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**NERC Research  
Centre Ownership  
and Governance**

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**External Advisory  
Panel Report**

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**October 2013**



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## Executive Summary

This report presents the recommendations of the NERC Research Centre Ownership and Governance External Advisory Panel. The panel was established by Council to review the risks and benefits to NERC science of granting its Centres greater independence from NERC and public ownership.

Overall, the panel concluded that the current model of operation for NERC centres is unsustainable and that significant (rather than incremental) change is needed to maintain world-class research. If the *status quo* is maintained there is likely to be a significant and unacceptable decline in the quality / volume of science output and impact. The result will be an end-point where UK environmental science will no longer be of the highest quality at internationally recognised standards of excellence.

The panel is of the opinion that the potential benefits of granting independence are such that a detailed analysis should be made of the best alternative models of ownership and governance for each centre and preliminary plans formulated to effect such changes should this be Council's recommendation.

Evidence presented to the panel that led to the above conclusion can be divided into seven broad areas corresponding to issues that need to be considered and addressed:

### 1. Commissioning

NERC is both a commissioner and a supplier of science, which is problematic for two reasons.

- a) Should a significant increase be required in one part of NERC's science supplier portfolio, the funds would most likely have to be found from within the science procurement portfolio because that part of NERC's finances are more flexible.
- b) The expertise on what long-term strategic environmental science is needed for the UK is derived from those who benefit from the funding.

It is important that NERC moves to a model whereby a level of independence is achieved between procurement and delivery.

## **2. UK-wide long-term science strategy**

Following on from 1b (above), it is timely for the Government to reconsider how it receives appropriate and independent long-term strategic scientific advice, reflecting the need for excellence, relevance and continuity.

Whatever the governance model, expertise has to be brought to bear by Government on the long-term strategic science needs as traditionally delivered through centres and surveys.

## **3. ‘Public good’ science**

If centres are moved out of NERC, the ‘public good’ science, which they undertake, can and should be maintained. The identification of “public good” science depends on an effective solution to 2 above.

## **4. Alternative ownership models**

Operating in the public sector prevents NERC centres from being sufficiently in charge of their own destiny. Two examples are:

- (a) the inability to plan through carrying money over from year to year for future re-investment; and
- (b) public sector salary constraints, which mean that centres are sometimes unable to offer competitive remuneration to attract top candidates.

## **5. Role of NERC**

Should its centres be granted independence, the ‘new’ NERC, its future mission, function and form will need to be re-defined (or re-envisioned). This will include NERC working with and through the centres that it no longer owns, as appropriate.

## **6. Staff engagement**

On-going staff engagement in any proposed change is a critical success factor. The overriding message from staff is that they want to concentrate on delivering excellent science. The move to a devolved centre governance model could facilitate this.

## **7. Change management**

Strong leadership is needed for change to be effective and to ensure that the future of the centres and the science they undertake of the highest quality. Investment will also be needed in the change programme. The resulting new governance with increased autonomy and the freedom to remunerate at market rates should result in senior posts being seen as highly attractive to high calibre scientists and centre leaders.

# Introduction

## Background

At its meeting of 21 February 2013, NERC Council asked its Executive to consider the benefits of granting its centres independence from NERC and public ownership. At its meeting of 2 May 2013, Council confirmed that there were two possible benefits from making this change:

- It will better ensure that the centres it supports have the cultural, managerial and financial flexibility to sustain a scientific environment that attracts and retains leading scientists.
- It will allow NERC to focus its efforts and resources on funding of excellent UK environmental research, achieving greater impact on science, society and business.

The NERC Chief Executive believed it important that Council benefited from a considered view of whether these potential benefits were realisable and whether there were sufficient grounds to warrant development of detailed plans to change the ownership and governance of its centres. An independent panel was therefore proposed.

In order to provide sufficient independence and authority, NERC Council agreed that the panel should have representation from academia, government and the private sector and at least one international member. Its members were to be figures of demonstrable standing and drawn from those with experience, at Chief Executive or Board level, of:

- the governance, finance and management of large public or private organisations with either a scientific mission or a substantial dependence on environmental science in performing their role;
- the role of NERC-supported science, and its national good contributions, to scientific understanding, the UK economy, its public policy and the wider benefit of society.

