

Institution:	University of Northumbria at Newcastle
Unit of Assessment:	17 - Geography, Environmental Studies and Archaeology
<p>a. Context</p> <p>Staff within the Unit are committed to undertaking research of societal and economic relevance, generating impact within both our Research Groups.</p> <ol style="list-style-type: none"> 1. <i>Communities and Resilience:</i> Impact is attained through the co-production of knowledge between staff and communities, following research practice in participatory geographies. Key audiences for impact include the United Nations, World Bank, and DFID policy makers, NGO, practitioners and community groups. Beneficiaries include marginalised, displaced and impacted citizens, particularly those in disaster-susceptible regions. 2. <i>Cold and Palaeo Environments:</i> Impact has resulted from methodological development, field-based experimental approaches and outreach activities. Key audiences for impact include the Environment Agency and Natural England with beneficiaries including civilian populations supported by the 'Air quality monitoring for major incidents programme' and policy makers engaged with the 5th Assessment report of the IPCC 2013. 	
<p>b. Approach to impact</p> <p>Our approach to impact is a natural development of our long-standing commitment to working externally and internationally with a wide range of users and beneficiaries. Our aims for the period 2008-2014 were to: 1) ensure that the unit created impact with tangible benefits and broad reach; 2) support and develop staff to foster impact; and 3) utilise institutional expertise and resource to enable impact. An indicator of the success of this approach is that over 70% of the £2.15 million grant income won by the Unit in the period 2008-2014 has come from impact focused streams such as industry, charities, UK central and EU government and local and health authorities.</p> <p>1. Impact with tangible benefits and broad reach: The success and reach of our approach is best indicated through impact exemplars.</p> <ol style="list-style-type: none"> <i>Impacts on creativity, culture and society:</i> Askins helped found the Geography Collective (www.geographycollective.co.uk) in 2008 raising geographical awareness through publishing 'Mission Explore' children's books (winner of the National Trust / Hay Festival Outdoor Book of the Year Award 2011) and interactive websites (over 15,000 downloads to date). Dunning, Mann and Woodward have developed innovative approaches to disseminate science through engaging with artists and the public. This on-going international work has been funded by the National Science Foundation POLARIS project (www.thepolarisproject.org), a Leverhulme Trust Artist in Residence Award and Dan Holdsworth Studios Ltd. <i>Economic, commercial, organisational impacts:</i> Research by Fitzgerald has supported integration of Polish migrant workers into UK society, by working with UK and international trade unions, influencing European policy and supporting individual Polish workers through community action groups (see Impact case study). O'Brien's research on energy technology diffusion, funded by a Knowledge Transfer Partnership (KTP) Award with North Tyneside Council, has led to a Private Finance Initiative (PFI) Sustainability Evaluation Tool designed to embed renewable technologies in housing regeneration. <i>Impacts on the environment:</i> Research by Glaves into ecosystem services, has been funded by Defra, the Environment Agency, Natural England, EUROPARC, WWF and the Slovenian Government. The Tranquillity Project, undertaken by King (néé Dunsford) to explore perceptions of tranquillity within the Northumberland National Park, led to a national project to establish robust participatory methodology to support land use and landscape planning activities, commissioned by the Campaign to Protect Rural England (CPRE) (http://www.cpre.org.uk/resources/countryside/tranquil-places). <i>Health and welfare impacts:</i> For over 20 years Deary has led the <i>Northumbrian Environmental Training and Research Centre</i> (NETREC), working on the influence of environmental pollutants in soil, sediments, air, vegetation and foodstuffs on human health. The research has led to the inception and delivery of an air quality monitoring unit as part of the 	

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Environment Agency's Air Quality in Major Incidents Project (<http://www.environment-agency.gov.uk/homeandleisure/pollution/air/125091.aspx>). The research of **Pearce** has developed approaches to discover novel metabolic gene clusters for biosynthesis of antibiotics. This on-going research on bacteria which reside in extreme habitats is funded through a NERC Innovation A award with commercial funding from Warwick Ventures.

v) Impacts on public policy, law and services: The Disaster and Development Network (DDN), established by **Collins** in 2004, researches disaster risk reduction and resilience building. Work has been funded by the Department for International Development, European Union and ESRC. Evaluations and international policy advisory roles have been undertaken for NGOs, the United Nations and other International Organisations e.g. The World Bank (see Impact Case Study). The research of **Salzmann** led to the position of contributing author on the policy influencing 5th Assessment report of the Intergovernmental Panel on Climate Change (IPCC) 2013.

vi) Impacts on practitioners and professional services: The research of **Fordham** has led resource exchange and policy advocacy through the Gender Disaster Network (GDN) online resource www.gdnonline.org (see Impact case study). Since 2008 NETREC have trained over 400 people in industry-specific Continuing Professional Development (CPD).

2. Support and develop staff to foster impact:

Since RAE 2008 the University has created an Award and Title route of Enterprise Professor and Enterprise Fellow (at a level equivalent to Reader). Staff have been encouraged to develop impact and enterprise portfolios with three staff gaining promotion to Enterprise Fellow (**Deary, Fordham and Glaves**). These roles allow staff the time and opportunity to develop their impact as well as to broaden impact activities across the Unit. The above is complemented by a requirement for convincing impact plans in the Person Specifications for new (and in particular senior) staff. We have supported **Collins** and **Fordham** by employing PDRAs using strategic investment funds. For **Fordham** staff support was provided to develop web page links to improve the currency and utility of the GDN web pages. For **Collins**, PDRAs were employed to work internationally to support the DDN impact agenda. **Fitzgerald**, an Independent Researcher, was encouraged to actively engage in the impact agenda and was afforded time and support to do this. The work of **Fitzgerald, Fordham** and **Collins** feature as Impact case studies.

3. Utilise institutional expertise and resource to enable impact:

The Faculty funded 25% of the salary of **Fitzgerald** for two years (drawing on HEIF-funds) as Public Engagement and Impact Champion to embed broader significance and rigour within our impact activities. **Fitzgerald** worked with Research and Business Services (RBS) (a central University provision) to identify research stakeholders and research commercialisation opportunities. The University-wide Public Engagement and Impact Fund, managed through RBS, has provided small grants to individual staff. At the Faculty level further support for impact has been in the form of equipment and laboratory upgrades to produce a professional analytical environment supporting research and impact activities. Sabbaticals have been awarded to staff who required time and space to develop impact activities, and financial support for the delivery of knowledge transfer has been in the form of travel funds and staff development money. Strategic funds have been used to allow sabbaticals for impact and public engagement and small travel grants to support International travel to develop links with companies and policy makers worldwide.

c. Strategy and plans

Our strategy is to further embed impact beyond 2014 by strengthening and evolving the three key aims outlined for the REF period 2008-2014, namely to: **1)** ensure that the unit creates impact with tangible benefits and broad reach; **2)** support staff to foster impact; and **3)** utilise institutional expertise and resource to enable impact. Plans for maximizing the potential for impact from future research are outlined below.

1. Develop impact with tangible benefits and broad reach:

For future research the Unit will promote and highlight the importance of impact across all our main research themes. Discussion of impact will be built into the review of research funding applications and will be prioritised and developed through careful pre-submission review of '*Pathways to Impact*' via newly established peer review mechanisms. The benefit of research will be monitored and impact opportunities developed and supported. Future initiatives will allow support for: **i)** the

'Geography Collective' initiative of Askins; **ii)** the interaction between artists and the public to disseminate scientific results to a broad audience, begun by **Dunning, Mann and Woodward**; **iii)** the continued international work of the GDN and DDN; **iv)** work on social inclusion/exclusion for economic migrants and marginalised society; and **v)** the CPD and industry focussed work of NETREC. We will also appoint staff with a track record of impact, engagement and outreach to broaden our impact base and strengthen the international reach of our impact agenda.

2. Support and develop staff to foster impact:

In order to support staff engagement with our impact agenda we will: **i)** encourage all staff to engage with the impact agenda as part of the application process for sabbaticals; **ii)** where appropriate, support staff to develop their CV in order to apply for promotions to Enterprise Fellow and Enterprise Professor via one of the three promotion routes available to staff at Northumbria; **iii)** invest strategically to support impact activity. This may be through appointing PDRA to support policy development, appointing technical support to develop web or laboratory resource, supporting staff to travel internationally to broaden the reach of our impact agenda or through the provision of space, staff time and resource to support public engagement activities; **iv)** increase impact-related training opportunities as part of staff, and PhD induction and provide training for all staff through workshops, placements and mentoring on commercialisation of research, developing KTPs, public engagement and writing 'pathways to impact' statements.

3. Utilise institutional expertise and resource to enable impact:

Expertise and resource will be provided at University, Faculty and Unit level to support the development of impact, for example: **i)** RBS will deliver support throughout the research process (both pre- and post-award) from a dedicated Impact and Public Engagement Manager; **ii)** Faculty Impact Champions will act as ambassadors for research impact, will help staff understand diverse pathways to impact, develop an impact training programme for the Unit and work with RBS to support impact initiatives; **iii)** the Unit has an academic Business and Engagement Lead (**Fordham**), supported by RBS, who will identify opportunities for external collaborations relevant to research, and mentor academic staff in dealing with commercial and other external partners; **iv)** at Unit level, we will set up systems to review and optimise the significance and reach of impact emerging from excellent research (including unforeseen beneficial impact) and will utilise strategic investment funds to support diverse and creative routes to impact; **v)** we will work to further develop University and Faculty systems to capture and record evidence of impact and refine and subsequently share case studies with stakeholders and the wider public.

d. Relationship to case studies

Our three case studies exemplify significant impact drawn from the *Communities and Resilience* and *Cold and Palaeo Environments* groups.

Improving human resilience through disaster and development research: The Case Study builds upon ten years of research by Collins into health problems in disaster-prone regions of Africa and Asia. Investment in two five-year DDN Independent Researchers has allowed this broad reaching impact to be developed. Crucially, this investment has allowed the sharing of experience between local communities in previously unconnected disaster-prone regions, for example the transfer of knowledge between local enablers in Mozambique, Zimbabwe, Bangladesh and Nepal.

Changing the way we think about women and men in disasters: The case study builds upon Twenty years of collaborative research by Fordham, an Enterprise Fellow, into gender and disaster studies. The impact is in the form of an online resource for in-country NGO and local government, designed to allow knowledge and resource exchange and policy advocacy. An Independent Researcher has facilitated web page updates, contributing to the success of the impact.

The impact of Polish migrant worker research on policy and practice: The Case Study builds upon eight years of work by Fitzgerald into the integration of Polish migrant workers into UK society, illustrating work in the unit focused on marginal or hard-to-reach groups in society. The impact of the work led to the establishment of appropriate international trade union support for migrant workers, new EU and national policy on employment rights as well as access to legal advice for migrants injured at work.