

Organisational Theme Reports
NERC Strategy 2007 – 2012
Next Generation Science for Planet Earth



NATURAL ENVIRONMENT RESEARCH COUNCIL

Organisational Theme Report

People

November 2007

People

Enterprising people delivering world class science

1. Introduction

- 1.1 Theme reports are the core of NERC strategy for 2007 – 2012 *Next Generation Science for Planet Earth*. The Reports are the culmination of consultation, advice and decision-making that took place over 2006 and 2007. They are working documents that provide the basis for implementation, informing Theme Action Plans. The corresponding sections of the published NERC strategy document are a summary of the information in the reports.
- 1.2 The reports were produced by Strategy Development Panels in 2006 and underwent further development in 2007 to incorporate changes to the strategy resulting from a public consultation. The overall process for development of the People report is summarised below:
- 1.3 The Chief Executive was delegated by NERC Council to establish the People Strategy Development Panel ('People panel') to identify the major 'people' issues NERC needs to address, and develop options and recommendations for consideration at the November 2006 Council Meeting.
- 1.4 The People panel met twice, on 20th April and 14th June 2006. The first meeting took the form of a workshop, while the second meeting was a targeted discussion of the issues previously identified. Panel members were selected for their knowledge and experience, not as representatives from particular institutions or organisations.
- 1.5 The panel was provided with a range of background material, and used a range of facilitated workshop techniques, complemented by in-depth panel discussion to identify and then further develop key strategy issues. In addition there has been input from senior managers across NERC.
- 1.6 Following discussion, the panel agreed that a working definition of the panel scope should be NERC's responsibility for the training of Environmental Scientists, its role as a significant employer of such scientists, and its wider responsibilities as an employer. The panel considered the role of the Research Councils in bringing new researchers into science and the specific responsibilities of NERC. It also considered the role NERC should play both pre and post funding PhD training and its role in building careers to the benefit of the UK economy as a whole.
- 1.7 The panel's report was presented to the NERC Executive Board (NEB) on 21 September 2006. A revised version, incorporating the conclusions from NEB was presented to Council on 30 November 2006. Subsequently, the report was further updated to reflect the overall priorities agreed at Council for the theme.

- 1.8 A draft NERC Strategy Document was developed from the panel reports and was opened for public consultation in February – April 2007. A final version of the Strategy, incorporating recommendations from the consultation, was approved by Council in June 2007 and published in November 2007. In October 2007 the theme reports were updated again to reflect this evolution of the strategy document.

2. Assessment of inputs to the panel

- 2.1 The panel were provided with a range of written inputs, including the FAB HR consultation paper, RCUK report on enhanced stipends, summaries of the targeted and general web-based consultation exercises, the recent Training Awards Review, Masters Review and outputs from the science strategy development panels.

3. Challenges

- 3.1 The initial workshop identified a number of issues, which were further refined, distilled and prioritised into the following:

Key Strategic Challenges

1. **Encourage greater flexibility in our people resource including NERC Staff and the environmental science community .**
2. **Determine NERC and the UK’s training priorities and address future skills gaps**
3. **Attract, retain and develop the best people for NERC and the environmental science community**
4. **Improve the role NERC plays in encouraging young people into environmental science**

Secondary Challenges:

5. **Determine the proportion of NERC budget allocated to training**
6. **Identify methods of demonstrating the effectiveness of NERC’s investment**
7. **Improve the diversity of people coming into science**

- 3.2 The challenges are considered below in more detail, along with the NERC contribution and desired deliverables.

3.3 **Challenge 1 – Encourage greater flexibility in our people resource including NERC staff and the environmental science community**

- 3.3.1 Effective delivery of NERC strategy requires flexibility as science priorities change over time. To do this NERC needs to have a flexible human resource base. This challenge primarily focuses on NERC's relationship with its directly employed staff and the way it recruits, manages, motivates and develops people. It also relates to how NERC people work with the wider community. It focuses particularly on scientific staff, but it is equally important that NERC operates the same principles when considering the way it employs, manages, motivates and develops those who fill key roles in engineering, IT, administrative support, and in the wide variety of roles that ensure that we operate as an effective, integrated organisation.

