

Dr MALIKI BIROSSE WARDJOMTO, Pr.Sci.Nat.

South African ID: 8107166103189 (South African Permanent Resident)

Marital status: Married to Dr Cynthia Gyogluu Wardjomto; father of three children (Ange, Nathan, Caleb)

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PROFILE SUMMARY

I am an Academic, Ecologist, Data Scientist, Consultant, and Biodiversity Advisor. I hold a Diploma and a B-Tech in Nature Conservation (Wildlife Management), a Master's in Nature Conservation (Conservation Ecology) and a PhD in Zoology (Molecular Disease Ecology and Parasitology). My interests lie in Wildlife Ecology, Veterinary Parasitology, Biodiversity Conservation, and GIS & RS. I am passionate about Nature, New Technologies, as well as Teaching and learning. I enjoy the outdoors, the Tech world, sports and learning.

SKILLS AND COMPETENCIES

- **Strong academic and research skills:** Ecology, Molecular parasitology, teaching and learning, Environmental Consulting;
- **Strong field ecology skills:** Vegetation Science, ornithology, small and large mammals ecology, soil science;
- **Significant teaching experience:** 11 years teaching experience in higher education;
- **Strong management and leadership abilities:** Supervision and mentoring of students and staff;
- **Knowledge of Science diplomacy:** application of science and innovation for development;
- **General evolutionary ecology and molecular biology procedures:** DNA and RNA extraction; conventional and Real-Time PCR; gel electrophoresis and imaging; buffer preparation;
- **Experienced in bioinformatics:** BioEdit, Mega, Geneious, GenBank, MalAvi;
- **Strong programming and statistical data analyses skills:** R, Python, Matlab;
- **Strong knowledge of Environmental laws:** NEMA, NEMBA, International legislations, Protocols and treaties;
- **Mapping and geospatial data analysis:** ArcGIS, ArcGIS Pro, R, GEE;
- **Experienced Laboratory Manager:** health and safety routines, cleaning routines, order management, bill management, and funds management;
- **Proven ability to obtain and manage grants:** PhD studies grant; FBIP; Thuthuka grant;
- **Efficient communication Skills:** report writing, publications and presentations;
- **Language proficiency:** English, French, basic Spanish;
- **Driving licence:** Code C1.

EDUCATION

PhD in Zoology **Mar 2021**

University of the Free State, Bloemfontein (South Africa)

Thesis title: *Prevalence of avian haemosporidian parasites in the Lowveld Region of South Africa*

Advisers: Dr Mduduzi Ndlovu and Prof Tshifhiwa Nangammbi

MTech in Nature Conservation (by dissertation) **Aug 2014**

Tshwane University of Technology, Pretoria, (South Africa)

Dissertation title: *Feeding patch selection by White rhinoceros (Ceratotherium simum simum) in the Songimvelo Nature Reserve, South Africa*

Advisers: Dr Jozua Viljoen, Dr Mike Panagos and Prof Gerhard Malan

BTech in Nature Conservation **Dec 2006**

Tshwane University of Technology, Pretoria (South Africa)

Project title: *Habitat selection by White rhinoceros (Ceratotherium simum simum) in the Songimvelo Nature Reserve, South Africa*

N. Diploma in Nature Conservation **Dec 2003**

Technikon Pretoria, Pretoria (South Africa)

CURRENT POSITIONS

Ecological Consultant, Silver Crates (Pty) Ltd 2019 – to present

Provision of Specialist services in: Ecological and Biodiversity Assessment, Wetland delineation and assessment, Remote sensing, GIS mapping, remote sensing and spatial analyses, Species and area management plans, Environmental authorisation permits, Water use Licences, Mining and exploration permits.

Researcher– Tshwane University of Technology Apr – Dec 2021

- Administration and management of Rodent Parasitology project and Thuthuka grant (ZAR 1 100 000);
- Acquisition of additional funding and grants;
- Field data collection and molecular Laboratory analyses;
- Acquisition of research equipment and supplies necessary for project;
- Supervision and mentoring of postgraduate students (Masters and PhD);
- Attend seminars, conferences and other science summits;
- Statistical data analyses and Publication of scientific papers.

Academic Marker (Staff Number 90199448) – University of South Africa 2015 - 2021

- Marking of Work Integrated Learning (WIL) reports;
- Marking of assignments and exams scripts for the module of Animal studies I (ANS1501).

