NERC Research Centre Ownership and Governance
Call for Evidence - Responses
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 (evidence supplied in confidence)
University of Leicester
University of Manchester
University College London
University of Liverpool
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 (evidence supplied in confidence)
Gwyn Griffiths
Prof Harry Bryden
Prof John Shepherd
Jenny Swainston
Huw Jones
Susan Macmillan
NERC Trade Unions (PCS and Prospect)
Dear Professor Wingham,

I am writing to you, in response to your letter of July 3, in my capacity as Chairman of the House of Lords Science and Technology Select Committee.

As you know, the Committee is currently undertaking an inquiry into scientific infrastructure. In this context, the Committee felt it appropriate to write to you to make a number of points about the proposal to establish the NERC Centres and Surveys (excluding the British Antarctic Survey) as independent bodies, outside the public sector. The Committee has not taken a view on the proposal per se, as your letter does not provide any detail about the possible future arrangements.

However, we wish to stress that, whatever governance arrangements are put in place, it is crucial that the role of NERC Centres and Surveys in providing national infrastructure is not eroded. We include within the definition of infrastructure not only large scale facilities such as oceanographic research vessels, but also data and national capabilities. It is important, in our view, that NERC ensures that environmental science infrastructure is maintained as a public good and is available to both the wider scientific and end user communities. We recommend that this should be a key priority in your consideration of any future governance model for the Centres and Surveys.

I would be happy to discuss these comments with you if you wish. Please do not hesitate to contact me.

Yours sincerely,

[Signature]

Lord Krebs
Chairman of the Science and Technology Committee

Professor Duncan Wingham
Chief Executive
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon, SN2 1EU
Dear Duncan

The Ownership and Governance of NERC Centres: Call for Evidence

Thank you for your letter of 19 June and the opportunity to provide input to the NERC Call for Evidence on the ownership and governance on four of its Research Centres.

Defra derives value from the research carried out by the NERC Centres and a variety of partnership and data sharing activities. The potential change in their status may, as you have indicated, bring benefits such as the potential to flourish in the private sector, increased investment in data systems and new products, and a greater efficiency of delivery and practical application of research knowledge. However, change poses potential risks to a number of attributes of the Centres that should be safeguarded, including:

- The need to ensure that the centres continue to provide essential national capability and expertise for the public good and that data continues to be available in the public domain.
- The value of centres of expertise which occupy a particular niche in the science community, providing research capacity which is of international standing.
- The need to ensure continued access, at reasonable cost, to the intellectual property and datasets which are critical to the business of the Defra Network.
- The importance of retaining an ethos of openness and collaborative working arrangements between the Centres and end-user organisations, which have proved to be effective arrangements in the past and which have been supported by NERC funding.
Clearly these objectives do not preclude any reasonable governance options, but, should any centres move out of the public sector it will be important that they are equipped with the necessary commercial skills to enable them to flourish and that NERC continue to provide support to maintain key national capabilities. Defra would be keen to engage, where appropriate, in the development of governance arrangements for institutes in which it has an interest and potentially play a role in such future governance. Furthermore, changes in the status of NERC institutes may impact other parts of the research base and other institutions. Such impacts need to be understood and considered.

Examples of capabilities, partnership working and data-sharing are set out below.

**Key Centre Capabilities**

**British Geological Survey (BGS)**

Defra derives benefit from our work with BGS, in particular with regards to evidence capability on groundwater. For example:

- BGS research into sustainable drainage (feasibility of infiltration, including national mapping) and “fracking” is contributing to the science base in these controversial areas and it is important that support for this is continued as part of national capability.

- BGS and CEH jointly run a programme for Government to maintain the UK’s surface and groundwater archive.

- For the Environment Agency BGS provides geological data that is combined with its own information to produce jointly derived datasets which the Agency relies on throughout its business, for example to define the extent of principal aquifers for public water supply.

**Centre for Ecology and Hydrology (CEH)**

CEH maintains a very diverse pool of expertise and capability, providing robust independent advice on new and unexpected problems at short notice; has a natural focus on problem solving via an interdisciplinary approach; maintains long term environmental monitoring, including many of the key biodiversity datasets; and supports a network of voluntary biological recording schemes.

It contributes to major, high profile research programmes and national capability, including areas such as air pollution, endocrine disruption in catchments, the Countryside Survey, the Environmental Change Network, the Biological Records Centre, the National Ecosystem Assessment and on water and flood risk management. For example:

- CEH research contributes to the work Defra funds on assessing the impacts of air pollution on ecosystems and the behaviour of pollutants in the environment. This includes long term monitoring together with computer modelling and mapping, annual assessments of risk and research on impacts themselves and how they can be quantified. Much of this work is reported to the UNECE Convention on Long Range Transboundary Air Pollution (CLRTAP) or forms part of the UK contribution to the underpinning scientific work of the Convention. Where there are shared research priorities work may be jointly funded by Defra and CEH.
CEH has and continues to make a contribution to Defra’s EDCAT (Endocrine Disruption in Catchments) research programme. CEH research for Defra on stress effects in fish arising from endocrine disrupting chemicals and the development of methods for the prioritisation of hazardous substances entering aquatic environments are delivering ground-breaking science, making use of unique expertise, and has diverse implications for policy development on chemicals management.

CEH holds intellectual property rights in the Flood Estimation Handbook, the basis of size of flood calculations in the Environment Agency, and associated software and other key databases which underpin EA flood risk management capability.

CEH own and support Hyrad, which provides the Environment Agency with rainfall radar displays, and has key expertise in Grid-to-Grid forecasting capability, which translates rainfall into river flows to predict potential flooding and is essential to the development of higher resolution flood warnings. EA also use CERF and LowFlow Enterprise software which is provided through Wallingford Hydro Solutions in collaboration with CEH.

CEH maintains the national River Flow Archive (NRFA) an important source of quality controlled daily flow data. The Environment Agency wishes to see continued and improved free access to the records of NRFA and the associated hydrological reports which are currently available at no cost. There is ongoing collaborative work on water situation reporting between the Met Office, CEH, BGS and the EA to help manage the impact of droughts, which EA wish to see continue.

CEH provides expertise and facilities for air, hydrology and hydro ecology, and radioactive substances research, which helps underpin the Environment Agency’s regulatory role. This provision is not replicated elsewhere in the UK and it would be essential to maintain this if the status of CEH were to change.

**National Oceanography Centre (NOC)**

Defra works closely with NOC in a number of areas, relying on the national capability of the centre to provide specific scientific advice and conduct research that develops a core science base to underpin more specific policy-related Defra-funded evidence activities. For example:

- NOC’s Ocean Technology and Engineering group is leading the UK effort to develop new technologies to improve the efficiency of marine monitoring. This includes lab-on-a-chip technology, and autonomous systems (including Autonomous Underwater Vehicles, gliders).

- We draw on NOC expertise in a number of specific areas, such as impacts of deep-sea mining (a relatively small area currently, but one where we expect a growing need for advice as it moves up the policy agenda).

- Defra has co-funded with NERC a number of strategic research programmes (including shelf-sea biogeochemistry, ocean acidification and marine ecosystems) in which NOC is playing a leading, critical role.
Recent experience highlights the fact that it is difficult to find owners for some big oceanographic programmes run out of the UK. The current mission of NOC enables it to run large capital intensive science programmes that are long-term in nature and allow sustained observations at an international scale.

NOC carry out maintenance of the Environment Agency’s Tide Gauge Network and provides the Agency with astronomic tide tables under a commercial contract (which is assumed would not be impacted by any change). However they also provide expertise on surge modelling and maintain the operational tidal surge model which runs on the Met Office supercomputer. This model and expertise are critical to the EA’s coastal flood risk management responsibilities and there is no realistic alternative provider.

NOC also incorporates the British Oceanographic data centre and holds the marine Environmental Data Information Network which is sponsored by the Environment Agency and which provides key data sharing capability.

National Centre for Atmospheric Science

NCAS provides knowledge and atmospheric modelling which underpins the Environment Agency’s regulatory capabilities for site based regulation and climate ready service.

Partnership working

CEH support is characterised by a national capability in surveillance, data management and advanced ecosystem modelling. The Centre plays a role in EU and wider international long term monitoring programmes and supports the development of tools and communications at the interface between science and policy, including socio-economic dimensions.

CEH acts as Secretariat for the UK Committee for National and International Hydrology for the International Hydrological Programme of UNESCO and helps coordinate UK’s input to both the UNESCO programme and the World Meteorological Organisation.

CEH’s advanced aquatic modelling capability contributes to the UK-Japan Research Collaboration on Endocrine Disrupters in the Aquatic Environment. This is a prestigious international co-operation, which is held in very high scientific regard and also forms the basis of joint approaches by the two countries in fora such as the OECD Chemicals Test Method Development Programme.

NOC represent the UK on a number of marine international initiatives, including on the Management Board of the EU Joint Programming Initiative (JPI) on Oceans, providing vital expertise alongside Defra to influence the development of the programme. NOC also provide the Secretariat for the Marine Science Coordination Committee (MSCC).

The Environment Agency has highlighted some examples of partnership working with the Centres:

- The Natural Hazards Partnership involving four NERC Centres providing expert advice to the Cabinet Office on the National Risk Assessment.

- The Environmental Sciences to Services Partnership involving CEH and BGS, which is developing joint products for public good and economic growth.
• A bilateral knowledge exchange agreement between the EA Evidence Directorate and CEH.

• Joint contributions to the Air Pollution Information System (APIS) and the Environmental Change Network (ECN).

Data sharing arrangements

The Environment Agency has entered into a number of data sharing agreements with the Centres, which enables it to access a number of data sets which are combined with its own data to underpin its business. Key examples include:

• CEH – Flood Estimation Handbook, Integrated Hydrological Digital Terrain Model (IHDTM) and flow return period (Q(t)) grids and Land Cover Maps. These are used in EA Flood Map, National Flood Risk Assessment and Water Framework Directive water bodies assessments.

• BGS – DigMap onshore geology, seabed sediment, active mines and quarries. These are used by EA groundwater and contaminated land and water resources teams to produce Groundwater Vulnerability and Aquifer Designation Map datasets.

• NOC – Astronomical tidal prediction data, which is a component of the EA’s coastal flood modelling capability.

The Environment Agency provides licensed but cost-free access to a number of its datasets to the Centres for non-commercial purposes. A change to the status of the Centres might trigger a review of data sharing arrangements on both sides. If the Centres are placed in the private sector and are no longer subject to the Re-use of Public Sector Information Regulations, which require fair and transparent pricing for datasets, the Agency may be forced to charge them for (potentially commercial use of) its datasets. In addition, a change to non-public status might also slow down the move to Open Data. The Agency has indicated that an arrangement similar to the current Ordnance Survey Public Sector Mapping Agreement would help mitigate concerns regarding costs and access to data.

Best regards

[Signature]

Professor Ian Boyd
30 August 2013

Duncan Wingham
Chief Executive
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon
SN2 1EU

Dear Duncan,

Thank you for your invitation to provide you with evidence of the NERC Centres contribution to the work of the FCO. I have consulted key departments in the FCO but I have not received enough substantive evidence to provide a response.

We do however maintain a wider interest in the two research centres that are outside the scope of the current review, the British Antarctic Survey and the National Centre for Earth Observation. If there were any suggestion to move one or more of the Centres out of NERC I would welcome reassurance that any potential impacts on BAS will be scoped and considered.

It would be appreciated if I could be kept updated on the progress of the review and the outcome.

Yours,

Robin

Robin Grimes
September 2013

Dear Ms Parker

THE OWNERSHIP AND GOVERNANCE OF NERC CENTRES: CALL FOR EVIDENCE

Thank you for giving me the opportunity to contribute to the Call for Evidence on behalf of the Scottish Government.

The contribution of the NERC centres to the work of the Scottish Government is at a number of different levels.

Two of the centres have a physical presence in Scotland: The British Geological Survey (BGS) has its headquarters in Edinburgh and the Centre for Ecology and Hydrology (CEH) has one of its four research sites at the Bush Estates, Penicuik. This is particularly valuable for their contribution to the local economy and growth but also facilitates partnership working.

The NERC Centres act as conduits to UK national capacity and access points to national infrastructure. They sustain critical and valuable national capability that complements that of the Scottish Government Main Research Providers.

For example, the expertise of CEH in climate and hydrological modelling, biogeochemistry and biodiversity on a national scale broadly complements capacity in the James Hutton Institute (JHI). The two bodies have recently signed a Statement of Intent designed to create a shared strategic vision and formalise their partnership. They have previously had particular success with collaborative bids for EU funding.

BGS in particular have expertise in subsurface observation and modelling, which complements policy work, especially in terms of sea bed mapping. The new partnership model they now have with Heriot-Watt University, the Centre for Earth and Marine Technology, could help support growing need for expertise and evidence, for instance in marine renewables.

The Scottish Government would want to understand the implications of a changing governance relationship for these new partnerships. We would also want to understand the
implications for the National Oceanography Centre (NOC) on the marine science base and Marine Scotland Science particularly.

A Centre whose governance is independent of NERC could provide more opportunities for growth, with commensurate benefits to the local economy. However, this is likely to make it necessary for the Centres to transfer to a more commercial model. The Scottish Government is concerned this would lead to the publicly funded data they currently hold becoming more expensive to access for contractors and through them, for government. We would want to ensure that NERC gives the issues of access and ownership of data careful consideration. This is especially the case if the Centres were to move out of the public sector.

I will watch with interest for the decision of NERC Council on this in due course.

Yours sincerely

[Signature]

PROFESSOR MUFFY CALDER
Chief Scientific Adviser for Scotland
Dear Ms Parker,

Natural Environment Research Council Consultation on Research Centres

I am replying to your request for comments on the possibility of establishing NERC Research Centres outside the public sector. I attach our response, which reflects relevant interests, including Natural Resources Wales and sets out some key questions.

We strongly support the contribution of these organisations to the public good, providing key scientific and technical underpinning for policy making and delivery across several departments. This role involves maintaining valuable scientific assets and infrastructure, supporting future science priorities and promoting effective knowledge exchange. In terms of our own interaction this activity includes:

– building and maintaining long-term data sets and the understanding of the processes underlying trends,
– giving neutral and broadly based advice and
– acting as strategic partners for key projects.

These roles are particularly critical for the science of the natural environment, which requires a high degree of integration between disciplines, which can at times be controversial and often needs to study long term trends. It is
especially critical to us that the Centre for Ecology and Hydrology has a presence in Wales, linked with Bangor University, and contributing actively to distinctive Welsh policy and delivery needs.

We recognise the potential benefits of changed organisational structures, in terms of freedom of action, the ability to respond quickly to opportunities and to maximise the value of scientific and technical assets. Overall, however, it is important that the benefits of any change should outweigh the risks to the public good roles. We would want assurance that, if there is change, these roles would continue and clear mechanisms are put in place for ensuring this. The UK has wide experience over several decades of different structural models for research institutes and I recommend that the review takes full advantage of the evidence on their impact, as set out in paragraph 14 of the response.
Natural Environment Research Council Consultation on Research Centres – Welsh Government Response

This response reflects input from relevant interests, including Natural Resources Wales.

1. In summary we strongly support the public good roles of the NERC Research Centres, which provide key scientific and technical underpinning for policy making and delivery across several departments. This role involves maintaining valuable scientific assets and infrastructure, supporting future science priorities and promoting effective knowledge exchange. In terms of our own interaction this public good activity includes:
   – building and maintaining long-term data sets and the understanding of the processes underlying trends,
   – giving neutral and broadly based advice and
   – acting as strategic partners for key projects.

2. These roles are particularly critical for the science of the natural environment, which requires a high degree of integration between disciplines, can at times be controversial and often needs to study long term trends.

3. It is especially valuable to us that the Centre for Ecology and Hydrology has a presence in Wales, linked with Bangor University and the wider university sector. This allows it to develop an overview of issues in Wales and give advice that is relevant to the Welsh environment and to our distinctive policy context. CEH also contributes to the local economy in terms of jobs, knowledge exchange and wider economic development. Its expertise has enabled it to undertake major cross-cutting evaluations of programmes, be a key partner in the Sêr Cymru Natural Resource National Research Network and Welsh Environmental Research Hub, with potential for this role to develop further. This role is particularly valuable because the local centre is also involved in some major CEH-wide science programmes across biodiversity, water, biogeochemistry, climate change and sustainable economies.

4. We also have extensive and significant working with British Geological Survey. Key functions include geoscience data and expertise, including legal and regulatory obligations; groundwater data, information and knowledge creation; real time seismic and space weather alerts for industry and others; climate related data management and advice on the key issue of shale gas. BGS works with Natural Resources Wales on many of these issues, including data, information, tools for groundwater and aquifer management and protection, baseline geology, geochemistry and in-situ monitoring.

5. The Welsh Government benefits from the work of the National Oceanography Centre. This Centre provides strategic input to the UK marine science strategy as well as key international links, providing the NERC contribution to the secretariat for the UK Government’s, Marine Science Coordination committee (MSCC). We are a member of the this committee and utilise the evidence base supported as part of the long-term observations
relating to ocean processes, which provides the wider context for our marine assessments.

6. In addition a sub group of the MSCC is examining options for the better use and access of publicly-funded scientific vessels, including those operated by the National Oceanographic Centre and we believe it is important that governance of the use of these investments continues to reflect the collective national interest.

7. Turning to the issues that apply to all centres we recognise the potential benefits of changed organisational structures, in terms of freedom of action, the ability to respond quickly to opportunities and to maximise the value from scientific and technical assets.

8. Overall, however, it is important that the benefits of any change should outweigh the risks to the public good roles. We would want assurance that, if there is change, these roles would continue and clarity about the mechanisms for ensuring this. If the original intentions are not borne out in practice then there may need to be some mechanism for intervening should this prove necessary.

9. Where Centres are custodians of vital long-term environmental data, we could see a significant risk to our work if data became corrupted or lost as a result of a more commercial operating model – especially as continuity in funding for some long term observational data is already proving difficult to maintain.

10. More widely it is critical that we can call on all of the Research Centres for advice that is based on their overview of the issues rather than the narrower perspective of one line of research or sectional interest. We are increasingly managing environmental issues as an integrated whole and this type of advice is therefore becoming increasingly important and demanding.

11. New structures might over time lead to the Centres focusing on a narrower set of issues than at present or having weaker connections with the research base as a whole. If this happened it would damage their ability to provide advice from a neutral but well-informed perspective.

12. Our engagement is currently quite broad and includes some larger scale projects. We would not want to lose this capability to deliver projects that are strategic and at scale.

13. Questions we would like your review to address therefore include:
   - How far will we and other public stakeholders be able to influence their research programme if they are no longer publicly owned and central funding plays a smaller role? What would the mechanism for this be?
   - What would be the mechanism for guaranteeing a public good role over the longer term?
• Will the Centres only undertake commercially viable projects and lose the ability to invest in basic science on their own account or to contribute to local knowledge exchange?

• How will long-term data-sets be safeguarded and the often tacit knowledge preserved that is associated with them and has often been built up over many years?

• How will their capability to deliver larger scale, strategic or higher risk projects be maintained?

• If there were to be a move to an independent business model what would be the arrangements regarding transfer and securing of assets and subsequent liability?

• How will their independence and impartiality of research be maintained?

• How will the Centres be able to access Research Council funding and through what routes? How will core capabilities and expertise be protected?

14. The review team might wish to consider evidence from other public sector research laboratories in addition to Research Council institutions, where different management models have been used over the years. The National Physical Laboratory has, for example, operated since 1995 under private sector management but the Government is now seeking a different operating model, an option made possible because it retains ownership. We also assume there will be synergies and lessons learnt from DEFRA’s review of its own agencies.

15. We recognise that freeing management and investment decisions from detailed control can yield significant efficiency benefits, though this does not necessarily require a change in ownership and the issues depend critically on the nature of the operation and the market environment. Innovative partnerships between the public sector and private sector can advance major benefits, providing that the governance arrangements allow public sector partners to be involved in the commissioning of science projects and the delivery of benefits.
Call for evidence: The ownership and governance of NERC centres

Ian Selby
Head of Minerals & Infrastructure
The Crown Estate

30 August 2013

To: Judith Parker, Head of Communications, Natural Environment and Research Council

Dear Judith,

The Crown Estate welcomes the opportunity to provide evidence as part of this consultation into the ownership and governance of NERC centres. Geoscience issues and resources will become increasingly important in the future as part of sustainable development, resource security and climate change and it is imperative that UK has the best advice for its decision making. Whilst we acknowledge this consultation is considering the ownership and governance of four centres, our response provides focused evidence on the British Geological Survey (BGS) as we have a long-standing strategic relationship.

Our key observations provide evidence of the national importance of the BGS role and considerations for their future ownership and governance:

• BGS are the authoritative source on all of the UK’s geoscience information. They preside over the national repository of geological data for the UK. This is a valuable role which extends beyond a solely commercial interest. We believe is best stewarded by an independent body with the ‘national interest’ at its core;
  
  o Of particular value is the integrity of BGS advice – provided independently from other influences;
  
  o As the organisation responsible for managing the ownership of the seabed, a wider perspective is integral to our business as well as those seeking to develop a better understanding for the purpose of project development or protection.

