

Personal profile: I am a multi-disciplinary Earth Scientist, specialising in fluvial geomorphology, sedimentology and hydrology. Overall, my research looks at the source to sink of sediment over different spatial and temporal scales (including deep time), and in recent years my work has looked at fine-grained sediment as a diffuse pollutant and the impact of invasive species (bio-geomorphology) on geomorphic processes. For the last 9 years, I have been working to translate research (including my own and fellow colleagues) into stakeholder-driven solutions related to river catchments, generating both economic and societal benefits. I am currently a senior lecturer at Edge Hill University in Earth Sciences teaching across both the Geology and Physical Geography and Physical Geography Degree Programmes (BSc). I am working towards chartered status via CIWEM to showcase my industry skillsets.

Selected successful Funding and awards: (total income as PI/CO-I: £ 552, 821)

2015: Gill Harwood Memorial Fund award (BSRG): costs associated with cosmogenic dating (£500)

2015: BSG postgraduate award: costs associated with cosmogenic dating (£450)

2016: BSG postgraduate conference award: attendance to the EGU conference, Vienna (£850)

2018: NERC Industrial Mobility Fellowship (PI total: £57,691, NERC contribution: £46,527)

2020: Nidderdale AONB work with University of Leeds, School of Earth & Environment (CO-I: £8,749) – I led on bid development, project management (including contracts and payment) and technical delivery.

2020: iCASP bolt on project on Upper Rother: modelling impact of natural flood management (CO-I: £60,443)

2020: iCASP project on Swinton Estate (CO-I: £42,225) – I was approached for this project and led on bid development, project management and technical delivery.

2021 - 2024: NERC Knowledge Exchange Fellowship (PI: £171,148 from NERC)

2021: water@leeds water women award for impact (£1000)

2022-2023: Yorkshire Water, Derwent AMP7 investigation on impact of Signal Crayfish on the sediment budget of the Derwent (CO-I: £104,000) – Yorkshire Water approached me regarding this opportunity, I was responsible for bid writing, project management, fieldwork and technical input (YW.200522)

2022-2023: National Trust and Nidderdale AONB - Skell Monitoring Programme, funded by the Heritage Lottery Fund (CO-I: £63,500) – I was approached for this project due to my previous input into a report that was appended to the HLF bid application. I was responsible for bid writing, fieldwork and technical input.

2024 - ongoing: BSG Outreach award: (PI: £1000). I was responsible for bid writing, network building and outreach documents.

2024 - ongoing: National Isotope Environment Facility (CO-I: £41,265) – I supported bid writing and lead on workpackages related to modelling and knowledge exchange; extending my network across the UK.

2026: Finalist of EHU ECR Rising Star ROAR award

In Review:

2026: Royal Society Research Grant (PI: £30,000) – To secure field work costs and new equipment to research fine-sediment in the Weaver-Gowry Catchment, Cheshire.

Significant Unsuccessful funding:

2025: NERC Future Leaders Fellowship (PI: £1.49 million) to facilitate my transition to a global leader in research related to fine-grained sediment, including managing PDRAs. Shortlisted to be one of two submissions from EHU.

2026: Royal Society Community Grant (CO-I: £105,000). I helped write the impact part of the proposal and would have led on Knowledge Exchange/ impact generation and tracking within the award.

Relevant work experience:

Senior Lecturer in Earth Sciences (Physical Geography and Geology), Edge Hill University, Feb 2023 – present

Learning and Teaching:

I currently lecture across both the Geology and Physical Geography and Physical Geography degree programmes adapting to both sides of my discipline (fluvial sedimentology, geomorphology and hydrology). Roles include: teaching, designing courses, supervising and supporting students, research and knowledge exchange.

I am module leader for Dynamic Earth (GEO1245), Earth History (GEO1247), Sedimentology (GEO2259) and Flood Hazard and Management GEO3252. I contribute to fieldwork on the following modules: GEO1060, GEO1246, GEO2260 and have been the Physical Geography Lead for GEO2250.

I moderate multiple modules such as GEO1246, GEO1058, GEO2255, GEO2260, GEO2262.

KE and citizenship, service and externality roles:

I am on the following department committees: Research and Knowledge Exchange; Recruitment, Employability (GEO employability lead) and Engagement Team. I was part of the successful Athena Swan working group. I sit on external catchment partnership networks such as the River Douglas Catchment partnership and North-West River Forum. I am also representing EHU on the external working group of CIWEM for their Flood and Coastal Conference. I am co-lead of EcoEdge, an environmental consultancy of EHU and I am active in CPD (e.g., teacher training, flooding).

Research: I am active in the field of geomorphology and sedimentology and routinely apply for and secure external grants.