Scientific career paths

- 3.3.2 NERC needs to:
- i. Offer a variety of science paths to reflect the needs of stakeholders
 - ii. Encourage flexibility in its staff
 - iii. Encourage excellence
 - iv. Ensure all its science staff develop certain key competencies
 - v. Create a realisation that working for NERC may form only part of a career
- 3.3.3 Traditionally, NERC scientific staff have developed very specific expertise, building their careers by becoming increasingly expert. This has benefits, in that it develops the deep knowledge needed to be able to attract funding, write papers or add value to previously discovered work. It enables NERC to develop experts of international status, who add value both to the organisation and to their science communities. NERC should continue to encourage some staff to follow this route to become international level researchers, but NERC must ensure that this is in areas of strategically significant science. This will need to be tensioned against wider stakeholder needs.
- 3.3.4 There is a recognition that NERC needs to encourage and value people who are prepared to be more flexible and to provide a broader contribution. This includes those individuals who are prepared to move between areas of work, adding value to them without necessarily becoming a world authority. It includes those who are capable of working on a multi-disciplinary basis; those who identify the next challenging science area, build a multi-disciplinary team to address it and attract funding in the process. It may also include people who are prepared to put particular emphasis on the exploitation of NERC's science and on knowledge exchange. Such flexibility needs to occur at both national and international scales. These people should be valued no less than those who fall into the category identified in 3.3.3. Encouraging and valuing this mix will build strength and flexibility into NERC.
- 3.3.5 Over time a far greater proportion of our staff will be expected to deploy their skills flexibly to changing NERC strategic priorities, and to collaborate with colleagues across NERC and other organisations through virtual and mobile working. It will be important that those joining NERC recognise this and embrace the need to develop and enhance their skills to reflect it.
- 3.3.6 Whatever the role that individuals play, NERC should encourage excellence. It should expect individuals to be prepared to contribute to a high level and to continually develop their skills. There are no roles in NERC where staff can simply stand still.

3.3.7 All NERC scientific staff should be required to develop a number of generic skills such as:

- Ability to work in teams
- Ability to motivate, communicate and influence effectively with a range of audiences
- Self management/self empowerment skills (i.e. the can-do mentality)
- IT skills

3.3.8 At present, NERC has relatively low turnover. Staff are offered the chance to pursue their broad research interests, albeit in a directed way, and to develop new skills; they receive good rates of pay and employment terms, and are provided with good pensions and an excellent safety net against any problems that may arise. This low turnover can make managing changing priorities difficult so we must ensure that the people we employ are high performing and flexible to NERC needs.

3.3.9 The panel considered that if NERC is to continue to meet the needs of stakeholders and at the same time build a more flexible workforce, the following actions should be considered:

Ref	Description of action
1.1	NERC should actively engage in managing people’s careers to ensure the needs and expectations of the organisation and of the individual meet. This should focus on identifying early potential for scientific leadership, science support, specialist roles etc.
1.2	NERC should identify which science areas are strategically important through closer stakeholder engagement and ensure that the specialists required for these areas are developed and maintained. It should ensure that those who follow this route are making a significant contribution to their area of science at all stages of their careers.
1.3	NERC should ensure that it sends clear messages that it values those who are prepared to diversify, change direction or contribute beyond their specific area of expertise. It should ensure that people do not remain in one role indefinitely unless there is a clear organisational need.
1.4	NERC should be clear to staff from the time they seek employment about the needs and expectations of the organisation; these messages should reinforce the concepts of flexibility and of regular re-evaluation of career options.
1.5	NERC should identify the generic competencies it requires for the future, and should recruit, train, develop and reward these.

Flexible employment approaches

3.3.10 The panel considered the current model of employing staff directly and discussed the advantages and disadvantages of this approach. For example, sudden changes in funding are easier to manage where there are no directly employed staff, however a highly skilled employed workforce can offer an immediate resource to direct to sudden events eg BSE crisis. The current CEH restructuring has highlighted the need for us to retain expertise in certain key areas and Council has rightly expressed concern about loss of capability if people do not remain with us. The NERC employment model has been a factor in ensuring that we are seen as an organisation people would want to work for. The panel concluded that the

current model has strengths and the focus should be on creating greater flexibility within our employed resource and managing carefully the total numbers employed across the centres.

