University of Birmingham

Professor Geoff Petts

Honorary Professor

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Biography

Having gained his BSc in Geography (Liverpool University 1974) and PhD (University of Southampton 1978), Geoff Petts was appointed Lecturer in Geography at Loughborough University in 1979 where he was awarded a chair in 1989. After three years as Head of the Geography Department he moved to Birmingham in 1994 as Professor of Physical Geography. He became Director of the Centre for Environmental Research and Training (1996) and Head of the School of Geography and Environmental Sciences (1999). He was Pro-Vice-Chancellor of the University of Birmingham from 2001 until becoming Vice-Chancellor and Rector of the University of Westminster in August 2007.

He has held a number of external appointments, including: Director of the International Water Resources Association, Council Member of the Freshwater Biological Association, Member of the NERC Centre for Ecology and Hydrology Programme Development Group, Scientific Advisory Committee for the UNESCO IHP Eco-Hydrology Programme and the International Council for Science (ICSU) Scientific Committee on Water Research. He is Editor-in-Chief of the international journal River Research and Applications.

In 2007, the Council of the Royal Geographical Society (with the Institute of British Geographers) awarded Professor Petts with the Busk Medal for his outstanding contributions to 'research on river conservation'. In 2009 the International Society for River Science awarded him a Life-time Achievement Award.

Postgraduate supervision

Research Students since 2001

M.P.Gosslin (funded by University College Worcester; with I.Maddock) "Hydraulic habitat dynamics". PhD Awarded 2010.

R. Francis (NERC Funded; with AM Gurnell) "Biogeomorphology of island-braided channels". PhD Awarded 2004.

J. Emery (NERC Funded; with AM Gurnell) "Hydraulics of Pool-riffle sequences" PhD Awarded 2003.

T.Grapes (NERC Funded CASE with NERC-CEH; with C.Bradley) "Surface water-groundwater interactions along rivers" PhD Awarded 2003

Research

Environmental flows and the impacts of dams, reservoirs and water abstractions
Fluvial geomorphology, especially sedimentation processes and vegetation development
Freshwater ecology, particularly the dynamics of riverine ecosystems over decadal timescales

Current major projects include:
Urban river dynamics and ecological enhancement (NERC, EU)
Channel sedimentation and flow regulation below Roadford Reservoir (SW Water)
Formation of a new river channel: flow, sediment and vegetation dynamics (NERC; with Kings College London, Nottingham and University College London)
Channel dynamics, vegetation development and biodiversity: the Tagliamento River, Italy (NERC; Knigs College London and ETH Zurich)

Publications

Key Publications since 2001

Milner A.M, Brittain J. and G.E. Petts "A new model for alpine glacial river ecosystems" *Freshwater Biology*, 2001, 46, 1833-1848.

Gurnell, A.M., Petts G.E., Hannah D.M., Smith B.P.G., Edwards P.J., Kollmann J, Ward J.V. and K. Tockner "Riparian vegetation and island formation along the gravel bed Fiume Tagliamento" *Earth Surface Processes and Landforms*, 2001, 26, 31-62.

Gurnell A.M and G.E. Petts "Changing riverine landscapes" *Freshwater Biology*, 2002, 47, 581-600.

Naiman R.J., Bunn S.E. Nilsson C., Petts G.E., Pinay G. and L.C. Thompson "Legitimizing Fluvial ecosystems as users of water: an overview" *Environmental Management*, 2002, 30, 4, 455-467.

Gurnell, A.M., Tockner K., Edwards P. and G.E.Petts "Effects of deposited wood on biocomplexity of river corridors. *Frontiers in Ecology and Environment* 2005, 3, 7, 377-382.

Petts, G.E. and A.M. Gurnell "Dams and geomorphology: research progress and future directions". *Geomorphology*, 2005, 71, 27-47.

Petts, G.E., Nestler, J. and R. Kennedy "Advancing science for water resources management." *Hydrobiologia*, 2006, 565, 277-288.

Gurnell, A.M. and G.E.Petts "Trees as riparian engineers: the Tagliamento River, Italy." *Earth Surface Processes and Landforms*, 2006, 31, 1558-1574.

Clifford, N.J., Harmar, O.P., Harvey, G. and G.E. Petts. "Physical habitat, eco-hydraulics and river design: a review and re-evaluation of some popular concepts and

methods." *Aquatic Conservation*, 2006, 14, 389-408.

Gurnell, A.M., Blackall, T.D. and G.E. Petts. "Characteristics of freshly deposited sand and finer sediments along an island-braided, gravel-bed river: the roles of water, wind and trees". *Geomorphology*, 2008, 99, 254-269.

Petts, G.E. "Instream-flow science for sustainable river management". *Journal of the American Water Resources Association*, 2009, 45, 1071 – 1086.

Yin, Xin'an, Zhang, Yang Z-F and G.E.Petts. "Reservoir operating rules to sustain environmental flows in regulated rivers" Water Resources Research 2011, 47, W08509, doi 10.1029/2010WR009991

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