



Reading list 2009–10

154 Geomorphological applications

The current edition of the subject guide is the 2004 edition. This reading list was last updated in May 2009. Any queries about this reading list should be directed to externalstudy@lse.ac.uk.

Essential reading

Books

For a complete listing of all the books and works cited in this subject guide, see Appendix 5. In terms of what to buy, it would be best to focus on one or two of the key references given below. The core text covering material from throughout the module is Fookes *et al.*, and you are strongly advised to obtain a copy. If two purchases from the rest of the list are considered, it would be best to choose Downs and Gregory and Goudie *et al.* from the list of essential reading below.

- Downs, P. and K.J. Gregory *River Channel Management: Towards Sustainable Catchment Hydrosystems*. (London: Arnold, 2001) [ISBN 9780340759691].
- Fookes, P.G., E.M. Lee and J.S. Griffiths *Engineering Geomorphology: Theory and Practice*. (Caithness: Whittles Publishing, 2003) [ISBN 9781904445388].
- Goudie, A. *et al.* (eds) *Geomorphological Techniques*. (London: Routledge, 1994) second edition [ISBN 9780415119399].
- Smith, K. *Environmental Hazards: Assessing Risk and Reducing Disaster*. (London: Routledge, 2004) fourth edition [ISBN 9780415318044]. Another revised edition: [ISBN 9780415428637] should become available late in 2008.
- IPCC Working Group I *Climate Change 2007 – The Physical Science Basis*. Cambridge: Cambridge University Press, 2007) [ISBN 9780521705967]. This is also available online at www.ipcc.ch/ipccreports/ar4-wg1.htm

Journal articles

- Alcantara-Ayala, I. 'Geomorphology, natural hazards, vulnerability and prevention of natural disasters in developing countries', *Geomorphology* 47(2–4) 2002, pp.107–124.
- Anbalagan, R. 'Environmental hazards of unplanned urbanization of mountainous terrains: a case study of a Himalayan town', *Quarterly Journal of Engineering Geology* 26 (1993), pp.179–184.
- Brunsdon, D. and R. Moore 'Engineering geomorphology on the coast: lessons from west Dorset', *Geomorphology* 31(1–4) 1999, pp.391–409.
- Chin, A. 'Urban transformation of river landscapes in a global context', *Geomorphology* 79(3/4) 2006, pp.460–487.
- Clark, W.A.V. 'Geography in court: expertise in adversarial settings', *Transactions of the Institute of British Geographers* 16(1) 1991, pp.5–20.
- Crooks, S. and R.K. Turner 'Integrated coastal management: sustaining estuarine natural resources', *Advances in Ecological Research* 29 (1999), pp.241–289.
- Dai, F.C., C.F. Lee and Y.Y. Ngai 'Landslide risk assessment and management: an overview', *Engineering Geology* 64(1) 2002, pp.65–87.
- Gilvear, D.J. 'Fluvial geomorphology and river engineering: future roles utilizing a fluvial hydrosystems framework', *Geomorphology* 31(1/4) 1999, pp.229–245.
- Gray, J.M. 'Planning and landform: geomorphological authenticity or incongruity in the countryside?', *Area* 29(4) 1997, pp.312–324.

