JACKIE DABROWSKI
(Ph.D., Pr. Sci. Nat. Aquatic Science)

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Citizenship: South Africa & New Zealand

TERTIARY EDUCATION

2012–2014 **Ph.D. Veterinary Science, University of Pretoria.**
"Pansteatitis in tilapia (Oreochromis mossambicus) from Loskop Dam, South Africa: links between the environment, diet and thyroid status."
Supervisor: Dr. Paul J. Oberholster (CSIR)

2010–2011 **M.Sc. (Cum Laude): Veterinary Science, University of Pretoria**
"Metal bioaccumulation and parasite communities of Oreochromis mossambicus (Mozambique tilapia) and water quality in Loskop Dam."
Supervisors: Dr. Jan Myburgh, Dr. Paul J. Oberholster

2009 **B.Sc. Honours in Entomology: Department of Zoology, University of Pretoria.**
"Dung beetles (Coleoptera: Scarabaeidae) can improve soil hydrological properties."
Supervisors: Prof. Clarke H. Scholtz

2006-2008 **B.Sc. in Biological Sciences, University of Canterbury, New Zealand.**

EMPLOYMENT RECORD

Present **Confluent Environmental - Co-Director:** Provision of aquatic consulting and research services to the agricultural, industrial, mining, tourism and private sectors in South Africa and the rest of Africa including conducting specialist studies for environmental assessments as required by national and international legislation (e.g. National Water Act of 1998, National Environmental Management Act of 1998).

2014-2016 **CSIR (Natural Resources and Environment) – Senior Researcher:** Attract funding and develop, implement and manage research projects in the field of aquatic ecology. Development of junior staff and students.

2012-2013 **CSIR/DST-NRF (Professional Development Programme) – Ph.D. Researcher:** Contracted to the CSIR and supported by the DST-NRF to complete Ph.D. in Veterinary Science.

1997-2006 **Flight Centre – Various positions in New Zealand and South Africa**. Learning Centre Team Leader (NZ); Mentor Manager (NZ); Branch Manager (Eastgate & Balfour Park (SA).

1999 **Air Vacations - Travel Consultant (UK):** Co-ordination and travel reservations for large tour groups to the USA and Europe, London.

KEY EXPERTISE

- Aquatic Ecology
- Eutrophication
- Aquatic food webs
- Drought and water quality
- Fish and macroinvertebrate diversity
- Land rehabilitation using dung beetles

RELEVANT RESEARCH EXPERIENCE

- **Biodiversity of ephemeral endorheic pans across a disturbance gradient in the Kalahari.** *(Project Leader)* Determine the invertebrate and diatom species composition of pans with a range of inundation regimes in order to identify indicator species and species of conservation value. *Client: Tswalu Foundation (2017-2018).*
- **Can dung beetles improve post-mining land-use options?** *(Project Leader)* Establish the viability of using dung beetles as a complimentary method of mine rehabilitation through a series of experimental and field studies. The numerous ecosystem services provided by dung beetles are well known in agro-ecosystems, but are they as effective in rehabilitated mines?
  Client: Coaltech (2015–2017).
- **The impact of temporary desiccation on the mobility of nutrients and metals from sediments of Loskop Dam.** *(Project Leader)* Water quality perturbations at Loskop Dam, and in the Olifants River system at large, followed a period of severe drought ending in 2006. This study aimed to determine the changes in water chemistry that could be attributed to the temporary desiccation of polluted reservoir sediments. *Client: CSIR (2014).*
- **The combined effects of acid precipitation and slag application to soils as an alternative source of metals in surface waters of the upper Olifants River catchment.** *(Project Leader)* Conducted a series of column leaching experiments and water quality analyses in order to assess metal release from slag treated, agricultural soils. *Client: Olifants River Forum (2011).*
- **Development of a fish kill reporting website for the upper Olifants River catchment.** *(Project Leader)* Designed the concept and content of the 'report a fish kill' link to the Olifants River Forum website. *Client: Olifants River Forum (2014).*
- **Risk assessment of pollution in surface waters of the upper Olifants River catchment.**
  (Ph.D. & M.Sc. Student). Conducted a wide range of field- and laboratory-based studies over four years (2011-2014):
  - Fish collected for analysis of several indices of fish health including thyroid hormone status, diet (using stable isotopes) and dietary quality, haematology analytes, metal bioaccumulation, fish parasites and antioxidant status.
  - Analysis of cellular changes in various fish tissues (thyroid, liver, fat) associated with pansteatitis (yellow fat disease) using histopathology.
  - Collection of seasonal limnological data including water chemistry in the epilimnion and hypolimnion, and physico-chemical variables along depth gradients in various reservoirs.
  - Analysis of trends in water quality from historical datasets.
  - Seasonal sampling of phytoplankton to relate community dynamics to fish diet and physico-chemistry of water.
  - Analysis of reservoir sediments to establish whether metal enrichment has occurred using linear models to define baseline metal concentrations.
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- Analysis of metazoan parasite communities of *O. mossambicus* as indicators of anthropogenic impacts in Loskop Dam.

