

CURRICULUM VITAE

NAME: Leslie Gordon Underhill
DATE OF BIRTH: 22 November 1946
PLACE OF BIRTH: Cape Town, South Africa
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MARITAL STATUS: Widower; married 1978–2016, two daughters, born 1981 and 1983

EDUCATION: 1953–1959 Pinelands Primary School, Pinelands, Cape Town
1960–1964 South African College High School, Newlands, Cape Town

1966–1973 University of Cape Town, degrees as follows:

1966–1968 BSc with distinctions in Mathematical Statistics and Mathematics, and the degree with distinction

1969 BSc (Hons) first class, in Mathematics

1971 MSc with distinction, in Operations Research

1973 PhD, in Mathematical Statistics

AWARDS: 1966–1968 UCT Entrance Scholarship
1969 University Council Scholarship
1971 Queen Victoria Scholarship
1989 Vera Davies Scholarship
*1999 Herschell Gold Medal of Royal Society of South Africa

1999 Endangered Wildlife Trust Top Ten Conservationist Award for 1999

2000 Mazda Wildlife Fund Top Ten Conservationist of the Decade Award

2001 SANCOR Marine and Coastal Communicator of the Year Award

*2002 SANCOR Gilchrist Memorial Medal for contributions to marine science

2003 Fellow of the University of Cape Town

2003 Owl Award, BirdLife South Africa

2003 Fellow of the Royal Society of South Africa

2004 Presidents' Special Award, Wildlife and Environment Society of South Africa

2006 Honorary Fellow of the American Ornithologists' Union

*2012 Oppenheimer Memorial Fellowship

2014 Individual Award, Wildlife and Environment Society of South Africa

*2017 Gill Memorial Medal for a lifetime of outstanding service to ornithology, BirdLife South Africa

*2019 Molteno Gold Medal of the Cape 300 Foundation for lifetime services to statistics and ornithology.

* five awards with gold medals, illustrated below



EXPERIENCE: Posts in the Department of Mathematical Statistics/Statistical Sciences at the University of Cape Town:

- 1970–1971 Temporary Lecturer
- 1972–1977 Lecturer
- 1977–1982 Senior Lecturer (*ad hominem* promotion)
- 1982–1992 Associate Professor
- 1992– 2011 Professor of Avian Demography in the Department of Statistical Sciences (*ad hominem* promotion), transferred to Department of Zoology in 2008, which become Department of Biological Sciences in 2013
- 2012– Senior Research Scholar, Department of Biological Sciences (five three-year appointments, current one ending 2026)

Managerial positions at the University of Cape Town

- 1985–1991 Head of Department of Mathematical Statistics/Statistical Sciences
- 1991–2020 Director, Animal Demography Unit (which was known as the Avian Demography Unit until the end of 2007)
- July–December 1993 Acting Head of Department of Statistical Sciences

Research experience at institutions abroad:

- January–December 1975 Used Queen Victoria Scholarship awarded in 1971 to visit University of Adelaide, Australia, and University of Auckland, New Zealand
- July 1979–June 1980 Study and research leave at University of Sheffield, England
- December 1984–July 1985 Study and research leave at Rothamsted Experimental Station, Harpenden, England
- January–December 1989 Study and research leave at the Institute for Arable Crops Research, Rothamsted Experimental Station, Harpenden, England
- January–December 1992 Statistical consultant, Schweizerische Vogelwarte (Swiss Ornithological Institute), Sempach, Luzern, Switzerland

RESEARCH INTERESTS:

My formal training is in statistics, and my PhD in 1973 was in abstract multivariate analysis. It is more than four decades since I graduated – and solved a problem that no one has ever had, or is ever likely to have. I rebelled against abstract mathematical statistics within two years of completing my PhD, and retrained myself as an applied statistician, with the objective of solving some of the quantitative problems of the real world. I focused on graphical display techniques for data matrices and on developing statistical models for specific problems for which existing methods were inadequate. I steadily narrowed the field of interest to applications of statistics in ornithology and ecology. Mainly through working with biologists, I developed a research interest in ornithology, especially the population dynamics and life histories of seabirds and shorebirds. In general, applied statisticians are prisoners to the datasets collected by others; I have discovered that I can motivate the fieldwork to collect the types of data which I take an interest in analyzing.

Although I remain firmly rooted in my quantitative base in statistics, I now regard myself as an interdisciplinary scientist, and I particularly enjoy working at the interfaces between disciplines. The theatre in which much of this research takes place is zoology/ecology, and primarily involves birds. My main interest lies in the interface between statistics and ornithology, but I also work at establishing and extending links between disciplines: some examples are between polymer physics and ornithology (rubber bands were field-tested on Robben Island's penguins, in collaboration with Professor Peter Barham, Department of Physics, University of Bristol); between stable isotopes and ornithology (the chick and family energetics research on shorebirds and gannets with doubly labelled water).

The overall red thread which runs through the overwhelming majority of my research is the concept of developing algorithms which enable other researchers to visualize the patterns in their data.

POSTGRADUATE SUPERVISION:

Completed postgraduate students

Postdoctoral fellows

de Villiers, Marienne 2001–2003. (PhD, University of Pretoria); supported by NRF

Mukherjee, Aeshita 2003–2004. (PhD, University of Gujarat, India); supported by UCT

Mecenero, Silvia 2005–2006. (PhD, University of Cape Town); supported by SAEON

Bruinzeel, Leo 2005–2006. (PhD, University of Groningen, the Netherlands); supported by UCT and the NRF

Crane, Jonathan 2006. (PhD, University of Glasgow, Scotland); supported by NRF

Altwegg, Res 2005–2008. (PhD, University of Zürich, Switzerland); supported by NRF, and the Swiss Science Research Foundation

Parsons, Nola 2007–2008 (PhD, University of Cape Town); supported by NRF

Remisiewicz, Magda 2008–2010 (PhD, University of Gdansk, Poland); supported by Claude Leon Foundation

Bled, Florent 2011–12 (PhD, University of Toulouse III, France); supported by NRF

Ludynia, Katrin 2008–11 (PhD, University of Kiel, Germany); supported by DAAD 2008, Claude Leon Foundation, 2009–11

Steinfurth, Antje 2009–13 (PhD, University of Kiel, Germany); supported by NRF, Leiden Conservation Trust, and the Earthwatch Institute

Gebresalassie, Fitsum 2010–12 (PhD, Leon Foundation, 2011–2013 University of Berne, Switzerland); supported by BirdLife South Africa, 2010, Claude Leon Foundation

Hoffman, Tali 2012–14 (PhD, University of Cape Town); supported by MammalMAP funding and the Mammal Research Institute, University of Pretoria

Sherley, Richard 2011–14 (PhD, Bristol University, UK); supported by Marine Research Institute, UCT, and the Earthwatch Institute

Kohler, Sophie 2012–14 (PhD, University of Reunion, France); supported by Claude Leon Foundation

Barshep, Yahkat 2012–15 (PhD, University of Cape Town), supported by ACCESS

Hofmeyr, Sally 2013–15 (PhD, University of Cape Town); supported by the University of Cape Town Research Committee, and entitled *Translational Research Communication*

Laver, Pete 2017–18. (PhD, Virginia Polytechnic Institute and State University); Supported by the Claude Leon Foundation.

