

Abi Stone

Professor of Physical Geography, University of Manchester

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Professional Summary

I am a Professor of Physical Geography with more than 20 years of experience working in dryland environments, where I seek to understand their geomorphological history, palaeoenvironmental records and geoarchaeology. My interests span timescales of hundreds of years through to the last half million years within the Quaternary, and I am particularly interested in exploring interdisciplinary questions about ancient human-environmental interactions, working with colleagues in archaeology. I have particular expertise in luminescence dating and U-Th dating of sands and carbonates respectively, and interests in groundwater recharge (hydrogeology). I utilise portable-luminescence reader signals to explore relative age alongside sediment provenance and transport.

I greatly enjoy and value teaching from first year UGT through to PGR across a range of formats (lectures, seminar discussions, fieldwork, virtual fieldtrips and laboratory classes). My critical reviews of state-of-science and textbook chapters define pedagogic principles in dryland science for undergraduate and MSc level students. I also work with schoolteachers as part of their continuing professional development to help them introduce deserts into their teaching. I enjoy sparking curiosity by sharing knowledge outside academia, taking opportunities to write for, and speak with, non-academic audiences, as well as designing and delivering interactive public engagement activities.

Education

2013	Fellowship of the Higher Education Authority (equivalent of PGCert)
2005-2009	DPhil "Multiproxy reconstructions of Late Quaternary environments, southern Africa" <i>University of Oxford</i>
2003-2004	MSc Quaternary Science: Distinction <i>Royal Holloway, University of London</i>
2000-2003	BA (MA) Geography: Class I <i>University of Oxford (Keble College)</i>

Work History

Aug 2026-	Professor of Physical Geography <i>University of Manchester</i>
Nov 2024-	SEED PGR Equity Lead <i>University of Manchester</i>
Sept 2022-	Department PGR co-ordinator <i>University of Manchester</i>
Sept 2014-	Visiting Research Associate and MSc lecturer <i>SoGE, University of Oxford</i>

Previous

Aug 24-Jul 26	Reader in Physical Geography <i>University of Manchester</i>
Aug 18-Jul 24	Senior Lecturer in Physical Geography <i>University of Manchester</i>
Sept 14-Jul 18	Lecturer in Physical Geography <i>University of Manchester</i>
Oct 13-Sep 14	Teaching Fellow (Water Science, Policy and Management MSc and Geography BA) <i>School of Geography and the Environment (SoGE) University of Oxford</i>
Jul 12-Sep 14	Early Career Fellow in Physical Geography <i>St John's College, University of Oxford</i>
Jan 12-Jun 12	Teaching Assistant (part-time) <i>SoGE, University of Oxford</i>
Oct 09-Oct 12	Post-doctoral Researcher & Tutor (part-time) <i>SoGE, University of Oxford</i>

Other visiting appointments/secondments

June 22-	Research Associate <i>Gobabeb Namib Research Institute, Namibia.</i>
Jul 15-Sept 15	Visiting Research Scientist <i>Earth Sciences, University of Adelaide</i>

Memberships of academic and professional bodies

Fellow of the Royal Geographic Society (2009-); Fellow of the HEA (2013-); Quaternary Research Association (QRA) (2003- board member 2016-2020); International Society for Aeolian Research (ISAR) (2018- and board member 2021-26); SASQUA (South African Quaternary 2009 – board member 2017-2019); European Geosciences Union (EGU) (2010-); British Society for Geomorphology (BSG) (2005-).

