Quality Assessments, Biomonitoring, River and Wetland Rehabilitation Plans, Catchment management, River maintenance management, Water education.

#### Summary of Experience:

1987 – 1988	Part-time field researcher, Department of Oceanography, University of Port Elizabeth
1989 – 1990	Mathematics tutor and administrator, Master Maths, Randburg and Braamfontein Colleges, Johannesburg
1991 – 1995	Water Pollution Control Officer, Water Quality Management, Department of Water Affairs, Pretoria
1995 – 1999	Hydrologist and Assistant Director, Institute for Water Quality Studies, Department of Water Affairs and Forestry, Pretoria
1999 – 2007	Assistant and Deputy Director, Water Resource Protection, Western Cape Regional Office, Department of Water Affairs, Cape Town
2007 – 2012	Self-employed – Aquatic Specialist
2013 – 2020	Senior Aquatic Specialist and part-owner, BlueScience
2020 – present	Self-employed – Aquatic Specialist



## APPENDIX 1: SPECIALIST CURRICULUM VITAE

### Johann Lanz Curriculum Vitae

#### Education

M.Sc. (Environmental Geochemistry)	University of Cape Town	1996 - 1997
B.Sc. Agriculture (Soil Science, Chemistry)	University of Stellenbosch	1992 - 1995
BA (English, Environmental & Geographical Science)	University of Cape Town	1989 - 1991
Matric Exemption	Wynberg Boy's High School	1983

#### Professional work experience

I have been registered as a Professional Natural Scientist (Pri.Sci.Nat.) in the field of soil science since 2012 (registration number 400268/12) and am a member of the Soil Science Society of South Africa.

**Soil & Agricultural Consulting      Self employed      2002 - present**

Within the past 5 years of running my soil and agricultural consulting business, I have completed more than 170 agricultural assessments (EIAs, SEAs, EMPRs) in all 9 provinces for renewable energy, mining, electrical grid infrastructure, urban, and agricultural developments. I was the appointed agricultural specialist for the nation-wide SEAs for wind and solar PV developments, electrical grid infrastructure, and gas pipelines. My regular clients include: Zutari; CSIR; SiVEST; SLR; WSP; Arcus; SRK; Environamics; Royal Haskoning DHV; ABO; Enertrag; WKN-Windcurrent; JG Afrika; Mainstream; Redcap; G7; Mulilo; and Tiptrans. Recent agricultural clients for soil resource evaluations and mapping include Cederberg Wines; Western Cape Department of Agriculture; Vogelfontein Citrus; De Grendel Estate; Zewenwacht Wine Estate; and Goedgedacht Olives. In 2018 I completed a ground-breaking case study that measured the agricultural impact of existing wind farms in the Eastern Cape.

**Soil Science Consultant      Agricultural Consultants International (Tinie du Preez)      1998 - 2001**

Responsible for providing all aspects of a soil science technical consulting service directly to clients in the wine, fruit and environmental industries all over South Africa, and in Chile, South America.

**Contracting Soil Scientist      De Beers Namaqualand Mines      July 1997 - Jan 1998**

Completed a contract to advise soil rehabilitation and re-vegetation of mined areas.

#### Publications

- Lanz, J. 2012. Soil health: sustaining Stellenbosch's roots. In: M Swilling, B Sebitosi & R Loots (eds). *Sustainable Stellenbosch: opening dialogues*. Stellenbosch: SunMedia.
- Lanz, J. 2010. Soil health indicators: physical and chemical. *South African Fruit Journal*, April / May 2010 issue.
- Lanz, J. 2009. Soil health constraints. *South African Fruit Journal*, August / September 2009 issue.
- Lanz, J. 2009. Soil carbon research. *AgriProbe*, Department of Agriculture.
- Lanz, J. 2005. Special Report: Soils and wine quality. *Wineland Magazine*.

I am a reviewing scientist for the *South African Journal of Plant and Soil*.