NERC Council also confirmed that its Chair should be a person satisfying all those criteria, except that of internationality. In appointing the Chair, the NERC Chief Executive consulted with the Chair of NERC Council and with BIS; in appointing

the panel's membership, the NERC Executive consulted with the panel Chair, centre directors and BIS.

### **Panel membership**

The panel comprised members listed in annex A.

### **Terms of reference**

The terms of reference (ToRs) of the panel were as follows:

*'The panel's remit concerns the British Geological Survey (BGS), the National Oceanography Centre (NOC) and the Centre for Ecology and Hydrology (CEH). The panel is asked to advise NERC Council and NERC Executive concerning its centres, considered individually of:*

- *the practical benefits for, and potential risks to, NERC science and its impact in moving a centre outside of the public sector; and their relative merit or demerit in comparison with the status quo;*
- *wider national and international implications of the proposed change.'*

### **Methodology**

To fulfil its ToRs, the panel held two meetings. In the first, the panel considered what evidence it wished NERC to provide to aid its considerations. In the second, a two-day meeting held in October 2013, the panel considered the evidence provided to it by NERC. It also considered input from the NERC Executive, the Chair of NERC Council, NERC centre directors and a broad range of NERC's key stakeholders including all those who provided input to NERC's public call for evidence during July and August 2013.

A list of the people / organisations who contributed to NERC's call for evidence and a list of the people / organisations met by the panel are provided at annexes B and C.

### **Terminology used**

The term 'public' in this report describes an institution owned by government, and in this case, NERC. Not-for-profit charities, which include universities, are considered to be private institutions in the context of this report. 'Private' or 'independent' should not be taken as being synonymous with 'profit-making' or 'for profit' organisations.

The use of the entity description 'NERC' in this report refers to the functions based in Swindon Office.



NERC's research centres provide, amongst other things, science and support that benefit a range of government departments and public policy. This is referred to as 'public good' science for the purpose of this report.

## **Summary of Key Points Considered by the Panel**

### **Commissioning**

Based on the evidence presented, the panel is of the opinion that NERC is not in an ideal position by being both a commissioner and a supplier of science. For example, should a significant increase in resource be required in one part of NERC's science supplier portfolio, those funds would most likely have to be found from within the science commissioning portfolio as that is the part of the budget in which there is the most flexibility. Whether it wishes to evolve its role to act as solely a commissioner or continue to operate as both a commissioner and a supplier is a matter for NERC Council. Notwithstanding any change, the panel is of the view that NERC will need to strengthen and clarify its commissioning process in order (i) for NERC to be much clearer about what its requirements of its suppliers are; (ii) for its suppliers to be clear about what they are supplying and under what conditions; and (iii) for all stakeholders to be clear about how the services supplied are to be accessed and how supplier performance against requirements will be evaluated.

The panel believes that NERC may wish to consider developing a commissioning framework covering these and other aspects around flexibility, transparency and access in order to provide reassurance to itself and its community. It is recognised that there will be a broad spectrum of approaches within this framework depending on what is being commissioned and over what timeframe this must happen.

The panel is of the opinion that this commissioning framework is the key NERC platform from which changes to centre ownership and governance can be launched successfully.

### **UK-wide long-term science strategy**

The panel formed the view that the government should take the opportunity afforded by the potential change in the ownership and governance of the NERC centres to review how it receives appropriate strategic scientific advice and commissions long-term strategic science. The panel heard, for instance, of a view that the UK is out of step with other technically advanced countries such as Germany and the US by lacking a long-term view of its strategic science programmes. If the government could better define its strategic vision of the UK scientific 'landscape', the panel believes that this would help NERC and others with a stake in UK science.

## **Public good science**

A clear message received by the panel from both the call for evidence and the face-to-face meetings was that if the centres are moved out of NERC, the public good science which they carry out should be maintained over the long-term.

