

## Dr Warren Eastwood

Lecturer

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### About

Warren Eastwood is a biogeographer and palaeoecologist who researches past environmental change for the last 25,000 years or so in the eastern Mediterranean region. His main specialism is elucidating natural versus human-induced vegetation change using pollen analysis (palynology). His research interests also include the impact of major volcanic eruptions and tephrochronology of volcanic ash layers preserved in lake and peat sediment archives. He works very closely alongside archaeologists and historians.

### Biography

- Lecturer in Physical Geography. School of Geography, Earth and Environmental Sciences, University of Birmingham (2001-)
- Fellow of the Higher Education Academy (FHEA) (2007)
- Registered Practitioner of the Higher Education Academy (2005)
- Postgraduate Certificate in Learning and Teaching in Higher Education, University of Birmingham (2004)
- Lecturer in Physical Geography. School of Professional and Continuing Education, University of Birmingham (2000-2001)
- Post Doctoral Associate. School of Geography, Earth and Environmental Sciences, University of Birmingham (1997-2000)
- Post Doctoral Research Associate Late Quaternary environmental change and the origins of agriculture in southern Turkey. University of Wales, Aberystwyth (1997). Funded by The Leverhulme Trust.
- Ph.D., Late Quaternary Environmental Change in Southwest Turkey. University of Wales, Aberystwyth (1996)
- B.Sc. Hons in Physical Geography. Royal Holloway, University of London (1992)

### Teaching

- Snowdonia Field Course (E) (Year 1; module GGM 105)
- Physical Environment of Birmingham (Year 1; module GGM 106B)
- Global Environmental Issues (Year 1; module GGM 103)
- Reconstructing Quaternary Environments (Year 2; module GGM 206) (Module Leader)
- Environment and Landscape Change in the Mediterranean Lands (Year 3; module GGM 305)

### Teaching Development Projects

**[Integrating E-Learning and Mobile Technologies in Geography. With Dr Phil Jones, Dr David Hannah, Dr Jo Southworth \(Birmingham\) and Stuart Marshall \(Consultant\). Project Development Coordinator: Mr Dan Kingston \(http://www.idu.bham.ac.uk/LEaP/projects/geographyWE.htm\)](#)**. With Dr Phil Jones, Dr David Hannah, Dr Jo Southworth (Birmingham) and Stuart Marshall (Consultant). Project Development Coordinator: Mr Dan Kingston

**[Developing learner independence through field-based GIS. Dr Jo Southworth with Dr Phil Jones and Warren Eastwood \(http://www.idu.bham.ac.uk/LIP/projects/gees.htm\)](http://www.idu.bham.ac.uk/LIP/projects/gees.htm)**. Dr Jo Southworth with Dr Phil Jones and Warren Eastwood

For learning and teaching materials please visit the modules **[WebCT pages \(http://www.weblearn.bham.ac.uk/\)](http://www.weblearn.bham.ac.uk/)**

### Postgraduate supervision

#### Research Students since 2001

**[Faize Saris \(https://cms.bham.ac.uk/staff/pgfxs720.shtml\)](https://cms.bham.ac.uk/staff/pgfxs720.shtml)** (2007-) Climatic Impact on Hydroclimatology in Northeast Turkey. Funded by the HE Council of Turkey. Supervisor: Dr David Hannah, Co-supervisor: Dr Warren J Eastwood

**[Gemma Wilson \(https://cms.bham.ac.uk/staff/pggcw229.shtml\)](https://cms.bham.ac.uk/staff/pggcw229.shtml)** (2005-2008) Theoretical Issues and Applications of Palynology in Forensic Science. Co-Supervisor: Dr Jon Sadler.

**[Catherine Jex \(https://cms.bham.ac.uk/staff/jexc.shtml\)](https://cms.bham.ac.uk/staff/jexc.shtml)** (2004-2008) High Resolution Stalagmite Records of Late Holocene Climate Change in Turkey. Supervisor: Dr Andy Baker, Co-Supervisors Dr Warren J Eastwood, Prof Ian Fairchild.

