

- For the post of Vice-President: Dr. David DUNKERLEY, Australia

Dear Morgan,

I am writing to you in my capacity as the Australian and New Zealand delegate to the IAG, to nominate Dr David Dunkerley for one of the three vice-president positions on the IAG Executive. I am nominating David as I am certain that he would make an excellent addition to the Executive and would bring with him a wealth of experience and expertise in organisational management. He has been a very active member of the Australian and New Zealand Geomorphology Group since its inception nearly 30 years ago and has provided leadership in the development of that group throughout that period. He is one of the main driving forces in the organisation of the 7th International Conference here in Melbourne and has worked tirelessly over the last 4 years to stage this conference. He has a broad vision for Geomorphology and as a member of the Executive will promote the whole range of the discipline.

David has agreed to be nominated.

I attach a copy of his short CV.

Yours sincerely

Brian Finlayson

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Brian Finlayson

Principal Fellow

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David Dunkerley

Summary Curriculum Vitae

Dr. David Dunkerley is Associate Professor in the School of Geography and Environmental Science at Monash University. He is a geomorphologist with particular interest and experience in contemporary landscape processes, especially in the realms of karst, fluvial, tropical and dryland environments. He has carried out field research in a wide range of environments from tropical to arid. Field areas have included Papua New Guinea, Borneo, the Solomon Islands, the American south-west, the Negev desert of Israel and Australian locations from Arnhem Land and Cape York to Victoria and Tasmania. One sustained focus of his research has been the Australian arid zone, with an ongoing programme of both experimental and observational work based at several locations in western NSW and the NT. The results of this work have appeared in many international periodicals. He also maintains an active interest in environmental history, and is joint author of the textbook *Quaternary Environments*, now in its second edition, and also published in Chinese language translation by Academia Sinica.

Prof. Dunkerley has served as a consultant to a number of government agencies and commercial firms, in recent years consulting on the Basslink development proposal for the Tasmanian Hydro Electric Corporation, and on an overseas environmental project for the Melbourne law firm Slater and Gordon. Other consulting work has included work on the development of an R & D Investment Strategy for Natural Resource Management for the Department of Natural Resources and Environment, and a review of the Lower Goulburn Floodplain Rehabilitation Project, for the Department of Sustainability and Environment. He has also lectured widely on geomorphology and landscape development to tourism and park management courses for the then Department of Natural Resources and Environment Victoria and for the Victorian Tourism Operators Association. He was elected first Secretary and Treasurer of the Australian and New Zealand Geomorphology Group, and served as the elected President of this body for the years 2002 – 2004. He is currently the Vice President of the ANZGG. Prof. Dunkerley also serves on the International Editorial Board of the *Journal of Arid Environments*. Other involvements with Government land stewardship include membership of the Fire Ecology Scientific Reference Group, advising on fire policy for the Victorian Department of Sustainability and Environment.

Prof. Dunkerley has supervised more than 60 thesis research projects carried out by Honours, Masters and PhD students, spanning many areas of geomorphic and hydrologic research, including several projects on fire-related impacts. National Parks have formed the field areas for several research projects, focussing especially on visitor impacts arising from recreational activities such as camping and trail riding. Land management issues including the use of prescribed fire have also been investigated in National Parks. Other research projects have dealt with the application of geomorphic principles and research methods to the investigation and management of mining-related impacts on the environment. Four investigations have been related to the Ranger mine adjacent to the Kakadu National Park. Other field studies have been conducted on the evaluation of the riverine impacts of prospective mine sites in Papua New Guinea and on the movement and management of tailings from the Mount Lyell and Endurance mines in Tasmania.

Prof. Dunkerley is registered as a Member of the Institute of Australian Geographers, and a signatory to its Code of Conduct, as well as various other academic bodies including the British Geomorphological Research Group. Following an invitation from the Dean of the Faculty of Science, he took up the post of Coordinator of the Bachelor of Environmental Science program within the Faculty of Science at Monash University, and during the years 1999 – 2002 completed the implementation of this innovative four-year, semi-vocational

environmental science course. Prof. Dunkerley continues to contribute to a wide range of basic science and environmental science teaching. His undergraduate units include a third-year level class that is run entirely in the field, based at the Fowlers Gap Arid Zone Research Station in western NSW. Other undergraduate units that he teaches focus on environmental aspects of hydrology and water resource management, and the broad physical geography and environmental evolution of the Australasian region.

Prof Dunkerley maintains an active program of research publication, and reviews manuscripts frequently for all of the major international journals in his fields of research, evaluating typically 30 papers per annum.

David Dunkerley – contact and other details

Position: Associate Professor

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Qualifications:

B.A. (with First-Class Honours), School of Earth Sciences, Macquarie University 1972.
Ph.D. (Geomorphology), Australian National University 1976.
A.Mus.A., NSW State Conservatorium of Music, Sydney 1969.