- Gray, J.M. 'Geomorphological conservation and public policy in England: a geomorphological critique of English Nature's 'Natural Areas' approach', *Earth Surface Processes and Landforms* 26(9) 2001, pp.1009–1023.
- Gupta, A. 'Geoindicators for tropical urbanization', *Environmental Geology* 42(7) 2002, pp.736–742.
- Guzzetti, F. and G. Tonelli 'Information system on hydrological and geomorphological catastrophes in Italy (SICI): a tool for managing landslide and flood hazards', *Natural Hazards and Earth System Sciences* 4(2) 2004, pp.213–232. Available online at www.nat-hazards-earth-syst-sci.net/volumes_and_issues.html
- Guzzetti, F. *et al.* 'Estimating the quality of landslide susceptibility models', *Geomorphology* 81(1/2) 2006, pp.166–184.
- Lane, S.N. and K.S. Richards 'Linking river channel form and process: time, space and causality revisited', *Earth Surface Processes and Landforms* 22(3) 1997, pp.249–260.
- MacCracken, M.C. 'Do the uncertainty ranges in the IPCC and US national assessments account adequately for possibly overlooked climate influences?', *Climatic Change* 52(1–2) 2002, pp.13–23.
- Newson, M.D. 'Geomorphological concepts and tools for sustainable river ecosystem management', *Aquatic Conservation – Marine and Freshwater Ecosystems* 12(4) 2002, pp.365–379.
- O'Hare, G. 'Reviewing the uncertainties in climate-change science', *Area* 32(4) 2000, pp.357–368.
- Pasuto, A. and L. Schrott (eds) 'Temporal stability and activity of landslides in Europe with respect to climatic change (TESLEC)', *Geomorphology* 30(1–2) 1999. [Note: This is a special issue of the journal devoted to the topic, including a CD with descriptions and images.]
- Pethick, J. 'Coastal management and sea-level rise', *Catena* 42(2–4), 2001, pp.307–322.
- Schumm, S.A. and R.W. Lichty 'Time, space and causality in geomorphology', *American Journal of Science* 263 (1965), pp.110–119.
- Stocking, M. 'Soil erosion in developing countries – where geomorphology fears to tread', *Catena* 25(1/4) 1995, pp.253–267.

Recommended general reading

The following general texts and articles cover various aspects relating to the unit, and you are advised to consult them at various stages as you work through the subject guide. You are strongly recommended to read the cited chapters in Gregory (2000) before commencing the detailed study in this guide.

Books

- Allison R.J. *Applied Geomorphology: Theory and Practice*. (Chichester: John Wiley and Sons, 2002) [ISBN 9780471895558].
- Bair, E.S. 'Models in the courtroom' in M.G. Anderson and P.D. Bates (eds) *Model Validation: Perspectives in Hydrological Science*. (Chichester: John Wiley and Sons, 2001) [ISBN 9780471985723], pp.57–76.
- Barrett, E.C. *An Introduction to Environmental Remote Sensing*. (Routledge, 1999) [ISBN 9780748740062].
- Beven, K.J. and I.D. Moore (eds) *Terrain Analysis and Distributed Modelling*. (Chichester: John Wiley and Sons, 1992) [ISBN 9780471938866].
- Bird, E.C.F. *Coastal Geomorphology: An Introduction*. (Chichester: John Wiley and Sons Ltd, 2008) second edition [ISBN 9780470517307].
- Birkeland, P.W. *Soils and Geomorphology*. (Oxford: Oxford University Press, 1999) third edition [ISBN 9780195078862]. Chapter 11 and Appendix 1.
- Blaikie, P.M. *et al.* *At Risk: Natural Hazards, People's Vulnerability and Disasters*. (London: Routledge, 2003) second edition [ISBN 9780415252164].
- Brookes, A. and D.F. Shields (eds) *River Channel Restoration: Guiding Principles for Sustainable Projects*. (Chichester: John Wiley and Sons, 1996) [ISBN 9780471961390].