• BGS employees are a unique national asset in terms of their expert knowledge and particularly their applied UK scale understanding of the UK’s geoscience. In our experience it will be to the national benefit if individual experts continue to provide uncompromised independent trusted advice to a range of
stakeholders including in its advisory role to government, local government, commercial organisations etc.

- The embedding of scientists and practitioners within an independent body, working for the national interest, is desirable where advice and guidance is required for development of UK-wide assets, such as geological resources like CO₂ Storage or marine minerals;
- In addition their national overview often generates economic and efficiency advantages when developing opportunities or managing issues.

- The Crown Estate has long experience of working with BGS. Recently, BGS has provided us with advice in relation to underground natural gas storage, and we are currently working in partnership on the CO₂ Stored project [http://www.co2stored.co.uk/](http://www.co2stored.co.uk/). In the latter example, BGS’ current position as independent advisor with a national interest means that our relationship is naturally one of partnership to further the UK’s interests to develop activities such as offshore CO₂ storage. Any changes to BGS’ role should ensure that their ability to act in the national interest is not adversely affected. An increased focus on short term commercial returns may carry with it the risk of diluting investment and allocation of resources to long term strategic efforts, such as projects with a broad national interest like this.

- We are aware of many national geological survey bodies around the world, such as in Denmark and Norway, where the model benefits development of national assets through the centralised and integrated provision of data and knowledge. An example of this could be the Norwegian CO₂ Storage Atlas [http://www.npd.no/en/Publications/Reports/CO2-Storage-Atlas-/](http://www.npd.no/en/Publications/Reports/CO2-Storage-Atlas-/).

- The UK has world class marine mineral resources. We have recently worked with the BGS on a Marine Minerals resource map¹ which will be used to efficiently manage our national world class resources into the future for construction market, coastal protection and adaptation schemes and reclamation projects in ports.

We understand that the BGS service could be delivered in a range of ways however we consider there is value retaining the core principles including; the national repository of information, held for the public benefit; provision of independent, uncompromised, expert and trusted advice, particularly applied geology remaining a focus in the future and this value should not be eroded by a revised organisational structure and governance model.

**The Crown Estate’s role and responsibilities:**

The statements contained in this response are in the context of The Crown Estate’s interests and ownership of almost the entire seabed out to the 12 nautical mile territorial limit. As well as virtually the entire seabed out to 12nm, our responsibility of the marine estate comprises of around half of the foreshore and beds of estuaries and

tidal rivers in the United Kingdom. In addition, we have the sovereign rights to explore and make use of the natural resources of the UK continental shelf, with the exception of oil, coal and gas. Through the Energy Acts 2004 and 2008, we have rights to issue leases for development beyond the territorial limit within the Renewable Energy Zone (REZ) and Gas Importation and Storage Zone out to 200nm.

The Crown Estate can bring to bear a high level of knowledge and expertise on issues relating to management of the foreshore, the territorial seabed and continental shelf, such as renewable energy development; natural gas storage; carbon dioxide transportation and storage; marine minerals; cables and pipelines and coastal infrastructure. We are committed to working with the UK and Devolved Governments and all stakeholders on issues which affect these areas.

We trust that you will find these comments constructive. We would be very willing to provide additional information on any of the points we have raised above and be very pleased to discuss these matters with you further. We are ready to engage in further discussions on these and other points relevant to our role or which our expertise may be brought to bear. All of this response may be put into the public domain and there is no part of it that should be treated as confidential.

Yours Sincerely,

Dr Ian Selby
Head of Minerals and Infrastructure, The Crown Estate.
Dear Judy,

Review of ownership and governance of NERC research centres

Thank you for the opportunity to comment on the potential merits of establishing NERC research centres as independent bodies outside the public sector.

As you know, there are many areas where NERC centres work closely with STFC, such as the National Centre for Atmospheric Science. The current NCAS arrangements work well, with good levels of co-operation and collaboration, and you will be aware that the governance of NCAS units embedded in STFC is controlled through a Service Level Agreement between our two Research Councils. A move to independent self-owning status may have advantages in terms of possibly reducing NERC outgoings, or VAT benefits, but it does bring an attendant risk to scientific delivery and the possibility that the current long term perspective or research focus might be lost. The key is of course the need to weigh up the benefits of independence against the risks of failure to deliver our shared objectives.

I note that no exact formula has yet been determined for how a fully independent NCAS might operate, and I request that before any firm proposals emerge, STFC, relevant NCAS University Partners and NERC have senior level discussions on the impact that this might have on our existing working arrangements and delivery. It is widely acknowledged that one of the strengths of NCAS is its ability to draw upon the expertise of multiple organisations and a dialogue on the requirements of its “customers” would be helpful to allow these to be fully considered before any decisions are made on a preferred governance model. I understand that the distributed nature of NCAS does create complex management issues, and may on occasion constrain the ability to respond quickly to new market opportunities, but I believe discussion amongst the partners is needed prior to any decision to significantly alter the current arrangements.

Cont./
To illustrate the importance of such discussions between us, there has already been impact on STFC resulting from the recent changes by NERC to the funding model for Services and Facilities, some of which are run by STFC. In addition, funding for the Molecular Spectroscopy Facility has been withdrawn, and the future funding for the atmospheric radars is entwined with both the reorganisation of NCAS and this consultation process, leaving STFC and its staff with significant uncertainty.

There are also existing links to STFC through NERC’s involvement in High Performance Computing/Big Data, connections to the National Oceanography Centre and through initiatives such as Climate & Environmental Monitoring from Space. If NERC wishes to seriously evaluate organisational change in the management of its research centres then their closer integration with STFC, as the steward of the underpinning national facilities, is a possibility that should also be considered. This would have the advantage of reducing potential fragmentation of the national research base and could liberate the synergies from integrating functions where there is technology overlap between our organisations. This would obviously encompass opportunities to build on the potential of the campuses, especially at Harwell, and encourage further linkages with ESA and the Satellite Applications Catapult.

Finally, I note that the future of the National Centre for Earth Observation is outside the current consultation framework. I would welcome an opportunity for dialogue on any emerging proposals there too, as again there are close connections to STFC activity.

I hope these comments are useful and I would stress that STFC understands the need to fully explore alternative delivery models. We would be very pleased to play a part in discussions prior to any final decisions being made by NERC Council.

Yours sincerely

W. John W

Professor John Womersley
Chief Executive
Friday, 30 August 2013

Professor Duncan Wingham  
Chief Executive  
NERC  
Swindon SN2 1EU

Dear Professor Wingham

**Call for evidence: ownership and governance of NERC Research Centres**

Thank you for your request for me to comment on this issue, in my capacity as Chair of the BGS Advisory Committee (note: not ‘Board’, as it was styled in your letter). As the Committee I chair has not met since receipt of your letter, and as the latter did not invite me to circulate it to members (which would in any case have been subject to futility in the holiday season), the views I express here are personal, albeit informed by my own experience of the large and varied BGS “user community”.

A debate on this issue is long overdue, in the case of BGS, at least. As you are no doubt well aware, BGS has existed for a very long time (since 1832, depending on how you interpret ancestor bodies¹), much longer than most (if not all) other NERC Research Centres, and indeed much longer than NERC itself. Over this long period its sponsoring department within government has shifted many times, with NERC being simply the latest resting place. As fashions have come and gone in government, so has the BGS at times been partly “marketised”, then withdrawn back into a straightforward “civil service” model of activity. A new wave of enthusiasm for privatisation characterises the present UK administration, hence it is inevitable that the status of BGS be considered. I relay this history not because I think you need to be informed about it, but merely to highlight that BGS has a long corporate track record, and a correspondingly long period of rapprochement with the geological community (within and far beyond the UK), which means that its particular charism and cachet are likely to be more widely appreciated than is perhaps the case for younger research centres.

Turning to the pros and cons of different governance and ownership models, there are two sides to how BGS tends to be viewed in the geological community which are to some degree mutually antagonistic, even though the same two views are often held by the same individuals. First is the view (however misguided it may be) that, as it is under NERC ownership, BGS gets unfair access

¹ [http://www.bgs.ac.uk/about/ourPast.html](http://www.bgs.ac.uk/about/ourPast.html)

**Professor Paul Younger**  
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to research resources “on the nod” from its parent Research Council, whereas on many of the issues it works on there are many other specialists out there in universities and other research and consultancy organisations who would often be just as well-placed as any BGS scientists to undertake the work in question. The logic of that suspicion is that it can induce a certain “flabbiness” in BGS operations, if staff are under the impression they don’t have to fight as hard as others might to get geological research funding. (I am not saying this is right, just that it is a sentiment one hears expressed in the community). There is a feeling abroad that this “cosiness” extends beyond NERC patronage to other government departments: for instance, it is notoriously difficult for geologists to access DFID research funding, whereas BGS has received much of this over the years. Even where a university does manage to get DFID funding, more than once it has happened that, as a condition of the award, BGS are shoe-horned into the work programme at the last minute, effectively piggy-backing on someone else’s bright idea. While such collaborations have turned out to be fruitful, there is no disguising the irritation they have caused over the years. Again, they bolster the impression that BGS’ position within NERC (though the same would apply wherever in government they were located) makes them pathologically prone to privileged access to scarce public research funding. All of this means that there are many people out there in the geological community who would experience considerable schadenfreude were BGS to be excised from formal public ownership and made to compete like the rest of us for research funds.

However, dissociative identity disorder then kicks in, and the same schadenfreude-mongers will rush to the barricades in defence of BGS’ widely cherished role as custodians of the nation’s geological data holdings. In many ways, this long-appreciated role of BGS has only recently entered into a new “golden age”, which I would say is characterised by:

- Dissipation of the bitterness that always attends changes in BGS’ regional presence, such as the elimination of a Northern England office about 15 years ago, or the more recent furore over the relocation of North Sea borehole cores from an ageing Scottish facility to the excellent environment of the Keyworth core store.
- Delight at the increase in the free availability (albeit in restricted formats) of borehole data on-line; hitherto this was both difficult and pricey to access, which was always more than a little annoying to the drillers and consultants who generate the info in the first place and deliver it to BGS free of charge (as they are legally obliged to do, of course, though BGS has never had the resources to police the refuseniks).
- Excitement at the advent of the 3-D geological model, and its gradual uptake for applied purposes, and of other novel services such as iGeology on mobile phones, and the temporary exposures on-line voluntary submission facility.

Thus any change in the ownership and governance of BGS would be likely to fall foul of community opinion unless matters were arranged to ensure the perpetuation, and indeed extension, of this golden age, consistent as it is with the zeitgeist of open- and crowd-sourcing, and the “free-of-charge-at-point-of-use” philosophy which the internet generation has come to expect. Witness the shift to open access publishing: BGS has made great strides in imaginatively adapting its offering in this environment, and this has greatly increased its popularity and, I would wean, its authority. Of course all of this requires that the less glamorous backroom functions of curation, cataloguing, and ongoing updating of basic geological mapping, by refreshed field mapping using new insights, and gathering of bespoke and second-hand borehole information.

The challenge as I see it, then, is to reconcile these two conflicting instincts. I think people have got used to the concept that a public service need not be entirely publicly-owned, as long as guarantees are in place to ensure stewardship of publicly-owned data etc. However, where overseas geosurveys have been fully- or partly privatised, the results have been mixed, and many
such organisations (e.g. TNO) have the worst of both worlds, being viewed as privileged “pretendy” private companies, trading on free access to public data for which others have to pay market rates, and thus unfairly competing with those consultancies that are exposed to the full blast of the chill winds of market forces. I would therefore urge that, when considering the future ownership and governance of BGS, some effort be devoted to a comparative analysis of international experiences with similar ventures. Certainly the USA, that paragon of free-marketism, eventually drew back from privatising USGS, even in the Newt Gingrich era when nothing was sacred, and many other venerable public institutions (such as the US Bureau of Mines) were casually dismembered and thrown to the dogs. It would be interesting to know the whys and wherefores of that case, as well as of others closer to home.

I hope the above is helpful, and look forward to further participation in this process, as appropriate.

Yours sincerely

Paul Younger

Professor Paul L Younger FREng
Rankine Chair of Engineering and
Professor of Energy Engineering
Dear Professor Wingham

CALL FOR EVIDENCE: THE OWNERSHIP AND GOVERNANCE OF NERC RESEARCH CENTRES

I am writing in reply to your letter of 2 July 2013 in which you invited me, in my capacity as the Chair of the CEH Advisory Board, to submit my views by 30 August 2013 on NERC’s consideration of the merits of establishing four of its Centres, including CEH, as independent bodies outside the public sector. My response refers exclusively to the implications for CEH and has not been discussed at a meeting of the Advisory Board, which next meets on 2 October 2013. I propose therefore to write again after that meeting when my response will benefit from detailed consideration at the Advisory Board.

As you state in your letter NERCs Research Centres are recognised for the quality of their science and also their role in the wider national context for providing a range of ‘national’ or ‘public’ services that benefit a range of Government Departments and public policy benefits. Any changes, therefore, to the present ownership and governance arrangements of CEH should only be contemplated if the potential benefits are assessed as outweighing the attendant risks. It is crucial that the contribution that CEH makes to the National Capability for undertaking environmental science is maintained and preferably enhanced.

Potential Benefits

Potential benefits from CEH becoming an independent body would be achievable if CEH were able to develop stronger long term contractual relationships and partnerships with government departments, international agencies and appropriate commercial organisations. CEH has been successful in forging a number of new partnerships and relationships in recent months and it must be recognised that its status as a NERC Centre is often a key determinant in achieving such success. However as all contracts are at present with NERC the ability to negotiate its own terms and conditions can inhibit CEH from achieving a more direct and closer relationship. If NERC were able to continue to provide appropriate scientific support then it might be feasible to benefit from increased flexibility while retaining the essential links with the wider scientific community.

NERC at present exercises a degree of control on the extent of funding from external
sources. As an independent body CEH would still be subject to government accountancy rules but should have the opportunity to pursue external contracts with less constraints and with the ability to offer greater incentives and rewards to those who outperform. If CEH were allowed to retain financial reserves very important benefits would accrue once this was successfully achieved. For example reserves could be used to plan procurement more effectively including long term capital planning and to support long term partnership arrangements to establish new links, such as funding joint PhDs, post docs and chairs. The ability to attract the leading scientists would thereby be enhanced.

As an independent body CEH would presumably have the freedom to manage its own affairs more effectively in a way which is not possible at present. I assume that CEH would be enabled to manage its own resources, including the ability to manage staff turnover effectively and in line with the expertise CEH needs to meet its commitments, which might change under a different governance structure. CEH would also need to be able to determine for itself how to provide business services, subject to the normal rules of accountability for any organisation in receipt of public funds. If CEH was restricted in its ability to manage its own scientific and business affairs then the possible benefits of being an independent body would be illusory.

The difficulties of generating new income streams in today’s financial climate are all too obvious and the risks therefore of increased independence, which implies reduced commitment from NERC to act as a funder of last resort, must be recognised. However with increased flexibility and enhanced opportunities for staff to benefit from innovative procedures, there might well be an opportunity for the steady decline in funding over the last decade to be halted.

Potential Risks

The 2013 NERC Annual Report states that NERC’s strategic goals are to deliver world-leading environmental research at the frontiers of knowledge to (1) enable society to respond urgently to global climate change and the increasing pressure on resources; (2) contribute to UK leadership in predicting the regional and local impacts of environmental change over timescales from days to decades, and (3) create and support vibrant, integrated research communities.

In order to meet these strategic goals NERC must ensure that National Capability can support current and future strategic science priorities, and the exchange of knowledge with society, while maintaining valuable scientific assets and infrastructure over the long term. The long term nature of the National Capability activities, such as long term surveys, monitoring and data management underpinned by research, has been protected by the present relationship of NERC and CEH. While it may be possible for NERC to be relieved of its responsibilities for ownership and governance of its Centres, it must ensure that core capability in the breadth of terrestrial, freshwater and atmospheric sciences is maintained.

If CEH is to continue to contribute effectively to National Capability, as ultimately determined by NERC, effective mechanisms must replace the existing arrangements to ensure that CEH is able to make the required scientific contribution to the delivery of National Capability and can contribute to the determination and delivery of strategic research programmes.
CEH provides to government departments and its agencies evidence based policy advice. As a NERC Centre its status as a provider of impartial advice is recognised. Once CEH is an independent organisation there will be a possibility of this impartiality being perceived to be at risk, particularly if there is a need at the same time to generate increased funding from commercial sources. By upholding the present standards of scientific rigour this risk should be manageable but would need careful monitoring.

**Essential Safeguards**

If CEH is to continue to contribute effectively to National Capability as an independent organisation there are a number of key requirements:

1. It would be essential to retain the current four sites of CEH. CEH’s national presence in North and South England, Scotland and Wales underpins its ability to provide a capability to monitor terrestrial, freshwater and atmospheric attributes across Great Britain and the United Kingdom. Each site complements the overall delivery of national capability and national good by CEH to NERC and external stakeholders. Skills are distributed in such a way that the loss of any site would mean material damage to the ability to achieve science objectives. Partnerships with universities, (whether with those on which CEH sites are based or those nearby) such as Lancaster, Bangor, Reading, Oxford and Edinburgh universities strengthen the whole CEH delivery.

2. The arrangements regarding asset transfers and contingent liability would need to be compatible with a viable business model for the independent organisation. As CEH must continue to be recognised as an authoritative source of impartial advice it should be recognised that this may place limits on some opportunities for commercial funding.

3. A new CEH organisation would presumably seek to qualify for charitable status. It would be necessary therefore that the requirements of independent charitable aims separate from Government or commercial interests are met in the governance and funding arrangements.

4. Appropriate funding transfer arrangements would need to be made to enable appropriate administrative support suitable for a small research organisation to be put in place. The present funding of services provided by UK-SBS through BIS would need to be replaced by funds being made available directly to an independent CEH to procure and deliver the appropriate services at a viable cost.

I understand that detailed discussions will take place in September between CEH and the expert team provided by the Cabinet Office. Once the options are more fully understood and after our meeting on 2 October 2013 I am sure that the CEH Advisory Board would wish me to write to you with our considered views on these options.

Yours sincerely,

[Signature]
17 OCT 2013

Professor Duncan Wingham
Chief Executive
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon SN2 1EU

Dear Professor Wingham

The Ownership and Governance of NERC Research Centres

When I wrote to you on 28 August in my capacity as the chair of the CEH Advisory Board I said that I would write again once the Advisory Board had met on 2 October. At this meeting we were able to benefit from the advice of those who had witnessed a number of organisations change their status to become independent bodies.

Some have been more successful than others, and even those organisations which have emerged ultimately as viable and invigorated organisations have sometimes taken an alarming length of time to manage this transition. There are clearly some important lessons to be learned from both the successful and unsuccessful changes in governance. The Advisory Board earnestly hopes that both NERC and the independent review panel chaired by Professor Robert Allison will be fully briefed on precisely why some transitions to independent status have been more successful than others. Even those organisations which have managed the change of status successfully have sometimes taken far longer to achieve this than would be desirable.

Inevitably an exercise of this nature threatens to be a massive distraction for senior management. It is therefore essential to assess whether the benefits both in the short term and the long term justify this level of distraction.

The Advisory Board accepted that there might be advantages in independent status for CEH, but if the benefits are not considered sufficient to justify the identified risks, then it would expect the proposal to be terminated forthwith.

Yours sincerely

John Selborne
Dear Judy,

NERC Centre Governance

I refer to the letter dated 2nd July from Duncan Wingham inviting views, as chair of the NOC Advisory Council to inform NERC’ consideration of the future governance of its research centres, and in particular the National Oceanography Centre. This was an item for preliminary discussion at the NOC Advisory Council meeting on 9th July and this response has been prepared in consultation with the members of the Council.

The NOC Advisory Council’s view is that the fundamental principle underpinning these discussions should be that UK should retain a viable, major centre of excellence for oceanography which is nationally and internationally recognised, which provides the community with impartial access to major, state of the art infrastructures, technologies and facilities, which sustains its world leading research capability and which takes a leadership role, nationally and internationally, for the wider UK marine science community.

This mission was enshrined in the founding documents for the NOC and its predecessors [refs] and has most recently been reinforced through NERC joining in 2010 the former NOCS and the Proudman Oceanographic Institute into one national centre for ocean and seas.

If it is agreed that this should remain the overarching mission and purpose for the National Oceanography Centre the key issue will be how to ensure this purpose is enshrined and safeguarded in any new governance arrangement with a long term financial viability, and that the arrangement chosen offers benefits to the delivery of that mission, for both NERC and for any new ‘centre’ over and above the current governance arrangements.

Council noted that, whilst in the detail different Governance models exist, it is the case that in almost all of the major countries with oceanographic institutes capable of undertaking research on a global scale there is just one leading, large scale institute that combines both leading research and infrastructure provision and which has a close government/public sector engagement and wider community engagement [viz NOC’s comparators Geomar (Germany – a Helmholtz institute), IFREMER (France –
public sector), JAMSTEC (Japan– public sector), CSIRO (Australia – public sector]. None of these countries entrusts the important ‘national mission’ to an organisation wholly in the private sector or in academia. The USA has two major players - Woods Hole Oceanographic Institute (a charitable organisation) and Scripps (owned by the University of California), both with very specific relationships to NSF and NOAA. Within each country it is also recognised that maintaining different types of research organisations for different core missions has real benefit – the mix is important for different parts of the research community - having only one kind misses opportunities.