RELEVANT CONSULTING EXPERIENCE

- **Dung beetle breeding consultation.** *Client: MSD Animal Health (2017).*
- **Investigation of a hypoxic blackwater event (fish kill) on the Bronkhorstspruit and Wilge Rivers.** *Client: E Oppenheimer & Son (2017).*
- **Statistical analysis of pig feed trials.** *Client: Urban Farmer (2016).*
- **Aquatic specialist report for a Water Use License Application at Kalkgat Farm, Polokwane.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for a Water Use License Application at Onverwacht Farm, Polokwane.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for a Water Use License Application at De Loskop Farm, Polokwane.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for a Water Use License Application at Triple C Feedlot, Dundee.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for an Environmental Impact Assessment (EIA) of a proposed off-stream dam at Triple C Feedlot, Dundee.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for a Water Use License Application at Robbertze Farm, Dundee.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for a Water Use License Application at AFT Feedlot, Dundee.** *Client: Bokamoso Environmental Consultants (2016).*
- **Aquatic specialist report for a Water Use License Application at Drafstap Boerdery, Dundee.** *Client: Bokamoso Environmental Consultants (2016).*
- **Investigation of a fish kill in Grand Cape Mount County, Liberia.** *Client: Enviro-Insight (2016).*
- **Water quality assessment for recreational use in Emmarentia Dam, Johannesburg.** *Client: Dabulamanzi Canoe Club (2011-2012).*
- **Aquatic specialist report for an Environmental Impact Assessment (EIA) of proposed road improvements between Apel and Burgersfort, Sekhukhuneland.** *Client: Envirobalance Solutions (2010).*
- **Aquatic specialist report for an Environmental Impact Assessment (EIA) of a proposed bridge over the Yellowwoods River, King Williamstown.** *Client: USK Environmental and Waste Engineering (2009).*

PROFESSIONAL ASSOCIATIONS & OTHER QUALIFICATIONS

Research Affiliations

- Research Associate (Department of Zoology and Entomology, University of Pretoria)
- Research Associate (Sustainability Research Unit, Nelson Mandela Metropolitan University)

Professional Societies

- South African Society of Aquatic Scientists (SASAqS)
- South African Council for Natural Scientific Professionals (SACNASP)
- Water Institute of South Africa (WISA)

Qualifications

- SASS5 (South African Scoring System) accredited practitioner (DWS)
- Skippers License (Category R)
- PADI Divemaster

SCIENTIFIC PUBLICATIONS

Scientific Journals

Dabrowski, J., Oberholster, P., Steyl, J., Osthoff, G., Hugo, A., Power, D.M., van Wyk, J.H. (2017). Thyroid function of steatitis-affected Mozambique tilapia *Oreochromis mossambicus* from a sub-tropical reservoir. *Diseases of Aquatic Organisms, accepted for publication*.

Dabrowski, J., Baldwin, D.S., Hill, L., Shadung, J., Dabrowski, J.M. (2017). The impact of desiccation on the mobility of nutrients and metals from the sediments of Loskop Reservoir, Olifants River. *Water SA*, 43: 7-16.

Lübcker, N., **Dabrowski, J**., Zengeya, T.A., Oberholster, P.J., Hall, G., Woodborne, S. and Robertson, M.P. (2016). Trophic ecology and persistence of invasive silver carp *Hypophthalmichthys molitrix* in an oligotrophic South African impoundment. African Journal of Aquatic Science 41(4): 399-411.

Dabrowski, J.M., **Dabrowski, J**., Hill, L., MacMillan, P. and Oberholster, J. (2014). Fate, transport and effects of pollutants originating from acid mine drainage in the Olifants River, South Africa*. River Research and Applications*, doi: 10.1002/rra.2833.

Dabrowski, J., Hall, G., Lubcker, N., Oberholster, P.J., Phillips, D.L. and Woodborne, S. (2014). Piscivory does not cause pansteatitis (yellow fat disease) in *Oreochromis mossambicus* from an African subtropical reservoir. *Freshwater Biology*, 59: 1484-1496.

Dabrowski, J., Oberholster, P.J., and Dabrowski, J.M. (2014). Water quality of Flag Boshielo Dam, Olifants River, South Africa: Historical trends and the impact of drought. *Water SA*, 40: 345-358.

Lubcker, N., Zengeya, T.A., **Dabrowski, J**. and Robertson, M.P. (2014). Predicting the potential distribution of invasive silver carp *Hyphophthalmichthys molitrix* in South Africa. *African Journal of Aquatic Science*, 39: 157-165.

Dabrowski, J., Oberholster, P.J., Dabrowski, J.M., Le Brasseur, J. and Gieskes, J. (2013). Chemical characteristics and limnology of Loskop Dam in light of recent fish and crocodile mortalities. *Water SA*, 39: 675-686.

Oberholster, P.J., **Dabrowski, J**. and Botha Anna-Maria. (2013). Using modified multiple phosphorus sensitivity indices for mitigation and management of phosphorus loads on a catchment level. *Fundamental Applied Limnology* 182(1): 1-16.

Chaplot, V., **Brown, J**., Dlamini, P., Eustice, T., Janeau, J-L., Jewitt, G., Lorentz, S., Martin, L., Nontokozo-Mchunu, C., Oakes, E., Podwojewski, P., Revil, S., Rumpel, C. and Zondi, N. (2011). Rainfall simulation to identify the storm-scale mechanisms of gully bank retreat. *Agricultural Water Management* 98(11): 1704-1710.

Brown, J., Scholtz, C.H., Janeau, J-L., Grellier, S. and Podwojewski, P. (2010). Dung beetles (Coleoptera: Scarabaeidae) can improve soil hydrological properties. *Applied Soil Ecology* 46: 9-16.

Book Chapters

Oberholster, P.J., **Dabrowski, J**., Blaise, C. and Botha, A-M (2014). To determine *Daphnia* population dynamics and recovering patterns after exposure to different environmental stressors. (2014). Eutrophication: Causes, Economic Implications and Future Challenges. Nova publishers.