

PERSONAL IN STRICT CONFIDENCE



OPEN COUNCIL MEETING

Two hundred and eighty ninth meeting of NERC Council
to be held at the Food and Environment Research Agency (FERA) in York
on Thursday 15th October 2009.

Natural Environment Research Council

NATURAL ENVIRONMENT RESEARCH COUNCIL

Two hundred and eighty ninth meeting of NERC Council, to be held in the Sand Hutton Suite, at the Food and Environment Agency (FERA), York on Thursday 15th October 2009.

OPEN AGENDA

Introductory item	Paper no.	Strategic Objective
10 11:00 Chairman's welcome	Oral	
Discussion items		
11 11:10 Update on Living With Environmental Change (LWEC)	NERC 09/53	1, 2
12 12:00 NERC Strategy for Public Engagement with Research	NERC 09/54	3, 14, 17
13 12:20 Executive Report	NERC 09/55	18
12:50 Lunch		
14 13:30 Impact and Knowledge Exchange update	NERC 09/56	3
15 14:00 Open forum (<i>45 mins</i>)		
14:45 Break for refreshments (<i>15 mins</i>)		
16 15:00 Progress on implementing the People element of the NERC Strategy	NERC 09/57	14, 17
17 15:20 NERC Health and Safety Advisor's annual report 2008	NERC 09/58	15, 18
18 15:25 NERC Security Advisor's annual report 2009	NERC 09/59	15, 18
Standing items		
19 15:30 Rolling programme of business	NERC 09/60	18
20 15:40 Any other business	Oral	
16:00 Meeting close		

Papers for information:

- i) Note of individuals from NERC who will attend for particular items
- ii) Common NERC Acronyms
- iii) Membership of Council 2008/2009
- iv) The Mission of the NERC
- v) Council Policy on Vested Interests
- vi) SMT Top level objectives

NERC COUNCIL

LIVING WITH ENVIRONMENTAL CHANGE – PROGRESS UPDATE (COVER)

Purpose of the paper

1. To update Council on LWEC's progress, the opportunities LWEC is now presenting the environmental science community and the contribution LWEC is making to the delivery of the NERC strategy.

Link to NERC strategic objectives

2. Strategic Objective 1 - Strategic partnerships with key UK and International Organisations are supporting research delivery
3. Strategic Objective 2 – Promote collaborative research and a vibrant community throughout the environmental science, engineering and technology base.

Responsible Director

4. Dr Phil Newton – Director, Science Delivery

Author of paper

5. Mr Dan Osborn, as NERC lead for LWEC

Action

6. Council is invited to:
 - i. **NOTE** the overall progress and development of LWEC and its contribution to delivering the NERC strategy.
 - ii. **DISCUSS** the extent to which NERC's contribution to LWEC is enabling delivery of NERC strategy and relevant LWEC objectives, and **ADVISE** on how this could be improved.

NERC COUNCIL

LIVING WITH ENVIRONMENTAL CHANGE (LWEC) – PROGRESS UPDATE

Issue

1. To update Council on LWEC's progress, the opportunities LWEC is now presenting the environmental science community and the contribution LWEC is making to the delivery of the NERC strategy.

Background

2. It is widely recognised that our planet faces unprecedented environmental change, with major potential impacts on the economy and society in the UK and globally. This change is exemplified by changes in the impacts of floods, droughts and heat waves, depletion of natural resources, imbalances in the supply and demand for food and water, loss and change in biodiversity and the increased vulnerability of people, places and infrastructure associated with these.
3. Living With Environmental Change aims to provide decision makers with the best information to manage the environment and protect vital ecosystem services at the time and space scales on which the economy is managed. It aims to strengthen the evidence base for policy, not least by addressing the uncertainties that remain about the impacts of climate change and the links between natural capital and human well-being. It also aims to communicate and work with a diverse array of stakeholders to enhance people's skills and knowledge so they can better comprehend change and its associated uncertainties. This will enable people in all walks of life to make better decisions and life choices, and create increased opportunities for the development of individuals and the economy overall.
4. In June 2009, LWEC partners agreed that the following short form of the strategic objectives will inform progress towards the design of the programmes of work that will make up LWEC:
 - A. To predict the impacts of climate change and to promote sustainable solutions through mitigation and adaptation (led by NERC and Defra)
 - B. To manage ecosystem services for human well-being and protect the natural environment as it changes (led by NERC and Defra)
 - C. To promote human well-being, alleviate poverty and minimise waste by ensuring a sustainable supply of food and water (led by BBSRC)
 - D. To protect human, plant and animal health from disease, pests and environmental hazards (led by Scottish Government)
 - E. To make infrastructure, the built environment and transport systems resilient to environmental change, less carbon intensive and more socially acceptable (led by EPSRC)
 - F. To understand how people respond to a changing environment and develop thriving, cohesive and informed communities (led by ESRC)
5. The national and international context for LWEC is provided by the 5th Treasury Challenge for CSR 2007 (population growth and fossil fuel use) and a range of authoritative reports such as the 2006 Stern Review, the 2007 IPCC AR4, the 2005 Millennium Ecosystem

Assessment, and the 2007 GEO4 report. LWEC is also beginning to respond (under Objective C) to the 2009 international agricultural assessment (IAASTD) that was led by Bob Watson. Overall LWEC is well placed to address issues of food security through work under several of its Objectives.

6. NERC has planned a major investment in the LWEC programme (£237M spend in the current CSR period)¹. The NERC Theme Leaders have responded imaginatively to the LWEC Objectives; the TAP process has provided a rich vein of ideas that have initiated considerable LWEC activity, much of it developed in association with partners (as indicated in Annex A).
7. The LWEC Partners Board (the main governance mechanism; a member from each of the 20 partners²) has an independent chair: Lord John Selborne FRS. Professor Andrew Watkinson has been in post as LWEC Director since October 2008, with his supporting Directorate staff in place from mid-September 2009³. Dr Dan Osborn is the RCUK priority theme leader for LWEC and is the NERC lead. There have been two important LWEC Partners Board meetings in December 2008 and June 2009. Firstly, over £100M worth of, predominantly new, research activity is the final stages of being designed and commissioned (Annex A). Secondly, the principles of partnership working within LWEC were more clearly defined in terms of how programmes of research and other activities would be accredited to, deliver towards, and be supported by LWEC. From the first round of Theme Action Plans, NERC is involved in LWEC activities with a total value of £89M; of this £44M comes from NERC. Of the new Theme Action Plan activities that are proposed (subject to Council approval) activities total £80M, of this £72M comes from NERC. It is anticipated that partner contributions will increase as engagement is confirmed during the commissioning process, as was achieved following Council's agreement of 2008 TAPs.
8. LWEC continues to work through partnership groupings of variable geometries and a range of funding mechanisms. In all cases, LWEC programmes and other activities need to have a research and end-user context so that, from the outset, LWEC programmes are focused on the need to deliver policy, business and social outcomes at the time and space scales on which decisions are made. Accreditation is a vital aspect of partnership working in LWEC. It ensures that programmes and activities deliver the aims and objectives of LWEC rather than simply being relevant to environmental change. Accreditation is not a re-badging exercise for existing programmes. Accreditation involves partners working together to meet their own objectives and to obtain added value, such as efficiencies in spend, speed at which research influences policy/business and the necessary changes in behaviour needed to achieve this. Central to accreditation are the principles of co-design, co-production (or co-influence) and co-delivery of research. Existing programmes need to be willing to adjust their future direction to meet these criteria as necessary. These principles are becoming increasingly embedded within LWEC partner organisations. To help with accreditation, as well as day-to-day management of LWEC, a Partners Support Unit has been formed consisting of a lead working-level representative from each partner to help develop and manage future activities. The current list of these activities is given in Annex C.

¹ <http://www.lwec.org.uk>

² Current members of Partners Board: NERC; ESRC; MRC; BBSRC; EPSRC; AHRC; DCLG; Local Government Association; DECC; Defra; DoH; DFID; DfT; EA; Natural England; Scottish Government; SEPA; Welsh Assembly Government; TSB; Met Office.

³ The new staff, Dr Ken O'Callaghan (Head of Directorate), Dr Ruth Welters (Communications Specialist) and Steph Bentham-Green (Programme and Partnership Support), started in September 2009 and are based at UEA. The new staff join the existing members of the Directorate: Jacqui Gopal (PA to the Director), Javier Delgado-Esteban (half-time Web Manager) and Dr Nichola Badcock (Coordinator, shared between NERC and Directorate).

9. Work is currently in hand by all partners to align and accredit aspects of National Capability (or its equivalent) and existing programmes of work to LWEC. For NERC, this will form a significant portion of the £237M NERC has committed to spending on LWEC in the current CSR period.

Discussion

10. Council is asked to note (a) the progress being made with LWEC overall, (b) the influence that the NERC TAP and associated commissioning processes are having on LWEC's early direction, and (c) the close mapping between LWEC's developing work programme and the challenges in the NERC strategy (Annex D). Exemplars of LWEC activity are given in the following paragraphs along with some issues to note.

11. Examples of working in partnership include:

- (i) *Developing NERC priorities:* At an international level, the research community has recently recognised that increasing concentrations of carbon dioxide in the atmosphere are leading to ocean acidification and that impact on fisheries and coral reefs could be severe as early as 2030. Led by NERC, following initial development in the TAP, the LWEC partners have initiated a programme on **Ocean acidification** (NERC, Defra, DECC, SG, NE) to assess the risks to the marine environment. During the commissioning process Defra policy groups (now joined by DECC) have responded in a co-ordinated way and committed c. £5M to this programme. In response, NERC have adjusted their eligibility criteria to facilitate a joint call for proposals so that all relevant bodies can apply for funding.
- (ii) *New models for collaborating:* One of the models LWEC is developing for accrediting activities is for multiple activities to be run in parallel so that each programme can be co-designed, co-produced and co-delivered with the other in mind. The NERC Pilot Virtual Observatory (£1.7M) and the Defra, EA and NE Demonstration Catchments Programme (£2.5M) are doing just this in order to improve our understanding and management of water at the catchment level. The NERC VO will provide an infrastructure for data and model validation and development whereas the demo-catchments programme will supply much of the vital data that will be used within the VO and in return benefit from the increased possibilities for predictive modelling. Although our investment in the pilot VO is small, Defra feel it is essential for the delivery of policy related to their demo-catchment programme.
- (iii) *Adapting working practices:* The **Joint Climate Research Programme** (NERC, Met Office) aims to ensure that the UK maintains and strengthens its leading international position in climate science by developing mechanisms that promote the more effective pull through of research into improved climate forecasts. This example of partnering illustrates how NERC and the Met Office adjusted working practices and approaches to Intellectual Property. The JCRP will deliver higher resolution outputs from climate models and address key knowledge gaps and uncertainties.
- (iv) *Responding to the needs of others:* Evidence is accumulating that natural pollinators such as bees are in decline. In response to this, a major new **Insect Pollinators Initiative** (Wellcome Trust, BBSRC, Defra, NERC, SG) has been launched to better understand interactions between biological and environmental factors that affect the health, longevity and distribution of pollinators. The quick establishment of the partnering needed to deliver this programme illustrates LWEC's ability to mobilise

partners towards a common goal and the ability of NERC, in this case at least, to respond to an initiative from another organisation.

- (v) *Developing research priorities:* LWEC is engaging with a wide range of stakeholders including the learned societies, business and third sector. This is leading to the better definition of research issues that the user community for NERC science would like to see addressed and provides the research community with the opportunity to develop ideas relevant to the policy context. Defra have established a **Strategic Evidence Fund** that is taking up some of the output from this activity – for example, in the area of climate impacts on biodiversity.
- (vi) *Responding to changing priorities:* ERF identified that the issue of environment and human health currently receives relatively little funding from the funders of environmental research, although it is recognised to be of growing importance. LWEC has now established a joint **Environment and Health Programme** (NERC, MRC, and perhaps DoH and other partners involved in current actions in this area). This involves two large joint MRC/NERC activities on, “the ecology of infectious disease” and “environment exposure and health” and a smaller scoping study (NERC/Defra) on “reducing uncertainty in models for decision making”, that have been initiated following July Council.
- (vii) *Identifying new strategic areas:* Government departments are beginning to see real benefits from LWEC. DECC have identified their need for more research into climate economics. This will involve bringing together NERC climate scientists and economists from ESRC and policy makers from DECC to identify how to take this emerging field forward so that the research addresses DECCs policy requirements.
- (viii) *International collaborations:* The Changing Water Cycle was launched under LWEC in February 2009 with the aim of understanding how local to regional scale hydrological and biogeochemical processes are responding and will respond to changing climate and land use, including impacts on the sustainable use of soil and water and consequences of the changing water cycle for water-related natural hazards. Through consultation with Partners and the RCUK, India has been identified as the international area of focus and current negotiations are looking promising. This will help raise LWEC’s international profile.
- (ix) *Development:* Although Ecosystem Services for Poverty Alleviation (ESPA) is one of the first and most substantial areas of LWEC to begin reporting, it has been identified that political economy and behavioural economics are key issues that need to be addressed to mount an effective global response to environmental change within the ESPA framework. To meet the anticipated signoff date of Autumn 2009, DFID, NERC and the ESRC have been working hard to ensure that these new identified needs are captured within ESPA and that programme governance structures meet all partner needs.
- (x) *Links to business:* NERC, with increasing involvement from TSB, are also leading on Knowledge exchange. A series of Systematic Reviews are being commissioned, the first is for the construction industry. DCLG and WAG are showing growing interest in this study. The second set of reviews will be for the water industry. We expect the reports to be completed by mid-2010. A number of KE managers have been contracted/seconded, e.g. in the area of agri-food.. The KE managers will help inform both NERC and LWEC of the potential business engagement opportunities within these sectors. As a result engagement of LWEC with the retail sector has started.

12. Some important aspects of LWEC needing more work by partners:

- (i) *Food security and links with Global Uncertainties (GU)*: Many aspects of LWEC have security ramifications and discussions are in hand to ensure that LWEC and GU are properly co-ordinated. There have been initial workshops on food and water that are helping develop perspectives on research needs across the LWEC-GU landscape. BBSRC have released a strategic paper on LWEC for their community to respond to covering Objective C with strong elements of Objective B and D. BBSRC are currently consulting on a food research roadmap.
- (ii) *Responsive mode*: A number of research council partners are keen to incorporate some responsive mode activity into LWEC. BBSRC have been in the forefront here. This presents certain challenges to the working principles of LWEC but partners are working to ensure that the principles of co-design, co-production and co-delivery are adhered to. BBSRC award letters will reflect the need to work with the user community throughout the lifetime of the award.
- (iii) *Impact and evaluation*: The LWEC Partners' Board in June 2009 identified outcomes and impacts as major areas where LWEC should focus. An evaluation strategy has been drafted with the help of NERC evaluation team, however there is a considerable way to go in getting these principles imbedded into NERC and other partner processes.
- (iv) *Ensuring co-delivery*: It is generally accepted that co-design and co-production are happening within LWEC; however, given the newness of many of the accredited programmes extra effort will be needed to ensure that mechanisms are in place to deliver the outputs from activities to relevant policy and business partners. To address this guidance is being developed for all LWEC accredited activities, so that programmes can address this from the outset.

13. The following topics might progressively develop in LWEC partly through Theme Action Plans with NERC leading – these are complex and challenging areas LWEC needs to give a lead on nationally:

- Climate impact and adaptation in coastal, urban and rural areas (Climate System)
- Ecosystems and the services they provide in the landscape (Biodiversity and Sustainable Use of Natural Resources)
- Renewable energy (Sustainable Use of Natural Resources)
- Flood risk management (Natural Hazards)
- Changing disease risks (Environment, Pollution and Human Health)

14. LWEC cross-cutting issues include:

- (i) *Communications*: The importance of communications was underlined at the briefing to DGSR given in December 2008. The DGSR and BIS (then DIUS) officials were very keen to see these aspects of LWEC emphasised. LWEC has a communications sub-group (chaired by LGA) and a communications strategy (funded by Defra). A redesigned website has a facility for tracking partner activity. The LWEC Directorate will lead on both internal and external communications and has appointed a communications and information specialist to help implement the communications strategy.

- (ii) *Engagement*: The lead for public engagement is with ESRC. Engagement has a high priority in BIS and RCUK. RCUK are emphasising engagement for all the priority themes. LWEC now has an advisory group on public engagement to help the LWEC team implement effective engagement activity. Activities proposed by this group include “citizens panels” and creating opportunities for researchers to engage with the public to inform their research.
- (iii) *Knowledge Exchange*: A number of knowledge exchange activities have been held and some of these, mainly those with business thus far, have influenced thinking in LWEC on such issues as vulnerability, resilience and adaptive environmental management. The June 2009 Partners Board agreed to form a Business Advisory Group to foster LWEC engagement with business (TSB in lead). Knowledge exchange will also focus on the science to policy interface and external experts are being engaged to study this within the context of LWEC.
- (iv) *Data and modelling*: The NERC Research and Collaborative Centres will have a major role to play here and CEH and BGS are beginning to work together on this topic (e.g. in climate impacts at the soil-water interface). All aspects of LWEC provide opportunities of this kind. For example, to meet the challenge of environmental change successfully we will need to provide people, policy and business with visualised projections of the consequences of adaptive environmental management.
- (v) *Influencing government, business, the third sector, the public and the wider research community*: In addition to work on research programmes both the LWEC Director and RCUK priority theme leader are engaged with a range of bodies and events to influence upcoming international negotiations and future policy developments and implementation plans. The June 2009 Partners Board endorsed and encouraged this approach.