NERC Knowledge Exchange Fellow (PI), Edge Hill University, July 2021 –June 2024 [Geography]

Principle Investigator NERC-funded fellowship

'Sediment matters - using recent advances to unlock effective catchment decision-making'

Springboard Partners: Environment Agency, Nidderdale AONB, Yorkshire Water, Natural England, Yorkshire Wildlife Trust, Ricardo Energy and Environment.

Principle Investigator for £171,148 project. I facilitated a network related to translating recent advances in sedimentology and geomorphology into catchment solutions related to water quality, natural flood management and payment for outcomes. The project was cross-disciplinary whereby I acted as a knowledge exchange node between different researchers / universities and external partners including statutory agencies, companies, and Non-Governmental Organisations. Through this work I generated a range of stakeholder-led outputs that is enabling NERC-funded science to be rapidly embedded into organisations. I also identified research gaps, stakeholders needs and learning how different organisations operate via a series of secondments.

Key skills

- Leading a large network of stakeholders and academics
- Rapidly translating information to a range of organisations, tailoring advice and outputs
- Working across different universities and disciplines to help answer stakeholder sediment related questions
- Project management and finance
- Workshop facilitation
- Communications: policy briefs, press release, magazines, website / twitter updates

NERC Impact Translation Fellow, School of Earth and Environment, Yorkshire Integrated Catchment Solution Programme (iCASP), University of Leeds. April 2017 – January 2023 [Geography]

Springboard partners: Arup, City of Bradford Metropolitan District Council, City of York Council, Environment Agency, JBA, Leeds City Council, Met office, Natural England, National Farmers Union, Yorkshire Water, Yorkshire Wildlife Trust, Yorkshire Dales Rivers Trust.

My role within iCASP was to translate research through co-created projects with stakeholders and partner universities (University of York, Sheffield and Leeds). I led and managed several projects and applied for additional funding and projects. I led **sixteen** projects and produced **>35 outputs**. Projects were co-designed with stakeholders and are related to workstream areas such as water quality, flood and drought risk mitigation, flood forecasting and climate resilience and sustainable agriculture. Through this role, I gained a wide understanding of stakeholder needs and the ways in which information can be translated to have impact. I liaised with academics and stakeholders (statutory industries, water companies, local councils etc.) and led development and delivery on a range of projects relating to natural flood management, water quality, invasive non-native species, payment for outcomes and data management.

Key skills:

- Part of a large network with >100 stakeholders organisations
- PRINCE 2 qualification
- Workshop preparation and facilitation (in person and online)
- Project development
- Project management (including finances)
- Client / stakeholder liaisons including large partnerships
- Presentations to a range of organisations (both technical and non-technical)
- Adaptability to apply skillset
- Team working – both with core iCASP members and within projects
- Co-designing projects within the partnership
- Technical report writing
- Supervising team members and skill building

- Tracking impact and forming pathways to impact for each project.
- Impact tracking
- Media trained by Boffin Media
- Bid writing including scoping and tendering processes
- Communications: policy briefs, press release, magazines, website / twitter update

NERC Industrial Mobility Fellow (PI), University of Leeds, January 2018 – June 2018 [Geography]

Principal investigator for a NERC funded (£~60k) fellowship working with Yorkshire Water on the River Derwent, Yorkshire. During the project, I developed erosion risk maps for sediment using high resolution satellite imagery to assess where land management within the catchment should be put in under a range of scenarios, incorporating climate change. Key skills:

- Successful application of competitive funding
- Secondment into Yorkshire Water
- Managing the project, project development and finances as principal investigator on time and to budget
- Leading webinars and meetings to external organisations
- Conference dissemination
- Running workshops on the methodologies used (knowledge exchange)
- Close working relationship with Yorkshire Water and the Environment Agency
- Translating outputs to technical and non-technical audiences
- Completing risk assessments for fieldwork
- Flexibility to adapt to Yorkshire Waters needs (e.g., software input, incorporating ecological data)
- Reporting to NERC through Research Fish and liaising with the data depository team
- Fieldwork planning and purchasing of equipment
- Use of multiple GIS software (ArcGIS, QGIS, SAGA) and matlab.
- Media trained, Boffin Media

Environmental Scientist, Ricardo Energy & Environment, May 2016 –April 2017 [Geography]

I was responsible for completing geomorphological and hydrological assessments related to water company drought plans. I was responsible for interacting with clients and stakeholders, including statutory agencies, technical experts, and water companies. I have disseminated and presented results and discussed the implications of the reports to clients and stakeholders, discussed work with local landowners and produced new lines of research to address specific issues related to the water industry.

Academic Qualifications:

University of Leeds, School of Earth and Environment and School of Geography, PhD 2012 – 2016

Field, laboratory and remote sensing geomorphology based PhD: *Antecedent fluvial systems on an uplifted continental margin: constraining Cretaceous to present-day drainage basin development in southern South Africa. [Geology]*

The main aim of my PhD research was to constrain landscape development of a fluvial system in the Western Cape, South Africa. I used a multidisciplinary approach of geomorphology, sedimentology, geology and remote sensing. My work has wider implications for linking continental erosion and ocean sedimentation.

