University of Birmingham

Professor Jon Sadler

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About

Jon Sadler is a biogeographer and ecologist who focuses on species population and assemblage dynamics in urban and riparian environments. His research involves interdisciplinary science using a combination of detailed field studies and field experimentation. His work emphasizes the links between environmental variability and species responses, with particular emphasis on urbanisation and hydrological disturbance.

Biography

Jon Sadler joined the School in 1993 having worked as a Leverhulme Trust Post doctoral Research Fellow (1991-1993) examining aspects of the impact of volcanic eruptions on ecological systems at Sheffield University. Previously he had completed a PhD (submitted in 1991) on the Biogeography of invertebrates in the North Atlantic Islands in Sheffield and an MSc and BSc in Birmingham. He is a fellow of the Royal Entomological Society, member of the British Ecological Society and a Chief Editor of the Journal of Biogeography.

Teaching

Year One:

GGM102 Earth and Ecological Systems - 20 credits (co-convenors, Prof. Ian Fairchild, Dr Ian Phillips, Dr Guy Harrington).

GGM105 Tutorials and fieldwork - 20 credits.

Year Two:

Tenerife field course (co-convenor - Dr Greg Sambrook-Smith

Year Three:

GGM312 Landscape and Urban Ecology - 20 credits.

Postgraduate supervision

Current research students

Leonie Clitheroe - ‘Riparian successional processes in a proglacial catchment’. (NERC - Oct 2012). Lead Supervisor: Prof. Sandy Milner (GEES, U of B).

Daniel Hunt - 'Bird productivity and dispersal in urban environments'. (College studentship - Oct 2012). Co-supervisor: Jim Reynolds (School of Biosciences, U of B).

Oliver Hölzinger - ‘How do human preferences and values for ecosystem services change depending on site-specific conditions and context?’ (Self funded Oct 2011). Co-supervisor: Dan Van der Horst (GEES, U of B).

Alexander Royan - ‘Assessing the vulnerability of river birds to inundation’ (NERC/BTO Case Award, Oct 2011-) Co-superisors: David Hannah (GEES, U of B), James Reynolds (Biosciences, U of B), Stefan Bodnar (RSPB), David Noble (BTO).

Robert Fowler - ‘Building for Biodiversity: managing and creating green infrastructure to maximise ecological services in our cities’ (EPRSC, Oct 2010) Co-Supervisors: Mark Ledger, Adam Bates (GEES, U of B).

Grace Garner - ‘River and stream temperature in a changing climate’ (NERC - Oct 2010) - Lead supervisor David Hannah (GEES, U of B), Iain Malcolm (SFL).

Emma Rosenfeld ‘Assessing the ecological significance of linkage and connectivity for avian biodiversity in urban areas’. (Big Lottery funded - Oct 2008), Jim Reynolds (Bio-sciences, U of B), Adam Bates (GEES, U of B), Stefan Bodnar (RSPB).

Completions

Matthew O’Callaghan – ‘The occupancy of ERS by specialist invertebrates: an evaluation of threats to populations in the UK’ (EA funded, 2011). Co-supervisors: David Hannah (U of B) and Mike Williams (EA).

Sarah E. Hensall - ‘Identifying ‘hotspots’ of ERS biodiversity: can physical habitat dynamics predict beetle distributions?’ (NERC funded, 2011). Co-supervisors: David Hannah (U of B) and Mike Williams (EA).

Phillip Green - ‘Urban canal water quality and chironomid pupal exuviae’ (EA/Self funded, 2011)

Montse Auladell - ‘The biological efficiency of constructed wetlands’ (School and CB Funded, 2010). Co-supervisor: Lesley Batty (U of B).

Jessica Frame -‘The effect of acidification on food-web structure’ (School Studentship, 2010). Co-supervisor: Mark Ledger (U of B).

Gemma Wilson - 'Forensic palynology' (Self-funded, 2008). Co-supervisor Warren Eastwood (U of B).

SelfJennifer Cousins - ‘Conservation tourism: embodied science and changing nature-society relations’. (NERC/ESRC 2008). Co-supervisor: James Evans.

Emily Quinton - ‘Legal Geographies of the plant hunting in Chile’ (NERC/ESRC funded 2004-). Co-supervisor: Ian Cook.

Dr Adam Bates - ‘The dynamics of Invertebrates of Exposed Riverine Sediments in Wales’ (School and CCW funded). Co-supervisor: Adrian Fowles (CCW 2005).