Rebecca Turner (2003-2006) Late Quaternary fire histories in the Eastern Mediterranean region. Supervisor: Neil Roberts (Plymouth), External Supervisor: Dr Warren Eastwood.

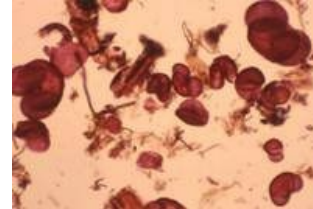
Ann England (2002-2006) Late Holocene Palaeoecology of Cappadocia (Central Turkey): An investigation of annually laminated sediments from Nar Gölü Crater Lake. NERC funded. Supervisor: Dr Warren Eastwood, External Supervisor: Neil Roberts (Plymouth).

Trena Huggins (2000-2008) Palaeoecological development of mires in North Wales. School Studentship with CASE award (CCW). Supervisor: Dr Warren Eastwood, External Supervisor: Dr Paul Hughes (Southampton), Dr Peter Jones (CCW)

## Research

### Research interests

- Quaternary Environmental Change including climate change and human impact via pollen and spore analysis, non-siliceous fungal and algal microfossils together with charcoal in Late Quaternary and recent lake sediments and peat deposits.
- Investigation of climate change in the eastern Mediterranean via stable isotope analysis on authigenic carbonates in lake sediments.
- Tephrology including the impact of major volcanic eruptions and tephrochronology of volcanic ash layers preserved in sediment cores



### Current and recent research

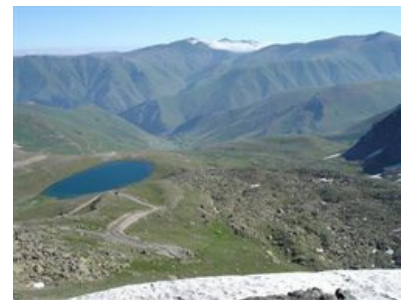
#### ***Environment and Landscape Change in Cappadocia, Turkey***

A Multi-disciplinary research project investigating human-environment interactions in the Cappadocian region of central Anatolia/Turkey. Palaeoecological data (pollen, charcoal, diatoms and stable isotope data) retrieved from a highly resolved and annually laminated crater lake sequence from Nar Gölü (Fire Lake) are compared with the rich archaeo-historical data for the region. With Prof John Haldon (Princeton), Prof Neil Roberts, Jessica Woodbridge, Becky Turner (Plymouth), Dr Matt Jones (Nottingham), Prof Mel Leng (Keyworth, Nottingham).



#### ***Environmental Change in Northeast Turkey***

A multi-disciplinary research project investigating environmental change in Northeast Turkey. Funded by the British Institute at Ankara, National Geographic Society, the Royal Geographical Society with Institute of British



Geographers, The Leverhulme Trust, TÜbitak, University of Ankara and the School of Geography, Earth and Environmental Sciences, University of Birmingham. With Dr Andy Baker, Prof Ian Fairchild and Catherine Jex (Birmingham), Prof Hakan Yiğitbaşıoğlu (Ankara), Dr Anne Mather and Prof Dan Charman (Plymouth) and Dr Elizabeth Maher (Liverpool).

#### ***Reconstructing the ecological footprint of early agriculture in Southwest Asia***

This project aims to use novel techniques, including phytolith, micro-charcoal and stable isotope analyses, to investigate the relationship between climatic and environmental change at the end of the last Ice Age with the emergence of Neolithic agricultural societies in Southwest Asia, including a systematic comparison of on-site (archaeological) and off-site (lake sediment) records of bio-resource availability, usage and manipulation. Funded by The Leverhulme Trust. With Neil Roberts, Rebecca Turner (Plymouth) and Arlene Rosen, Emma Jenkins (UCL)

*Holocene climate change in the eastern Mediterranean* via 18O/16O and 13C/12C analysis of authigenic carbonates and organic matter in order to gain an independent record of climatic change in southwest Turkey. Funded by NERC Isotopic Geosciences Laboratory. With Professor Melanie Leng (NIGL) and Neil Roberts (Plymouth)

#### ***Logistics of Medieval Warfare***

Project exploring the feasibility of linking palaeoenvironmental and archaeo-historical data in Turkey with a GIS-based model of vegetation change. With Professor John Haldon (Princeton), Dr Steve Wilkes, Professor Vince Gaffney (Birmingham).