PhDs

Brandao, Anabela 1998. A comparative study of stochastic models in biology. PhD, University of Cape Town

Let $\hat{y}_i = \hat{\alpha} + \hat{\beta}t_i$ for birds that have not started moult. Then the first partial derivative of ℓ_4 with respect to μ is given by

$$\begin{aligned} \frac{\partial \ell_4}{\partial \mu} &= \sum_{i=1}^I \left(\frac{-\phi\left(\frac{\alpha + \beta t_i}{\sigma_\epsilon}\right)}{\sigma_\epsilon \left(1 - \Phi\left(\frac{\alpha + \beta t_i}{\sigma_\epsilon}\right)\right)} + \frac{\phi\left(\frac{1 - (\alpha + \beta t_i)}{\sigma_\epsilon}\right)}{\sigma_\epsilon \Phi\left(\frac{1 - (\alpha + \beta t_i)}{\sigma_\epsilon}\right)} \right) \\ &\quad + \sum_{j=1}^J \left(\frac{y_j - (\alpha + \beta u_j)}{\sigma_\epsilon^2} + \frac{\phi\left(\frac{1 - (\alpha + \beta u_j)}{\sigma_\epsilon}\right)}{\sigma_\epsilon \Phi\left(\frac{1 - (\alpha + \beta u_j)}{\sigma_\epsilon}\right)} \right) \\ &= \sum_{i=1}^I \left(\frac{-1}{\sigma_\epsilon} h\left(\frac{\mu_i}{\sigma_\epsilon}\right) + \frac{1}{\sigma_\epsilon} f\left(\frac{1 - \mu_i}{\sigma_\epsilon}\right) \right) + \sum_{j=1}^J \left(\frac{y_j - (\alpha + \beta u_j)}{\sigma_\epsilon^2} + \frac{1}{\sigma_\epsilon} f\left(\frac{1 - \mu_j}{\sigma_\epsilon}\right) \right). \end{aligned}$$

Therefore

$$E\left[(y_i^* - \hat{y}_i) \mid y_i = 0; \hat{\alpha}, \hat{\beta}, \hat{\sigma}_\epsilon\right] = -\hat{\sigma}_\epsilon h\left(\frac{\hat{y}_i}{\hat{\sigma}_\epsilon}\right),$$

which implies that

$$E\left[y_i^* \mid y_i = 0; \hat{\alpha}, \hat{\beta}, \hat{\sigma}_\epsilon\right] = \hat{y}_i - \hat{\sigma}_\epsilon h\left(\frac{\hat{y}_i}{\hat{\sigma}_\epsilon}\right), \quad i = 1, 2, \dots, I.$$

The partial derivative of ℓ_4 with respect to σ_ϵ is

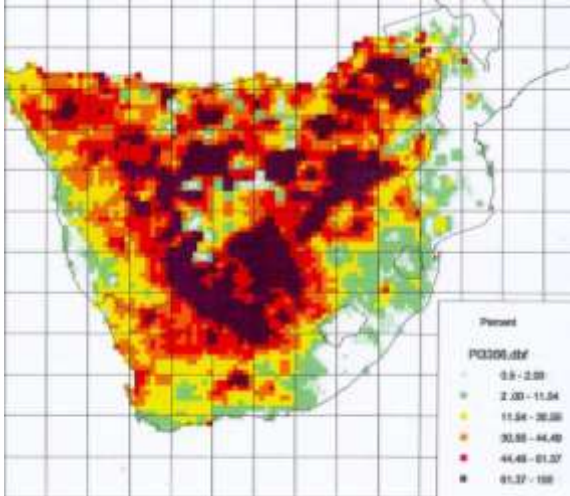
$$\begin{aligned} \frac{\partial \ell_4}{\partial \sigma_\epsilon} &= \sum_{i=1}^I \left(\frac{\alpha + \beta t_i}{\sigma_\epsilon^2} h\left(\frac{\mu_i}{\sigma_\epsilon}\right) + \frac{1 - (\alpha + \beta t_i)}{\sigma_\epsilon^2} f\left(\frac{1 - \mu_i}{\sigma_\epsilon}\right) \right) \\ &\quad + \sum_{j=1}^J \left(\frac{(y_j - (\alpha + \beta u_j))^2}{\sigma_\epsilon^3} + \frac{1 - (\alpha + \beta u_j)}{\sigma_\epsilon^2} f\left(\frac{1 - \mu_j}{\sigma_\epsilon}\right) - \frac{1}{\sigma_\epsilon} \right). \end{aligned}$$



Serra, Lorenzo 2002. Cold winters vs. long journeys: adaptations of primary moult and body mass to migration and wintering in the Grey Plover *Pluvialis squatarola*. PhD, University of Cape Town

Whittington, Phil A 2002. Survival and movements of African Penguins, especially after oiling. PhD, University of Cape Town





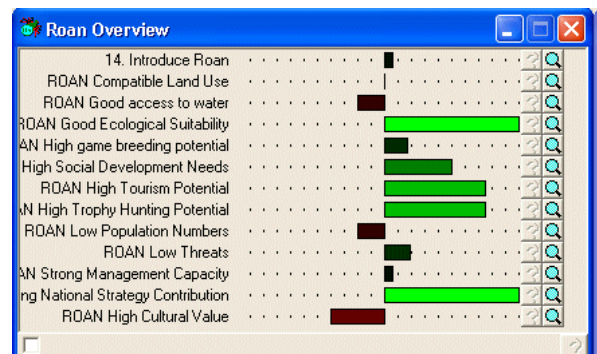
Little, Francesca 2003. The smooth is better than the rough: an exploitation of reporting rate information in southern African bird atlas data. PhD, University of Cape Town

Mecenero, Silvia 2005. The diet of the Cape Fur Seal *Arctocephalus pusillus pusillus* in Namibia: variability and fisheries interaction. PhD, University of Cape Town



Oschadleus, H Dieter 2005. Patterns of primary moult in the weavers, Ploceidae. PhD, University of Cape Town

Paterson, Barbara 2005. A transdisciplinary study on developing knowledge based software tools for wildlife management in Namibia. PhD, University of Cape Town





