

<b>Institution:</b> York St John University
<b>Unit of Assessment:</b> Geography and Environmental Studies (UoA 14)
<p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>Unit context and structure</b></p> <p>The Geography subject group is situated within the School of Humanities (referred to hereafter as HUM) and comprises eight academic staff with a total of 7.2 full-time equivalent (FTE) of which 100% are eligible for Category A return. Geography was introduced as a new subject area at York St John University (YSJU) in 2014, with initially two academic staff (1.6 FTE; Couper, Parks). Since then, the unit has grown by two academic staff in 2016 (3.0 FTE), and four more in 2017 and 2018 to eight, supported by one technician (0.8 FTE). All staff are research active and deliver research-informed teaching in undergraduate degree programs.</p> <p><b>Research and impact strategy</b></p> <p>The unit has been established to address contemporary emerging environmental and social challenges in the UK and internationally, such as interaction between a society of changing attitude towards the environment, and the services, resources and risks provided by dynamic natural systems. Thus, a conscious strategy of appointing staff with multiple overlapping interests across the spectrum from physical geography to human geography was adopted, hereby contributing to two main research themes: Environment and Society and Dynamic Landscapes. These themes are supported by shared interest in:</p> <ul style="list-style-type: none"> <li>• landscape from both physical and cultural perspectives (Schwendel, Bailey, Schofield, Garlick);</li> <li>• understanding the physical and social dimensions of environmental hazards (Schwendel, Schofield, Adekola);</li> <li>• nature conservation as scientific and cultural practice (Bailey, Garlick, Couper);</li> <li>• access to nature and environmental values, behaviours and identities (Garlick, Couper, Parks, Fitzpatrick);</li> <li>• social and environmental sustainability (Parks, Adekola); and</li> <li>• place-based community engagement (Adekola, Parks, Fitzpatrick).</li> </ul> <p>The overall university strategy has three priorities: inspiring learning, impactful research, and enabling our students to be clear about their careers. The research strategy emphasises interdisciplinary working, demonstrating greater research excellence through external recognition, and wider dissemination of research as key goals. Aligned to this, the key objective of the UoA research theme Environment and Society is to create a hot spot for research into environmental and social sustainability with application and impact in a regional to international envelope. To accomplish this, the unit has been successful in actively developing collaborations within the group and with relevant stakeholder organisations, such as a formal partnership with Natural England's Humberhead Peatlands National Nature Reserve, ongoing dialogue with the National Association for Areas of Outstanding Natural Beauty (and individual AONBs) and collaboration with People, Landscape And Cultural Environment of Yorkshire (PLACE). This objective and resulting impacts on communities are demonstrated in the focus of the two impact case Studies; for example, the role of community music in achieving social sustainability and creation of community engagement with their physical and social environment. As part of the school's impact strategy, impactful research was supported by internal quality-related (QR) funds used explicitly for enhancing effects on beneficiaries.</p> <p>Research into Dynamic Landscapes has been accelerated since 2018 with new staff arrivals. The focus of this theme is the use of innovative approaches for the appraisal of changes in landforms and landscapes under the influence of natural and human drivers. This includes research into processes facilitating these dynamics and the resulting resources and hazards. Staff have a range of established and new external collaborations. The latter include Operation Wallacea's projects in Madagascar and Romania, and collaborations with the Yorkshire Wildlife Trust, St Nicks Centre for Nature and Green Living, York, The National Trust, the Royal Society</p>

for the Protection of Birds (RSPB) and the Environment Agency. These partnerships have already created strong links between the unit's research, stakeholder organisations and students' education. Research- and industry-informed teaching is achieved by involving staff of partner organisations in taught sessions (e.g., Environment Agency, environmental consultants Arup and City of York Council on flood management) and field projects (e.g., RSPB in Sherwood Forest or Natural England at Humberhead Levels), and encouraging dissertations within research or consultancy projects (e.g., within Flood Futures York: Risk and Social Justice or restoration of Osbaldwick Beck, York).

During this Research Excellence Framework (REF) cycle the unit has produced 63 outputs in total, of which 47 are suitable for UoA 14 REF return. Twenty-one percent of the unit's journal articles available through Web of Science are currently listed in the top 10% (2014–20) for normalised citation impact (mean NCI 1.37) (Web of Science/InCites).