In our somewhat brief discussion at NOC Advisory Council, and without at this stage a detailed SWOT analysis and additional background materials to develop ‘evidence’, Council at this stage does not have a view on whether NOC should remain within NERC or might be better placed in some other governance arrangement. It is also premature to take a view on the many possible governance models which exist, but the presumption is that NERC would consider the status quo alongside the alternatives. Therefore we take the opportunity here to highlight some of the key issues that will require detailed and expert consideration prior to any decision being taken.

These include:

**Defining and securing the ‘national interest’ and securing and providing NC facilities to the wider community**

The ‘national interest’ in the science of the oceans needs to be better defined (E.g. engagement in the high seas) and enshrined such that it cannot be changed by a new Board of Governors on day one of a new organisation. A Royal Charter could be the mechanism to offer such protection, perhaps also with a charitable status. In a charity the assets cannot be transferred to another body and the mission generally cannot be changed quickly or easily. It was noted that the Marine Biological Society MBA has just been awarded a Royal charter; this helps to anchor the purpose and mission though it does not guarantee funding or protect liabilities e.g. ships etc.

The UK marine science community generally recognise that NOC plays an important role in championing marine science to Government and society, and in leading the community in a cohesive way. A purely commercial organisation is unlikely to want to take on such altruistic roles, unless they are properly recognised and funded. How funds are allocated within NERC will drive this.

**Liabilities**

Who would hold and underwrite the liabilities and the associations accounting and operating/charging policies? Would NERC have to maintain ownership of the ships or could they be managed by others? A private body might not have the capacity (liability, insurance, cash flow) or desire (cost benefit) to own the ships and other expensive equipment.

Council noted that in the US, the research ships are operated by UNOLs so the government still carries the liability. US accounting policy differs with write off of capital day at start of lifetime service. Other countries have higher day rates for ship operations as depreciation is built in. Care would need to be taken concerning how the ships were managed. Council members noted that private contractors do undertake sensitive ‘national’ missions e.g. BAE Systems for MoD.
Assets

Buildings and ships – ownership carries a risk of unrealistically burdening a new institution but also opportunities. For instance a new organisation might find it beneficial to own the building in order to secure loans on it. The ‘dowry’ from NERC, with its constraints and liabilities, would need to be carefully determined, and this would be influenced by the political drivers at the time.

Capital

In a non-public environment the downstream access to capital streams and government commitment would be a big unknown. For NOC, access to BIS capital is a big issue – e.g. the robotics and autonomous vehicle developments. This is currently predicated on a case that it is based on access to long term access to the community, a remit that would need to be enshrined.

Access to Funding

Methods would need to be found to ensure that there was equitable treatment for the Centres in a funding, recognising the importance in planning and financial terms of delivering a long term mission. For example the BBSRC model for its institutes offers a substantive proportion of long term funding from BBSRC on 10 year cycles (more security than NERC centres get currently) and ensures the institutes have ongoing access to capital allocations.

Competitive position

NERC’s interest is in maintaining a vibrant science base built on excellent science, awarded in a competitive process; differing contractual relationships may bring in issues of eligibility and differences in VAT treatment. These are complex issues which need to be investigated on an individual basis.

Advisory council noted that NOC is already highly competitive (as demonstrated e.g. by its high success rate in making bids for NERC funding and its excellence rating in the Centre Evaluation Exercise) and operating in a highly competitive environment. Confidence would be needed in its ability to continue within a new model. Would a new governance model be more attractive in order to be able to seek private sector research activity? The academic community has access to the QR funds (research excellence); would a new NOC have this dual support funding? How would the ‘gap’ between 80% funding on Awards and 100% costs being incurred be closed?

Key relationships and Influence

The impact on relationships with the University of Liverpool and Southampton as hosting partners needs to be considered. In 2010 these universities were willing to reassess the relationship, largely because they had the assurance that it was still NERC/government body that they were dealing with. It could be very different with a private sector organisation.

Reputational risks and NOC’s standing nationally, against the collocated institutes, with Delivery Partners, University and with other centres, public and private bodies must be considered.

A private sector organisation would necessarily have a different relationship with NERC and with Government departments. Its status internationally – especially in
international representational roles – is also at risk. Will other countries accept a private body as representing the UK position?

People issues

It would be important that NOC staff support the mission and any new organisational status, that they are heard in the decision making process and that their practical concerns are addressed. There will be real tangible concerns about pay, pensions, retention and other conditions. A significant number (over 140) of the NOC staff had a poor experience of the TUPE process from University of Southampton to NERC employment, and for whatever the specific reasons then, they are now acutely aware of the need to safeguard their interests during any future organisational change.

The NOC Advisory Council also recognises the real dangers of change fatigue specific to NOC given its recent evolution and the demands on the capacity of senior management to manage simultaneous change programmes. It will be essential that NERC secures access to dedicated and specialist external advice and support to the staff and indeed to NERC Council to ensure that any decisions are taken with a full appreciation of the their immediate impact and longer term consequences.

The members of the NOC Advisory Council recognise that this the beginning of a long and complex process in which we expect, and will be pleased, to engage in providing advice based on our own individual and collective experiences.

Yours sincerely,

Sir David King
Chair, National Oceanography Advisory Council

CC Members of NOC Advisory Council
Professor Ed Hill, Executive Director NOC
Dear Judy,

The Ownership and Governance of NERC Research Centres

Following the request from Duncan in his letter of 2 July ‘13 for input to the above discussion, I am writing as Chair of the NOC Association. The Association represents the NERC-funded UK marine science community across the board, including NOC itself, associated laboratories (including PML, SAMS, SMRU, BAS, BGS, MBA, NCEO, SAHFOS) and about 30 UK universities engaged in NERC-funded marine research.

The Board of the Association had a discussion of the issue at its meeting on 18 July ‘13. Here is a summary of its conclusions:

1. We took as our starting point that the strategic aims of NOC would stay essentially the same as at present in any new ownership and governance arrangements. It is worth reiterating them here:

   i) Undertake world-class marine research in an earth-system context, especially with long-term focus.
   ii) Support (Research Infrastructure, Facilities, Services, Data Assets) and transform ocean measurement capabilities.
   iii) Translate knowledge about the marine environment into demonstrable benefit for the UK economy and society.
   iv) Provide leadership in national and international marine science and technology programmes.

   It was agreed that with the above broad remit, responsibilities and leadership role some long-term stability in its funding is required if NOC is to function strategically.

2. The NOC-A Board were generally in favour of a looser governance/ownership arrangement between NERC and NOC, provided such change did not damage NOC’s ability to achieve the above aims. It is clear that there could be some
clear advantages, for example in staff recruitment and retention by not being tied to the civil service pay structure, end-of-year balance transfers and, importantly, greater freedom to pursue its own scientific agenda. However, the Board did not consider full ‘privatisation’ to be compatible with achievement of the aims. It concluded that, as ever, the devil will be in the detail of any new arrangements. Further discussion of internal management issues will not be pursued here on the assumption that they will be covered by input from the NOC Council through its chair. Here we concentrate on the outward face of NOC and in particularly its relationship with the NOC Association and its individual members. The four aims of NOC provide the structure for our comments in this context.

3. Research excellence of NOC is clearly key both for NOC but also for its relationship with Association members and others. Here we are pleased to note the excellent outcome for NOC science of the recently published REF exercise. Many of the best papers are published jointly with scientists outside NOC and this outward co-operative mode of working must be preserved. Competition in research is fine but due to the sheer number of NOC scientists care should be taken in any new structure to ensure that smaller non-NOC players are not driven out. Working together NOC and the wider community can maintain and even improve the UK’s already exceptional standing internationally for excellence in marine science and technology.

4. There are certain vital support elements that are located and managed by NOC. These include the deep-sea research vessels, data centre and deep-sea core repository. It is entirely appropriate that such major infrastructure facilities should be managed for the benefit of the whole community by the national centre. Along with BAS, NOC is arguably the major provider of such community facilities amongst the NERC centres. Any new arrangements must maintain access to these facilities for all with a justified need to use them.

The issues of who owns such very expensive capital assets as the ships is a key issue, as well as how they will be maintained and replaced as and when necessary. There is a similar concern over replacement and upgrading of large capital equipment, for example for sophisticated chemical analysis and the marine equipment pool (currently valued at about £20M). We also noted that 84% of research vessel usage is by non-NOC scientists, which illustrates the vital role NOC plays for the whole marine community by running the facility.

5. Marine knowledge transfer is a vast topic with the potential of significant benefit to the UK economy. Again this will work more effectively if NOC works co-operatively with the wider community. A fully privatised NOC would be likely to pursue commercial aims with scant regard to the interests of others. But although this might be superficially attractive, in the whole UK
context and in the longer term it would lead to waste or under exploitation of ideas which come from many parts of the marine community. There is certainly a role for NOC in developing ideas coming from outside but such ideas will only flow when there is trust on all sides.

6. It is natural for a national centre to provide leadership both nationally and internationally. But again this has to be done in a spirit of co-operation or the impact will be lessened. Being the largest marine science entity in the NOC-Association, NOC should have a concern for the health and vitality of the wider community that it relies on for trained personnel, ideas and much else. Such ‘paternalism’ is not to be sneered at but cherished. Although it may at times cost something to NOC, it is what keeps the community acting as such and not as a set of competing baronies. Such an outward looking, benign attitude would be very unlikely to survive in a privatised NOC.

7. Finally, it was clear to the NOC-A Board that an optimum solution to the governance issue would be for NOC to be in looser arrangement with NERC but for some way to be found to ensure that the greater freedom gained did not negatively impact on NOC’s strategic aims and its relationship with the wider community. Ideas in this context were gaining of charitable status and maybe also a Royal charter. We also noted that BBSRC and MRC have been through a similar exercise with their institutes and useful lessons were likely to be had from those experiences.

We hope these comments will be helpful; please let me know if anything is unclear or more information is needed.

Best wishes,

Prof. Peter S. Liss, CBE, FRS,
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September 2013 to March 2014:
TIAS Fellow,
Department of Oceanography,
Texas A & M University,
College Station, TX, USA
Response to the call for evidence on the ownership and governance of Natural Environment Research Council (NERC) Centres

Summary

As the UK's national academy of science the Royal Society welcomes the opportunity to respond this call for evidence. Our response draws on the advice of over 20 Fellows expert in relevant scientific fields, science policy and research management. Preparation of this response was led by Professor Geoffrey Boulton FRS, Chair of our Science Policy Advisory Group (SPAG).

- Publicly funded research centres with a long-term, strategic role are important as independent sources of evidence for public policy and in supporting economic activity.
- Granting the NERC Centres independence might offer them advantages such as the ability to carry financial surpluses from year to year and allowing the Centres to set salaries that would attract the best talent.
- Of the claimed advantages to NERC: a) we do not understand how it would free NERC to act as “champion for the environmental sciences”; b) other research councils have not found the dual roles of centre ownership and research funder problematic; c) independence would not address the problem of pre-set budgets for maintaining world-class infrastructure; d) there is no evidence that research council ownership mitigates against high scientific standards.
- We summarise possible national and international models of ownership and governance, including full privatisation, creating independent charitable institutions, non-departmental public body status and consortia with universities.
- The evidence is a) that full privatisation is an inadequate vehicle for sustaining long-term strategic research and maintaining research excellence. b) Relatively high levels of assured core funding are necessary for centres to sustain a long-term strategic mission. c) Project based funding would be inadequate to support long-term strategic science.
- The call for evidence is not explicit about why change is being considered and why current arrangements are inadequate, thus making a focused and informative response difficult. Before making a decision, a full and analytic business case is needed that evaluates the strengths and weaknesses of different options and clearly articulates the rationale for change.

The function of publicly funded research centres

1. The starting point for an analysis of appropriate modes of ownership, funding and governance of a publicly-funded research centre must be an assessment of the public value that it creates either as a source of independent evidence for public policy or in stimulating or supporting economic activity in its sphere of operation.

2. Most such centres operate in a strategic fashion. They have sustained, long-term, thematic functions and goals, in contrast to universities, which, with few exceptions, are typically more diverse and able to reconfigure their research efforts to create new knowledge wherever the opportunities lie. A national public research system benefits from the coexistence and interaction of these two modes: one a sustained thematically-defined function, the other concerned with the creation and application of new knowledge irrespective of theme. All major national research bases observe this distinction in one form or another.

3. The key prior question is whether the UK has been and will be dependent for the foreseeable future upon the information and analysis produced by the NERC Centres. If it has and it will be, two questions arise.
Whether and how the strategic roles of the Centres could be sustained if there were a change in the mode of ownership? How should this imperative be balanced against the benefits that the consultation paper claims will accrue to NERC (‘as a funder and champion for the environmental sciences’) if the Centres were to be moved outside the public sector (i.e. to a privatised or charitable status)?

**How do the NERC Centres currently fulfil their strategic functions?**

4. The four Centres under review have well-defined functions. It is important to consider them separately rather than necessarily assuming that a common solution will fit all. Their functions are set out below:

**British Geological Survey (BGS)**
BGS provides essential baseline evidence to support policies for energy supply, natural resources, infrastructure planning and environmental management. This infiltrates almost all major sectors of society, the national economy and the private sector. Topical examples include assessment of gas reserves from fracking; development of carbon capture and storage; radioactive waste management; site selection for major projects such as the Olympic Games or the third runway at Heathrow; natural hazards; mining subsidence; and maintaining the UK as a player in the global mining industry. BGS’ external income in 2010/11 was 41.8% of its total income of £48.27 million.¹ This includes services, products and data licensing in addition to research commissioned by external partners. Its policy advice is directed primarily to the Department of Energy and Climate Change (DECC), the Department of Business, Innovation and Skills (BIS), the Department of the Environment Food and Rural Affairs (DEFRA) and the Department for International Development (DFID).

**Centre for Ecology and Hydrology (CEH)**
CEH monitors terrestrial, freshwater and atmospheric systems. The continuity of its long-term data sets such as biological records, countryside surveys etc are of critical importance in understanding the impacts of global change. Topical examples of its policy-related work include risks from metals in waters and soils; impacts of offshore wind farms on seabird populations; recommendations for offshore Special Protected Areas; flood risk mapping and forecasting; the basis for emission control measures and reduction of acid deposition; and risk assessment for lake restoration. Around 55% of its anticipated income of £34 million for 2013/14 comes from sources other than the NERC Science Budget.² Its policy advice is directed to DECC, DEFRA and DFID.

**National Oceanography Centre (NOC)**
International awareness of the importance of the oceans as an economic resource and their vulnerability to human impacts is growing. NOC acts as a UK “flagship” in this highly competitive field. It maintains and develops state-of-the-art capability in conducting long-term, ocean-scale research and observations; provides essential resources for the UK oceanographic community including administering and managing equipment and the two research vessels that have high and unpredictable operational costs determined by global fuel markets; manages data curation and core sample storage; and provides representation on major international committees. Topical policy advice includes advice on the United Nations Convention on the Law of Sea; sovereignty and control over mineral resources around the Falklands; planning of Marine Conservation Zones and protected areas; reform of the Common Fisheries Policy; and advice in response to the EU marine directive and the development of the EU’s Integrated Maritime Policy. Its external income for the financial year 2010/11 was 22.3% of its total income of £47.22 million.³ Its policy advice is directed principally to DEFRA, but also to the Foreign and Commonwealth Office (FCO), BIS, and DECC.

National Centre for Atmospheric Science (NCAS)
NCAS conducts research on the natural climate, how changes in the composition of the atmosphere drive climate change and on the impacts of climate change and weather events. Its work on processes that govern climate variability and change is complementary to that of the Met Office (a UK Government trading fund) which works on climate models and prediction systems. Topical policy-related work includes national responses to volcanic ash hazards; climate adaptation and mitigation policies; projecting temperature changes worldwide; impacts of emission control policy and air quality management; boundary layer pollution in London; and forecasting severe turbulence at airports. It has a mixed model of governance, part contracted to the University of Leeds and part retained by the NERC Office. Its external income is 15% of its total of £20 million.4 Its policy advice is directed mainly to DEFRA, DECC, DFD and the Ministry of Defence (MoD).

5. As a first-order summary, BGS majors in advice to national and local government, and to industry over a wide range of issues that are fundamental to our use of the sub-surface environment. CEH is primarily concerned with advice to government about the operation of the terrestrial biosphere and hydrosphere, making major contributions to policy for environmental health, biodiversity, farming and flood hazards. NOC is a major resource of skill and capability for the UK ocean science community in addition to its policy advice, where its work in supporting international treaties and partnerships almost certainly results in a return to the UK that is far greater than the cost of NOC. NCAS complements and contributes to the work of the Met Office in vital assessments of climate change. All need to maintain and develop a high level of scientific excellence over a wide range of issues in their respective fields in order to fulfil their strategic roles effectively. The Society’s view is that these complementary functions are important in underpinning national environmental policies, practices and capabilities. The issue for NERC is one of optimisation: whether there are ways in which these functions can be safeguarded whilst reaping benefits that greater independence for the centres might bring.

Potential benefits of greater independence for the Centres

6. Scientific institutions find independence of action of great value in responding rapidly to opportunities and exploiting them. In the case of the Centres in question, such independence is currently limited by the reporting line to NERC in conditioning their actions; by government rules about carrying over surpluses from one year to the next; by inflexible government purchasing systems that do not allow for rapid response; by the restrictions placed on the salaries that they are able to offer staff and, thereby, their ability to attract the best talent to ensure international excellence (in contrast to the freedom of universities to do so); and by the limitations of their pre-set budgets in maintaining world-class infrastructure. The latter will remain a major problem no matter what the source of funding but the others are key issues that could be resolved if a form of independence was identified that would permit the Centres to address them whilst maintaining their important national functions. A series of models of independence and the benefits and disadvantages they might offer are discussed in the following section.

7. The benefits to NERC of relinquishing ownership are set out in the consultation as “ensuring that it can focus on its externally facing roles as a funder and champion for the environmental sciences.” The Society understands how NERC’s responsibility as both a research council and an employer of researchers can sometimes be in conflict. However, it is not clear how the present arrangement militates against NERC’s capacity to act as “a champion for the environmental sciences.” It appears to be a weak argument for

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change of any great magnitude. Moreover, how would this capacity be improved if it were to lose centres that are major sources of environmental evidence?

**What is the evidence that a move to independence can be successful without detriment to national strategic capacity?**

We here discuss a range of models of ownership of research institutions by giving specific examples.

a) Full privatisation

8. There is little or no precedent for maintaining excellence in research for public good under fully privatised ownership, whether in the UK or abroad.

9. Twenty years ago science research in the UK gained its strength from three main sources: academia, large industrial research laboratories, and government-owned establishments. The large industrial laboratories including GEC Hirst Research Centre, ICI, and EMI died either because private finance did not appreciate the risks of long-term research or because the long-term is not a favoured element in the financial models of stock-driven corporations. Publicly-owned laboratories were not immune to this trend. Defence establishments have been the key to innovative research in aerospace and electronics, but the two largest laboratories, RAE Farnborough and RSRE Malvern, are now privately owned. Their current research trend is illustrated at Malvern by the owner, QinetiQ, which in 2010 abandoned the photonics research that had given the UK international leadership in LCDs and thermal imaging.⁵

10. Civil government research has suffered no less. Of a long list of establishments including the Laboratory of the Government Chemist, the National Environmental Technology Centre, the Road Research Laboratory, and establishments for Fire and Buildings Research, none now invest in long-term research. Two of the most prestigious laboratories, NEL and NPL, have both changed in structure. NEL is now owned by a German company and its research record is unimpressive. NPL spent years as a Government Owned, Contractor Operated (GOCO) organisation, and for much of that time its record suffered. A new form of ownership is now under consideration, with the hope that NPL’s previous standard of research can be recovered.⁶ Central to this is the need to enhance collaboration with other parts of the UK research capability, notably in the universities. Any isolation of a research centre from the national research community is damaging, whether it occurs through funding constraints, limiting movement of staff, or lack of coherence of policy between institutions in making the case for high quality research.

11. The above trends illustrate the difficulty of maintaining strategic research for the public good in a privatised environment where short-term concerns to maintain income militate against the long-term maintenance of excellent research in pursuit of long-term strategic objectives.

12. Privatising the Centres may also raise questions over the impartiality of advice to government, depending on how they would be set up. Commercial providers tend to be poor substitutes for centres operating in the public interest (see paragraph 1): they are motivated to lock their clients into their services, which tends to influence the advice provided; government needs to be an intelligent customer, and hence needs its own specialists; and there is evidence in plenty that it is not a cost effective route in the long-term. Providing high quality, domain-specific advice is a core role of all of NERC’s Research Centres. To maintain this function within a privatised structure would require careful thought and management. Although it is

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difficult to be prescriptive, our review fails to find evidence of any such centre that has managed to retain this capability when its core funding is below about a third of its total income.

b) Creating independent charitable institutions

13. An independent research institute operating as a charity could be an appropriate mode, with former Biotechnology and Biological Sciences Research Council (BBSRC) institutes as partial precedents. The 2006 Follett Review\(^7\) addressed the conflicts of governance that arose because of BBSRC management of institutes with an independent status both as companies limited by guarantee and registered charities. The ownership and governance structures of eight institutes were changed, of which five now operate under a simple charity model, two were embedded in universities, which also employ the staff, and one is both a charity and company limited by guarantee.\(^8\) Approximately 40% of the funding allocated to BBSRC is spent on grants to these institutes. It is important to recognise however that the reasons for change were not to save money or to privatise, but the unclear lines of responsibility. There is no such issue for the NERC Centres. If they were to become independent they would still require high levels of funding, presumably from the NERC budget, if they were to retain their strategic national function.