- Bryant, E. *Natural Hazards*. (Cambridge: Cambridge University Press, 2004) second edition [ISBN 9780521537438].
- Burton, I., K.W. Kates and G.F. White *The Environment as Hazard*. (London: Guildford Press, 1993) second edition [ISBN 9780898621594].
- Clark, M.J., K.J. Gregory and A.M. Gurnell (eds) *Horizons in Physical Geography*. (Basingstoke: Macmillan, 1988) especially Section 4, 'Management of the Physical Environment' [ISBN 9780333396100].
- Collison, A.J.C. and J. Griffiths 'Modelling slope instability', in Wainwright, J. and M. Mulligan (eds) *Environmental Modelling: Finding Simplicity in Complexity*. (Chichester: John Wiley and Sons, 2003) [ISBN 9780471496182], pp.197–209.
- Cooke, R.U. *Geomorphological Hazards in Los Angeles*. (London: Allen and Unwin, 1984) [ISBN 9780045510900].
- Cooke, R.U. and J.C. Doornkamp *Geomorphology in Environmental Management*. (Oxford: Clarendon Press, 1990) second edition [ISBN 9780198741510].
- Cooke, R.U. *et al. Urban Geomorphology in Drylands*. (Oxford: Oxford University Press, 1982) [ISBN 9780198232391].
- Dikau, R. *et al.* (eds) *Landslide Recognition: Identification, Movement and Causes*. (Chichester: John Wiley and Sons, 1996) [ISBN 9780471964773].
- Doornkamp, J.C. 'Legislation, policy and insurance aspects of landslip and "subsidence" in Great Britain' in McGregor, D.F.M. and D.A. Thompson (eds) *Geomorphology and Land Management in a Changing Environment*. (Chichester: John Wiley and Sons, 1995) [ISBN 9780471955115], pp.37–50.
- Goudie, A.S. and H.A. Viles *Salt Weathering Hazards*. (Chichester: John Wiley and Sons, 1997) [ISBN 9780471958420].
- Gregory, K.J. *The Changing Nature of Physical Geography*. (London: Arnold, 2000) [ISBN 9780340741191]. Chapters 7 and 8 on the development of applied geomorphology.
- Hellin, J. *Better Land Husbandry: From Soil Conservation to Holistic Land Management*. (Enfield, NH: Science Publishers, 2005) [ISBN 9781578082445].
- Hewitt, K. *Regions of Risk: a Geographical Introduction to Disasters*. (Harlow: Longman, 1997) [ISBN 9780582210059].
- Heywood, I., S. Cornelius and S. Carver *Introduction to Geographic Information Systems*. (London: Prentice Hall, 2006) third edition [ISBN 9780131293175].
- Howard, A.D. and I. Remson *Geology in Environmental Planning*. (New York: McGraw-Hill, 1978) [ISBN 9780070305106].
- Hudson, N. *Land Husbandry*. (London: Batsford, 1992) [ISBN 9780801428036].
- Jones, D.K.C. 'Landslide hazard assessment in the context of development', in McCall, G.J.H., D.J.C. Laming and S.C. Scott (eds) *Geohazards: Natural and Man-Made*. (London: Chapman and Hall, 1992) [ISBN 9780412439308] pp.117–142.
- Kay, R. and J. Alder *Coastal Planning and Management*. (London: SPON Press, 2005) second edition [ISBN 9780415317733].
- Kondolf, G.M. and H. Piégay (eds) *Tools in Fluvial Geomorphology*. (Chichester: John Wiley and Sons, 2003) [ISBN 9780471491422].
- Lee, E.M. and D.K.C. Jones *Landslide Risk Assessment*. (London: Thomas Telford, 2004) [ISBN 9780727731715].
- Maidment, D.R. (ed.) *Handbook of hydrology*. (New York: McGraw-Hill, 1993) [ISBN 9780070397323]. Chapter 18 on extreme value statistics.
- Marchetti, M. *et al.* (eds) *Geomorphology and Environmental Impact Assessment. Proceedings of the 1st and 2nd Workshops of a 'Human Capital and Mobility' Project*. (Milan: *Quaderni di Geodinamica Alpina e Quaternaria* 3, 1995) [ISBN 9788886596015].
- Morgan, R.P.C. *Soil Erosion and Conservation*. (Oxford: Blackwell Scientific, 2004) third edition [ISBN 9781405117814].
- Nicholls, R.J. and S.P. Leatherman 'Sea-level rise and coastal management', in McGregor, D.F.M. and D.A. Thompson (eds) *Geomorphology and Land Management in a Changing Environment*. (Chichester: John Wiley and Sons, 1995) [ISBN 9780471955115], pp.229–244.
- Owen, L.A., M.C. Sharma and R. Bigwood 'Mass-movement hazard in the Garhwal Himalaya: the effects of the 20 October 1991 Garhwal earthquake and the July–August 1992 monsoon season', in McGregor, D.F.M. and D.A. Thompson (eds) *Geomorphology and Land*