### **Future strategic aims and goals**

As a new subject area submitting to REF for the first time, and with a substantial proportion of staff at an early stage in their careers, the unit will see the staff base maturing and gaining in experience and reputation over the next five years. The unit's overall aim is to build on the current momentum to enable research quality and quantity to grow, and to establish emergent interdisciplinary interests to address national and international concerns around landscape, nature, sustainability, and community. Progress towards this aim is already evident in the increase in research income since 2018 (see Section 3).

Four key goals are central to this aim:

- 1) To increase opportunity for research by growing our external income and taking advantage of the institutional support available (such as academic leave/sabbaticals and internal funding). The YSJU Research Office (RO), established in 2018, encourages grant applications by providing logistical support and advice in targeting relevant funding organisations. Increasing levels of bidding activity have already been observed within the UoA with 18 out of 19 grant applications submitted after 2018. The growing network of external partners will open opportunities for consultancy and/or applied work.
- 2) To further develop our partnerships and collaborations with external (non-university) organisations, ensuring our research is informed by, and relevant to, stakeholders and users. This also includes efficient means of community engagement in research projects, which is a key topic informed by our own research.
- 3) To increase our postgraduate provision. Central to this is a desire to attract postgraduate research students. The unit has already undertaken first steps into postgraduate provision with the completion of studies of one full-time PhD student and another part-time PhD in progress during the REF assessment period. The establishment of a research dialogue with staff members of the local Askham Bryan College in 2020 aims to attract them for PhD research to the unit, which is supported by YSJU with fee waivers. We also envisage taught postgraduate provision as enriching the research culture, strengthening our external partnerships through work-based or work-related learning (thus contributing to our second goal) and providing ground for postgraduate research student recruitment. To date, scoping for demand in MA/ MSc/ PGDip level programmes in the areas of Landscape, Environment and Conservation (linking with the Dynamic Landscapes theme), Environmental Humanities (linking with Environment and Society) and Human Geography has been carried out.
- 4) To increase our facilities in strategic areas such as remote sensing, geospatial analysis and environmental data collection and analysis. This is reflected in a strong commitment to internal investment by HUM (see Section 3), as well as the use of academic networks (e.g., Terrestrial Laser Scanning International Interest Group) and collaborations with other academic partners.

### **Open research environment**

YSJU supports the principle of open access (OA) and where possible follows the "green" OA route. In response to the university's open access and open data agenda, an institutional

repository, Research at York St John (RaY), has been developed over the last five years, which makes researchers' publications available to the wider public, in open access wherever permissible. As RaY is searched by Google Scholar and CORE, these can be shared with individual members of the wider public via "Request a copy" buttons that have been added to all embargoed outputs on RaY. Direct downloads of the unit's outputs from RaY have almost doubled within the last two years and have reached a total of more than 2,000 to date (on average 457 per FTE and year). In 2019, a companion repository, RaYDaR, was launched, which enables researchers to upload their research data in addition to their publications.

The Geography UoA commitment to OA exceeds the REF minimum open access requirements in that all geography journal articles and book chapters since April 2016 and 81% of publications prior to this date are available as full text. Where embargo prevents upload of typeset versions, author accepted manuscripts have been provided in all cases. In the current REF cycle, 79% of the unit's outputs have been published in open access journals or open access charges have been paid (source: InCites/ Web of Science).

### **Research integrity**

YSJU is committed to maintaining the highest ethical and integrity standards in research carried out by staff and students. As such it complies with Universities UK's Concordat to Support Research Integrity and our policies ensure allegations of academic misconduct are investigated thoroughly and rigorously, although such an instance has never occurred in the submitting unit. The UoA has a strong record of promoting ethical aspects in research. As such, Garlick and Adekola are members of the HUM ethics committee, with the latter currently chairing it.

