

## **Diana Rietz**

### **Contact details:**

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### **Personal information:**

Place of residence: Durban, South Africa

SA ID no: 7612300964181 (Permanent resident)

Citizenship: Zimbabwean

Gender: Female

Covid vaccinated: Yes

Age: 44 years old

Language/mother tongue: English

Health: Excellent

Disabilities: None

### **South African Council for Natural Scientific Professions (SACNASP):**

Professional Natural Scientist (Registration no. 400650/15)

### **Summary of Professional Qualifications:**

- Soil identification and mapping
- Resource assessment and land use mapping and planning (suitability and capability)
- Assessment of soil organic matter/carbon (labile and non-labile fractions), soil microbial population (size, function and respiration) and soil enzyme dynamics
- Sound understanding of impacts (e.g. soil compaction, disturbance, sodicity, salinity issues, biomass additions/removals) on overall soil health and organic matter
- Plant biomass assessments (above and below-ground)
- Veld condition assessment
- Strong understanding of all aspects of sugarcane and plantation forestry production

- Determining likely outcomes of management practices on soil properties and plant growth and productivity (and practical recommendations to improve these)
- Assessment of “complimentary” (and efficient) additional land-uses
- Agriculture value chain analysis and optimisation
- Role-player engagement, interaction and establishment of working groups
- Project initiation, planning, establishment of collaborative partnerships, project budgeting and management
- Timely delivery of project outputs
- Extensive experience in the writing of reports and the presentation of scientific knowledge in a form most practical to company managers, farmers, contractors, etc.
- Team management

#### **Employment history:**

*August 2018 – Current*

Company: LandMax Consulting (Self-Employed Consultant)\*

*September 2017 – June 2018*

Company: Tongaat Hulett, South Africa (an agriculture and agri-processing business, focussed on sugarcane and maize, with holdings in several SADC countries)

Position: Lead Agronomist in the Technology Group

*September 2016 – August 2017*

Company: LandMax Consulting (Self-Employed Consultant)\*

*February 2008 – June 2016*

Company: Institute for Commercial Forestry Research (a non-profit organisation that provides research services to the plantation forestry industry in South Africa)

Position: Senior Research Scientist and Project Leader of three projects in the Long-Term Site Productivity Programme. These projects were: Forest Products Value Chain Improvement, Site Impacts of Mechanised Operations and Multiple Rotation Impacts of Harvest Residue Management Practices

\* Applicable projects include:

- Site assessments for various agricultural (e.g. kiwifruit, avocado, sugarcane and animal production), forestry (plantation) and biofuel specific (e.g. tobacco) land-

uses. (Clients would need to be contacted for consent to share specifics or Reports).

- Soil survey (as part of an environmental impact assessment and agricultural land assessment) for a potential mining operation (and resultant recommendations).
- Professional opinion (based on field assessment and laboratory analyses of soil samples) in dispute between a farmer and Department of Environmental Affairs.
- Sugarcane soil and nutrition workshops for yield optimisation – a 3-day workshop run by Dr Neil Miles and myself given at the various Tongaat Hulett Estates in Eswatini and Mozambique (2019).
- Feasibility study of biofuel availability and financials in the summer rainfall region of South Africa.

#### **Education:**

*University of Kwa-Zulu Natal (UKZN): Ph.D. (Soil Science - 2010)*

Thesis: The effects of compaction and residue management on soil properties and growth of *Eucalyptus grandis* at two sites in KwaZulu-Natal, South Africa.  
(Supervisors: Prof J Hughes and Dr C Smith)

*University of Natal: M.Sc. (Soil Science - 2002)*

Thesis: The effects of irrigation-induced soil salinity and sodicity on sugarcane yield and soil biological properties in the Zimbabwe lowveld. (Supervisors: Prof R Haynes and Prof M Johnston)

*University of Natal: B.Sc. (Agricultural Production - 1999)*

Thesis: Farm plan of Craigieburn Estates (Supervisor: Mr J Klug)

#### **Applicable Courses, Workshops and Awards:**

- Dean's Commendation for overall high marks during undergraduate studies.
- J.A. Pentz Medal for the best final year student in Agricultural Production.
- Best presentation by a person under 35 years old at the Proceedings of the Soil Science Society of South Africa 23rd Congress (2001), Pretoria.
- "Research Skills Workshop". Grassland Science Society of South Africa. 12-13 November 2008.
- "Making sense of complex and messy problems – supply chains and network analysis". A CPD course by Prof C Bezuidenhout and Dr J Cockburn. 18 March 2014.

