

Dr Sallie Louise Burrough

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Research Interests and Expertise

Long-term hydro-climate variability, landscape dynamics and ecological change in dryland systems. Implications of environmental change for human populations past and present. Specialist skills include geomorphology, geochronology (Luminescence dating) and long-term ecology.

Academic Posts

- 2014-2019 **Trapnell Fellow of African Environments**, Environmental Change Institute, University of Oxford, Research Associate, Long-term Ecology Laboratory, Zoology, Oxford. (part-time from 2016)
- 2010-2014: **Leverhulme Post-Doctoral Researcher**, *Floods and droughts: environmental dynamics in the Upper Zambezi Valley*. School of Geography and the Environment & Long-term Ecology Laboratory, Zoology,
- 2009-2010: **Drapers Company Junior Research Fellow (stipendiary)**, Hertford College, University of Oxford, *Palaeolithic mega-lakes & early human occupation of the Kalahari*.
- 2009: **Lecturer** (sabbatical cover) Department of Geography, Kings College London, Desert Environments.

Education

- 2005-2008: **D.Phil., Geography, Oxford University**. *Late Quaternary Palaeolacustrine Environments of the Kalahari, Botswana*.
- 2003-2006: **MSc., Quaternary Science, University of London**
Distinction and Elsevier prize (best overall MSc performance)
- 1999-2002: **BA (Hons) Geography, Oxford University**. 1st Class
Gibbs prize (highest 1st class FHS Geography)
Henry Beckett dissertation prize (best undergraduate dissertation)

Awards, Grants and Prizes

2017: PER Knowledge Exchange: Megalakes and Stone Age Humans: Telling the Story of the Makgadikgadi

2017: NSF Grant (£1.1m): Interactions between Incipient Continental Rifting, Fluvial Systems, and Regional Climate in Southern Africa: The Okavango-Makgadikgadi Complex, Botswana (collaborative partner)

2016: Leverhulme Grant Landscape archaeology of the Kalahari: How did major hydrological shifts affect Stone Age mobility and landscape use in the late Quaternary? (Co-I)

2015: INQUA fund for international research collaboration "Palaeolakes of the Arid Southern Hemisphere (PotASH)"

2015: Award for Excellence – Oxford University Reward and Recognition Scheme, for an outstanding and exceptional contribution to the University

2015: John Fell Fund (£7k): Testing the asymmetry of African humid periods.

2015: Leverhulme Grant (£145k) Testing the importance of lake-climate feedbacks for African hydroclimate variability (Co-I)

2014: National Geographic Global Exploration Award (£18k) "Megalake records of Kalahari climate change" (PI)

2014: QRA Award "Dating the desert" In conjunction with RLAHA

2012 & 2015: Oxford University Fell Fund (£4.5k/7k) "People and environment in western Zambia" (PI) & "Kalahari Climate Change" (PI)

2010: Leverhulme Grant "Floods and droughts in the Upper Zambezi Valley" (£140k)

2009: Boise Fund, Oxford University (£12k) (Co-I)

2009: Royal Society International Travel Grant (£1.3k)

2009: Royal Geographical Society Small Grant (3k) (PI)

Student Awards/Prizes (2001-2008)

INQUA & BGS **Travel/Conference Bursary**

NERC Studentship (DPhil), Geography, Oxford

St Catherine's College **Graduate Scholarship**

CC Reeves **Graduate Scholarship**

Royal Society **Dudley Stamp Memorial Award**

QRA **New Researchers Award**

Elsevier Prize, RHUL, London

Full **NERC MSc Studentship**, RHUL, London

Gibbs Prize, Oxford (*highest 1st Class Geog BA Hons*)

Henry Beckett **Dissertation Prize**, Oxford

Kaye Scholarship (Geography), St Catherine's, Oxford

Shell Prize, Oxford (*outstanding field-based coursework*)

Expedition Leader's Award (British Sports Trust), Wilderness Medical Training (RGS), Military Training Awards: Qualifications 1 & 2 (Leadership and Management; First aid at work (St Johns).

Other Institutional and Professional Responsibilities

Co-Director, Oxford Luminescence Dating laboratory, University of Oxford.

Scientific Advisory Board Member, Humans and the Biosphere, International Union for Quaternary Science

Chair, Early Career Researcher Committee (ECR) (2013-2015), International Union for Quaternary Science

Governing Body Fellow (2009-2013), Hertford College, Oxford

Fellow of the Higher Education Academy (awarded 2015)

Teaching: Broad range of lecturing, tutoring & supervision (incl. Earth Systems, Dynamics, Desert Environments, Quaternary Environmental Change, Quaternary Environmental Reconstruction, Long-term Ecology, Statistics)

Final Honours School and DPhil Transfer **Examination Assessor**, School of Geography, Oxford

Fellow of the Royal Geographical Society, London

Reviewer for *National Geographic*, *Nature*, *Quaternary Science Reviews*, *Quaternary Research*, *Quaternary International*, *Palaeo Palaeo Palaeo*, *Geomorphology*, *Journal of Arid Environments*, *Journal of Archaeological Science*, *Quaternary Geochronology*, *Z. fur Geomorphologie*.