## **2. People**

### **Staffing strategy**

The staffing strategy of the unit reflects the balance of implementing the research strategy and providing teaching expertise across the spectrum of physical, environmental, and human geography. Initial staffing (Couper, Parks) allowed establishment of the common research theme Environment and Society. This was strengthened with the appointment of two more staff to bolster the research in urban environments (Fitzpatrick) and animal geographies (Garlick) in the following two years. The parallel appointment of Schofield in 2016 expanded the theme towards human-environment interaction on a landscape scale, which also acted as a seed to establish the second research theme, Dynamic Landscapes. The latter was developed with the employment of Schwendel and Bailey over the next two years. The appointment of Adekola (2017) filled a gap in both research groups in terms of providing expertise in policy and stakeholder engagement and supported implementation of the impact strategy. The unit's research capacity has been strengthened with the appointment of a technician in 2018.

Having overlapping research interests enables, in alignment with an appropriate research strategy, internal collaboration, efficient acquisition and use of equipment and infrastructure. It also allows development of specialised and interdisciplinary research hotspots, which is important for such a small unit (in terms of FTE).

All staff within the unit are employed on permanent/open-ended contracts, which provides a certain level of security for implementing the research and impact strategy. As it is a new subject at YSJU, most staff have been appointed at lecturer level. Three of the eight academic staff of the unit (42% of total FTE) are classified as early career researchers (ECRs). Two members (Parks, Schwendel) have since been promoted to senior lecturer. While the university, HUM and the unit seek to grow research, staff costs are primarily covered by undergraduate fees; therefore, success in growing the unit's undergraduate numbers has facilitated growth in the staff base.

### **Staff development**

Staff have an annual personal development review (PDR), with research as an integral part. Topics discussed include reviewing progress, setting objectives for published outputs, research

engagement (grant applications, PGR supervision, scholarship, knowledge exchange) and research development (external visibility, conference attendance, networking). YSJU is a signatory on the Vitae Concordat to Support the Career Development of Researchers, which directly informs our staff development approach. Our centralised research CPD programme (over 40 sessions) is aligned to the four core Vitae competencies and recognises staff individual development needs while also acknowledging that a common set of requisite personal and professional skills are needed for success. CPD delivery is mainly delivered by our professoriate and by external speakers (e.g. Professor Mark Reed delivered our impact workshop). Our new open data repository service (RaYDaR) and research repository (RaY) will further increase the impact and transparency of research at YSJU and support researcher development.

Technical staff have benefitted from a 24-month action plan to implement the pledges of the Technician Commitment after YSJU becoming signatory in 2018.

Professional development opportunities are available via internal courses or external providers, with recent examples including software training (Couper, Parks, Schwendel) and workshops on research ethics, impact and funding applications, Royal Geographical Society (RGS) Teaching in Geography, Parliament for Researchers and Diversifying Leadership (Adekola, Bailey, Schofield). The university's technology-enhanced learning team supports the development of digital capabilities in line with the UK Professional Standards Framework and Vitae Researcher Development Framework.

At school level, HUM provides internal research funding (see Section 3) and research mentoring organised by the school research lead (SRL). The latter is a professorial-level post that was created to manage and promote research among staff and postgraduate researchers (PGRs) within the school. The SRL arranges research mentoring (by trained senior staff with proven research experience) for less experienced researchers as well as working with the RO to ensure training programmes and support are in line with current needs.

Monthly HUM research seminars and the annual HUM research conference have been used by Geography staff to showcase their research projects and develop internal interdisciplinary collaborations (Adekola, Couper, Garlick, Parks, Schofield).

The Geography subject group provides additional staff development and research support, for example a seminar series (comprising five seminars per academic year with internal and external speakers) aimed at staff and Geography students, unmanned aerial vehicle (UAV) training and licensing (Schofield, Schwendel) and time allowances for ongoing external research projects (Bailey).

### **Research students**

Despite the young age of the Geography subject group at YSJU, the unit has one completed PhD and an ongoing supervision. Additionally, Adekola is an external advisor on the supervisory team of a PhD research student in the School of Natural Sciences, Manchester Metropolitan University, and Garlick is external supervisor to a MSc student dissertation in the Royal (Dick) School of Veterinary Studies, Edinburgh. This reflects their academic standing in their field of research. As a new unit, the establishment of a PGR community is in its infancy, but over the next REF cycle there is the ambition to grow this field (see Section 1).