Supervisors: Prof. David Hodgson, Prof. Andreas Lang, Dr Jonathan Carrivick, Dr Andy Wilson

Edge Hill University, PGCERT Teaching in Higher Education, Postgraduate Certificate in Learning 2023 – 2024)

Degree: Distinction

Advanced HE accredited programme to develop pedagogical approaches.

Aberystwyth University, M.Phil in Geography 2011-2012

M.Phil: *Controls on the location, development and significance of bedrock reaches on the middle River Rheidol, west Wales.*

Investigation of bedrock erosion rates, reconstruction of flooding events and impacts using HEC-RAS, deciphering landscape development over the Quaternary.

Supervisors: Prof. Stephen Tooth, Dr Hywel Griffiths

Royal Holloway, University of London 2008-2011

Degree: BSc (First Class, Hons) Physical Geography and Geology

Mapping project in Sorbas basin, modules on sedimentology, stratigraphy, geological mapping, hydrogeology, geomorphology. Dissertation in Geography. I graduated the top joint student across the faculty.

Wider Qualifications:

2025 – present: Fellow of HEA

2020: Prince 2 Qualification: Foundation Certificate in Project Management

ECR support/ supervision:

Yongshen Chen (MRes 2021, University of Leeds, lead supervisor): Identification of microplastics using novel techniques

Training delivered: SENSE CDT (2022, University of Leeds), Evolve (EHU, 2025), GTA KE routes (EHU, 2025)

Academic Membership:

British Sedimentological Research Group (BSRG) – 2012 – present. Elected outreach Officer 2019 - 2023

British Society of Geomorphology – 2012 – present

British Society of Soil Science – 2024 – present

Selected peer-reviewed publications:

Published:

Bond, S; **Richardson**, J. C.; Keevil, G.; Brown, H.; Mann, I.; Crisp, G.; Hodgson, D. M.; Klaar, M., (In review)
A new approach to assessing natural flood management opportunities for land holdings'. *Journal of Flood Risk Management*

Emery, A.R., Hodgson, D.M., Barlow, N.L., Carrivick, J.L., Cotterill, C.J., **Richardson**, J.C, Ivanovic, R. & Mellett, C., 2020. Ice sheet and palaeoclimate controls on drainage network evolution: an example from Dogger Bank, North Sea. *Earth Surface Dynamics Discussions*, pp.1-36.

Richardson, J.C., Vanacker, V., Hodgson, D.M., Christl, M. and Lang, A., 2025. Constraining the timing and processes of pediment formation and dissection: implications for long-term evolution in the Western Cape, South Africa. *Earth Surface Dynamics*, 13(2), pp.315-339.

Richardson, J.C., Ferré, M., Rabb, B.L., Armstrong, J.C., Martin-Ortega, J., Hodgson, D.M., Willis, T.D.M., Grayson, R., Leeder, P. and Holden, J., 2021. Yorkshire Integrated Catchment Solutions Programme (iCASP): A New Model for Research-Based Catchment Management. *Handbook of Catchment Management 2e*, pp.359-383.

Richardson, J.C., Hodgson, D.M., Kay, P., Aston, B.J. & Walker, A.C., 2019. Muddying the picture? Forecasting particulate sources and dispersal patterns in managed catchments. *Frontiers in Earth Science*, 7, p.277.

Richardson, J.C., Hodgson, D., Paton, D., Craven, B., Lang, A., & Rawcliffe, A. 2017. Where is my sink? Reconstruction of landscape development in southwestern Africa since the Late Jurassic. *Gondwana Research* 45, 43-64.

Richardson, J.C, Hodgson, D., Wilson, A., Lang, A., & Carrivick, J. 2016. Testing the applicability of morphometric characterisation in discordant catchments to ancient landscapes: a case study from southern Africa. *Geomorphology*, 261, 162 - 176.

Selected Impact and KE outputs

Practitioner magazines:

Richardson, J.C., Armstrong, J.C., Klaar, M., Sullivan, E., Clarke, S., Brown, H and Brown, C., (2021)
National Trust and Farmers Trial Natural Flood Management Payments. The Environment. Pages 26 - 27. Feb 2021 [CIWEM]

Richardson, J.C., Armstrong, J.C., Hassall, C, Dunn, A. (2021) Tackling INNs and Implementing Biosecurity in Local Authorities: A Yorkshire Case Study. CIEEM In Practice. Pages 17 – 20. June 2021 [CIEEM]

Open access reports:

Bond, S, Willis, T, **Richardson J.C.**, Klaar, M. (2023) Modelling the Spital Brook catchment. Upper Rother Project. Yorkshire Integrated Catchment Solutions Programme.