14. Rothamsted Research, a former BBSRC institute, offers a particularly distinctive example. It is an independent charitable institute that now receives strategic funding from BBSRC and considerable support from the Lawes Agricultural Trust. Its current activities benefit hugely from commercial successes over the years due to the nature of its work, that of global agriculture, which raises many commercial opportunities. However, it is not clear to us that such clear-cut major opportunities currently exist for any of the NERC research centres, except possibly in the case of BGS. Nevertheless the diversity of the external portfolio that BGS needs to exploit to bring in its external income makes the Society doubtful that it could make such a move without endangering the wide range of activities that it needs to sustain in order to fulfil its national functions.

15. Another example of an independent institute that still pursues long-term front-line science and a diverse portfolio is the Dunstaffnage laboratory of the Scottish Association for Marine Science (SAMS), which was transferred by NERC to SAMS in the late 90s. Although it is successful in winning NERC research grants, it receives no strategic funding from NERC and must match NERC funding with other sources to make these activities viable. Although it has been successful in scientific and educational terms, and benefits greatly from support from Highlands and Islands Enterprise, it is a relatively small operation and its long-term financial viability is perennially under threat because of the absence of strategic funding. It would be a bold experiment for NERC to assume that such a model could work for its large centres and their strategic roles.

c) A diverse pattern of governance and ownership: the MRC approach

16. The Medical Research Council (MRC) is distinctive amongst UK councils in the number and diversity of the thematic Institutes, Units and Centres that it funds.\(^9\) They are described in greater detail in Appendix 1. They represent a spectrum from the highly strategic Institutes to the more opportunistic Centres. All Institutes and their assets are owned by the MRC, which also employs most of their staff. There are two types of Unit: long-established and well-known intramural units (where the MRC is the main employer) and newer, university units (where the university is the main employer). Intramural units can evolve into university units where they can benefit from new scientific opportunities and funding streams, strengthened

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\(^9\) Further information is available from: [http://www.mrc.ac.uk/Ourresearch/Unitscentresetinstitute/index.htm]
integration with university research activities and efficiency gains/cost savings which can then be re-invested into science. All institute/unit/centre investments are reviewed every five years. The scientific creativity of these bodies and the applications that have arisen from their work are envied both nationally and internationally. Notwithstanding the benefits of independence set out in paragraph 6, the achievements and high quality of the science of MRC owned and operated laboratories demonstrates that research council ownership is not incompatible with the highest scientific standards.

d) Bodies closer to government

17. If the fully privatised represents one extreme of a spectrum of ownership, governance and function, the other extreme is that of a non-departmental public body (NDPB) responsible to a government minister. The Environment Agency (EA) is one such example, being responsible as an executive NDPB to the Secretary of State for Environment, Food and Rural Affairs. It plays a central role in delivering the environmental priorities of central government.\(^{10}\) It is an interesting example because of its dependence (or interdependence) on NERC centres. Its planned income for 2013/14 is £1084 million, 60% of which comes from Grant-In-Aid and the other £413 million from licensing and a variety of statutory levies.\(^{11}\) In other words, the operational aspects of environmental management cost about ten times what is expended on long-term research and monitoring (an under-estimate as the EA relates only to England). Most of its R&D is applied\(^{12}\) but it seems very likely that it is dependent on the research and monitoring produced by the NERC centres. Have these inter-dependencies been examined? The media for example attributes much of its underpinning research to the EA, although the true credit for much may lie elsewhere.\(^{13}\)

e) International examples

18. We suggest that NERC should also explore the way that the duality noted in paragraph 1 is dealt with in other countries. As an example, we set out in Appendix 2 how this issue is dealt with in the USA in the field of environmental science. We offer examples of three major national institutions that have a long-term strategic role, and three independent ones, one a private, not-for-profit foundation, one a part of a public university and one part of a private university. All are renowned internationally for the excellence of their research, although a cost-benefit analysis of their operation and effectiveness would be required before contemplating using them as models. All depend heavily on substantial federal funding. We particularly draw NERC’s attention to the way that the National Center for Atmospheric Research (NCAR) is managed on behalf of the National Science Foundation (NSF) by a consortium of universities.

Observations on ownership and governance models

19. We draw two major general conclusions from the foregoing analysis:
   a) Fully privatised institutes are poor vehicles for sustaining long-term strategic research. Few such institutes have succeeded in maintaining high levels of research excellence and their record of sustaining a long-term mission is poor.
   b) Relatively high levels of assured core funding are necessary if institutes or centres are to sustain a long-term strategic mission. In US examples, as is also the case elsewhere, core funding from government is essential for strategic bodies that are called upon to provide systematic advice to government, although their ownership models may vary.

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\(^{10}\) Further information is available from: [http://www.environment-agency.gov.uk/aboutus/default.aspx](http://www.environment-agency.gov.uk/aboutus/default.aspx)

\(^{11}\) Environment Agency (2012) Corporate plan update [http://a0768b4a8a31e106d8b59dc802554e4b3a24458b98f72df550b19_c13.rackcdn.com/oeho0412bwhz-g-e.pdf](http://a0768b4a8a31e106d8b59dc802554e4b3a24458b98f72df550b19_c13.rackcdn.com/oeho0412bwhz-g-e.pdf)

\(^{12}\) Further information is available from: [http://www.environment-agency.gov.uk/researchpolicy/default.aspx](http://www.environment-agency.gov.uk/researchpolicy/default.aspx)

20. As the US examples illustrate, independent bodies are important contributors to the sciences that government bodies need to draw on to fulfil their strategic functions, much as happens in the UK. The fundamental difference is that the former win competitive government funds for specific projects and capabilities, whilst the latter receive core funding for the institution in furtherance of its strategic objectives but targeted and managed in ways that it chooses. The central questions for NERC in exploring how greater centre independence could be achieved are:

- Would independent bodies need core institutional funding to be sustainable, or could a strategically focussed centre could be sustained in the long-term by project funding alone (without a core funding guarantee)? If there were to be a privatised future for the centres, how would NERC propose to prevent the privatised labs being taken over, asset-stripped and closed with the consequent loss of vital national capability? Could this be prevented if government had a “golden share” or limited a GoCo contract period?
- How would long term strategic funding be guaranteed if the centre were no longer owned by NERC? What would be NERC’s longer-term financial support for a privatised lab or independent charity? Would NERC simply be a “customer” or would it provide underpinning funds, or some combination of funding mixes? What level of support could be guaranteed over 5-10 years?

21. The Society believes that a credible, long-term funding commitment would be required and that project based funding alone would be inadequate to support a commitment for long term, strategic science. The Dunstaffnage laboratory of SAMS (paragraph 15) is one that is successful in these terms, but has a level of vulnerability and exposure to risk that is too high for bodies that are key parts of national research infrastructure.

22. The NERC consultation identifies a reason to consider relinquishing ownership of the centres as a desire to focus on its role as a funder of environmental science. The arrangement between NSF and the consortium of universities that manage NCAR on its behalf, or the arrangements for MRC extramural Units are models that NERC could consider for some, although not all, of its Centres’ functions. If a satisfactory and sustainable agreement could be reached that would protect long-term strategic capabilities, these routes might offer both the benefits of independence referred to in paragraph 6 together with entry into the competitive environments of the Research Excellence Framework and research council grant competitions that recognise and incentivise research excellence\textsuperscript{16}. It would however not release NERC from the responsibility (that NSF has) of due diligence in ensuring that its agent acts in the best interest of the function it is contracted to deliver. It is also important to note the central role of NCAR is to provide a community resource that works to the great advantage of the academic community (analogous to part of the function of NOC). We are sceptical that long-term strategic research would be regarded by universities as of similar value.

23. If NERC should conclude, as the Society does, that it is important to retain the strategic national roles of the Centres, the evidence presented above suggests that it would be optimistic to believe that public funding for these roles could be substituted by private funding or overheads on contracts. If public funding were to be reduced, long-term strategic work would be displaced by the shorter-term contracts that would be required to sustain the organisation. The loss of capacity building that comes from the non-viability in these circumstances of leading edge research will inevitably result in a loss of the leading-edge skills needed for excellent advice to government (note that this is not to argue against periodic assessments of whether some activities in Centres should be moved into other bodies such as universities, which can be dealt with.

\textsuperscript{16} Note however that there is an issue of equity. Universities compete both for their core funding for research through the REF process and for individual project funding from research councils and charities. Centres that have core funding and some project funding assured would be on the up-side of a tilted playing field if they were also able to bid for research council project funds.
through adequate strategic oversight and independent review of the Centres’ work). Whether NERC retains the current governance of Centres in its present form or transforms them into independent entities, the requirement would remain for government to be their principal funder through a block grant to maintain national capability. Presumably this would simply involve a transfer of funds that currently flow through NERC.

24. There is also a question of confidence in the sustainability of Centres if NERC ceased to be owner. The history of core strategic funding for independent bodies is unlikely to give the confidence to those managing long-term programmes that the present model of ownership does. Although it appears that independence brings benefits provided that core funding can be assured, the inherent uncertainties of the latter need to be balanced against those benefits.

Managing change

25. If NERC were to divest itself of ownership of the four Centres, it would be a much more onerous legal, managerial and political process than that accompanying the withdrawal of BBSRC from a role in managing its institutes (which were already companies limited by guarantee and registered charities). The process of transition of MRC Units from intramural to Extramural should also be explored. The potential disruption to the work of the Centres that the process of divestment would bring is one of the considerations that need to be balanced against any perceived benefits to NERC.

Final comments

26. The consultation document is skeletal. It is difficult to do more than raise a series of issues and hypothetical options in response. The document says nothing of substance about the different possible forms that ownership and governance arrangements might take, what will or might happen to government funding and how the public good and positive externalities arising from the present arrangements will be maintained. What is required is a properly written business case which seeks to evaluate the various options – including the status quo - and assigns some likely benefits or disadvantages for the options.

27. The starting point must be an analysis of why the status quo is unsatisfactory. The rationales given in the consultation are unpersuasive as reasons for major change. The recently.completed evaluation of NERC centres concluded that “the research being carried out in the centres is mainly excellent”, that they “scored very highly for economic and society impact”, and that they “provide an environment that is generally conducive to producing research and impact of internationally excellent or world-leading quality.”14 It implies that mechanisms to enhance scientific excellence are not urgently needed, and that would seem unwise to risk this environment unless there is a strong driver for change. (Moreover, wholly-owned MRC Institutes and Units operate at high levels of international excellence). Perhaps there are unstated reasons: for instance, the cost of major facilities such as research vessels; a concern about costs; or a view that independent bodies subject to market disciplines could yield the same results more cheaply. Before embarking on a change of the magnitude implied by the consultation, NERC must consider what capacities are needed, what is the most effective way to organise them, and whether a process or status can be devised that would produce some of the benefits of independence summarised in 6 without jeopardising national capabilities in view of the precedents summarised in 8-18.

28. There are a number of further issues that should be addressed:

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• Would Research Councils UK (RCUK) seek to negotiate to retain its current funding streams and would NERC expect to allocate its share purely on research merit and record of impact? Would government pay the up-front costs of change? Would any eventual savings be ring-fenced within NERC? Would NERC in reality have any greater discretion than in present circumstances? Could NERC obtain the maximum financial benefits if it still owns some centres such as BAS i.e. by operating a mixed mode model?
• If NERC divests all but one of its research centres, and if the other centres took their funding with them, NERC would become a very small disburser of grants. Would this then threaten its survival as an independent research council, with the loss of a voice to “champion the environmental sciences”, and might this also require a reorganisation of the research councils?
• The risks of major change in the direction indicated are significant both to the national capability and the independence and rigour of advice to government. Have the views of government, both national and devolved, been sought?
Appendix 1 Medical Research Council, Institutes, Units and Centres

Institutes

Institutes are very long-term flexible bodies charged to address major challenges in health-related research using multi-disciplinary methods often requiring ground breaking methodology and technology development. They are provided with sustained support and state-of-the-art facilities over a long period of time. They offer scientists maximum flexibility to engage in innovative “risky” research, avoiding traditional university-style departmental boundaries. They attract and develop outstanding students and early career scientists from the UK and internationally. There are three institutes.

Units

Units are set up to meet specific needs or to tackle important research questions where the need cannot easily be addressed through grant funding. They are led by well-established principal investigators, overseen by a director. Units are fully-funded by the MRC and there is no set limit on their lifespan. They attract and develop outstanding students and early career programme leaders from the UK and internationally and often have a major impact through developing future research leaders in their specialist areas. There are two types of unit: the long-established and well-known intramural units (where the MRC is the main employer) and the newer, university units (where the university is the main employer). Intramural units can evolve into university units where they can benefit from new scientific opportunities and funding streams, strengthened integration with university research activities and efficiency gains/cost savings which can then be re-invested into science. By the end of 2013, 10 units will remain as intramural units and there will be 17 university units.

Centres

Centres allow the MRC to help universities develop and consolidate internationally competitive, high-profile centres of excellence with a clear strategic direction in areas of importance for UK medical research. They provide intellectually stimulating and well-resourced programmes and environments which are attractive not only to established researchers but also to new investigators. MRC core funding is provided for a set period to develop the centre’s capabilities and research strategy, and is expected to help universities attract further support from other funders as well as the MRC. As of June 2013 there are 26 centres and related charity partnerships.
Appendix 2 Examples of approaches to the organisation of national environmental science capability in the USA

National Center for Atmospheric Research (NCAR)

NCAR conducts collaborative research in atmospheric and Earth system science and provides tools and technologies to the scientific community including research, supercomputers, instrumented aircraft and observing systems. It is managed by the University Corporation for Atmospheric Research (UCAR), a non-profit consortium of universities, on behalf of the NSF. It is formally an NSF Federally Funded Research and Development Centre that works in the public interest as a long-term strategic partner with NSF. It is set up as an independent body but with restrictions on their activities, such as being prohibited from manufacturing products, competing with industry or working for commercial companies. NCAR’s total expenditure in fiscal year 2011 was $268 million, of which 95% was provided from federal funds.15

The Office of Oceanic and Atmospheric Research (OAR)

OAR is a division of the National Oceanic and Atmospheric Administration (NOAA), a federal scientific agency that has operational responsibility to provide critical and accurate weather, climate and ecosystem forecasts. OAR is responsible for research to underpin better forecasts, earlier warnings of natural disasters, and a greater understanding of the Earth, operating under the principal themes of climate, weather, air quality, and ocean and coastal resources. NOAA’s R&D funding is 13.5% of its total funding of $5.5 billion (as requested in 2014). It anticipates 69% of its R&D funding in 2014 to be from federal agencies and 31% from non-federal entities including private companies, academia and non-profit making bodies.16

US Geological Survey (USGS)

The USGS has a remit analogous to that of the BGS and CEH combined. It provides scientific information to describe and understand the Earth, to minimise loss of life and property from natural disasters and manage water, biological, energy and mineral resources. It collects, monitors, analyses and provides scientific understanding about natural resource conditions, issues and problems, including water and biological resources. The US Fish and Wildlife Service’s research function was incorporated in the USGS in 1996. It is a Federal scientific agency and part of a bureau of the US Department of the Interior, making budgetary requests directly to the US President’s office. Its budget for fiscal year 2012 was $1.1 billion, the major (unspecified) part of this being from federal sources.17

Woods Hole Oceanographic Institution (WHOI)

WHOI is a research and educational institution to advance understanding of the ocean and its interaction with the Earth system. It is a private, independent, not-for-profit institution run by the WHOI Corporation and a Board of Trustees created by the recommendation of a National Academy of Sciences committee in 1927. The bulk of its funding comes from grants and contracts from the NSF and other government agencies alongside foundations and private donations. It also offers facilities and services for use by external groups and organisations. Its operating expenditure in 2011 was approximately $227 million, with 74%

15 NCAR/UCAR (2013). Quick facts about NCAR & UCAR https://www2.ucar.edu/about-us/quick-facts
from government sources (NSF, US Navy, NOAA & others others).\textsuperscript{18}

**Scripps Institution of Oceanography**

‘Scripps’ is part of the publicly funded University of California, San Diego. Its mission is to ‘seek, teach, and communicate scientific understanding of the oceans, atmosphere, Earth and other planets for the benefit of society and the environment.’ Its research expenditure in financial year 2011-2012 was $153 million, of which about 95% was from government (largely NSF, Department of Defence, NASA, NOAA, and state sources).\textsuperscript{19} ‘Private gifts and endowments furnish funds critical to launching new areas of research, supporting students, purchasing equipment, and constructing new facilities’.

**Lamont-Doherty Earth Observatory**

‘Lamont-Doherty’ is part of Columbia University, a private institution. It ‘seeks fundamental knowledge about the origin, evolution and future of the natural world’ and conducts research on many aspects of the planet from its interior to the outer reaches of the atmosphere, covering climate change, earthquakes, volcanoes, non-renewable resources, environmental hazards. Its expenditure for financial year 2011-2012 was approximately around $92 million, of which 82% was derived from governmental sources.\textsuperscript{20}

Judy Parker  
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30 August 2013

Dear Judy,

The ownership and governance of the NERC centres

I write on behalf of the British Ecological Society (BES) in response to NERC’s call for evidence on the merits of establishing the NERC research centres as independent bodies, outside of the public sector.

The British Ecological Society is the UK’s learned society for the science of ecology, and is the oldest such organization in world. Our membership comprises over 4,000 ecologists worldwide, including those working at the country’s top research institutions. The BES celebrated its centenary this year, and continues to pursue its mission of advancing ecology and making it count in decision-making.

The Society has very strong links with the Centre for Ecology and Hydrology, through BES members based at CEH and those employed in universities and elsewhere who make use of its outputs. The BES is also a partner with CEH in the Natural Capital Initiative. Ultimately it is ecological science as a discipline that benefits from CEH’s work, and our response is driven by our interest in ensuring that the science of ecology is well supported.

1. The unique public contribution of the NERC centres – long term datasets

It is important to understand the unique contribution that institutions such as CEH make, in order to ensure that these features are able to flourish in any change of ownership or governance.

The NERC centres uniquely provide consistent long-term data¹, including from ecological studies that are undertaken over the course of decades or even centuries. For instance, the Predatory Bird Monitoring Scheme² has been running for over 40 years and the National Riverflow Archive has entries dating back to 1841. Both of these provide crucial data for policy decisions and cutting edge research. Under the current ownership model, such studies are rightly protected from changes in

¹ See [http://www.ceh.ac.uk/data/datasetsandfacilities.html](http://www.ceh.ac.uk/data/datasetsandfacilities.html) for details of major dataset holdings
² [http://pbms.ceh.ac.uk/](http://pbms.ceh.ac.uk/)
fashion or the fluctuations of short-term demands of the market, and provide a vital national resource of information and the corresponding specialist expertise required to make best use of it. These studies allow us to maintain records that support science research; without them, the science of ecology would be constrained in the ways in which it can progress.

CEH is also able to gather the resources needed for large-scale national projects such as the Countryside Survey, and this ability should also be protected.

We recommend that NERC provides an appropriate guarantee of continuing public functions such as this alongside any shorter-term consultancy operations. The motivations and nature of private and public funding are different; a move to take advantage of private-sector opportunities should not compromise delivery of services that other funders will not pay for over the necessary timescale.

2. Ownership and use of data produced by CEH

In evaluating the merits of a change of ownership model, NERC must consider the implications of a change in ownership of the data produced by bodies such as CEH. At present, CEH data is made freely available to researchers, and this provides effective support for ecological science. Moreover, the current approach aligns with the government’s drive towards open data and any change to private ownership will need to be considered carefully. It would be prudent to evaluate how BBSRC has handled ownership of and access to the Rothamstead datasets, and consider and problems that may have arisen.

3. Capitalising on recent investment

NERC has invested recently in new CEH facilities at Wallingford and Lancaster that align with the Centre’s current aims and objectives. It is important that the ownership model for CEH allows it to capitalise on this investment, and provide stability for its activities after a period of change.

4. Development of alternative ownership and governance models

A range of possible models for ownership and governance of the centres exists, and in developing proposals for further consultation we recommend that the structures used in the BBSRC centres and the James Hutton Institute are evaluated as part of the process. These may provide the basis for a model which provides a ‘win-win’ – a system which safeguards the public contribution of the centres and provides a national resource, while also allowing for additional outside investment that could lead to spin-out companies.

We look forward to contributing further as NERC considers its options and would be pleased to expand on any of the points above as needed.