YSJU has well-established processes for induction, training, and monitoring of PGR students. Formal reviews of PGR student progress are conducted every six months by academics external to the supervisory team. Progress is monitored centrally four times a year (by Research Degree Committee). All supervisory meetings are logged. Supervisory teams are made up of multiple academic staff from the PGR student supervisory register. To be added to the register, staff are required to meet stringent criteria for PGR supervision eligibility pertaining to engagement in research, continual professional development and formal YJSU training. Endorsement from Heads of School or School Research Leads is also required. Applications are assessed by a

central committee of senior research staff (again, by Research Degree Committee). It is mandatory that all supervisory teams have at least one member of staff with experienced supervisory status (have previously supervised a PhD student to successful completion). In addition, all PGR students have a PGR tutor who is available to provide support outside of the supervisory team.

All students undertake needs analysis periodically and an individually tailored training programme is created. The needs analysis is based on competencies in the Vitae Researcher Development Framework. Support is provided by supervisory teams and via a centralised PGR training programme that includes core and supplementary workshops at each year of study. Like our staff training programme, our PGT training programme aligns with the Vitae Researcher Development Framework. Core parts of the programme include Research Ethics and Integrity, General Data Protection Regulation (GDPR) for Research, Data Management, and Copyright and Intellectual Property rights. These sessions are compulsory for all PGR students.

A range of other central and local support is available to PGR students that include (1) access to centralised services (e.g. Student Services, Chaplaincy, Library and Learning Services, Careers); (2) access to a stipend of up to £900 (£450 part-time) to support travel and consumables associated with their research and professional development; (3) access to the YSJU Graduate Centre providing study space and remote access to a range of specialist software; (4) opportunity to complete a postgraduate certificate in academic practice to achieve associate fellowship of the Higher Education Academy (HEA); (5) administrative support provided by the School and Research Office and (6) various PGR events held throughout the year (e.g., Three Minute Thesis (3MT), Bake Your Thesis, and the annual PGR conference).

In addition to the institutional provision of facilities and training, the school also organises an annual PGR day conference at which PGRs present issues arising from their research that are related to method. This allows even new starters to discuss methodology and common issues from a range of disciplines. The annual HUM research conference and a school-level research seminar series provide opportunities for exchanges between wider staff and the PGRs. The seminar series comprises roughly eight external and internal speakers per academic year with the latter also including PGRs.

### **Equality and diversity**

UoA14 sits within a broader context of support for equality and diversity at YSJU which has implemented several initiatives which ensure policies and practices relevant to researchers are inclusive, equitable and transparent. This is formalised in the YSJU Equality, Diversity and Human Rights Policy and the targets within the YSJU 2026 strategy (e.g., 10% BAME student and staff population; all staff are engaged in equality and diversity training and development appropriate to their role; median gender pay gap below 10%; 95% of staff think the university is a good place to work). Equality impact assessments are a routine part of annual monitoring and progress towards YSJU targets are reported to executive board and the governing body on a yearly basis. Of additional note, YSJU is a member of the Athena SWAN Charter (and is currently applying for a Bronze Award), a Stonewall Diversity Champion (ranked 49th place on the 2020 Top 100 Employers list) and Top 20 Trans employer, a Disability Confident employer, and a Mindful Employer. There are also several active staff networks available for staff to join that align with these awards and this agenda including the LGBT+, BAME and Disability staff networks.

Geography is highly diverse in many aspects, which reflects its recruitment policy. Within the group there is gender parity and two thirds of staff on higher (senior lecturer or above) grades are female. One in four are of international background and more than one ethnicity is represented. Whilst most of the policies for staff and PGRs are driven by the highly inclusive approach to equality and diversity taken by YSJU (outlined in part 5a), the atmosphere of diversity and equality in the submitted unit and the global focus of their research should enable recruitment of staff and PGRs from any background. All staff have received training in equality and diversity and elimination of unconscious bias as part of their induction. Additional training

promoted by HUM in topics such as cultural awareness and LGBT inclusion has been attended by members of the unit.

Flexible and remote working is supported by HUM and the university by the aspiration to timetable at least one day per week without teaching if possible (e.g., outside weeks with residential field trips). Working at home is arranged on request by the line management and all members of the unit have made use of this opportunity on a regular basis.