- 3.3.11 It is recognised that in future, under FAB, the total number of people we employ will depend upon four significant factors: the strategic need for each Research Centre, as reflected by the level of national capability funding it receives; the ability of the Research Centre to win research programme funding through collaboration and competition; the level of commissioned research income; the extent to which NERC seeks to avoid the transitional costs associated with funding changes.
- 3.3.12 NERC Research Centres may choose not to employ directly all the people and skills needed to deliver every programme. Collaboration with other research centres and universities to access and share capability and skills (infrastructure and people) will be an alternative option. Secondments will be actively pursued with HEIs, industry and other stakeholders to ensure an interchange of people and ideas. This important activity will breakdown barriers and help change the culture. It will support the knowledge exchange agenda in addition to providing a more fluid people resource within NERC and the community.
- 3.3.13 NERC has experimented in the past with different employment models to increase headcount flexibility but with limited success. In particular, it has tried using fixed term employment as a model for initial employment. Only a decade ago, 30% of science staff were employed on a fixed term basis, but turnover remained below 5%, because the majority of appointments were renewed or converted to an open-ended basis after a number of years. Such an employment model only brings flexibility if difficult management decisions are taken to end contracts. The legislative backdrop is significantly tighter now, such that the flexibility offered to an employer is much reduced. NERC should encourage the appropriate use of fixed term employment but not rely on this as a major contributor to increasing flexibility.
- 3.3.14 However, consideration should be given to developing early career flexibility through a training scheme similar to a university post-doc scheme. This would enable skills and experience to be developed and career goals identified during the training programme. There would be some opportunities for established positions at the end of the training based on performance and potential.
- 3.3.15 Of great significance is the expectation that is created and fostered by managers. At present staff are given no reason to believe that their employment will not continue indefinitely or that they should be looking to build some of their career outside the organisation. Where people no longer fit the needs of the organisation the issue should be tackled.
- 3.3.16 We need to challenge some of the traditional ways in which staff approach careers in research. The very best staff and those who are most capable of adapting to NERC's changing needs will have considerable opportunities to build careers within Research Centres. The organisation will encourage and develop them. However, a greater proportion should expect time with a Research Centre to be one part of their career path.
- 3.3.17 Managers in NERC need to be better skilled at dealing with individuals who are under performing, or are failing to demonstrate sufficient flexibility, or whose attitudes/behaviours do not meet our needs. NERC has become a 'leader' amongst the Research Councils at tackling underperforming staff but this has been largely managed by Corporate Personnel,

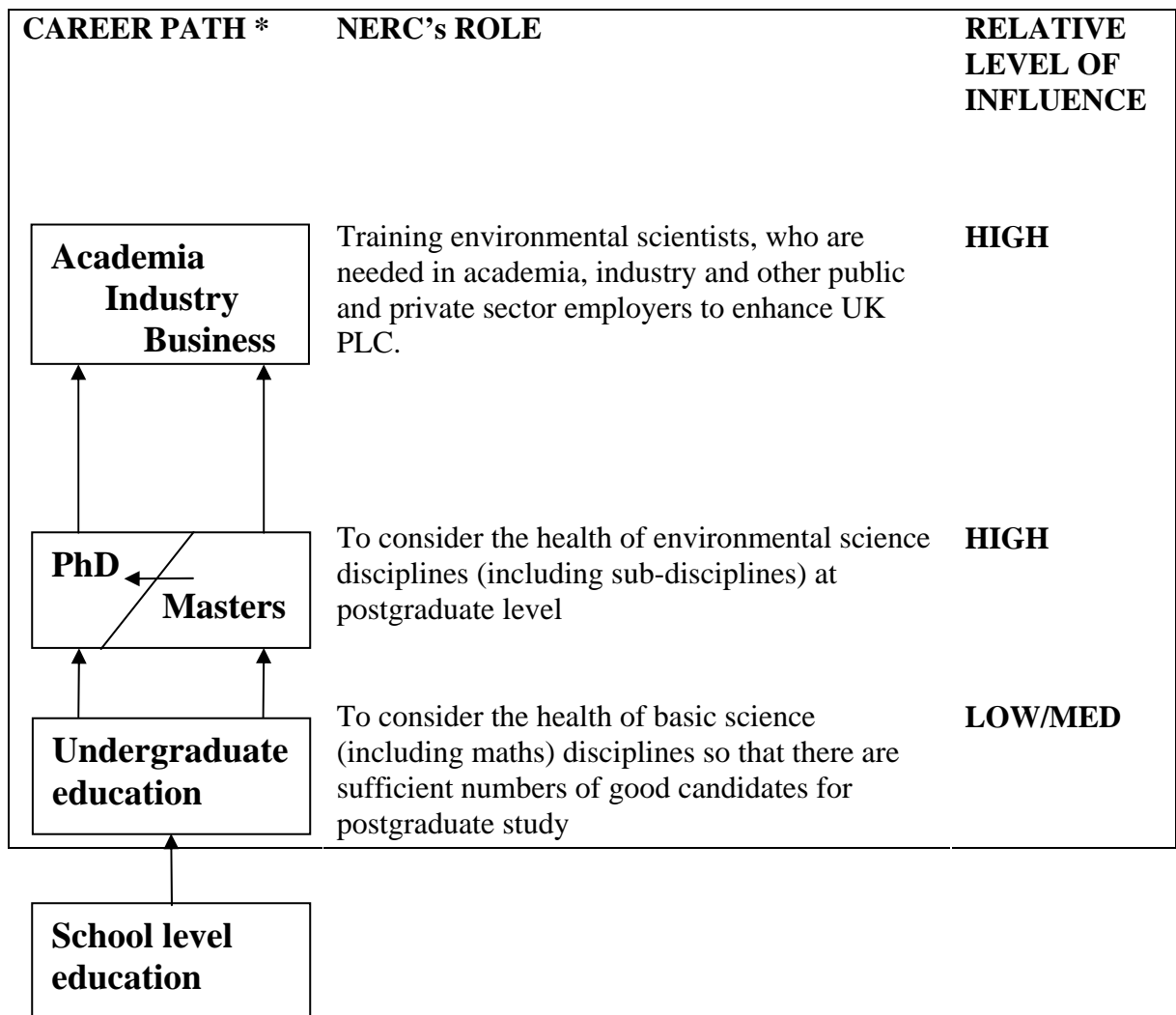
rather than line managers. Managers need to be better equipped to deal with these circumstances as part of their responsibilities as a manager.