- “Mapping the South African Pulpwood Supply Chain: A Brown Paper Workshop” facilitated by D. Rietz. 19 June 2015.
- “Forest finance and valuation: What every forester should know”. A Stellenbosch University short course by C. Ham. 28-29 January 2015.
- “A method to assess wetland ecological condition based on land-cover type”. A WRC short course by D Kotze. November 2015.
- “Precision Agriculture” A South African Institute of Agricultural Engineers Course. 6-7 July 2018.

**Other relevant information:**

- Current SACNASP evaluator for Agricultural Science Applications.
- Current member of:
  - Soil Science Society of South Africa
  - South African Sugar Industry Agronomists Association
  - South African Sugar Technologists Association
- Co-supervisor of UKZN MSc thesis: Siphamandla Madikizela 2014 “The effects of burning or mulching of harvest residues on selected soil properties in a Eucalyptus plantation in Northern KwaZulu-Natal”
- Internal examiner of Soil Science 351 and 352 – Soil Physics (2002)
- External examiner of Soil Science 351 and 352 – Soil Physics (2003-2004)
- Tutor of Soil Science 330 Practicals (1997-2005) – Pedology. Involved teaching of methods of soil identification and mapping to students in Hluhluwe-Umfolozi, Ophathe, and Bonamanzi Game Reserves.
- Organiser of ICFR KZN Midlands Field Days (2009-2014).
- Forest Engineering South Africa (FESA) Committee member (2012/2013)
- Hesketh Conservancy Committee member (2010-2013).
- South African Institute of Forestry member.

*Note:* List of conferences, symposia, field days etc. that I have attended can be provided upon request.

**Publications:**

- Rietz DN, Ackerman SA and Titshall LW. 2017. Pursuing efficiency in the South African pulpwood supply chain: Measures, challenges and opportunities. ICFR Bulletin Series xx/2017.
- Rietz DN. 2015. Towards developing guidelines for machinery use in plantation forestry: A review of the effects of soil compaction on growth of commercial plantation species grown in South Africa. ICFR Technical Note 04/2015.
- Rietz DN, Ackerman SA and Titshall LW. 2015. Silvicultural research requirements of the South African commercial forestry industry: a qualitative assessment through stakeholder consultation. ICFR Bulletin Series 03/2015.
- Rietz DN and Little KM. 2014. Changes in *Eucalyptus grandis* x *E. camaldulensis* productivity between successive rotations in Zululand, South Africa. ICFR Bulletin Series 04/2014.
- Ackerman S and Rietz DN. 2014. Current operational constraints in the harvesting-silviculture interface: A scoping study. ICFR Technical Note 02/2014.
- Ackerman S and Rietz DN. 2013. Harvesting and silviculture synergy to improve the South African forest industry value chain. SA Forestry October 2013.
- Rietz DN. 2013. The effect of compaction and residue management on soil properties and early *Eucalyptus* growth on a granite-derived soil. ICFR Bulletin Series 12/2013. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Titshall, LW, Rietz, DN and Dovey, SD. 2013. A review of management impacts on the soil productivity of South African commercial forestry plantations and the implications for multiple rotation productivity. Southern Forests 75: 169-183.
- Rietz DN. 2012. Visit to the Long-Term Soil Productivity Researchers and Trials of the United States Forest Service, 7-17 July 2012, Idaho, Oregon and California, USA. ICFR Bulletin Series 10/2012. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN. 2012. The effect of timber extraction on the early growth of *Pinus patula*: preliminary results. ICFR Technical Note 02/2012. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Titshall, LW, Rietz, DN and Dovey, SD. 2012. A general review of site and management factors affecting long-term site productivity of commercial forestry plantations.

- ICFR Bulletin Series 07/2012. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN. 2012. Wildfires, harvest residue management and productivity: finding the best solution. *Wood Southern Africa and Timber Times* 37(8): 28-30.
- Rietz DN. 2010. The XXIII IUFRO World Congress “Forests for the Future: Sustaining Society and the Environment”. *Wood Southern Africa and Timber Times* 36(1): 18-20.
- Rietz DN and Smith CW. 2010. Does soil compaction and residue management affect early *Eucalyptus* tree growth and volume differently at different sites? ICFR Technical Note 04/2010. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN and Light ML. 2010. Report on XXIII IUFRO World Congress, 23-28 August 2010, Seoul, South Korea. ICFR Bulletin Series 07/2010. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN, Smith CW, and Hughes JC. 2010. Effect of compaction and residue management on soil bulk density and strength at two contrasting sites in KwaZulu Natal. ICFR Bulletin Series 04/2010. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN and Smith CW. 2009. Does Residue Management Affect Wildfire Movement and Damage in Plantations? A Case Study in the KwaZulu-Natal Midlands. ICFR Bulletin Series 11/2009. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN, Smith CW, and Hughes JC. 2006. Residue management and early compaction effects on the early growth of *Eucalyptus grandis* on a sandy soil in Zululand. ICFR Bulletin Series 22/2006. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN and Smith CW. 2004. A preliminary study of aboveground allometric relationships of *Eucalyptus nitens* (Dean and Maiden) plantations in South Africa. ICFR Bulletin Series 14/2004. Institute for Commercial Forestry Research, Pietermaritzburg, South Africa.
- Rietz DN and Haynes RJ. 2003. Effects of irrigation-induced salinity and sodicity on soil microbial activity. *Soil Biology & Biochemistry*: 35:845-854.
- Rietz DN and Haynes RJ. 2002. Effect of irrigation-induced salinity and sodicity on sugarcane yield. *Proceedings of the Annual Congress - South African Sugar*