- Management in a Changing Environment*. (Chichester: John Wiley and Sons, 1995) [ISBN 9780471955115], pp.69–88.
- Platt, R.H. *Land Use and Society: Geography, Law and Public Policy*. (Washington DC: The Island Press, 2004) second edition [ISBN 9781559636841].
- Reed, D.W. (ed.) *Flood Estimation Handbook*. (Wallingford: Institute of Hydrology, 1999) [ISBN 9780948540943]. In five volumes – concentrate on the overview in Volume 1 and examples of rainfall and runoff return-period estimation in Volumes 2 and 3.
- Rotmans, J. and H. Dowlatabadi 'Integrated assessment modelling' in Rayner, S. and E.L. Malone (eds) *Human Choice and Climate Change. Volume 3: Tools for Policy Analysis*. (Columbus, OH: Batelle Press, 1998) [ISBN 9781574770476], pp.291–378.
- Thorne, C.R., R. Hey and M. Newson *Applied Fluvial Geomorphology*. (Chichester: John Wiley and Sons, 1997) [ISBN 9780471969686].
- Thornes, J.B. and D. Brunnsden *Geomorphology and Time*. (London: Methuen, 1977) [ISBN 9780416800906].
- Toy, T.J. and R.F. Hadley *Geomorphology and Reclamation of Disturbed Lands*. (London: Academic Press, 1988) [ISBN 9780126969603]. Especially Chapter 10: 'Lands disturbed by construction activities'.
- Tricart, J. and C.K. de Jonge *Ecogeography and Rural Management: A Contribution to the International Geosphere–Biosphere Programme*. (Harlow: Longman, 1992) [ISBN 9780582062733].
- Viles, H. and T. Spencer *Coastal Problems: Geomorphology, Ecology and Society at the Coast*. (London: Arnold, 1995) [ISBN 9780340531976].
- Wainwright, J. and M. Mulligan (eds) *Environmental Modelling: Finding Simplicity in Complexity*. (Chichester: John Wiley and Sons, 2003) [ISBN 9780471496182].
- Wainwright, J. and J.B. Thornes *Environmental Issues in the Mediterranean*. (London: Routledge, 2003) [ISBN 9780415156868]. Chapter 20 on the evaluation of climate-change impacts at the regional level.
- Wilson, G.A. and R.L. Bryant *Environmental Management: New Directions for the Twenty-First Century*. (London: UCL Press, 1997) [ISBN 9781857284638].

Journal articles

- Bracken, L.J. and J. Wainwright 'Geomorphological equilibrium: myth and metaphor?', *Transactions of the Institute of British Geographers NS* 31(2) 2006, pp.167–178.
- Brierley, G. *et al.* 'Application of the River Styles framework as a basis for river management in New South Wales, Australia', *Applied Geography* 22(1) 2002, pp.91–122.
- Chandler, J.H. and D. Brunnsden 'Steady state behaviour of the Black Ven mudslide: the application of archival analytical photogrammetry to studies of landform change', *Earth Surface Processes and Landforms* 20(3) 1995, pp.255–275.
- Demeritt, D. 'The construction of global warming and the politics of science', *Annals of the Association of American Geographers* 91(1–4) 2001, pp.307–337.
- Foster, K.R., D.E. Bernstein and P.W. Hubert 'Science and the toxic tort', *Science* 261(5128) 1993, pp.1509–1514.
- Gordon, J.E. *et al.* 'Geo-ecology and management of sensitive montane landscapes', *Geografiska Annaler Series A – Physical Geography* 84(3/4) 2002, pp.193–203.
- Graf, W.L. 'Damage control: restoring the physical integrity of America's rivers', *Annals of the Association of American Geographers* 91(1) 2001, pp.1–27.
- Hedelin, B. 'Criteria for the assessment of sustainable water management', *Environmental Management* 39(2) 2007, pp.151–163.
- Hooke, J.M. 'Decades of change: contributions of geomorphology to fluvial and coastal engineering and management', *Geomorphology* 31(1–4) 1999, pp.373–389.
- Hooke, J.M., M.J. Bray and D.J. Carter 'Sediment-transport analysis as a component of coastal management – a UK example', *Environmental Geology* 27(4) 1996, pp.347–357.
- Iida, T. 'Theoretical research on the relationship between return period of rainfall and shallow landslides', *Hydrological Processes* 18(4) 2004, pp.739–756.
- Kennedy, B.A. 'Classics in physical geography revisited – Time, space and causality in geomorphology', *Progress in Physical Geography* 21 (1997), pp.419–423.
- Kosmas, C.S. *et al.* 'The effect of land use on runoff and soil erosion rates under Mediterranean conditions', *Catena* 29(1) 1997, pp.45–59.