15. Internal NERC issues include:

- (i) *Flexibility to respond to LWEC*: The NERC TAPs have provided a range of opportunities for the development of LWEC accredited programmes. In addition SISB has to date been able to be flexible in responding to the needs of LWEC. However, as the creation, development and realignment of research activities to LWEC strategic objectives gathers pace, maintaining flexibility has presented a challenge, both in terms of time-tabling and resources. NERC has responded flexibly to the need to make timely investment decisions by developing a new process that allows investments to be made outside of the usual planning cycle.
- (ii) *National Capability*: There is a question of how best to account for National Capability as part of NERC’s contribution. The NERC LWEC team are working with designated Research and Collaborative Centre Champions on the NC to be accredited. In the future, this group will highlight LWEC relevant areas where they can join together to form a larger programme of work. The existence of these LWEC champions is already stimulating cross-centre working (e.g. BGS-CEH on modelling) and will create new foci for activity (e.g. estuaries and coasts – in which all RCCs, have a potential interest). This group meets at the end of September to discuss the accreditation of NC and RP and how the Centres can work together in collaboration.
- (iii) *Responsive Mode*: The Research Councils are currently considering accreditation of certain Responsive Mode applications. Council should note that “responsive mode” has a different character in each Research Council. NERC will take a retrospective

look at the recent consortium grants it has funded as a way of looking back at how partnership working within responsive mode has developed over the past few years.

- (iv) *Strategic fit*: The need to develop a more strategic view of LWEC's direction in relation to the future direction of the NERC Strategy is being examined by the LWEC Directorate team, for example, through structured processes involving some degree of horizon scanning, systems mapping and road mapping.

16. Progress on working in Partnership. The challenges LWEC presents to its partners are considerable. The partnership is large. Many of the partners have not worked in partnership together before. To deliver the ambitious aims of LWEC there has been a need for partners to adapt their existing processes. Despite these challenges, there is considerable willingness of partners to develop and implement activities within LWEC. A number of mechanistic and cultural factors have contributed to this:

- (i) *Scientific and policy drivers* are robust and recognised by all partners – there is an emphasis on policy, social and economic “needs” that research can strengthen the evidence base for;
- (ii) *Philosophy* that “LWEC is the Partners” is strongly embedded within its development. This is reinforced by the existence of LWEC programmes that do not include NERC and in the number organisations that are not partners wanting to be involved with LWEC activities;
- (iii) *Open and transparent nature* of LWEC has been welcomed by BIS and the Partners and is essential in ensuring that the LWEC brand remains strong;
- (iv) *Early benefits identified* by key partners, such as NERC and Defra, have demonstrated that although sometimes challenging, working in partnership is rewarding;
- (v) *Incentive to engage* generated by the early sight of activities that allows partners to exert influence during design phases. This has been shown to reduce duplication and provide better value for money;
- (vi) *Motivation* for partners to adapt their behaviour to realise the benefits of partnership working. e.g. The Insect Pollinator Initiative is one of the first times that BBSRC has engaged with environment stakeholders before grants have been awarded;
- (vii) *Identification of key people* who are open to new ideas and able to influence their own organisations are essential to driving the partnership forward;
- (viii) *Key role of the CEs/CSAs in LWEC evolution*; and
- (ix) “*Directorate*” core skills include ability to prospectively link research and policy impacts intelligently and sensitively.

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Estimated action delivery/completion date

- 17. The NERC LWEC team are developing a series of milestones with the Director LWEC that will track and record the development of LWEC (Annex E)

Implementation of actions delegated to

18. Dan Osborn, as NERC lead for LWEC.

Estimated resources required

19. No resources are needed in addition to those agreed. NERC has a small team dedicated to LWEC: 0.8 FTE Band 2; 0.5 Band 5 (the same individual works 0.5 FTE for Director LWEC in addition); 2 x 0.5 FTE Band 6; 0.4 FTE Band 8.

Communication plan

20. By Dan Osborn, through established internal NERC channels and to LWEC Director and partners.

Action

21. Council is invited to:

- (i) **NOTE** the overall progress and development of LWEC and its contribution to delivering the NERC strategy.
- (ii) **DISCUSS** the extent to which NERC's contribution to LWEC is enabling delivery of NERC strategy and relevant LWEC objectives, and **ADVISE** on how this could be improved.

LWEC programmes and expected outcomes as agreed at the Partners Board in Edinburgh 17 December 2008:

Objective A: Climate

1. Joint Climate Research Programme (NERC and Met Office)

The UK leads the world in predictive climate science and LWEC's overall success depends on making sure predictive capacity improves to the point where predictions can be used at the same time and space scales on which the economy is managed. This work will provide evidence that the UK needs in international negotiations as well as underpinning much of the predictive work needed to develop and implement successful mitigation and adaptation policies. It will also provide the foresight that UK business can use to lead on approaches to mitigation and adaptation. The programme was launched in March 2009.

2. Quantifying Uncertainty (NERC, Defra, Met Office, DECC, SG)

£1.4M was made available to the climate science community (in addition to that under the Joint Climate Research Programme) to address the key issue of uncertainty in climate modelling. Unless we can better quantify uncertainty – or become more confident in the way we handle uncertainty in predictions of change – it will be difficult to develop effective mitigation or adaptation strategies. UK scientists aim to use this work to have a major impact on the work of the IPCC.

3. Avoiding dangerous climate change (DECC and Defra lead with other partners)

Avoiding Dangerous Climate Change (AVOID) is to be delivered by a consortium including the Met Office and research centres supported by Research Council partners, some of whose activities are themselves accredited. AVOID will make an important contribution to the UK position at the Copenhagen climate meeting and also no doubt to the way we look at risks to the UK in the round.

4. Centre for Climate Change Economics and Policy (ESRC funds with interactions from other LWEC partners)

This £4.7M group, guided by Lord Stern, began work in October 2008. The LWEC Director sits on the Advisory Board and the group will be addressing the economic and policy challenges identified in the Stern review and the debate that followed.

5. Tyndall Centre for Climate Change Research (NERC, EPSRC, ESRC)

The internationally renowned Tyndall Centre for Climate Change Research that contributed significantly to the IPCC assessments on climate change adaptation and mitigation has been provided with an additional £4M of funding. This is to help orientate and engage the UK climate change research community to deliver more effectively on the LWEC environmental change objectives.

Objective B: Ecosystems

6. National Ecosystem Assessment (Defra, SG, WAG, NERC, DECC and involvement of other partners and stakeholders)

This world-leading, £1M initiative will produce the world's first national assessment of its kind. Following the Millennium Ecosystem Assessment chaired by Professor Robert Watson (Chief Scientific Adviser to Defra and DECC) it will provide an assessment of the current state of all of the ecosystems in the UK. The study will provide the evidence foundation of the ecosystems approach to policy that Defra are leading across Whitehall, identifying both threats and opportunities.

7. Ocean acidification (NERC, Defra, DECC, SG, NE)

This is another major long-term environmental issue to which partners are committing £12M. The potential impacts of ocean acidification, resulting from oceans absorbing anthropogenic carbon dioxide, stretch from climate regulation to fisheries. Because ocean life is so sensitive to ocean acidity it now seems likely that marine fisheries could be adversely affected much sooner than had been thought. The marine food chain may already have been affected.

8. Ecosystem Services for Poverty Alleviation - ESPA (Partners: NERC, ESRC, and DFID)

This £43.5M programme will address key environmental vulnerabilities in areas of the world where poverty is worst. The aim is to find ways in which poverty can be reduced by accounting for regional variations in climate, weather patterns and land use without causing or worsening enduring environmental problems.

9. The Changing Water Cycle (NERC, Defra, EA, DECC, SEPA, WAG, SG) [relevant to many Objectives]

This is a large initiative that is still gathering interest not only from LWEC partners but also key stakeholder groups (such as the UK water industry). One partner alone is contributing £10M. This will be a very significant element of LWEC as there are expected to be very large changes to the global water cycle that will affect billions of people, including many in the UK. Some people will be more likely to experience drought, others flooding. Better drought and flood management will be a key outcome.

Objective C: Human well-being through sustainable Food and Water supply

No programmes or activities at December 2008 Partners Board.

Objective D: Pests and diseases

10. Environment and Human Health Programme (Partners: NERC, EA, Defra, MoD, MRC, The Wellcome Trust, ESRC, BBSRC, EPSRC and HPA)

Estimates suggest that some 30% of human health problems worldwide have a strong environmental component. In the UK damage to human health from poor air quality costs, on average, six months of life expectancy and the nation some £20bn a year in health care. Environmental change may exacerbate this and key uncertainties in air quality pollutant dynamics need to be resolved. Equally we need to prepare for new and emerging diseases in ways that require close NERC, MRC and DoH collaboration. A further £20M is expected to be allocated to these research areas.

11. Centre for Environment and Health (MRC, DoH/HPA with interest from other partners developing)

This new £5M multi-disciplinary grouping using a mix of more traditional and leading edge techniques is centred around Imperial and Kings Colleges in London to identify and understand health impacts of a range of environmental changes on the scales that influence management policies and practices.

Objective E: Transport and Infrastructure systems

12. Adaptation and Resilience to a Changing Climate - ARCC (Partners are: EPSRC, ESRC, with potential interest from DCLG and other partners such as the TSB and NERC as the programme develops)

This programme will enable the design of urban systems that are more resilient to climate change. In May 2009 six new projects were funded totalling £million. In addition a network for £0.4m was

supported (operated by UKCIP) which brings together these projects with previously funded other climate change projects to give a programme of 13 projects with total funding in excess of £12M.

Objective F: People and Communities

13. Science Heritage Programme (AHRC, EPSRC)

This programme takes forward recommendations made by the House of Lords Science and Technology Select Committee report on science and heritage of November 2006 which concluded that there was a compelling need for a comprehensive national strategy for heritage science which covered both immovable and moveable heritage. The joint five year research programme has a dual purpose: it will provide funding opportunities for high quality research to increase our understanding, and improve the resilience of cultural heritage in the face of 21st century environmental change. It will also develop the heritage science community by funding networks and other awareness-raising and capacity building activities.

14. Centre in Understanding and Managing Natural and Environmental Risks (Defra, NERC, EPSRC, ESRC)

LWEC partners identified risks and the way we deal with them as a cross-cutting aspect of LWEC. This £1.2M centre, with its headquarters at Cranfield University, will enable improved management of risk through a focus on better understanding the ways the public responds to perceived risks in areas such as natural and man-made hazards, extreme events and new and emerging diseases. The LWEC RCUK Theme Leader sits on the advisory board.

15. Research Centre on Sustainable Behaviours (ESRC, Defra, SG, WAG, EA) [The inception of this centre has been delayed due to unforeseen circumstances]

£6M has been committed to this centre that will focus on sustainable consumption. The successful research group is about to be announced. Set within the context of broader debates about sustainable development and "one planet living", the focus of the Centre will be on the research challenges of informing moves within UK society towards more environmentally sustainable patterns of consumption and ways of living, and of achieving more effective pro-environmental behaviours to help to address the environmental challenges faced by the UK in the wider world.

Cross-cutting actions

16. Knowledge Exchange (NERC, ESRC, BBSRC, WAG, Defra)

Although knowledge exchange is embedded in all LWEC programmes, an additional £2M is currently available for Knowledge Exchange across the breadth of LWEC. There are opportunities for creating closer links with business and for aligning the rural research community more closely with LWEC Objectives. This action will do much to identify stakeholder needs in key economic sectors.

17. Public Engagement (ESRC led strong interest from other partners)

The partners were pleased to approve plans to launch a public engagement activity to ensure that technological, economic and social changes that are necessary to combat climate change (for example) are acceptable to the public. The UK cannot afford to develop a technology only for it to be rejected as unacceptable by the public (as happened with genetically modified organisms). This activity will help manage such risks.

NERC Contribution to LWECC activities

updated version: 21st September 2009

Table 1: Agreed activity by LWECC PB involving NERC - 2008 Theme Action Plans	Total Value (£m)	NERC contribution (£m)	LWECC Objective					
			Climate	Ecosystems	Food and water	Diseases	Infrastructure	Societal
Ecosystem Services for Poverty Alleviation	43.5	10.0	x	x	x	x		x
Joint Climate Research Programme	1.6	0.8	x					
The Changing Water Cycle	10.1	10.1	x	x	x	x		x
Ocean Acidification	12.0	7.7	x	x	x			
Quantifying uncertainty	1.4	1.4	x		x			
Tyndall Centre repositioning	4.0	1.3	x	x	x		x	x
Knowledge Exchange	2.0	1.0	x	x	x	x	x	x
Urban Atmospheric Science	2.9	2.9				x		
* Storms	4.9	4.9	x			x		
* Catchments Programme (inc Virtual Observatory)	4.2	1.7		x	x			
* Land-based Renewables	2.4	2.1		x				

Total value of activity once negotiations conclude

88.9

43.9

* Awaiting accreditation

italics - currently no co-funding, this may develop during the commissioning process

Table 2: Potential LWECC activities involving NERC - 2009 Theme Action Plans ¹	Total Value (£m)	NERC contribution (£m)	LWECC Objective					
			Climate	Ecosystems	Food and water	Diseases	Infrastructure	Societal
* Joint Research Programme	1.8	0.9	x					
Arctic Research Programme	14.0	14.0	x	x				
Ice Sheet Stability	11.0	11.0	x					
Next Generation Weather & Climate Prediction Systems	4.4	4.4	x					
Algal Bioenergy Network	0.6	0.6		x				
Marine Renewable Energy	3.1	3.1		x				
Macronutrient Cycles	10.5	10.5		x	x			
Valuing Biodiversity & Natural Resources	0.5	0.5		x				
Multi Hazard Assessment of Earthquake - prone & Volcanic Regions	5.0	5.0	x					x
* Environmental & Social Ecology of Infectious disease	8.2	4.0				x		
* Pollutant exposures & Human Health	6.0	3.0				x		
Biodiversity and Ecosystem Service sustainability	15.0	15.0		x	x			
*Reducing uncertainty in models for environmental decision making - scoping study	0.08	0.04				x		

Current value (discussions with LWEC partners and other in hand)

80.2

72.0

¹ Financial figures in this table are currently being revised in light of SISB comments and will likely change

* co-funding agreed with partners

italics - currently no co-funding, this may develop during TAP development and commissioning process

Table 3: Non-NERC led programmes	Total Value (£m)	NERC contribution (£m)	Climate	Ecosystems	Food and water	Diseases	Infrastructure	Societal
Bangladesh capacity building	0.2	0.05			x			x
National Ecosystem Assessment	0.5	0.2		x				
Insect Pollinator Initiative	10.0	2.5		x	x	x		
LWEC Pilot Reviews for Objective B	0.1	0*		x				
LWEC evolution and progress study	0.3	0.1						x
Centre for Understanding and Managing Natural and Environmental Risks	1.2	0.3	x	x	x	x	x	x

Total value of activity once negotiations conclude

12.3

3.2

* in kind contribution of staff time to administer and coordinate call

Approximate funds being aligned from the private and third sector	40
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TOTAL	221.4	119.1
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Upcoming Activities for accreditation in 2009 include:

1. Climate impacts and adaptation scoping study (Defra)
2. Land-based renewables (NERC, NE, Shell)
3. Defra Strategic Evidence Fund (Defra)
4. Insect Pollinator Initiative (BBSRC, Defra, NERC, SG, Wellcome Trust)
5. Sustainable Agriculture Research for International Development (SARID) (BBSRC, Dfid)
6. Innovation Platform – Sustainable agri-food supply chain (TSB, BBSRC)
7. BBSRC Living With Environmental Change Strategic Priority area (BBSRC, NERC, ESRC, Defra)
8. Catchments Programme (NERC, Defra, EA, NE)
9. Flood Surge Centre (EA, Met Office)
10. Innovation Platform – Detection and identification of infectious agents (TSB)
11. Exeter Environment and health programme
12. Virtual Transport Research Centre (DfT and a number of Research Councils)
13. Innovation Platform – Low impact buildings (TSB)
14. Innovation Platform – Low carbon vehicles (TSB)
15. Innovation Platform – intelligent transport systems and services (TSB)
16. Low Carbon transitions (DECC with others)
17. Bangladesh capacity building (LWEC partners, managed by UKCDS)
18. ESRC Climate fellows (ESRC with others)
19. LWEC evolution and progress study (ESRC, NERC, Defra, SG)
20. Green villages, towns and cities (DECC, DCLG, ESRC, EPSRC)



Mapping between LWECs developing work programme and the challenges in the NERC strategy

		NERC Challenges	Objectives					
			A	B	C	D	E	F
Climate systems	1	Develop high resolution regional predictions for decision making;	Blue					
	2	Enable society to develop mitigation and adaptation strategies through climate science	Blue					
	3	Improve and expand observations to validate climate change detection and prediction	Blue					
	4	Increase knowledge of the physical, chemical and biological feedback processes	Yellow					
	5	Improve understanding and modelling of key processes determining the sensitivity of the climate system	Blue					
	6	Improve understanding of natural variability and the link with climate change;	Blue					
	7	Improve understanding of the changing water cycle and how it will affect water availability and quality	Blue		Blue			
	8	Increase knowledge of the role of the polar and tundra regions in the global climate system	Yellow					
Biodiversity	1	Improve understanding of biodiversity's role in ecosystems: processes, resilience and environmental change		Blue				
	2	Develop new tools and techniques to describe biodiversity and its function		Yellow				
	3	Improve approaches for measuring abundance and distribution of biodiversity and its functions		Blue				
	4	Enable society to predict and mitigate effects of biodiversity change on processes that sustain life		Blue				
	5	Develop integrated tools for assessing the benefits of biodiversity		Blue				
SUNR	1	Extending the Resource Base			Blue			
	2	Meeting the Renewables Challenge		Yellow	Blue			
	3	Sustaining water and soil Life Support Systems			Blue			
	4	Valuing Environmental Services			Blue			Blue
ESS	1	Provide forewarning of abrupt changes in the Earth system	Yellow			Yellow		
	2	Improve knowledge of the interaction between the evolution of life and the Earth						
	3	Understand the forces and feedbacks that drive the earth system	Yellow					

		NERC Challenges	Objectives					
			A	B	C	D	E	F
Natural Hazards	1	Enable better forecasting and mitigation of hydrometeorological hazards			Weak	Strong		
	2	Enable better forecasting and mitigation of geohazards						
Environment Pollution and Human Health	1	Improve measurement and monitoring of the distribution of pollutant and pathogens at required time and space scales				Strong		
	2	Improve knowledge of processes and models of the dynamics of transport and transformation of pollutants and pathogens in the environment				Strong		
	3	Improve assessments of pollutant and pathogen exposure and risk to humans				Strong		
	4	Understand the impacts of waste management activities on the environment and human health				Strong		
Tech	1	Remote sensing and earth observation	Weak	Weak	Weak	Weak	Weak	
	2	Sensors and sensor networks	Weak	Weak	Weak	Weak	Weak	
	3	Novel laboratory instruments	Weak	Weak	Weak	Weak	Weak	
	4	Informatics, models and data	Weak	Weak	Weak	Weak	Weak	Weak

LWEC Objectives

A	To predict the impacts of climate change and to promote sustainable solutions through mitigation and adaptation
B	To manage ecosystem services for human well-being and to protect the natural environment as it changes
C	To promote human well-being , alleviating poverty and minimise waste by ensuring a sustainable supply of food and water
D	To promote human, plant and animal health from diseases , pests and environmental hazards
E	To make infrastructure , the built environment and transport systems more resilient to environmental change
F	To understand how people respond to a changing environment and develop thriving, cohesive and informed communities

	strong alignment
	weak alignment

NERC COUNCIL

NERC STRATEGY FOR PUBLIC ENGAGEMENT WITH RESEARCH (COVER)

Purpose of this paper

1. Council is asked to discuss a Strategy for Public Engagement with Research and consider the pace and scale of NERC's Public Engagement activity.

