

<p>Institution: Nottingham Trent University</p>
<p>Unit of Assessment: C17 Geography, Environmental Studies and Archaeology</p>
<p>a. Overview</p> <p>The Unit is based in the School of Animal, Rural and Environmental Sciences (ARES) at the Brackenhurst Campus of Nottingham Trent University. Following RAE2008, the Unit has used the REF2014 period to build on successes achieved. The Unit has seen growth in staff numbers and diversity in research focus while investing in developing areas of expertise. Research is not constrained by distinct groups, but instead interacts across three themes: i) Sedimentary Environments; ii) Biodiversity Conservation; and iii) Sustainable Environments of Managed Animals.</p>
<p>b. Research strategy</p> <p>b.i) The research strategy – evaluation of achievements post RAE2008</p> <p>The submission of 2 staff to A17 in RAE2008 was considered a positive strategic milestone in the development of the Unit, signalling intent to advance the Unit. The key strategic aims to progress the Unit stated in the RAE2008 submission were:</p> <ol style="list-style-type: none"> a) <i>Build upon excellence in research by reinforcing and developing niche themes, particularly where there can be cross-fertilisation of ideas between disciplines.</i> b) <i>Continue focus on end-user, outward-facing research.</i> c) <i>Conduct research that informs policy formation at a national level</i> d) <i>Further development of research at an international level</i> <p>a) <i>Build upon excellence in research by reinforcing and developing niche themes, particularly where there can be cross-fertilisation of ideas between disciplines.</i> Assessment of the Unit post-RAE2008 illustrates development and achievement of these strategic aims. The Unit has broadened the research themes to span the themes of Sedimentary Environments, Biodiversity Conservation and Sustainable Environments of Managed Animals. While these are niche areas, research expertise within the Unit allows for strong internal collaborations within the Unit and across other Units within the Institution. The themes reflect complementary interests, with an emphasis on inter-disciplinary collaboration. Several researchers work across themes. The success of the strategy is evidenced by the growth in research outputs and esteem within the Unit, resulting in an increase from 2 researchers submitted for RAE2008 to 13 for REF2014. The nature of the themes facilitates inter-disciplinary collaboration and flow of research strengths between themes, with no constraints across academic Departments or Schools.</p> <p>b) <i>Continue focus on end-user, outward-facing research.</i> The Units' emphasis is high-quality outward-facing research driven by external collaborations. Sources of external funding throughout the REF period exemplify the strong links with industry with funding awarded by end-user organisations such as Natural England, the Environment Agency, Defra, Severn Trent Water plc, the National Trust, and the People's Trust for Endangered Species. Research Council funding has been awarded for research into areas of direct impact to industry, such as the management of the environment within the poultry industry. The Unit's strength lies in the provision of evidence-based advancements in research for end-users. The outward-facing focus of the Unit is reflected in the research environment which combines robust academic partnerships with strong industrial and organisational collaborations. This strength has expanded beyond the RAE2008 submission of hydrology and sedimentology to incorporate development of a broad range of field-based research methods; such as methods of identifying and minimising human-animal conflict, and end-user orientated field trials relating to environments of managed species. The field-based focus is enabled by the Unit's emphasis on growth of facilities and equipment, and maintenance of networks of external collaborators.</p> <p>c) <i>Conduct research that informs policy formation at a national level.</i> The end-user approach to applied research continues to inform policy at a national and international level. Research on peatland hydrology is used by water companies, Defra, International Union for the Conservation of Nature (IUCN), Natural England, Scottish Natural Heritage, Moors for the Future, RSPB, and the Environment Agency to promote understanding and improve policy and practice in managing peatlands for biodiversity conservation and sustainable water resources. Findings from hydrology research have contributed to the cessation of peat extraction on many sites and a</p>

recommended total ban on peat as a horticulture medium in the UK from 2020. The Unit's research has expanded to **inform end-user practice** as well as policy. Development of track-station monitoring methods has led to the adoption of a unique design of hedgehog monitoring tunnel by The Mammal Society for national-level monitoring of declining hedgehog populations. Research determining overlap of resource use by endangered and common species has **informed policy on management** of the endangered San Joaquin kit fox **by the United States Fish and Wildlife Service** (USFWS) as outlined in the Five-Year Recovery Plan. Methods developed for assessing and analysing individual animal personality are recommended by the British and Irish Association for Zoo and Aquaria and are currently incorporated as a research method utilised to assess welfare of elephants in UK zoos by the Elephant Welfare Group as part of the UK Government directive on examining the sustainability of zoo environments for elephants.

d) *Further development of research at an international level.* Expansion of the Unit both in terms of research themes and staff numbers has led to a greater emphasis on high quality international research, both in terms of collaboration and impact. This has been achieved through continuing growth of research areas by existing Unit members e.g. Midgley's work on ice-marginal processes, and through members of the Unit appointed since RAE2008 bringing established international collaborative links to the Unit, and **facilitating development of new links**. Existing international collaborative research projects develop the theme of **sustainable environments of managed animals**, such as brown hyaena collaborations with the University of Pretoria, S. Africa, cheetah research in association with Cheetah Outreach in S. Africa, endangered canid species research with California State University, the USFWS and the Smithsonian Institution. International initiatives developed since new staff members have been recruited to the Unit include work on livestock guarding dogs and cheetahs in S. Africa, behavioural research on translocated skinks in Mauritius, and a global red fox immune gene diversity study comprising collaboration with institutions from six countries across three continents. These links have enabled the Unit to progress the strategy of **expanding international impact of research** within the Unit. This strategy will continue as a focus beyond the REF2014 submission. Examples include producing research data pertinent to the national power supplier in South Africa (Eskom) regarding endangered vultures perching on powerlines, leading to the means to mitigate against vulture collisions with powerlines in areas where vulture frequently occur. This information is relevant to other countries where similar patterns of powerline utilisation by raptors in tree-less habitat is emerging. Research regarding the impact of variation in personality on reintroduction success has been disseminated to the International Union for Conservation of Nature (IUCN) Reintroduction Specialist Group (RSG) and is reported in the IUCN RSG 2013 Case Studies book disseminated to all members.

b.ii) Future strategic aims and goals for research

Following the success of the RAE2008 marker submission to A17, and supported by the University Research Strategy, strategic investment has facilitated sustained growth in high quality research activity within the research themes. Research activity within the Unit is increasing year on year in terms of the number of research active staff with a subsequent increase in journal publications and funding applications submitted. The Unit's strategy is to build upon excellence in research by reinforcing and developing niche areas, particularly where there can be cross-fertilisation of ideas between disciplines. The Unit has particular emphasis on applied research through collaboration with end-users, with stakeholders ranging from industry, NGO and governmental organisations. The on-going successful implementation of the strategic objectives for the Unit (outlined below) has resulted in a significant change in the research environment surrounding the Unit. Growth of research output, impact and esteem is forecasted as the strategy continues to enhance the Unit.

a. *To support research-active staff to achieve their full potential.* Research Development Plans have been reviewed through one to one meetings with the School Research Coordinator and implemented in line with the strategy, to allow staff the means to define, prioritise and realise their research ambitions. One particular area of staff development that has been focused on is providing early career researchers (ECRs) with guidance on writing for scholarly publication, including the importance of targeting high quality international refereed journals. The success of this strategy has been evidenced by the increase in publications during the REF period. QR funds from the

College of Arts and Science have been invested strategically to underpin this growth. This has included funding for equipment, travel and for competitively awarded sabbaticals. To date, five 4-month sabbaticals have been completed by Unit members, with three further sabbaticals awarded for the academic year 2013-14. Completed sabbaticals have resulted in the publication of 9 journal articles, an Industry-commissioned report for Natural England and an IUCN case study book chapter. There are recurring opportunities through internal investment for new projects and pump priming activities, with internal investment in equipment driving forward established and new areas of research. Investment in the 200ha campus estate where the Unit is based has totalled £150K from University funds. £8,000 was invested in the Poultry Research Unit to expand the analysis of materials collected during nutrition uptake trials, and £2,000 was invested in remote detection cameras for non-invasive wildlife monitoring enabling the development of new research projects. The cameras have been instrumental in a study to determine presence of the cryptic Egyptian wolf in Mt. Sinai, and are currently being utilised in two concurrent studies in S. Africa, one focused on assessing risk of disease transmission within a cheetah captive breeding facility, and the second to examine risks to livestock from jackals in a recently re-established nature reserve in S. Africa.

Research funds are used to increase attendance and presentation of research at national and international conferences, increasing networking and international collaboration of existing staff. To date, staff have presented at end-user workshops, policy meetings and at academic conferences in the UK, USA, Turkey, Spain, Switzerland, Sweden and Canada. Presentations have resulted in further development of collaborations or advisory appointments such as the appointment of Bremner-Harrison to the UK Government Directive Elephant Welfare Group and the IUCN Reintroduction Specialist Group. Whitehouse-Tedd participated in a Sustainability Workshop hosted by the British & Irish Association for Zoo and Aquaria which resulted in a collaborative project with West Midlands Safari Park investigating the effect of fast days on captive cheetahs. Pullen and Starbuck received funding to attend a collaboration meeting at Edinburgh Zoo which has resulted in a new research initiative investigating captive housing and pregnancy success in captive pandas. An internally-funded data-collection trip to Svalbard resulted in a collaboration between Midgley and a local researcher, resulting in a submitted output for Midgley.

b. *To provide opportunities for ECR staff within the Unit to develop the necessary skills to become research active at a nationally and internationally recognized level.* Opportunities for ECR staff development include provision of training needs or assistance with buy-out time from teaching. ECRs are encouraged to submit sabbatical applications that demonstrate strong research plans and agreed deliverables. There is currently one ECR researcher within the Unit conducting research for submission for PhD by Publication. Buy-out of teaching time is financed by an external FP7 grant (Harrison, RE533: MC IRG276754/Jackals, €100,000, Project title: Investigation of immune gene diversity in a global species: Red fox (*Vulpes vulpes*)) but supported administratively within the Unit. In 2013 6 researchers within the Unit completed Home Office training and examination for ASPA modules 1-3 to facilitate future project development and ongoing good practice in animal research.

c. *To develop the profile of the Unit and to extend and deepen its research expertise.* Strategic investment in staff has resulted in 10 new strategic appointments within the Unit following RAE2008. Research specialisms of the 10 appointees both consolidate existing research strengths, for example in the area of hydrology, and expand the niche network to incorporate environmental sustainability of managed animals and conservation of environments for biodiversity. Six Visiting Research Fellows and Visiting Professors have been appointed in the REF period across the spectrum of research interests. These appointments have been drawn from both academia and industry to complement the applied focus of research within the Unit: a) Visiting Professor Doug Wilson (government agency – Environment Agency); b) Visiting Professor Paul McGreevy (academia – University of Sydney); c) Visiting Professor Richard Lea (academia – University of Nottingham); d) Visiting Fellow Dr Sarah Hemstock (NGO/academia – University of the South Pacific); e) Visiting Fellow Jeremy Kemp-Symmonds DVM (industry – wildlife disease and equine sarcoid consultant); and f) Visiting Professor Lorna Kennedy (academia – University of Manchester). Each of these appointments has resulted in increased collaborations with Unit researchers within relevant areas of expertise.

d. *To broaden and deepen the research culture.* The research ethos of the Unit reflects that of the Institution's: 'shaping lives and society'. Since RAE2008 the Unit has seen substantial growth both in terms of the number of research-active staff and the overall growth of the research culture within the Unit. One example of this is reflected in the growth of PhD students and Research Assistants within the Unit. The Institution's support of the growth of the Unit and recognition of research excellence is reflected by the appointment of 6 internally-funded PhD students who were awarded highly competitive Vice Chancellor Bursary funding. These bursaries support continued research in glacial sedimentary environments, and advance the new areas of non-invasive wildlife monitoring, species conservation and sustainable poultry management. In addition, internal funding provides travel expenses for external speakers for a Research Seminar Series that is attended by staff, post-graduate students and final year undergraduate students. The Seminar Series has increased external academic collaborations, e.g. University of Durham, University of Nottingham and University of Oxford.

Research funds are strategically allocated under the guidance of the UoA Coordinator, the School Research Co-ordinator and the UoA Advisory Panel, reporting to the School Research Committee. Funding is allocated on a competitive basis via an annual call for Expressions of Interest and on a responsive basis when promising research opportunities arise. The number of applicants for internal research funding has risen in the last three years, again indicating the growth in activity across the Unit. Staff whose research is clearly linked to the Unit are given a priority for funding, however, funding is also allocated to support projects developing new areas of research that fit within the remit of the Unit. Internal funds have supported post-graduate students, provision of research assistants, purchase of equipment, and travel to facilitate international collaboration, data-gathering and dissemination. The investment has resulted in high quality end-user outputs e.g. research assistants – Yarnell output no. 4, Harrison output no. 2; equipment – Burton outputs 2 and 3.