PREVIOUS POSITIONS

Research Assistant and Collaborator – NRF Thuthuka Grant (TUT) 2018 - 2021

- Establish and manage a wildlife molecular Disease Ecology Lab
- Administer and manage the NRF Thuthuka grant (ZAR 1 100 000);

- Plan and conduct field data collection;
- Prepare reports and motivation for submission to granting agency (NRF);
- Setting-up of new Molecular laboratory in the department of Nature Conservation;
- Acquisition of research equipment and supplies necessary for project;
- Supervision and mentoring of postgraduate students (Masters and PhD);
- Attend seminars, conferences and other meetings as required;
- Publish scientific papers.

Lab and Field Demonstrator – University of the Free State 2017 - 2018

- Wildlife parasitology demonstrator in the Wildlife and Conservation Lab;
- Bird capture and sampling;
- Avian blood sampling and avian ectoparasite;
- Microscopy observation and molecular analyses of avian blood parasites.

Academic Writing Consultant – University of South Africa 2014 - 2014

- Develop the science foundation tutorial resource documents for the modules of Animal studies I (ANS1501) and Conservation Resource Management I (CVM1501) in the field of Nature conservation.

Lecturer (Staff Number 681183) - Tshwane University of Technology 2011 - 2021

- Lecturing Game Science II, Game Ranch Ecology I, Ecology III and Soil Science I (Department of Nature conservation);
- Lecturing Environmental Studies I and II (Horticulture and Landscape Technology);
- Tutoring Conservation Ecology III (Nature Conservation);
- Developing and updating study materials and guides;
- Coordinating Work Integrated Learning (WIL) and mentoring WIL students;
- Participated in the re-curriculation and accreditation for Environmental Studies I and II Diploma in the Department of horticulture and Landscape Technology at TUT;
- Supervision of B-Tech students projects in Horticulture, landscape Technology and Nature Conservation.

E-Tutor/Tutor – University of South Africa 2010 - 2017

- Facilitation of learning through e-tutoring (online) and face to face tutorials for Conservation Resource Management I;
- Counselling and advising of students;
- Organisational and administrative functions.

Research / Lab Technician – Tshwane University of Technology 2009 - 2009

- Management of laboratories for botanical and zoological use;
- Field trip organization;
- Field data collection;
- Maintenance of computers and other electronic and audio-visual equipment;
- Management and maintenance of departmental equipment and vehicles;
- Organization of colloquiums and exhibitions for marketing.

Student/Teaching Assistant – Tshwane University of Technology 2006 – 2008

- Assisting lecturers during classes, present practical classes and administer tests;
- Tutor for Ecology I, Resource management I;
- Teaching module of environmental management;
- Assist the Research technician in all his duties in the Department of Nature Conservation;
- Data collection and analyses;
- Support WIL students with ecological management plans.

Deputy Coordinator and Project Manager – Cameroon Natural Resources (CAMNARES)
2005 - 2009

- Manage and lead science, community development programmes and field expeditions in Cameroon;
- Initiate and develop scientific research projects (eg: Wild dog).
- Hunt Manager, Camp Manager and Translator to non-French speaking clients;
- Conduct awareness and Environmental education campaigns;
- Lead and coordinate community development projects (provision of health facilities and medication, sanitation and water provision, education);

Student Ranger - KNP, Manyeleti NR and Songimvelo NR 2003 - 2003

Compiling the management plan of a reserve or protected area; Systematic field data collection; data capture and analysis; Mapping; Administration; Game capture and translocation; Game count and culling; Monitoring and management of threatened species; Veld condition assessment; Alien plants control; Musketry and firearm handling (R-1, 303, 30.06, 375); Environmental education and community development.

CONSULTING AND OTHER ACTIVITIES

SADC TFCA Financing facility roster of experts 2021

I am a member of a panel of experts appointed by IUCN to review proposals submitted for financing by the SADC-TFCA financing Facility

Founder and Director, Eco-Consulting (Pty) Ltd 2019

- Terrestrial, fauna and flora Biodiversity Assessments;
- Wetland delineation and assessment;
- Remote sensing, GIS mapping, and spatial data analyses;
- Species and area management plans;
- Environmental authorisation permits and Licences.

Organiser: school awareness programme in the Mpumalanga province 2019

Information session on diversity, abundance and diseases on rodent parasites in the Kruger National Park and surrounding communities.