Yours sincerely

William Sutherland
President
British Ecological Society
From the President

To

Judy Parker
NERC
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29 August 2013

FAO Professor Robert Allison

Dear Professor Allison

Review of NERC Research Centres

Thank you for inviting the British Hydrological Society (BHS) to present evidence to the forthcoming review of the ownership and governance of NERC research centres. BHS is a learned body with individual membership open to all who are interested in hydrology. We currently have over 1000 individual members, spread fairly evenly between universities, private and public sectors, and seek to provide a link between researchers and practitioners in hydrology. The Society is supported by the Institution of Civil Engineers (BHS is an Associated Society of ICE) and, to a more limited extent, by the Centre for Ecology and Hydrology.

The Society is not aware of the reasons behind this review, though we suspect saving money might be one of them. On the assumption that the review is to assess what might be best for hydrological science in the UK, and what the country might expect to gain from supporting it, we suggest that just looking at the ownership and governance structure is not perhaps the most obvious focus for a review to take.

Firstly we would ask you to consider what UK hydrological science needs. Hydrology is now part of the Centre for Ecology and Hydrology. Although we accept that there are considerable links between ecology and hydrology these are no greater, indeed probably less than, the links between hydrology and hydrogeology or hydrology and meteorology. It makes sense to us to consider the hydrological cycle as a whole, and it is baffling that research in such a fundamental science is so fragmented.

Many of the major advances made in UK hydrology were achieved when there was an Institute of Hydrology, which could focus on the subject. The catchment-scale studies, the flood studies report and low flow studies, advances in instrumentation and mathematical modelling, in fact all the developments that Wallingford Hydrosolutions now markets, were conceived, established and...
developed by the Institute of Hydrology. Much as we admire the current work of our colleagues at the CEH it has been in no way as significant as the major advances made in previous decades. Hydrology in the UK has languished since the formation of CEH. It is poorly resourced, fragmented, unfocussed and lacking any sense of long term aim.

This is a serious issue when the country faces growing problems with water management, drought and climate change, which brings us on to what the country should expect from hydrology and hydrologists. Hydrological understanding is crucial to our management of these issues, and they are of such pressing concern in the world that development of appropriate solutions is a significant international opportunity. It merits a focused research body that has support of and communication with central government.

Setting the agenda, co-ordinating effort and promoting UK science to the world are all political activities. It seems a nonsense to consider that it could be achieved with equivalent gravitas either by a commercial organization or piecemeal by competing universities.

As evidence for what could, and should, be done we cite the example of Singapore. Here a concerted effort is made to develop and sell the hydrological expertise of each country in a co-ordinated manner. The government has had a leading role in setting the direction of research and development, and in promoting the hydrological expertise of the country to export markets. It has co-ordinated political effort, the universities and business interests with the aim of becoming a regional or even world centre of excellence in some aspects of hydrology, especially in water resources management and water re-use.

This effort has included political support for research programmes, international awards and conferences -what is now the Singapore International Water Week conference for example. The government has also promoted the signing of international memoranda of understanding with target countries many of which, the Arab Emirates for example, used to be UK markets for our hydrological expertise. The UK hydrological industry in contrast is fragmented and, without such political support, continues to lose international markets.

It is difficult to see how the top level of hydrological infrastructure in this country could hope to compete if not directly supported by government.

We therefore ask that if the research institutes are to be reviewed, the review should consider how research into the whole hydrological cycle can be brought together, how the research agenda can be re-invigorated and focused on pressing national and international issues and how UK hydrological science can be promoted to the world.

We wish you every success on your review. If we can help in any way please let me know.

Yours sincerely

[Signature]

President, BHS
SUBMISSION TO NERC CONSULTATION: GOVERNANCE AND OWNERSHIP OF
NERC CENTRES

1. This submission has been produced jointly by the Geological Society of London, the Petroleum Exploration Society of Great Britain, the Committee of Heads of University Geosciences Departments and the British Geophysical Association. Together with the British Geological Survey (BGS), our organisations represent a significant part of the UK geoscience community, spanning academia, industry and government:

i. The Geological Society of London (GSL) is the national learned and professional body for geoscience, with over 10,500 Fellows (members) worldwide. The Fellowship encompasses those working in industry, academia and government, with a wide range of perspectives and views on policy-relevant geoscience. The Society is a leading communicator of this science to government bodies and other non-technical audiences, and works with others in the geoscience community to highlight the importance of the geoscience research base and its application to the economy and society. Its functions in this regard are complementary to those of the BGS.

ii. The Petroleum Exploration Society of Great Britain (PESGB) represents the national community of Earth scientists working in the oil and gas industry, with over 5,000 members worldwide. The objective of the Society is to promote, for the public benefit, education in the scientific and technical aspects of petroleum exploration. To achieve this objective the PESGB makes regular charitable disbursements, holds monthly lecture meetings in London and Aberdeen and both organises and sponsors other conferences, seminars, workshops, field trips and publications.

iii. The Committee of Heads of University Geosciences Departments (CHUGD) is the subject association of Geoscience (geology, applied geology, Earth science, geophysics, geochemistry and some environmental science) departments/schools based within universities in the British Isles. It promotes discussion and exchange of information between departments and provides a
point of contact between these and professional, government and quality control agencies.

iv. The British Geophysical Association (BGA) represents geophysicists in academia and industry who are members of the Royal Astronomical Society and/or the Geological Society of London. Its role is to promote geophysics and knowledge about geophysics at national and international levels.

2. Our comments below relate principally to the BGS, the research centre with which our organisations and the communities they represent are most closely involved, but many of our observations are also relevant to the other NERC centres whose ownership and governance is under review, particularly the National Oceanography Centre (NOC) which does significant geoscientific work.

3. NERC’s call for evidence notes the national importance of NERC centres in ‘providing a range of ‘national’ or ‘public’ good services that benefit a range of government departments and public policy formation’. We are pleased to see this role recognised, but its scope and benefits are much wider than this statement implies. Through partnerships with industry, BGS plays a vital role in wealth creation by providing underpinning or precompetitive data and research. It contributes to the UK’s research base more widely, through its own programme of excellent science, and through strategic partnerships and collaborative research programmes with universities. We note that NERC’s 2013 evaluation of its research centres rated the impact of BGS research outstanding or excellent in 91% of cases. Taken in conjunction with BGS’s partnerships with key higher education institutions, this constitutes a valuable asset to the UK. BGS’s services and activities also support the quality of life of the UK’s population, helping to deliver security of supply of energy and mineral resources, the sustainable management of wastes generated by our use of these resources, and preparedness for and response to impacts of natural hazards and environmental change. This work includes the provision of independent and impartial environmental impact studies and monitoring to ensure public safety, and the dissemination of public information, in relation to a broad range of industrial activities, especially in the energy sector.

4. These benefits are delivered through several (overlapping) nationally important functions:

   a. Survey and monitoring functions
b. National capability functions (e.g. analytical services provided by BGS laboratories, development of the GB3D national geological model, publication of commodities/mineral profiles)

c. ‘Contractor’ for government (e.g. assessment of shale gas resources, screening of potential areas under consideration for geological disposal of radioactive waste)

d. Advisor to government (e.g. on volcanic ash)

e. Participation and leadership in international initiatives (e.g. One Geology initiative to make geological map data of the world freely available, European Geoscience Data Infrastructure project, Global Earthquake Model)

5. In addition to these broader national functions, the future health and wellbeing of BGS is a matter of vital importance to the UK geoscience community, of which it constitutes an essential part. It is a significant employer of geoscientists, many of them Fellows of the Geological Society. Furthermore, the academic and industrial geoscience communities with which it works in partnership depend on BGS expertise, data and research outputs. The NOC is similarly important in some areas of geoscience.

6. In addition to its headquarters at Keyworth and a significant presence in Edinburgh, BGS has smaller offices and facilities throughout the UK. It also runs the Geological Survey of Northern Ireland, under contract to the Department of Enterprise, Trade and Investment, which works closely with the Geological Survey of Ireland. This cooperation has led to valuable cross-border and all-Ireland initiatives such as the Tellus geophysical and geochemical surveys.

7. We have no preferred model for the future ownership and governance of BGS and the other NERC centres. There is insufficient detail at this stage to comment on the merits or otherwise of any model NERC may be considering. A wide variety of potential ownership and governance models exist, encompassing a range of possible relationships with government and other public bodies, whether or not the centres themselves continue to be owned by NERC, or indeed remain in public ownership. To be fit for purpose, any proposed new model must meet a range of needs, and will have to be carefully designed and examined. Each centre should be treated separately. Any assessment of alternative models should be guided by the needs of BGS and NERC’s other centres, and those of their customers. It would be beneficial to seek advice from organisations with expertise and successful experience in outsourcing, which is not easy to do well. Some factors which should be considered when considering possible ownership and governance models are outlined below.
8. The nationally important functions outlined above must be safeguarded. The UK will continue to need a high-quality national geological survey, and it is essential that there is confidence in BGS’s long-term viability and excellence in these regards. Any new structure should ensure that BGS continues to be able to play a leading role internationally among national geological surveys. It must also be conducive to effective international data sharing. A degree of protection is likely to be needed for some functions of BGS, and possibly for the organisation as a whole, to provide these safeguards. NERC and central government will no doubt consider the implications of any models under which there is the possibility of BGS, or any other NERC centre, becoming bankrupt.

9. In other areas of activity, where BGS competes with commercial companies for work as a contractor (whether to public or private sector bodies), it should be ensured as far as possible that there is a level playing field between BGS and its competitors. This is not a straightforward matter, and will need careful thought. There is a risk that any protection extended to BGS to safeguard nationally important functions, together with its ownership of and access to its unrivalled data holdings, may lend it an unfair competitive advantage. On the other hand, it seems likely BGS will be obliged to share many of its data resources openly – something it will no doubt also wish to do, given its existing strong commitment to open data. Its competitive advantage would then lie solely in its expertise and ability to interpret the data, rather than in its ownership and access. If companies have access to data and associated research outputs generated by BGS work and investment, without being obliged to reciprocate, this could give unfair advantage to BGS’s commercial competitors. Care should be taken not to inadvertently ‘asset strip’ BGS of its data – arguably its principal asset and in large part taxpayer funded.

10. If the existing model for NERC centres is to change, thought should also be given to future governance and management arrangements for NERC research facilities, especially those which are closely associated with research centres (such as the NERC Isotope Geosciences Laboratory, in the case of BGS). Appropriate arrangements are likely to differ case-by-case.

11. The links between BGS and other NERC centres are of great value. For example, the holistic approach to environmental policy-making espoused by national administrations throughout the UK depends on a wide variety of research funded by NERC and carried out across universities and its own centres. Implementation of policy in this area is underpinned by work done across BGS, NOC and the Centre for Ecology and Hydrology (CEH).
Governments have shown a tendency, in implementing this approach, to undervalue geoservices, abiotic aspects of ecosystems, and the role of the geosphere in sustaining them. The marginalisation of these vital factors is likely to be exacerbated if effective links between the centres are not maintained.

12. No doubt NERC will review the experience of other UK Research Councils which have undertaken similar reviews of their own research centres, and in some cases relinquished ownership. NERC should also look at the ownership and governance models of other national geological surveys, and at reviews and instances of restructuring which have been undertaken internationally. Although they exhibit some significant differences, national surveys generally share many similarities and meet a number of common national needs. They are likely therefore to constitute a useful point of comparison, complementing the particular UK context. It is especially important that the international setting is considered, given the high regard in which BGS is held internationally, and its valuable leadership role. Of course, different national settings and political cultures have given rise to models which are unlikely to be directly applicable in the UK, but there may be useful lessons to be learned.

13. It is essential that any new model has the confidence of BGS (and other centres) and their scientists. They are uniquely placed to advise on existing arrangements, their benefits and deficiencies, and how these might be improved in future. They must have a leading role in decision-making about future ownership and governance arrangements.

14. We recommend a thorough analysis and review of each centre be undertaken before any final decisions are made. We strongly recommend consulting in detail on any particular proposed model, to ensure that it has the confidence of the wider geological community, relevant parts of government, customer groups and other stakeholders, including those with successful experience of outsourcing nationally significant services. In doing so, it would be helpful for NERC to set out the current and intended roles and functions of each research centre. We would be pleased to discuss how best to engage stakeholders in any review of the research centres and in developing specific proposals, and to canvass the views of the wider geoscience community on such proposals if NERC decides to take the matter further.

23 August 2013
Call for evidence: The ownership and governance of NERC centres

Response from the Royal Astronomical Society

The Royal Astronomical Society (RAS) has more than 3700 members (Fellows) working in areas related to the fields of astronomy, space science and geophysics. The Society works to advance these sciences and so we take a keen interest in decisions that may have an impact on the capability of British scientists to carry out research in these disciplines. We therefore welcome the opportunity to be involved with the consultation on this proposal.

In preparing this response, we have consulted with the Solid-Earth and External Geophysics Forums, convened by the RAS, but which both see attendance from senior NERC staff. We also liaised with the British Geophysical Association, the joint association of the RAS and the Geological Society (who will themselves put in a separate submission).

Geophysicists who responded are primarily concerned about the future ownership of the British Geological Survey (BGS) and the impact on the health of their scientific discipline.

The RAS response shares this concern i.e. that any change in status for the NERC centres should not have a detrimental impact on overall scientific activity. Although the health of the centres is not necessarily predicated on their position within NERC, there seems to be no great advantage to a change and a number of issues arise if they become private sector organisations, even if they are then run on a not-for-profit basis.

A variety of research institutes have been devolved from research council ownership in the past. Some appear to have prospered; some have closed or changed beyond recognition. It is suggested that no action be taken concerning national assets of the scale of the British Geological Survey without due consideration and consultation by NERC with its fellow research councils as to lessons learned and experience gained in change of ownership.

Turning to the BGS itself, this is an organisation that forms part of the core national capability for UK geophysics. Its present status allows it to be an honest broker between the rest of the public sector and private companies, who recognise its public good through the donation of research data. Its contribution in areas like the International Geomagnetic Reference Field (IGRF) and the curation of data over long periods of time is also invaluable. Should a change of ownership take place, the Society urges NERC to ensure that these and similar roles are given due protection, given that they may not always lead to immediate economic returns, but are nonetheless vital to basic geophysics research.

In general terms, if the operation of centres like BGS is handed to a large private sector company then other conflicts of interest and pressures will need careful management. For example, large corporations might simultaneously have interests in e.g. waste management but at the same time then be involved with advice on hazards. A private sector shareholder-based organisation might also face a conflict of interest if required to publish research results on an Open Access basis. NERC should also consider how safeguards can be put in place to ensure that the sharing of data between the UK and international partners for scientific purpose continues without additional hindrance.
The consultation document also does not make it clear how the assets associated with centres (i.e. the NERC services and facilities listed at [http://www.nerc.ac.uk/research/sites/facilities/list.asp](http://www.nerc.ac.uk/research/sites/facilities/list.asp)) would be affected by a change in ownership. These are now run by the centres, rather than centrally by NERC in Swindon. If NERC proceeds to move the centres to the private sector it would need to put arrangements in place to ensure continued access to these facilities at a sensible cost for scientific research.
The Challenger Society for Marine Science

29th August 2013

Consultation on the Ownership and Governance of NERC Research Centres. Evidence submitted on behalf of Challenger Society for Marine Science by Professors Hilary Kennedy and Harry L. Bryden FRS.

Introduction

The Challenger Society for Marine Science formed 100 years ago is the leading learned society for marine scientists in the United Kingdom. Challenger Society holds bi-annual scientific meetings summarising progress in UK marine science and bi-annual prospectus meetings to help develop strategic marine science nationally and internationally. The Society also tries to contribute constructively to marine policy discussions when asked. Nearly all Society members interact with the present National Oceanography Centre at Southampton and Liverpool (NOC) and they have a strong interest in the future ownership and governance of the NOC. The following Evidence has been collated by Harry Bryden and Hilary Kennedy and has been approved by Challenger Society Council.

International Context

Every major country bordering the sea has marine laboratories to provide long-term, strategic research on subjects of relevance to national policy and interests and to provide effective interaction with international institutions and organisations. With environmental science issues increasingly coming to the attention of society, and given the pivotal role of marine systems in many of these issues, the need for strategic marine research that can inform international collaboration on global environmental policies is growing. The UK will therefore continue to require a substantial marine science research centre to address societal issues. The benefits of existing NERC centres were well documented in the recent NERC strategy "The Business of the Environment". The NOC has a strong international reputation for marine research and this profile is essential if the UK wants to have an organisation that has international credence, and is able to provide information on long-term changes, particularly relating to climate, and guidance on the implications of these changes.

Recommendations:

The Society agrees that it is good practice to periodically review the way marine science is funded by the public sector and to consider whether changes in governance and ownership of the NERC Research Institutes could be beneficial. Given that the “call for evidence” does not contain any details of specific ownership/ governance arrangements, only our general views can be given at this stage.

Presently NERC funds strategic marine research primarily in Centres under the umbrella of National Capability. In the Society's view, NERC must continue to provide sustained support for strategic marine research, with a focus on national capability for long-timescale activities. Any proposed change would benefit from a combination of strategic and blue skies research, because they feed off each other: top quality research is often triggered by operational problems and new advances can improve operational practice. Some of today's major "blue skies" scientific problems (eg the causes of seasonal, interannual and
decadal climate variability, ocean acidification, geoengineering) are also strategic issues that require sustained observations and modelling to unravel. It is not clear or demonstrated what alternative model for governance or ownership might provide an equivalent capability. Thus we recommend that NOC should remain part-funded by NERC to provide these capabilities. Any change could take many forms, but existing beneficial linkages to HEIs and the private sector should be protected. The Society would like the opportunity to comment on proposed new models when they are available.

Summary:

The Challenger Society for Marine Science is very willing to continue to help with developments at the NOC and looks forward to working with centre scientists in the promotion of the UK's leadership role in international marine science.
Response to Call for Evidence:

The ownership and governance of NERC Centres

1 Introduction to the ETI

The Energy Technologies Institute (ETI) is a public-private partnership between global energy and engineering companies and the UK Government. The ETI carries out two key activities – (1) modelling and analysis of the UK energy system to identify the key challenges and potential solutions to meeting the UK’s 2020 and 2050 targets at the lowest cost to the UK, and (2) investing in major engineering and technology demonstration projects which address these challenges with the aim of de-risking solutions – both in technology and in supply-chain development – for subsequent industry uptake.

See more at: www.eti.co.uk

The ETI has worked, and continues to work, with all three of the wholly owned NERC Centres (BGS, CEH and NOC) on a number of its projects in our carbon capture and storage (CCS), bioenergy and energy storage and distribution technology programmes. These areas are as diverse as carbon dioxide storage, energy storage, mineralisation, ecosystem land use modelling and the use of automated unmanned marine vehicles. Our experience and interests lie in the Centres’ ability to deliver high quality project work, to aid our own mandate rather than their wider research and ‘national contribution’ roles. However we recognise that these wider roles underpin the sort of project work we require.

Observations are offered in three areas: scientific quality, commercial approach and project delivery.

2 Scientific Quality

In all of our work with NERC Centres, the scientific work has been of high quality, providing access to world-leading experts and the high quality teams that work alongside them. Any change to the ownership and governance of NERC centres must not have any adverse effect on this proposition.

The Centres manage many critical, world-leading national datasets. The long-term development and management of such datasets is vital to understand issues such as climate change trends. Such datasets must be protected and long-term national funding provided to maintain their upkeep. It would destroy value if they were not kept up to date.

3 Commercial Approach

In order to ensure that high quality scientific work is made available in the most appropriate manner we recommend that the Centres have more flexibility and access to more, professional expertise to negotiate commercial contracts in any alternative governance arrangement.
All of the centres have considerable knowledge and IP portfolios and, in order to maximise their external use along with any revenues generated for an independent centre, there should be appropriate commercial and legal arrangements in place. Sufficient resources need to be in place to ensure this happens.

Financial arrangements should also be in place to ensure the centres have sufficient financial covenant to back contractual promises contained in more commercial contracts. This would help counter some of the challenges when managing complicated IP issues, financing arrangements relating to charging for access to IP such as data and when dealing with external organisations’ requirements and their approach to risk.

4  Project Delivery

Any potential change in governance structure could also improve the delivery experience to end customers by ensuring that the high quality scientific work that is produced is delivered in a professional manner to ensure it meets customer requirements.

Taking a more commercial approach would allow the organisation to focus more on the needs of the customer, enhance the management of individual projects and ensure the necessary skills and resources (both scientific and management) are made available to appropriate levels across the organisation to ensure that projects are delivered on time and on budget.
RSPB response to consultation: NERC is considering the merits of establishing its research centres as independent bodies, outside of the public sector.

For the attention of: Judy Parker, Head of Communications, Natural Environment Research Council, Polaris House, North Star Avenue, Swindon SN2 1EU

Dear Judy

I am writing on behalf of the RSPB to express our concerns with regards the NERC consultation considering the merits of establishing its research centres as independent bodies. The financial model for such a change, how it would operate and prioritize work areas, are not made clear in the consultation, and would be critical in determining its impact, good or bad. The Centre for Ecology & Hydrology (CEH) in particular is held in the very highest regard by the RSPB, which is both an end user of CEH’s considerable research output, and also an active collaborating partner in multiple research and monitoring projects.