## 8.2 Curriculum Vitae (CV)

1. **Position:** Owner / Director
2. **Name of Firm:** Visual Resource Management Africa cc ([www.vrma.co.za](http://www.vrma.co.za))
3. **Name of Staff:** Stephen Stead
4. **Date of Birth:** 9 June 1967
5. **Nationality:** South African
6. **Contact Details:** Tel: +27 (0) 44 876 0020  
Cell: +27 (0) 83 560 9911  
Email: [steve@vrma.co.za](mailto:steve@vrma.co.za)
7. **Educational qualifications:**
  - University of Natal (Pietermaritzburg):
  - Bachelor of Arts: Psychology and Geography
  - Bachelor of Arts (Hons): Human Geography and Geographic Information Management Systems
  - MSc Geography: Land use and land use change (submitted pending grading)
8. **Professional Accreditation**
  - Association of Professional Heritage Practitioners (APHP) Western Cape
    - Accredited VIA practitioner member of the Association (2011)
9. **Association involvement:**
  - International Association of Impact Assessment (IAIA) South African Affiliate
    - Past President (2012 - 2013)
    - President (2012)
    - President-Elect (2011)
    - Conference Co-ordinator (2010)
    - National Executive Committee member (2009)
    - Southern Cape Chairperson (2008)
10. **Conferences Attended:**
  - IAIAsa 2012
  - IAIAsa 2011
  - IAIA International 2011 (Mexico)
  - IAIAsa 2010
  - IAIAsa 2009
  - IAIAsa 2007
11. **Continued Professional Development:**
  - Integrating Sustainability with Environment Assessment in South Africa (IAIAsa Conference, 1 day)
  - Achieving the full potential of SIA (Mexico, IAIA Conference, 2 days 2011)

- Researching and Assessing Heritage Resources Course (University of Cape Town, 5 days, 2009)

## 12. Countries of Work Experience:

- South Africa, Mozambique, Malawi, Lesotho, Kenya and Namibia

## 13. Relevant Experience:

Stephen gained six years of experience in the field of Geographic Information Systems mapping and spatial analysis working as a consultant for the KwaZulu-Natal Department of Health and then with an Environmental Impact Assessment company based in the Western Cape. In 2004 he set up the company Visual Resource Management Africa that specializes in visual resource management and visual impact assessments in Africa. The company makes use of the well-documented Visual Resource Management methodology developed by the Bureau of Land Management (USA) for assessing the suitability of landscape modifications. Stephen has assessed of over 150 major landscape modifications throughout southern and eastern Africa. The business has been operating for eighteen years and has successfully established and retained a large client base throughout Southern Africa which include amongst other, Rio Tinto (Pty) Ltd, Bannerman (Pty) Ltd, Anglo Coal (Pty) Ltd, Eskom (Pty) Ltd, NamSolar and Vale (Pty) Ltd, Ariva (Pty) Ltd, Harmony Gold (Pty) Ltd, Millennium Challenge Account (USA), Pretoria Portland Cement (Pty) Ltd

## 14. Languages:

- English – First Language
- Afrikaans – fair in speaking, reading and writing

## 15. Projects:

A list of **some** of the large-scale projects that VRMA has assessed has been attached below with the client list indicated per project (Refer to [www.vrma.co.za](http://www.vrma.co.za) for a full list of projects undertaken).

Table 13: VRM Africa Projects Assessments Table

DESCRIPTION	COUNT	DESCRIPTION	COUNT
Dam	2	UISP	8
Mari-culture	1	Structure	9
Port	1	OHPL	11
Railway	1	Industrial	12
Power Station	3	Wind Energy	14
Hydroelectric	4	Battery Storage	15
Resort	4	Mine	20
Golf/Residential	5	Residential	45
Road Infrastructure	5	Solar Energy	61
Substation	5	TOTAL	<b>226</b>