Dr James Evans - ‘Biodiversity and Management of urban land: knowledge communities in a risk society’. (NERC/ESRC 2003). Co-supervisors: John Bryson (U of B) and Nick Henry (Newcastle).

Dr Luke Beavan - Chironomidae as indicators of environmental stress in polluted waters (NERC PhD 2001).

Dr Emma Small - Carabid Beetles in urban spaces: Biodiversity and population dynamics in fragmented habitats (NERC PhD 2001).

Research

Research interests

- Biogeography, ecology and the dynamics of urban habitats
- Disturbance ecology and biogeography of invertebrates on patchy habitats in riverine environments
- Biogeography and palaeoecology of invertebrates
- Biodiversity knowledges

Jon's research team includes three postdoctoral researchers and six doctoral researchers supported by grants from EPSRC, NERC, UK Charities (e.g. The Big Lottery via OPAL) and the Environment Agency.

Current and recent research

‘LONNE – loss of the night’. EU COST action network (Sept 2012); Role – UK partner. Lead partner: PD Dr. Franz Hölker (Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin).

‘EP/J017698 – Transforming the Engineering of Cities to Deliver Societal and Planetary Wellbeing’ (EPSRC consortia team). (Role: CI). Lead PI Prof Chris Rogers (Civil Eng. U of B). EPSRC - May 12-Apr 17 - £6,146,000.

‘Integrating Ecology and Social Science in Conservation: Orchards, beetles and agroecology’ (Role: PI). (Leverhulme Trust - Oct 1 12-Sept 15). Collaborators: Dr Lloyd Jenkins (GEES, U of B), Prof. Alan Gange, Dr Deborah Harvey (RHUL) , Prof Paul Shaw, Dr Niall McKeown, Univ of Aberystwyth; Peoples’ Trust for Endangered Species - £256,552.

‘Mapping Artificial Lightscapes: high resolution solutions to artificial light pollution in cities’ (Feb 2012-Feb 2013). Sponsor: EPSRC. Research Team: Prof. Chris Rogers (U of B) - £121,522 (PI).

'Sustainable regeneration: from evidence-based urban futures to implementation’ (May 08-Apr 12). Sponsor: EPSRC. Research Team: SUE II grant – consortia include: University of Birmingham (Civil Engineering, GEES, CURS), UCE, Exeter University), Lancaster University - £3,191,418 (CI).

‘Biodiversity in Cities: Encountering and developing awareness of wildlife in open-spaces’ (Sept 07-12). Sponsor: Big Lottery Fund (BIG) via OPAL (Open Air Laboratories) - £680,000 (PI)

‘An integrated approach to sustainable urban redevelopment : Birmingham Eastside as a National and International Demonstrator’ (Nov 04-Apr 08). Sponsor: EPSRC. Research Team: Chris Rogers (U of B), Jon Sadler & John Bryson (U of B), Austin Barber (U of B), Richard Coles (UCE) - £624,051 (CI).

‘The occupancy of ERS by specialist invertebrates: an evaluation of threats to populations in the UK’ (Oct 06-Oct 09). Sponsor: Environment Agency. Research Team: David Hannah (U of B) - £114,000 (PI).

‘An integrated approach to sustainable urban redevelopment : Birmingham Eastside as a National Demonstrator’ (Nov 04-Oct 06). Sponsor: EPSRC. Research Team: Chris Rogers (U of B), Jon Sadler & John Bryson (U of B), Austin Barber (U of B), Richard Coles (UCE) - £350,966 (view project web site) (CI).

‘The autecology of the riparian specialist beetle Bembidion testaceum’ – National R & D project (Feb 04-Dec04). Sponsor: Environment Agency - £17,652 (CI).

‘Dynamics of invertebrate populations on exposed riverine sediments’ (Jun 02- Jun 05). Sponsor: CCW - £15,000 (CI).

‘Investigation of the effects of disturbance to gravel patches on the invertebrate populations of Exposed Riverine Sediment’ (Sept 01- Dec 05). Sponsor: CCW - £4500 (CI).

‘A Feasibility study adopting Birmingham Eastside as a Regional Demonstrator of Sustainability in the Urban Environment’ (Jun 02-Jun 05). Sponsor: EPSRC. Research Team: Chris Rogers (U of B), Jon Sadler (U of B), Austin Barber (U of B), Richard Coles (UCE) - £207,758 (CI).