Organisation of Scientific Meetings

Session Convener: AFQUA Nairobi, Kenya 2018 "African archaeological Landscapes"

Workshop Leader: Palaeolakes of the Arid Southern Hemisphere, Oxford, 2017

Session Convener: European Geosciences Union: "Late Quaternary palaeoenvironments of African drylands"

Co-organiser: UK Luminescence and Electron Spin Resonance Dating Meeting, Oxford, September 2010.

Organiser: 3rd International Southern Deserts Conference, Uppington, South Africa, September 2008

Major Publications

Burrough SL, Barham, L, Thomas DSG (in press) Human occupation of the upper Zambezi valley. *Journal of Archaeological Science*

Stone, A. E., Bateman, M. D. , **Burrough, S. L.** , Garzanti, E. Limonta, M., Radeff, G., Telfer, M. W. (in press) Using a portable luminescence reader for rapid age assessment of aeolian sediments for reconstructing dunefield landscape evolution in southern Africa. *Quaternary Geochronology*

Lancaster, N., Bristow, C., Bubenzer, O., **Burrough, S.** et al (2016) The INQUA Dunes Atlas Chronologic Database. *Quaternary International*

Burrough SL, (2016) Late Quaternary environmental change and human occupation of the southern African interior in Jones, S & Stewart B (Eds) Africa from MIS 6-2: Population Dynamics and Paleoenvironments. Springer

Singarayer JS and **Burrough SL**, (2015) Inter hemispheric dynamics of the African rainbelt during the late Quaternary. *Quaternary Science Reviews* 124, 48-67

Burrough SL, Willis KJ; (2015) Ecosystem resilience to late-Holocene climate change in the Upper Zambezi Valley. *The Holocene*

Burrough SL, Thomas DSG, Willis KJ (2014) Landscape sensitivity and ecological change in western Zambia. The long-term perspective from a Zambian dambo. *Journal of Quaternary Science* 30 (1), 44-58

Thomas DSG, **Burrough SL** (2014) Luminescence-based dune chronologies in southern Africa: analysis and interpretation of dune database records across the subcontinent. *Quaternary International*

Burrough SL and Thomas, DSG (2013) Central southern Africa at the time of the African Humid Period: A new analysis of Holocene palaeoenvironmental and palaeoclimate data. *Quaternary Science Reviews* 80, 29-46

Willis KJ, Bennett KD, **Burrough SL**, Macias-Fauria M, Tovar C (2013) Linking long-term perspectives to 21st century management of African landscapes. *Philosophical Transactions of the Royal Society B*, 368 (1625).

Burrough SL, Thomas DSG, Bailey RMB, Davies L, (2012) From landform to process: Morphology and formation of lake-bed barchan dunes, Makgadikgadi, Botswana. *Geomorphology* 161-162,1-14

Thomas DSG, **Burrough SL** (2012) Interpreting geo-proxies of late Quaternary climate change in African drylands: implications for understanding environmental and early human behaviour. *Quaternary International*, 253, 5-17

Burrough SL, Breman, E and Dodd, C (2012) An insight into past vegetation of the Middle Kalahari Palaeolakes during the late Quaternary. *Journal of Arid Environments* 82, 156-164

Thomas DSG, **Burrough SL** and Parker AG (2012), Extreme events as drivers of early human behaviour in Africa? The case for variability, not catastrophic drought. *Journal of Quaternary Science* 27, 7–12

Thomas DSG and **Burrough SL** (2011) Climatic frameworks: legacies from the past. In Thomas D.S.G. (Ed) Arid Zone Geomorphology. 3rd Edition. Wiley, 648 pp.

- Telfer MW, Bailey RM, **Burrough SL**, Stone AES, Thomas DSG, Wiggs GSF (2010) Understanding linear dune chronologies: Insights from a simple accumulation model. *Geomorphology*, 120 (3-4), 195-208
- Burrough SL**, Thomas DSG, Singarayer J (2009) Late Quaternary hydrological dynamics in the Middle Kalahari: Forcing and feedbacks. *Earth-Science Reviews* 96, (4), 313-326
- Burrough SL**, Thomas DSG, Bailey, RMB (2009) Mega-Lake in the Kalahari: A Late Pleistocene record of the Palaeolake Makgadikgadi system. *Quaternary Science Reviews* 28, 1392-1411
- Burrough SL**, Thomas DSG (2009) Geomorphological contributions to palaeolimnology on the African continent. *Geomorphology* 103, 285-298
- Burrough SL**, Thomas DSG (2008) Late Quaternary lake-level fluctuations in the Mababe Depression: Middle Kalahari palaeolakes and the role of Zambezi inflows. *Quaternary Research* 69 (3), 388-403
- Burrough SL**, Thomas DSG, Shaw PA, Bailey RM (2007) Multiphase Quaternary high-stands at Lake Ngami, Kalahari, northern Botswana. *Palaeogeography, Palaeoclimatology, Palaeoecology* 253, 280–299