We are concerned that any such move could significantly weaken scientific capability and understanding in the UK, most especially in relation to the maintenance of long-term monitoring and research programmes involving CEH. The ecological research led by CEH is first class and internationally renowned, particularly the long-term monitoring programmes and initiatives; including Biological Records Centre, UK Environmental Change Network, Seabird population ecology programme, Countryside Survey/Land Cover Map programme, Predatory Bird Monitoring Scheme, International Long-Term Ecological Research (LTER) site etc. These are all held in very high regard and are of critical importance in the UK in charting and understanding ecological change in UK and in an International arena. Any move that jeopardised such essential long-term ecological monitoring and research programmes would be short-term and highly regrettable, and ultimately would be very costly to correct. The loss of long-term monitoring and research programmes would take with it the specialized ecological expertise in data gathering, storage and analysis of such temporal-spatial datasets, and general ecological expertise in the UK.

Arguably, as a privatised independent entity, CEH would need to follow short-term funding sources and seek consultancy contracts to pay the bills, rather than having a strategic research function, upon which its world-class reputation and unique ecological UK-role are based.

This consultation raises the bigger question of how the future of critical long-term monitoring and environmental research programmes in the UK will be secured by the NERC.

Yours sincerely

Richard D. Gregory
Dr Richard D. Gregory
Head of Conservation Science (Acting)

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rsbp.org.uk
Let’s give nature a home

The RSPB is a member of BirdLife International, a partnership of nature conservation organisations working to give nature a home around the world.
The Royal Society for the Protection of Birds (RSPB) is a registered charity: England and Wales no. 207076, Scotland no. SC037654
27 August 2013

Judy Parker
Head of Communications
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon
SN2 1EU

Dear Judy Parker

The Ownership and Governance of NERC centres

Thank you for the opportunity to respond to this call for evidence. The British Trust for Ornithology confines our evidence to the knowledge we have as a result of our long and close working relationship with the Centre for Ecology & Hydrology and with its predecessor body, the Institute of Terrestrial Ecology. Our interaction with CEH is primarily on the ecological side of its business. We recognise and greatly value CEH as an organisation with a unique portfolio of expertise and datasets. CEH occupies an essential niche in UK science in that its scientists and facilities offer broad and well-balanced expertise allowing it to address environmental problems in an exceptionally integrated and strategic way.

At a time when environmental quality is facing an unprecedented range of pressures, it is not in the interests of society for the effectiveness of the national resources provided by CEH to be diminished. Substantial changes to the ownership and governance of CEH will inevitably be accompanied by a risk that such reduction of capability will be an outcome, if not in the short-term then over the longer-term. Unfortunately no information has been given concerning possible future models for CEH, so it is not possible to be more specific but we remain concerned that there will be gradual loss of skills, resources and integrated capability currently residing within CEH that are not clearly replicated elsewhere. We note that Rothamsted Research has become an independent charitable company, though continues to be sponsored by BBSRC. Rothamsted Research continues to deliver exceptionally high quality science, though in recent years there has been reduction in its long-term monitoring capability which is a serious cause for concern from an ecological perspective.

Whilst universities are technically private sector bodies they receive substantial core funding from government which, together with competitive funding, allows their academics to undertake a vast range of essential non-profit-making work. If CEH is to maintain long-term scientific credibility and its value to society under a different ownership and governance arrangement, then the issue of core funding would have to be addressed, otherwise there is a serious risk that the more strategic functions that it delivers will not be sustained.

One area of particular concern is how CEH could maintain its high quality programmes of environmental monitoring and surveillance. Long-term data sets are of enormous value in identifying environmental change and in elucidating the drivers of change. Commitment to the
public funding of such work is essential – it cannot be guaranteed by any other route. Three examples of where this directly relates to the work of CEH are as follows.

First, the work of the Biological Records Centre (BRC) is central to understanding changes in the status of Britain’s biodiversity. Along with organisations such as ourselves, the BRC provides the essential national data source on trends in much of our wildlife which give critical insights to pressures on the environment. The BRC gathers much of these data through specialist recording societies and networks of expert volunteer recorders who require the focus, feedback and infrastructure provided by BRC. Second, the Predatory Bird Monitoring Scheme provides an essential means of monitoring environmental contaminants of critical importance both to wildlife and humans. Third, CEH’s research on Britain’s internationally important seabird populations is a fine example of the value of long-term ecological research in the context of a dynamic environment. The performance of seabirds, in terms of their survival and breeding, gives critical insights to the processes operating within the changing marine environment including climate change, food supplies and renewable energy generation.

CEH provides an essential strategic environmental function underpinned by core funding from government. Any new arrangements must provide some mechanism for maintaining the security of its integrated approach and its role in long-term ecological survey and research.

Yours sincerely

Dr Andy Clements
Director
Call for evidence:
The ownership and governance of NERC centres

Response from the Joint Nature Conservation Committee (JNCC)

JNCC welcomes the opportunity to provide evidence to support NERC’s consideration of the merits of establishing its research centres as independent bodies, outside of the public sector.

JNCC’s main interaction with NERC research centres is through a very long standing partnership with the Centre for Ecology and Hydrology (CEH) on a number of activities, and our collaboration on marine projects, mostly involving offshore survey and analysis, with the National Oceanographic Centre, British Geological Survey and the Sea Mammal Research Unit marine issues.

The Council states that the change being considered could be an advantage to the centres in allowing them to develop freely and in line with their overall business and science objectives. This would be a welcome step forward, but it is difficult to see from the information available how a change to governance and ownership would achieve this. It seems just as likely that the change could cause re-direction of overall business and science objectives which JNCC would see as unwelcome. JNCC’s considerable interactions with CEH over many years have not revealed any serious constraints to the partnership, so these proposals for change have the potential to de-stabilise our joint working with CEH and add uncertainty. If more information were available it may well provide the reassurance that JNCC needs to embrace the change and work with CEH to achieve the advantages seen by the Council.

JNCC’s marine collaborations have helped bridge the gap between research and operational delivery, applying research outputs within the operation of science-policy. Any change of direction by these institutes perhaps to a more tightly focussed research agenda, particularly to increase revenue, would be to the detriment of the UK’s science delivery.

There are a number of CEH functions and attributes that JNCC regards as critically important. All of these are rooted in the careful and unique balance that CEH has achieved between its science quality role and its provision of a range of ‘national’ or ‘public’ good services that benefit a range of government departments and public policy formation.

For JNCC this makes CEH a natural partner when trying to bridge the science-policy interface. CEH represents the NERC community in policy fora, understands environmental policy, has the ability to deliver applied science to the appropriate format and quality, provides scientific tools to support policy and runs long term schemes to meet statutory requirements for evidence. No other body is so appropriately placed to do this work. Consequently, JNCC and CEH have developed partnerships, many long-term, around:

- Delivery and running of the National Biodiversity Network (NBN)
- The Biological Records Centre
- The Butterfly Monitoring Scheme
- Various aspects of Countryside Survey
- LWEC Ecosystems Task Force
- Engagement with Citizen Science

Similarly JNCC has effective partnerships with the NOC, BGS & SMRU concerned with:

- Offshore surveys to support protected sites
- European funding to develop new approaches to evidence
- Enhancing data collection and accessibility
- Science underpinning policy advice on managing marine mammals

It is very important to JNCC that these partnerships are maintained and if possible enhanced. We are open-minded as to how this might be achieved.

Other important attributes of CEH are its integrity, impartiality, reputation and capability. Capability is particularly important as CEH provide a significant portion of the national capability for applied environmental science that would have serious consequences if diluted or re-directed. Similar attributes apply to the other centres with which we deal.

As CEH is JNCC’s most significant partner on science issues, and NOC, BGS and SMRU support many of our marine delivery programmes, we would appreciate being kept fully informed and, if appropriate, involved in any further development of this proposal.

Paul Rose  
JNCC Director Evidence and Advice
Consultation on ownership and governance of NERC centres

Response by Butterfly Conservation

27/8/13

Butterfly Conservation has had a long and productive relationship with the Centre for Ecology and Hydrology and is concerned that any changes in ownership and governance might adversely affect this relationship and the very important long term strategic research that the institute conducts. The consultation document is very short on any detail so it is difficult to reply in anything other than a general sense.

BC particularly values the independence of CEH and its research, which looks at many issues that are crucial to the conservation of biodiversity. In collaboration with CEH, we run the long running UK Butterfly Monitoring Scheme and Butterflies for the New Millennium recording scheme, both of which are world-leading schemes both in terms of the mass participation and quality of scientific output. Over 10,000 volunteers contribute freely to these schemes and many the data have been used in over 50 scientific papers in recent years.

We also greatly value the work that CEH does in supporting recording schemes via the Biological Records Centre as well as the scientific support they provide in analysing the results from these schemes. Such long term datasets are vital to provide a strong scientific base to our understanding of ecological change and to underpin UK strategies to meet the Convention on Biological Diversity, including the biodiversity strategies produced by the devolved UK administrations.

We work with CEH scientists to analyse trends in butterflies and produce definitive reports on the State of the UK’s butterflies as well as government indicators. It is vital that CEH remains an independent body and retains its ability to support voluntary organisations like ourselves. There is a big concern that a different governance route would put this independence at risk and a move to a more commercial basis would remove the ability to support the voluntary sector.

We sincerely hope that these factors are considered carefully before any changes are made and that the voluntary sector is consulted more fully on any changes. It is extremely important that the UK retains a credible and independent scientific body looking at the natural environment.

Dr Martin Warren
Chief Executive
Butterfly Conservation
Ms Judy Parker
Head of Communications
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon
SN2 1EU

15 August 2013

Dear Judy

The establishment of NERC Research Centres as independent bodies

The National Biodiversity Network Trust welcomes the opportunity to comment upon NERC's plans to change the present governance arrangements for its research centres and establish them as independent bodies. The Trust has particular interest in NERC's plans for the Centre of Ecology and Hydrology with which it has a long standing partnership.

NERC played a leading role in the establishment of the NBN Trust, and the National Biodiversity Network that it leads, through the personal involvement of Lord Krebs, then chief executive of NERC. The continuing involvement has been through CEH; until recently through Professor Mark Bailey who was a trustee. This role has now passed to Dr Richard Pywell. At a more practical level, Biological Record Centre staff members have played an important role in both the development of the NBN Gateway, and in populating it with data from the national recording schemes supported by BRC.

We are now moving to a new phase in the evolution of the NBN. A new version of the NBN Gateway will soon be rolled out. This new web-service driven Gateway will continue to have its component parts hosted at CEH Lancaster on a custom server stack purchased by CEH. We are also actively exploring the use made by the research community of volunteer data; we are being supported in this by BRC staff.

The relationship between the NBN Trust and CEH is therefore as intimate as it is complex and multifaceted. I am sure that the NBN could not continue without the enduring support of CEH.

The NBN Trust is also fully aware of the other external relationships that CEH has developed and which also underpin the NBN. These range from partnerships within the public sector, perhaps most strongly with JNCC but also with other agencies, the research sector and, most sensitive of all, with the volunteer recorders whose activities underpin the NBN.
The consultation document alludes to the possible benefits to NERC of changes in the governance of its research centres. In particular there is reference to a renewed focus on its externally facing roles as funder and champion for the environmental sciences. Whist this may be true, the NBN Trust is not aware that NERC has been in any way deficient in undertaking these roles in the past. Turning to the research centres, CEH in particular, it is not clear what benefits might actively accrue to them following changes in governance. There are no obvious new opportunities that might arise. CEH already builds external partnerships, it already attracts external funding; it already plays a full part in national and international research, it already has a clear identity and presence. It might be easier to visualise, and therefore engage with and comment on, what these benefits might be if there was some clarity over the style of independent organisations NERC had in mind for the centres. Clearly from the NBN Trust’s point of view there is a major difference between a profit orientated plc compared to perhaps a company limited by guarantee with charitable status (as is the NBN Trust itself). The actual style of governance and incorporation could have a major impact on the NBN Trust and our relationship with CEH.

This is even more pronounced for the national recording schemes themselves who may not react well to the change in circumstances of CEH. As so much of the relationship with this community is founded on trust, the NBN Trust would wish to see greater clarity being given to the actual long term vision planned for CEH. In particular how this change in governance may impinge upon its relationship with the other partners within the NBN Trust will need to be examined further.

Experience dictates that a change in governance of the scale intended will be unsettling both internally and for external partners; it may also carry with it the real risk of unintended consequences. The NBN Trust is therefore of the view that it is essential for direct and positive new benefits to be identified for the research centres themselves as a result of any changes.

The Trust is entirely content with its present relationship with CEH. Therefore, I and my Board would be seeking assurances from NERC that any change to the governance of CEH would not jeopardise the continuance of this relationship or the NBN as a whole.

With kind regards,

Michael Hassell

Prof Michael Hassell CBE FRS
Chairman
NBN Trust
NERC CEH consultation:
August 30th 2013

From National Forum for Biological Recording (NFBR)

Although we in the wider recording community all rely on BGS for geology information and analysis and the National Oceanography Centre for a marine context, our main concern here is the survival of the Centre for Ecology and Hydrology (CEH) and its environmental services, especially the Biological Records Centre (BRC).

Our comments are somewhat limited by the lack of information on the current funding arrangements and the details of the various options that could be possible for the future. We are raising our concerns that any change could pose a risk to the present arrangements and services which we as an organisation, on behalf of many others, value highly.

Currently CEH is valued for the quality of its scientific research, its independence, integrity, authority and competence.

Its BRC service is especially valued because of:

- its continuing development of its historic role in organizing national recording schemes, collating and interpreting large scale national datasets and publishing the results.
- Its role in undertaking original biological research relevant to understanding the UK biodiversity in a changing environment
- Its role in manipulating and analysing other large national datasets and its maintenance of the NBN Gateway
- Its role as a centre of biological recording expertise that is available to all recording groups and individual recorders, and the international links it supports especially as a European leader in the environment.
- Its role in publishing national summaries across the UK taxa.
- Its role in developing partnerships to develop and extend its services and share the cost of projects and publications.
- Its role as figure head for innovation in biological recording and outreach to new communities and raise public awareness of recording and its role in understanding the environment.

The above makes the CEH and its BRC services unique in the UK and key to the exploration, understanding and consequent protection and enhancement of the UK’s biodiversity. Its well-known national and international status for research and for helping the serious and aspiring naturalist gives it a unique place in biological recording. If it wasn’t there it would have to be invented.
NFBR expects that any change in ownership and governance of the CEH/ BRC should ensure they will still:

- operate nationally and for the ‘public good’.
- operate in a way that encourages the current numbers of volunteer recorders to feel valued, and working towards the common good and not supporting a commercial enterprise for commercial gain.
- remain scientifically independent and be free to publish material that may be politically sensitive or not to the advantage of its funders.
- support the national recording schemes, and be able to expand them as may be required by any increase in multi-taxa recording.
- retain its current ability to undertake research within its own priorities as separate from externally funded research projects.
- retain its current quality of service.
- plan to retain its skilled personnel through suitable contracts that encourage the building of on-depth knowledge and skills, and engage in the long-term relationships with the recording community that are so productive and valued, (as opposed to short-term contracts between many personnel so favoured by some academic institutions).
- have sustained finances and will its current capacity for work be maintained.
- have flexibility and opportunity to grow capacity as circumstances may change.
- give clarity as to who directs research, to what purpose.
- had the means to meet the wider biological recording community's needs.
- serve the 2020 Biodiversity Strategy

The NFBR believes the next few years will be a crucial time for the UK's natural environment. Although there are key strategies in place, such as the Biodiversity 2020: A strategy for England’s wildlife and ecosystem services (go to https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf ), there is widespread concern about how they can be put into practice and deliver what is needed in terms of biodiversity assessment, protection, enhancement and monitoring.

CEH and its BRC are key components of a wider partnership of specialist organisations that are working together to collect and make sense of the large quantities of UK biological information that a far larger network of volunteer recorders and practitioners continue to put together.
This is not the time to casually restructure such a key component if it risks its work in delivering sustainable biodiversity and its ecosystem services. However it could be the time to strengthen and invest in it. NFBR believes that the decision to change the ownership of CEH/BRC should be decided by that outcome - will the change increase or decrease their effectiveness in terms of capacity and quality and their role within the work of ecological monitoring and environmental management that strategies such as Biodiversity 2020 require.

Part of that calculation should include how any change will temporarily divert organisational and individual energies when important work on UK biodiversity priorities need to continue. National biodiversity priorities and many individuals who contribute to the wider 'national biodiversity network' depend on CEH/BRC and cannot wait several years for any lost momentum to be regained.

NFBR has concerns over the process of deciding on the future of CEH/ BRC and we would appreciate more details of any independent review of the decision and we would like to see a clear breakdown of any comparison of costs for the options for the current and planned arrangements - ideally by management, staff, facilities and research costs etc .

Finally NFBR wishes to thank NERC for its support of the CEH and its BRC and we hope it will continue to do so under any future ownership or management arrangements, and develop one of its most useful organs for research, environmental management and public engagement.

Graham Walley
Chairman
National Forum for Biological Recording
c/o Leicestershire County Council
Room 400
County Hall
Glenfield
Leicestershire
LE3 8RA
Dear Ms Parker

CALL FOR EVIDENCE: THE OWNERSHIP AND GOVERNANCE OF NERC RESEARCH CENTRES

RESPONSE FROM NATURAL ENGLAND

Natural England is grateful for the opportunity to provide evidence on the implications of any change to the ownership and governance of NERC’s research centres. Natural England (NE) is the government’s statutory adviser on the natural environment in England. Our purpose is defined in the Natural Environment and Rural Communities Act 2006: “to ensure that the natural environment is enhanced, conserved and managed, for the benefit of present and future generations, thereby contributing to sustainable development.” In fulfilling our purpose, Natural England works closely with CEH and BGS, and we also use data provided by the NOC. Our response considers the impact on these three centres.

General comments applying to all centres

1. Our main concern from a Geographic Information perspective is the potential impact any change may have on our data sharing agreements with NERC research centres (notably CEH and BGS). Many datasets used within Natural England are based upon master datasets owned by CEH and BGS. Although we do already pay for the use of several of these datasets, we have strong relationships with the centres and our current agreements represent good value for money. We would seek assurances that the cost of accessing these data would not increase under any new governance or ownership arrangement. In this regard, we also note that while NERC research centres remain in the public sector,
they are required to engage with the various initiatives and strategies currently being developed as a result of the Shakespeare report which include requirements of transparency of data and openness, data sharing etc. This requirement would presumably no longer exist under certain ownership models, potentially leading to changes that make it more difficult and/or more costly to access valuable data and evidence.

2. We are also concerned that there should be no reduction in the **Capacity and Capability** of NERC research centres. Being public bodies has enabled these centres to take a strategic approach to the development and retention of skills, and this has benefited Natural England and others in the environment sector, through continuity of scientific excellence, facilitated by the ability to develop and maintain long-term and productive working relationships with key staff in core work areas. This goes beyond what is typically encountered in a more time limited or commercial environment. NERC researchers take steps to maximise the scientific value of their research, and will work with us beyond core monitoring/research projects to include the provision of training and development activities, technology transfer and communication of outcomes via conferences and scientific papers. In effect, the current set up as research centres propagates a vocational attitude to the delivery of work that is reflected by NERC employees ‘going the extra mile’. We are concerned that changes in ownership or governance could result in a workforce with a broader and shallower skill set, who may be less willing or able to add value, if they need to be more accountable for all of their time. It’s possible this could cause ‘a brain drain’ as the best scientists head for universities, where they might benefit from academic freedom, but where, in our view, they risk losing touch with practical delivery which is an important part of much environmental monitoring work that they currently undertake for us. Any change to a commercial research institute, for example, might be able to sustain a role as a link between academia and delivery, but we’re not convinced that commercial practices wouldn’t drive it towards being just another environmental consultancy (of which there are already many).

**Centre for Ecology and Hydrology**

3. **Online species data**

CEH has been very influential in developing the on-line species recording capability – including the Indicia concept and a central ‘community warehouse’ for all species records. We will be further developing our strategy around on-line management of species data in future as part of an NBN Trust network partnership process. The key issue for us here is how this development work and input to a wide partnership would continue under any new governance or ownership model. We would be concerned that CEH would not be able to be an independent partner in the NBN in the way that they have so far – including contribution of staff expertise to projects.

4. **Data storage**

CEH are also responsible, via funding from Defra, for the data storage of and online access to all of NE’s long term monitoring data and that of the Environmental Change Network.
We would seek assurances that they would be able to maintain and develop these long-term data sets securely, reliably and affordably under any new governance and ownership.

**British Geological Survey**

5. BGS maps and memoirs provide Natural England with an invaluable and detailed description of the geology, geomorphology and natural hazards of Great Britain (see Annex for further details of how we use these maps). The data BGS holds and publishes has been used by Natural England and its predecessors since the first national nature conservation legislation was passed in 1949. We are concerned that any change in ownership or governance would increase the cost of access (via licenses) to these maps and mean that some added value that is currently provided free (like BGS promoting geology to the general public) would no longer be available without additional costs. Our VCO partners might also struggle to afford the level of access they currently enjoy. Having more limited access to these data would have implications for Natural England both in terms of our designations work (e.g. notifying geological SSSIs) and the quality of our statutory advice (which could in turn reduce the quality of outcomes in this sector). We are also concerned that future efforts to update BGS products should not be overly determined by any ability to realize commercial potential. For example, we would not want to see further divergence in the quality of maps (i.e. how up-to-date they are) between rural and urban areas, even though urban maps often have more commercial potential because of their use to developers and planners.