Parental leave has been made use of over two periods by Geography staff in the current REF cycle. Increase in FTEs of other staff or temporary cover buffered the effects on workload within the small team and ensured research activity would not be compromised.

The two part-time staff in the unit enjoy support in terms of day-to-day arrangements such as scheduling of training sessions and meetings and flexibility around residential teaching field trips. They have the same opportunities in accessing internal funding (e.g., five out of six applications were successful) and career progression (one was promoted to senior lecturer).

UoA14 complied fully with the YSJU institutional code of practice in selecting research outputs. The UoA lead also undertook Advance HE training on equality and mitigating bias as part of the role. Due to the small size of our submission, it is not possible to report a profile at UoA level here while also complying with HESA guidelines on anonymous reporting when presenting Equality and Diversity data (e.g., all our percentages would be based on less than 22.5 FTE). However, equality and diversity data for the UoA was reviewed internally following the completion of output selections and reported to both the School Academic Leadership Team (SALT) and Athena SWAN development groups as part of promoting greater diversity and inclusion at UoA, school, and institutional levels. Our data was also included as part of an equality and diversity impact assessment at institutional level.

### 3. Income, infrastructure and facilities

#### Research funding and income

The unit has been active and successful in obtaining funding from internal and external sources. Particularly over the last three years of the REF cycle the group was involved in 18 applications (ten of those as principal investigator [PI]) for research grants of which eight with a total value of £109,000 were successful. Applications have been made to a range of research councils (e.g., Arts and Humanities Research Council [AHRC], Natural Environment Research Council [NERC]), charitable organisations (e.g., Joseph Rowntree Charitable Trust [JRCT], Leverhulme) and research networks. As the examples provided below show, the grant acquisition strategy is well aligned with the UoA's impact strategy (see Section 1):

- Royal Academy of Engineering grant (2018) to Adekola (PI) for research on climate-resilient aqua-culture (£19,600)
- Rising from the Depths network grant (2019–20) on which Adekola is co-investigator (Co-I) for research on social learning in the management of ecosystem services (total £29,900, of which £1,400 went to YSJU)
- AHRC grant (2019) providing financial support (~£3,000) to Adekola as Co-I to support environmental education of young people (total £25,000, no direct Higher Education Standards Agency [HESA] research income to YSJU)
- Royal Academy of Engineering grant (2018) providing financial support (~£2,500) to Adekola as Co-I on improving social and environmental health via more sustainable ship-breaking processes (total £20,000, no direct HESA reported research income to YSJU)

There is a clear trajectory of growing research income from external sources towards the end of the REF period. The UoA's research income strategy foresees increasing grant success in the next REF cycle by strategically targeting funding opportunities that facilitate impact from the unit's research, either individually or collaboratively. In 2020, already five out of eight bids were based on internal collaboration within the research themes, which has already resulted in 38% success to date. While these collaborations resulted in more efficient grant application (e.g.,

review of applications across groups) and administration processes, it also demonstrates the first steps in carrying out the research income strategy. The latter also includes, supported by the RO (see below), enabling and encouraging all members of the unit to apply for external funding and ensuring funding success precipitates in direct research income rather than in-hand support from collaborators.

Most members of the unit have received internal funding via competitive bids from sources such as QR funding and catalyst funding for field work, research trips, specialist support services, public engagement and catalyst projects. During the REF cycle, 22 applications have been made by seven members of the Geography group for this type of funding, with a 95% success rate. To give some examples:

- Adekola and Schwendel received QR funding in 2020 for the project Flood Futures York: Risk and Social Justice, which facilitated stakeholder participation in flood management (£10,300).
- Parks and Bailey were CIs on a QR-funded project on students' expectations, anxieties and agency in social justice in 2020 (£3,300).
- Schwendel received catalyst funding for the purchase of a sonar-supported radio-frequency identification (RFID) gravel-tagging system in 2020 (£2,910).
- Fitzpatrick received funding twice for travel, photographic exhibits and interview transcription, which contributed to her exhibition at Warrington Museum and links to one of the unit's impact case studies (£1,500).
- Parks attained funding for organising a symposium in 2018 and travel funding to organise a conference session in 2019, both of which resulted in publications, further collaboration and networking, and contributed to an impact case study.
- Schofield received travel funding to Harvard Forest, resulting in one publication.
- Couper and Garlick received funds to employ a research assistant on their Humberhead Peatland collaboration with Natural England (£1,448).
- Funding of annual field work expenses in northern England for Schwendel enabled contribution to collaborative research, which led to two publications to date (£1,565).