Link to NERC strategic objectives

2. Objective 3, 14 and 17

Responsible Director

3. Mrs Janice Timberlake – Director People, Skills and Communication
Dr Steven Wilson – Director, Strategy and Partnerships

Author of paper

4. Ms Judy Parker – Head of Communications

Annexes and website links

5. Annex A - NERC Strategy for Public Engagement with Research

Vested interests

6. None declared

Action

- 7: Council is asked to:
 - i. **DISCUSS** and **DECIDE** on the Strategy for Public Engagement with Research and **ADVISE** on the pace and scale of public engagement activity.

NERC COUNCIL

NERC STRATEGY FOR PUBLIC ENGAGEMENT WITH RESEARCH

Issue

1. To present to Council a Strategy for Public Engagement with Research. To also seek advice on the appropriate pace of change and volume of public engagement activity that NERC should deliver.

Background

2. At its meeting in February 2009, Council considered a review of NERC's extensive programme of Science in Society activities. To help guide the direction of this work, Council asked for a refreshed Science in Society Strategy to be developed. Since the term Public Engagement has widely superseded the term Science in Society, the strategy presented here is being called a Strategy for Public Engagement with Research, in line with the terminology that has been adopted by RCUK.

Discussion

3. The Strategy for Public Engagement with Research (PER) at Annex A builds on NERC's existing Science in Society policy and recognises that much excellent public engagement work is already undertaken across the NERC community. Delivery of the strategy will be through a variety of channels and programmes managed through different parts of the environmental science community. In addition to the corporate public engagement activity that is detailed in the strategy, there are public engagement programmes in RCUK, to which NERC contributes £300k per annum, and in the NERC Centres and Collaborative Centres. NERC researchers working on individual grants and within themed research programmes are also expected to do public engagement work.
4. The strategy does not represent a major change in direction but does signal some new objectives and a move towards much wider participation in public engagement amongst the research community.
5. The existing level of resource is sufficient to deliver many of the ongoing and future planned corporate activities detailed in this strategy. However, there are some significant new areas of work associated with the aspiration to develop a coherent programme of activities to enthuse young people in environmental science and in the aim to embed public engagement across NERC's research investments. To deliver this new work could require significant additional resource depending on the pace of change and the overall volume of activity that Council wishes to see. We would welcome Council's steer on this.
6. An implementation plan will be developed and provided the additional costs are below £200k the necessary adjustments will be made through re-prioritisation in the Swindon Office budget. If more substantial extra investment is required to deliver the strategy the issue will be brought back to Council to consider against other spending priorities.

7. One further issue that Council may wish to consider is the possibility of establishing a Societal Issues Panel to provide strategic advice on societal issues surrounding the conduct and outcomes of NERC research and to help promote a healthier relationship between research and society. Some other Research Councils have panels of this type and in addition the RCUK has a Public Engagement Advisory Group. NERC is in discussion with other Councils about the value and impact of individual Council panels. Such a panel would represent an additional cost in delivering the public engagement strategy and Council's advice on this issue would be welcomed.

Estimated action delivery/completion date

8. N/A

Implementation of actions delegated to

9. Mrs Janice Timberlake / Dr Steven Wilson

Estimated resources required

10. See discussion above.

Communication Plan

11. N/A

Action

12. Council is asked to:
 - i. **DISCUSS** and **DECIDE** on the Strategy for Public Engagement with Research and **ADVISE** on the pace and scale of public engagement activity.

NERC STRATEGY FOR PUBLIC ENGAGEMENT WITH RESEARCH

Introduction

Public engagement incorporates a wide range of activities that involve both one way communication and two-way dialogue with the public of all ages. Defined in this way, public engagement is synonymous with science in society and is now the preferred term. The purpose of public engagement is to enable people to learn about, consider, question and debate science issues and to be inspired by and understand the benefits that science brings to society.

The excitement of NERC science and its relevance to people's lives provides a strong platform for public engagement. The NERC mission and strategy clearly state the key objectives of NERC's public engagement strategy: to be accountable to the public for NERC's investment in environmental science and to enable informed debate between NERC and the public about environmental science and NERC's activities. However, public engagement activities contribute to a much wider range of objectives such as enthusing young people about environmental science and delivering societal impact. Public engagement is also a public relations tool and is therefore an integral component of corporate communications work to promote and enhance the external reputation of NERC and its centres.

Scope

This strategy for Public Engagement with Research (PER) builds on NERC's existing Science in Society policy and recognises that much excellent public engagement work is already being carried out by the NERC community. It sets out high level public engagement goals for NERC that are sufficiently flexible to guide public engagement in all NERC centres and to apply generally across NERC investments. This document does not, however, seek to encompass the detail of all the public engagement activity undertaken across the NERC community. The examples of ongoing activity and future plans set out for each of the strategic aims include only the corporate public engagement work led by the Swindon Office. It is expected that each centre will develop its own public engagement plan based on the high level aims set out here.

Public engagement cannot be carried out in isolation and it is expected that the public engagement strategy will overlap with strategies for corporate and external communications, stakeholder engagement, knowledge exchange and the communication plans for individual programmes and other major investments, all of which include an element of public engagement.

The strategy

The NERC strategy for PER sits within the framework of the RCUK PER strategy. Both the RCUK and NERC strategies will evolve to support delivery of the

Government's science and society strategy currently being developed through the Department of Business, Innovation and Skills (BIS). The vision of the BIS strategy is to develop the UK skills base, improve science communication and build public confidence in science and its application. Greater coordination and collaboration between scientists, the public and policy makers is seen as key to realising these aspirations and bringing about cultural change in attitudes to science in the UK. NERC will actively work with delivery partners to help achieve this.

NERC shares the visionary goals for public engagement set out by BIS and the RCUK and its strategy will contribute to their delivery. NERC's own public engagement aims and priorities are selected to support delivery of NERC's corporate strategy with emphasis on those areas where NERC can make a unique contribution based on access to environmental research, exciting infrastructure and researchers.

The NERC strategic aims for public engagement are as follows :

Aim 1: Work with the public to foster debate and identify attitudes to environmental issues to be considered in the conduct of research and in deciding research priorities.

Aim 2: Engage young people with environmental research to encourage the uptake of environmental science as a research career and to ensure more informed citizens.

Aim 3: Encourage and enable NERC-funded scientists to engage with the public and undertake public engagement activities that link science and society, and support and reward those that do so.

Aim 4: Increase public awareness of NERC-funded research, and the impacts that flow from it.

Implementation and delivery of the strategy

Delivery of NERC's PER strategy will be through a variety of channels and programmes managed through different parts of the environmental science community. The activities that are featured in this strategy document will be delivered directly, or contracted out, by the Swindon Office and the RCUK PER team. A wide range of other public engagement work will be delivered through the NERC Centres and by NERC-funded researchers in HEIs.

To monitor public engagement activity, the current collection of public engagement output and performance measures will continue. In addition, mechanisms will be put in place to enable better visibility and coordination of public engagement activities within NERC and its centres to help achieve a reasonable balance of effort across the different strategic aims. Inevitably some activities will contribute to the delivery of more than one of the four aims, just as some public engagement activities contribute to strategic aims outside the scope of this strategy. The division into four groups of activities is a practical but artificial one and the strategy should be viewed as a whole.

Aim 1: Work with the public to foster debate and identify attitudes to environmental issues to be considered in the conduct of research and in deciding research priorities.

Background

The two-way process of public dialogue with research is an integral and important aspect of public engagement and involves a deliberative process of participatory engagement where the outcomes are used to support sound and effective decision-making about research priorities and the way research is conducted. Dialogue activities are also a means of communicating and disseminating the outcomes of research. Public dialogue about the natural environment and environmental research will help to create a society that is informed about the conduct, relevance and impact of NERC-funded science. This work will support the wider Government agenda for public dialogue to inform research and policy so that the public can be confident that their attitudes and views are taken into account in deciding research priorities and in the governance of research.

Strategy

The NERC will:

- Encourage and enable informed debate between NERC and the public about environmental science and the conduct and direction of NERC research.
- Ensure that, where appropriate, public dialogue or consultation is, from the outset, an integral part of research programmes.
- Ensure that mechanisms are in place to enable the outcomes of public dialogue to be considered in the development of NERC's strategy and research objectives

Ongoing activity and future plans

Corporately NERC will:

- Conduct formal and structured public dialogue on areas of scientific research that are potentially controversial or which present ethical and social issues and in which the public will have an interest eg geoengineering dialogue activity in partnership with Sciencewise planned for Spring 2010.
- Through experience of public dialogue activities across the NERC, share best practice amongst the environmental science community
- Ensure that public dialogue is considered, where appropriate, as an integral part of the process in both the development and management of research programmes and that guidance is available about ways of conducting dialogue.
- the programmes consider public dialogue as part of the process in setting research priorities where appropriate and that guidance is available about ways of conducting dialogue activities.
- Foster opportunities for informal dialogue through public debates, lectures with opportunities for questions, presence of NERC researchers at science festivals and events where NERC science is being exhibited eg Royal Society summer exhibition.
- Each year to have one meeting of Council that is open to the public.

- Work with RCUK on regularly researching public attitudes to science in general, including environmental science.

Aim 2: Engage young people with environmental research to encourage the uptake of environmental science as a research career and to ensure more informed citizens.

Background

Science, technology, engineering and mathematics (STEM) has been identified as a national priority and the Government wants to encourage many more young people to study STEM subjects. NERC, through RCUK, supports this general aim but NERC also has the more specific aim of wanting to attract excellent young scientists into environmental science in particular. To meet this aim we need to start the process early, when children are still very young and before they begin to make subject and career choices. To ensure the flow of well-qualified young scientists into environmental science careers we must enthuse children from an early age in the subject matter of the natural environment and science research. We must work with education departments and curriculum developers to ensure that relevant topics are included in the national curriculum and taught well and that young people are made aware of the range of science careers and the subject choices they need to make in order to pursue a particular research career.

Strategy

Working to secure and sustain the future supply of environmental science researchers NERC will:

- Identify and focus effort on activities by which NERC can make a unique contribution to the STEM agenda through access to environmental research, researchers and facilities.
- Develop innovative activities and resources to engage young people from the age of 8 upwards in the excitement of environmental science and the process of research.
- Develop new ways to promote to both children, students, teachers and parents the range of career opportunities in environmental science and research and to provide information about subject choices required for these careers.
- Support teachers to deliver exciting and high-quality lessons in those aspects of the national curriculum that deal with the natural environment.
- Explore ways in which NERC can influence and support the national curriculum, education policy and the aims of the STEM programme in general.

Ongoing activity and future plans

Corporately NERC will:

- Work with the cross-NERC working group on Enthusing Young People in Environmental Science (EYES) to develop a plan for delivering this objective which is an integral part of the People Strategy as well as public engagement.

- Work with RCUK and the new RCUK Schools Policy Advisory Board to develop and implement a schools policy that will help Councils better to link into and influence national STEM initiatives and to make best use of the access to research and researchers that Councils can provide to engage young people.
- Encourage NERC researchers to participate in activities that engage children such as school visits, festivals, National Science and Engineering week events, open days etc and acknowledge the value of such activities.
- Explore the possibility of developing a children's web resource within Planet Earth Online to showcase environmental science to age groups from 8 to 18, gaining experience from partnership working with BBC Blue Peter on a project to involve children in web-based learning about the environment viewed from space.
- Develop materials featuring environmental science researchers and providing career information for children and teachers, for use by NERC researchers undertaking school visits, available online and distributed through appropriate channels and events.
- Work in partnership with other Councils, museums and Science Learning Centres to create interesting exhibits to engage children, their parents and teachers in environmental science eg Royal Society summer shows, Darwin 200 and joint NERC/BBSRC Biodiversity touring exhibit.
- Working through RCUK, contribute to schemes such as Researchers in Residence, Nuffield bursaries and CREST that help to connect students with the excitement of the research process.
- Work through RCUK to provide environmental science support for teachers through a programme of Continuous Professional Development and provision of web-based curriculum-relevant resources ie schoolsience.co.uk.

Aim 3: Encourage and enable NERC-funded scientists to engage with the public and undertake public engagement activities that link science and society, and support and reward those that do so.

Background

With the publication of the RCUK Expectations for Societal and Economic Impact there is a growing emphasis on embedding public engagement activities within all research funded by the Councils. Consistent with these guidelines and with Government aims for science in society, NERC will work to build an environmental science research community that values and rewards public engagement and where individuals acquire the necessary skills training and actively seek opportunities to engage. Our researchers are a valuable resource that we can utilise to increase the volume, quality and impact of public engagement activity flowing from NERC investments. NERC already supports an aspiration to improve communication and engagement skills amongst researchers but there will need to be a step-change in the way we skill and incentivise researchers if public engagement is to be truly embedded as a natural part of the research process.

Strategy

NERC will:

- Create the conditions for researchers to deliver increased public engagement activity relating to NERC's investments.
- Provide researchers with training and advice on public engagement to improve the numbers of researchers skilled in communicating with the public, to provide role models, to encourage the sharing of best practice and to improve the quality and effectiveness of public engagement delivery.
- Seek ways in which NERC can make an active contribution to bringing about culture change that will make public engagement an integral part of the research process.

Ongoing activity and future plans

Corporately NERC will:

- Make available to research providers through the NERC website, guidance about their obligations to communicate their science, advice on best practice and information about what training is available.
- Continue to provide training courses in 'Communicating science to the public' for up to 100 NERC-funded researchers each year.
- Through support of schemes like Researchers in Residence (via RCUK), provide opportunities for young researchers to develop their communication skills.
- Work with RCUK to develop and distribute a brochure to encourage and support researchers working with schools, providing practical ideas and details of the skills to be gained from such work.
- Provide support for one Royal Society Media Fellow each year.
- Consider ways in which researchers employed by NERC who have an interest in and aptitude for public engagement can be enabled to carry out public engagement activities and rewarded for their achievements eg allow staff time to do public engagement and encourage the inclusion of public engagement work in Forward Job Plans.
- Promote the STEM ambassador scheme across NERC and aim to increase the overall number of researchers taking part.
- Work with RCUK in developing and implementing measures to embed public engagement internally amongst NERC employees and externally amongst research providers funded by NERC eg through the requirement for grant applicants to produce Impact Plans.
- Through RCUK work with the Beacons for Public Engagement to promote public engagement activity in Higher Education Institutions (HEIs) and to make Council-funded researchers aware of the RCUK statement of expectation for economic and societal impact.
- Consider ways in which small sums of money can be made available to NERC researchers for public engagement work.

Aim 4: Increase public awareness of NERC-funded research, and the impacts that flow from it.

Background

NERC is accountable to the public for the funding it receives and so communicating science to the public is a commitment set out in the NERC charter. Public engagement activities that give the public access to the knowledge derived from NERC research are predominantly one-way and therefore differ from two-way public dialogues activities. Providing public access to research outcomes, researchers and research facilities aims to grow public interest in NERC science, create an atmosphere of mutual respect and build confidence in NERC and the way its research is conducted.

Enabling social learning about the environment and environmental issues will inform people's views and understanding of the contribution that environmental science makes to society. This will help to deliver and demonstrate impact which is particularly important at a time when Government is urging Research Councils to increase the impact of their research. The RCUK statement of expectations for societal and economic impact conveys this message to all recipients of Research Council funding.

Strategy

NERC will:

- Devise activities that will increase visibility and societal impact of NERC science, reach new audiences and grow traditional audiences.
- Develop innovative ways to communicate NERC science more effectively and more efficiently.
- Select subjects and prioritise activities that particularly benefit from access to NERC research and researchers, will reach as wide an audience as possible and are most likely to be of interest to a non-specialist audience.
- Seek partnership opportunities that will add value to the NERC's science communication activities.

Ongoing activity and future plans

Corporately NERC will:

- Provide advice and encouragement to NERC programme managers and principal investigators to ensure that they make best efforts to communicate the outcomes of their research effectively to the public (eg each programme to have a knowledge exchange and communication plan, each grant to have an Impact Plan stating who will benefit, how they will benefit and how the researchers will disseminate knowledge to a non-specialist audience).
- Work with RCUK and the Beacons for Public Engagement to ensure NERC researchers are familiar with and understand the importance of public engagement.

- Continue to work with RCUK and other partners, particularly the Living with Environmental Change programme (LWEC), to communicate the outcomes of cross Council investments.
- Support and deliver exhibits, lectures and other activities to engage the public in environmental science, working as appropriate in partnership with RCUK, NERC centres and HEIs.
- Improve communication within the NERC community to enable timely identification of the best and most engaging science stories and support a vigorous and proactive effort to achieve media coverage through formal press releases and increasingly through Planet Earth Online.
- Maintain the style and standard of Planet Earth magazine and develop specialist publications as required to engage children and the wider public.
- Review Planet Earth Online and develop strategies to improve its appeal and grow visitor numbers eg change format of podcasts, have a presence on social networks such Facebook and Twitter, links to other sites like BBC plus include content for children.
- Continue to promote and develop the Science Impacts Database.
- Develop an area on the web outlining the NERC Strategy for Public Engagement with Research and highlighting examples of interesting public engagement activities that have been supported and are planned.