6. If change was to occur, any future ownership and governance model should ensure that up-to-date geological and geo-morphological data and products remain available to Natural England (and ideally to those involved in local geo-conservation groups) at an affordable cost. Furthermore, we consider it important that safeguards are put in place to ensure continued involvement of the BGS in promoting geology to the general public, maintaining photographic records and in engaging in promotional, educational and conservation initiatives is also highly desirable for the added benefits this provides.

7. The BGS is a signatory of the pan government multi-beam data and survey sharing MoU, and is increasingly making more data freely available (funding once for multiple uses) which helps us in areas such as Marine Protected Area identification. BGS was also a major partner in the now abandoned MALSF survey work, for which we have used the data for free in various projects. We are concerned that any change in ownership or governance should not lead to increased cost in accessing their different data sources, and that the IPR of datasets remains in public ownership.

**National Oceanography Centre (NOC)**

8. NOC are involved with the coastal observatories and while we do not directly fund these observatories, NE benefits from Defra’s funding which enables us to receive a lot of information without charge. A loss of this service (or a significant increase in costs) would
impact upon our ability to provide information for the marine environment, and so we hope that this can be guaranteed in any future ownership or governance model.

Conclusion

9. In summary, our main concerns regarding any change in ownership and governance arrangements for the NERC centres are:

- We are able to maintain a relationship with NERC centres that is based on a strong commitment to partnership, collaboration, and joint strategies and initiatives, and that these are not eroded by, for example, a focus on revenue building.
- NERC centres own and manage many datasets upon which Natural England depends to inform our delivery and advice. Although we currently pay both CEH and BGS directly for data, we recognize their products represent good value for money, and we hope safeguards can be put in place to ensure the costs do not increase.
- More generally, we recognise the fundamental role that the datasets currently owned and managed by NERC centres play in our understanding of the natural environment within the UK and at international levels. The collection and management of these data has been supported by many years of public funding and they represent an enormously important and valuable public asset. It is consequently essential that there is full consideration of the consequences of any changes that would lead to the IPR of these datasets becoming owned by an institution outside the public sector.
- We are also concerned to avoid the loss of the ‘added value’ that we get from working in partnership with NERC centres. Added value comes in a number of forms including ‘free’ access to data and map updates (e.g. when we have contributed to the original datasets through our partnerships) and access to scientific expertise. We hope, for example, to retain the ‘pay once and re-use a lot’ principal we gain from the current partnership approach.

I hope this response is helpful and would be happy to provide any further explanation or detail that would be useful.

Yours sincerely,

Peter Brotherton
Annex - Examples of Natural England’s use of British Geological Survey maps

1) BGS maps and descriptions are used in undertaking the Geological Conservation Review, the GB-wide conservation audit that underpins the 1200 geological and geo-morphological SSSIs that make up our geodiversity SSSI series.

2) BGS descriptions of the geology of different parts of Great Britain, as well as of specific sites, are used by NE on an almost daily basis to help inform our decision making about SSSI condition, designation and management.

3) BGS reports, maps and digital data are also used to underpin our work writing National Character Area profiles, providing hydrological and coastal change advice, designating marine conservation areas (e.g. MCZ and SAC identification processes) and in some cases in planning habitat restoration.

4) BGS data is also used by our partner (often VCOs) local geo-conservation groups to support their work on approximately 3700 Local Geological Sites. BGS promotional material and websites help inform planners and the public about geo-diversity and BGS staff have contributed their expertise to the setting up and running of Global Geoparks. All of these activities help support the work of Natural England.

5) In terms of Natural England’s business, continued access to BGS data, maps and reports by Natural England and its partners in the voluntary sector or local authorities, at an affordable cost is essential to the future management of geo-diversity features on SSSIs. This in turn contributes to our understanding the natural environment as an integrated whole.
Professor Duncan Wingham
Chief Executive
NERC
Polaris House
North Star Avenue
Swindon
SN2 1EU

29th August 2013

Dear Duncan,

THE OWNERSHIP AND GOVERNANCE OF NERC RESEARCH CENTRES:
CALL FOR EVIDENCE

I write in response to NERC's call for evidence to enable you and the NERC Council 'to consider the benefits to NERC science of establishing its Research Centres as independent bodies, outside the public sector.' The University of Southampton is a charity and while we receive a significant part of our income from the public purse, for the purpose of this call for evidence, I consider that the University is strictly 'outside the public sector.'

Attached is our submission which we have sent separately to Judith Parker as requested. It is divided into two parts: Generic Issues for all centres, and specific Issues in relation to the National Oceanography Centre.

Given past history and diversity of the sector the University considers that it is unlikely that there is one solution for all the centres, especially given that BAS and the various NERC funded CLGs delivering both research and national capability are not included in the review.

We highly value our relationship with NERC through our past hosting and current co-location with NOC at Southampton. We see significant risks if an outside third party were brought in to run the NOC. However, if you are moving in the direction of outsourcing, I would be keen to explore with you how the University of Southampton could take on a greater level of ownership at NOC Southampton. This could include our subsuming responsibility and ownership of the leasehold of NOCS, and employment and management of scientific staff. A CLG, hosted by the University, might be created for the major facilities and services. Further detailed work would be needed to identify potential models and my staff are more than willing to engage with yours in this discussion.

Yours sincerely

[Signature]

Professor Don Nutbeam
Vice-Chancellor
Title: Consultation on Ownership Models for NERC Research Centres and Surveys – University of Southampton Response

From: Professor Don Nutbeam, Vice-Chancellor

Date: 30th August 2013

Summary

The document considers generic issues relevant to ownership of NERC-funded research institutes before considering Southampton specific issues related to the ownership of the National Oceanography Centre (NOC). It concludes by outlining a possible way forward for NOC.

Overall issues

On the overall issue of institute ownership, it is essential that whatever the model, the public good is maintained. This means ensuring access to facilities and data for the UK scientific community, business and the wider public sector. Thus privatisation in the strict sense of the word would not be ideal. This does not, however, rule out outsourcing of the delivery of specific services as has been successfully done in other countries (e.g. research vessels in Ireland and Germany) and in other environmental sectors in the UK (e.g. Centre for Environment, Fisheries & Aquaculture Science (CEFAS) and Bangor University research vessels).

Although not in the scope of the consultation it is worth emphasising that much national capability is currently being delivered by CLGs (e.g. sustained observing by Plymouth Marine Laboratory (PML)/Marine Biological Association (MBA)/Sir Alister Hardy Foundation for Ocean Science (SAHFS) in Plymouth; sustained observing and national culture collection at Scottish Association for Marine Science (SAMS) in Oban).

Co-location/hosting/integration with Higher Education Institutes (HEIs) works extremely well. There are some locations which are distant from University campuses where maintaining facilities has a sensible purpose or the fit with the most adjacent University is not good. However, where possible, even at these sites links with appropriate Universities can work (e.g. joint appointments, postgraduate training).

Some of the functions and activities of NERC Centres such as service provision, ownership and operation of large facilities and research infrastructure, plus operational science and forecasting may not be compatible with the mission of HEIs and might be best dealt with by other arrangements. These need to be examined on a case by case basis.

Where NERC Institutes lie within HEIs, it is important that their mission in delivering public good science, including strategic research and operational modelling and observation, is respected and nurtured.

NERC is urged to consider best practice from experience of BBSRC and MRC institutes and units being integrated in the HEI sector. In considering ownership options there is unlikely to be a single solution for all the NERC wholly owned centres and surveys. A more textured approach is needed on a case by case basis.

The future of the National Oceanography Centre

There have been a number of different operational models at the National Oceanography Centre at Southampton since its inception in 1995. At its heart has been an extremely close partnership between the University of Southampton and NERC. A similar close partnership exists between NOC Liverpool and the University of Liverpool.

Transferring ownership of NOC to a third party carries a significant risk that the partnership operation would be more difficult and that costs would increase. Specific concerns include: VAT leakages, disruption to the
hugely successful Graduate School of the National Oceanography Centre Southampton, compromising the National Oceanographic Library, and doubts as to whether a third party private sector organisation would support major collaborative projects requiring large scale investment.

However, there are a number of options to transfer some of the functions of NOC Southampton to the University of Southampton (such as buildings, estate, employment and management of scientific staff), with continued ownership by NERC or the creation of a public interest CLG for major facilities and services, to be considered on a case by case basis. Similar arrangements could be achieved at NOC Liverpool, with a continuation of the Southampton/Liverpool links created by NOC.

Generic Issues

Background and History
NERC on its formation in the 1960s assumed responsibility for funding various research institutes with a variety of ownership models including long established Company Limited by Guarantee/Charities such as the MBA, Scottish Marine Biological Association (SMBA) and the Freshwater Biological Association (FBA) and wholly owned government centres or institutes (e.g. British Geological Survey (BGS), Institute of Oceanographic Sciences). During the course of the last fifty years various wholly NERC owned institutes have been created from scratch (e.g. Institute of Marine Environmental Research (IMER), Plymouth) or evolved from changes in governance (SMBA to Dunstaffnage Marine Lab with SMBA/SAMS as embedded CLG; IMER and MBA to PML (NERC owned) with MBA as embedded CLG; FBA to Institute for Freshwater Ecology with FBA embedded). There is a long history of small and large "Units" or more recently "Collaborative Centres" being embedded in Universities for specific missions. There has been both aggregation up to Centres (e.g. PML, Dunstaffnage Marine Laboratory (DML), Proudman Oceanographic Laboratory (POL) into Centre for Coastal and Marine Sciences (CCMS) and Institute for Freshwater Ecology (IFE) and Institute for Terrestrial Ecology (ITE) into the Centre for Ecology & Hydrology (CEH)) and disaggregation (e.g. CCMS being disbanded in 2000; PML and SAMS leaving NERC ownership to function as CLGs in 2001.). There have also been more complex changes with the Collaborative Centre, the Southampton Oceanography Centre (SOC) founded in partnership between NERC and the University of Southampton (UoS) in 1995 with the Institute for Oceanographic Sciences moving from Wormley, becoming National Oceanography Centre Southampton (NOCS) (2005), then formally the NERC component of NOCS withdrawing from UoS joining POL to become NOC (2010). CEH went from 9 to 5 sites in the mid-2000s.

Thus the current landscape has evolved rather than being created by intelligent design. There have been periods when NERC policy has favoured greater integration of institutes with Universities (1995 –2005) – and periods when this has not been the case. Some NERC Institutes are co-located on University campuses or hosted by Universities by design (e.g. NOC at Southampton and Liverpool; CEH at their Bangor and Lancaster sites). Others are not and there are often historical reasons for their settings including being close to locations of scientific interest. Moves onto University campuses have tended to be due to contraction (e.g. CEH Bangor) or when sites such as Wormley (Institute of Oceanographic Sciences (IOS)) or Bidston (POL) become no longer fit for purpose and relocation to an HEI campus made sense.

The above complex history and geographic realities have to be acknowledged by NERC Council in its deliberations. Much national capability is also stewarded and delivered by CLGs (e.g., algal culture collections at SAMS; long-term observing in Plymouth by PML, MBA, SAH/FOS). Thus a single model is unlikely to work for all of the institutions being reviewed. All of the centres have different histories and some differences in emphasis and mission. There are multiple models from which comparisons can be drawn. Therefore context dependent solutions are the way forward. In this respect NERC can also draw on the experience of MRC and BBSRC in integration of institutes in the HEI sector, coupled with cognisance of EPSRC’s approach to national capability via Framework Universities and hosting of national facilities (e.g. mass spectrometry at Swansea, X-ray crystallography at Southampton).

National Research Infrastructure, Facilities and “Capability”
NERC undertakes various activities that it categorizes as "National Capability" which include provision of major research infrastructure, specialised facilities, continuation of long-term and broad-scale data set, modelling platforms, archiving and access to data via repositories, plus elements of operational science relevant to forecasting (e.g. storm surges, tidal predictions). This capability includes both equipment and specialised support staff and the time of supervising scientists. These are 'public good' activities and the facilities and resources are open to the UK academic community, the wider public sector, plus the commercial sector including consultancies to varying degrees. NERC also discharges various UK and international statutory duties, obligations and responsibilities on behalf of the UK. Much of this capability is in NERC wholly owned centres, but some is in CLGs and some in HEIs (e.g., the Sea Mammal Research Unit (SMRU) at St Andrews).
A variety of models for access to such facilities exist from competitive peer-reviewed bidding enabling free utilisation at the point of supply, linkage via collaborative research, Theme Action Plans or responsive mode research grants, or via informal collaborations. Stewardship of such resources for the public good and ensuring free and open access to major research infrastructure, national facilities and data may not be appropriate for the commercial sector—although outsourced delivery of services could and should work (e.g. there are successful examples of such public/private partnerships in areas such as management of research vessels). CLGs have and continue to provide such capability in line with the 'public good' nature of their charitable status. HEIs also widely serve as hosts of more specialised facilities—a system that works well and is generally admired elsewhere in Europe and the wider world.

In reviewing options, a granular approach needs to be adopted depending on the nature and scale of operations and breadth of usage across the UK Scientific Community. With the exception of direct service provision, few are likely to be sufficiently profitable for the private sector. CLGs and HEIs are potential alternatives. CLGs are often leaner than wholly owned government institutes and benefit from charitable status for rates and other tax advantages and do not have to deliver profits to shareholders. The UK HEI community has a healthy balance of competition and collaboration and there is wide use of facilities held at particular HEIs by other Universities fulfilling national needs.

Options going forward

Various aspects of national capability are considered below in descending order of suitability for running or hosting by HEIs:

1. National Infrastructure: major research facilities
   As in many countries major national infrastructure such as research vessels and aircraft is wholly owned by the governmental sector (i.e., NERC) and made available to the wider HEI and research institute community. This is a sensible and established model as it ensures fair and transparent access to platforms for 'public good' research and environmental monitoring. An alternative would be a CLG/Charity (which by statute must act in the public good) entrusted to steward and govern such facilities; this could include commissioning outsourcing to the private sector and monitoring subsequent performance. Management of major facilities does not sit well with the mission of HEIs, but there are advantages in co-locating service providers with clusters of major users both logistically and in terms of strategic planning and being aware of customer needs (e.g., NOC at Southampton and Liverpool). Development of new approaches and techniques can be more rapidly trialled and assimilated by equipment and service providers.

2. National Infrastructure: data centres
   NERC has taken the lead with national data centres in the marine sciences (British Oceanographic Data Centre (BODC) for primarily physic-chemical data), terrestrial and freshwater sciences (Environmental Information Data Centre (EIDC)), atmospheric sciences (British Atmospheric Data Centre (BADC)) and earth sciences (National Geophysical and Solar-Terrestrial Data Centre (NGSDC)). These are essential repositories for archiving of publically-funded science enabling data sharing and re-use. Open access to data is a priority issue, ensuring availability of important resources to all sectors. Such activities need long-term and assured funding and therefore are suitable for continued stewardship by NERC or possible translation to a CLG. Examples of CLGs involved in data archiving and access for the public good are the National Biodiversity Network Trust and the Data Archive for Seabed Species and Habitats hosted by the MBA in Plymouth. Such data centres are generally not compatible with the mission of HEIs, but clearly benefit from co-location (e.g. BODC in Liverpool).

3. National Infrastructure: operational sciences
   Operational science currently owned by NERC includes the Permanent Service for Mean Sea Level (PSMSL), Tidal Predictions and storm surge forecasting run out of NOC Liverpool. The former POL built a global reputation in this area. This may be an area best left under governmental ownership but a CLG could also discharge these responsibilities with assured funding. Being associated with on-going research enhances both instrumentation development and best modelling practice. There are strong arguments not to divorce such operational science from research and therefore such activity could be hosted by a CLG or an HEI. In an HEI setting staff undertaking such operational science could be managed with the "national capability" activities of scientists being viewed as equivalent to teaching in terms of income generation, with the opportunity to undertake strategic commissioned research or 'blue-skies' research funded in responsive mode also being available as it is to HEI staff. Universities all have academic-related staff undertaking specialized technical roles in libraries, workshops and enterprise units. Such careers can be managed in the HE sector and HEIs have done and do this successfully (i.e. at Southampton pre-2010, St Andrews).

4. National Infrastructure: sustained observing
Networks and capability for sustained observing are crucial to the NERC mission and several high profile examples exist of where long-term data sets have addressed major environmental issues (e.g. Antarctic ozone hole, Atlantic thermocline circulation, biodiversity loss, shifts in phenology). NERC plays a major role through CEH in managing and co-ordinating the terrestrial and freshwater Environmental Charge Network which brings together in-house observations with those of other government agencies CLGs, HEIs, learned Societies and specialist charities (e.g. British Trust for Ornithology (BTO)). The Department for Environment, Food and Rural Affairs (Defra) through funding the Marine Environmental Charge Network (co-ordinated by the MBA) have taken the lead on coastal and nearshore observing. NERC has taken the lead on shelf and global marine observing contributing to various initiatives and networks co-ordinated by NOC and its delivery partners (e.g. ARGO/ Programme for Observing the Global Ocean (POGO)).

Such sustained observing is fragile whether conducted in a governmental setting or not (e.g., the Continuous Plankton Recorder staff at Plymouth were made redundant at Plymouth before rescue as a CLG - SAHFOS; SAHFOS despite producing and stewarding data that have led to multiple high profile papers and contingent policy contribution (i.e. the Intergovernmental Panel on Climate Change (IPCC)) still faces challenges. Other CLGs and HEIs have maintained long-term data sets. There is no reason why HEIs could not host such sustained observing.

Therefore the issue on sustained observing is not setting, but commitment to long-term programmes. Such programmes need national integration and stewarding – perhaps best done by a neutral government institute or CLG. Delivery can be multi-sector. One of the successes of the Oceans 2025 programme – developed by the NERC funded marine sector – was its integration of sustained observing on different scales, with contribution from wholly owned institutes, CLGs and HEI-hosted Collaborative Centres.

5. Smaller-scale facilities

NERC and other research councils entrust operation of small and medium-sized specialist facilities to both HEIs and CLGs as well as wholly owned centres. This works extremely well and is envied in the USA and the rest of the world. This demonstrates that with appropriate tendering, procurement and performance monitoring, HEIs can deliver services across the sector.

University of Southampton/NOC specific issues

The University has enjoyed a close, productive and mutually beneficial relationship with NERC in the joint development of the NOC through its various incarnations as SOC 1995 – 2005 and the National Oceanography Centre Southampton (NOCS) 2005 – 2010. Working relations post 2010 on the formation of NOC at Southampton and Liverpool continue to be excellent.

The University, as a result of the contribution of the Higher Education Funding Council for England to the original construction of SOC, holds a beneficial interest of 25% in the building. NERC is the leaseholder of the land from Associated British Ports, on which NOC Southampton is built.

The mission for NOC should be to pursue world leading science and to establish itself as one of the foremost centres for ocean and environmental sciences in the world. The ownership model for NOC must facilitate world leading science and certainly not create barriers which prevent appropriate collaboration nor cause for funding to be diverted from its scientific mission.

Over the past two decades the University and NERC have worked together to produce remarkable achievements, some of which are listed below:

- A system for monitoring the Atlantic meridional overturning circulation (MOC) was developed, tested and deployed at 26°N since 2004, providing the first time series of variability in all components of the Atlantic MOC
- Leadership in all aspects of the Ocean Drilling Program and Integrated Ocean Drilling Program, including provision of co-chief scientists for many expeditions, participants in most expeditions, and co-authorship of over 30 papers in Science and Nature directly related to ODP/IODP research.
- Demonstrating for the first time, the feasibility of using controlled source electromagnetic surveys to detect resistivity anomalies due to hydrocarbon reservoirs on continental margins – work that spawned a new global industry.
• Discovery of hydrothermal vents and associated unique ecosystems at mid-ocean ridges from the Arctic to the Antarctic, including the deepest and the hottest vents yet identified.
• Recognition through election to Fellowship of the Royal Society of the founding director of SOC, Prof. John Shepherd, and NERC–University Joint appointment Prof. Harry Bryden.
• Career progression to whole UK HEI and research sector by Early Career Researchers and more senior scientists; with staff being recruited from all over the world and many progressing to take senior positions in the UK, Europe and Worldwide.

We have worked to resolve many of the administrative problems, and invariably these have been resolved through goodwill on both sides. There is a leakage of £270,000 of VAT as a result of the cross charging of administrative costs between the two organisations since formation of NOC. There are also inevitable differences in practices and service expectations between NERC and the University and these will tend to add to costs and cause some difficulties in terms of the allocations of costs. However, the two bodies have developed ways of working to allow academic collaboration (including the appropriate management of intellectual property) within a reasonably efficient cost regime.