South African Biodiversity Biobank committee Member 2018

A South African Research Infrastructure Roadmap project of the Department of Science & Technology – Open stakeholder engagement at SANBI

Trainer: Bird trapping, ringing and blood sampling

2018

As part of my PhD studies, I trained a group of students as well as rangers on bird catching, handling, ringing, measuring and blood sampling;

Co-Founder and Deputy Coordinator, Cameroon Natural Resources (CAMNARES) 2004

Private Consultant - Ecologist (Cameroon)

2004 - 2004

- Conduct flora and fauna inventories in hunting areas;
- Develop area and species management plans;
- Make recommendations on hunting quotas.

Field Assistant (Volunteer) – Technikon Pretoria

2001 – 2003

- Field data collection for soil mapping;
- Data collection for EIA reports;
- Vegetation data collection in game reserves;
- Conducted game counts in private reserves;
- Culling and fire application in various nature reserves and game parks.

TRAINING / COURSES / WORKSHOPS

- **Combatting wildlife trafficking** – ACI, October 2021
- **Imagery in Action** – ESRI, August – September 2021
- **Using Google Earth Engine for Land Monitoring Applications** – NASA ARSET, 16 – 30 June 2021
- **The Fundamentals of Animal Research Ethics** – Scientific Veterinary Consulting Inc. (Hosted by University of the Free State), Nov 2020
- **The fundamentals of Grant Proposal Writing** – University of the Free State, Sept 2020
- **Programming and statistical data analyses with R and Python** – Data Camp, May 2020
- **Professional Drone Course: farm Drone Sensor Showdown** – Scholar farms, April 2020
- **MOOC: Protected Areas Management in Africa** – IUCN, April-May 2016
- **MOOC: Learning to teach online** – UNSW, July 2014
- **SFP tutorial resource development workshop**: UNISA, March 2014
- **Statistical Modelling for biologists** – Using R: University of Cape Town, July 2012
- **Curriculum Development SLP**: Tshwane University of Technology (TUT), June 2012
- **Academic orientation** programme for Part-time Lecturers: TUT, 13th March 2012
- **License to teach SLP**: Tshwane University of Technology, 26 – 30 September 2011
- **E-Tutor Training and Support (SFP)**: UNISA; February 2011 and 2013
- **Tutor development workshop**: UNISA; 2010, 2011 and 2012
- **Writing for publication workshop**: Chris Kapp & Associates, November 2010
- **Challenges in the Management in a changing world**: SAWMA seminar Sept 2010
- **Laboratory safety seminar**: Merck Chemicals, 2009
- **Understanding social systems in Protected Areas management**: TUT, 2009
- **Scientific writing Seminar**: SAWMA, 2009
- **Rifle handling and Musketry**: 2002 - 2003

SCHOLARSHIPS, GRANTS AND AWARDS

- NRF Thuthuka grant (Co-Investigator and Grant Manager), 2018 – 2021 (ZAR 1 100 000);
- UFS Fees Bursary, 2017 – 2020 (ZAR 60 000);
- NRF - Innovation Doctoral Scholarship, 2016 – 2018 (ZAR 350 000);
- Faculty of Science Junior Research Award, Tshwane University of Technology (2013);
- Tshwane University of Technology Postgraduate scholarship, 2008 – 2009 (ZAR 150 000);
- Shikar scholarship, 2007 – 2008 (US\$ 18 000);
- Mzuri Wildlife Management Foundation scholarship, 2005 – 2006 (US\$ 12 000);
- Safari Club International (SCI) scholarship – project Noah, 2001 – 2003 (US\$ 18 000);

MEMBERSHIP SOCIETIES AND AFFILIATIONS

- South African Council for Natural Scientific Professions (SACNASP) – Registered *Pr.Sci.Nat* (Ecological Sciences);
- Parasitological Society of Southern Africa (PARSA) – Member;
- Southern African Wildlife Management Association (SAWMA) – Member;
- Geo-Information Society of South Africa (GISSA) – Member;

PEER-REVIEW SERVICES FOR SCIENTIFIC JOURNALS

- African Journal of Zoology;

SCIENTIFIC PUBLICATIONS AND OUTPUTS

Submitted / In review

Wardjomto MB, Ndlovu M, Perez-Rodriguez AD, Pori T, and Nangammbi TC. (*in review*). Comparative performance of microscopy, nested PCR and real-time PCR to screen for avian haemosporidian parasites. *International Journal of Parasitology: Parasites and Wildlife*.