The panel believes that NERC has to find a way of allaying fears that consideration of the ownership and governance arrangements of its centres is part of a process of the UK 'stepping back' from providing these services. As part of this, the panel considers that identifying the on-going cost of public good science provided by the centres is an important step so that the value of and budgeting for these is not lost to the UK in any changed ownership and governance arrangements.

The panel noted that NERC and all of the centres agree with the need to maintain public good science. A model must therefore be found which enables the centres to continue to deliver public good science.

## **Alternative ownership models**

The panel accepts that running organisations under the NERC umbrella imposes constraints such as lack of flexibility in carrying forward financial surpluses beyond the year-end accounting and in the use of business systems which cause NERC and its centres to operate in a risk averse way. NERC centres also operate under public sector pay constraints, which the centres' competitors (eg HEIs) do not experience. On the other hand, centres believe that being part of NERC offers them the opportunity to be perceived as independent and even-handed.

The challenge is for the centres to seek alternative models, which will enable them to address the demerits of the current system whilst retaining sufficient continuity of mission and their independent 'honest broker' roles. It should be noted that in Germany this same problem has been dealt with differently. "Helmholtz" scientific centres and surveys are now allowed to carry a proportion of their budget over from one year to the next. Indeed this flexibility is viewed as essential for long-term programmes involving major facilities. They are also allowed to recruit top scientists strategically with competitive salaries. In so doing Germany has faced the same problems as in the UK but responded to establish the necessary flexibility rather than privatise national centres of strategic importance.

In terms of possible alternative ownership models, the panel accepts that much work remains to be done. It did hear about different options such as:

- public ownership outside of NERC;
- owned by the private (not-for-profit) sector;
- government-owned, contractor-operated (GoCo).

Each model has advantages and disadvantages.

If it were possible, the first would maintain the national character of centres. However, unless a model like that of the Helmholtz (Germany) or CSIRO (Australia) was adopted, the issues over operational flexibility would remain.

The second would improve operational flexibility but there might be issues to be addressed over whether the private sector would protect public good science.

The GoCo option can lead to improvements in efficiencies and can help ease pay-related issues but contractors would not necessarily be able to produce and implement long-term science strategies. The panel heard that in the USA, such operation is most effective when there is a contractor plus a university collaborator. This enables a move away from Civil Service-type pay and grading structures whilst retaining small numbers of people with long-term technical capacity and commitment to the organisation. The ideal is to have a scientific Director and a commercial Deputy Director who between them could provide scientific excellence together with commercial know-how and management discipline.

The panel was impressed by the emerging thinking around the approach to ownership and governance for NCAS and encourages NERC to consider (albeit with some changes) the wider applicability of the NCAS approach.

The panel has no opinion about the relative merits of the various models but notes that the negotiation between NERC as a main funder on the one hand, and the centres on the other, will need to ensure that both parties benefit from changes to ownership and governance. . This will require a clear understanding – on both sides – of what the UK’s long term strategic science needs are, as well as ‘lines in the sand’ and full awareness of legal (as well as scientific) consequences of decisions.

### **Competition**

The panel heard that competition can make a very significant difference to the operation of a scientific organisation. Bringing in people who can improve the scientific culture as well as spot new opportunities was considered to be an important way of unlocking potential from within a centre. The panel heard that

‘success is everything to do with people’ and that to be effective, the centres would need to develop a greater customer focus and entrepreneurial spirit.

It is recognised that for the good of the UK, competition is needed as well as consolidation / critical mass. Independent centres have the potential to be a force for the good or to be a destabilising influence on the relevant environmental science sector.

The suggestion from those interviewed was for each centre to concentrate on its core business and develop a strategy for improved performance using some form of private sector model. This could lead to delivering not just national capability but also international leadership.

### **Role of NERC**

The panel heard that there was a need to address the issue of the ‘new’ NERC and its future mission, function and form. The panel recognised that this work was, for entirely legitimate reasons, initially carried out to a slower timeframe than consideration of the future of the centres but was reassured that it was now being actively considered.

