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Research Associate

**Area of research**

Biogeochemistry of freshwater systems

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**Summary**

My current research involves the characterisation of dissolved organic matter (DOM) in UK freshwaters in relation to inorganic nutrient export from a wide variety of catchment source areas. I am currently working as a postdoctoral research assistant funded under a NERC Large Grant (the DOMAINE programme). The DOMAINE programme aims to assess the origins and rates of Dissolved Organic Carbon (DOC), Dissolved Organic Nitrogen (DON) and Dissolved Organic Phosphorus (DOP) flux to aquatic ecosystems as they vary over time and space in relation to catchment character, hydrological function and nutrient export. The project will also aim to assess the availability of DON and DOP to riverine phytoplankton and macrophytes and their contribution to N and P uptake by these functional groups.

My work on the programme involves the quantification and characterisation of DOM using a combination of both traditional nutrient analyses combined with novel approaches including excitation emission fluorescence spectroscopy to determine the environmental controls on DOM delivery to riverine ecosystems.

**Keywords**

- Biogeochemistry of freshwater systems

**Memberships**

**Organisations**

[School of Geographical Sciences](#)

**Research groups**

- [Hydrology Group](#)

**Recent publications**

- Brailsford, FL, Glanville, HC, Golyshin, PN, Johnes, PJ, Yates, CA & Jones, DL, 2019, '[Microbial uptake kinetics of dissolved organic carbon \(DOC\) compound groups from river water and sediments](#)'. *Scientific Reports*, vol 9.
- Yates, CA, Johnes, PJ & Spencer, RG, 2019, '[Characterisation of treated effluent from four commonly employed wastewater treatment facilities: A UK case study](#)'. *Journal of Environmental Management*, vol 232., pp. 919-927
- Reay, M, Yates, C, Johnes, P, Arthur, C, Jones, D & Evershed, R, 2019, '[High resolution HPLC-MS confirms overestimation of urea in soil by the diacetyl monoxime \(DAM\)colorimetric method](#)'. *Soil Biology and Biochemistry*, vol 135., pp. 127-133
- Yates, C, Johnes, P, Owen, A, Brailsford, F, Glanville, H, Evans, CD, Marshall, M, Jones, D, Lloyd, C, Jickells, T & Evershed, R, 2019, '[Variation in dissolved organic matter \(DOM\) stoichiometry in UK freshwaters: Assessing the influence of land cover and soil C:N ratio on DOM composition.](#)'. *Limnology and*

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- Brailsford, F, Glanville, H, Marshall, M, Golyshin, P, Johnes, P, Yates, CA, Owen, A & Jones, D, 2017, '[Microbial use of low molecular weight DOM in filtered and unfiltered freshwater: Role of ultra-small microorganisms and implications for water quality monitoring](#)'. *Science of The Total Environment*, vol 598., pp. 377-384
- Yates, C, Johnes, P & Spencer, R, 2016, '[Assessing the drivers of dissolved organic matter export from two contrasting lowland catchments, U.K.](#)'. *Science of The Total Environment*, vol 569?570., pp. 1330-1340
- Yates, CA & Johnes, PJ, 2013, '[Nitrogen speciation and phosphorus fractionation dynamics in a lowland chalk catchment](#)'. *Science of The Total Environment*, vol 444., pp. 466-479
- Comber, S, Crossman, J, Daldorph, P, Johnes, PJ, Kelly, M, Mistry, R, Robinson, S, Whitehead, P & Yates, CA, 2012, '[Phosphorus contributions from WwTW discharges to watercourses and their long term impacts relative to other sources](#)'. UK Water Industry Research Limited

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