Publications

- Stone, A.**, Holden, P.B., Blades, B. (2026) The temporal evolution of Southern Hemisphere hydroclimate through the Last Interglacial: a model-proxy synthesis. *Quaternary International* 110432
- Nitundil, S., Darvill, C.M., **Stone, A.**, Fink, D., Hughes, P.D., Tomkins, M.D., Simon, K. (2026). Glaciation of the eastern Himalayas: Palaeoglacial and palaeoclimatic insights from the Dibang Valley, India. *Quaternary Science Reviews* 380, 109836
- Stone, A.** (2025) Quaternary Dryland Dynamics: Perspectives, prospects. *Cambridge Prisms: Drylands*
- Gomes, S., Fletcher, W., **Stone, A.**, Rodrigue, T., Rebotim, A., Oliveira, D., Sánchez Goni, M.F., Naughton, F. (2025) Rising atmospheric CO₂ concentrations: the overlooked factor promoting SW Iberian Forest development across the LGM and the last deglaciation? *Biogeosciences* 22(21), 6631-6650.
- Stone, A.**, Bateman, M.D., Sanderson, D., Burrough, S.L., Cutts, R., Cresswell, A. (2024) Probing sediment burial age, provenance and geomorphic processes in dryland dunes and lake shorelines using portable luminescence data. *Quaternary Geochronology* 82, 101542
- Stone, A.**, Leader, G., Stratford, D., Marks, T., Efraim, K., Bynoe, R., Smedley, R., Gunn, A., Marais, E. (2024) Landscape evolution and hydrology at the Late Pleistocene archaeological site of Narabeb in the Namib Sand Sea, Namibia. *Quaternary Science Advances* 14, 100190
- Stone, A.**, Inglis, R., Candy, I., Sahy, D., Jourdan, A-L., Barfod, D., Alsharekh, A.M. (2023) Humid phases on the southwestern Arabian Peninsula are consistent with the last two interglacials. *Quaternary Science Reviews* 319, 108333
- Nitundil, S., **Stone, A.**, Srivastava, A. (2023) Applicability of using portable luminescence reader for rapid age-assessments of dune accumulation in the Thar desert, India. *Quaternary Geochronology* 78, 101468
- Leader, G.M., Bynoe, R., Marks, T., **Stone, A.**, Efraim, K., Stratford, D., Marais, E. (2023) Revisiting the Early Acheulean at Namib IV in the Namib Desert. *Journal of Field Archaeology* 48(5), 380-394.
- Stone, A.**, Zeng, Y., Yu, L., van der Ploeg, M., Wanke H. (2022) Reconstructing rainfall using dryland dunes: Assessing the suitability of the southern Kalahari for unsaturated zone hydrostratigraphies. *Frontiers in Earth Science* 10:1034671
- Stone, A.**, Inglis, R., Barfod, D., Ickert, R., Hughes, L., Waters, J., Jourdan, A-L., Alsharekh, A.M. (2022) Hydroclimatic and geochemical palaeoenvironmental records within tufa. *Sedimentary Geology* 437, 106181
- Garzanti, E., Pastor, G., **Stone, A.**, Vainer, S., Vermeesch, P., Restentini, A. (2022) Provenance of Kalahari Sand: Palaeoweathering and recycling in a linked fluvial-aeolian system. *Earth-Science Reviews* 224, 103867.
- Stone, A.** (2021) Dryland dunes and other dryland environmental archives as proxies for Late Quaternary stratigraphy and environmental and climate change in southern Africa. *South African Journal of Geology* 124(4)
- Gomes, S.D., Fletcher, W.J., Rodrigues, T., **Stone, A.**, Abrantes, F., Naughton, F. (2020) Time transgressive Holocene maximum of forest development across the Iberian Peninsula reflects orbital forcing. *Palaeogeog. Palaeoclim. Palaeoecol.* 550, 109739
- Inglis, R., Fanning, P. C., **Stone, A.**, Barford, D. N., Sinclair, A., Chang, H-C., Alsharekh, A., Bailey, G. (2019) Palaeolithic artefact deposits at Wadi Dabsa, Saudi Arabia: multi-scalar geoarchaeology approach. *Geoarchaeology* 34(3), 272-294.