Evaluation

Evaluation should be an integral part of delivering the PER strategy. It is important to ensure accountability, capture lessons learned to inform future activities and collect evidence of impacts.

Although the benefits of public engagement are often hard to evaluate, the range of techniques that are available for evaluating the different types of engagement activity are well documented. There is already a significant effort in evaluating NERC's public engagement through collection of metrics such as numbers of events, numbers of participants, web page hits and media coverage etc. This should continue and should be reported more rigorously. But there must also be increased effort to capture the outcomes that are much harder and more costly to evaluate, such as understanding and learning, and change of opinion, attitude and behaviours. Where outcomes are long-term, such as demonstrating that an event to enthuse young people is the beginning of an individual's journey to a career in research, it will be extremely hard to evaluate and may only be possible for very large projects with significant evaluation budgets.

NERC COUNCIL

EXECUTIVE REPORT – OCTOBER 2009 (COVER)

Issue

1. This standing item provides information to Council on key business issues that are not addressed elsewhere in the papers under the following headings:
 - i. Strategy and Partnerships
 - ii. Science Delivery
 - iii. People, Skills and Communications
 - iv. Health and Safety
 - v. NERC Research Centres
 - vi. Chief Executive's key issues and activities

Discussion led by

2. Professor Alan Thorpe, NERC CE

Information for paper collated by

3. Samantha Way, Secretary to NERC Council, sway@nerc.ac.uk, 01793 442570

Action

4. Council is invited to **NOTE** the report.

NERC COUNCIL

EXECUTIVE REPORT - OCTOBER 2009

I. STRATEGY AND PARTNERSHIPS

International

- a) On 15 September the Research Councils and FAPESP, the Research Council for the State of Sao Paulo, Brazil, signed an MoU to enable Brazilian and UK research partners to apply for funding through a single application and peer review process, removing the barriers of double jeopardy that occurs when applications are reviewed separately by both countries' funding agencies. NERC will apply the MoU to its Responsive Mode Consortium and Standard Grant schemes, from the December 2009 closing dates, and is considering whether applications to some Research Programme calls could also deliver significant benefits.
- b) In September, NERC awarded funding to four International Programme Offices (IPOs) of global programmes. This included renewals of IPOs for programmes of the International Council of Science (ICSU) – Surface Ocean-Lower Atmosphere (SOLAS), Global Environmental Change and Food Systems (GECAFS), and Climate Variability and Prediction (CLIVAR) and, new for NERC, joint funding with the European Space Agency of Global High Resolution Sea Surface Temperatures (GHRSSST). NERC support for these IPOs enables the coordination of global research and knowledge exchange directly aligned to NERC strategy, and supporting their location in the UK adds value for NERC through increasing UK access to and influence on international agendas.
- c) In June 2009 NERC and NSF led a meeting of the Chief Executives of the world's major global change funding agencies and ICSU, in Belmont Washington DC, which established a new high-level forum aimed at identifying strategic priorities for international collaboration. This forum will be action orientated, aimed at codesign and cofunding of major programmes, which it may charge ICSU with delivering. NERC will host the second meeting of this 'Belmont Forum' in January 2010, at the Royal Society.

Knowledge Exchange

- a) As part of NERC's contribution to LWEC, the KE group has seconded four individuals to develop knowledge exchange and impact with a range of business sectors; Richard Max-Lino, lead technologist for financial services at the Technology Strategy Board (TSB; financial services), Nathan Hill, of the Sensors and Instrumentation KTN (environmental monitoring), Murray Gardner of the Environmental Sustainability KTN (agri-food) and Craig Wallace of NOCS (marine).
- b) NERC is working with the TSB's Innovation Platform on low impact buildings towards a Collaborative R&D programme on "Design for Future Climate" which will take place in Spring 2010. Systematic reviews of the literature are being used to bring together the evidence for decision-making by the construction industry. Examples of information requirements include those relating to changing ground and wind conditions in a future climate.

- c) Under the Linking Innovation in NERC initiative, 8 KE fellows have been appointed at academic institutions across the UK. These individually are funded part-time to facilitate KE for their departments and schools in order to maximise the impact of NERC-funded science. Individuals range from post-doctoral scientists to professors on subjects from nanotechnology to environmental monitoring. KE fellowships will commence from October 2009 and are from 1 to 3 years in duration.

II. SCIENCE DELIVERY

- a) Up-to-date news of NERC science is published online at www.planetearth.nerc.ac.uk, and a schedule for announcing new research programme opportunities is available on the NERC website at www.nerc.ac.uk/research/programmes/opportunities.asp

b) *Delivering Theme Action Plans*

Of the sixteen Research Programme actions approved by Council in 2008, thirteen are underway (projects funded or in review), one has an open call, and two are finalising partnership funding and specifications.

- c) Calls are now open for the two actions Council approved in July 2009:

- Environmental & Social Ecology of Human Infectious Diseases (£9.6M, of which £4M NERC); <http://www.nerc.ac.uk/research/programmes/esei/>;
- Environmental Exposures and Health.
- and for a 'sandpit' to design and fund a pilot virtual observatory <http://www.nerc.ac.uk/research/programmes/virtualobservatory/events/sandpit.asp>

d) *Pollinators*

At a town meeting in July, the joint *Insect Pollinator Initiative* was launched as part of LWEC. NERC, BBSRC, Defra, The Wellcome Trust and the Scottish Government have joined together to co-design and co-fund the £10M research programme.

https://www.nerc.ac.uk/research/programmes/lwec/events/_DanaInfo=www.nerc.ac.uk+insect.asp

e) *Taxonomy & systematics review*

The Natural History Museum won the contract from NERC to deliver the *UK Taxonomy & Systematics Review*, as part of the Research Councils' response to the House of Lords Science & Technology Committee inquiry into systematic biology research and taxonomy. Expertise loss has potentially significant implications for NERC, since delivery of much NERC science, including key elements of our strategy, depend on taxonomic expertise. The review will particularly focus on strategic science needs and identifying the roles that different UK institutions and parts of the UK taxonomy and systematics community can play in their delivery.

f) *Termination of the Antarctic Funding Initiative*

Created in 1998 to fund responsive-mode research requiring access to BAS Antarctic infrastructure, such proposals will in future be considered through the responsive-mode standard grant scheme. This will enable all proposals that require access to BAS Antarctic infrastructure to compete on an equal footing with other responsive-mode proposals. The excellent working relationship with BAS in considering feasibility and planning of logistics will remain.

g) *Thinning ice-sheets*

The most comprehensive picture of the rapidly thinning glaciers along the coastline of both the Antarctic and Greenland ice sheets has been created using satellite measurements. The findings from two new studies provide an important step forward in the quest to make more accurate predictions

for future sea level rise. Work led by NCEO and recently published in GRL reveals a quadrupling of the thinning rate of Pine Island Glacier (West Antarctica) from 1995-2006, apparently driven by ocean warming where the glacier meets the sea.

Reporting in the journal Nature (Sept) researchers from British Antarctic Survey and the University of Bristol describe how analysis of millions of NASA satellite measurements from both of these vast ice sheets shows that the most profound ice loss is a result of glaciers speeding up where they flow into the sea. The authors conclude that this 'dynamic thinning' of glaciers now reaches all latitudes in Greenland, has intensified on key Antarctic coastlines, is penetrating far into the ice sheets' interior and is spreading as ice shelves thin by ocean-driven melt. Ice shelf collapse has triggered particularly strong thinning that has endured for decades.

III. PEOPLE, SKILLS AND COMMUNICATIONS

Communications

Events

- NERC-CEH-POST seminar on the draft Water and Flooding Bill (7th July)

Activities

- Sponsorship of two stands at the Royal Society Summer Science exhibition (1-4th July)
- Sponsorship of an RCUK stand and event at the World Conference for Science Journalists (July)
- Launch of Blue Peter-1 website for collaborative activity with Blue Peter and Surrey Satellite Technology (due early October)
- DVD targeted at 15/16 year olds to inform and enthuse about environmental science careers (in production)
- Filming with BBC's Real Rescues to document the RRS James Cook's rescue of Atlantic rower (scheduled for broadcast in November)

Publications

- Autumn issue of Planet Earth (in press).
- Planet Earth Online (around 8 podcasts, 35 news items, 8 features).
- Relaunch of Planet Earth podcast as a longer fortnightly programme, timed to coincide with BA Science Festival.
- Editing internal documents including Green Economy sector report.

Formal press releases and briefings

- 22 July: European Space Agency arrives in Oxfordshire
- 27 July: NERC Annual Report and Accounts published
- 31 July 2009: Kids in Space
- 19 Aug: RRS James Cook rescues Atlantic rower
- 20 Aug :Targeted investments in climate science could present enormous economic savings
- 21 Aug: Should females trust showy males?
- 27 Aug: Drugs designed by nature could prevent heart attacks and blood clots
- 1 Sept: NERC welcomes recommendations on geo-engineering research
- 1 Sept: UN Secretary-General visits the Arctic
- 14 Sept: Sex life may hold key to honeybee survival

IV. HEALTH AND SAFETY

- a) There have been three incidents, equivalent to RIDDOR, in the period July – September:
- On RRS James Cook. Bad cut and bruising to hand that was trapped whilst a moving a compressor using a chain block, resulting in two weeks off work. Accident review confirmed that correct manual handling procedures had been adhered to but it was agreed that such a heavy object would not be moved at sea in the future.
 - At BAS Svaalbard. Suspected Lyme Disease caused by reaction to a tick bite which was successfully treated with antibiotics.
 - At BAS Svaalbard. Possible Carbon Monoxide poisoning. BAS Staff member using Polish Research Facility felt unwell for a week whilst living in accommodation with a coal fired stove which may have had a leaky flue/chimney. Further investigations underway but individual now fully recovered after changing accommodation.

V. NERC RESEARCH CENTRES AND NOCS

BAS

Ice Core Team returns from Greenland

- a) Scientists from British Antarctic Survey (BAS) have just returned from Greenland where they were engaged in an ambitious multi-national project to drill an ice core through more than 2500 metres of ice that contains a climate record reaching back 120 000 years – the last warm interglacial period - when it is believed the northern hemisphere climate was several degrees warmer, and the sea level was up to several meters higher, than today.
- b) Led by the Geophysics Institute in Copenhagen and part-funded by NERC the NEEM project will drill a core to the base the ice sheet in north western Greenland over the next three years. Using instrumentation normally confined to laboratories the BAS team were able to perform on-site analysis of 600 metres of core – providing real time results from the drilling that will help estimate the extent of Arctic sea ice in the past, a critical component of the Arctic climate system. BAS will return to the NEEM drill site over the next two field seasons.

BGS

a) *BGS in the News*

I highlight here three events that have received extensive press coverage over the past few weeks. *The Carrington Magnetic storm* occurred on the 2nd September 1859 – the month marked the 150th anniversary of the largest magnetic storm ever recorded. This event was recorded at Greenwich. BGS now holds the record of the UK geomagnetic field through its geomagnetic network which is linked to an international network (Intermagnet). Large magnetic storms can severely disrupt transport and electrical networks. They also tell us a lot about the sun's energy input to our planet and geodynamics.

- b) BGS has geomagnetic field monitoring sites across the UK and across the Northern Hemisphere into the Canadian Arctic. In addition to providing important science information, these recordings are used by oil exploration companies, by the MoD and by the UK airports for near real-time correction to magnetic north. Part of our effort in this area includes an ambitious program to digitise our archive of over 250 000 daily magnetograms.

- c) *Writing with 160 My old squid ink.*
In 2008 I recorded in an earlier note to council that BGS had managed to relocate a classic fossil location which had been lost for a hundred or so years (Preserving the unpreservable: a lost world rediscovered at Christian Malford, UK). A BGS team lead by Dr Phil Wilby located the site and dug a new trench. The site is in Oxford clay which is about 160 My old, and preserves some of the best fossils from this era, some of which have extremely well conserved soft body parts. One of them, a squid fossil preserved 160 My old ink and this made a press splash this summer. In addition to the public interest, these fossils are providing new clues to past paleoenvironments and evolutionary trends and BGS is working with Princeton University on potential genetic classification of these well preserved fossils.
- d) *The North Sea: a store for Europe's future CO2 emissions* BGS with DECC and University collaborators organised a special session at the BA festival on Carbon Capture and Storage - CCS. In particular, the talks focussed on the role of injecting captured CO2 into saline reservoirs and the fact that the North Sea will be the major hub for storage of CO2 via CCS in Europe. :Mike Stevenson Head of Energy Science at BGS, said that CCS “ is an industry that could be the size of present day North Sea oil, and in many ways is simply the reverse of the oil and gas business, putting climate-changing CO2 gas back in the ground after fossil fuels have been burnt'. The research that we are undertaking helps develop economic opportunities as well as proving the technology and driving down costs of the CCS process through best practice. The outcome of the session was covered in most of the major British newspapers.

CEH

- a) *Countryside Survey update*
The Countryside Survey partnership, coordinated by the Centre for Ecology & Hydrology (CEH), recently published country reports for England, Wales and Scotland, following the field survey carried out in 2007. The Scottish Report was launched by Scotland's Minister for Environment at the Royal Highland Show, and the Welsh report at the Royal Welsh Show by the Welsh Assembly Rural Affairs Minister.
- b) *Flood estimation software update*
A major upgrade to the flood estimation software package, WINFAP-FEH, was launched on 9 September incorporating scientific advances to the Flood Estimation Handbook (FEH) statistical methods. The updated FEH encapsulates developments from CEH scientists working with NERC spin-out company, Wallingford HydroSolutions. FEH methods form the basis of most flood frequency estimation work in the UK.
- c) *European climate change reports*
Two new reports examining climate change adaptation and policy-making across Europe were launched at an event in Brussels in June. The preliminary conclusions were used in the European Commission's White Paper on climate change. The reports were produced by the Partnership for European Environmental Research (PEER), chaired by Professor Pat Nuttall, CEH Director.
- d) *Public involvement in UK Ladybird Survey*
A CEH led group of fifteen scientists from several organisations were invited to develop an exhibit on the recent harlequin ladybird invasion for the Royal Society Summer Exhibition. The stand focussed on two aspects of the invasion, new scientific developments in methods for controlling the harlequin, and the role biological recording by the public has played in monitoring. The stand was the most popular at the exhibition and attracted significant press coverage.
- e) The interest led to a CEH partnership with woolworths.co.uk, who wished to re-launch the Ladybird clothing brand in an unusual way. This collaboration resulted in an educational ladybird habitat at

London Zoo, educational content on the Woolworths website encouraging children to send in ladybird records, and the creation of a mobile phone portal to aide ladybird recording by members of the public - especially young people - while outdoors.

NOCS

a) Science to policy interactions

The Third World Climate Conference (WCC 3) took place in Geneva from 31 August to 4 September 2009 and brought together more than 2,000 climate scientists, sector experts and decision-makers. Professor Ed Hill chaired the session on 'Climate of Oceans and Coasts' in the expert segment of the meeting. The First and Second World Climate Conferences in 1979 and 1990 both had far reaching outcomes, including establishment of the Intergovernmental Panel on Climate Change (IPCC), the World Climate Research Programme (WCRP), the Global Climate Observing System (GCOS), the UN Framework Convention on Climate Change (UNFCCC) – the framework for international climate treaties such as the Kyoto Protocol. The WCC3 outcome declaration, adopted by Heads of State, Heads of Government and Ministerial representatives from over 150 countries who attended, has established a new Global Framework for Climate Services.

b) Arctic methane release

Data collected from the RRS *James Clark Ross*, as part of the International Polar Year Initiative, indicate that the warming of the northward-flowing West Spitsbergen current by 1° over the last thirty years may have caused an enhanced release of methane by breaking down methane hydrate in the sediment beneath the seabed.

POL

Review of UK shelf seas

- a) POL is leading the Ocean Processes Evidence Group's contribution to Charting Progress 2 (CP2), a Defra funded project charged with producing a comprehensive review of the physical chemical, biological and geological state of the UK shelf seas. This review is carried out on a five yearly basis and it provides impartial scientific evidence about the "health" of UK shelf seas which will be required by the UK Government in support of its obligations to the EU Marine Strategy Framework Directive.

Workshop on The Climate System and our Oceans

- b) POL and the University of Liverpool organised a workshop entitled *The Climate System and our Oceans* on 3rd September 2009 for the Anglican Bishop of Liverpool, local MPs and delegates from Liverpool City and Sefton Borough Councils, The Mersey Partnership and NWDA.
- c) Ms. Angela Eagle MP, Minister of State for Pensions and the Ageing Society, toured POL on 11th September and was briefed by the POL Director and Senior Scientists about the research carried out in the laboratory.

VI. CHIEF EXECUTIVE'S KEY ISSUES AND ACTIVITIES

- a) On 20 July 2009 NERC and the Royal Society co-organised a Climate Science Seminar for the DECC Ministerial Team, including Secretary of State, Ed Miliband and Minister for Climate, Joan Ruddock. Chief Executive of NERC and the President of the Royal Society were in attendance.
- b) I attended the launch of the Royal Society's 'Geo-engineering the Climate' Report on 1 September 2009. The Report calls for research to be carried out on the feasibility and unintended consequences of either managing incoming solar energy or direct removal of carbon dioxide from the atmosphere.

- c) I gave a presentation at the Royal Society in a seminar on “Science Collaboration in a Multi-polar World” on 21 September 2009. My talk was a response to a talk by Professor Deliang Chen, Head of the International Council of Science ICSU.
- d) On 22 September 2009, I met Phil Willis MP Chairman of IUSS Select Committee for an informal briefing on RCUK.
- e) On 1 October 2009 I took over as Chairman of RCUK from Professor Ian Diamond.
- f) During September and October I have visited the Universities of Plymouth, Reading and Oxford; CEH at Wallingford; and NCAS at Edinburgh.

NERC COUNCIL

IMPACT AND KNOWLEDGE EXCHANGE UPDATE (COVER)

Purpose of this paper

1. To provide Council with an update on delivery of NERC's Impact and KE plans, and seek early guidance on the next phase of strategic developments.