- Malet, J.P., O. Maquaire and E. Calais 'The use of Global Positioning System techniques for the continuous monitoring of landslides: application to the Super-Sauze earthflow (Alpes-de-Haute-Provence, France)', *Geomorphology* 43(1/2) 2002, pp.33–54.
- Marcus, W.A. and M.A. Fonstad 'Optical remote mapping of rivers at sub-metre resolutions and watershed extents', *Earth Surface Processes and Landforms* 33(1) 2008, pp.4–24.
- Martin, P. *et al.* 'Management of soil surface characteristics for soil and water conservation: The case of a silty loam region (Pays de Caux, France)', *Earth Surface Processes and Landforms* 29(9) 2004, pp.1105–1115.
- Newson, M.D. 'Applied physical geography: the opportunities and constraints of environmental issues revealed by river basin management', *Scottish Geographical Magazine* 104 (1988), pp.67–71.
- Oreskes, N., K. Shrader-Frechette and K. Belitz 'Verification, validation, and confirmation of Numerical Models in the Earth sciences', *Science* 263(5147) 1994, pp.641–646.
- Parker, P. *et al.* 'Progress in integrated assessment and modelling', *Environmental Modelling and Software* 17(3) 2002, pp.209–217.
- Parsons, A.J. 'Is sediment delivery a fallacy?', *Earth Surface Processes and Landforms* 31(10) 2006, pp.1325–1328.
- Phipps, A.G. 'Applications and effects of geographical research in two quasi-judicial hearings about land-use changes', *Applied Geography* 19 (1999), pp.137–151.
- Pope, G.A., T.C. Meierding and T.R. Paradise 'Geomorphology's role in the study of weathering of cultural stone', *Geomorphology* 47(2/4) 2002, pp.211–225.
- Schauman, S. and S. Salisbury 'Restoring nature in the city: Puget Sound experiences', *Landscape and Urban Planning* 42(2–4) 1998, pp.287–295.
- Thorn, C.E. and M.R. Welford 'The equilibrium concept in geomorphology', *Annals of the Association of American Geographers* 84(4) 1994, pp.666–696.
- Trimble, S.W. 'A sediment budget for Coon Creek Basin in the Driftless Area, Wisconsin, 1853–1977', *American Journal of Science* 283 (1983), pp.454–474.
- Urban, M.A. 'Conceptualizing anthropogenic change in fluvial systems: drainage development on the Upper Embarras River, Illinois', *Professional Geographer* 54(2) 2002, pp.204–217.
- Valentin, C., J. Poesen and Y. Li 'Gully erosion: impacts, factors and control', *Catena* 63(2/3) 2005, pp.132–153.
- Wainwright, J. *et al.* 'A transport-distance approach to scaling erosion rates: 1. Background and model development', *Earth Surface Processes and Landforms* 33(5) 2008, pp.813–826.
- Wenland, W.M. 'Climate changes: impact on geomorphic processes', *Engineering Geology* 45(1–4) 1996, pp.347–358.
- Wischmeier, W. 'Use and misuse of the Universal Soil-Loss Equation', *Journal of Soil and Water Conservation* 31 (1978), pp.5–9.