- 3.3.18 NERC has traditionally not used the skills base it ‘owns’ as an organisational resource, i.e. in ensuring that the boundaries between individual research Centres do not stand in the way of the best scientific outcome. The barriers seem to be less about culture and more about the way in which funding is allocated on a centre rather than themed basis. This will be addressed as part of the FAB process. There is however, a need to understand the NERC wide resource better, in terms of skills and competencies to enable this cross working to happen.
- 3.3.19 The challenge therefore is to change this culture and create one that is more responsive to NERC’s and national needs. There is a clear link to the Delivery theme here.
- 3.3.20 The panel suggested the following actions should be considered in addition to those set out in 3.3.8 above:

Ref	Description of action
1.6	Expectations need to be changed – the culture from recruitment onwards should be that employment is not for life, and staff must have the skills to meet changing scientific needs, both from NERC and stakeholders.
1.7	Employment policies should be reviewed to stimulate high performers, while effectively managing performance and dealing appropriately with under-performance.
1.8	NERC should identify what skills are needed for the future, and ensure that managers have the skills to deliver.
1.9	Restructuring and redundancy policies and procedures should be reviewed to ensure they balance the wish to avoid risk with the need to avoid undue complexity and cost.
1.10	NERC should ensure that at the recruitment stage consideration has been given to whether a fixed term appointment would be appropriate eg where work is clearly time limited. Tighter procedures would be implemented to limit the number renewed and converted to open ended contracts.
1.11	NERC should consider introducing the training equivalent of a university post-doc scheme to provide early career flexibility for the individual and resource flexibility for the organisation.
1.12	NERC must find ways of taking advantage of the skills base across NERC, and actively encourage cross Centre working.
1.13	NERC should continue to develop links between Centres, HEIs and other key stakeholders within the UK and internationally, eg working in partnership, sharing students and creating secondment opportunities.

3.4 Challenge 2 – Determine NERC and the UK’s training priorities and future skills gaps

- 3.4.1 The panel recognised that the NERC Charter places a requirement on the organisation to support UK training needs in the Environmental Sciences. Training is one of the best means of knowledge exchange and also provides core skills to industry and the UK more broadly. However, given that demand will always significantly outstrip resources the panel felt that it was important that Council decide both why we support training and where it should be directed. The panel also debated whether NERC’s role is to supply environmental scientists to work in environmental science or to work within the UK more generally. It concluded that the former was the priority area in times of resource constraint. Figure 1 illustrates where the Panel sees NERC most able to play a role.
- 3.4.2 The panel discussed and refined the mission to propose that NERC’s role should be explicitly to “deliver training for UK benefit as a whole, whilst targeting areas of critical national shortage within environmental science as identified through a regular assessment and evaluation process”.