‘Alien species and Biodiversity: from generic models to practical management’ (Jan 00-Jan 02). Sponsor: NERC (Urgent). Research Team: Phillip Hulme (CEH), Jon Sadler (U of B), Penny Angold (U of B), James Bullock (CEH) - £160,548 (PI).

'Modelling River Corridors: The Scientific Basis for the Rehabilitation of Urban Rivers’ (Jul 98-Jul 01). Sponsor: NERC (Urgent) Research Team: John West, Geoff Petts, Jon Sadler (U of B), Angela Gurnell (Kings College), Patrick Armitage (CEH) - £491,762 (CI).

‘Biodiversity in urban habitat fragments’ (Jul 98-Jul 01). Sponsor: NERC (Urgent). Research Team: Penny Angold, Jon Sadler, Andrew Pullin (U of B), Mark Hill (CEH), Steven Rushton (Newcastle), Ken Thompson (Sheffield) - £306,040 (joint PI).

‘The history and impact of insect pests of stored products from Ancient Egypt’ (May 1998-Oct 2001). Research Team: Jon Sadler (U of B), Kevin Edwards (Aberdeen), Paul Buckland (Bournemouth). Sponsor: The Leverhulme Trust - £169,180 (PI).

Other activities

Jon is Editor in Chief of the Journal of Biogeography and a Trustee of two national conservation charities.

Publications

Selected publications

Hale, J.D., Fairbrass, A.J., Matthews, T.J. & **Sadler, J.P.** (2012) Habitat composition and connectivity predicts bat presence and activity at foraging sites in a large UK conurbation. PLoS ONE, 7(3): e33300.doi:10.1371/journal.pone.0033300.

Hale, J.D. **Sadler, J.** (2012) Resilient ecological solutions for urban regeneration. Engineering Sustainability, 165(1), 59-68.

Perkin, E.K., Hölker, F., Richardson, J., **Sadler J.P.**, Wolter, C. and Tockner, K. (2011) Artificial light for river and riparian ecosystems: Questions, challenges, and perspectives. Ecosphere. 2(11):122. doi:10.1890/ES11-00241.1.

Olly, L.M., Bates, A.J., **Sadler, J.P.** & Mackay, R. (2011) An initial experimental assessment of the influence of substrate depth on floral assemblage for extensive green roofs. Urban Forestry & Urban Greening, 10, 311–316.

Boyko, C.T., Gaterell, M.R., Barber, A.R.G., Brown, J., Bryson, J.R., Butler, D., Caputo, S., Caserio, M., Coles, R., Cooper, R., Davies, G., Farmani, R., Hale, J., Hales, A.C., Hewitt, C.N., Hunt, D.V.L., Jankovic, L., Jefferson, I., Leach, J.M., Lombardi, D.R., MacKenzie, A.R., Memon, F.A., Pugh, T.A.M., **Sadler, J.P.**, Weingaertner, C., Whyatt, J.D. & Rogers, C.D.F. (2012) Benchmarking sustainability in cities: The role of indicators and future scenarios. Global Environmental Change, 22, 245–254.

Lombardi, D.R., Caserio, M., Donovan, R., Hale, J., Hunt, D.V.L., Weingaertner, C., Barber, A., Bryson, J.R., Coles, R., Gaterell, M., Jankovic, L., Jefferson, I., **Sadler, J.** & Rogers, C.D.F. (2011) Elucidating sustainability sequencing, tensions, and trade-offs in development decision making. Environment and Planning B: Planning and Design, 38, 1105–1121.

Bates A.J., **Sadler J.P.**, Fairbrass A.J., Falk S.J., Hale J.D. et al. (2011) Changing Bee and Hoverfly Pollinator Assemblages along an Urban-Rural Gradient. PLoS ONE 6(8): e23459. doi:10.1371/journal.pone.0023459

Henshall, S.E., **Sadler, J.P.**, Hannah, D.M. & Bates, A.J. (2011) Habitat manipulation of Exposed Riverine Sediments (ERS), how does microhabitat, microclimate and food availability influence beetle distributions? Ecohydrology. vol. 4 (4) pp. 512-519.