The panel considers that NERC must think about how to ensure that the centres continue to do the work that is required. It understands that thought is already being given as to how NERC can continue to have influence in centres that it no longer owns. A commissioning model will need to address this concern. The panel believes that NERC should not seek to constrain the business models that the centres wish to set up but recognises that it should seek to ensure, through appropriate mechanisms, that will they continue to do the work that is important to NERC.

The panel heard that NERC is currently reviewing the funding of its National Capacity (NC) portfolio and noted the five strands of NC funding which have been introduced. The panel believes that NERC needs to understand how to operate with these five strands and review how they might be impacted by centre independence.

### **Staff engagement**

The panel heard how centres’ senior teams have been engaged in the work done to date and was reassured to hear that staff engagement, through a variety of means, is underway.

The panel heard that centre staff are generally feeling neutral about the potential change in their centre’s ownership and governance at this stage. The overriding

message from staff is that they want to work for organisations that support and deliver excellent science for the benefit of the entire environmental sciences community and that they want to concentrate on delivering excellent science rather than ‘chasing’ contracts to bring in money to the detriment of the science. It was noted by the panel that the evidence presented to them by other national and international organisations suggested that the two were not necessarily mutually exclusive.

### **Change management**

The panel recognises that if change is agreed, effective leadership must be in place in NERC and the centres. The change programme will require investment in the short term.

## Issues and risks

Throughout its deliberations the panel identified a number of issues and risks that it recommends that NERC and the centres consider. A list of the risks is provided at annex D but it should be recognised that this is by no means comprehensive. Before any change is embarked upon, detailed work must be undertaken to identify as many of the risks as is possible although it is recognised that some will only become apparent throughout the transition period. Those which the panel deemed to be particularly significant are listed below.

- NERC should not assume that there is a ‘one size fits all’ model / approach across the centres. A view was expressed to the panel that this change is likely to be more complicated than those already undertaken by BBSRC and MRC due to the infrastructure issues and the breadth of interest across government. The panel has no reason to disagree with this view.
- NERC needs to consider what a new National Capability framework will look like and how the centres would respond to it.
- The commissioning process for national capability needs to be considered.
- There is a need to devise a model that enables investment in and operation of, large, expensive items of infrastructure. This issue primarily revolves around the cost of maintaining and replacing infrastructure, which is costly in comparison to the annual budget of the organisation that is managing it. Some centres hold very expensive and complicated infrastructure (e.g. ships) and NERC will need to resolve capital renewal issues.
- NERC must ensure the future of long-term environmental datasets and their availability / accessibility to the environmental science community.
- This governance change is not just about NERC or the centres. It is also about other organisations affected by it in both the public and private sectors. Decisions taken now by NERC will affect decisions taken in other organisations. NERC must guard against unintended consequences elsewhere.
- If change is unsuccessful there is a risk of institutional failure and with it a diminishing of scientific capability across the UK environmental science base.
- The costs of an effective transition must be identified and budgeted for and must be realistic.

- The people elements of this change are key to its success. NERC and the centres must have the capacity to deliver this change and the capacity to lead it.



## Conclusions

The panel is persuaded that the *status quo* is not a viable way forward. A step change rather than incremental development is needed in order to maintain the quality and health of the UK's scientific outputs and impacts.

There are at least two significant demerits in the current model:

- i. NERC is potentially compromised by being both a commissioner and a supplier of science. For example, should a significant increase be required in one part of NERC's science supplier portfolio, the funds would most likely have to be found from within the science procurement portfolio as that is the part of the budget in which there is the most flexibility;
- ii. operating strictly within in the public sector prevents centres from being sufficiently in charge of their own destiny. Two examples of this are (a) the inability to accrue reserves for long-term investment needs and (b) public sector salary constraints.

The panel believes that both of these issues need addressing as a matter of some urgency. The first could be dealt with by moving the centres and surveys outside of NERC either to another arm of government (as in most countries) possibly with NERC remaining a procurer, or by transitioning them to privatised entities, again with NERC as procurer. The second could be dealt with by providing greater financial flexibility either somewhere within government, or as a privatised entity. Whatever the approach, a greater degree of self-determination would enable the centres to better set their own agendas, address public science needs, respond to opportunities and employ staff of sufficient quality. Any future model needs to address these issues without introducing further restrictions or instabilities.