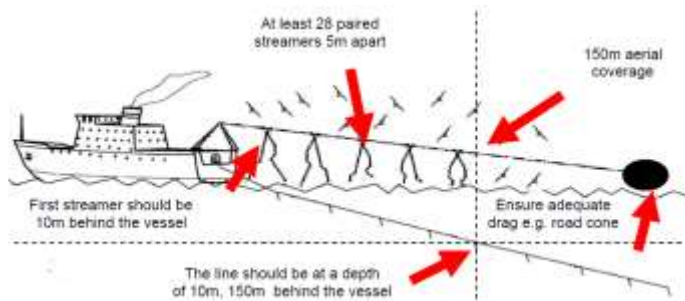
Kemper, Jessica 2006. Heading towards extinction? Demography of the African Penguin in Namibia. PhD, University of Cape Town

Parsons, Nola J 2006. Quantifying abundance, breeding and behaviour of the African Black Oystercatcher *Haematopus moquini*. PhD, University of Cape Town



Tjørve, Kathy MC 2006. From an egg to a fledgling: perspectives on shorebird breeding ecology and chick energetics. PhD, University of Groningen

Wolfaardt, Anton C 2007. The effects of oiling and rehabilitation on the breeding productivity and annual moult and breeding cycles of African Penguins. PhD, University of Cape Town



Petersen, Samantha L 2008. Long-line fishing interactions with seabirds, turtles and sharks: evaluation, mitigation and recommendations. PhD, University of Cape Town

Makhado, Newi 2009. Investigation of the impact of fur seals on the conservation status of seabirds at islands off South Africa and at the Prince Edward Islands. PhD, University of Cape Town



Wheeler, Mari ette 2009. Effects of human disturbance on the seabirds and seals at sub-Antarctic Marion Island. PhD, University of Cape Town

de Ponte Machado, Marta 2010. Study of Great White Pelicans in southern Africa: feeding ecology, predation, migration and conservation. PhD, University of Cape Town



Kirkman, Stephen P 2010. The Cape Fur Seal: monitoring and management in the Benguela Current Ecosystem. PhD, University of Cape Town

Navarro, Rene A 2010. Energy budget and foraging behaviour of the Cape Gannet *Morus capensis* during the breeding season. PhD, University of Cape Town



$$\hat{\beta} = (\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \mathbf{y} = \mathbf{V} \mathbf{D}_\alpha^{-1} \mathbf{U}^T \mathbf{y}$$

We can express the j th regression coefficient as

$$\begin{aligned} \hat{\beta}_j &= \sum_{i=1}^n \sum_{k=1}^m \frac{v_{jk} u_{ik} y_i}{\alpha_k} \\ &= \sum_{k=1}^m \frac{v_{jk}}{\alpha_k} \left[\sum_{i=1}^n u_{ik} y_i \right] \\ &= \sum_{i=1}^n y_i \left[\sum_{k=1}^m \frac{v_{jk} u_{ik}}{\alpha_k} \right] \end{aligned}$$

Ramaboa, Kutlwano KKM 2010. Contributions to linear regression diagnostics using the singular value decomposition: measures to identify outlying observations, influential observations and collinearity in multivariate data. PhD, University of Cape Town

Sherley, Richard 2010. Factors influencing the demography of endangered seabirds at Robben Island, South Africa: Implications and approaches for management and conservation. PhD, University of Bristol



Barshep, Yahkat 2011. Migration and moult strategies of the Curlew Sandpiper. PhD, University of Cape Town

Braby, Justine 2011. The biology and conservation of the Damara Tern in Namibia. PhD, University of Cape Town



Waller, Lauren J 2011. The African Penguin *Spheniscus demersus*: conservation and management issues. PhD, University of Cape Town

Harebottle, Doug M 2012. Seasonality and abundance of waterbirds in the winter rainfall region of South Africa. PhD, University of Cape Town



Hofmeyr, Sally 2012. Conservation impacts of environmental change on populations of threatened large terrestrial bird species in South Africa. PhD, University of Cape Town

Boast, Lorraine 2014. Human-cheetah conflict on game ranches in Botswana: Exploring causes and mitigation options – Is coexistence possible? PhD, University of Cape Town

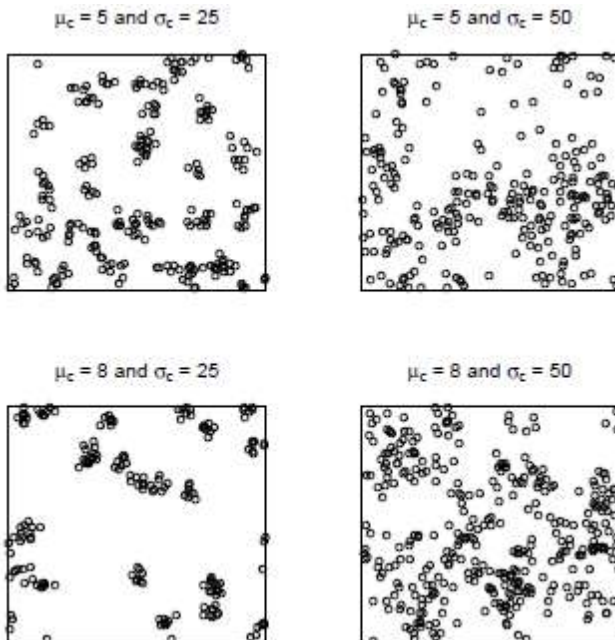


Maphisa, David 2015. Towards adaptive management of high altitude grasslands: Ingula as a case study. PhD, University of Cape Town



Burman, Marc 2016. Citizen science reveals complex changes in Barn Swallow phenology in South Africa over three decades. PhD, University of Cape Town

Campbell, Kate 2016. Factors influencing the foraging behaviour of African Penguins *Spheniscus demersus* provisioning chicks at Robben Island, South Africa. PhD, University of Cape Town



Distiller, Greg 2016. A continuous time formulation for spatial capture-recapture models. PhD, University of Cape Town

Murgatroyd, Meg 2016. The effects of land-use on the diet and hunting habits of the Verreaux's Eagle *Aquila verreauxii*. PhD, University of Cape Town



Jackson, Colin 2018. The moult and migration strategies of Lesser Sand Plover, Greater Sand Plover and Terek Sandpiper. PhD, University of Cape Town

Loffie-Eaton, Megan 2018. Woody cover and birds. PhD, University of Cape Town



Nickless, Alecia 2018. Regional CO₂ flux estimates for South Africa through inverse modelling. PhD, University of Cape Town

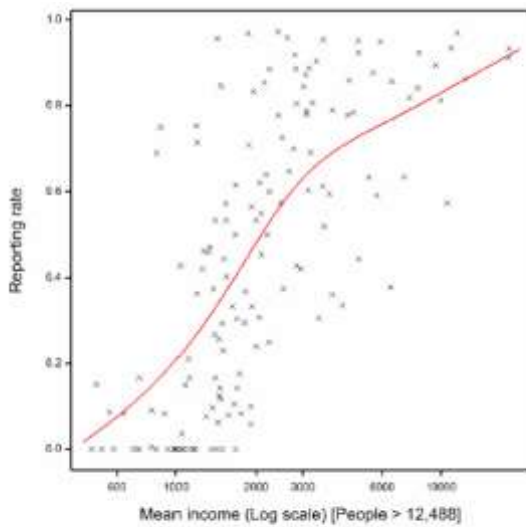


Fig. 7.2: Relationship between reporting rate of the Karoo Thrush and log of mean income of the human population in Greater Gauteng from pentads with people greater than 12,488.