Krause S., Hannah D.M., **Sadler J.P.** and Wood P.J. (2011), Ecohydrology on the edge: interactions across the interfaces of wetland, riparian and groundwater-based ecosystems, Ecohydrology, 4, 477–480 DOI: 10.1002/eco.240

Davies, L., Kwiatkowski, L., Gaston, K.J., Beck, H., Hope, B., Batty, M., Scholes, L., Wade, R., Sheate, W.R., **Sadler, J.**, and 4 others (2011) Urban. In: The UK National Ecosystem Technical Report. UNEP-WCMC, pp. 361-410. Cambridge.

Sadler, J.P., Bates, A.J., Donovan, R. & Bodnar, S. (2011) Building for Biodiversity: accommodating people and wildlife in cities. In Niemela, J., Elmqvist, T., James, P. (eds.). Urban Ecology. Oxford University Press, pp.286-296. Oxford.

Sadler, J.P., Bates, A.J., Hale, J., & James, P. (2010) Getting life into cities: the importance of greenspace for people and biodiversity. In Gaston, K.J. (ed.) Urban Ecology. Cambridge University Press, pp. 230-260. Cambridge.

Cousins, J.A., **Sadler, J.P.**, Evans, J., (2010). An economy of conservation: the challenge of regulating private wildlife ranching in South Africa. Ecology and Society. 15(2).

Cousins, J.A., Evans, J., **Sadler, J.P.** (2009) 'I've paid to observe lions, not map roads!' – The emotional economy of conservation tourism in South Africa. Geoforum. 40(6): 1069-1080.

Bates, A.J., **Sadler, J.P.**, Henshall, S.E. & Hannah, D.M. (2009) Insects of exposed riverine sediments (ERS): an introduction and literature review. Terrestrial Arthropod Reviews, 2, (2009), 77–98.

Adam Bates, Rae Mackay, Richard Greswell, and **Jon Sadler** (2009) SWITCH in Birmingham, UK: experimental investigation of the ecological and hydrological performance of extensive green roofs. Reviews in the Environmental Science and Biotechnology, 8: 295–300.

James, P., Adams, M.D., Annett, P., Barber, A., Box, J., Breuste, J., Cooper, I., Curwell, S.R., Elmqvist, T., Flood, T., Frith, M., Gledhill, D.G., Goode, D., Gordon, C., Greening, K.L., Handley, J., Harding, S., Haworth, S., Hesketh, F., Home, R., Johnston, M., Kazmierczak, A.E., Korpela, K., Leeks, G., Morley, E., Nail, S. Niemelä, J, Moretti, M., Stein, N., Pauleit, S., Powell, J.A., Radford, K.G., Richardson, D., Roe, M.H., **Sadler, J.P.**, Selman, P., Scott, A.V., Snepp, R., Stern, N., Timmermans, W., Tzoulas, K., and Ward-Thompson, C. (2009) URBAN GREEN – Towards an integrated understanding of greenspace in the built environment. Urban Forestry and Urban Greening. 8, 65-75.

Cousins, J. A., **J.P. Sadler**, and J. Evans (2008) Exploring the role of private wildlife ranching as a conservation tool in South Africa: stakeholder perspectives. Ecology and Society, 13(2):43.

Hannah, D.M., **Sadler, J.P.** & Wood, P.J. (2007) Hydroecology and ecohydrology: a potential route forward? Hydrological Processes, 21(24), 3385-3390.

Bates A.J., Sadler J.P., Perry, J.N. and Fowles A.P. (2007). Microspatial distribution of beetles (Coleoptera) within spatially delimited patches of exposed riverine sediments. European Journal of Entomology. 104: 497-487.

Bates, A.J., **Sadler, J.P.** and Fowles, A.P. (2007) Livestock trampling reduces the conservation value of beetle communities on high quality exposed riverine sediments. Biodiversity and Conservation. 16, 1491-1509.

Bates A.J, **Sadler, J.P.**, Fowles, A.P. 2006. Condition-dependent dispersal of a patchily distributed riparian ground beetle in response to disturbance. Oecologia. 150(1): 50-60.

Sadler, J.P., Small, E.C., Fiszpan, H.A. and Telfer, M. (2006) Investigating environmental variation and landscape characteristics of an urban-rural gradient using woodland carabid assemblages. Journal of Biogeography. 33, 1126-1138.

Angold, PG, **Sadler, J.P.**, Hill, M.O., Pullin, A.S, Rushton, S, Austin, K, Small, E.C. Wood, B., Wadsworth, R., Sanderson, R. & Thompson, K. (2006) Biodiverisity of urban habitat patches. Science of the Total Environment. 260, 196-204.

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