#### ***ISO-MED (Mediterranean Isotope Records Initiative)***

ISOMED is an international working group examining Late Quaternary stable isotope records from the circum-Mediterranean region. Its initial focus is on isotopic records from Mediterranean lakes and aims to synthesize stable isotopic records from lakes throughout the region to gain an understanding of Mediterranean wide climatic and environmental change during the last 130,000 years. ISOMED forms an integral part of the Mediterranean sector of the IGBP PAGES PEP3 transect. With Prof Neil Roberts (Plymouth), Dr Matt Jones (Nottingham), Prof Melanie Leng (NERC). transect. With Prof Neil Roberts (Plymouth), Dr Matt Jones (Nottingham), Prof Melanie Leng (NERC).

## Publications

### Key Publications since 2001

Roberts, N., Jones, M.D., Benkaddour, A., Eastwood, W.J., Filippi, M.L., Frogley, M.R., Lamb, H.F., Leng, M.J., Reed, J.M., Stein, M., Stevens, L., Valero-Garcés B. and

England, A., Eastwood, W.J., Roberts, C.N., Turner, R. and Haldon, J.F. (2008) Historical landscape change in Cappadocia (central Turkey): a palaeoecological investigation of annually-laminated sediments from Nar lake. *The Holocene*, 18(8), 1229-45.

Eastwood, W.J., Leng, M.J., Roberts, N. and Davis, B. (2007) Holocene climate change in the eastern Mediterranean region: a comparison of stable isotope and pollen data from a lake record in southwest Turkey. *Journal of Quaternary Science*, 22(4), 327-341 . , 22(4), 327-341

Eastwood, W.J., Roberts, N., and Boyer, P. (2007) Pollen analysis at Çatalhöyük. In: Hodder, I. (ed.) *Excavations at Çatalhöyük: the 1995-1999 seasons. Monograph of the McDonald Institute and the British Institute of Archaeology at Ankara (BIAA)*, pp. 573-580

Pearce, N.J.G., Westgate, J.A., Preece, S.J., Eastwood, W.J., Perkins, W.T. and Hart, J.S. (2007) Reinterpretation of Greenland ice-core data recognises the presence of the late Holocene Aniakchak tephra (Alaska), not the Minoan tephra (Santorini), at 1645 BC. *Proceedings of the Second Euroconference of "The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium BC III (SCIEM) 2000"*, Vienna, pp.139-147.

Eastwood, W.J. (2005) Palaeoecology and eastern Mediterranean landscapes: Theoretical and practical approaches. In: Haldon, J.F. (ed.) *General issues in the study of medieval logistics: sources, problems and methodologies*. Brill Publishers. pp. 119-158. . In: Haldon, J.F. (ed.) . Brill Publishers. pp. 119-158.

Pearce, N.J.G., Westgate, J.A., Preece, S.J., Eastwood, W.J. and Perkins, W.T. (2004) Identification of Aniakchak (Alaska) tephra in Greenland ice core challenges the 1645 date for Minoan eruption of Santorini. *Geochemistry Geophysics Geosystems*, 5 (doi: 10.1029/2003GC000672).

Eastwood, W.J. (2004) East Mediterranean Vegetation and Climate Change. In: Griffiths, H.I., Kryštufek, B. and Reed, J.M. (eds.) *Balkan Biodiversity: Pattern and Process in the European Hotspot*. Kluwer, Dordrecht. pp. 25-48.

Reed, J.M., Kryštufek, B. and Eastwood, W.J. (2004) The Physical Geography of the Balkans and nomenclature of place names. In: Griffiths, H.I., Kryštufek, B. and Reed, J.M. (eds.) *Balkan Biodiversity: Pattern and Process in the European Hotspot*. Kluwer, Dordrecht. pp. 9-22.