- Stone, A.,** Bateman, M.D., Burrough, S. L., Garzanti, E., Limonta, M, Radeff, G., Telfer, M. (2019) Using a portable luminescence reader for rapid age assessment of aeolian sediments for reconstructing dunefield landscape evolution. *Quaternary Geochronology* 49, 57-64.
- Rowell, A., Thomas, D. S. G., Bailey, R., **Stone, A.,** Garzanti, E., Padoan, M. (2018) Controls on sand ramp formation in southern Namibia. *Earth Surface Processes and Landforms*. 43(1), 150-171.
- Inglis, R. H., Sinclair, A. G., Robson, H. K., Barfod, D. N., Fanning, P. A., **Stone, A.,** Shuttleworth, A., Alsharekh, A. M., Bailey, G. N. (2017) Preliminary Report on UK-Saudi 2017 fieldwork at Wadi Dabsa, Asir Province, Saudi Arabia. *Saudi Commission for Tourism and National Heritage*.
- Stone, A.,** Edmunds, W. M. (2016) Unsaturated zone hydrostratigraphies: a novel archive of past climate in dryland continental regions. *Earth-Science Reviews* 157, 121-144.
- Stone, A.,** Bateman, M.D., Thomas, D.S.G. (2016) Rapid assessment of Namib Sand Sea sediment chronologies? *Quaternary International*, 200-201.
- Stone, A.,** Bateman, M. D., Thomas, D.S.G. (2015) Rapid age assessment in the Namib Sand Sea using a portable luminescence reader. *Quaternary Geochronology* 30(B), 134-140.
- Stone, A.** (2014) Last Glacial Maximum conditions in southern Africa: are we closer to understanding the climate of this time period? *Progress in Physical Geography* 38(5), 519-542.
- Stone, A.,** Edmunds, W. M. (2014) Naturally-high nitrate in unsaturated zone sand dunes above the Stampriet Basin, Namibia. *Journal of Arid Environments* 105, 41-51.
- Stone, A.,** Edmunds, W. M. (2014) Rainfall in the Desert Sand. *Quat. N.* 134, 58-60.
- Stone, A.** (2013) Age and dynamics of the Namib Sand Sea: a review of chronological evidence and possible landscape development models. *Journal of African Earth Sciences* 82, 70-87.
- Stone, A.,** Thomas, D. S. G. (2013). Casting new light on late Quaternary environmental and palaeohydrological change in the Namib Desert: a review of the application of optically stimulated luminescence in the region. *Journal of Arid Environments* 93, 40-48.
- Stone, A.,** Edmunds, W. M. (2012). Sand, salt and water in the Stampriet Basin, Namibia: calculating recharge using CMB. *Water SA* 38(3), 367-377.
- Stone, A.,** Bailey, R. M. (2012). The effect of single grain luminescence characteristics on single aliquot equivalent dose estimates. *Quaternary Geochronology* 11, 68-78.
- Stone, A.** (2012) Recharge investigations above the Stampriet Aquifer in semi-arid Namibia using geochemical methods and environmental tracers; sand, salt & water. *Quat. Int.* 279, 470-1
- Stone, A.** (2012) Dune generations in the east of the northern Namib Sand Sea. *Quat. Int.* 279, 471.
- Stone, A.,** Viles, H. A., Thomas, L., van Calstern, P. (2010). Can ^{234}U - ^{230}Th dating be used to date large semi-arid tufas? Challenges from a study in the Naukluft Mountains, Namibia. *Journal of Quaternary Science* 25(8), 1360-72.
- Telfer, M. W., Bailey, R. M., Burrough, S., **Stone, A.,** Thomas, D. S. G., Wiggs, G. S. F. (2010). Understanding linear dune chronologies: insights from a simple accumulation model. *Geomorphology* 120(3-4), 195-208.
- Stone, A.,** Thomas, D. S. G., Viles, H. A., (2010). Late Quaternary palaeohydrological changes in the northern Namib Sand Sea: New chronologies using OSL dating of interdigitated aeolian and water-lain interdune deposits. *Palaeogeog. Palaeoclim. Palaeoecol.* 288, 35-53.
- Stone, A.,** Thomas, D. S. G (2008). Linear dune accumulation chronologies from the southwest Kalahari, Namibia: challenges of reconstructing Late Quaternary palaeoenvironments from aeolian landforms. *Quaternary Science Reviews* 27, 1667-1681.
- Stone, A.,** Thomas, D. S. G., Viles, H. A. (2007). Linear dune accumulation chronologies, far western SW Kalahari, Namibia. *Quaternary International* 167-168, 300.
- Blockley, S. P. E., Lowe, J. J., Pollard, A. M., Pyne-O'Donnell, S. D. F., Matthews, I. P., **Stone, A.,** Molyneux, E. G. (2005). A new and less destructive laboratory procedure for the physical separation of distal glass tephra shards from sediments. *Quat. Sci. Rev.* 24 (16-17), 1952-1960.

