Institution: University of Northampton

Unit of Assessment: 17 Geography, Environmental Studies and Archaeology

a. Overview

UoA 17 (Geography, Environmental Studies and Archaeology) sits predominantly within the Department of Environmental and Geographical Sciences, based in the School of Science and Technology. As we demonstrate in the following sections, this UoA contains internationally recognised pure and applied research that cuts across both the natural and human-dominated environments. Activities are focused around two broad natural groupings that reflect staff interests and expertise: the Centre for Sustainable Wastes Management (including **Bates, Phillips** & **Tudor**); and the Natural Environment Research Group (including **Crockett**, **Foster**, **Holmes**, **Livingstone**, **McCollin**, **Ollerton**, & **Petford**). There is frequent collaboration by staff within and between both groups, as evidenced by shared authorship of some of the outputs we are submitting (e.g. see joint outputs by **Bates** & **Phillips**, **McCollin** & **Ollerton**, **Livingstone** & **Foster**, and **Phillips** & **Crockett**). All staff actively collaborate and publish with colleagues in the UK and abroad.

The **Centre for Sustainable Wastes Management** (CSWM) is a multi-disciplinary research centre focusing on issues central to the international and national wastes and resource management agenda. In addition to the three academic staff included within this submission, the CSWM supports 7 research students and research assistants, plus one postdoc. Six research students have completed their PhDs since January 2008. The CSWM's web pages can be viewed at: http://www.northampton.ac.uk/about-us/academic-schools/school-of-science-and-technology/research-in-the-school-of-science-and-technology/centre-for-sustainable-wastes-management

The **Natural Environment Research Group** (NERG)'s research addresses the themes of biogeography and the conservation of biodiversity; physical geography (geomorphology and geology); and radioactivity in the natural and built environment. In addition to the academic staff within the NERG, the research group supports 7 research students and two postdocs, with 4 research students having completed their PhDs since January 2008. The NERG's web pages can be viewed at: http://www.northampton.ac.uk/about-us/academic-schools/school-of-science-and-technology/research-in-the-school-of-science-and-technology/natural-environment-research-group-nerg.

Activities within the CSWM are led by **Phillips**, those within the NERG are led by the apposite professors, e.g. biodiversity by **Ollerton**, physical geography by **Foster**. Senior members of the CSWM and the NERG have achieved international reputations in their respective fields, as evidenced, for example, by the significant h-indexes of academic staff, e.g. **Foster** (h-index = 23), **Livingstone** (h-index = 18), **Ollerton** (h-index = 18), **Petford** (h index = 19), **Phillips** (h-index = 16) [data from ISI Web of Science].

b. Research strategy

For RAE2008 some members of staff were submitted to other Units of Assessment, were employed by other institutions, or had not yet achieved sufficient maturity in their research to be entered. Subsequently these staff have, through the stimulus of research leadership and opportunities within the CISWM and the NERG, been brought together into a sufficient critical mass to be entered into UoA 17 for the REF. Since 2008 the research strategy within the Department of Environmental and Geographical Sciences has been to build a world-class group of academics delivering internationally excellent research that enhances the reputation of the University of Northampton. This strategy built upon existing research strengths within the Department and involved both appointment of new staff and career progression opportunities for existing academics (see below).

Staff within the two research groups have a commitment to tackling important and significant questions in their fields, and to inform national and international policies. This is facilitated by a range of Departmental, School and University strategies and structures that serve to support both early career and more established researchers, which include: financial investment via opportunities to bid for monies to instigate research projects and fully funded PhD studentships; away days to discuss collaborations with counterparts at other institutions; an on-going seminar series and special lectures; hosting of UK and international visitors.

Through the activities of these staff the Department has instigated formal collaborations and links with a wide array of national and international partners. These involve both strategic institutional

partnerships, fostering exchange of ideas and indirect opportunities for funding projects, and strategic business partnerships that generate direct research funding for the Department. Examples of both include large non-governmental organisations such as the International Union for the Conservation of Nature (IUCN), United Nations Environment Programme (UNEP), Secretariat of Basel Convention, the RSPB; UK and international government departments for example Defra, BIS, NEMA (Kenya), Brazilian Science Without Borders scheme; international businesses such as Banco Santander, Veolia, Suez, Dell, Nokia, Hewlett Packard, Phillips. In addition we host 5 visiting Professors and Research Fellows who between them provide additional external linkages to organisations such as the local NHS Trust and other universities (e.g. Rhodes University, South Africa) and actively collaborate with staff in this UoA.