Pori T, Ndlovu M, Markus M, and **Wardjomto MB**. (*Submitted*). Consequences of blood parasite infection for avian immunity and body condition in Afrotropical birds. *Zoology*.

Wardjomto MB, Ndlovu M, Perez-Rodriguez AD, Pori T, and Nangammbi TC. (*Submitted*). Bird host richness drive the prevalence and diversity of avian haemosporidia in the Lowveld region of South Africa. *Acta Tropica*.

Published in Peer-Reviewed Journals

Wardjomto MB, Ndlovu M, Pérez-Rodríguez A, Pori T, Nangammbi T. 2021. Avian haemosporidia in native and invasive sparrows at an Afrotropical region. *Parasitology Research*, **120**(7), 2631–2640. doi: 10.1007/s00436-021-07214-8. Epub 2021 Jun 21. PMID: 34152467.

Wardjomto M.B., Viljoen J.J., Panagos M.D. and Malan G. 2019. Hierarchical feeding and habitat selection by white rhinoceros (*Ceratotherium simum simum*) in a marginal habitat. *The Journal of Animal and Plant Sciences* **29**(5), 1476-1484.

In prep

Wardjomto MB, Ndlovu M, Perez-Rodriguez AD, and Nangammbi TC. (*In prep*). A first report of *Leucocytozoon* spp. in the red-billed oxpecker (*Buphagus erythrorhynchus*). *Parasitology*.

Wardjomto MB, Ndlovu M, Perez-Rodriguez AD, and Nangammbi TC. (*In prep*). Avian Haemosporidia in the order columbiformes of the lowveld. *Parasitology Research*.

Wardjomto MB, Ndlovu M, Perez-Rodriguez AD, Pori T, and Nangammbi TC. (*In prep*). Phylogenetic diversity and host specificity of avian haemosporidia in the Afrotropics. *International Journal for Parasitology: Parasites and Wildlife*.

Nangammbi TC, **Wardjomto MB**, Moloro GT, Ndlovu M (*In Prep*). Diversity and abundance of rodents in the enclosures of the Kruger National Parks, South Africa. *Scientific report*

Book Chapters / Theses:

Wardjomto, M.B. 2020. Prevalence of avian haemosporidian parasites in the Lowveld Region of South Africa. PhD thesis, University of The Free State, Bloemfontein, South Africa.

Wardjomto, M.B. 2013. Feeding patch selection of white rhinoceros (*Ceratotherium simum simum*) in Songimvelo Nature Reserve, Mpumalanga Province. M-Tech dissertation, Tshwane University of Technology, Pretoria, South Africa.

Non-Refereed Articles and Reports:

Biko'o, A.A., **Wardjomto, M.B.**, and Degeorges, P.A. 2006. Hunting adventures in Cameroon (Part 1). *SA Hunter* Vol. 21/11.

Biko'o, A.A., **Wardjomto M.B.**, and Degeorges P.A. 2006. Hunting adventures in Cameroon (Part 2). *SA Hunter* Vol. 22/12

Other Scientific Outputs

Deposited 54 unique DNA sequences into GenBank (www.ncbi.nlm.nih.gov/genbank)

Authors: **Wardjomto MB**, Ndlovu M, Pérez-Rodríguez A, Pori T, Nangammbi T.

Year: 2020

Deposited 54 unique DNA sequences in the MalAvi database (<http://130.235.244.92/Malavi/>)

Authors: **Wardjomto MB**, Ndlovu M, Pérez-Rodríguez A, Pori T, Nangammbi T.

Year: 2021

CONFERENCE PRESENTATIONS

Wardjomto MB, Ndlovu M and Nangammbi TC. (*Accepted abstract*) Haemoparasites in native and non-native sparrows from the Lowveld Region of South Africa. **Platform presentation**: 4th International Congress on Parasites of Wildlife (ICPOW) Conference (Postponed to 2022), Skukuza, South Africa

Wardjomto MB, Ndlovu M and Nangammbi TC (*Accepted abstract*). Ecological determinants of avian haemosporidian prevalence and diversity in the Lowveld Region of South Africa. **Online presentation**: 23rd International Congress of Zoology (Nov 2021), Cape Town, South Africa.