Book Chapters

- Bynoe, R., **Stone, A.** (2026) Pleistocene archaeology (Early and Middle Stone Age) from the dunefields of southern Africa. In Eckardt, F. (Ed) *Dunes of Southern Africa*. Springer, London.

- Stone, A.,** Wanke, H., Uugulu, S. (2026) Hydrology and hydrogeology and southern African dunes. In Eckardt, F. (Ed) *Dunes of Southern Africa*. Springer, London.
- Griffiths, S., **Stone, A.** (2022) Luminescence: Optically Stimulated Luminescence and Thermoluminescence. In Griffiths S. (Ed) *Scientific Dating Methods in Archaeology*.
- Stone, A.** (2022) Landscape evolution of the Stampriet Transboundary Basin and relation to the groundwater system. In Eckardt, F. (Ed) *The Geomorphology of Botswana*. Springer.
- Stone, A.,** Smedley, P., Lanzoni, M. (2020) Groundwater Resources: Past, Present and Future. In Dadson, S., Garrick, D., Hughes, J., Hall, J., Hope, R., Penning-Rowsell, E. (Eds) *Water Science Policy and Management: The Global Challenge*. Wiley, Oxford. pISBN: 9781119520603 (Lead 90%)
- Stone, A.** (2012). Shedding light on the past: records of past conditions in the Namib Desert and the use of luminescence dating. In Mol and Sternberg (Eds) *Changing Deserts: integrating people and their environments*. White Horse Press, Cambridge.

Official Reports

- Browne, A.L., **Stone, A.,** Fredriksen, A., Richards, L., Polya, D., Mi, D., Jackson, C., Glay, G., Ashton, J. Da Conceicao Bispo, P. (2022) UKRI Equality, Diversity and Inclusion Strategy Consultation Submission - from the Cottonopolis Collective.

Professional/popular Journal Papers

- Stone, A.** (2016) Squeezing a rainfall record out of desert sand dunes. *PAGES Magazine* 24, 24-25.

Selected conference presentations (last 3 years)

- Stone, A.** (5th Jan, 2026) Exploring the paleoenvironmental context of surface archaeology in the Namib Sand Sea. *The Wiley Sponsored Keynote at the Quaternary Research Association annual conference, University of Brighton*.
- Stone, A.** et al. (2025) PANS in the sands: Palaeoenvironmental context of surface Archaeology in the Namib Sand Sea. *27th Biennial Meeting of the Society of Africanist Archaeologists (SAfA 2025): Crossroads Through Time. 21-25th July 2025, Faro, Portugal*.
- Stone, A.** et al. (2024) Dating S.A.N.D.S. *UK Luminescence and ESR meeting 2024, 11-13th September, 2024, University of Oxford*.
- Stone, A.** et al. (2024) Shifting sand dunes amongst green corridors? Landscape evolution at the archaeological site of Narabeb in the Namib Sand Sea. *UK Windy Day 7th June 2024, Liverpool*.
- Stone, A.,** Nitundil, S., Srivastava, A., Songara, K. (2024) Using portable luminescence to explore dune dynamics in the western Thar desert, India. *QRA Annual Discussion Meeting, 4-7th January 2024, Manchester*
- Stone, A.** (2023) Southern African dryland environments: a terrestrial regional chronostratigraphic framework during the last global glacial. *XXI INQUA Congress, 14-20th July 2023, Rome, Italy*.
- Stone, A.,** Nitundil, S., Bateman, M., Sanderson, D., Cresswell, A., Srivastava, A., Kinnaird, T. (2023). Exploring dryland dynamics with portable luminescence readers: the good, the bad and the ugly. *17th International Luminescence and ESR Dating conference, 26-30th June, Copenhagen, Denmark*.