Whether NERC becomes solely a commissioner of science or remains a commissioner and supplier, the panel believes that NERC should consider the following three elements:

- the detail of the NERC commissioning framework;
- the best structure for enabling centres to respond to this and other opportunities;
- the bridge between NERC commissioning and centre supply in the immediate future, during the transition period and in the longer term.

NERC should take a 'systems view', and consider the impacts on Government and on other organisations to prevent destabilisation in sectors of the environmental sciences community. For example, one of the key challenges for NERC is that of understanding the future needs of the UK and its government departments. It is worth considering whether, if its centres are privatised, NERC itself would then lack the competence to evaluate what strategic science should be procured for the UK. Without being a supplier and without a proper procurement mechanism NERC could then be vulnerable to the allegation that it does not know what is needed for the UK's future, and will become marginalised in terms of its relevance.

NERC and the centres must address all of the risks inherent in any change to ensure a smooth transition and an acceptable end-point. If this is successful, the panel believes that there are significant positive opportunities for NERC, the centres, the nation and relevant public and private sector organisations.

## **Acknowledgements**

The panel thanks the many organisations and individuals that submitted a range of valuable documentary evidence. The meetings held on 21<sup>st</sup> to 23<sup>rd</sup> October were particularly influential in the panel's deliberations and the open and engaged way in which participants were willing to discuss a wide range of issues is appreciated. The panel is grateful to staff from NERC Swindon Office for their excellent support.

## **Annex A: Panel membership**

The panel comprised the following members:

- Professor Robert Allison, Vice-Chancellor and President, Loughborough University (Chair)
- Sir John Arbuthnott, President of the Royal Society of Edinburgh
- Dr Susan Avery, President and Director, Woods Hole Oceanographic Institute, USA
- Professor Alex Halliday, Head of the Mathematical, Physical and Life Sciences Division, University of Oxford
- Professor Jeremy Watson CBE, Director, Science and Technology, Arup.

## Annex B: List of people/organisations who spoke to the panel

Name	Role	Organisation
<b>Ed Wallis</b>	Chair of Council	NERC
<b>Prof Duncan Wingham</b>	Chief Executive	NERC
<b>Prof John Ludden</b>	Executive Director	BGS
<b>Amanda Clewes</b>	Head of Finance	BGS
<b>Prof Mark Bailey</b>	Director	CEH
<b>Jaqui Dingle</b>	Director, Resource & Operations	CEH
<b>Prof Ed Hill</b>	Executive Director	NOC
<b>Julie Pringle Stewart</b>	Director, Finance & Operations	NOC
<b>Paul Fox</b>	Director, Finance & Operations	NERC
<b>Prof Stephen Mobbs</b>	Professor of Atmospheric Dynamics Director	University of Leeds NCAS
<b>Dr Derek Craston</b>	Chief Scientific Officer Government Chemist Managing Director	LGC LGC Science and Technology
<b>Prof Nick Hastie</b>	Director	MRC Human Genetics Unit
<b>Prof Laurence Mee</b>	Director	Scottish Association of Marine Science (SAMS)
<b>Dr Graeme Reid</b>	Deputy Director, Research Funding Unit	Department for Business, Innovation and Skills (BIS)
<b>Dr Andrew Johnson</b>	Group Executive, Environment	Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
<b>Dr Mike Daly</b>	Executive Vice President	BP
<b>Prof John Pethica</b>	Chief Scientific Advisor Vice-President	National Physical Laboratory Royal Society
<b>Prof Ian Boyd</b>	Chief Scientific Advisor	Defra