Nangammbi TC, Ndlovu M, **Wardjomto MB**, Molero GT. Diversity and abundance of rodents in the enclosures of the Kruger National Parks, South Africa. **Poster presentation**: 48th Annual PARSA Conference 15-17 September 2019, Windhoek, Namibia

Wardjomto MB, Ndlovu M and Nangammbi TC. Diversity of avian Haemosporidian parasites in the Lowveld Region of South Africa. **Platform presentation**: 48th Annual PARSA Conference 15-17 September 2019, Windhoek, Namibia

Molero GT, Nangammbi TC, Ndlovu M and **Wardjomto MB**. Prevalence of rodent haemoprotezoan infections in the Lowveld region of South Africa. **Platform presentation**: 48th Annual PARSA Conference 15-17 September 2019, Windhoek, Namibia

Wardjomto MB, Ndlovu M and Nangammbi TC. Molecular characterisation of Avian Haemosporidian parasites in the Kruger National Park. **Platform presentation**: 39th ZSSA Congress 7-10 July 2019, Skukuza, South Africa.

Wardjomto MB, Nangammbi TC and Ndlovu M. Using a Real-time PCR protocol to screen for avian Haemosporidian parasites. **Platform presentation**: 47th PARSA Conference 16-18 September 2018, Tshipise Forever Resort, Limpopo – South Africa

Maliki B. Wardjomto, Jozua J. Viljoen, Mike D. Panagos and Gerard Malan. Spatiotemporal scale and seasonal resource selection: White rhinoceros in the Songimvelo Nature Reserve. **Platform presentation**: Faculty of science research day, Tshwane University of Technology, 14 August 2013.

Maliki B. Wardjomto. Feeding Patch selection by white rhinoceros (*Ceratotherium simum simum*) in the Songimvelo Nature Reserve, South Africa. **M-Tech Colloquium presentation**: Departmental Research day – TUT Nature Conservation, 21 **October 2011**, TUT. Supervisors: Jozua J. Viljoen, Mike D. Panagos and Gerard Malan.

Maliki B. Wardjomto, Armand A. Biko'o, Simon Essissima and Wayne Lau. 2011. African Wild dog (*Lycaon pictus*): Are there any left in Northern Cameroon? **Poster presentation**: 41th Anniversary Symposium of the Southern African Wildlife Management Association, 19 – 22 **September 2011**.

Maliki B. Wardjomto, Jozua J. Viljoen, Mike D. Panagos and Gerard Malan. Habitat use and forage patch of white rhinoceros (*Ceratotherium simum simum*) in Songimvelo Nature Reserve, Mpumalanga Province. **Platform presentation**: 40th Anniversary Symposium of the Southern African Wildlife Management Association, 19 – 22 **September 2010**, Buffelspoort, Marikana North West Province.

Maliki B. Wardjomto, Jozua J. Viljoen, Mike D. Panagos and Gerard Malan. Seasonal floristic characteristics of foraging patches of white rhino (*Ceratotherium simum simum*) in Songimvelo Nature Reserve, Mpumalanga Province. **Platform presentation**: 45th Annual Grassland Society of Southern Africa Congress, **July 2010**.

FORA / SUMMITS ATTENDED

- **Africa – Europe Science and Innovation Summit** – 14 to 18 June 2021
- **Science Forum South Africa:** Attended in December of every year since 2018

STUDENT SUPERVISION / MENTORING

PhD Students

- Glenton Moloro (Mentor)
- Vhonani Mulaudzi (Mentor)

Masters Students

- Mariska Botes (Mentor)
- Tinotendashe Pori (Mentor)

B-Tech/Honours Students

- Mduduzi Vilakazi (Supervisor) – Completed in 2019
Project title: Impacts due to over abstraction of groundwater through boreholes in Welgevonden Game Reserve, Limpopo province, South Africa.
- Sindi Viera Khubeka (Supervisor) – Completed in 2017
- Clement Ndweni (Supervisor) – Completed in 2016

REFERENCES

Dr MDUDUZI NDLOVU (PhD Supervisor)

Senior Lecturer: School of Biology and Environmental Science, University of Mpumalanga

Email: mduduzi.ndlovu@ump.ac.za Mobile: +27 83 386 8803

Prof TSHIFHIWA NANGAMMBI (PhD Co-supervisor and Collaborator)

Associate Professor: Nature Conservation, Tshwane University of technology

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Prof RETHA SLABBERT (Immediate work Supervisor)

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Prof GERHARD MALAN (Masters Co-supervisor and Collaborator)

Professor: Nature Conservation, Tshwane University of Technology

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Prof BRIAN REILLY (Immediate work Supervisor)

HOD: Nature Conservation, Tshwane University of technology

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