Additionally, travel to meetings with the purpose to incept research or to inform investment in equipment was covered (Bailey, Couper, Schofield, Schwendel). Fitzpatrick and Parks also received QR funding targeted at implementing the unit's impact strategy.

The school finances conference attendance (fees, accommodation, travel and subsistence) where staff are delivering papers that are likely to lead to peer-reviewed outputs. Since 2014, five staff of the unit have been funded to attend eight national and four international conferences, with a 100% success rate in applications to access these funds.

Overall, 34 applications for internal funding have been made during the REF cycle, which is on average 0.87 applications per FTE and year with a total success rate of 97%. This shows how well the unit is engaging with the available internal funding opportunities.

### **Research infrastructure**

The introduction of the Environmental Geography programme was accompanied by significant investment to supply a suitable research environment for staff on the Dynamic Landscapes research group; for example, high-end PCs for Bailey, Schofield and Schwendel, and access to specific remote sensing and geospatial analysis software. The latter included institutional site licences (e.g., SPSS, NVivo, ArcGIS) and desktop licences (e.g., Agisoft Metashape, ERDAS Imagine, Matlab, Surfer, ReflexW). In accordance with the UoA's research strategy (see Section 1), since 2019 this area has been further strengthened by the purchase of two differential global navigation satellite systems (GNSSs), a versatile UAV with integrated 20 Mpix camera and a multispectral RTK UAV, as well as associated pilot training and licencing. Additionally, a sonar system, a mobile GNSS-supported RFID antenna and data logger for gravel clast tagging, water depth monitoring sensors and five microclimate loggers have been purchased.

In total, £95,000 was spent on the enhancement of environmental geography research infrastructure within four academic years since 2016, which amounts to an average annual spending of £10,500 per every associated academic (Bailey, Schofield, Schwendel).

Since 2018 a technician (0.8 FTE) with expertise in geographic information system (GIS), remote sensing and virtual reality has been employed to support the advances in hardware and software. In addition, collaborations within the university allowing access to 3D printers and the development of virtual-reality applications have been established. The group also has access to a range of surveying equipment via inter-institutional collaborations (e.g., terrestrial laser scanner, ground penetrating radar, electric resistivity ground imager) and international networks (Terrestrial Laser Scanning International Interest Group).

To facilitate the achievement of its key strategic aim of research with impact, the university launched its first dedicated RO in 2018. The RO includes a head (1.0 FTE) and a further 5.15 FTE staff. Its remit includes supporting grant applications, monitoring research performance, overseeing research governance and compliance, coordinating staff research training, and managing the PGR student experience. The RO also disseminates information on grants calls and provides support during the application process and throughout the grant period, services which have been accessed by Adekola, Couper, Garlick and Parks in this REF cycle. The work of the RO is complemented by a new Business Development and Knowledge Exchange Office (BDKEO). The BDKEO includes a director (1.0 FTE) and a further 13.5 FTE staff. The BDKEO is responsible for supporting staff in increasing the range and scope of applied research, business development and knowledge exchange.

The university library provides access to over 64,000 journal titles (excluding Open Access), with Geography now well represented across the breadth of the discipline. With Geography being a developing discipline at YSJU, the group has seen significant expansion since 2014. Since offering initially only an undergraduate programme in human geography, staff research was initially weighted toward this area along with the acquisition of scholarly infrastructure (e.g., access to literature). With the diversification of staff research interests since 2016, this has been complemented by purchasing access to ten collections and databases relevant to Geography, additional digital mapping resources within Digimap and participation in several evidence-based acquisition programmes. Spending on geography-specific titles and the discipline's share of broader subject collections has increased more than six-fold (623%) between 2016–17 and 2019–20, with a total of £133,300 spent over those four years. A notable spending commitment by the university is to allow unlimited free inter-library loan requests for all staff and PGRs. York's proximity to the British Library at Boston Spa means that most items can be obtained within a few days. The library will also send items by post to the home address of staff and PGRs, a great help for part-time staff who live some distance from York.

#### **4. Collaboration and contribution to the research base, economy and society**

##### **Collaborations**

Members of the geography group are engaged in a wide range of collaborative activities with colleagues in the UK and abroad. The relatively high proportion of ECRs within the unit means that many are still involved with the publication of research from previous PhD or post-doctoral projects (Adekola, Bailey, Garlick, Schofield, Schwendel). Moving forward, the emphasis for the unit is, in alignment with the research and impact strategy, to grow and deepen selected partnerships with non-academic organisations at local, national, and international level (see Section 1). The latter ensures a close alignment between research activities and the requirements of industry, NGOs and governmental institutions. Additionally, they provide staff with opportunities to build their personal networks, gain experience working with external organisations and enhance their likelihood of attracting competitive research funding. Alongside collaboration with colleagues at other academic institutions, interdisciplinary cooperation within HUM and across schools has already enabled successful bids for funding and will be promoted in future to unlock complementary expertise, technical skills and facilities, and to strengthen the unit's research themes.



Adekola's collaborations include a Rising from the Depths funded project with Ulster University and Pedagogical University, Mozambique, aimed at promoting the use of local knowledge in the management of marine cultural heritage; and a Royal Academy of Engineering funded project with researchers in Kenya (Kenya Marine and Fisheries Research Institute, Aquaculture Association of Kenya and Lattice Consulting), exploring adaptation of aquaculture infrastructure to climate hazards. He is also involved in collaboration with University of Plymouth, the Nigerian Institute for Oceanography and Marine Research and Bangladesh University of Engineering and Technology to develop sustainable processes that can be implemented to current ship-breaking practices in developing countries.

Adekola and Schwendel have led an interdisciplinary team from the HUM on a project that promotes community and stakeholder participation in creating resilience and adaptation to flood risk.

Schwendel is actively engaged in various projects, including the assessment of the sediment yield of Storm Desmond (2015) in the Lake District in order to inform sediment management (with colleagues in Hull and Salford); the geophysical exploration of palaeo-channels on upland valley floodplains to aid river restoration (in partnership with the National Trust, Hull and Salford); the geomorphological recovery of a mountain catchment from flash floods (collaboration with the University of Hull); the reconstruction of proglacial fan deposits on the Isle of Arran and the identification of pre-Ipswichian cliffs on the Yorkshire coast (with colleagues in Hull and Derby). He is leading a project on the appraisal of the topographic effects of a river meander cut-off and associated sediment and habitat management (in partnership with the Yorkshire Wildlife Trust). In York a collaborative project between the City Council, the Environment Agency and St Nicks Centre for Nature and Green Living is carrying out an urban stream restoration programme with high community engagement for which Schwendel acts as a scientific advisor.

The unit supports Bailey's involvement as senior scientist at the Romania field site of Operation Wallacea, a conservation research organisation that provides an academic and NGO network for the design and implementation of biodiversity research and expeditions. Bailey is also involved in collaborations with the University of Nottingham on buffering biodiversity against climate change in the Arctic, with Nottingham Trent University on lemur behaviour, and on endemic species with colleagues in Madagascar. Bailey has a leading role in a global collaboration on essential variables for geodiversity and he forms part of the SoilTemp database consortium.

Couper and Garlick are leading a joint project with Natural England on the historical and contemporary cultural significance of nature and landscape within the Humberhead Peatlands National Nature Reserve.

Fitzpatrick is working with colleagues at Oxford Brookes University, Coventry University and the Warrington Museum and Art Gallery on bringing the archive of the Warrington New Town Development Corporation into public view via exhibitions and online resources.

Parks is working with colleagues in the School of Performance and Media Production, the Royal Northern College of Music and University of Northumbria on measuring outcomes of community music projects in relation to geographical conceptualisations of social sustainability. She is also working on projects that will feed into the university Strategy 2026 with colleagues in HUM, the University Secretary's Office, and Student Services on black, Asian and minority ethnic (BAME) experiences of studying and working at YSJU and of living in York, as well as academic approaches to embedding education for sustainable development in teaching.

Building on an existing collaboration with colleagues at Boston University, USA, University of Massachusetts, USA, University of Salford and University College London, Schofield received HUM funding to carry out research at Harvard Forest to undertake experimental forest measurements with a novel terrestrial laser scanner. Schofield is also involved in a collaborative

project with Schwendel and the Yorkshire Wildlife Trust on the modelling of habitat changes due to fluvial dynamics in a nature reserve with sensitive species.

### Networks

Members of the unit are engaged in respective discipline-specific learned societies (e.g., RGS, European Geoscience Union, British Society for Geomorphology, Remote Sensing and Photogrammetry Society, British Ecological Society [BES], UK Advising and Tutoring) and research networks, and have assumed leadership positions within these, including committee roles for Couper on the RGS History and Philosophy of Geography Research Group and Bailey on the Macroecology Special Interest Group of the BES.

All members of the unit are senior fellows, fellows or associate fellows of the Higher Education Academy.

Garlick has instigated the York Environmental Humanities Network, Fitzpatrick is a member of the Association of New Towns and Archives and Schofield is a member of the Terrestrial Laser Scanning International Interest Group.

### Contributions to scientific base and society

The expertise and leadership in research of members of the group has been acknowledged through invited talks and session chairs at international conferences and invited lectures at various institutions nationally and internationally. These include Parks organising and chairing a session at the Nordic Geographers Meeting (2019), and Couper being an invited member of conference panel discussions at RGS (2017 and 2018).

Parks organised the Community Music and Human Geography Symposium in 2018 at YSJU which explored social sustainability in context of research and practice in these disciplines. In 2020, Bailey was involved in organising a workshop on tropical ecology for the BES, and Adekola and Schwendel are organising a stakeholder workshop on flood risk and social justice in York.

Many members of the group have been invited as speakers in discipline-related lectures and seminars, including Schwendel at the University of Plymouth (2014), Couper to give the annual public "Lovatt Lecture" at the University of Worcester (2015), Garlick at the University of Cambridge (2016), Couper at the University of Bergen, Norway, (2017) and Schwendel at the University of Graz, Austria (2018).

As part of engagement with the wider public, Adekola, Bailey and Garlick have published articles in *The Conversation* and *Earth Heritage*. Bailey has been invited to give an outreach talk to the Harrogate U3A Science and Technology Group. Bailey and Schwendel regularly engage in environmental consultancy activities.

### Contributions to disciplinary infrastructure

The standing of the members of the Geography UoA in their academic field is demonstrated by numerous contributions to the scientific community. Couper has been invited to submit a chapter on epistemology for the *International Encyclopedia of Human Geography*. Garlick and Fitzpatrick were co-editors of special issues in the journals *Environmental Humanities* and *Area*, respectively. Couper has agreed to be external examiner for a PhD at the University of Worcester.

Furthermore, members of the unit have regularly made contributions to their disciplines through peer-reviewing processes on a national and international level. These include serving on the advisory panel to the editorial board of the GA journal *Geography* (Couper), reviewing Economic and Social Research Council grant applications (Couper) and numerous reviews of journal articles for largely (76%) Q1 publications in Geography and related areas such as *Agriculture, Ecosystems & Environment; Annals of the American Association of Geographers; Annals of Leisure Research; Area; Australian Feminist Studies; Catena; City; Cultural Geographies; Diversity and Distributions; Earth Surface Processes and Landforms; Environmental Humanities;*

*Environmental Science & Policy; Freshwater Science; Fundamental and Applied Limnology; Geocarto International; GeoHumanities; Geomorphology; Global Ecology and Biogeography; Journal of Adventure Education and Outdoor Learning; Journal of Biogeography; Journal of Consumer Culture; Remote Sensing in Ecology and Conservation; Local Environment; Public Understanding of Science; Science of the Total Environment; Social & Cultural Geography; Society and Animals; Transactions of the Institute of British Geographers and Urban Studies.*

The unit regularly contributes to the dissemination of research at national and international conferences such as the RGS annual conference, Association of American Geographers conference, BES Macroecology conference, British Society for Geomorphology annual meeting, European Geosciences Union annual meeting, International Biogeography Society conference, International Conference of Historical Geographers, I. S. Rivers, UK Advising and Tutoring conference.