<p>To encourage greater numbers of young people into science and quantitative disciplines, so as to ensure sufficient numbers of well-trained environmental scientists</p>	LOW
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Fig 1 *for simplicity this diagram shows a linear career path however it is recognised that career paths are more complex with apprenticeships, short skills courses, etc

- 3.4.3 The panel discussed the role NERC should play in maintaining the Health of the Disciplines. It was identified that there are two elements to this:- the basic science/maths disciplines (maths, chemistry, physics etc) at undergraduate level and the environmental science disciplines (hydrology, ecology etc) at Masters and PhD level. Supporting development of skills to bridge interdisciplinary gaps will also be important. The panel recognised that NERC's challenge is the breadth of disciplines needed in Environmental science. To deliver our strategy we need to be able to recruit both basic and environmental science disciplines.
- 3.4.4 NERC has considerable influence over the development of skills in the environmental science disciplines at Masters and PhD level. Capability in disciplines such as hydrogeology can be developed through targeted Masters courses and potentially through controlling PhD subject areas.
- 3.4.5 It is recognised that NERC cannot influence significantly the health of the basic disciplines. NERC is, however, able to play a part in raising awareness of the importance of these in environmental science. NERC can link with Learned Societies to raise awareness of our needs and to understand where the future gaps are likely to be. NERC could make undergraduates studying basic disciplines (like maths and physics) more aware of environmental science by offering summer vacation placements, during which they would undertake some environmental research.
- 3.4.6 NERC can also influence at school education level, to encourage greater numbers into science generally, emphasising the link of the basic disciplines to future careers. This links with challenge 4 below. NERC can also link with the curriculum providers to encourage environmental science onto the agenda and emphasise the role of the basic disciplines in environmental science. This would be best achieved through DfES.
- 3.4.7 In considering this challenge, the panel came to the conclusion that currently, NERC does not have sufficient information to be able to identify skills gaps. Future skills requirements can be driven by factors such as developments in EU and UK legislation, new science and technology developments such as nanotechnology, changes in government priorities, industrial and/or societal needs, or changes in NERC strategic priorities. The panel noted that other bodies (eg professional societies such as the Royal Meteorological Society) also have a training remit, and there may be partnership opportunities in sharing information to identify these gaps.
- 3.4.8 The panel recognised that once these gaps were identified NERC would need to consider how to balance these specific needs with its role of developing broader core research skills. The current training position shows the majority of PhDs (~80%) are funded via the algorithm, or tied to responsive mode grants. Around 15% are funded through directed programmes and 5% through the CASE competition. However, this would not necessarily cover all the

identified future skills gaps, a more directed approach may be necessary. There are schemes which have tried to target studentships on more specific fields, such as Environmental Mathematics & Statistics, or e-Science. The panel see an opportunity to direct more funding to identified skills gaps in the UK economy. However, this must be very carefully managed so as to maintain the quality.

- 3.4.9 NERC targets its support for Masters training through a regular Masters Review. However, in the next review, NERC will need to consider again, its level of support for more vocational courses, where increased support from industry and other employers might be more appropriate.
- 3.4.10 The panel acknowledged the difficulty in achieving the right balance and would make a recommendation to NERC Council once the gap analysis was completed.
- 3.4.11 NERC also needed to ensure that the HEI community were aware of the future skills requirements once the analysis was complete and the likely availability of jobs over the next 5 – 10 years.
- 3.4.12 The Panel suggests the following actions:

Area	Ref	Description of action
- Academia - Industry - Business	2.1	Gain a better understanding of what roles NERC trained people move into;
	2.2	Identify if/where there are skills gaps that can be addressed by NERC funded postgraduate training;
	2.3	Identify what skills and trained people will be required in the future for NERC science and UK PLC.
PhD/Masters	2.4	Continue to strategically target masters support through the regular Masters Review;
	2.5	Commission an evidence based study on skills needs in environmental science, including consideration of the contribution NERC is currently making; skills gaps and future needs;
	2.6	Use the outcome of the study to inform strategic decisions on the level of NERC postgraduate support; the proportion of masters and PhD funding and areas where there are skills gaps which need targeted support;
	2.7	Continue to target PhD studentship support through directed programmes, as appropriate, but also target specific skills gaps through separate competitions;
	2.8	Target a high percentage (possibly two-thirds) of algorithm studentships to NERC Strategic Priorities, as well as retaining one-third as CASE studentships.
Undergraduate education	2.9	Engage with DfES to influence the curriculum and improve the diversity of science undergraduates;
	2.10	Fund an undergraduate summer vacation scheme targeted at shortage disciplines to introduce them to environmental science research.