Wala, Zingfa 2018. Birds and people: Studies based on citizen science and census data of Greater Gauteng, South Africa. PhD, University of Cape Town

Bussiere, Elsa 2019. Camera traps as sensor networks for space-time exploration of terrestrial mammal communities. PhD, University of Cape Town





Brom, Peta 2022. Monkey beetles on the beat: Urban monkey beetles reveal opportunities for pollinator habitat management in a South African city. PhD, University of Cape Town

Scott, Tanya 2023. A contribution to understanding primary moult of birds. PhD, University of Cape Town

Dr Scott was awarded the Joseph Arenow prize, and the PhD medal, for the best PhD thesis in 2023 in the Faculty of Science at the University of Cape Town



Cottrant, Emy 2024. Assessing conservation measures for five southern African endemic shark species. PhD, University of Cape Town

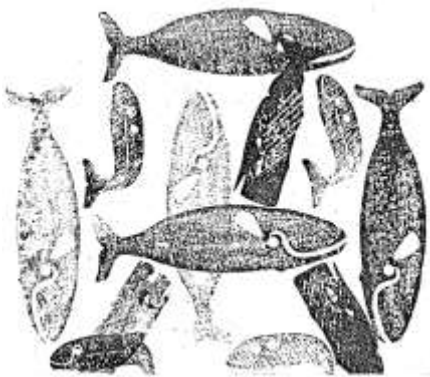
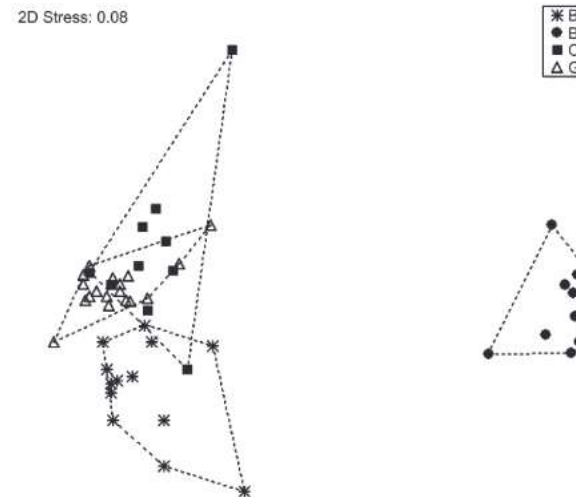


Daniel, Karis 2024. The scientific and socio-cultural value of citizen science. PhD, University of Cape Town

Dr Daniel was awarded the Purcell Memorial Prize for the best thesis dealing with a zoological topic at the University of Cape Town in 2024.

MSc by thesis

Mimmack, Gill M 1979. An investigation into aspects of nonmetric multidimensional scaling. MSc, with distinction, University of Cape Town

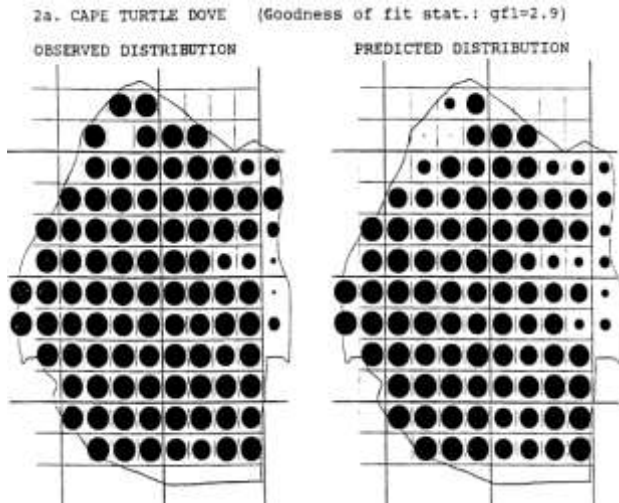


Basson, Marinelle 1983. A simulation study of the effect of target motion on sighting estimates of Minke Whale population density. MSc, University of Cape Town

Iloni, Karen 1992. Biplot graphical display techniques. MSc, University of Cape Town

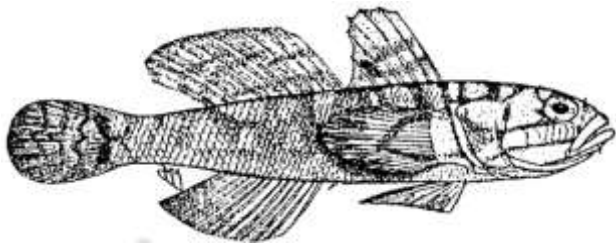
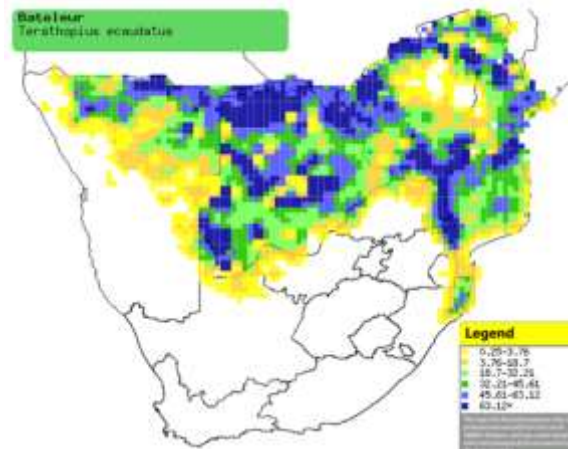
$$\|Z\|_{Dr, Dc}^2 = \sum_{i=1}^n \sum_{j=1}^m r_i c_j \left(\frac{p_{ij} - r_i c_j}{r_i c_j} \right)^2$$

$$= \sum_{i=1}^n \sum_{j=1}^m \frac{(p_{ij} - r_i c_j)^2}{r_i c_j}$$



Parker, Vincent 1995. Statistical analysis of bird atlas data from Swaziland. MSc, University of Cape Town

Erni, Birgit 2000. Analysis of distribution maps from bird atlas data: dissimilarities between species, continuity within ranges and smoothing of distribution maps. MSc, University of Cape Town



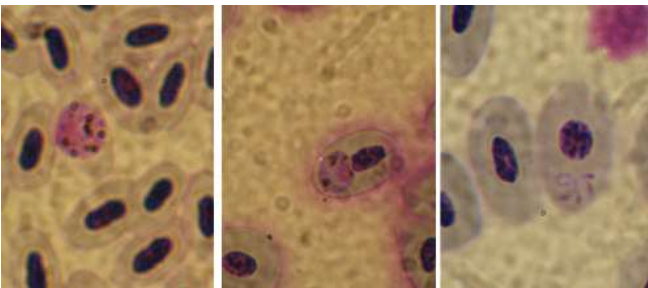
Anday, Tekie 2005. Consistency of spatial and temporal size differences of gobies consumed by seals in the Benguela ecosystem. Dissertation component of MSc in Statistical Sciences, University of Cape Town

le Roux, Janine 2006. The Swift Tern *Sterna bergii* in southern Africa: growth and movement. MSc, University of Cape Town