Link to NERC strategic objectives

2. Strategic Objective 3

Responsible Director

3. Dr Steven Wilson – Director, Strategy and Partnerships

Author of paper

4. Mr Simon Jackman, NERC Head of Knowledge Exchange

Action

5. Council is invited to:
 - i. Taking account of the presentation, to **DISCUSS** progress on delivering the KE parts of the Delivery Plan and provide initial advice on the development of the next Impact and KE action plan.

NERC COUNCIL

IMPACT AND KNOWLEDGE EXCHANGE UPDATE

Background

1. NERC's Delivery Plan 2007 laid out detailed plans for activities in the knowledge exchange area, under the title *Economic and Policy Impact*. This was in response to the 'Warry' report, *Increasing the Economic impact of the Research Councils*, 2006. The plan was updated in March 2009. In summary, these plans are covered under the Warry headings of Leadership, Influencing, Engagement and Demonstrating Impact. In addition, working with the Technology Strategy Board (TSB) is highlighted as a key route to impact.
 - i. **Leadership** – including taking the lead for Knowledge Exchange (KE) within LWEC and developing an approach to understanding impact in the green economy.
 - ii. **Influencing** - through seeking to embed KE within all of NERC processes including themes, TAPs, programmes and reporting structures.
 - iii. **Engagement** - through working with stakeholders at all stages, from the setting of research priorities to the dissemination of results.
 - iv. **Demonstrating impact** – through identifying key areas of impact, refining our evaluation methods, populating our science impacts database and producing an annual economic impact report.
2. Given the importance of economic impact within the strategic goals of NERC, the new NERC Head of Knowledge Exchange (Simon Jackman) would welcome the opportunity to update Council on progress in this area, and discuss his vision and thinking for future development.
3. This paper focuses on delivery of existing KE activities. It will be complemented by a presentation which will focus on future developments.

Issue

4. To provide Council with an update on delivery of NERC's Impact and KE plans, and seek early guidance on the next phase of strategic developments.

Person responsible for implementing outcome

5. NERC Head of Knowledge Exchange.

Estimated action delivery/completion date

6. An Impact and Knowledge Exchange Action Plan is being developed for consideration by SISB and Council in the first quarter of 2010. The Council discussion will inform its content.

Discussion

7. Knowledge Exchange within NERC comprises activities related to impact on businesses, science to policy and public engagement in research. The following progress has been made in relation to the Worry headings.
8. **Leadership.** An assessment of the impact of NERC research on sectors and themes within the green economy has been carried out. Existing sectors where environmental science has impact include construction, transport, agri-food, water, waste and natural resource extraction. These sectors are all in a process of adapting to environmental change. The existing energy sector of oil and gas will remain an area of impact, but the rapidly developing renewables sector, a resurgent nuclear industry and the implementation of Carbon Capture and Storage (CCS) and related approaches to carbon sequestration present significant new opportunities. Valuing the environment in the context of ecosystem services is growing in importance to businesses. In combination with carbon accounting and trading and climate services, this provides a significant opportunity for the exploitation of environmental information. Within financial services, the insurance industry and others focused on risk management are making greater use of environmental information in relation to natural hazards and climate change. NERC is the lead for KE within LWEC, providing an opportunity to work with partners in achieving impact in these sectors as well as through policy and public engagement.
9. **Influencing.** The embedding of impact is the principal mechanism for influencing the community. This requires a change in practice, through NERC processes and mechanisms, which is ongoing. For the research community, it also requires a change of culture. The significant challenge is to establish impact alongside excellence in assessing research without compromising academic freedom and the need to support blue skies research. This is being communicated through a range of mechanisms and through working with RCUK.
10. **Engagement.** Significant mechanisms for achieving impact include working within the Living With Environmental Change (LWEC) partnership, with the Met Office in their Climate Services initiative and with the Technology Strategy Board (TSB). These partnerships have yet to deliver impact for NERC science but each has significant potential to impact a range of users.
11. Within LWEC, aside from funding research programmes, NERC is the lead for KE. This has involved developing the strategy for KE within LWEC, working with TSB on developing a business advisory group and seconding four individuals from business-focussed organisations to identify opportunities within financial services, environmental monitoring, agri-food and marine industries.
12. The Met Office has established a Climate Services Board to oversee the development of its climate services activities for business customers. Simon Jackman has joined the Board as NERC's representative and is leading on partnerships and IPR. The Met Office's climate service will be a major pathway of impact for NERC's science within the business community.
13. Working with the TSB, NERC is close to achieving its target of £5.5m committed to co-funding with TSB in the current Spending Review period. NERC has been working directly with TSB in a number of areas specifically related to new initiatives and Innovation Platforms.
14. **Demonstrating impact.** An Economic Impact Baseline report was provided to BIS in March 2009, drawing together data and case studies from across the portfolio of NERC

investments. The Science Impacts Database (SID) now has over 120 case studies of specific projects and programmes which have led to impact. A subset of these is being further analysed by an environmental economist to provide more accurate assessments of the value of the impact. A further large scale impact study is being undertaken on climate change and on impacts on the house and town. The drawing together of these studies is developing methodologies for evaluating impact.

Working with the Technology Strategy Board

15. **Financial Services.** Together with ESRC, NERC has been working with TSB to establish a Knowledge Transfer Partnership (KTP) programme for the insurance industry. This has initially focussed on developing the Willis Research Network (WRN) through co-funding of post-doctoral KTPs in research organisations. WRN is migrating to the KTP model over the next year. In addition, a group of re-insurance companies and brokers, led by AON Benfield and Liberty Syndicates, under the umbrella of the Insurance Intellectual Capital Initiative (IICI) is establishing a further KTP programme on large risks. NERC has contributed to TSB's financial services strategy and is funding a Special Interest Group within the Financial Services Knowledge Transfer Network (KTN), to be launched in September 2009, which will bring together business and academics to discuss and develop projects in the area of Environmental Risk Management.
16. **Construction.** NERC has been working with TSB's Low Impact Buildings Innovation Platform. Specific government targets for zero carbon buildings in 2015 and 2017 will drive innovation towards new materials, structures and environments. As part of this activity, there is a need for the construction industry to understand the impacts of climate change. NERC has been contributing to the design of a call for proposals under the "Design for Future Climate" theme to be launched by TSB in Spring 2010. NERC has commissioned systematic reviews of the literature focussed on specific construction industry questions identified by TSB in relation to other impacts of climate change on aspects such as wind and ground conditions. These reviews will be overseen by Prof. Andrew Pullin from University of Bangor who is transferring the approach from its established position with the ecological and medical communities.
17. **Agri-food.** TSB is establishing an Innovation Platform in Agri-food. This will operate with £10M p.a. over 5 years from TSB and £3.5M p.a. and 2 FTE staff from Defra. The platform has been closely developed with BBSRC and they have now begun to work more closely with NERC. The broad topics as defined by TSB are plant protection and growth (pesticides and fertilisers), animal nutrition, waste and greenhouse gas emissions. The first call will be around pesticides and the pesticide directive, with little focus on environmental aspects. A later call in 2010 will focus on fertilisers and this should be able to be linked with the planned macronutrient cycle TAP.
18. **Water.** TSB has been in discussion with OFWAT concerning the potential of an innovation platform for the water sector. The recent Cave review of the water sector identified the need for ring-fencing of funding for research to enable sufficient innovation to occur in a sector which is primarily controlled by low pricing for customers and where long-term views can therefore be limited. Defra has yet to respond to the Cave review and TSB have therefore been slow in moving forward. The Environmental Sustainability KTN has conducted a mapping of the water sector's needs in the context of Living with Environmental Change. The top five priorities in order were integrated water basin management, carbon optimisation, valuing water in future society, "Google Water" and drought/flood forecasting and management. Once this report is complete, they will be conducting a more detailed mapping to NERC's research activities.

19. **Environmental monitoring.** NERC and TSB co-fund the Centre for Earth Observation Instrumentation which is a consortium led by Astrium and comprising the University of Leicester, Qinetiq and STFC/Rutherford Appleton Laboratory. Funding from each organisation is £0.5M p.a. The Sensors and Instrumentation KTN is establishing a Special Interest Group on Environmental Monitoring to map out the opportunities for monitoring and environmental science and to bring together researchers and businesses for knowledge exchange and the development of research projects.
20. **Energy.** The Bioscience KTN has been operating a Special Interest Group on algal bioenergy, which is being supported in part by NERC and is linked to the Carbon Trust. This will enable environmental aspects to be incorporated within the development of algal bioenergy systems as they emerge from this network.

Additional ongoing developments

21. In addition to the activities described previously, NERC and TSB are establishing a Business Advisory Board for LWEC, by the end of 2009, with a remit of strengthening the business engagement and impact arising from the programme. Roadmapping activities are being undertaken for a number of business sectors to identify KE opportunities and business needs to be fed into future strategy development.
22. Reviews of NERC KE funding mechanisms and commercialisation are being undertaken to ensure that these fit the needs of the community (both end-users and researchers) in maximising impact from research. The outcomes from these reviews will form a key part of the Impact and KE action plan.

Action

23. Council is invited to:
 - i. Taking account of the presentation, to **DISCUSS** progress on delivering the KE parts of the Delivery Plan and provide initial advice on the development of the next Impact and KE action plan.

NERC COUNCIL

PROGRESS ON IMPLEMENTING THE PEOPLE ELEMENT OF THE NERC STRATEGY (COVER)

Purpose of this paper

1. The People element of the NERC Strategy is currently being addressed through an integrated programme of tasks (twenty-one work streams) set out in the People Action Plan. This Plan was discussed and agreed by NEB in November 2008, following consultation with groups such as the People and Skills Network and the Personnel Corporate Strategy Group. This paper updates Council on progress in implementing the People Action Plan.

Link to NERC strategic objectives

2. Strategic Objective 14 & 17

Responsible Director

3. Mrs Janice Timberlake – Director, People, Skills and Communication

Author of paper

4. Mr Jonathan Bates, Head of People and Skills

Annexes

5. Annex A – Progress report on individual work streams

Action

6. Council is invited to:
 - i. **DISCUSS** any issues arising from the report of progress on implementation of the People element of the NERC Strategy.

NERC COUNCIL

PROGRESS IN IMPLEMENTING THE PEOPLE ELEMENT OF THE NERC STRATEGY

Issue

1. The People element of the NERC Strategy is currently being addressed through an integrated programme of tasks (twenty-one work streams) set out in the People Action Plan. This Plan was discussed and agreed by NEB in November 2008, following consultation with groups such as the People and Skills Network and the Personnel Corporate Strategy Group. This paper updates Council on progress in implementing the People Action Plan.

Background

2. The four key challenges identified in the People component of the NERC Strategy are:
 - i. Creating flexibility/adaptability in the people within our community;
 - ii. Delivering training priorities to meet skills gaps in our community;
 - iii. Attracting the best people for employment within NERC and developing them;
 - iv. Identifying the role NERC can play in attracting young people into environmental science.

The People Action Plan currently focuses on challenges 1-3 above. Challenge 4 is referred to later.

3. The twenty one work streams within the People Action Plan include a significant number of actions that are focussed specifically on the people we employ within our Research and Collaborative Centres. However, many of the actions have a wider impact. An underlying emphasis within the Plan is to enhance and strengthen the sense of community across those who deliver NERC science, wherever based and whoever their employer is. A particular emphasis is given to establishing what skills exist within our community and in identifying skills needs for the future.
4. Amongst the major tasks being undertaken, the following are of particular note:
 - Defining more clearly the expectations that NERC has from the people it directly employs and ensuring that individual aspirations are more closely linked to organizational needs, by spelling out the 'Deal' and through the development of regular discussions with individuals on the 'Personal Deal.' This is enabling very clear, tailored messages to be given to staff about the need for adaptability/flexibility – whilst at the same time ensuring that we also encourage the development of expertise.
 - Developing the concept of 'skilled communities', linked through professional networking; this work brings together the Skills and IT development areas and is intended not only to promote the concept of the wider community but also to provide a greater awareness of the skills that exist amongst the people we both support and employ.
 - Ensuring that the support NERC provides for postgraduate level training is linked to the NERC Strategy and takes account of the skills needs of our community. Over the next 6 months we will be engaging with SISB on the development of a new NERC Training Strategy, with a focus on our key role of ensuring the UK has a healthy and broad science base.

Discussion

5. Progress on each of the work streams in the People Action Plan is recorded in Annex A.
6. Overall, progress on delivering the People Action Plan has been good. Where targets have not been met this is due mainly to the demands generated by other issues, notably SSC. The resource dedicated specifically to implementation of the People Action Plan is relatively small and dependent on input from areas such as Corporate HR and Postgraduate Training that have heavy commitments to the SSC project.
7. However, good progress is being made overall, with 18 of 21 of the tasks recorded as making satisfactory progress. Action has been taken to bring the three remaining tasks in line. Perhaps most importantly, there is a very active awareness of the People elements of the NERC Strategy and considerable debate around them, particularly in Research Centres. The Head of People and Skills is engaging with staff – and, increasingly, the wider NERC community – on these issues.
8. Work streams to reflect challenge 4 – attracting young people into environmental science – are now being developed. The work will focus on enhancing awareness of what careers in environmental science look like and the skills required. This is in addition to the activities already supported through RCUK which look at attracting young people into science generally. A major workshop on 21 September will pull together existing activities by our RCCs and consider how this can be further focussed and developed to increase impact. In addition NERC is developing links with Blue Peter and is creating a careers DVD. The agreed activities will then be incorporated into the People Action Plan.

Estimated action delivery/completion date

9. The People Action Plan is intended to deliver across the period of the current NERC Strategy and beyond.

Implementation of actions delegated to

10. Janice Timberlake.

Estimated resources required

11. The delivery team for the People Action Plan is centred on a Band 3 (100%), Band 5 x 2 (both 30%) and a Band 6 (50%). A dedicated resource (Band 4, 100%) manages the Skills Review.
12. In practice, much of the delivery will be carried out on a day-to-day basis by senior staff, HR specialists etc, within our RCCs and in the wider community.

Communication plan

13. The People element of the Strategy has been communicated extensively through meetings and presentations in RCCs. In late September, it is to be published both on the WWW and in paper form.

Action

14. Council is asked to:
 - i. **DISCUSS** any issues arising from the report of progress on implementation of the People element of the NERC Strategy.

People Action Plan

Progress report: the individual work streams

Activities primarily focussed on NERC employees

1. 'What's the Deal?'

Aim: To provide staff with a greater awareness of what the organization offers its staff and what it expects in return.

Original Timetable: Document to be developed, agreed by NEB and rolled out to staff meetings by Directors by March 2009.

Progress: Draft developed by senior cross-NERC group and trialled with staff, before being agreed by NEB in November 2008. Has been rolled out at POL and in NCAS. Currently being rolled out within CEH. BGS planning roll-out in late 2009. BAS, SO and NOCS considering roll-out plans.

To note: Collaborative Centres have been given scope to add to/adapt the Deal to reflect their own circumstances; this has been done particularly successfully by NCAS as a way of creating a greater Centre identity.

Status: Green.

2. The Personal Deal

Aim: To ensure that staff link their career aspirations to the needs of the organization.

Original Timetable): All staff to have had one discussion by March 2010. All staff to have had second meeting by April 2013.

Progress: Endorsed by NEB in November 2008. CEH has taken a lead in implementing and are well-advanced. POL have recently launched. In other Centres, suitable managers are being trained to carry out these key discussions.

To note: CEH report that whilst these discussions are resource intensive, they are proving particularly valuable in ensuring staff have a clearer understanding of how they contribute to CEH and NERC Strategy.

Status: Green.

3. Workforce planning

Aim: To anticipate changing needs and priorities and to ensure recruitment and staff development reflects this.

Original Timetable: Each RCC to be undertaking workforce planning using tools provided by Corporate HR by June 2009.

Progress: Two workshops held involving senior HR and science staff from RCCs. Follow-up action taking place at RCC level. Various levels of progress but mostly in early stages. NERC Leadership Programme is being used to emphasize the significance of this activity.

To note: Has been hampered by loss of expertise within Corporate HR and demands of SSC.

Status: Amber.

4. The People and Skills Network

Aim: To promote good practice in managing people and skills across a wider community

Original Timetable: Initial meeting by March 2008 and four meetings to be held each year.

Progress: The Network is up-and-running and has met several times. It includes membership from most of the major NERC RCCs. It is taking forward work on Skilled Communities and providing an active forum for discussion. The input from senior scientists is particularly valuable and the interaction between scientists/HR practitioners is rewarding.

To note: Will be extended into wider NERC community once well-established.

Status: Green.

5. Interchange Policy

Aim: To encourage individuals to move in and out of the various parts of the NERC community.

Original Timetable: New scheme to be worked up and agreed by NEB by December '08, to be in use across NERC by July 2009.

Progress: Outlines of a Scheme focussed on greater use of part-time secondments was presented to the People and Skills Network and to RCCs; this did not gain total support because of reservations about the willingness of organizations to release key individuals on both an 'outgoing' and 'incoming' basis. Further discussions being held.

To note: NERC already has a Secondment Policy, but this has tended to operate reactively rather than proactively and take-up remains low.

Status: Amber

6. Fixed term employment Policy

Aim: To ensure that where appropriate short-term appointments are used.

Original Timetable: Policy to be drafted, agreed and implemented by August 2008.

Progress: Policy agreed and implemented. Evidence of gradual increase in such appointments.

To note: Changed legal background means such appointments no longer offer the advantages they once did and competitive market place has made them less attractive.

Status: Green.

7. NERC Research Associate Programme

Aim: To both provide a bridging period between postgraduate training and research employment; to offer a practical alternative to Fixed Term contracts.

Original Timetable: Scheme to be approved by NEB in October '08 and pilots to be held in BGS and CEH by April '2009.

Progress: Scheme that enables appointments of 1-3 years to be offered worked up and cleared with lawyers. Has been taken up by both BGS and CEH, the latter particularly successfully.

To note: Fits in well with current government emphasis on internships and similar schemes.

Status: Green.

8. Redundancy provisions

Aim: To introduce a scheme for reduced redundancy provisions for new employees, working in conjunction with other Research Councils.

