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Summary

Biography

I am a catchment hydrologist and hydrogeologist. My research aims to provide a better understanding of how climate, land-use and land management affect the quantity and quality of surface and groundwater over the short- and long-term. I am particularly interested in the diffuse transport of nitrate from agricultural watersheds.

I studied Engineering at Durham University before completing a PhD in Civil and Environmental Engineering at Imperial College London. Then I spent three years working in industry, latterly as Principal Consultant for White Young Green, before moving to Cranfield University as a Lecturer in Soil and Water Engineering in 2007. I joined the Department of Civil Engineering at the University of Bristol in March 2010.

I was recently leader of Work Package Hydrology for the **A**rctic **B**iosphere **A**tmosphere **C**oupling at M**ul**tiple **S**cales (ABACUS: www.abacus-ipy.org) research project, funded by the National Environmental Research Council (NERC) as part of the International Polar Year (IPY). In 2008 I was given a Young Investigators' Award by the NERC-UKPopNet (www.ukpopnet.org) to improve hydrological modelling of catchments in the Welsh Uplands, and have also worked as a hydrological consultant for Yorkshire Water, WINGAS Storage UK, Egdon Resources, and the Portland Gas Company.

Memberships

Organisations

Department of Civil Engineering

Other sites

- Civilengineering

Research Groups

- Water and Environmental Engineering - Core

Recent publications

- Gnann, S, Woods, R & Howden, N, 2019, 'Is there a baseflow Budyko curve?'. *Water Resources Research*.
- Noacco, V, Duffy, C, Wagener, T, Worrall, F, Fasiolo, M & Howden, N, 2019, 'Drivers of inter- and intra-annual variability of dissolved organic carbon concentration in the River Thames between 1884 and 2013: Century-long rise in fluvial DOC variability'. *Hydrological Processes*.
- Worrall, F, Burt, TP, Howden, NJ, Hancock, GR & Wainwright, J, 2018, 'The fate of suspended sediment and particulate organic carbon in transit through the channels of a river catchment'. *Hydrological Processes*, vol 32., pp. 146-159

- Worrall, F, Howden, NJ, Burt, TP & Bartlett, R, 2018, 'Declines in the dissolved organic carbon (DOC) concentration and flux from the UK'. *Journal of Hydrology*, vol 556., pp. 775-789
- Civan, A, Worrall, F, Jarvie, HP, Howden, NJ & Burt, TP, 2018, 'Forty-year trends in the flux and concentration of phosphorus in British rivers'. *Journal of Hydrology*, vol 558., pp. 314-327
- Howden, NJ, Birgand, F, Burt, T & Worrall, F, 2018, 'The seven sources of variance in fluvial flux time series'. *Hydrological Processes*, vol 32., pp. 3996-3997
- Brenner, S, Coxon, G, Howden, NJK, Freer, J & Hartmann, A, 2018, 'Process-based modelling to evaluate simulated groundwater levels and frequencies in a Chalk catchment in south-western England'. *Natural Hazards and Earth System Sciences*, vol 18., pp. 445-461
- Granger, SJ, Yang, Y, Pfahler, V, Hodgson, C, Smith, AC, Le Cocq, K, Collins, AL, Blackwell, MS & Howden, NJ, 2018, 'The stable oxygen isotope ratio of resin extractable phosphate derived from fresh cattle faeces'. *Rapid Communications in Mass Spectrometry*, vol 32., pp. 703-710
- Coxon, G, Freer, J, Lane, R, Dunne, T, Howden, N, Quinn, N, Woods, R & Wagener, T, 2018, 'DECIPHeR v1: Dynamic fluxEs and ConnectIvity for Predictions of HydRology'. *Geoscientific Model Development Discussions*.
- Noacco, V, Wagener, T, Worrall, F, Burt, TP & Howden, NJ, 2017, 'Human impact on long-term organic carbon export to rivers'. *Journal of Geophysical Research: Biogeosciences*, vol 122., pp. 947-965

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