Staveres, Linda 2006. Breeding productivity of Cape Gannets *Morus capensis* in relation to age. MSc, University of Cape Town

McInnes, Alistair 2007. Biology of the Grey-headed Gull *Larus cirrocephalus* in southern Africa. MSc, *cum laude*, University of KwaZulu-Natal



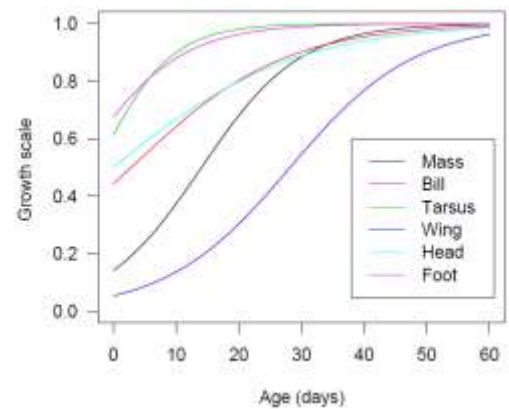
Schultz, Albert 2007. Patterns of avian haemosporidia in birds within the greater Cape Town area. MSc, University of Cape Town

Hampton, Shannon 2008. A preliminary investigation into effects of flipper banding on African Penguins *Spheniscus demersus*. MSc, University of Cape Town



Houniet, Darren 2008. Present and future distribution ranges of the Cape Dwarf Chameleon *Bradypodion pumilum*. MSc, University of Cape Town

Ntirampeba, Dismas 2008. Modelling growth patterns of bird species using non-linear mixed effects models. Dissertation component of MSc in Statistical Sciences, University of Cape Town



Southey, Diane 2009. Wildfires in the Cape Floristic Region: exploring vegetation and weather as drivers of fire frequency. MSc, with distinction, University of Cape Town

Rousset, Thierry 2011. 'Might is Right': A study of the Cape Town/Crozets Elephant Seal oil trade (1832–1869). MA, with distinction, University of Cape Town



Duckworth, Greg 2011. Population demography of the Hadeda Ibis on the edge of its expanding range. MSc, with distinction, University of Cape Town

Mostert, Esther A 2012. Prioritising bird species of special concern for monitoring and conservation action in protected areas. MSc, University of Cape Town

Table 5.7. Ranking of the eight top species for the Threat Status criterion for four different weight shift Scenarios. The first column sets the weight for Threat Status at 35%, as for Model 1. The Key Table below lists the species in each threat category

Model 1: Threat status		SCENARIO 1	SCENARIO 2	SCENARIO 3	SCENARIO 4
Selected weight		If this criterion was not considered	Lower weight	Upper weight	If this were the only criterion
Score	Weight 35	Weight 0	Weight 10	Weight 50	Weight 100
1	69 Opecker, Yellow-billed	Opecker, Yellow-billed	Opecker, Yellow-billed	Opecker, Yellow-billed	Stork, Saddle-billed
2	64 Vulture, Hooded	Vulture, Hooded	Vulture, Hooded	Stork, Saddle-billed	all VU species - 2nd position
3	63 Stork, Saddle-billed	Parrot, Brown-headed	Parrot, Brown-headed	Vulture, Hooded	all NT species - 3rd position
4	51 Openbill, African	Openbill, African	Stork, Saddle-billed	Bateleur	all LC species - 4th position
5	49 Openbill, African	Stork, Saddle-billed	Openbill, African	Night-heron, White-backed	
6	45 Night-heron, White-backed	Bateleur	Bateleur	Openbill, African	
7	44 Hawk, Bat	Hawk, Bat	Hawk, Bat	Fishing-Owl, Pel's	
8	41 Parrot, Brown-headed	Bush-strike, Black-fronted	Bush-strike, Black-fronted	Hawk, Bat	



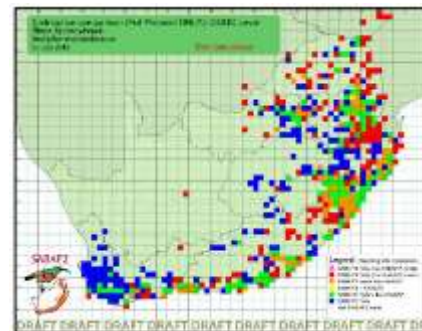
Towner, Alison 2012. The influence of environmental parameters on the fine scale movements of Great White Sharks *Carcharodon carcharias* in Gansbaai. MSc, University of Cape Town

Wcisel, Michelle 2013. The effects of White Shark presence on the behaviour of Cape Fur Seals at Geyser Rock, Gansbaai, South Africa. MSc, xUniversity of Cape Town



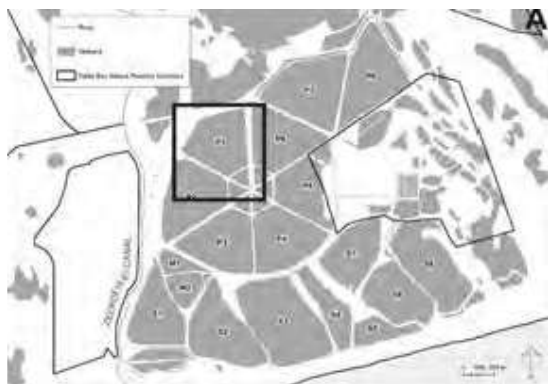
Botha, Philna 2014. The effects of prey availability on the endangered Bank Cormorant *Phalacrocorax neglectus*. MSc, University of Cape Town

Loftie-Eaton, Megan 2014. Geographic range dynamics of South Africa's bird species. MSc, University of Cape Town



Meyer, Corlia 2014. The endangered Bank Cormorant *Phalacrocorax neglectus*: the heat is on: Understanding the effect of climate change and associated environmental variable changes on the breeding biology and population dynamics of the Bank Cormorant in the Western Cape, South Africa. MSc, University of Cape Town

Tol, Leanne 2015. Factors impacting the breeding success of African Penguins *Spheniscus demersus* on Robben Island. MSc thesis, University of Cape Town

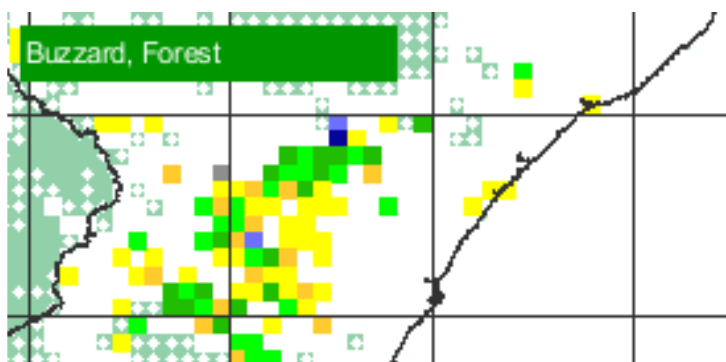


Essig, Erica 2016. Long-term population trends and habitat preferences of waders at Strandfontein Wastewater Treatment Works. MSc, University of Cape Town

Brom, Peta 2017. There might be a frog in McElligot's Pool: a study of the habitat characteristics and social factors associated with amphibian presence in urban residential gardens in a suburb in Cape Town. MPhil, University of Cape Town



Figure 2.2 The study area in Cape Town, Western Cape, South Africa, showing context.