School level education	2.11	Work through RCUK to influence at school education level, including curriculum development and improve the diversity of students taking science;
	2.12	Encourage NERC researchers from HEIs and NERC Centres to undertake activities to raise the profile of environmental science as a career.

3.5 Challenge 3 – Attract, retain and develop the best people for NERC and the environmental science community

- 3.5.1 To deliver world class research NERC needs to be able to attract the best people, whether in scientific, specialist or support roles. People choose their employer for many different reasons; such as scope in the role, career development opportunities, terms and conditions, pride in what the organisation delivers. NERC needs to consider how to provide and communicate the right package to attract the calibre we require.
- 3.5.2 NERC has good terms and conditions, with competitive salaries in the majority of roles. There are one or two specialist roles where adjustments have had to be made to keep in line with the market, however, the strategy of moving towards being an upper quartile payer over the last few years has put NERC in a stronger position than other research councils. The university sector is implementing a new pay structure which could raise the game and the cross council agenda of harmonisation poses a potential challenge to NERC's ability to deliver competitive salaries. NERC must maintain flexibility to attract the best in field and be able to reward the high achievers.
- 3.5.3 Having competitive salaries is not enough, the package must be communicated effectively in the market, so that potential recruits see the value and breadth of what NERC has to offer, have accurate, clear expectations of NERC as an employer and understand what NERC's expectation is of them.
- 3.5.4 The brand of an organisation plays a significant role at the recruitment stage. NERC has strong Research Centre brands, which help to attract the best people, but a weaker NERC brand does not have the same pull. With FAB encouraging more and more cross NERC working, NERC needs its staff to have pride in and recognition of the NERC brand, and see themselves as NERC employees. This is an integral part of the branding challenge considered more fully in the Delivery Theme.
- 3.5.5 NERC offers significant development opportunities and exciting careers. Schemes such as the Merit Promotion Scheme are attractive to potential recruits and demonstrate NERC's commitment to continuous learning and development and career growth – this needs to be promoted at the recruitment stage.
- 3.5.6 Finding scientific leaders, with the unique mix of a strong scientific reputation and management/people skills has historically proved difficult. We need to develop the next generation of scientific leaders in-house through a targeted development programme. NERC should identify and develop talent from an early career stage for future succession into these key roles.

3.5.7 The following actions should be considered:

Ref	Description of action
3.1	Ensure NERC terms and conditions are and remain competitive. Ensure the cross council pay scheme can meet NERC's ongoing needs.
3.2	Promote the employee package clearly.
3.3	Focus on building employee pride in the NERC brand as part of the wider brand review.
3.4	Create a NERC-wide training and development strategy to support the changes identified in this people strategy.
3.5	Develop a mechanism to identify and grow future scientific leaders.

3.6 Challenge 4 – Improve the role NERC plays in encouraging young people into environmental science

- 3.6.1 Corporately, NERC is part of a number of existing schemes aimed at young people which all share the objectives of trying to enthuse or interest young people in science and, via that interest, to recruit them into science careers. These schemes include Researchers in Residence, Nuffield Bursaries and the CREST scheme. In addition, our small grant scheme for Science Week essentially targets young people/schools audiences. We also take a stand each year at the Association of Science Education conference. These activities form part of our Science in Society programme.
- 3.6.2 The management of all these schemes is now with the new Research Councils UK Science in Society Unit. Already under discussion are a number of additional initiatives aimed at young people, or their teachers, to ensure they have access to the latest outcomes of our research. Some examples are a central resource of science briefing information (run by ASE), continuous professional development for teachers of science and curriculum development work.
- 3.6.3 In the past NERC has not emphasised internally the importance of encouraging young people to consider careers in environmental science. Despite this, there is significant activity within Research Centres in communicating about science to young people, often relying on individual scientists (often out of hours) who recognize the value of this activity for their science.
- 3.6.4 The panel considered that there are benefits in NERC playing a role in encouraging young people into careers in the environmental sciences. This would help the health of the overall science base, and may go some way towards meeting future skills shortages. It is also important that students make informed choices (eg over whether to give up maths or physics)

based on good career advice. There is evidence of demand from schools for engagement, but we must accept that any engagement will have a resource implication. This is linked to challenge 2.