Rabb, B., Armstrong J.A., **Richardson J.C.**, Willis, T. (2021) Developing a new business model for multi-functional forestry on Swinton Estate. Erosion & flood risk hotspot analysis to inform tree planting. Yorkshire Integrated Solutions Programme.

Richardson, J.C., Armstrong, J.A., Hassall, C., Leeder, P., Dunn, A.M. (2021). The economic costs of Invasive Non Native Species: why we need to slow the spread. Yorkshire Integrated and Catchment Solutions Programme (iCASP).

Richardson, J.C., Armstrong, J., Sullivan, E., Keep, H., Clarke, S., Brown C., Klaar, M. 2020. Integrating Natural Flood Management into Payment for Outcomes Schemes in the Yorkshire Dales. Yorkshire Integrated and Catchment Solutions Programme (iCASP).

Richardson, J.C., Brown, H, Keevil, G., South, J., Hodgson, D.M and Dunn A. (2023). Final Report: Derwent Sediment Analysis. AMP7 Derwent Sediment and Invasive Non-Native Species (INNS) (YW.200522)

Richardson. J.C., Hassall C., Dunn, A., (2021) The spread of Invasive Non Native Species in Yorkshire; the infestation and spread of INNS around development and urban land-use. Yorkshire Integrated and Catchment Solutions Programme (iCASP).

Richardson. J.C., Hassall C., Dunn, A., (2021) The spread of Invasive Non Native Species in Yorkshire;

the infestation and spread of Giant Hogweed. Yorkshire Integrated and Catchment Solutions Programme (iCASP).

Richardson J.C. and Hodgson, D.M. (2022). Bishops Dyke Sediment Modelling. Yorkshire Integrated and Catchment Solutions Programme (iCASP).

Richardson, J.C., Maltby, L., Warren, P., Brown, C and Klaar, M (2020) Opportunity mapping for natural flood management: a case study of the Don Hidden Heritage Secret Stream Project. A Yorkshire Integrated Catchment Solution Programme (iCASP) report developed in collaboration with the Don Catchment Rivers Trust.

Richardson, J.C., Villamizar Velez, M., Armstrong, J., Klaar, M., Brown., C (2020). An analysis of sediment and flow in the River Skell, Yorkshire: Natural Flood management and payment by results. Yorkshire Integrated Catchment Solution Programme (iCASP) report.

Shipp, E., **Richardson, J. C.**, Armstrong, J.C, Clarke S., Sullivan, E., Keep, H., Brown, C., and Klaar, M. (2021) Natural Flood Management Monitoring Tool. Yorkshire Integrated Catchment Solutions Programme.

Conference organisation:

Richardson, J.C., (2026). CIWEM Flood and Coast Flagship Conference: Steering Committee and co-organiser for Future of FCERM zone.

Richardson, J.C. (2024). Led organiser of: Sediment Matters: Integrating Recent Advances in Catchment Decision-Making. Hosted at EHU. Attendance from the following organisations: Amalgamated Construction Ltd; Calder Rivers Trust; Edge Hill University; Environment Agency; Greenslate Community Farm; Groundwork CLM; Loughborough University; Lune Rivers Trust; Mersey Forest; Mersey Rivers Trust; Natural England; Tees Rivers Trust; Tyne Rivers Trust; University of Huddersfield & Slow The Flow Calderdale; University of Leeds and University of Salford. (KEF funded)

Recent Conferences presentations and attendance:

Richardson, J.C; Sanders, C; Worne, S: The use of stable isotopes for sediment fingerprinting: deciphering source areas in Signal Crayfish impacted River Nene Catchment. British Society for Geomorphology AGM, University of Lincoln.

Richardson, J.C. and Jones, A.J. (2026). Sediment Matters: advancing flood records and catchment management decisions. Chartered Institute of Water and Environmental Management: Flood and Coast 2026, curated session.

Richardson, J.C. (2025) British Society for Geomorphology AGM. Invited Chair.

Richardson, J.C., Brown, H; Keevil, G.M; Aston, B; Dunn, A and Hodgson, D.M (2024). Sediment budgets in the River Derwent: Modelling and monitoring. British Society for Geomorphology AGM, Loughborough University.

Richardson, J.C., Brown, H., Keevil, G.M., Aston, B., and Hodgson, D.M. (2024): Sediment Budgets in The River Derwent, Yorkshire: soil erosion modelling. British Society of Soil Science AGM, Cardiff.

Richardson, J.C. (2023). Sediment matters: integrating recent advances into catchment decision making processes. British Society for Geomorphology AGM, Edinburgh University.

Richardson, J.C. (2023) British Society of Sedimentological Research, Loughborough University.