Departmental seminars (last 3 years)

- Stone, A.** (21st Nov, 2024) RiVER – Routes into Vleis: Environmental Reconstruction of conditions facilitating hominin occupation in the northern Namib Sand Sea. *University of Oxford*.
- Stone, A.** (13th Dec, 2023) A tale of two pans: lithic archaeology and palaeoenvironments in the northern Namib Sand Sea. *University of Liverpool seminar series*.
- Stone, A.** (29th Nov, 2023) Pantastic archaeology in the northern Namib Sand Sea. *Cambridge Quaternary Discussion Group Seminar*.
- Stone, A.** (5th August, 2023) Making Sand Glow. *Archaeology Seminar Series, Melbourne*.
- Stone, A.** (3rd Aug, 2023) Dynamic Drylands. *SGEAS Colloquia Series, University of Melbourne*.

Key Administrative Experience

Nov 2024 (current)	Equity Lead for PGR, School of Environment, Education and Development, University of Manchester (embedded in HUMS Doctoral Academy).
Sept 2022 (current)	PGR Physical Geography Department Co-Ordinator, University of Manchester
2016-19	Secretary of SASQUA (the South African Quaternary Association)
2016 -20	Executive Board Member of the UK Quaternary Research Association
Sept 2018-2022	Chair of Mitigating Circumstances Panel, Geography, University of Manchester
Sept 2017-2021	QEG Research Group Lead, Geography, University of Manchester

Editorships: Academic Journals

2022-	Editorial Board, Aeolian Research
2018 -	Editorial Board, Palaeogeography, Palaeoclimatology, Palaeoecology
2016-20	Editor Quaternary Newsletter (an ISSN listed publication 0 143-2826)

Invited Reviewer:

2025-	The Leakey Foundation
2021-	Chilean National Agency for Research (Agencia Nacional de Investigación y Desarrollo)
2019-	The Leverhulme Trust, UK
2019-	French National Research Agency (ANR)
2019-	German Research Foundation (Deutsche Forschungsgemeinschaft)
2010-15	Royal Geographical Society, Henrietta Hutton Research Grant

Programme-level External Examiner

2024-present:	Chief External Examiner for MSc Programmes across the School of Life Sciences and the Environment (<i>Royal Holloway University of London</i>).
2017-2026:	External Examiner for MSc Quaternary Science (<i>Royal Holloway University of London</i>).
2017-20:	External Examiner BSc Geography (<i>University of Gloucestershire 2017-20</i>).

Regular PhD and MPhil External Examiner.

Referee Books:

Invited reviewer (by Routledge Publisher) of proposal for 4th edition of *Reconstructing Quaternary Environments* (Lowe, J. & Walker, M.). This is the leading textbook in Quaternary Science.

Referee Academic Journals: wide range of Geography and Earth Science Journals: *Nature Scientific Reports, Nature Ecology and Evolution, Royal Society Open Science, Aeolian Research, Anthropocene, Applied Geochemistry, Applied Geography, Boreas, Environmental Earth Sciences, Earth Surface Processes and Landforms, Geoarchaeology, Geomorphology, Journal of Archaeological Science, Journal of Hydrometeorology, Palaeogeography Palaeoclimatology Palaeoecology, Proceedings of the Geologists' Association, Quaternary International, Quaternary Research, Quaternary Geochronology, Quaternary Science Reviews, Royal Society Open Science, Sedimentology, Sedimentary Geology, South African Journal of Geology, South African Geographical Journal*

Conference Hosting:

QRA (Quaternary Research Association) Annual Discussion Meeting, joint hosted UoM and Manchester Metropolitan University, 4-7 Jan 2024. 100+ delegates (90% UK and 10% Europe).

UK meeting of aeolian scientists (23rd Windy Day) hosted at UoM (sole organiser) 1st Nov, 2017.