- 3.6.5 The importance of NERC promoting the environmental sciences at the stage in people's education where key choices are made is not explicit in NERC's strategy and the reward mechanisms for engaging with schools is insufficient. The panel recognised that engaging individual schools is not an effective or efficient use of resources on its own. However, engaging with education departments or curriculum developers can be effective at the strategic level.
- 3.6.6 The panel considered a number of methods which could be applied to this challenge and decided that this should focus on web resources and expert, teacher moderated methods. There may also be scope to widen existing schemes such as the science ambassadors scheme.
- 3.6.7 If this challenge is to be met, the panel suggest the following actions:

Ref	Description of activity
4.1	NERC should continue to work with other research councils in supporting and further developing the schemes and initiatives aimed at young people. NERC should also support the strategic initiatives that foster more engagement with DfES and teachers' professional bodies.
4.2	NERC should explore new ways of engaging with young people to meet the objective of encouraging uptake of science careers.
4.3	There should be a general expectation that NERC Centres will engage with schools in their area to promote wider understanding of science.
4.4	NERC should consider increasing the corporate level co-ordination of this activity to ensure it is meeting the strategic need, which will require resources (staff time and materials).
4.5	Encourage NERC scientists to work with schools or other organisations for young people. Recognise the value of this activity at the individual and corporate level. Success in this challenge will require motivated, trained and enthusiastic individuals.
4.6	Consider an additional funding element as part of the main grant to act as an incentive to academics to develop mechanisms for engaging children.

3.7 Secondary challenges:

Challenge 5: Determine the proportion of NERC's budget allocated to training

- 3.7.1 The panel noted that current spend on training is approx £30m, or around 8% of budget. The panel considered that this challenge is a strategic issue for Council, once the evidence is available. The recent Training Awards Review identified a much greater demand for NERC funding in the training area than NERC is providing. Also with knowledge exchange being a high government priority, training - as one of the means of knowledge exchange - should remain an important priority for NERC. The government have set a target of increasing research intensity to 2.5 % of GDP, which will create more demand for researchers. However, Council will need to tension this against other areas of NERC spend or determine – possibly in conjunction with RCUK – whether we should be highlighting to government the demand identified in this key area of UK economic activity.
- 3.7.2 The panel also noted that more investment does not necessarily mean more students, as increasing the PhD funding period to 4 years could be beneficial. Ultimately, any increase in training funding will result in reductions in other areas of NERC investment. Council guidance will be sought in the light of the evidence from the skills gap analysis.

Challenge 6: Demonstrate the long term effectiveness of NERC investment in training

- 3.7.3 The panel noted that the main metrics for students NERC collects are numbers awarded, first destination data and submission rates. The panel highlighted the future need for accurate first destination data, and it felt it would be useful to have information on whether PhD graduates are remaining in the environmental science area. The skills gap analysis would, if repeated over time, show the moving landscape of studentships and demonstrate the benefits of investment over time. The panel also considered other mechanisms which could be applied, for example, collection of a similar suite of data as currently collected annually from PIs and fellows (including publications, exploitables, KT activity etc), integration into existing data collection systems (eg Research Outputs Database (ROD)), improved data-collection methods, including incentives for PhDs to provide data for a period post qualification.
- 3.7.4 The panel felt it would be useful to try to track those whose training had been funded by NERC each year, to see what careers they go into and where ultimately their careers take them. This is data that could be particularly effective in arguing that NERC makes a significant contribution to the economy.
- 3.7.5 The panel suggest the following actions:

Ref	Description of activity
6.1	Better output metrics would add to the evidence base to support future funding
6.2	NERC to track the careers of those funded by NERC
6.3	Use of existing mechanisms such as ROD to include studentships. There may be a need to incentivise students to provide data for a period post-qualification
6.4	Use the data to assess which HEIs provide the highest quality teaching and training.