Eastwood, W.J., Pearce, N.J.G., Westgate, J.A., Preece, S.J., and Perkins, W.T. (2004) Tephra geochemistry confirms the caldera-forming eruption of Aniakchak, not Santorini, at 1645 bc. *PAGES News*. (Dec, 2004).

Eastwood, W.J., Tibby, J.C., Roberts, N., Birks, H.J.B. and Lamb, H.F. (2002) The environmental impact of the Minoan eruption of Santorini (Thera): numerical analysis of palaeoecological data from Gölhisar, southwest Turkey. *The Holocene*, 12(4), 431-444.

Pearce, N.J.G., Eastwood, W.J., Westgate, J.A. and Perkins, W.T. (2002) The composition of juvenile volcanic glass from the Minoan eruption of Santorini (Thera), c. 3300 bp. *Geological Society Special Publication*, 159, 545-556.

Jones, M., Leng, M.J., Eastwood, W.J., Keen, D.H. and Turney, C.S.M. (2002) Interpreting stable isotope records from freshwater snail shell carbonate: a Holocene case study from Lake Gölhisar, Turkey. *The Holocene*, 12(5), 629-634.

Eastwood, W.J., Black, S., Burgess, A. and Pearce, N.J.G. (2002) *The palaeolimnological record of recent environmental change at the Daventry Country Park Reservoir, Northamptonshire*. An official report for Daventry District Council. 58 pp.

Homan, J. and Eastwood, W.J. (2001) The 17 August 1999 Kocaeli (İzmit) Earthquake: Historical records and seismic cultures. *Earthquake Spectra*, 17(4), 617-634.

Pearce, N.J.G., Westgate, J.A., Perkins, W.T. Eastwood, W.J. and Shane, P. (1999) The application of laser ablation ICP-MS to the analysis of volcanic glass shards from tephra deposits: bulk glass and single shard analysis. *Global and Planetary Change*, 21, 151-171.

Eastwood, W.J., Pearce, N.J.G., Westgate, J.A., Perkins, W.T., Lamb, H.F., & Roberts, N. (1999) Geochemistry of Santorini tephra in lake sediments from southwest Turkey. *Global and Planetary Change*, 21, 17-29.

Roberts, N., Black, S., Boyer, P., Eastwood, W.J., Griffiths, H.I., Lamb, H.F., Leng, M.J., Parish, R., Reed, J.M., Twigg, D. and Yiğitbaşıoğlu, H. (1999) Chronology and stratigraphy of Late Quaternary sediments in the Konya Basin, Turkey: Results from KOPAL Project. *Quaternary Science Reviews*, 18, 611-630.

Eastwood, W.J., Roberts, N., Lamb, H.F. and Tibby, J.C. (1999) Holocene environmental change in southwest Turkey: a palaeoecological record of lake and catchment-related changes. *Quaternary Science Reviews*, 18, 671-695.

Eastwood, W.J., Roberts, N. and Lamb, H.F. (1998) Palaeoecological and archaeological evidence for human occupation in southwest Turkey: The Beyşehir Occupation Phase. *Anatolian Studies*, 48, 69-86.

Eastwood, W.J., Pearce, N.J.G., Westgate, J.A. and Perkins, W.T. (1998) Recognition of Santorini (Minoan) tephra in lake sediments at Gölhisar Gölü, southwest Turkey by laser ablation ICP-MS. *Journal of Archaeological Science*, 25, 677-687.

Roberts, N., Eastwood, W.J., Lamb, H.F. & Tibby, J. (1997) Volcanism, climate change and human impact: separating cause from effect in the palaeoenvironmental record of SW Turkey. In: Nüzhet Dalfes, H., Kukla, G. and Weiss, H. (eds.), *Third World Millennium BC Climate Change and Old World Social Collapse*. NATO ASI Series, Series 1: Global Environmental Change, Vol 49, pp. 409-429. (Proceedings of the NATO Advanced Research Workshop, held at Kemer, Turkey, September 19-24, 1994)