Further reading

The list below contains reference works with readable introductions and background material to the geomorphic processes we will consider, as well as some general overviews of applied geomorphology. You may want to consult some of these volumes as a refresher, either before commencing the subject guide, or while considering relevant materials in each of the chapters that follow. Some will provide a useful source of further case studies that you can use in your examination responses.

A full list of all Further reading referred to in the chapters is included in Appendix 5 at the end of this guide.

- Bennett, M.R. and P. Doyle *Environmental Geology: Geology and the Human Environment*. (Chichester: John Wiley and Sons, 1997) [ISBN 9780471974598].
- Bird, E.C.F. *Coastal Geomorphology: An Introduction*. (Chichester: John Wiley and Sons, 2008) second edition [ISBN 9780470517307].
- Brunsdon, D. 'Geomorphology in the service of society' in Johnston, R.J. (ed.) *The Future of Geography*. (London: Methuen, 1985) [ISBN 9780416367003], pp.225–257.
- Bryant, E. *Natural Hazards*. (Cambridge: Cambridge University Press, 2004) second edition [ISBN 9780521537438].
- Coates, D.R. (ed.) *Geomorphology and Engineering*. (London: Allen and Unwin, 1980) [ISBN 9780045510405].

- Coch, N.K. *Geohazards: Natural and Human*. (Englewood Cliffs, NJ: Prentice Hall, 1995) [ISBN 9780023229923].
- Cooke, R.U. *et al.* *Jones Urban Geomorphology in Drylands*. (Oxford: Oxford University Press, 1982) [ISBN 9780198232582].
- Crozier, M.J. *Landslides: Causes, Consequences and Environment*. (London: Croom Helm, 1986) [ISBN 9780709907909].
- Douglas, I. and T. Spencer (eds) *Applied Geomorphology in the Tropics*. (Berlin: Bornträger, 1982) [ISBN 9783443210441].
- Douglas, I. and T. Spencer *Environmental Change and Tropical Geomorphology*. (London: Allen and Unwin, 1985) [ISBN 9780045510740].
- Eyles, N. (ed.) *Glacial Geology. An Introduction for Engineers and Earth Scientists*. (Oxford: Pergamon, 1983) [ISBN 9780080302638].
- Hooke, J.M. (ed.) *Geomorphology in Environmental Planning*. (Chichester: John Wiley and Sons, 1988) [ISBN 9780471919889].
- Huggett, R.J. *Fundamentals of Geomorphology*. (London: Routledge, 2003) second edition [ISBN 9780415241465].
- Karr, J.R. *Landscape Disturbance and Stream Ecosystems*. (Dordrecht: Kluwer Academic Publishers, 1997) [ISBN 9780412034916].
- Nir, D. *Man, A Geomorphological Agent*. (Dordrecht: Reidel, 1983) [ISBN 9789027714015].
- O'Riordan, T. (ed.) *Environmental Science for Environmental Management*. (Harlow: Longman, 1995) [ISBN 9780582218895].
- Selby, M.J. *Hillslope Materials and Processes*. (Oxford: Oxford University Press, 1993) [ISBN 9780198741831].
- Sharma, P.V. *Applied Geomorphology in the Tropics*. (Varanasi: Rishi Publications, 1997) [ISBN 9788185193113].
- Thorne, C.R., R. Hey and M. Newson *Applied Fluvial Geomorphology*. (Chichester: John Wiley and Sons, 1997) [ISBN 9780471969686].

Making use of the Online library

- To help you read extensively, all External students have free access to the University of London Online library where you will find the full text or an abstract for many of the journal articles listed for this unit.
- The Online library is accessed via the Student Portal at <http://my.londonexternal.ac.uk/>
- For most journals, the username and password you need is the same as the one which you have been sent to use for logging in to the Student Portal.