Research interests:

- geomorphic processes in the contemporary landscape
- observational and methodological problems in geomorphology
- dryland hydrology and soil erosion
- mining and the application of geomorphic methods to the investigation and management of landscape and riverine impacts
- human impact in the landscape, especially in dryland environments, including tourist impact
- environments of the Quaternary, especially mechanisms of environmental change
- numerical modelling applications in geomorphology
- riverine sediment transport and fluvial geomorphology

Selected recent publications:

(1) Books:

Williams M.A.J. Dunkerley D.L. De Deckker P. Kershaw A.P. and Chappell J. 1998.
Quaternary Environments. London: Arnold, second edition, 329pp.

Thomas D.S.G. and Goudie A. (Eds.) with Dunkerley D.L. Meadows M. Balling R. Sherman D. and Abrahams A. (International Advisory Panel) 2000. *The Dictionary of Physical Geography*. Oxford: Blackwell Scientific, 3rd edition, 610pp.

(2) Partial list of journal papers, book chapters, etc. (only from 2000 onwards):

- Dunkerley D.L. forthcoming. The influence of vegetation on erosion. Invited review chapter for Elsevier publishers, Y. Enzel (editor).
- Dunkerley D.L. forthcoming. Changing characteristics of rainfall at sub-daily timescales, 1950-2007, Melbourne, Australia, and implications for ecohydrology. Submitted to *Water Resources Research* and under review.
- Dunkerley D.L. forthcoming. Soil seals and crusts. Invited review chapter for the forthcoming third edition of D.S. Thomas *Arid Zone Geomorphology*. (Wiley). Completed and submitted to the editor January 2009.
- Dunkerley D.L. forthcoming. Eco-geomorphology in the Australian drylands: contemporary observations bearing on the role of biota in mediating the effects of climate change on landscape processes and evolution. Chapter prepared for forthcoming volume on Australian geomorphology, to be published by the Geological Society of London. Completed and submitted to the editors November 2008.
- Morton S.R., D.M. Stafford Smith, C.R. Dickman, D.L. Dunkerley, M.H. Friedel, R.J. McAllister, J.R.W. Reid, D.A. Roshier, M.A. Smith, F.J. Walsh, G.A. Wardle, I.W. Watson, M. Westoby A fresh framework for the ecology of arid Australia. Paper prepared at ARC Research Network for Vegetation Function meeting, Alice Springs, 2007. To be submitted to *Journal of Arid Environments*.
- Dunkerley D.L. 2008. Identifying individual rain events from pluviograph records: a review with analysis of data from an Australian dryland site. *Hydrological Processes* 22, 5024-5036. (doi: 10.1002/hyp.7122).
- Dunkerley D.L. submitted. Water interception on vegetation and elsewhere in the environment: significance, mechanisms, and research needs. Submitted to *Earth Science Reviews*.
- Dunkerley D.L. 2008. Rain event properties in nature and in rainfall simulation experiments: a comparative review with recommendations for increasingly systematic study and reporting. Submitted to *Hydrological Processes* 22, 4415-4435. (doi: 10.1002/hyp.7045).
- Dunkerley D.L. forthcoming. Bulk density from core samples and the flexible membrane method: efficacy in desert soils. Submitted to *Soil Science Society of America Journal*.
- Dunkerley D.L. Martin N. Berg SS Ferguson R. in press. Fire, Catchment Runoff and Erosion Processes, and Post-fire Rehabilitation Programs: Recent Australian Experience. Invited contribution to two-volume international review of post-fire rehabilitation measures, edited by A. Cerda & P. Robichaud, Science Publishers USA.
- Dunkerley D.L. 2008. Flow chutes in Fowlers Creek, arid western New South Wales, Australia: evidence for diversity in the influence of trees on ephemeral channel form and process. *Geomorphology* 102, 232-241 (doi: 10.1016/j.geomorph.2008.05.004).
- Dunkerley D.L. 2007. Intra-storm evaporation as a component of canopy interception loss in dryland shrubs: observations from Fowlers Gap, Australia. *Hydrological Processes* 22, 1985-1995. (doi: 10.1002/hyp.6783).
- Dunkerley D.L. 2007. Bank permeability in an Australian ephemeral dry-land stream: variation with stage resulting from mud deposition and sediment clogging. *Earth Surface Processes and Landforms* 33, 226-243. (doi: 10.1002/esp.1539).
- Oke A.M.C., Dunkerley D.L., & Tapper N.J. 2007. Willy-willies in the Australian landscape: sediment transport characteristics. *Journal of Arid Environments* 71, 216-228. (doi: 10.1016/j.jaridenv.2007.03.014).