Challenge 7: Improve the diversity of people funded

- 3.7.6 The panel started by considering the nature of diversity – ethnic, gender, age, disability and sexual orientation. It is necessary for NERC to involve more diverse communities. As a public body we have a responsibility to reflect society as a whole, and to discount certain groups may make skills gaps more difficult to fill. The panel acknowledged that in the environmental sciences, there is a cultural issue which needs to be addressed as there are low numbers of candidates from ethnic minorities who apply for posts. This contrasts with other areas of science, particularly bio-medical, which does attract candidates from a wide variety of ethnic backgrounds. It was recognised that unless we can encourage individuals to consider our sciences at school, when life choices are made, we will fail to make progress. The Research Councils are working together to develop approaches to tackle this issue, focussing particularly on increasing the involvement of women and ethnic minority groups in science and its governance.
- 3.7.7 The panel considered the improvements in the gender balance that have been achieved within Research Centres, and welcomed the study being undertaken by BGS, identifying case histories. This study shows an increasing female/male employment ratio over a ten year period. Recruitment to science posts show significant increases in female recruitment and ‘similar’ career progression for males and females to at least Band 6 level. Beyond Band 6 this is not the case and barriers to progression are currently being studied. BGS has also started other initiatives, including the use of a diversity consultant to provide specialist advice and training.
- 3.7.8 Nevertheless, the panel noted that overall females continue to be under-represented on key decision-making bodies and at Bands 4 and above in NERC. The (relatively few) female staff in senior positions in NERC find they are being asked to carry out a disproportionate representative role. Despite recognising the achievements that there had been and the increased consciousness, further improvement can be made.
- 3.7.9 The advent of age discrimination poses many challenges for NERC, from recruitment practices to the need to accommodate a greater number of staff of mature years; this legislation may create some conflicts with Council’s wish to encourage greater flexibility in the employment model.

3.7.10 The panel suggests the following actions:

Ref	Description of activity
7.1	Continue to engage with the other Research Councils to influence the diversity in the supply of scientists to the UK in general.
7.2	Greater promotion of the work done so far through core values and the respect agenda.
7.3	Ensure that all the barriers to female staff reaching senior levels have been removed.
7.4	Positive engagement with diverse groups, to attract them to NERC science. Influencing the curriculum as identified in challenge 4, targeting schools in areas of high ethnicity (eg, Leicester has >50% non-white population, and close proximity to BGS), identifying role models. Ensure use of appropriate advertising channels to reach diverse populations.

4. Meeting the Challenges

4.1 The published NERC Strategy highlights some of the ways in which the NERC will be ‘Meeting the Challenges’ for the People Theme. These are essentially some of the potential key deliverables. They often cut across several of the Theme’s challenges. For consistency, we have included them below against the key challenges that they most strongly relate to. They are not exclusive and may evolve during the Strategy’s lifetime.

“Meeting the Challenges” (from the NERC Strategy)	People Challenges			
	1	2	3	4
Produce and evidence-based analysis to inform decisions on the level of NERC postgraduate support and identify areas where there are critical national shortages		X		
Encourage a culture of greater flexibility and collaboration within the community. We will do this by identifying and promoting a variety of career paths within NERC to attract the highest quality people and implementing a range of flexible employment approaches and opportunities	X		X	
Develop a programme in partnership with others to engage education departments and curriculum developers to enthuse young people with science.			X	X

5. Conclusions and Recommendations

- 5.1 The people panel identified a broad range of issues covering all aspects of NERC's remit related to people – NERC's responsibility for the training of Environmental Scientists, its role as a significant employer of such scientists, and its wider responsibilities as an employer. There are many areas that could be tackled to improve the way NERC delivers in this area. However, the panel considered that the focus needed to be on a few key areas that would achieve the most impact i.e. the 4 key challenges, identified and listed in priority order on p.3.
- 5.2 The first two priority challenges are recommended for immediate attention.
- 5.3 Improving the flexibility of our people resource is the most critical factor to be addressed if NERC is to deliver its strategic priorities effectively. There is no panacea to achieve this. What is required is a series of actions, which singularly will make a small contribution but collectively will have significant impact. This should include a focus on the contractual terms we have with our staff, the expectations we foster and the way we manage our staff through their careers. This is a long-term objective will take several years to bring benefit to NERC, hence the urgency to start this work now.
- 5.4 The other main area that impacts on our ability to deliver our strategy effectively is our investment in training. NERC spends annually over £30m on training environmental scientists, playing a very important role in maintaining the health of environmental disciplines at the post graduate level. To maximise the impact of this investment NERC needs to have a very good understanding of the current UK skills base and the future needs. However, given the breadth of disciplines needed in environmental science there is very little relevant evidence for NERC to draw upon. The Panel consider this evidence key to targeting investment appropriately and recommend an evidenced based study on skills needs in environmental science as a priority.