Original Timetable: Treasury blessing to be obtained by Dec '08, with the aim of introducing change in 2009..

Progress: Government has now indicated intention introducing lower provisions for all staff with links to the Civil Service Pension Scheme early in 2010. Whilst this does not go as far as our proposals, which were aimed at achieving substantial long term savings, we anticipate this will save NERC up to 30% of redundancy costs in the short-term.

To note: Our scope to negotiate a separate scheme for new starters will be curtailed by this change.

Status: Green.

9. Merit Promotion Scheme revisions

Aim: To ensure our promotion arrangements encourage the skills and behaviours needed to deliver the NERC Strategy.

Original Timetable: Roll out 2008-2009

Progress: Developed and rolled out. New scheme will apply for 2009.

To note: Initial response has been adrop in applications, although these appear more focussed and of higher quality.

Status: Green.

10. Fast track routes for promising scientists

Aim: To ensure we encourage the very best of our research staff to obtain Individual Merit Promotion (Band 3) early in their careers.

Original Timetable: NEB paper by summer 2009 .

Progress: Proposed new Scheme now being discussed with selected senior staff.

Status: Green

11. Leadership for NERC

Aim: To increase the skills base of our senior staff, from NEB level downwards.

Original Timetable: Link Programme to NERC Strategy and launch new modules by March 2009.

Progress: Programme refocused as planned; new modules launched; 135 individuals now engaged across RCC community.

To note: Amongst the successes of this initiate are the extent to which it has broken down barriers/created a 'common language'/stimulated collaboration across the RCC community.

Status: Green

12. Enhanced change management

Aim: To improve the ability of the organization – and particularly of senior staff – to effectively manage change .

Original Timetable: New change management framework and training to be introduced by August 2008.

Progress: Framework introduced; good progress in training change leaders (85% of senior staff now trained). Change Facilitators network introduced. Some good evidence of new methods being used.

To note: The new framework has been used during the FAB implementation and at a local level (eg in BGS). It now forms part of the methodology for all major projects.

Status: Green

13. Aligning NERC internal L&D strategies with NERC Strategy and L4N

Aim: To ensure all our internal L&D activities map onto the NERC Strategy and reflect organizational priorities.

Original Timetable : Develop new portfolio by Dec 2009 with a view to this being in place – with providers identified – by Jan 2011.

Progress: On hold. Needs to be informed by SSC position on training provision.

Status: Green.

14. Investors in People

Aim: All wholly owned Centres to have IiP accreditation ; Collaborative Centres to be encouraged to do so.

Original Timetable: Wholly owned Centres by February 2009.

Progress: Achieved.

Status: Green.

15. Pay and rewards strategy

Aim: To ensure that our pay and rewards strategy meets our needs as an organization.

Original Timetable: Review pay strategy by June 2009; implement any changes by July 2010.

Progress: Consultant-based review completed; however, our scope to make significant changes is very much limited by government pay policy.

To note: We continue to be under some pressure to harmonize with other Research Councils, although this would not fit in with our business needs.

Status: Green.

Activities focussed on building a skilled community

16. Skills stores/communities

Aim: To arrive at a better understanding of what skills exist in our community and to encourage wider and greater collaboration.

Original Timetable Identify a new pan-NERC tool for creating and maintaining skills stores by June 2009; populate stores by Dec 2009, make information available across RCCs by January 2010.

Progress: Discussion at P&SN has identified the difficulties in building skills stores (poor associations for staff, difficulty in persuading staff to maintain data) and focussed on the preferred alternative of building skills communities, linked by professional networking. IT staff are interested in taking this forward and have identified various options. Under active discussion and linked to NERC EIM (I-Share) Project.

To note: Current idea is to pilot some communities across NERC RCCs and (if successful) then to roll out into the wider NERC community.

Status: Green.

17. Review of skills requirements in the environmental sciences community (ERFF Review)

Aim: To identify the skills priorities for our community over 5-10 year period.

Original Timetable: Phase 1 report by Sept 2008, Phase 2 report by Sept 2009; leading to Implementation Plan by Dec 2009, which needs to be agreed by SISB in April 2010 as part of the process of arriving at a new Training Strategy.

Progress: After a difficult start (consultants engaged failed to deliver) this activity has been taken back in-house. A new Project Board has been established, with a membership reflecting the community, and a Project Manager appointed. Expert workshops are being held this autumn. Whilst we have some continuing concerns, the project is now back on track.

To note: The initial work indicated that this is a rather more difficult task than envisaged; it has been necessary to put considerable work into identifying a methodology likely to produce satisfactory results.

Status: Amber.

18. Liaising with Theme Leaders and with groups such as NCAG to identify skills gaps

Aim: To ensure that Theme Leaders and NCAG identify skills needs and that appropriate action is taken

Original Timetable: Engage with TLs September 2008 onwards.

Progress: Presentation to TLs and some individual discussions have taken place

Status: Green.

19. Developing a new Training Strategy

Aim: To ensure that NERC's strategy for supporting postgraduate training reflects our broader Strategic objectives and takes account of priority skills needs.

Original Timetable: SISB need a framework within which to assess the outcomes of the ERF Skills Review. This was provisionally noted as late 2009.

Progress: Papers in draft. Being tested on Directors Science Strategy and Delivery.

To note: This work stream includes an important task in pulling together information to raise SISB awareness of current training policies and delivery mechanisms within NERC and the other Research Councils.

Status: Green.

20. Science Leadership Academy

Aim: To identify the particular skills needs of science leaders in the NERC community, to establish these are provided, and to formulate proposals to enhance them.

Original Timetable: Engage with community and establish parameters by Feb 2009. Options analysis by March 2010. Implementation Plan by 2011/2012

Progress: Two meetings held involving both NERC and academic community reps. This provided a clear outline produced of issues to be addressed and a possible way forward. Head of People & Skills is now working up detailed proposals.

Status: Green.

21. Grantsmanship training

Aim: To provide the people we support with better skills at producing effective grant proposals.

Original Timetable: Training package to be developed by October 2008 and rolled out across RCCs by April 2009. Scope for roll out in the wider community to be explored subsequently.

Progress: Package developed and rolled out at BGS and BAS. Now being evaluated.

Status: Green.

NERC COUNCIL

NERC HEALTH & SAFETY ADVISOR'S ANNUAL REPORT 2008 (COVER)

Purpose of this paper

1. There is a legal requirement on NERC to review its safety performance annually at Board level. The purpose of this paper is to inform Council on performance of the safety management systems during the calendar year 2008.

Link to NERC strategic objectives

2. Strategic Objective 18 – Run an efficient, effective and flexible organization to deliver NERC's strategy whilst demonstrating sound governance.

Responsible Director

3. Mr David Bloomer, Director responsible for Health and Safety

Author of paper

4. Mr Neville Hime, NERC Health and Safety Advisor

Action

5. Council is invited to:

- i) **NOTE** the annual report of the NERC Health and Safety Advisor and
- ii) **DISCUSS** any issues arising.

NERC COUNCIL

NERC HEALTH & SAFETY ADVISOR'S ANNUAL REPORT 2008

Background

1. There is a good corporate governance requirement on NERC to review its health and safety performance annually at Board level.

Issue

2. To inform Council on performance on the safety management systems during the calendar year 2008

Person responsible for implementing outcome

N/A

Estimated action delivery/completion date

N/A

Discussion

Period: 1 January – 31 December 2008

3. During this period Dr Stuart Dobson retired from the post of NERC Health and Safety Advisor. His replacement is Dr Neville Hime, who started on April 21st 2008, with a three month handover period between the two. In addition, Colin Hankinson and Richard Pope, who provided part-time Health and Safety support, also retired in 2008. Credit should be given to Stuart, Colin and Richard for their contributions to NERC Health and Safety over many years.

POLICY AND PROCEDURES

4. The progress made by the Safety Management Group / Safety Management Team / NERC Health and Safety Committee is summarised in the following table (status as at end December 2008):

Title of Procedure/Policy/Guidance	Date of endorsement (current version)
Safety policy statement	Being revised
Ionising Radiation	Final draft completed
Work equipment	1 st Draft circulated, 2 nd draft with major alterations in progress

HSE INSPECTIONS AND AUDITS

5. One HSE inspection took place in NERC at BGS following a complaint from a member of staff who is pursuing a claim after an accident. No enforcement action or even a letter resulted.

TRAINING

6. Regular training of senior and middle managers together with all NERC staff continues. Approximately 3 or 4 courses for middle managers (Safety Management in a Research Environment; 2.5 days and IOSH accredited) are required each year to deal with new appointments to these posts. Three courses were run in 2008. For senior managers and directors it has been found a face to face format over a single day is the best way to deliver training. No Safely Directing in a Research Environment courses were run in 2008. The NERC Corporate Health and Safety Team directly deliver and manage this training programme.
7. It is intended that the two half day training courses in Safety Responsibilities and Risk Management for other NERC staff will also be able to be conducted by the full-time safety professionals in Research Centres. All such trainers will have received the JTS Presentational Skills training and specific training in these courses through observing current trainers. Both these courses were delivered 4 times in 2008, on two occasions by Corporate Health and Safety and on two occasions by local staff.

AUDIT

8. The audit programme has continued during 2008 as follows:

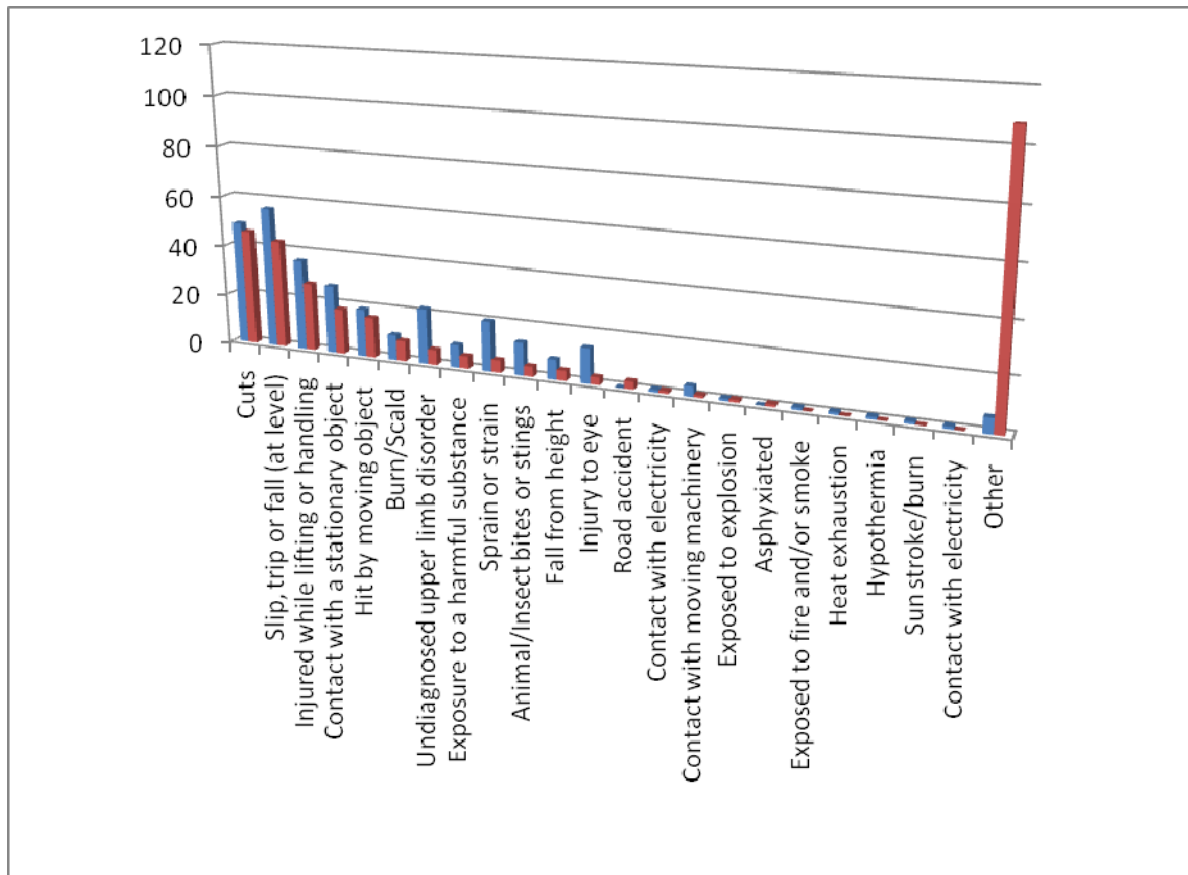
Area of audit	Research Centre	Date
DSE & Manual Handling	SAMS	January
Management Systems	NOCS	June
NERC H&S Management (external by Consult-G)	NERC, PML & CEH	1 st Quarter

Recommendations from the completed audits have been, or are in the process of being, implemented and all audit reports have been accepted by local management. Reports of the audits were formally discussed at both 2008 meetings of the Safety Management Team and presented to NEB and the Audit Committee.

ACCIDENT STATISTICS AND MANAGEMENT

9. A breakdown of accidents by category is presented in Figure 1. The top three major causes of accidents remain as in 2007 although their order is changed. 'Cuts' (formerly number 2) followed by 'slips, trips and falls' (formerly no 1) and 'injuries associated with lifting and handling' caused over 60% of the classifiable injuries. The total number of accidents reported, at 300, is exactly the same as in 2007 compared with 365 in 2006 and 370 in 2005. Unfortunately a greater than usual number of injuries in 2008 were classified as 'other', which makes comparison of absolute numbers difficult. The view of NERC Corporate Health and Safety is that increased reporting of accidents and especially incidents/near misses is a good indicator of a healthy health and safety culture and is to be encouraged.

Figure 1: Accident Classification Statistics 2007 & 2008



Key: Blue column 2007 statistics, red column 2008 statistics

10. The number of Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) reportable events in 2008 was down to 5 (compared to 9 in 2007, 4 in 2006 and 9 in 2005). The numbers of reportable accidents have always been low and it is difficult to see any significant trends (see table 1). This year's RIDDOR-reportable events comprised:

Over- 3 day lost time injuries:

- Scald to leg when a flexible hot water heating hose failed
- Damaged leg when struck by a falling object, the injury being exacerbated by a serious reaction due to blood thinning drugs
- Back injury when lifting lap-top in case from floor

Major Injury:

- Broken knee cap when fell as descending stairs

Reportable disease:

- Musculo-skeletal upper limb disorder arising from laptop usage.

There were no reportable Dangerous Occurrences under RIDDOR in 2008.

The difference between 2008 and 2007 can largely be accounted for by the absence of any cases of Lyme Disease. In 2007 there were three cases of Lyme disease caused by tick bites during fieldwork in Scotland, which was very unusual and probably weather related.

Table 1: Historical review of reportable occurrence statistics

The historical statistics for occurrences reportable by NERC to the Health and Safety Executive for the past four years are as follows:

<u>Year</u>	<u>Total</u>	<u>Reportable Occurrence Frequency Rate*</u>
2004	10	0.21
2005	9	0.19
2006	4	0.09
2007	9	0.19
2008	5	0.11
Average: 7.4		0.16

* No of reportable occurrences per 100,000 hours worked, assuming 2800 employees; anything below 0.25 would be considered a good performance with less than 0.1 exceptional.

It can be seen that although the number of reportable occurrences was lower in 2008 than 2007, it is still within the range seen in the previous four years. When health and safety performance is good, small variations in numbers of accidents etc. can make a huge apparent change in performance.

11. The statistics given are based on 'reactive' data, a lagging or negative indicator which only records adverse events. With the introduction of an electronic accident, incident and near miss recording system, which it is hoped will be in place throughout NERC this year, it should be possible to identify more positive measures of performance that can be given to better identify potential performance. One benefit of an electronic recording system is that it facilitates reporting of incidents and near misses, which can be investigated and preventative measures taken before they cause injuries. Next year it is hoped to give data on the ratio of reported injuries to incidents/near misses from which future improvement targets can be set.

SERIOUS INCIDENTS AND LESSONS LEARNT

12. Fieldwork in Madagascar. A member of NERC staff undertaking fieldwork in a remote part of Madagascar was taken ill, apparently seriously. He was evacuated on foot, then by car and made a rapid recovery but a thorough investigation revealed that useful lessons could be learnt on: preparation and acclimatisation, fieldwork and support methods, clothing, communication arrangements, emergency provisions and emergency evacuation procedures.
13. Wind turbine at NOCS. One blade of a newly installed wind turbine on the NOCS building failed with the result that it fell to ground next to the building. No one was hurt but there was a potential for serious injury. The incident has been thoroughly investigated by the manufacturer as it has serious implications for this design. Failure may have been related to replacement of high tensile bolts by stainless steel items due to concern about corrosion in this exposed marine location.

An independent consultant is being sought to undertake a due diligence report on the manufacturers' investigation.

14. HMS Endurance. A number of BAS staff were travelling on HMS Endurance from work in the South Atlantic to Chile. Most of the BAS staff had been taken to shore but two were still on board when HMS Endurance got into serious trouble from flooding. The BAS staff helped in the rescue operation and the ship was aided by other vessels. Lessons learned from the occurrence have been shared between all NERC ships and the importance of ensuring emergency arrangements and equipment are fully functional, tested and regularly operated/practiced re-emphasised.

HEALTH AND SAFETY IN ACTION

15. In the autumn of 2008, two of NERC's aircraft, the Dornier 228 from the Airborne Research and Survey Facility (ARSF) and the BAE 146 from the Facility for Airborne Atmospheric Monitoring (FAAM), joined forces as part of the VOCALS UK research project to spend a month investigating the immense clouds over the Pacific that affect climate and weather across the world. The work involved over 20 NERC employees travelling overseas with considerable logistical issues in getting staff, aircraft and equipment to South America. The ARSF plane made stops in Iceland, Greenland, Canada, USA, Jamaica, Panama, Ecuador and Peru before reaching its final destination. The aircraft were based in Arica, the 'city of eternal spring', in Northern Chile. The NERC systems for overseas working were utilised with a visit and reconnaissance survey to Arica undertaken in April 2008 to help identify potential issues and investigate the best and safest work arrangements. Risk assessments were developed to cover the work and helped ensure the research programme went smoothly despite civic disturbances across the border in Peru. The riots achieved international news coverage and, as the alternate airfield in case Arica become unavailable was in Peru, resulted in the need for other alternate airfields to be identified. Adherence to the NERC Health, Safety and Security Policy on overseas working was an important part of ensuring the programme was a success and proceeded without any incident despite the unexpected events.