Since RAE2008 the Department has grown its capacity for research excellence, as evidenced, for example, by the publication rate of members of this UoA; since 2008 the number of international, peer reviewed papers produced by this set of staff totals 163. Developing the capacity for research excellence has been supported internally by the University of Northampton and the School of Science and Technology, and by external funding and in-kind support for projects totalling over £2 million. Stimuli include co-supervision of UoN-funded research students, availability of research funding within the University and pro-active joint research bidding.

The Department's research strategy has been aided by the implementation of the "Raising the Bar: Strategic Plan 2010-2015" institutional strategy in which "intellectual capital" is one of the four critical success factors that drive the University's performance. Implementation of this University-level strategy includes development of research-support structures such as the Research Bidding Office, the appointment of a new postgraduate and early career researcher training coordinator, as well as additional administrative research support, for example via the institutional research repository NECTAR (http://nectar.northampton.ac.uk/) and the Research Support Hub (http://researchsupporthub.northampton.ac.uk/).

The research strategy for the period 2014-2019 is aligned to School and University strategies to significantly grow numbers of academic staff, contract research staff, and PhD students, to increase both the breadth and depth of research being conducted within the Department, focussed on the core themes of the CSWM and the NERG. Key to the success of this strategy will be an increase in the number, size and success rate of our external bidding activities which is a formal goal for individuals, set through the Performance Review system at the University. Major research bids will be undertaken in collaboration with large consortia of colleagues from other institutions (a strategy which is already proving successful, e.g. the Nene Valley Nature Improvement Area project) and supported by current investment in research facilities (see below).

c. People, including:

i. Staffing strategy and staff development

Since 2008 the Department has made a number of strategically key appointments and promotions that have augmented both the breadth and depth of research activities. These include the appointment of **Ian Foster** as Professor of Geomorphology and **Naomi Holmes** as Lecturer in Biogeography & Palaeoecology; the promotions of **Robin Crockett** to Reader in Data Analysis (2010); **Margaret Bates** to Reader (2010) then Professor of Sustainable Wastes Management (2012); and **Jeff Ollerton** to Reader (2010) then Professor of Biodiversity (2012); the promotion of **Duncan McCollin** to Associate Professor (2013); and the appointment of **Nick Petford** as Vice Chancellor and Professor of Earth and Planetary Sciences.

New members of staff are allocated a mentor who provides support and advice as appropriate to their role, and are expected to fulfil the requirements of a one year probationary period. In addition, **Ollerton** as Research and Enterprise Coordinator for the School of Science and Technology provides day-to-day advice and support, in conjunction with the School's Director of Research (Professor Phil Picton, returned to UoA12).

Active participation with School, University and external committees is considered a vital aspect of staff development as it fosters good research practice. For example, staff monitor ethical standards for research projects by participation in the School of Science and Technology Ethics Committee. Likewise, broad strategic aspects of research activities are determined by the School's Research and Enterprise Committee chaired by its Director of Research. Members of this UoA sit on this committee in various representative capacities and undertake a variety of roles. This includes internal peer review of draft research proposals in order to enhance quality and success rates of applications, a process bolstered by the fact that members also undertake grant

reviewing and sit on review panels for UK and international funding bodies, including Research Councils such as NERC (**Foster**, **Livingstone**, **Ollerton**, **Petford**), EPSRC (**Bates**, **Phillips**) and BBSRC (**Ollerton**); government funding agencies such as the Technology Strategy Board, Defra, Waste and Resources Action Programme, the National Institute for Healthcare Research, and the EU Commission (**Bates**, **Phillips**, **Tudor**) and a wide range of overseas funding agencies.
Another important aspect of the development of staff as internationally excellent researchers is inter-disciplinary collaboration and members of both the CSWM and the NERG actively collaborate with colleagues from other Schools within the University, increasing the breadth of research activities and opportunities for joint funding applications that cut across disciplines. Significant examples include: **Bates** with the Northampton Business School on the WeRePC Social Enterprise project; **Phillips** with the School of Health on projects relating to the implications for smokers of radon gas in the built environment and the microbiological health implications for workers in waste management facilities; **Foster** with the Institute for Creative Leather Technologies investigating the historical legacy of heavy metal contamination from leather tanneries along the River Nene; **Ollerton** with the Department of History on the historical ecology of pollinator populations in the gardens of large English country houses, and with staff from the Estates Department on the Hefce funded SEED Project; **Tudor** with the School of Health evaluating the link between the management of clinical waste and the risk of the spread of infections, and the Students' Union for the Hefce funded project Planet Too.

ii. Research students

Research students within the Department constitute a critical research capacity and are highly valued for their contribution to large research projects, including co-authoring research publications with their supervisors, and to the vitality of the overall research environment of the Department. A significant investment is made in the development and training of research students and this is reflected in the successful careers that they have gone on to (see below for some examples).
Since 2008 staff in the CISWM and the NERG have between them supervised 10 University of Northampton research students to completion and currently supervise 14 students across the two groups. Funding for **t**hese students has come from a range of sources including: external charities such as the Finnis Scott Foundation; the SITA Environmental Trust (via Landfill Tax Credit Scheme); Defra/ADAS; overseas governments (e.g. Pakistan); self funding; and studentships provided by the University and its partner institution, Moulton College. All postgraduate research students within the University undertake the Graduate School's generic Research Training Programme. This programme has been developed with reference to the Researcher Development Framework formulated by Vitae which focuses on the knowledge, behaviours and attributes of effective and successful research students across the full range of disciplines. The programme consists of workshops, individual sessions and University-level events, covering a wide range of subject areas. The aim is to provide the skills and experience necessary for both successful completion of a research degree and to prepare the student for subsequent employment. The Programme is led by the Head of the Graduate School and run by a dedicated Research Training Coordinator supported by a Senior Research Degrees Manager and a Research Student Coordinator. Additionally, the Programme has input from academic and professional services staff from across the institution.
Research student representatives sit on the Science Research Degree Board and the university-level Research Degree Committee. All research students have the opportunity to contribute to teaching within the Department, typically during lab and field sessions, or contributing lectures specific to their areas of research. An Introduction to Teaching in Higher Education course is run by the University and all research students are required to undertake this prior to commencing any formal teaching.
At a Departmental level, specific training is provided on subjects such as statistical analysis, GIS, advanced statistical skills (including an R Users' Group) and the use of technical equipment, and students take an active role in the research seminar series. In addition all students can attend Master's level modules as appropriate to their training at no cost.
Research students who completed in this period have gone into a variety of careers, including research, advisory and consulting positions. For example, following graduation in 2008, Dr Stella Watts worked as a postdoctoral researcher for three years at the University of Haifa (Israel) with Professor Amots Dafni, following which she returned to UN to work on the Defra/NE funded Nene Valley Nature Improvement Area Project with **Ollerton** and **McCollin**; Dr Sam Tarrant (2010) is

currently the RSPB & CEMEX UK Biodiversity Advisor; Dr Lutfor Rahman (2010) is Research Ecologist with International Wildlife Consultants Ltd.; Dr Anne Woolridge (2009) is the Technical Director of Independent Safety Services Ltd.; Dr Waleed Montasser (2010) works as a researcher in the CSWM at UN; Dr Shanom Ali (2010) is a postdoctoral scientist in the Environmental Research Group at the Centre for Clinical Microbiology at University College London.
Staff also advise and co-supervise research students at other institutions in the UK and abroad. For example, **Phillips** supervised PhD completions in 2010 at the University of Wolverhampton and the University of Oulu (Finland); **Foster** currently supervises two students at the University of Westminster, and one completed in 2012, in addition to one student at the Nelson Mandela Metropolitan University (South Africa), who completed in 2012); **Ollerton** advised on the PhD work of Dr Bo Dalsgaard (University of Aarhus, Denmark) and is currently on the supervisory committee of Mr André Rodrigo Rech (Universidade Estadual de Campinas, Brazil, with funding from the Brazilian Science Without Borders scheme); **Tudor** was on the supervisory committee for Elizabeth O'Connell who was awarded her PhD in July 2012 from Prescott College (Tucson, Arizona). All members of this UoA undertake UK and international examinations of PhD theses at other universities, which enhances their supervisory skills by bringing examples of good practice back to the University.

d. Income, infrastructure and facilities

The Department of Environmental and Geographical Sciences is one of four areas within the School of Science and Technology, the others being the Department of Computing, the Department of Engineering, and the Institute for Creative Leather Technology. There is significant collaboration between staff and sharing of facilities across all of these sections. The Department's investment in intellectual capital is therefore being achieved both through its staffing strategy (see above) and infrastructure developments such as capital investment into buildings and facilities, for example:

- **£11 million invested in the Newton Building** which houses the Department of Environmental and Geographical Sciences, along with the Departments of Computing and Engineering. This includes teaching and research laboratories, e.g. £300,000 for specialist environmental science facilities (see below).
- **£7.5 million invested in IT infrastructure** across the university since 2008, including upgrades to staff computing facilities and software.
- **£30,000 on refurbishment of postgraduate research laboratory**, plus additional field equipment and specialist GIS software, specifically for research students within the Department that are supervised by staff included within UoA 17.
- **£1.1 million refurbishment of the Institute for Creative Leather Technology** which works closely with the Department on research activities such as the sustainable manufacture of leather (with **Bates**) and heavy metal pollution of the River Nene by historical tanneries (with **Foster**). This includes an investment of £180,000 on refurbishment of a wet chemistry laboratory and scanning electron microscope suite, and £200,000 in new analytical equipment.

Sources of this institutional investment include monies from the European Regional Development Fund, the Worshipful Company of Leathersellers, SITA Wastes Management, plus QR money resulting from RAE 2008.
External research funding and significant in-kind support (e.g. grants held by visiting overseas researchers to allow them to work in the Department) of over £2 million has been obtained from a wide range of sources, e.g. research councils, SITA Environmental Trust, Hefce, charities, companies such as Santander, Food & Drink iNet, the Royal Geographical Society, the Technology Strategy Board, HECF iNET, WRAP, ADAS. This has built on significant earlier funding, for example funding by the wastes management company SITA of over £1.5 million up until May 2008. Examples of successful research bids from 2008 onwards include:

- A series of Knowledge Transfer Partnerships (KTPs) awarded to **Phillips** and **Bates** [including the FFP KTP (£99,044), the Fernbrook Bios KTP (2010 - £53,563) and Knights of Old KTP (2010 - £135,771] enabled the CSWM to develop the Food & Drink iNet (2010 - £42,200).
- Work on Waste Management Practices funded in 2008 (£70,697) led to a current project funded by a large waste management company (£21,850) examining the efficacy of various treatment technologies for managing healthcare waste. In addition, there has also been

research on the Social Context of Waste (2010 - £200,000, £20k of which came to UoN) from the Leverhulme Trust for **Tudor,** which has led to a recent successful bid to Coca Cola to undertake some research in the UK and France on recycling practices.

- In 2009 the Education Partnerships in Africa funding of £59,976 (**Bates**) led to work with African governments, NGOs and UNEP, and enjoyed a high media profile.
- CSWM also benefitted from the continued support of the SITA Environmental Trust which funded research student and training activities up until 2010 and was the only such centre funded by SITA. Eight PhD students successfully completed their degrees with this support.
- In 2009 funding of £57,000 from the Finnis Scott Foundation to support a three year research studentship studying pollinator diversity in the gardens of large English country houses. This was a cross-disciplinary project between **Ollerton** and Professor Jon Stobart (Department of History).
- Hefce funding of £165,000 for the "Shared Enterprise Empowering Delivery" (SEED) project in 2010 involved collaborations between CSWM (**Bates**) and NERG (**Ollerton**) with the Facilities Department of the University plus external partners, to look at issues around sustainability and biodiversity on university estates.
- Defra funding of over £150,000 in 2011 for the Nene Valley Nature Improvement Area (**Ollerton** and **McCollin**) is supporting research in one of only 12 ecological restoration and assessment projects recently funded by national government. The project involves a consortium of over 20 partner organisations led by the by the Wildlife Trust for Bedfordshire, Northamptonshire and Cambridgeshire.
- An assessment of the efficacy of mitigation options for diffuse water pollution from agriculture in England and Wales is a recent (2012) collaboration led by **Foster** and Professor Adrian Collins (formerly of ADAS, now at Rothamsted Research) with funding from Defra (£30,000 contribution towards a PhD studentship).
- South Downs National Park funding of £31,000 to **Foster** & **Holmes** in 2013 to study sediment pressures and mitigation options for the River Rother.

In 2009, the School of Science and Technology invested some £300,000 in new laboratory space and specialist facilities for measuring gamma-emitting radionuclides, mineral magnetic and particle size properties of soils and sediments. New laboratories were equipped with three hyper-pure Ge 'Well' detectors (Ortec), a Bartington Magnetic Susceptibility system (with a range of field probe attachments and an MS2B dual frequency sensor) and Molspin ARM and pulse magnetisers and a Molspin spinner magnetometer. A Malvern Instruments Mastersize with hydro-2000 dispersal system has also been installed. These instruments currently support research that uses Pb-210, Cs-137 and a range of long lived nuclides to date and / or fingerprint sediment sources in a wide range of environments. In 2012, these facilities were enhanced with the purchase of a microwave digestion system and an ICP-OES to extend the range of fingerprint properties to include geochemical signatures. This supports **Foster**'s own work, the work of 3 current PhD students (a 4th to be appointed in October 2013), and has continued to support externally funded collaborations with, for example, the Universities of Aberdeen, Oxford, Sheffield and Rhodes University, South Africa.

The current investment in research facilities is part of a broad strategy for generating external income for research and enterprise activities in the short to medium term. Other parts of this strategy include staff attendance on internal and external research bidding workshops; income target setting for researchers within the Department; [see above].

Research in the department is currently being underpinned by a number of grants which continue beyond the end of the REF period (e.g. **Ollerton** & **McCollin**'s Nene Valley NIA Project; **Foster**'s pollution mitigation research with ADAS/Defra; **Foster** & **Holmes**'s work on the River Rother) and we have a continuing strategy of sustaining research within the Department by targeting Research Councils and other funders with large, multi-institution collaborative bids. Some significant funding applications have been submitted whose result will only be known after the REF submission, for example to NERC: a £500,000 application as UN's part of a larger consortium of six universities under the recent UK Droughts and Water Scarcity call (**Ollerton**) and £198,000 for a study of biotic drivers of river sediment transfers, in collaboration with Loughborough, Durham and the Environment Agency (**Foster).**

e. Collaboration and contribution to the discipline or research base

Members of the NERG and the CSWM collaborate with colleagues in other Schools (see above) and are active nationally and internationally within their disciplines, contributing to disciplinary development in a wide range of ways, including active international research projects, organisation of conferences and invitations to deliver talks, memberships of editorial boards, grant and manuscript reviewing, and examination of PhD students. A selection of examples is given below.

Current national and international collaborations

- **Crockett** is collaborating with Prof. G. Gillmore (School of Geography, Geology and the Environment, Kingston University) on environmental consequences of radon; and with Prof. F. Perrier (Institut de Physique du Globe de Paris, Université Paris Diderot, France) on the UNESCO/IGCP Project-571 "Radon, Health and Natural Hazards".
- **Foster** is studying landscape degradation in Southern Africa in collaboration with Prof. J. Boardman (Oxford University Centre for the Environment) and Prof. K.M. Rowntree (Department of Geography, Rhodes University, South Africa) - see the recent special issue of Land Degradation and Development http://onlinelibrary.wiley.com/doi/10.1002/ldr.v23.6/issuetoc.
- **Holmes** works with Prof. P. Langdon (School of Geography, University of Southampton) on chironomids as palaeoecological indicators.
- **Livingstone** is Chair of the British Society for Geomorphology Working Group for Sand Seas and Dune Fields (a collaboration of 10 colleagues from UK HEIs) and works with Prof. Grant McTainsh (Griffith University, Australia) on aeolian geomorphology research.
- **McCollin** is working on the ecology of cultural landscapes in Europe with Dr Iván A. Sánchez (Saint Louis University, Madrid) and Dr. Tommaso Sitzia (Padova University, Italy)
- **Ollerton** collaborates internationally on projects related to the biogeography of plant-pollinator interactions (e.g. Prof. Nick Waser, Prof. Mary Price, Dr Ruben Alarcón in the USA); the ecology of flowering time with Mexican colleagues (Prof. Victor Parra-Tabla and Dr Miguel Munguía-Rosas – funded by CONACYT) and the effect of historical climates on pollinator network structure (Dr Bo Dalsgaard, University of Copenhagen, Denmark).
- **Petford** is studying the physics of ice magma with colleagues at NASA in the USA.
- **Phillips** works on a diversity of wastes management and resource efficiency projects with collaborators across the globe, e.g. Dr Eva Pongraz (University of Oulu); Dr Lawrence Mbeng (University of Doula); Prof. Cleber Dutra (University of Fortaleza); Kate Hornsby (University of Aachen); Dr Georgia Davis (Australian Environment Agency); Dr Ron Mersky, Widener University.
- **Tudor** researches resource consumption patterns in developing economies with Dr Madha Suresh (University of Madras) and Prof. Cleber Dutra (The University of Fortaleza, in Brazil); waste minimisation and recycling in Barbados with Maria Pena (Cave Hill Campus, University of the West Indies); and works with Dr Mentore Vaccari from the University of Brescia, Italy, on healthcare waste management.

Contributions to professional service

Members of this submission have been involved in organising and running national and international conferences in their fields, for example:

- European Geosciences Union General Assemblies annual sessions on radon and natural-radionuclides 2009 to 2013 (**Crockett**).
- International Association of Geomorphologists (IAG) with Southern African Association of Geomorphologists (SAAG) Annual Conference, Rhodes University, 2010 (**Foster**).
- Global Sand Seas: past, present, future, Royal Geographical Society, London, 2010 (**Livingstone**).
- International Conference on Solid Waste Technology and Management in Philadelphia, USA 2008-onwards (**Phillips)**.
- International symposium on healthcare waste management: improving knowledge: sharing experiences, Royal College of Physicians, London, 2009 (**Tudor**).

Invitations to address international learned conferences, university departments and international meetings are regularly accepted; to give just a small number of examples:

- E-waste Africa Stakeholders meetings and the Pan-African Forum on E-waste (both Secretariat of the Basel Convention, United Nations) (**Bates**)
- Keynote Address to the 2nd International Seminar on Small Catchments sponsored by the IAG. University of the Balearic Islands, Palma, Mallorca, 2009), (**Foster**)
- 8th European Conference on Ecological Restoration - Czech Republic 2012 (**McCollin**),
- Evolution of Plant-Pollinator Interactions - Milwaukee – (2008), Origin of Biodiversity by Biological Interactions - Tokyo 2009; (**Ollerton)**
- Brazilian Government: Sustainable Consumption - Federal University of Rio Grande, Porto Alegre, Brazil and University of Fortaleza, Brazil 2008; International Waste Management for Developing Countries – Chennai, India 2008; World Congress of Industrial Biotechnology - 2013) (**Phillips**),
- Healthcare waste management – Lagos 2009; Waste minimisation in hospitals – Amsterdam, 2011; Waste management in developing countries – Chennai, 2012 (**Tudor**).

Staff in this UoA contribute their expertise to government-level documents and policy statements, as well as expert stakeholder workshops. A few examples show the breadth of these contributions:

- **Bates:** Wastes management advisory panels including the WEEE Advisory Board IPR sub group, Environment Agency REPAC, Defra's Evidence Advisory Panel on the Waste, Resources & Sustainable Consumption Evidence Programme (WReSCE), Nigerian National Environmental (Electrical/Electronic, Sector) Regulations, Kenyan e-waste regulations, Reference group for UNEP-UNITAR initiative to prepare guidelines for the development, review and updating of national waste management strategies,
- **Crockett:** HPA East Midlands Environmental Health Advisory Board, 2008-2010,
- **Foster:** Defra-funded erosion workshop, 2010
- **Ollerton** International Insect Pollinators workshop at Westminster, hosted by the Foreign and Commonwealth Office, the Science and Innovation Network and the Department for Business Innovation and Skills, 2012
- **Petford:** member of South West Science and Industry Council Board
- **Phillips:** Defra: Business Waste and Resource Efficiency; East Midland Regional Technology Advisory Board, Waste and Resource Action Programme (WRAP), Audit Commission: Waste Management in England.
- **Tudor:** has provided advice to the Department of Health on managing healthcare waste, as well as to the State Government of Lagos in Nigeria, on developing health care waste policies.

In addition to manuscript reviewing for journals, which is undertaken by all members of NERG and CSWM, many of the staff in this unit of assessment provide a service to their research community by acting as editors or members of editorial boards of international, peer-reviewed journals such as:

- **Bates:** *Communications in Waste and Resource Management*, *Waste and Resource Management*
- **Crockett:** *Natural Hazards and Earth System Sciences*, *International Journal of Geophysics*
- **Foster:** Submissions Editor, *Journal of Soils and Sediments;* Submissions Editor and Special Issue Editor, *Land Degradation and Development*
- **Livingstone:** *Aeolian Research*
- **Ollerton:** Academic Editor for *PLoS ONE*, founding member of the Editorial Board for the *Journal of Pollination Ecology*
- **Phillips:** Associate Editor *Resources, Conservation and Recycling*; European Editor, *Journal of Solid Waste Management and Technology*; Editorial Board member for: *Environmental Management and Health, International Journal for Sustainability and Environmental Management*, and the *Open Waste Management Journal*

All of the above activities contribute to a lively culture of excellent research within the Department and to the development of the respective disciplines of the members of this UoA. In addition these activities link research within the Department directly into UK and international strategy and policy for governments, inter-governmental organisations, NGOs and businesses.