Technologists' Association 76:173-185. South African Sugar Technologists' Association, Mount Edgecombe, South Africa.

**Presentations (2010-2016):**

- Rietz DN. 2016. The interaction between pitting method and fertiliser application in pines and eucalypts: Some early results. ICFR KZN Midlands Regional Field Day. 31 May, 2016. Ixopo, South Africa.
- Rietz DN. 2016. Soil compaction and harvest residue management in plantations: Putting the Paulpiet trial in perspective. ICFR Central Regional Field Day. 19 April, 2016. Amsterdam, South Africa.
- Rietz DN. 2016. Multi-rotation management impact trials – insanity or progress? ICFR Annual Research Meeting. 2-3 March 2016. Hilton, South Africa.
- Rietz DN. 2016. Mapping the eucalypt supply chain: A brown paper exercise. ICFR Annual Research Meeting. 2-3 March 2016. Hilton, South Africa.
- Rietz DN. 2015. Integration of the eucalypt pulpwood supply chain: are there opportunities? ICFR Annual Research Meeting. 3-4 June 2015. Pietermaritzburg, South Africa.
- Rietz DN. 2015. Compaction effects on different genera: a review. ICFR Annual Research Meeting. 3-4 June 2015. Pietermaritzburg, South Africa.
- Rietz DN. 2014. Feedback to ICFR research staff of silviculture research priorities with supply change optimisation. Internal ICFR workshop. 25 July 2014. Pietermaritzburg, South Africa.
- Rietz DN. 2013. Harvesting-silviculture interface and mechanised operations. ICFR Zululand Regional Field Day. 12 November, 2013. Dukuduku, South Africa.
- Rietz DN. 2013. Harvesting-silviculture interface with reference to manual and mechanised operations. FESA Focus on Forest Engineering 2013: Mechanised harvesting and silviculture. 6-7 November, 2013. Lidgetton, South Africa.
- Rietz DN. 2013. The USDA Forest Service Long-Term Soil Productivity Project. ICFR Occasional Seminar, 22 February, 2013. Pietermaritzburg, South Africa.
- Rietz DN. 2012. The effect of compaction and residue management on soil properties and early *Eucalyptus* growth on a granite-derived soil. ICFR-Central Regional Field Day. 18 October, 2012. Paulpietersburg, South Africa.

- Rietz DN. 2012. Does residue management affect wildfire damage in plantations? A case study in the KwaZulu-Natal Midlands. ICFR-Mpumalanga Regional Field Day. 24 May 2012. Sabie, South Africa.
- Rietz DN. 2011. Mechanised harvesting: a site perspective. FESA Focus on Forest Engineering 2011: Challenging Harvesting Operations. 2-3 November, 2011. Howick, South Africa.
- Rietz DN. 2011. The effects of timber extraction on soil properties and the early growth of *Pinus patula*. ICFR Central/Mpumalanga Interest Group Field Day. 13 October 2011. Warburton, South Africa.
- Rietz DN. 2011. Does residue management affect wildfire damage in plantations? A case study in the KwaZulu-Natal Midlands. ICFR-Ugie Regional Field Day. 27 September 2011. Ugie, South Africa.
- Rietz DN and Light ML. 2010. Forests for the Future: Highlights of the XXIII IUFRO World Congress 2010. ICFR Occasional Seminar. 29 October, 2010. Pietermaritzburg, South Africa.
- Rietz DN. 2010. Do we understand the effects of changes in soil properties on the long-term productivity of forest plantations? ICFR/DAFF Forest Science Symposium 2010. 3-4 August, 2010. Pietermaritzburg, South Africa.
- Presentations prior to 2010 available on request.