HEALTH AND STAFF WELFARE

16. Stress continues to be a potential issue, especially in areas undergoing significant change such as the Shared Services Centre. NERC Health and Safety Advisors have worked closely with NERC Welfare to ensure our activities are co-ordinated with regard to stress and joint initiatives launched where appropriate. Neville Hime has undertaken training and become a Local Welfare Officer.

Neville Hime
May 2009

Action

17. Council is invited to:
 - i) **NOTE** the Annual report of the NERC Health and Safety Advisor and
 - ii) **DISCUSS** any issues arising

NERC COUNCIL

NERC SECURITY ADVISOR'S ANNUAL REPORT 2008

Purpose of the paper

1. There is a risk management and good corporate governance need for NERC to review its annual security performance.
2. Council is asked to consider the summary report of the NERC Security Adviser, covering the period January to December 2008.

The procedure for handling this report has been agreed as follows:

- i. Received by Director Finance and Operations, who has responsibility for Security;
 - ii. Discussed by NEB, which may add value;
 - iii. Considered by the Council Audit Committee, which may identify issues for action; and
 - iv. Received, in summary, together with Council Audit Committee comments, by Council.
3. Council Audit Committee noted the annual report of the NERC Security Adviser at its June meeting and did not raise any significant issues.

Link to NERC strategic objectives

4. Strategic Objective 18 – Run an efficient, effective and flexible organization to deliver NERC's strategy whilst demonstrating sound governance.

Responsible Director

5. David Bloomer, Director of Finance and Operations

Author of paper

6. Mr Ben Herman, NERC Security Advisor

Action

7. Council is invited to:
 - i) **NOTE** the annual report of the NERC Security Advisor and
 - ii) **DISCUSS** any issues arising.

NERC COUNCIL

NERC SECURITY ADVISOR'S ANNUAL REPORT FOR PERIOD 1 JANUARY 2008 TO 31 DECEMBER 2008

Background

1. It is NERC policy that its security performance is reviewed once a year.

Issue

2. To inform Council on performance on security management during the calendar year 2008

Person responsible for implementing outcome

3. N/A

Estimated action delivery/completion date

4. N/A

Discussion

5. This is the sixteenth NERC Annual Security Report. The report covers the NERC Security Advisor's operational role, areas of risk, asset protection measures, security trends and best practice procedures which have affected NERC daily operations over the past year.

6. **NERC Security State**

The NERC Security Advisor is most happy to report a first class security year for the NERC, with NO reported incidents across the whole Research Council land, sea and air estate. This really is a super result following hot on the heels of the 2007 figure of one incident. This result reflects most creditably on the steady maintenance and progression of the NERC Security profile through hard work by all concerned coupled with:

- Continual "hardening" of sites through security system installation and equipment upgrading resulting in risk displacement to a softer target.
- "Hands on" security management and monitoring.
- A pro-active culture of staff awareness, personal responsibility and continued vigilance linked to a willingness and interest to report security concerns however minor, especially the "challenging" of non-pass holders/strangers.
- A central point of contact for each site for security control, reporting concerns to and advice.
- Ongoing acceptance NERC-wide of the need for good security coupled with general awareness.

- Effective man management of the sites' security teams by the NERC Security Advisor achieved by regular ongoing site visits and face to face contact.

7. **NERC Sites – Security Status**

The security status table below 14 summarizes NERC sites' security status.

8. **Site Security Risk Assurance Level**

The basis of the risk assurance level for each Category One Security site is given in relation to overall internal control security in terms of procedures, and does not necessarily reflect the comprehensiveness of physical or electronic measures. All Category One Security sites are now graded with Substantial level risk assurance. Continuing security enhancement has also reduced the number of Category 2 risk levels to 2 across two sites, both of which are being addressed in 2009.

- 8.1 Currently no NERC sites have an outstanding Risk Category 1 recommendation, and only two sites have a Risk Category 2, which should be executed in 2009.
- 8.2 The NEB should and will be informed of all Risk Category 1 security recommendations and resultant decisions.
- 8.3 At the time of writing, the NERC overall Security Risk Assessment level is Substantial.

Note: Security Assurance and Security Risk Category level definitions are reproduced below the security status summary table.

9. **Perceived Threats to NERC Security**

There are four main perceived threats to NERC security, namely:

- Terrorist action
- Extremist action
- Criminal action
- Social malcontent action

- 9.1 Of these, criminal action has been the most prevalent and such action could well increase in the current economic situation which has already produced increased unemployment and crime rates in terms of theft and burglary. Vandal action has reduced greatly across the NERC due to heightened site security and installation of CCTV. However it is still considered especially with reference to void sites.
- 9.2 Extremist action continues to centre mainly on the Halifax Building at Oxford University. As CEH Oxford forms part of the Halifax Building secure perimeter it is clearly in the target area, however it benefits considerably by coming under the comprehensive care and response to site action of the OU security team, which is excellent.
- 9.3 There are currently no specific criminal or extremist action areas affecting any other NERC sites.

10. **NERC non – UK Operations**

The operational synergy between Health and Safety, Risk Management and Security, alluded to in the 2007 Security Report has been recognised and has resulted in the formation of a risk group, under the direction of the NERC Health and Safety Advisor. The group will be advising on and supporting Non – UK Operations for the NERC, and within the UK also in terms of Business Continuity and Disaster Recovery.

11. **Piracy**

The NERC Security Advisor is organising a joint, NMFD and BAS marine executives' meeting to discuss the Piracy risk to NERC vessels. The meeting will look at current legislation/advice emanating from the EU, International Maritime Organisation (IMO) and the Marine Coastguard Agency (MCA), with regard to producing a single NERC policy for all NERC vessels to follow.

12. **The Security situation in UK**

2008 has seen a continuance of Government strategy in dealing with the Terrorist. The year has produced no decrease in either the international or domestic (Irish dimension) threat level or activity. The remaining perpetrator of the Glasgow Airport vehicle bomb attack has been found guilty and sentenced.

12.1 Terrorists continue to methodically seek to radicalise young people and children in this country. The widening of the demographic factor in UK highlights that there is no single profile of an Islamist extremist, and, it is necessary to think broadly when considering the threat from Islamist extremists.

12.2 Dissident Republican groups the Real IRA (RIRA) and the Continuity IRA (CIRA) continue their opposition to the current political process. Dissident groups remain active, committed to terrorism and continue to engage in terrorist activity. The desire to mount attacks in Great Britain remains active. The Provisional IRA (PIRA) is reported to be fully committed to the Political path.

12.3 The home crime scene, particularly the use of hand guns and knives amongst young people in the city areas has risen, motivated by the drug scene which has expanded. General crime continues in terms of burglary, car theft, "car jacking". The marked increase in Identity (ID) theft which has alerted both business and personal information to be better protected in all its forms continues to present a major security concern.

12.4 The extremist front in the Animal Rights Extremist (ARE) arena, has seen much activity in terms of demonstrations across the country – however this has, to an extent, been classified as more froth than content, as the ARE have been on the receiving end of vigorous Police action culminating in the arrest and sentencing of a number of key players and their hard core supporters. Oxford University remains the key target.

13. Against this scenario the absence of any reported security incident across the whole Research Council land, sea and air estate represents a very fine, first class result. However it is certainly no panacea for the future and in these uncertain times it is important to maintain the pressure and for everybody to keep their eyes on the security ball. Such an incident rate could give rise to the attitude "well that's all right then, not much need for security here". Of course the reciprocal is true. There is a constant need for security! To ensure its effectiveness a constant need also, to "prod and agitate" sites through regular visits to

implement security recommendations, procedures, upgrade technical equipments so as to “stay ahead of the game”, thus inculcating a practical, workable and acceptable security culture.

Summary

14. 2008 has produced another rewarding security year for NERC which when reviewed in the context of the national and international security landscapes offers much for applause. Security improvement is borne out by all sites now having achieved a substantial security assurance level, an increase of thirteen since 2005!

Ben Herman
May 2009

NERC CATEGORY ONE SECURITY SITES - SECURITY STATUS SUMMARY								
	Number of	No of Security	Recommendations - Risk Category			Perceived Risk	Date of	Comments
	Visits	Recommendations	Category 1	Category 2	Category 3	Assurance Level	Recommendations	
BAS CAMBRIDGE	1	2			2	Substantial	2002	
RRS JAMES CLARK ROSS	1	2			2	Substantial	2005	
RRS ERNEST SHACKLETON	1	2			2	Substantial	2005	
BGS KEYWORTH	1	1			1	Substantial	2005	
BGS EDINBURGH	1	Nil				Substantial		
BGS LOANHEAD	1	Nil				Substantial		
BGS GILMERTON	1	Nil				Substantial		
CEH BANGOR	1	2			2	Substantial	2005	Main and Aber Solar Dome sites – being implemented
CEH EDINBURGH	2	2			2	Substantial	2005	
CEH MONKS WOOD	1	Nil				Substantial		Impending void site
CEH LANCASTER – LEC	1	1			1	Substantial	2004	
CEH WINDERMERE – HATCHERY	1	1			1	Substantial		
CEH DORSET	3	Nil				Substantial		Void site
CEH EAST STOKE	2	3			3	Substantial	2007	Shared site with FBA
CEH WALLINGFORD	1	5			5	Substantial	2x05 3x04	Both Phy & elect security needs
CEH OXFORD	1	2			2	Substantial	2005	Being executed
SAMS OBAN	2	3		1	2	Substantial	2004	Cat 2 should be executed in 09
PML PROSPECT PLACE	1	Nil				Substantial		
MBA CITADEL HILL	1	Nil				Substantial		
POL BIDSTON	1	Nil				Substantial		Void Site "Camelot" guardees
POL LIVERPOOL UNI	1	Nil				Substantial		
KEMPSTON STREET	1	Nil				Substantial		
NOCS	2	3		1	2	Substantial	2005	Cat 2 to be progressed 2009
RRS DISCOVERY	1	1			1	Substantial	2006	Cat 3 being progressed
RRS JAMES COOK	1	Nil				Substantial		
ARSF OXFORD	1	Nil				Substantial		
FAAM	1	Nil				Substantial		

- Note:
1. There are no Category I risks.
 2. Category II risks - no new risks arose in 2008. Three were outstanding from 2007. One has since been implemented, and the other two are in the process of execution in 2009.
 3. Category III risks are mainly upgrading requirements.
 4. “Substantial” assurance level exists across all sites

Definitions

Security Assurance Definitions

<u>Title/Opinion</u>	<u>Definitions</u>
<u>Full Assurance</u>	A sound system of internal control likely to achieve the system objectives, and which is operating effectively in practice.
<u>Substantial Assurance</u>	A basically sound system of internal control, but where there are a few weaknesses that may put achievement of some system objectives at risk.
<u>Limited Assurance</u>	A system of internal control that is satisfactory in part, but which contains a number of weaknesses that are likely to undermine the achievement of system objectives and leave it vulnerable to material error/abuse or threatening risk.
<u>No Assurance</u>	An unacceptable system of internal control, containing fundamental weaknesses creating serious doubts over the achievement of system objectives and leaving it vulnerable to significant error/abuse.

Security Risk Categories Definitions

Risk Category 1

A serious security procedural and/or security system weakness, which could lead to substantial loss or damage, resulting in major disruption to site, scientific and /or business operations to an unacceptable degree. Of immediate concern to senior management and requiring urgent remedial action. Director's discretion.

Risk Category 2

A security procedural and /or security system weakness, which could lead to a less immediate level of impact on site scientific and/or business operations. Of essential concern to senior management. Prompt attention required. Senior Management discretion.

Risk Category 3

A security procedural and /or security system weakness requiring attention in order to support site security wholly and benefit management overall with better security control and effectiveness. Remedial action required. Site Management discretion.

Estimated resources required

15. N/A

Communication Plan

16. N/A

Action

17. Council is invited to:

- i) **NOTE** the annual report of the NERC Security Advisor and
- ii) **DISCUSS** any issues arising.

NERC COUNCIL

ROLLING PROGRAMME OF BUSINESS (COVER)

Purpose of this paper

1. Council is asked to discuss possible items of business for the meeting of Council on 26th November 2009, consider whether any further items of business should be added to the Council Business Whiteboard and note proposed locations for 2010 meetings.

Link to NERC strategic objectives

2. Strategic Objective 18 – Run an efficient, effective and flexible organisation to deliver NERC's Strategy whilst demonstrating sound governance.

Responsible Director

3. Dr Steven Wilson – Director, Strategy and Partnerships

Author of paper

4. Miss Samantha Way – NERC Council Secretary

Annexes and website links

5. **Annex A** - Mapping of Council business against responsibilities
Annex B –2010 Council Business Whiteboard

Vested interests

6. N/A

Action

7. Council is asked to:
 - i) **DISCUSS** any additional items of business for the Council meeting on 26th November 2009.
 - ii) **DISCUSS** whether any further items of business should be added to the NERC Whiteboards.
 - iii) **NOTE** the proposed locations for 2010 Council meetings.

NERC COUNCIL

ROLLING PROGRAMME OF BUSINESS

Issue

1. Council is asked to discuss possible items of business for the meeting of Council on 26th November 2009, consider whether any further items of business should be added to the Council Business Whiteboard and note the proposed locations for 2010 Council meetings.

Discussion

2. In addition to standing items, provisional agenda items for the November Council meeting are as set out below.

Theme Action Plans
National Capability Action Plan
Forward look at Council business
BAS Mission Statement

3. Based on previous Council discussions and the rotation of site visits, proposed locations for 2010 are as follows:

23-25 February - Council retreat, Swindon
28/29 April – Potential site visit to POL
14/15 July - London
29/30 September – Potentially Open meeting at Welsh Assembly, Cardiff
8/9 December - Swindon

Implementation of actions delegated to

4. Miss Samantha Way, NERC Council Secretary

Communication plan

5. The outcome of this paper will be communicated to the NERC Business Coordination team and appropriate NERC staff.

Action

6. Council is asked to:
 - i) **DISCUSS** any additional items of business for the Council meeting on 26th November 2009.
 - ii) **DISCUSS** whether any further items of business should be added to the NERC Whiteboards.
 - iii) **NOTE** the proposed locations for 2010 meetings

Council responsibilities:	NERC's Strategic Objectives **	2009					2010				
		February	May	July	October	November	February	May	July	September	November
<p>• To advise on new scientific opportunities, scientific direction and user needs, in line with NERC's charter.</p> <p>• To establish the Mission and Strategic Plan and approve the Delivery Plan (including the strategy, use of resources and key performance indicators and targets).</p> <p>• To ensure that Council's views are reflected in the pursuit of RCUK objectives and to be informed of their views of RCUKEG and the JSG</p>	<p><u>Research Priorities and Partnerships:</u></p> <p>i. Strategic Partnerships with key UK and international organisations supporting research delivery (Obj 1)</p> <p>ii. Promote collaborative research and vibrant community throughout the environmental science, engineering and technology base (Obj 2)</p>			UK Space Sector	Living With Environmental Change				Living With Environmental Change		
	<p>iii. Decide on funding priorities within NERC's Strategic science themes (Obj 5 -11)</p>	Planning future NERC investment levels (also fits into RM funding and NC)		Environment, Pollution and Human Health Theme Actions		Transitional Phase-Theme Action Plans 2009	Planning future NERC investment levels (also fits into RM funding and NC)				Steady State phase - Theme Action Plans 2010
	<p><u>Sustainability:</u></p> <p>i. Responsive funding: Support cutting edge & emerging areas of science through responsive mode research (Obj 12)</p>						Transitional Phase-Responsive Mode Action Plan				
	<p>ii. Ensure that NERC's National Capability meets current priorities and that it is developed to meet future priorities. (Obj 13 & 16)</p>	National Good		Review of NCEO status		Development phase - National Capability Action Plan					Transitional phase - National Capability Action Plan
		10 year Capital Strategy		Business Case for Keyworth Building - Phase 2			10 year Capital Strategy				10 year Capital Strategy
		Ship Operations Review		RRS Discovery replacement project				RRS Discovery replacement project?			
			NERC Marine Science								
	<p>iii. Recruit and develop skilled people to ensure a healthy environmental science base, deliver NERC's strategy and meet future science priorities. (Obj 14 & 17)</p>				Public Engagement with Research						
					Progress update on People Action Plan				Progress update on People Action Plan		
	<p><u>Economic and Public Policy impact:</u></p> <p>i. Establish a culture of knowledge exchange between NERC and stakeholders and ensure knowledge generated from NERC-funded science, and data information holdings, are communicated and used. (Obj 3)</p>	Science in Society overview			Knowledge Exchange Update		Knowledge Exchange Delivery Plan				
			Science Information Strategy				Science Information Strategy				
<p>• To maintain high standards of corporate governance, and through reports from the Executive and advisory boards :</p> <p>i) ensure that Council's decisions and actions are followed through effectively</p> <p>ii) monitor risk management and progress of high risk projects</p> <p>iii) ensure proper use of public funds and that NERC does not operate outside of the limits of its delegated authority</p> <p>iv) receive and reviewing regular financial information concerning the performance of NERC.</p> <p>v) comply with all relevant employment legislation, adopt management practices which use resources in the most economical, efficient manner and ensure that NERC staff have appropriate access to relevant advice and training opportunities.</p> <p>vi) ensure that Council and advisory boards are fit for purpose and that Council makes use of the independent audit committee.</p> <p>• To ensure that action is taken to inform the Secretary of State, DGS1 and DIUS of any changes impacting on the delivery of the Strategy and Delivery Plan, and any measures put in place to address these.</p>	<p><u>Efficiency and effectiveness:</u></p> <p>i. Run an efficient, effective and flexible organisation to deliver NERC's strategy whilst demonstrating sound governance. (Obj 18)</p> <p>ii. Build and maintain effective working relationships with DIUS (Obj 4)</p> <p>iii. Adapt the organisation for strategic risk management -seizing opportunities and mitigating threats (Obj 15 - future perspective).</p>	<p>Council receives the following reports as standing items:</p> <ul style="list-style-type: none"> Executive Report * Update from DIUS representative Rolling programme of business Reports from Science and Innovation Strategy Group and Council Audit Committee Financial forecast and context Progress update on delivery of NERC's objectives Minutes and Decisions and Actions 									
			Environmental Management Policy		BAS Mission Statement	SISB self-assessment exercise					
		Spending Review 2009				Horizon Scanning					Spending Review 2011
		Process for review and refresh of NERC Strategy		Annual Health and Safety and Security reports		Annual Review and refresh of current NERC Strategy			Annual Health and Safety and Security reports		
		Annual Report of Council Audit Committee	Annual Delivery Report			Annual Look at Future Council Business	Annual report of Council Audit Committee	Annual Delivery Report			Annual Look at Future Council Business
		Open Council discussion				Council Self Assessment Exercise		Council Self Assessment Exercise			
		Environmental Management Policy		Meeting of Council sub-group - Senior Staff Salaries Review Committee			Evaluation Programme 10/11	Meeting of Council sub-group - Senior Staff Salaries Review Committee			

Blue - Strategy Red- Action Plans Green - update Grey - Review Purple - Housekeeping

* The Executive Report includes, amongst other adhoc issues, updates on: Swindon Office based Directors' areas of responsibility; NERC's Risk Register; Halley VI, SSC and any other high risks projects; Health and Safety; Research Centre activity and key issues highlighted by Chief Executive.