- Oke A.M.C. Tapper N.J., and Dunkerley D.L. 2007. Willy-willies in the Australian landscape: the role of key meteorological variables and surface conditions in defining frequency and spatial characteristics. *Journal of Arid Environments* 71, 201-215. (doi: 10.1016/j.jaridenv.2007.03.008).
- Dunkerley D.L. 2007. Intra-storm evaporation as a component of canopy interception loss in dryland shrubs: observations from Fowlers Gap, Australia. *Hydrological Processes*, doi: 10.1002/hyp.6783.
- Dunkerley D.L. 2007. Bank permeability in an Australian ephemeral dry-land stream: variation with stage resulting from mud deposition and sediment clogging. *Earth Surface Processes and Landforms* DOI 10.1002/esp.1539.
- Dunkerley D.L. 2004. Flow threads in surface run-off: implications for the assessment of flow properties and friction coefficients in soil erosion and hydraulics investigations. *Earth Surface Processes and Landforms* 29, 1011-1026.
- Berg S.S. & Dunkerley D.L. 2004. Patterned mulga near Alice Springs, central Australia, and the potential threat of firewood collection on this vegetation community. *Journal of Arid Environments* 59. 313-350.
- Dunkerley D.L. 2003. Organic litter: dominance over stones as a source of interrill flow roughness on low-gradient desert slopes at Fowlers Gap, arid western NSW, Australia. *Earth Surface Processes and Landforms* 28, 15-29.
- Dunkerley D.L. 2003. Determining friction coefficients for interrill flows: the significance of flow filaments and backwater effects. *Earth Surface Processes and Landforms* 28, 475-491.
- Dunkerley D.L. 2003. An optical tachometer for short-path measurement of flow speeds in shallow overland flows: improved alternative to dye timing. *Earth Surface Processes and Landforms* 28, 777-786.
- Dunkerley D.L. 2002. Infiltration rates and soil moisture in a groved mulga community near Alice Springs, arid central Australia: evidence for complex internal rainwater redistribution in a runoff-runon landscape. *Journal of Arid Environments* 51, 199-219.
- Dunkerley D.L. and Brown K.J. 2002. Oblique vegetation banding in the Australian arid zone: implications for theories of pattern evolution and maintenance. *Journal of Arid Environments* 51, 163-181.
- Dunkerley D.L. 2002. Volumetric displacement of flow depth by submerged and non-submerged obstacles, and the determination of friction factors in shallow overland flows. *Earth Surface Processes and Landforms*. 27: 165-175.
- Dunkerley D.L. 2002. Surface tension and friction coefficients in shallow, laminar overland flows through organic litter. *Earth Surface Processes and Landforms* 27: 45-58.
- Dunkerley D.L. 2002. Systematic variation of soil infiltration rates within and between the components of the vegetation mosaic in an Australian desert landscape. *Hydrological Processes* 16: 119-131.
- Dunkerley D.L. 2001. Estimating the mean speed of laminar overland flow using dye injection -uncertainty on rough surfaces. *Earth Surface Processes and Landforms* 26(4): 363-374.
- Seghieri J. and Dunkerley D.L. 2001. Specific methods of study. pp.32-51 in D.J. Tongway, C. Valentin and J. Seghieri (Eds.) *Banded vegetation patterning in arid and semiarid environments*. New York: Springer Verlag, 251pp.
- Thiery J.M. Dunkerley D.L. and Orr B. 2001. Landscape models for banded vegetation genesis. pp.167-197 in D.J. Tongway, C. Valentin and J. Seghieri (Eds.) *Banded vegetation patterning in arid and semiarid environments*. New York: Springer Verlag, 251pp.
- Dunkerley D.L. Domelow P. and Tooth D. 2001. Frictional retardation of laminar flow by plant litter and surface stones on dryland surfaces: a laboratory study. *Water Resources Research*, 37(5): 1417-1424.
- Dunkerley D.L. 2000. Assessing the influence of shrubs and their interspaces on enhancing infiltration in an arid Australian shrubland. *Rangeland Journal*, 22: 58-71.

- Dunkerley D.L. 2000. Hydrologic effects of dryland shrubs: defining the spatial extent of modified soil water uptake rates at an Australian desert site. *Journal of Arid Environments* 45: 159-172.
- Dunkerley D.L. 2000. Desert pavement. pp.236-237 in P.L. Hancock and B.J. Skinner (Eds.) *The Oxford companion to the Earth*. New York: Oxford University Press, 1174pp.
- Dunkerley D.L. 2000. Measuring interception loss and canopy storage in dryland vegetation: a brief review and evaluation of available research strategies. *Hydrological Processes* 14: 669-678.