e. *To increase the amount and diversity of external research funding applications from the Unit including Research Councils, industrial and other sources.* Both internal and external training and guidance has been provided within the Unit regarding external funding applications (including Research Councils, European Union, Defra and UK statutory bodies, industry, animal and conservation charities). Success is indicated by an increase in income generated by 2 researchers during the RAE2008 period to 13 researchers within the Unit during the REF2014 period. This upward trajectory is set to continue with the increasing number of research active staff within the Unit as a whole. RAE QR funds have been provided to support buy-out from teaching to facilitate staff working on external grant proposals in collaboration with the NTU Research Grant Capture Team (RGCT). The remit of the RGCT is to facilitate the securement of high-profile research funding, thus it is a strategic priority of the Unit to engage staff with the RGCT to increase external research funding. To date, four members of the Unit have utilised the services of the RGCT for either assistance with applying for Research Council/EU FP7 funding or with evaluation of pre-proposals for grant securement with a successful EU grant outcome in 2010 (Harrison, RE533: MC IRG276754/Jackals). The RGCT have facilitated securing contract research via research showcasing, resulting in setting up of new industrial research collaborations (Burton, Grant Ref no. 01AEQ//R1634).

f. *To develop infrastructure and physical estate supporting a growing research base.* A key strategic aim of the Unit has been to develop a framework to support its growing research base. Substantial investment has been made in the physical infrastructure and estate for use by the Unit since RAE2008 (Section d for details).

c. People: Staffing strategy and staff development

Staffing strategy: The Unit is committed to the development and sustainability of a strategic research base that enhances the applied nature of the research. This is being achieved through staff recruitment, development and mentoring. Strategic recruitment has enhanced the research culture and diversity. The need for additional resources to sustain and grow research within the Unit was identified post-RAE2008 and ten new staff appointments made. The goal is to promote sustainable research specialisms within the Unit that grow the expertise within the Unit's research themes. Of the ten appointments, six are staff in the early stage of their careers (ECR's). For the

remaining four new staff, the appointment is their second position conducting independent research, indicating the means for both advancement and long-term sustainability of the Unit. Furthermore, investment in the Unit has resulted in staff appointed at the end of the RAE2008 period being incorporated into the Unit as their research profile has advanced. New appointments have led to an emerging dynamic profile within the Unit. Staff have teaching commitments within their own disciplines, ensuring that research underpins our courses. This is exemplified in the growth in diversity of PG research projects within taught MSc courses. Research themes have capitalised on new staff appointments and the external links they have brought to the Unit, particularly in the area of Sustainable Environments for Managed Animals. Furthermore, increasing internal collaborative links established during the assessment period have resulted in a significant increase in research activity and outputs since 2008. This is evidenced by the substantial growth of the Unit (Sections bi.a & bii). The development of research within the Unit is the result not only of the submitted staff, but has been contributed to by a wider range of academic staff, thus providing a solid basis for on-going evolution within the themes.

Staff development: Academic staff participate in annual performance development and contribution reviews (PDCRs), ensuring that their development needs are ascertained and addressed. The University uses a Researcher Continuing Professional Development Tool (RCPD: based on the Vitae Researcher Development Framework) to assess and enhance its support for the research-related career development of our staff at all stages of their career. NTU has implemented the *Concordat to Support the Career Development of Researchers*, and holds the European HR Excellence in Research Award, in recognition of its commitment to enhancing working conditions and careers for research staff. Our implementation of the Concordat is evident through our commitment to recruiting, rewarding and developing Researchers as full members of our university staff community. The Unit has a wealth of early and mid-career scientists who are supported through mentoring schemes and training programmes run by advanced career scientists from within the University. The scope of training offered covers the diverse elements required to effectively perform research including training in project management, appointment and interview processes and procedures, equality and diversity awareness training, grant writing and publishing in high impact journals. The subsequent increase in published outputs exemplifies the success of these measures. In 2009 the Unit hosted a full-day workshop by BBSRC regarding funding opportunities which led to successful grant applications by Burton. Staff are encouraged & funded to attend events held by other research councils, funding bodies, or training institutions where appropriate to develop individual research priorities. Courses attended include the Food and Environment Research Agency/University of York Home Office Licence training for ASPA Modules 1-3 focusing on wild animals and birds; the lab-animal based ASPA Modules 1-3, and specialised statistics courses. The Unit proactively trains staff in Equality & Diversity with a commitment to maintain an inclusive culture, and uses impact assessment to ensure compliance and understanding. A new School-level Ethics Review Group has recently been established with both internal and external membership, and provides guidance on ethical queries and ensures ethical standards are maintained within the Unit.

i. Research students

The growing base of Postgraduate (PGR) Research students within the Unit has been a major success during the 2008-2013 period, with the development of a vibrant PGR community across the Unit. The Unit has been awarded full or partial studentships from external sources: Alltech, AB Agri and AB Vista of the Poultry industry have each funded a PhD studentship, Natural England have funded 1x partial studentship, and highly competitive internal University funding has been awarded for 6 x studentships. Studentships have been awarded across the core themes within the Unit. During the REF2014 period there have been 4 PhD completions, 10 under progress and 1 under examination. Graduate destinations included post-doctoral research positions (Scholey, D.), Industry researchers (Lea, H.) and lecturers (Bottom, S).

Research supervisors within the Unit are responsible for the high standard of PG research degrees that are awarded. In the first year PGRs attend an induction programme (including Health and Safety), a 2½ day Research Methods workshop, and a 2 day vitae 'Effective Researcher' course. Subject-specific training is undertaken as advised by their supervisory teams; PGRs can attend

relevant M-level modules. Training on transfer report writing and PhD completion, including the *viva voce* process, is given in the second and third years respectively. The training programmes are complemented by a range of CPLD courses in project management, appointment and interview processes and procedures, planning for publication and equality and diversity awareness. Research student progress is formally monitored on a six monthly basis, via a panel of supervisors and an independent assessor, with key milestones and deliverables at month 6 (Project Approval) and month 18 (transfer from MPhil to PhD). PhD students are required to submit their theses within four years of registration. External courses are available to research students such as the Midlands Consortium for Graduate Training in Physical Geography (a collaboration between six universities assisting new PhD students developing research skills and planning research projects), the NERC-approved Windsor Postgraduate Research Training Workshop and the Postgraduate Symposia of the British Hydrological Society. Students are active participants in School Conferences and the School Seminar Series, engaging with external speakers through an informal post-seminar discussion session. Conducting fieldwork and presenting work at national and international conferences is given a priority for student funding. Students have received RAE2008 QR funding to undertake fieldwork in Poland, Russia, Iceland, the UK, Svalbard, Sweden, Switzerland and South Africa, and have presented at international meetings such as the European Symposium on Poultry Nutrition and the International Ethological Congress. The networking process is further enhanced by opportunities to visit other research facilities, field sites and commercial enterprises.

d. Income, infrastructure and facilities

Income: The increase in both the overall amount of funding, and the diversity of funding obtained demonstrates the upward trajectory of the Unit since RAE2008. External research income for 2008 to 2013 has totalled £725,243. Funding from industrial partners has provided a supportive collaborative research environment within the theme of sustainable environments for managed animals. The Poultry Research Group has secured >£500,000 external funding in the REF period leading to outputs from Burton and impact as detailed in the Poultry Case Study. Small project grants have been awarded by charitable organisations for end-user focused research, e.g. the Peoples Trust for Endangered Species, the Columbus Zoo and The National Geographic Society provided funding to Yarnell for monitoring of the endangered brown hyaena (totalling £7,006). High-impact research initiated by Labadz and furthered by Clutterbuck (see Peatlands Case Study) has resulted in successive grants totalling £74,556 from a diversity of end-user sources including industry and government (the Environment Agency, Defra, Natural England, Severn Trent Water plc). New appointments within the Unit led to the award of an FP7 Marie Curie Reintegration Grant of €100,000 (Harrison, see Section bii). The applied nature of the Unit's research has resulted in either direct funding as highlighted above, or 'in-kind' funding from collaborative organisations. For example, The Mauritius Wildlife Foundation and the National Parks Conservation Service has provided in-kind funding of £3,000 in the form of transportation, field assistance and field station bench fees for work on behavioural aspects of reptile translocation.

Infrastructure and facilities: Post RAE2008 the Unit recognised the need for investment in both staff and facilities to ensure long-term sustainability of research. Substantial investment has been made in the physical infrastructure and estate across the sites where Unit staff are situated. Funding for a bespoke animal unit was provided in 2008 (£1.25m) and £150,000 has been invested in equipment and livestock, both of which facilitate research on sustainable environments of managed animals. A new £2.75m library focusing on the Unit's research themes opened in August 2013 housing research facilities. In 2011/12 the £4.4M Superlab facility opened, housing bespoke research and teaching laboratories. Following provision of funding allocated as a result of the RAE2008 submission, the Unit has invested RAE2008 QR and Research Contingency Funds of £246,500 to develop infrastructure and facilities within the Unit. Areas of support are outlined in Sections Bi, Biv, and Ci.

Applied research is central to the Unit, thus, an infrastructure of field-sites has been established within both UK and overseas with land-owners providing access, permits and in some cases in-kind funding in the form of accommodation at field-stations. This includes multiple UK sites in Derbyshire, Nottinghamshire and Cumbria, and North Wales; and overseas sites in Mauritius, South Africa, Spain, the USA, the Middle East, Norway, Svalbard and Iceland. The Unit's researchers have priority access to the University's 200hectare estate comprising mixed farmland,

woodland and wetlands habitats. Upwards of £150k has been spent to facilitate research on the estate in the form of habitat upgrades, equipment and facilities. (see Section bii,a).

d. Collaboration or contribution to the discipline or research base

i) Support for collaboration

As a result of the end-user, outward facing focus that is central to the Unit's research, staff have strong collaborations with stakeholders from industry, academia and government. This external collaboration has been central to the growth of research capacity within the Unit. In addition, continued collaboration with other related disciplines within the Institution has been encouraged. Methods of supporting interdisciplinary and collaborative research include:

- i) A dedicated weekly Research Hour on the School timetable to allow staff time within their teaching schedule for interdisciplinary research meetings.
- ii) A Research Seminar Series comprising speakers across a range of disciplines beyond the scope of the Unit. This has resulted in several academic collaborations.
- iii) Provision of RAE-QR funding for collaborative visits to field-sites, laboratories or institutions.
- iv) Collaborative industrial or academic supervision of PGR students where this provides an element of expertise external to the Unit (e.g. NERC Centre for Population Ecology at Imperial College London, moved to University of Oxford in 2013; Chicago Zoological Society; Alta Vista)
- v) Appointment of Visiting Professors/Fellows with whom Unit members collaborate (1 government agency, 3 academia, 2 industry).

ii) Collaborations, contribution and dissemination

Collaborations have facilitated the growth of the Unit's network of external stakeholders. The range of end-user profiles enriches the research environment of the Unit; profiles include commercial industrial partners, UK and international NGO's and charities, and UK and international governmental agencies. Collaborations have contributed to the Unit's profile through joint publications, end-user commissioned research and joint PhD supervision. Outputs are in the form of published journal papers, commissioned research reports and reports to advisory bodies.

Academic: NERC Centre for Population Ecology, Imperial College London; University of Oxford; University of Nottingham; University of Sheffield; University of California, Davis; University of Manchester; University of Stockholm; University of Vermont; University of Canberra; University of Zurich; Queen's University of Belfast; University of Aberystwyth; Loughborough University; Writtle College; University of Leeds; University of Brighton.

Industrial partners: Severn Trent Water; CaniX UK; AB Vista, Alltech, AB Agri.

NGO/Charities: Durrell Wildlife Conservation Trust; Endangered Species Recovery Program, California; Mauritius Wildlife Foundation; Chicago Zoological Society; Guide Dogs Trust; The National Trust; Cheetah Outreach; People's Trust for Endangered Species; West Midlands Safari Park, Twycross Zoo; Umpfafa Wildlife Reserve; Mankwe Wildlife Reserve, The Mammal Society.

Government agencies, directives or advisory groups: the Environment Agency, Defra, Natural England, National Veterinary Institution, Sweden; the United States Fish and Wildlife Service; the California Dept. Of Fish and Game, USA; the Elephant Welfare Group, National Parks and Conservation Service, Mauritius.

Dissemination to end-users and stakeholders is a key element of contribution to the discipline for the Unit. Dissemination methods are diverse and include journal publications, conference organisation and delivery, contribution to recovery teams and advisory groups for work commissioned by government organisations. During the assessment period staff have reviewed papers for a number of respected journals and/or grant applications for national and international funding bodies. The following staff are members of important committees, advisory groups or boards: **Bremner-Harrison:** Symposium convenor for International Mammalogical Congress 2013, IUCN Reintroduction Specialist Group, Kit Fox Sub-team of the San Joaquin Valley Recovery Team, Defra Elephant Welfare Group Behaviour Sub-team; **Burton:** Chair of Scientific committee for WPSA 2014 Poultry Science Symposium, Chair of British Society for Animal Science Academia Association, Council member of World's Poultry Science Association UK branch; **Midgley:** Fellow of the Royal Geographical Society, Fellow of the Geological Society; **Yarnell:** IUCN Hyaena Specialist Group, Accredited member of Institute of Ecology & Environmental Management.