Conference Session Convening: (widespread, with examples listed here)

- *INQUA Congress* (2013-) Sessions: Hydroclimate change in drylands. Aeolian Palaeoenvironments.
- *EGU General Assembly* (2014-current). Sessions: Late Quaternary palaeoenvironments of African drylands and Drylands: paleoenvironmental and geomorphic perspectives.

- *International Conference on Aeolian Research (ICAR)* (2018-). Session: Palaeoenvironments.
- *PAGES Open Science Meeting* (2017). Sessions: Frontiers in drylands research & Climate variability signals in groundwater archives.
- *AGU* (2016). Session: H43M Climate variability and change and subsurface hydrology.
- *African Quaternary Research Conference* (2015). Session: Dating and correlation of African archives of environmental change and archaeology.

Knowledge Exchange and Public Engagement (last 10 years)

- Sept 2025 Work with BBC Studio's Science Unit, as **expert contributor for *Mysterious Earth***.
- 2024-2026 ***What's in the mud and sand beneath our feet*** at the *Wild Researchers Night* 25th September. I led the QEG research group outreach event to engage with the public about how mud and sand holds records of the past climatic and environmental conditions.
- Aug 2024 ***Ancient lake in the Namib Sand Sea holds unearths secrets of early human life***. CapeTalk 567AM (Primedia Broadcasting) Afternoon Drive with John Maytham.
- July 2024 African archaeology has neglected Namibia's deserts, but scientists now know when an ancient lake supported human life in the Namib. *The Conversation*.
- June 2024 ***Reconstructing past environments*** at the *Universally Manchester Festival* 8th June. I led the QEG research group outreach event.
- June 2022 CPD work for charitable organisation **The Prince's Teaching Institute** New Teacher Subject Days for Geography, delivering a **seminar and training** for teaching Drylands as part of the A Level Geography curriculum within the Geomorphological Processes & Hazards theme.
- July 2021 Expert contributor to Joubert, L. (2021) Rising heat puts the Kalahari's ecosystem on the edge of survival. *National Geographic* p110-137.
- 2018 Higher Education representative at the **Ofqual Evaluation of the Reformed A level and GCSE level in Geography**. Invited as 1 of 4 University Sector representatives.
- Aug 2017 ***Sand in the Anthropocene***. Abi Stone from UoM introduces us to a whole new geological era: the Anthropocene. She also answers Monique's long held question: why is Dubai importing sand from Australia? www.jodocast.net/archive/2017Bluedot/
- Jul 2017 ***Living in the Anthropocene: the day after tomorrow***. Bluedot festival of science and music, Engaged the public about sand as a natural resource, and in doing so, discussed the long-term processes which led to presence of local sand quarries. Including **Stone, A., Shuttleworth, E.** (2017) Introducing the Anthropocene. *Festival Programme*.
- Jul 2016 ***Climate Control Secrets of the sand: to see (past) world(s) in a grain of sand*** Manchester Museum, European City of Science. Feedback included 'fascinating insight into how climates in deserts have not remained the same' (30-40 year age bracket exhibit attendee) 'I love the different colours of sand - so cool they are different' (6 year old).
- 2016 Article "Dynamic Drylands: understanding the processes" ***Geography Review*** Vol. 30(2), a resource for A-level teachers.

Selected Invited talks

- Stone, A.** (13th Jul, 2022) Dating of Namib IV sediments with luminescence. *Gobabeb Namib Research Institute, Namibia "what's happening at Gobabeb" series*.
- Stone, A.** (16th Mar, 2022) Dunes, Diamonds and Dust: a potted history of the Namib Sand Sea. *Royal Geographical Society*.
- Stone, A.** (8th Jun, 2017) "Introduction to luminescence dosimetry". And "Using a portable luminescence reader. Topical Day for industry professionals on luminescence dosimetry for environment, health and safety. *SCK-CEN Nuclear Science & Technology institute, Mol, Belgium*. Feedback: "That was brilliant! Great balance, perfect timing and something for everyone. Thanks again Abi." (organiser).