## **Annex C: List of people/organisations who responded to the call for evidence**

House of Lords Science and Technology Committee  
Defra  
Foreign & Commonwealth Office  
Scottish Government  
Welsh Government  
The Crown Estate  
Science and Technology Facilities Council  
BGS Advisory Committee  
CEH Advisory Board  
NOC Advisory Council  
NOC Association  
Royal Society  
British Ecological Society  
British Hydrological Society  
Geological Society of London/Petroleum Exploration Society of Great Britain/Committee of Heads of University Geosciences Departments/British Geophysical Association (combined response)  
Royal Astronomical Society  
Challenger Society for Marine Science  
Energy Technologies Institute  
RSPB  
British Trust for Ornithology  
Joint Nature Conservation Committee  
Butterfly Conservation  
National Biodiversity Network Trust  
National Forum for Biological Recording  
Natural England  
University of Southampton  
Lancaster University  
University of Leeds  
University of Reading  
University of York  
University of Nottingham  
University of Leicester

University of Manchester  
University College London  
Scottish Association for Marine Science  
Plymouth Marine Laboratory  
Arup  
NERC Geophysical Equipment and Field Spectroscopy Facilities  
NERC Biomolecular Analysis Facility  
Scottish Universities Environmental Research Centre  
Edinburgh Ion Microprobe Facility  
Steering Committee, NERC Radiocarbon Facility  
SAGES  
Prof Richard England  
Gwyn Griffiths  
Prof Harry Bryden  
Prof John Shepherd  
Jenny Swainston  
Huw Jones  
Susan McMillan  
NERC Trade Unions (PCS and Prospect)

## **Annex D: List of the issues and risks identified by the panel**

- NERC should not assume that there is a 'one size fits all' model / approach across the centres. A view was expressed to the panel that this change is likely to be more complicated than those already undertaken by BBSRC and MRC due to the infrastructure issues and the breadth of interest across government. The panel has no reason to disagree with this view.
- NERC needs to consider what a new national capability framework will look like and how the centres would respond to it.
- The commissioning process for national capability needs to be considered.
- There is a need to devise a model that enables investment in, and operation of, large, expensive items of infrastructure. The issue primarily revolves around the cost of maintaining and replacing infrastructure which is costly in comparison to the annual budget of the organisation which is managing it. Some centres hold very expensive and complicated infrastructure (e.g. ships) and NERC will need to resolve capital renewal issues.
- NERC must ensure the future of long-term environmental datasets and their availability / accessibility to the environmental science community.
- A 'systems view' should be taken. This change is not just about NERC or the centres. It is also about other organisations affected by it in both the public and private sectors. Decisions taken now by NERC will affect decisions taken in other organisations. NERC must guard against unintended consequences elsewhere.
- If change is unsuccessful there is a risk of institutional failure and with it a diminishing of scientific capability across the UK environmental science base.
- The costs of an effective transition must be identified and budgeted for and must be realistic.
- The people elements of this change are key to its success. NERC and the centres must have the capacity to deliver this change and the capacity to lead it.
- Determining the commissioning model is an important feature of this process; there is significant risk in getting it wrong.
- It is important to have the ability to invest financially into people, equipment etc.
- NERC needs to ensure that it and its centres have access to scientific, legal and commercial advice throughout any change process.



- NERC will need to address the issue of where any necessary transition funding will come: the transition will not be cost-free.
- Strong leadership will be needed within the centres to make any change happen; committed leadership is absolutely critical to successful delivery of the vision. There may currently be a fear of what the future holds but this must be overcome in order to determine potential new models of future operation.
- It is recognised that for the good of the UK, competition is needed as well as consolidation / critical mass. The panel recognised that one risk could be that a centre could be established in such a way that it operated on its own which could potentially drive competing university departments out of business. Independent centres have the potential to be a force for the good or to be a destabilising influence on the relevant environmental science sector.
- If the centres were to receive no or insufficient funding for public good science, they and their relevant long-term datasets could be lost.
- If an independent centre decided not to deliver public good science NERC would need to consider how to prevent its loss to the UK.
- If an alternative provider offered a service which seemed to be better than that of the centres, thought needs to be given as to how NERC and the centres might respond.
- NERC needs to give thought to how it can continue to have influence in centres that it no longer owns.
- NERC will need to understand the future needs of government as well as its current needs

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