** The groupings of Strategic Objectives in this document are based on the headings in the NERC/DIUS Scorecard 2008/09.

COUNCIL Agenda Overview 2010

NERC 09/60 Annex B

No.	Task	Main Statement					
			23-25 Feb	29-Apr	15-Jul	30-Sep	09-Dec
1	Advise on new scientific opportunities, scientific direction and user needs	MS	As Required				
2	Establish the Mission and Strategic Plan and approve the Delivery Plan	MS	As required				
3	Ensure that action is taken to inform Sec of State, DGSi and OSI of any changes impacting on the delivery of No. 2	MS	As necessary				
4	Satisfy itself of the proper use of public funds and that NERC operates within its limits of delegated authority	MS	As required				
5	Receive and review regular financial information concerning the performance of NERC	MS	√	√	√	√	√
6	Ensure Council's views are reflected in pursuit of RCUK objectives and to be informed of the views of RCUKEG and JSG	MS	As necessary				
7	Maintain high standards of corporate governance, including making use of the audit committee	MS	As necessary				
8	Approve minutes from previous meeting and receive update on progress of matters arising		√	√	√	√	√
9	Receive report from Chief Executive on agreed areas		√	√	√	√	√
10	Receive rolling programme of Council business		√	√	√	√	√
11	Receive report from Chairs of SISB and Audit Committee on previous meeting(s)		√	√	√	√	√
12	Update from DIUS representative		√	√	√	√	√
13	Annual Report from Audit Committee on its activities		√				
14	Receive Annual Report on Health and Safety and Security in NERC					√	
15	Consider Annual Forward Look of agenda and business for following year						√
16	SISB Self assessment exercise		√				
17	Strategic Management Tool update /quarterly reports		√		√	√	√
18	Theme Action Plans 2009						√
19	National Capability Action Plan						√
20	Responsive Mode Action Plan - update		√				
21	Knowledge Exchange Plan - update		√				
22	Annual Delivery Report			√			
23	Evaluation Programme 2009/10			√?			
24	Spending Review 2009			√?	√?	√?	√?
25	Review and refresh of the NERC strategy*		√				
26	Horizon scanning exercise*		√				
27	Planning future NERC investment levels*		√				
28	Marine Sector			√			
29	UK Space Sector		√				
30	Living with Environmental change update					√	
31	Action plan for people element of Strategy				√		
32	Science Information Strategy		√				
33	10 Year Capital Strategy		√				√
34	RRS Discovery - updates			√?			

Individuals attending Council for specific items

- Ms Judy Parker – Head of Communications, NERC (Item 12 and Open Forum)
- Mr Dan Osborn – NERC lead for LWEC (Item 11)
- Dr Simon Jackman – Head of Knowledge Exchange, NERC (Item 14)

COMMON NERC ACRONYMS

AEDC	Antarctic Environmental Data Centre	ERFF	Environment Research Funders Forum
AFI	Antarctic Funding Initiative (Research Programme)	ES	Ecosystem Sustainability
AHRC	Arts & Humanities Research Council	ESF	European Science Foundation
APPRAISE	Aerosol Properties, Processes and Influences on the Earth's climate (Research Programme)	ESFRI	European Strategy Forum on Research Infrastructure
BADC	British Atmospheric Data Centre	ESPA	Ecosystem Services and Poverty Alleviation (Research Programme)
BAS	British Antarctic Survey (NERC)*	ESRC	Economic and Social Research Council
BBSRC	Biotechnology and Biological Sciences Research Council	ESA	European Space Agency
BERR	Department for Business Enterprise & Regulatory Reform	EuroHORCs	European Union Research Organisations Heads of Research Councils
BGS	British Geological Survey (NERC)*	EYF	End of Year Flexibility
BNSC	British National Space Centre	FAB	Funding Allocation and Budgeting Project
BODC	British Oceanographic Data Centre	FOG	Finance and Operations Group
BPM	Business Performance Management	FP	Framework Programme
BPMF	Business Performance Management Framework	FREE	Flood Risk from Extreme Events (Research Programme)
BREEAM	Building Research Establishment Environmental Assessment Method.	GCSA	Government Chief Scientific Adviser
CASE	Collaborative Awards in Science and Engineering	GERB	Geostationary Earth Radiation Budget Experiment (Research Programme)
CEOI	Centre for Earth Observation Instrumentation**	GMES	Global Monitoring for Environment and Security
CEH	Centre for Ecology and Hydrology (NERC)*	HEC	High End Computing
CEE	Centre for Environmental Evidence	HEFCE	Higher Education Funding Council for England
CPB	Centre for Population Biology**	HEFCW	Welsh Higher Education Funding Council
CSA	Chief Scientific Adviser	HEIs	Higher Education Institutions
CSR	Comprehensive Spending Review	HIRDLS	High Resolution Dynamics Limb Sounder (Research Programme)
CWC	Changing Water Cycle	HPC	High Performance Computing
D4RP	'Discovery for Replacement' project	IODP	Integrated Ocean Drilling Program
DCLG	Department of Communities and Local Government	IMP	Individual Merit Promotion
DEFRA	Department for Environment, Food and Rural Affairs	IPY	International Polar Year
DfID	Department for International Development	ISG	Information Strategy Group
DfT	Department for Transport	ITAG	Information Technology Advisory Group
DGSR	Director General Science and Research (formerly DGSI)	ITT	Invitation to Tender
DBIS	Department for Business, Innovation and Skills (formerly OSI and then DIUS)	Je-S	Joint electronic-Submission
DMAG	Data Management Advisory Group	JSG	DIUS/RCUK Joint Strategy Group
EA	Environment Agency	LWEC	Living With Environmental Change
EIC	Environmental Information Centre	MBA	Marine Biological Association
EC	European Commission	MRC	Medical Research Council
EHFI	Ecology and Hydrology Funding Initiative	NC	National Capability
EHH	Environment and Human Health	NCAG	National Capability Advisory Group
ENI	Environmental Nanoscience Initiative (Research Programme)	NCAS	National Centre for Atmospheric Science*
EO	Earth Observation	NCEO	National Centre for Earth Observation**
EOF	UK Environmental Observation Framework	NDGC	National Geosciences Data Centre
EPA	Environmental Protection Agency	NE	Natural England
EPSRC	Engineering and Physical Sciences Research Council	NEB	NERC Executive Board
ER	Environmental Radioactivity	NEODC	NERC Earth Observation Data Centre
ERC	European Research Council	NGO	Non-Governmental Organisation

* NERC Research Centre ** NERC Collaborative Centre

Updated 06/07/2009

NIC	NERC Investment Committee	TAP	Theme Action Plan
NMF	National Marine Facilities	ToR	Terms of Reference
NMF-SS	National Marine Facilities – Sea Systems	TSB	Technology Strategy Board
NOCS	National Oceanography Centre, Southampton	TSEC	Towards a Sustainable Energy Economy (Research Programme)
OGC	Office of Government Commerce	UAI	Urban Atmospheric Infrastructure
OPMs	Output and Performance Measures	UKCDS	UK Collaborative on Development Sciences
OSG	Operations Strategy Group (RCUK)	UKERC	UK Energy Research Centre
PAG	Personnel Advisory Group	UKIODP	UK Integrated Ocean Drilling Program
PCSG	Personnel Corporate Strategy Group	UKPOPNET	UK Population Biology Network (Research Programme)
PGP	Post-Genomics and Proteomics (Research Programme)	UKRO	UK Research Office (Brussels)
PML	Plymouth Marine Laboratory**	UKSOLAS	Surface-Ocean/Lower-Atmosphere Study (Research Programme)
POL	Proudman Oceanographic Laboratory*	UKSB	UK Space Board
PQQ	Pre-Qualification Questionnaire (Procurement)	VO	Virtual Observatory
PSG	Pay Strategy Group	WAG	Welsh Assembly Government
PSN	People and Skills Network		
QR	Quality related (in context of HEI funding)		
QUEST	Quantifying and Understanding the Earth System (Research Programme)		
RAE	Research Assessment Exercise		
RAPID-WATCH	Rapid- Will the Atlantic Thermohaline Circulation Halt (Research Programme)		
RCIAS	Research Councils' Internal Audit Service		
RCUK	Research Councils UK		
RELU	Rural Economy and Land Use (Research Programme)		
RM	Responsive Mode		
RMAP	Responsive Mode Action Plan		
ROD	Research Outputs Database		
RP	Research Programme		
SAHFOS	Sir Alister Hardy Foundation for Ocean Science		
SAMS	Scottish Association for Marine Science**		
SEBCC	Science and Engineering Base Co-ordinating Committee		
SEPA	Scottish Environment Protection Agency		
SHEFC	Scottish Higher Education Funding Council		
SISB	NERC Science and Innovation Strategy Board		
SMRU	Sea Mammal Research Unit**		
SMT	Strategic Management Tool		
SOFI	Strategic Ocean Funding Initiative		
SoR	Statement of Requirements		
SPA	Sector Portfolio Analysis		
SRG	Services Review Group		
SSC	Shared Service Centre		
STAR	System for Targets and Risks		
STFC	Science and Technology Facilities Council (formerly PPARC and CCLRC)		

A full list of NERC Research Programmes can be found on the NERC website at: www.nerc.ac.uk/research/programmes/

* NERC Research Centre ** NERC Collaborative Centre

Updated 06/07/2009

MEMBERSHIP OF COUNCIL 2009 (as at 01 August 2009)

Mr Edmund Wallis	Chairman
Professor Alan Thorpe	Chief Executive and Deputy Chairman
Professor Paul Curran	Vice-Chancellor University of Bournemouth
Professor Huw Davies	Institute for Atmospheric and Climate Science, ETH Zurich
Mr Rowan Douglas	Managing Director, Willis Analytics for Willis Re
Professor Alastair Fitter	Department of Biology, University of York
Professor Anne Glover	Chief Scientific Advisor for Scotland, School of Medical Sciences, University of Aberdeen
Professor Charles Godfray	Professor of Zoology, University of Oxford
Professor Alex Halliday	Head Mathematical Physical & Life Science Division, University of Oxford
Mr Peter Hazell	Chairman of the Argent Group. Chairman of the Audit Committee for: BRIT Insurance PLC, Smith & Williamson and UK Coal PLC. Member of the Competition Commission.
Professor Michael Lockwood	University of Reading
Professor Thomas Meagher	Chair of Plant Biology, University of St Andrews
Professor Julia Slingo	Met Office
Professor Andrew Watson	Professor at the School of Environmental Sciences, of East Anglia University
Professor Robert Watson	Chief Scientific Advisor, DEFRA
Professor Marjorie Wilson	School of Earth & Environment, Leeds University
Secretary to Council	
Miss Samantha Way	01793 442570, e-mail sway@nerc.ac.uk

The Mission of the Natural Environment Research Council is:

The Natural Environment Research Council delivers independent research, survey, training and knowledge transfer in the environmental sciences, to advance knowledge of planet earth as a complex, interacting system. Our work covers the full range of atmospheric, earth, biological, terrestrial and aquatic sciences, from the deep oceans to the upper atmosphere, and from the poles to the equator. Our mission is to gather and apply knowledge, create understanding and predict the behaviour of the natural environment and its resources, and communicate all aspects of our work.

In fulfilling its mission, NERC will:

- support high quality research and technology and maintain long-term capability to understand and predict the environment, natural resources and their response to change;
- foster the health and vitality of the UK environmental science skills base through education, training and career development;
- collect, manage and supply environmental data and provide information to meet the needs of users;
- provide objective, independent expert scientific advice and information to underpin national and international policy and sustainable growth;
- provide specialist scientific facilities and services to meet the needs of UK environmental sciences;
- work in partnership with users and other science suppliers and promote effective knowledge transfer;
- encourage public understanding of environmental issues and the role of science;
- ensure openness, accountability and value for money in the delivery of the NERC mission.

NERC POLICY ON VESTED INTERESTS FOR MEMBERS OF NERC BOARDS AND COMMITTEES¹

1. INTRODUCTION

NERC uses the expertise, knowledge and advice of the international academic and research community, government agencies, industry and elsewhere. Their involvement is an essential contribution to the Council's decision-making processes, many of which lead to the allocation of public funds.

2. WHY IS A VESTED INTERESTS POLICY NEEDED?

NERC needs to set out clearly how it expects its committee and board members to act in considering the allocation of funds and in the wider decision-making and advisory contexts.

The aim of this policy is to protect both the organisation and the individuals involved from any appearance of impropriety.

3. HOW DOES NERC DEFINE 'VESTED INTEREST'?

Vested interest is defined as the committee or board member being associated or involved in any way with:

- an *institution*, *department* or *individual* that has submitted a funding proposal or would otherwise benefit from a decision;
- and/or has been involved in the *development*, or *implementation* of proposals seeking Council funds or in the *evaluation* of research investments.

4. HOW DOES NERC APPLY ITS VESTED INTEREST POLICY?

- a. The chair of a meeting will be briefed on vested interests using the *Register of Declarations of Interests* (see section 5), and will draw attention to these before the meeting starts.
- b. NERC will remove all papers relating to a vested interest from the respective member's meeting papers.
- c. *At the start of each meeting the chair should remind the committee/board that they should declare if any item on the agenda is likely to give rise to an actual or potential conflict of interest.*
- d. *The chair should consider if the interest is such as to require the member to leave the room when that matter comes up for discussion, or to remain in the room, but without expressing any opinion on the issue.*
- e. If there is doubt as to whether the member should be asked to leave, the chair may discuss this with the rest of the committee. The member may be asked to leave the room while the committee decides.
- f. If the absence of a member who has declared an interest will compromise the committee's expertise, they may be invited to speak on 'matters of fact'.
- g. If the committee member concerned is the chair, then another member should chair that item.
- h. If in doubt, the chair and committee should assume that the actual or potential conflict of interest may call into question the objectivity and impartiality of the committee's consideration of that issue.
- i. *All vested interests declared, and actions taken, should be recorded in the minutes of the meeting, ensuring a proper audit trail.*

¹ For the purposes of this statement, Boards and Committees is the generic term used for any group convened by, or acting on behalf of, Council or the Chief Executive.

5. NERC'S REGISTER OF DECLARATIONS OF INTEREST

- a. On taking up their appointments, all Committee members **must** declare any private, professional or commercial interests that could conflict with NERC's interests. These interests may be *direct* or *indirect*, *monetary* or *non-monetary*, which the public might reasonably think could influence the Committee members' judgment.
- b. NERC will record the declarations of interest centrally and update them every year.
- c. Members should, provide updated information as changes occur.
- d. NERC will put the register on its website so the public can inspect it, and the website detail will be published in the NERC Council's annual report.

NERC STRATEGIC MANAGEMENT TOOL: Council Overview of Strategic Objectives

Knowledge & Partnerships

- | | -1Q | = | +4Q |
|---|--------------------------|--------------------------|--------------------------|
| 1: Strategic partnerships with key UK and international organisations are supporting research delivery | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2: Promote collaborative research & a vibrant community throughout the environmental science, engineering & technology base. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3: Establish a culture of knowledge exchange between NERC and stakeholders and ensure knowledge generated from NERC-funded science, and data and information holdings, are communicated and used. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4: Build and maintain effective working relationships with DIUS. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Resource & Process Management

- | | -1Q | = | +4Q |
|--|--------------------------|--------------------------|--------------------------|
| 16: Ensure that NERC's national capability meets the needs of current priorities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17: Have skilled people to deliver NERC's strategy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18: Run an efficient, effective & flexible organisation to deliver NERC's strategy whilst demonstrating sound governance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Research Outputs

- | | -1Q | = | +4Q |
|---|--------------------------|--------------------------|--------------------------|
| 5: Climate system theme: develop risk-based predictions of the future state of the climate on regional & local scales, from days to decades | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6: Biodiversity theme: understand the role of bio-diversity in key ecosystem processes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7: Sustainable use of natural resources theme: provide the science to optimise the use of renewable & non-renewable natural resources whilst living within the Earth's environmental limits | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8: Earth system science theme: increase knowledge of the past & present behaviour of Earth to enable predictions of future change | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9: Natural hazards theme: increase knowledge to improve the forecasting & mitigation of natural hazards | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10: Environment, pollution & human health theme: provide science to reduce damaging health effects of pollutants & pathogens | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11: Technologies theme: develop the tools & technologies needed for cutting-edge environmental science | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Future

- | | -1Q | = | +4Q |
|---|--------------------------|--------------------------|--------------------------|
| 12: Responsive Funding: Support cutting edge & emerging areas of science through responsive mode research | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13: Develop NERC's national capability to meet future priorities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14: Develop skilled people (to ensure a healthy environmental science base) to meet future science priorities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15: Adapting the organisation for strategic risk management – seizing opportunities and mitigating threats. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |