

Curriculum Vitae

Florian Gerhard Weller

PhD, MSc (Zoology)

Date of birth: 16/08/1976
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Qualifications

- 2010 **Doctor of Philosophy (Zoology)**
awarded by University of Otago, Dunedin, New Zealand
Thesis title: "Monitoring bird abundance on New Zealand pastoral farms"
- 2004 **Diplom-Biologe Univ. (equiv. to *Masters degree in Biology*)**
awarded by Ludwig-Maximilians-Universität, Munich, Germany
with a score of 1.1 (98%)
Thesis title: „Influence of fine sediment influx on stream invertebrates under different land use regimes“
- 1999 **Vordiplom in Biologie (equiv. to *Bachelors degree in Biology*)**
awarded by Ludwig-Maximilians-Universität, Munich, Germany
with a score of 1.8 (84%)

Academic work experience

- 04/2024 – ongoing Postdoctoral Research Fellow, Department of Ecoscience, University of Aarhus (**agent-based modeling of porpoises in response to wind farms**). PI: Prof Jacob Nabe-Nielsen
- 02/2019 – 3/2022 Postdoctoral Research Fellow, Missouri Cooperative Fish and Wildlife Research Unit, Department of Fisheries and Wildlife Sciences, University of Missouri (**agent-based modeling of mallard populations**). PI: Asc Prof Lisa Webb
- 03/2013 – 12/2017 Postdoctoral Research Fellow, Marine Research Institute / Department of Biological Sciences, & Center for Statistics in Ecology, Environment and Conservation / Department of Statistical Sciences, University of Cape Town (**system dynamics modeling of African penguin populations**). PI: Asc Prof Astrid Jarre, Asc Prof Res Altwegg
- 05 – 10/2011 Research assistant at Center for Sustainability: Agriculture, Food, Energy and Environment (CSAFE), University of Otago, Dunedin (freshwater invertebrate analysis and bird monitoring data processing & modeling)
- 02 – 04/2011 Demonstrator for 300-level Physiology course (EEG and electrophysiology)
- 07/2010 - 01/2011 Research Assistant at Department of Physiology, University of Otago (electro-physiological work on *in vitro* mouse olfactory bulb & hippocampus models)
- 05 - 07/2010 Research assistant at Center for Sustainability: Agriculture, Food, Energy and Environment (CSAFE), University of Otago, Dunedin (modeling of bird survey data for the ARGOS project)
- 2006, 2008 Demonstrator for 200-level Zoology courses "Evolutionary Biology / Animal Physiology"; and 300-level Freshwater Ecology course, Department of Zoology, University of Otago, Dunedin
- Smstr 1 & 2/2002 Demonstrator for 300-level (equiv.) Marine Zoology course "Mediterranean Ecosystems", Institute of Zoology, Ludwig-Maximilians-Universität, Munich (D)
- 09 - 11/2001 Research assistant at the palaeontological excavation Eckfelder Maar (Landessammlung für Naturkunde Rheinland-Pfalz)

1998/1999 Research assistant in echolocation and behavioural experiments with bats at the Institute of Zoology, Ludwig-Maximilians-Universität, Munich (D); publication of results in "Ethology" 108, 2002

Member of: New Zealand Ecological Society, The Wildlife Society

Other relevant work and voluntary experience

05/2018 – ongoing Handling editor, WikiJournal of Science

02/2012 – ongoing Scientific English manuscript editor with Uni-Edit academic editing services

07/2012 – 02/2013 Development of an R extraction tool for taxonomic databases within the Diversity Workbench project (<http://diversityworkbench.net>), Zoologische Staatssammlung Bayern, Munich

2005 – 2008 Design, development and maintenance of the website for the Bavarian Fish Biodiversity Project, Zoologische Staatssammlung Bayern, Munich

Research interests: **Population ecology:** community ecology, wildlife monitoring methodology
Conservation ecology: wildlife management, risk assessment, biodiversity
Ecological modeling: integrated models, system dynamics and predictive simulation, spatially explicit simulation, agent-based models
Other: spatial ecology, fire ecology, palaeo-ecology, history of natural sciences

Language skills: Fluent in German and English, basic skills in French

Computer skills: **Statistics and modeling:** R, Distance, Numerus, VenSim, S-Plus, GenStat
GIS: ArcGIS, QGIS, ERDAS Imagine
Programming: Java / Javascript, QuickBasic and related languages, basic Python
General: MS Office / OpenOffice, Photoshop / GIMP, HTML / XML, basic SQL

References: Asc Prof Lisa Webb, Missouri Cooperative Fish and Wildlife Research Unit, Department of Fisheries and Wildlife Sciences, University of Missouri, Columbia, MO
tel. +1 573 8822591; webbli@missouri.edu
Dr William Beatty, Upper Midwest Environmental Sciences Center, La Crosse, WI
tel. +1 608 7816248; wbeatty@usgs.gov
Asc Prof Astrid Jarre, Marine Research Institute / Department of Biological Sciences, University of Cape Town, Cape Town, South Africa
tel. +27 21 6506453; astrid.jarre@uct.ac.za

Grants received

2019 – 2022 Post-Doctoral Fellowship, Missouri Cooperative Fish and Wildlife Research Unit, Department of Fisheries and Wildlife Sciences, University of Missouri

2017 – 2018 Post-Doctoral Fellowship, Center for Statistics in Ecology, Environment and Conservation / Department of Statistical Sciences, & Marine Research Institute / Department of Biological Sciences, University of Cape Town

2013 – 2016 Post-Doctoral Fellowship, Marine Research Institute / Department of Biological Sciences, University of Cape Town

2009/2010 Center for Sustainability: Agriculture, Food, Energy and Environment Internship

2009 University of Otago Publishing Bursary

2005 – 2007 University of Otago Postgraduate Scholarship (tenure 36 months)

2002 German Academic Exchange Service (DAAD) International Diploma Thesis Grant

Publications

- F.G. Weller, E.B. Webb, W.S. Beatty, S. Fogenburg, D. Kesler, R.H. Blenk, J.M. Eadie, K. Ringelman, C. Arzel, M. L. Miller (2023). "An agent-based model to quantify energetics, movement and habitat selection of mid-continent mallards in the Mississippi Alluvial Valley." *Ecological Modelling* 485: 110488
- F.G. Weller, E.B. Webb, W.S. Beatty, S. Fogenburg, D. Kesler, R.H. Blenk, J.M. Eadie, K. Ringelman, M. L. Miller (2022). "Agent-based modeling of movements and habitat selection by mid-continent mallards." U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-143-2022, Washington, D. C. <https://doi.org/10.3996/css47216360>
- US Fish and Wildlife Service (*in press*). "Gray Bat (*Myotis grisescens*) 5-Year Review: Summary and evaluation". USFWS Non-Series Report, Interior Region 3 – Great Lakes. [*performed analysis and modeling*]
- F.G. Weller, W.S. Beatty, E.B. Webb, D.C. Kesler, D.G. Kremetz, K. Asante, L.W. Naylor (2022). "Environmental drivers of autumn migration departure decisions in midcontinental mallards". *Movement Ecology* 10(1): 1-13
- A. Jarre, L. Shannon, R. Cooper, G. Duggan, L. Gammage, E. Lockerbie, E. McGregor, S. Ragaller, N. Visser, C. Ward, K. Watermeyer, F. Weller, R. Ommer (2018). "Untangling a Gordian knot that must not be cut: social-ecological systems research for management of southern Benguela fisheries". *Journal of Marine Systems* 188: 149-159
- R.B. Sherley, B. J. Barham, P. J. Barham, K. J. Campbell, R. J. M. Crawford, J. Grigg, C. Horswill, A. McInnes, T. L. Morris, L. Pichegru, A. Steinfurth, F. Weller, H. Winkler, S. C. Votier (2018). "Bayesian inference reveals positive but subtle effects of experimental fishery closures on marine predator demographics." *Proceedings of the Royal Society B* 285(1871): 20172443
- F. Weller, R. B. Sherley, L. J. Waller, K. Ludynia, D. Geldenhuys, L. J. Shannon, A. Jarre (2016). "System dynamics modelling of the Endangered African penguin populations on Dyer and Robben islands, South Africa". *Ecological Modelling* 327: 44-56, + TRACE model documentation (70 p.)
- F. Weller, R. B. Sherley, L. J. Shannon, A. Jarre, T. Stewart, R. Altwegg, L.-A. Cecchini, R. J. M. Crawford, D. Geldenhuys, K. Ludynia, J. Waller (2015). "Penguins' perilous conservation status calls for complementary approach based on sound ecological principles: reply to Butterworth et al.". *Ecological Modelling* 337: 1-3
- F. Weller, L.-A. Cecchini, L. Shannon, R.B. Sherley, R. J. M. Crawford, R. Altwegg, L. Scott, T. Stewart, A. Jarre (2014). "A system dynamics approach to modelling multiple drivers of the African penguin population on Robben Island, South Africa". *Ecological Modelling* 277: 38-56.
- F. Weller (2012). "A comparison of different approaches to monitoring bird density on New Zealand sheep and beef farms". *New Zealand Journal of Ecology (Special Edition: Advances in bird monitoring techniques)* 36(3): 382-390.
- F. Weller, G. Blackwell, H. Moller (2012). "Detection probability for estimating bird density on New Zealand sheep & beef farms". *New Zealand Journal of Ecology (Special Edition: Advances in bird monitoring techniques)* 36(3): 371-381.
- C. MacLeod, G. Blackwell, F. Weller, H. Moller (2012). "Designing a bird monitoring scheme for New Zealand's agricultural sectors". *New Zealand Journal of Ecology (Special Edition: Advances in bird monitoring techniques)* 36(3): 312-323.
- S. Meadows, H. Moller, F. Weller (2012). "Reduction of bias when estimating bird abundance within small habitat fragments". *New Zealand Journal of Ecology (Special Edition: Advances in bird monitoring techniques)* 36(3): 408-415.
- F. Weller (2011). "Testing the power of an experiment to measure the impact of predator control and habitat complexity on New Zealand farmland bird abundance". *New Zealand Journal of Ecology* 35(1):44-51.
- F. Weller (2010). "Monitoring bird abundance on New Zealand pastoral farms". PhD thesis, University of Otago.

F. Weller, S. Meadows, M. Gradwohl (2008). "Retaining adaptive capacity in New Zealand's ecological systems". (Forum article) *New Zealand Journal of Agricultural Research* 51(4): 477-479

H. Moller, C.J. MacLeod, J. Haggerty, C. Rosin, G. Blackwell, C. Perley, S. Meadows, F. Weller, M. Gradwohl (2008). "Intensification of New Zealand agriculture: implications for biodiversity". *New Zealand Journal of Agricultural Research* 51(3): 253-263

H. Moller, G. Blackwell, F. Weller, C. MacLeod, C. Rosin, M. Gradwohl, S. Meadows, C. Perley (2008). "Social-ecological scales and sites of action: Keys to conserving biodiversity while intensifying New Zealand's agriculture?". (Forum article) *New Zealand Journal of Agricultural Research* 51(4): 461-465

S. Meadows, M. Gradwohl, H. Moller, C. Rosin, C. MacLeod, F. Weller, G. Blackwell, C. Perley (2008). "Pathways for integration of biodiversity conservation into New Zealand's agricultural production". (Forum article) *New Zealand Journal of Agricultural Research*. 51(4): 467-471

C.D. Matthaei, F. Weller, D. Kelly, C.R. Townsend (2006).. „Impacts of fine sediment additions to tussock, pasture, dairy and deer farming streams in New Zealand". *Freshwater Biology* 51: 2154-2172

F. Weller (2003). „Effects on freshwater invertebrates of increased fine sediment influx under various land use regimes". Diplom thesis, Ludwig-Maximilians-Universität München

D. Leippert, E. Frank, P. Gabriel, S. Kutter, K. Scheidemann, N. von Stillfried, F. Weller (2002). „Prey-related spectral changes in echolocation sounds of the Indian False Vampire *Megaderma lyra*". *Ethology* 108: 139-156

Conference presentations

F. Weller, E. Webb, W. Beatty, D. Kesler, M. L. Miller, K. M. Ringelman, R. H. Blenk, S. Fogenburg, J. M. Eadie (2020). "Use of an agent-based model to inform waterfowl conservation planning in the Mississippi Alluvial Valley: quantifying mallard response to wetland composition and configuration". Oral presentation & conference abstract at the Lower Mississippi Valley Joint Venture Waterfowl Symposium, 4.-6. October 2022 in Memphis, Tennessee (given virtually)

F. Weller, E. Webb, W. Beatty, D. Kesler, M. L. Miller, K. M. Ringelman, R. H. Blenk, S. Fogenburg, J. M. Eadie (2020). "Using an agent-based model to understand the role of landscape composition on wintering mallard body condition, movements and survival". Oral presentation & conference abstract at 27th The Wildlife Society Conference, 28 September - 2 October 2020, held virtually

F. Weller, E. Webb, W. Beatty, D. Kesler (2020). "Agent-based modeling of wintering mallards in the Mississippi Alluvial Valley". Oral presentation & conference abstract at the 80th Fish and Wildlife Conference, 26.-29. January 2020 in Springfield, Illinois

F. Weller, R.B. Sherley, A. Steinfurth, K. Ludynia, D. Geldenhuys, L. Shannon, L. Waller, A. Jarre (2016). "Conservation scenarios from system dynamics modelling of African penguin populations on Robben, Dyer and Dassen islands". Poster presentation & conference abstract at the Benguela Symposium 2016, 15.-18. November 2016 in Cape Town, South Africa.

F. Weller, R.B. Sherley, A. Steinfurth, K. Ludynia, D. Geldenhuys, L. Shannon, L. Waller, A. Jarre (2016). "Conservation scenarios from system dynamics modelling of African penguin populations on Robben, Dyer and Dassen islands". Poster presentation & conference abstract at the 9th International Penguin Congress, 2016, 5.-9. September 2016 in Cape Town, South Africa.

F. Weller, R.B. Sherley, K. Ludynia, L. Shannon, L. Waller, A. Jarre (2014). "A system dynamics approach to modelling multiple drivers of the African penguin populations on Robben and Dyer Islands, South Africa". Oral presentation & conference abstract at the 8th International Conference on Ecological Modelling (ECEM 2014) in Marrakech, Morocco, 2014.

F. Weller, L.-A. Cecchini, L. Shannon, R.B. Sherley, R. J. M. Crawford, R. Altwegg, K. Ludynia, L. Waller, L. Scott, T. Stewart, A. Jarre (2014). "System dynamics modelling of African penguin populations on Robben and Dyer Islands, South Africa." Poster presentation & conference abstract at the 2014 Southern African Marine Science Symposium in Stellenbosch, South Africa

F. Weller (2010). "Habitat and seasonal influences on New Zealand farmland bird populations". Oral presentation & conference abstract at the 2010 New Zealand Ecological Society Conference in Dunedin, New Zealand

F. Weller (2009). "Design of an experiment to measure the impact of introduced predators on farmland bird populations in New Zealand". Oral presentation & conference abstract at the 22nd Australasian Wildlife Management Society Annual Conference, 2009, in Napier, New Zealand

C.D. Matthaei, F. Weller, D. Kelly, C.R.Townsend (2004). „Effects of fine sediment on streams in catchments with contrasting land uses: a reach-scale experiment“. Oral presentation & conference abstract at the 2004 meeting of the North American Benthological Society in Vancouver, BC, Canada.

C.D. Matthaei, F. Weller, D. Kelly, C.R.Townsend (2003). „Impacts of fine sediment additions to tussock, pasture, dairy and deer streams in Otago, New Zealand“. Oral presentation & conference abstract at the 2003 meeting of the Limnological Societies of Australia and New Zealand in Warrnambool, Australia.