Scott, Tanya 2018. Birds along a transect across KwaZulu-Natal: altitudinal preference and altitudinal migration. MSc, University of Cape Town.

Bate, Taylyn 2023. Moulting strategies of oystercatchers (Haematopidae) in New Zealand, Australia and South Africa. MSc, with distinction, University of Cape Town



Gonzalez Lugo, Maite 2024 An analysis of anthropogenic impacts on Robben Island's biodiversity, with the African Oystercatcher as a focus species: What does biodiversity loss mean for human well-being? MSc, University of the Basque Country.

Seakamela Mdu 2024. Colonisation of Vondeling Island, South Africa, by Cape Fur Seals *Arctocephalus pusillus pusillus*: its conservation and management implications. MSc, University of Cape Town.



Dissertation as part of coursework MSc in Conservation Biology

Greyling, Leticia 2000. Investigating the effects of different land use on certain raptor species in South Africa and predicting the possible influences that future land transformations will have on the raptor community. MSc, University of Cape Town

Waller, Lauren 2000. The influence of landscape structure on species' distribution and abundance. MSc, University of Cape Town

Hemming, Matthew 2001. The *Treasure* oil spill and its influence on moulting African Penguins *Spheniscus demersus* at Robben Island. MSc, University of Cape Town

Kabelo, Senyatso 2004. Applicability of the IUCN Red List criteria at a regional level: A case study of birds in Botswana. MSc, University of Cape Town

Schultz, Philippa 2007. A foraging ecology study of the critically endangered Cape Vulture population of Namibia. MSc, with distinction, University of Cape Town

Wright, Dale 2011. Evaluating a citizen science research programme: understanding the people who make it possible. MSc, with distinction, University of Cape Town.

Honours projects (since 1996, Department of Statistical Sciences, unless otherwise stated)

Erni, Birgit 1996. Predicting the occurrence of bird species in southern African vegetation types, using logistic regression. BSc(Hons), University of Cape Town

Maughan-Brown, Brendon 1999. The distribution of birds in the south western Cape. BSc(Hons) Environmental and Geographical Science, University of Cape Town

Pentz, Audrey 2000. Seeking patterns of seasonality in seabird mortality. BBusSc, University of Cape Town

Hlatswayo, Fikile 2001. Estimating the stage of incubation of the African Penguin *Spheniscus demersus* eggs and breeding productivity. BCom(Hons), University of Cape Town

Leverton, Bronwyn 2002. The relationship between incubation period and chick growth rate in Kelp Gulls *Larus dominicanus*. BSc(Hons) Zoology, University of Cape Town

Matanyaire, Sandra 2002. Extrapolation and generation of the density function of egg laying days of the African Black Oystercatcher *Haematopus moquini*. BCom(Hons), University of Cape Town

Ntirampeba, Dismas 2003. The statistical calibration of electronic data logger scales. BSc(Hons), University of Cape Town

Petersen, Samantha L 2003. Population dynamics of the Northern Giant Petrel *Macronectes halli* and the Southern Giant Petrel *M. giganteus* on sub-Antarctic Marion Island. BSc(Hons) Zoology, University of Cape Town

Edwards, Janet 2004. Impacts of feral cat predation on nest success of Hartlaub's Gulls *Larus hartlaubii* on Robben Island. BSc(Hons) Zoology, University of Cape Town

Shaw, Tracy R 2005. The highways and byways of the African Penguin *Spheniscus demersus* on Robben Island. BSc(Hons) Zoology, University of Pretoria

Lubbe, Alwyn 2008. Condition indices for African Penguins. BSc(Hons) Zoology, University of Cape Town

De Abreu, Petra 2009. African Penguin (*Spheniscus demersus*) foraging complexities associated with chick food demand and growth at the coastal islands of Algoa Bay, South Africa. BSc(Hons) Zoology, University of Cape Town

Galada, Yolokazi 2011. A comparative investigation of annual cycles of four penguin species on sub-Antarctic Marion Island in 2010/11. BSc(Hons) Zoology, University of Cape Town

Calder, Jordan-Laine 2012. Long-term impacts of oiling. BSc(Hons) Zoology, University of Cape Town

Roberts, Jennifer 2012. Bank Cormorant conservation research: measurement of operative temperature. BSc(Hons) Zoology, University of Cape Town

Spiby, Jacky 2012. Long-term trends in African Black Oystercatcher biology on Robben Island. BSc(Hons) Zoology, University of Cape Town

Opperman, Megan 2015. Animal Demography Unit on Facebook. Fourth year project, Statistics specialization, BBusSc, University of Cape Town.

MSc students from European universities

These students do one or more substantive projects as part of their MSc studies. The duration of each project is six months to one year. In each case, I cosupervised the second project. At the University of Groningen, this was done in collaboration with the late Professor Henk Visser, who had a chair of behavioural energetics in the Biological Institute. At the University of Wageningen, the collaboration is with Dr Fred de Boer.

Bakker, Trineke 2003–2004. Prefledging energetics of Kelp Gull *Larus dominicanus* chicks. MSc, University of Groningen, The Netherlands

Mullers, Ralf 2003–2004. Growth of Cape Gannet *Morus capensis* chicks on Malgas Island, Western Cape. MSc, University of Groningen, The Netherlands

Bouwhuis, Sandra 2004–2005. Prefledging energetics of the African Penguin *Spheniscus demersus*. MSc, University of Groningen, The Netherlands

Perk, Martijn 2004–2005. Feeding behaviour and chick growth in Cape Gannets, using the deuterium method. MSc, University of Groningen, The Netherlands

Bijleveld, Allert 2005–2006. Foraging decisions made by gannets using the diet sampling data. MSc, University of Groningen, The Netherlands

van Schaik, Hanneke 2008–2009. Impact of Elephants (*Loxodonta africana*) on bird diversity in southern Africa. MSc, University of Wageningen, The Netherlands

Voorbergen, Anne 2009–2010. Kelp Gull and Cape Fur Seal predation at Cape Cormorant colonies on Dyer Island, South Africa. MSc, University of Wageningen, The Netherlands

Bussiere, Elsa 2011. Analyses of SABAP2 data. MSc, University of Nancy, France

Bekker, Steven 2015. Nest attendance of Verreaux's Eagles *Aquila verreauxii* breeding in contrasting habitats. MSc, University of Amsterdam, The Netherlands

Ginosian, Achot 2026. Annual variation in the timing of primary moult of three weavers in relation to temperature and rainfall. MSc, Aix-Marseille University, France.

In addition, I have made major inputs into many other postgraduate projects in a variety of disciplines through providing statistical consultation

PROFESSIONAL ACTIVITIES:

South African Statistical Association:

Member 1972–

Served on Executive Committee: 1986–1987 and 1987–1988

Elected Fellow of the Association: 1990

Fellow of Royal Statistical Society: 1985–1990

Royal Society of South Africa:

Member 1990–

Elected Fellow of the Society: 2003

Member of the British Ornithological Union: 1994–

BirdLife South Africa, formerly the Southern African Ornithological Society (SAOS), and its branch in Cape Town, the Cape Bird Club (CBC):

Member 1956–

Member of CBC Committee: 1976–1977

CBC Bird Ringing Organizer: 1976–1998

Member of CBC Atlas Committee: 1984–1989

Member of CBC Conservation Committee: 1988

Member of BirdLife South Africa Research Committee: 1989–2000

Member of BirdLife South Africa Publications Committee: 1993–1999

Member of Council of BirdLife South Africa: 1993–2015

Co-organiser, Eighth SAOS Thematic Symposium, Migration, Dispersal and Nomadism, Langebaan, September 1993: 1990–1993

Member, BirdLife South Africa Conservation Working Group: 1995–1998

Vice-Chairman, Council of BirdLife South Africa: 1997–2001

President, BirdLife South Africa: 2004–2007

Member, BirdLife South Africa Conservation Advisory Committee: 2009–2011

Project Director, (First) Southern African Bird Atlas Project (SABAP): 1989–1997

Project Director, South African Bird Ringing Unit (SAFRING): 1990–2017

Project Director, Coordinated Waterbird Counts (CWAC): 1991–2017

Project Director, Coordinated Avifaunal Roadcounts (CAR): 1992–2017

Member of Executive Committee, South African Section of BirdLife International (formerly International Council for Bird Preservation): 1993–1994

Project Director, Southern African Frog Atlas Project (SAFAP): 1995–2004

Project Director, Southern African Reptile Conservation Assessment (SARCA): 2005–2011

Project Director, Second Southern African Bird Atlas Project (SABAP2): 2007–2017

Project Director, Southern African Butterfly Conservation Assessment (SABCA): 2007–2011

Member, Advisory Board of the Percy FitzPatrick Institute of African Ornithology: 1999–2008

Department of Environmental Affairs and Tourism:

- Member of the South African Ramsar Convention Working Group: 1991–1995
- Member of the South African Bonn Convention Working Group: 1996
- Marine and Coastal Management Evaluation Committee: Consideration of candidates for possible translation to the Specialist Scientist Dispensation and for possible promotion within this dispensation: 1994, 2001

International Wader Study Group:

- Member: 1980–2013
- Member of Advisory Panel: 1989–1996
- Organiser, Special Meeting of the International Wader Study Group, Cape Town, August 1998: 1996–1998
- Member of Executive Committee: 1999–2013
- Co-convenor, Oystercatcher Workshop, October 2007: 2006–2007

Founder member, Western Cape Wader Study Group: 1971–

Coordinator, midsummer and midwinter Langebaan Lagoon waterbird censuses: 1985–2000, 2013–2017

Project evaluation panel, Human Sciences Research Council: 1990–1999

Researcher evaluations, Foundation for Research Development: 1992–1999

Researcher evaluations, National Research Foundation: 2000–2010

Invited participant, European Science Foundation Scientific Network on European-African Songbird Migration, Technical Workshop on Field Methodology, first workshop, Bologna, Italy, February 1994, and third workshop, Sempach, Switzerland: February 1997

Advisor, South African Delegation to the Fourth Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), Nairobi, Kenya: June 1994

International Ornithological Congress:

Co-convenor (with Dr Pertti Saurola, Finland) of Round Table Discussion, The changing role of bird ringing. 21st International Ornithological Congress, Vienna: August 1994

Member of National Committee for 22nd International Ornithological Congress, Durban, South Africa: 1993–1998

Member of Scientific Programme Committee for 22nd International Ornithological Congress, August 1998, Durban: 1994–1998

Plenary speaker, 22nd International Ornithological Congress. Durban: August 1998

Co-convenor (with Dr Luc Lens, Belgium) of Round Table Discussion, An inventory of ornithological research in Africa. 22nd International Ornithological Congress, Durban: August 1998

Elected to International Ornithological Committee: August 1998

Co-convenor (with Dr Lorenzo Serra, Italy) of Symposium, New directions in avian moult ecology. 23rd International Ornithological Congress, Beijing: August 2002

Co-convenor (with Dr Barbara Helm, Germany) of Symposium, Coping with seasonal challenges: the role and regulation of moult. 24th International Ornithological Congress, Hamburg, Germany: August 2006

Elected Vice-President of International Ornithological Committee: 2006–2010

Project evaluations, The Green Trust: 1995, 2000

Co-manager (with Rene Navarro) of WADERS-L listserver: 1996–2010

Pan-African Ornithological Congress:

Elected member for southern Africa, Committee of the Pan-African Ornithological Congress: 1996–2004

Member of Scientific Programme Committee for 10th Pan-African Ornithological Congress, September 2000, Kampala, Uganda: 1996–2000

Member of Scientific Programme Committee for 11th Pan-African Ornithological Congress, November 2004, Tunisia: 2000–2004

Chair, Local Organising Committee for 12th Pan-African Ornithological Congress, September 2008, Goudini Spa, South Africa: 2007–2008

Invited Plenary Speaker 13th Pan-African Ornithological Congress, August 2012, Arusha, Tanzania

Invited participant. Willem Barents Memorial Arctic Conservation Symposium, Moscow: March 1998

Co-convenor (with Dr David Thomson, the Netherlands) of Symposium on Survival Studies. International Conference, Bird Ringing at 100 Years: Results and Perspectives of Bird Ringing. Helgoland, Germany: October 1999

Chairman of the Scientific Symposium. Sixth Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), Somerset West, Cape Town: November 1999

Plenary speaker. 14th International Conference of the European Bird Census Council, Hungary: March 2001

Principal Investigator. Earthwatch Institute Project, South African Penguins: 2001–2017

External Examiner. Department of Statistics, University of Namibia, Windhoek: 2001–2004

Trustee. Middelpunt Wetland Trust: 2001–2012

Member of Board of Directors. Southern African Foundation for the Conservation of Coastal Birds (SANCCOB): 2001–2010

Member. Technical Steering Committee of the Global Gap Analysis Project of Conservation International, “Building Comprehensive Protected Area Systems”, in preparation for the World Parks Congress, Durban, held at National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara, USA: March 2003

Convenor of Symposium, The energetics of breeding in precocial waders. Fourth Conference of the European Ornithologists’ Union, Chemnitz, Germany: August 2003

Chair, Scientific and Programme Committee. Waterbirds around the World Conference, Edinburgh, Scotland: April 2004

Member. Dyer Island Committee, CapeNature: 2004–2006

Member. Steering Committee, Benguela Current Large Marine Ecosystem (BCLME) Project, “Top Predators as Biological Indicators of Ecosystem Change in the BCLME”: 2004–2007

Evaluation Panel, Northern Cape. Consideration of candidate for translation to the Specialist Scientist Dispensation: 2004

Co-convenor of Symposium, Using trace element analysis of feathers to determine migration patterns. Fifth Conference of the European Ornithologists’ Union, Strasbourg, France: August 2005

Trustee. Dyer Island Conservation Trust: 2005–2015

Co-recipient, with Dr Magda Remisiewicz, University of Gdańsk, Poland, of a grant in terms of the South Africa-Poland Science Agreement, award by the NRF in South Africa and the Ministry of Science and Higher Education in Poland: 2007

Co-recipient, with Professor Wlodek Meissner, University of Gdańsk, Poland, of a grant in terms of the South Africa-Poland Science Agreement, award by the NRF

in South Africa and the Ministry of Science and Higher Education in Poland: 2009–2011

Trustee, Cape Leopard Trust: 2011–2013

Co-recipient, with Professor Fernanda Lages, Instituto Superior de Ciências de Educação da Huíla, Lubango, Angola, of a grant in terms of the South Africa-Angola Science Agreement, award by the NRF in South Africa and the Ministry of Science in Angola: 2013–2014

Co-recipient, with Dr Magda Remisiewicz, Bird Migration Research Station, University of Gdańsk, Poland, of a grant in terms of the South Africa-Poland Science Agreement, award by the NRF in South Africa and the Ministry of Science and Higher Education in Poland: 2017–2019

Director, Biodiversity and Development Institute: 2018–

EDITORIAL ACTIVITIES:

Editor, *BLSA Guides*, formerly *Southern Birds*: 1993–1999

Editor, *The Atlas of Southern African Birds*: 1990–1997

Associate Editor, *Ibis*: 1998–1999

Editorial board, *Journal of Applied Ecology*: 1996–2000

Editorial board, *Waterbirds*: 1999–2000

Editor, *Bright Continent Guides*: 1999–2002

Editorial board, *African Journal of Marine Science*: 2001–

Editorial board, *Journal of Ornithology*: 2003–2010

Representative for Africa, *Wader Study Group Bulletin*: 2002–2008

Editorial board, *Wader Study Group Bulletin: the Journal of Shorebird Research*: 2008–2018

Editor, *The Annual Cycle of the Curlew Sandpiper* *Calidris ferruginea*.
International Wader Studies: 1998–2006

Editor, *Endangered Species Research*: 2008–2018

Editor, *Conservation Assessments of the World's Oystercatchers*. *International Wader Studies*: 2007–2011

Editor, *Biodiversity Observations*: 2020–

Associate Editor, *Frontiers of Bird Science*: 2022–

Referee for

African Journal of Marine Science/South African Journal of Marine Science

African Zoology

Animal Conservation
Ardea
Auk
Biological Conservation
Biological Journal of the Linnaean Society
Biometrics
Biometrika
Bird Conservation International
Bird Study
Condor
Cormorant/Marine Ornithology
Cimbabesia
Diversity and Distributions
Emu
Environmental and Ecological Statistics
European Journal of Operations Research
Frontiers in Evolution and Ecology
Gabar
Ibis
International Whaling Commission
Journal of Agricultural, Biological and Environmental Statistics
Journal of Agricultural Science
Journal of Applied Ecology
Journal of Applied Statistics
Journal of Avian Biology
Journal of Cetacean Research and Management
Journal für Ornithologie/Journal of Ornithology
Journal of Zoology, London
Madoqua
Marine Ecology Progress Series
Ostrich
Physiological Zoology
Polar Biology
Psychometrika
Safring News/Afring News
South African Journal of Science
South African Journal of Wildlife Research
South African Medical Journal
South African Statistical Journal
Wader Study Group Bulletin
Water SA
Wildfowl
Wilson Bulletin

EXPEDITIONS:

- 1976–1977 and 1978, Western Cape Wader Study Group Namibia Expeditions
- 1978–1979, Western Cape Wader Study Group Eastern Cape Expedition (Organiser)
- 1980–1981, Western Cape Wader Study Group Western and Southern Cape Expedition (Co-organiser)
- 1985, Tay Ringing Group Shetland Expedition: wader survey for BTO Winter Shorebird Count, UK
- 1991, Russian Academy of Sciences International Arctic Expedition to Taimyr Peninsula, Siberia, Russia
- 1995–1996, Avian Demography Unit Northwestern South Africa Expedition (Co-organiser)
- 2001, Prince Edward Islands Millennium Expedition (Scientist-in-Charge, Prince Edward Island)
- 2002, Pristine Wilderness? Unravelling the Riddles of the Siberian High Arctic Tundra Ecosystem with Special Reference to Reserve Management, Local Awareness and Ecotourism. Pilot Expedition, Piasina Delta, Taimyr Peninsula, Russia

OTHER RELEVANT ACTIVITIES:

- Student advisor, Faculty of Science: 1981–1985
- Author of introductory textbooks (*IntroStat* and *ComMath*)
- Extensive involvement in statistical consultation
- Consultant, UCT Statistical Consultation Service
- Statistical consultant, Benguela Ecology Programme: 1988–1991
- Statistical consultant, Island Liaison Research Committee: 1990
- Statistical consultant, Marine and Coastal Management: 1993–1998
- Member, Academic Support Programme Admissions Committee, Faculty of Commerce: 1988
- Member, Academic Planning Committee, University of Cape Town: 1991
- Member, Stony Point Advisory Committee, Kleinmond-Hangklip Municipality (dealt with Stony Point African Penguin colony issues): 1994–1999
- Expert witness for Cape Town City Council in Supreme Court case: Daniel Muller vs Stadsraad van Kaapstad: 1994–1995

Member, UCT Faculty of Science *Ad hominem* Promotions Committee: 1994–1996

Coordinator, SAFRING Ringers' Training Course, Witsand Nature Reserve, Northern Cape: 2000

Co-leader, SAFRING Ringers' Training Course, Lamberts Bay, Western Cape: 2001

Member, Review Panel, Dyer Island Ecotourism Outsourcing Proposal Review, Western Cape Nature Conservation Board: 2002

PUBLICATIONS

See separate list, or Google Scholar profile at

<https://scholar.google.com/citations?hl=en&user=0MOL15UAAAAJ>