**Concerns on transfer of ownership to a 3rd Party**

Our immediate concern should NOC be transferred to a third party would be that collaboration would be more difficult and that costs would increase. The evidence above shows the success of the current academic collaboration, as both organisations can be led by the quest for scientific excellence. We would be concerned that:

a) VAT leakages (because of the University's partially exempt status) would significantly increase should a private sector organisation take over the role of NERC.

b) The hugely successful collaboration in the training of research students may be disrupted. NERC and University staff have worked together to create a single Graduate School of considerable academic scale. The Graduate School of the National Oceanography Centre Southampton (GSNOC) has currently around 200 PhD students enrolled and has grown steadily in recent years. GSNOC has developed robust student recruitment, training and development mechanisms that are widely seen as a benchmark both nationally and internationally. It is run by a committee that includes substantial NERC representation and NERC staff are involved in almost half of the studentships as supervisors or independent panel chairs. University, NOC and external funds are used flexibly to attract the highest-quality students from all over the world, and NERC science benefits considerably from the contribution of these students, while the students go on to gain employment in a wide range of offshore industries or research organisations. GSNOC's combined focus of one of the 14 Impact Case Studies submitted by NOC to the recent NERC REF exercise.

c) The joint operation of National Oceanographic Library could be disrupted and its funding compromised. The original SOC agreement of 1995 stated that the Library should "remain a special entity within the overall framework of the (University) Library service", and a management structure was put in place working within the University Library structure. This model has proved very successful, delivering a highly-valued service to members of the NERC and University communities, and also to researchers and commercial bodies both nationally and internationally. Particular benefits include: a multidisciplinary collection which enables the NOC community to draw upon books, periodicals and other material from the full range of subjects taught and researched in the university, in both print and electronic media; the ability of the University Library to licence the use of electronic resources for the entire NOC community has been particularly significant.

The Library provides:

• A uniform and seamless service for everyone using the library at the NOC, whatever their affiliation and status.
• A single automated library management system, not only supporting this seamless service but also providing significant cost savings.
• Access to the full range of skills held by University Library staff, reinforcing and supplementing the specialist skills and knowledge held by staff based at the National Oceanographic Library.
• A governance structure that is part of both NOC and University systems, with a single Library Committee with representation from all stakeholders in the service, enabling the service to be developed in mutually beneficial ways with input and agreement from all library users.
• Membership of major organisations such as Research Libraries UK and the Society of College, National and University Libraries (SCONUL), offering a range of training and development.
opportunities and representing the interests of research libraries at the highest levels nationally and internationally

- Archives of relevance to long-term change in the oceans as well as the history of science

d) Finally, we would have considerable concerns whether a new third party private sector organisation would have the financial capacity or long term commitment to support the major collaborative projects requiring large scale investment for long term gains.

Other concerns relating to current arrangements post 2010

a) The current ownership model is not perfect. In particular, it leads to very significant brand dilution. An example of this comes from the Essential Science Indicators world league table for citations in the "Geosciences" category for 1/1/03–30/4/13. In this table the University of Southampton is at 98 (with a small percentage of contributing papers coming from outside NOCS) and NOC is at 99 (with some papers coming from NOC Liverpool). If the two entries for NOCs were combined as pre-2010, the world ranking would be much higher.

b) Missed opportunities - QR via REF. The NERC institutes in general and NOC in particular have shown they are competitive with Universities via their own recent internal REF analogue. As a consequence of ownership change at NOC there is a missed opportunity of securing additional QR income from HEFCE (former UoS staff transferred back to NERC in 2010). Category C staff could be returned as Category A; the excellent work on impact delivered by NERC institutes could also be translated into QR. This is a missed opportunity.

Potential way forward for NOC

The University has recently engaged very constructively with the MRC to facilitate the transfer of the MRC Lifecourse Epidemiology Unit from the MRC to the University. The MRC established a clear vision and objective for the transfers of its units to a number of Universities and devised a detailed set of operating principles. At their heart was the objective to protect and enhance the often world leading science, with a clear legal structure and methodology for the transfer of assets and liabilities to the relevant University. There remains an extremely strong governance regime to protect the public interest in the science, and the Universities now supporting the MRC units must comply with the MRC requirements and ensure that the science is contributing appropriately to the public good. Our MRC unit was relatively small (£3 million) and there was a relatively simple asset transfer (specialist equipment plus a long lease interest in a building). Other transfers have been on a much larger scale and with far greater complexities. The over-riding vision and operating principles have held good in facilitating these transfers. We would strongly recommend that NERC Council evaluates the success of the transfer of MRC units from the MRC to Universities. BBSRC has also transferred institutes into Aberystwyth and Warwick in recent years.

Our experience with the MRC Units and the evidence in our submission leads us to the judgement that if there is to be a change in the ownership model with a transfer of the NOC Southampton science mission to a private sector organisation, we would strongly advocate the view that the transfer should be made back to the University of Southampton, with the continuation of a strong collaborative link to the NERC activity in Liverpool and the University of Liverpool. This would remove any barriers to academic collaborations and enable the most appropriate and effective administrative structure to be established to serve the scientific mission. The NERC element of the NOC assets could be transferred to the University with a reversionary Treasury interest. This would protect the long term public interest. Appropriate arrangements could be made to maintain and protect the National Oceanographic Library and special collections within the excellent research library of the University of Southampton. Other national facilities would be governed by specific service level agreements and the University would commit to procure the most efficient means of managing these facilities in the interest of the national and international research community.

There are various options for the way forward specifically for NOC. Both the Universities of Southampton and Liverpool have been engaged in discussions at VC/Dean level to scope the way forward in a manner sensitive to the needs of the rest of the UK ocean, Earth and environmental science community. One approach would be:

1. The Universities subsume responsibility for ownership and management of buildings and estate. (N.B. There are subtle differences in ownership at the two locations i.e. leasehold at Southampton versus freehold at Liverpool).

2. The Universities take responsibility for the employment and management of scientific staff (as was the case with SOC/NOCs until 2010).
3. Elements such as major facilities and equipment pools, data and sample repositories are looked at on a case by case basis for objective assessment of whether best owned by NERC in-house, or are suitable for establishment of a public interest CLG to ensure continued access of the whole UK and International Ocean, earth and environmental science community. There are already examples of this in the environmental sector (the Joint Nature Conservation Committee).

4. There are various options going forward on major facilities and services:

   a. A joined up CLG, which the Universities of both Liverpool and Southampton host and are involved in governance along with other Universities and Research Institutes and private sector stakeholders. Some elements of operation and delivery could be outsourced to the private sector by this CLG (e.g. research vessel) if desired.

   b. A joined up CLG with some elements remaining under NERC ownership.

   c. A more granular approach with different activities remaining within NERC (e.g. research vessels and equipment pool – but with the possibility of out-sourcing of operation) and others being in site (at Liverpool or Southampton) or sectoral specific (equipment, data) CLGs.

   d. Status quo for major facilities and infrastructure with potential out-sourcing for operations to private sector.

We feel it is beyond the scope of this consultation exercise to discuss the pros and cons of particular models in detail. We do, however, advocate a two stage process by Council where a particular model is selected provisionally, followed by a more detailed assessment of which elements would be best owned and delivered by HEIs, CLGs or be retained by NERC as a means of fully exploring and testing options.
19 August 2013

Professor D Wingham
Chief Executive
Natural Environment Research Council
Polaris House
North Start Avenue
Swindon SN2 1EU

Dear Professor Wingham

The Ownership and Governance of NERC Research Centres: Call for Evidence

Thank you for your letter of 2nd July inviting comment as input to the discussions within NERC over potential future models for the ownership and governance of four of your Research Centres. I appreciate this opportunity to comment on behalf of Lancaster University. I should start by making two general points. First, being a Research Council and employer/funder of last resort of your research Centres has always struck me as an odd position for you and your Council to be in. This was pointed out in the context of BBSRC in the Follett report concerning its research centres/institutes. The second general point is a specific Lancaster perspective, where we have co-working interactions with BGS and of course CEH, being one of CEH’s host sites. We value interaction with our CEH colleagues generally very much.

Lancaster has extensive and long-term interactions with CEH and more recently, with BGS. BGS and CEH make valuable contributions to the research infrastructure and landscape in aspects of environmental science. Your recent REF-style review of the quality of the scientific research and impact of that research provided strong validation, especially as to CEH’s work. I would also note by housing CEH scientists alongside those of the Lancaster Environment Centre creates one of the largest (if not the largest) groups of environmental scientists in Europe. I could provide a lot of detail here, but at this point that would not seem most relevant. However I will quote a few examples and would be happy to expand on these. For example there are interactions with CEH over soil/plant ecology, land use and management, nutrient and carbon cycling, and a whole range of environmentally centred chemistry, and of course freshwater science is important. With BGS subsurfaces processes are a joint strength and interest. Across both CEH and BGS themes such as natural resource management, environmental resource and sustainability are very high profile issues, and I value the joint activity that is developing around international opportunities and innovations. If models of ownership/governance change Lancaster would want this to enhance our interactions with our partners within the current NERC centres.

It seems that your overriding drive for changing the status quo (other than sorting out the anomaly I referred to above) is allowing NERC to focus on its role as funder and champion for environmental sciences, which I agree with. It will also allow Centres to be much more flexible and potentially agile. My direct experience is that freeing such entities from ‘the government institute mentality’ can create energy and entrepreneurialism. However, I would caution about the level of actual activity and flexibility this can generate. I would also assume that given the nature of national capability and social good that the centres provide, that their status would be towards a charitable organisation rather than an out and out commercial basis. I would again encourage this direction of travel if it is decided there should be change.
In a role independent of NERC I would also assume that if a charitable route is pursued that there would be some level of agreement over the continued funding on a contractual background basis (presumably via NERC) for provision of some of the valuable long term data collection, environmental monitoring and data management that fall within the Centres’ current remits. I know that this role is valued by the community.

Again, if change is the direction of travel then ensuring that genuine freedom is provided in the governance of NERC Centres I can see expanded opportunities for key universities such as Lancaster to interact with them. I would be keen to explore more proactively joint appointments, particularly but not exclusively leveraging complementary Lancaster/CEH expertise, and looking at the increasing role social science plays in larger scale, interdisciplinary environmental projects. If any change could also be used to catalyse even more integrated working between CEH and BGS and relevant universities, looking for enhanced efficiency and improved pathways for exploitation of research, this could give very significant benefit for both parties.

Given CEH’s distribution over four sites there may be a temptation to look for local solutions of splitting the operation up. I think this should be examined very carefully since it could lose some of the benefits of the strengths across the whole of the organisation. This naturally then leads to a governance model, giving key universities a role in such governance, as trustees, or strategic ‘shareholders’, or the like, could be a way of creating greater coherence in the community rather than generating fragmentary competition. As a university we would be very keen to discuss this with you and whilst my concern is Lancaster University, I and my colleagues are also concerned with the overall health and vitality of environmental science within the UK.

I hope these comments are helpful and am happy to provide future input as your thinking develops.

Yours sincerely,

[Signature]

Professor Mark E. Smith
Vice-Chancellor
28 August 2013

Professor Duncan Wingham
Chief Executive
Natural Environment Research Council
Polaris House
North Star Avenue
Swincon SN2 1EU

Dear Professor Wingham

Re: Ownership and governance of NERC research centres

Thank you for the opportunity to respond to your call for evidence on the ownership and governance of NERC research centres.

Leeds academics engage with all of the NERC research centres. However, we have the strongest relationship with the National Centre for Atmospheric Science (NCAS) which we host, along with other university partners, and which exists “semi-detached” from NERC compared with the other wholly owned NERC centres.

NCAS is structured with a directorate, housed at the University of Leeds, and centres distributed amongst numerous UK universities focusing on various areas of NCAS aims. This model enables NCAS to work towards its aims with the added benefits of being housed at universities with particular strengths in the areas of each centre. We believe this distributed centre approach works well but we also recognise that NERC’s consideration of change to the governance and ownership may also lead to further improvements. The University of Leeds is very supportive of such considerations and are committed to working with NERC/NCAS to improve NCAS and other centres going forward.

We feel that NCAS centres being housed in universities provide excellent benefits to the UK atmospheric science community. To NCAS there is a core of scientific expertise both in terms of PIs to help guide NCAS science towards its aims, infrastructure to assist in housing NCAS staff and equipment, PhD training capability and expertise with a rich scientific environment for those research students, and a beneficial environment for research scientists and academic staff that contribute to NCAS furthering its aims both in formal and informal ways. At centres such as Leeds, we have a critical mass focused wholly on atmospheric science research as well as a large number of staff conducting related research across numerous disciplines so there is efficiency in terms of the wider support available across the university (and other university partners) for services and infrastructure as well as intellectual benefits from the wider research relationships across campus and between the universities that host NCAS centres. This provides significant added value for centres such as NCAS.

One of many examples, would be the collaborative research currently underway with the mobile radar operating in Cornwall. The fieldwork is a potent mix of NCAS and University researchers pursuing common aims. In our opinion, a cornerstone of NCAS success is that NCAS integrates staff into the University system and this enhances cross fertilisation of ideas and skills that benefits both NCAS and the University partners. This makes for efficient and effective use of skills and resources.
Governance of the NERC centres should be seen as a tool to allow them to fulfil their mission rather than an end in itself, and so when considering how the current regime might be amended, this should be the central focus. Our perspective is that the current model used by NCAS works well, and elements of its governance and modus operandi might be suitable for other NERC centres. With regards to NCAS, we believe there are areas to tweak but in general the distributed centre and integration with universities across the UK works well.

NCAS should continue to:
- Be entrenched within Universities to gain from the mutual exchange of key research infrastructure, training, and support in a seamless way and other partnering organisations.
- Retain a distributed centre model so that NCAS will gain from the cross fertilisation of science and skills and it will enable NCAS to effectively pursue its needs.

Nonetheless, we feel that there are a few areas where the current governance arrangements (which stop short of full self-ownership), are a limiting factor in its operational effectiveness. These tend to be practical issues such as:

- Since NCAS is not a separate legal entity, it cannot sign legal agreements with other organisations. This can be a limiting factor in underpinning collaborative activity.
- The seconding of academics to act as directors can be perceived at times as a conflict of interest.
- The exploitation of intellectual property is made more difficult when it is shared by several different organisations.
- The current funding mechanism is not compatible with je-s.

Any changes in governance should ensure that NCAS retains the strengths of the current regime whilst addressing some of the practical issues outlined above.

As far as the other wholly owned centres under consideration are concerned, we would be of the view that changes that provide the advantages provided by the NCAS model whilst preserving the benefits of ownership and autonomy would provide the best of both worlds. In principal we support changes to BGS, CEH and NOC ownership and governance relationships. We are not keen on some of the NERC grant calls in recent years such as EHFI which strictly required inclusion of staff within the research centres (in EFHI’s case it was CEH) on all funding bids to the scheme. These calls meant that blue sky competitive funding from NERC was no longer competitive as in every case research grant funding would go to the NERC research centres potentially excluding stronger science bids that could have been funded. However, we do encourage more cross fertilisation between universities and the centres in other ways to promote potentially stronger science.

The University of Leeds is fully supportive of changes to the governance and ownership being considered and would welcome changes that lead to improvements in the functioning and effectiveness of the centres.

Yours sincerely

[Signature]

Professor Michael Arthur
Vice-Chancellor
Judy Parker  
Head of Communications  
Natural Environment Research Council  
Polaris House  
North Star Avenue  
SWINDON SN2 1EU

29 August 2013

THE OWNERSHIP AND GOVERNANCE OF NERC RESEARCH CENTRES: CALL FOR EVIDENCE

I am writing in response to the NERC call for evidence: The ownership and governance of NERC Centres.

As you know, the University of Reading is one of the UK’s leading universities in environmental research. We have invested in, and benefited from, successful long term relationships with several of NERC’s research centres, in particular NCAS, NCEO, CEH and BGS.

The further development of environmental research, under the broader theme of Secure and sustainable societies is a major pillar of our emerging University-wide strategy. In line with this focused strategy, and through our Academic Investment Project, we have recently invested £15m to support 28 (24 FTE) new full-time and part-time academic posts in climate and environmental sciences.

We have specific interests in the current call for evidence in relation to NCAS. The delivery of NCAS through universities is a major strength of the organisation NCAS fosters collaboration between universities, drawing together complementary capabilities and expertise to address national priorities.

NERC benefits from this arrangement through: i) access to university facilities, such as libraries, laboratories, and e-infrastructure; ii) collaborative opportunities for science and impact that arise from embedding its long-term science programmes in major university centres of excellence such as Reading; and iii) through reduced costs and risks associated with the employment of staff.
Any move to new arrangements for the ownership and governance of NCAS should preserve the current strengths. However, I believe it is timely to consider how these arrangements could be improved.

There is an obvious opportunity to establish a more formal strategic partnership between NERC, the major NCAS universities, and STFC. Setting up such a partnership would enable the explicit identification of shared goals (in science and impact), investments and responsibilities, in a manner that has not been possible thus far. The recently established Francis Crick Institute provides an example of such a partnership from another field.

The University of Reading would welcome the opportunity to play a strong role in developing a new ownership structure for NCAS. I would note too that such a process could also offer opportunities to develop and exploit more fully the interactions between NCAS and NCEO activities at Reading.

Any risks in a future formal strategic partnership would be dependent upon the operation and governance model devised for the partnership arrangement. Undoubtedly, this would require careful consultation with all parties involved.

The relationships between the University of Reading and both CEH and BGS are extremely positive, with our staff being involved in collaborative projects with staff from a number of the centres’ sites. However, given their distributed nature and national roles, we do not envisage playing a role in the future ownership or governance of the centres, as currently constituted.

Nevertheless, should a future reorganisation result in more consolidated activities, a closer, more formal relationship with an individual centre could be an attractive proposition to a university (including this one) either alone or as part of a consortium. Such an arrangement would bestow considerable benefits both to the universities involved and to the newly constituted centres.

Regardless of any future changes to their structure/ownership/governance, we have every intention of strengthening our existing relationships with NERC centres. Indeed, NERC centres are key partners in the Doctoral Training Partnership proposal that we recently submitted to NERC. Given its geographical location and scientific interests, we believe that there is considerable potential for an innovation collaboration with Wallingford around environmental information, perhaps in partnership with other regional institutions.

One final important point to bear in mind is that the NERC centres support valuable long-term environmental datasets and monitoring programmes. It is essential that—whatever ownership/governance models are adopted—these activities are not compromised.
I hope that you find these comments helpful. I am, of course, happy to elaborate further on them should that be necessary.

Best wishes.

Yours sincerely,

SIR DAVID BELL KCB
17 July 2013

Judy Parker
Head of Communications
Natural Environment Research Council
Polaris House
North Star Avenue
SWINDON SN2 1EU

Dear Judy

I am writing in response to the NERC request for consultation on the future ownership and governance of NERC Research Centres
http://www.nerc.ac.uk/about/consult/centre-overnance.asp?cookieConsent=A

The University of York has a substantial portfolio of environmental research, and many successful and enduring connections with the NERC Research Centres, in particular CEH, BAS, NCAS and NCEO. As a University we aim to strengthen further our activities in environmental science, and plan major new investments in areas such as global environment and health. The consultation on the future governance of NERC Research Centres is therefore of particular interest to York, since we see working with Centres as a key part of our research strategy in the environmental sciences.

NERC Centres provide a special resource to the UK, supporting long-term science programmes, observations and national infrastructure. The role of centres in enabling and enhancing research in the higher education sector is a very important one, through data centres, science expertise and facilities, and access to research platforms such as bases, aircraft or ships. Our past experiences of working with NERC Centres have been overwhelming positive. We hope that any future governance and ownership arrangements will continue to foster a national environment that encourages collaboration rather than competition between the Centres and universities, allowing each to bring their distinctive strengths to research.

The environmental science community in the UK benefits in particular from the distinctive and clear disciplinary leadership that each NERC Centre provides. It is essential that each Centre can maintain this clarity of purpose and remit, whilst operating in an research environment that encourages
multidisciplinary working between Centres themselves, with universities and internationally.

We have a particular interest in the future governance arrangements of the National Centre for Atmospheric Science. The University of York plays host to one of the major NCAS sub-contracts, which support around 10 staff in the Department of Chemistry. The distributed model of NCAS works particularly well for the atmospheric sciences, since much of the UK’s world-leading research capability resides in universities. The clarity of the NCAS mission, and NERC’s long-term commitment to this, has allowed the University of York to build further its own academic activities in the field, and invest substantially in new buildings and infrastructure to support NCAS. We will open a new £2.1M building for Integrated Global Atmospheric Chemistry at the end of this year.

This combination of University and NERC investment into a collaborative endeavour is highly efficient, and achieves far greater scientific impact than can be achieved by either working in isolation. NCAS offers up an interesting model of collaboration that other NERC-owned centres may wish to consider. It is clear however that the time is right to update the ownership structure for NCAS, one that reflects the contributions made by University partners, NERC, and the NCAS staff themselves. This University is committed to atmospheric science research and would welcome the opportunity to play its full part in developing this new ownership structure. We would wish to see a structure that reflected the investment and commitments of the key partners, but which gave NCAS greater autonomy, the opportunity to grow, and increase its scientific and societal impact.

We look forward therefore to engaging with you further in the process as you consider future governance arrangements for the NERC Centres, organisations that we consider essential to the vibrancy and excellence of environmental science in the UK.

Yours sincerely

Brian Cantor
University of Leicester response NERC consultation on the ownership and governance of NERC centres

Submitted by Professor Martin Barstow, PVC and Head of the College of Science & Engineering on behalf of all departments involved in NERC research. Key contributors were: Professor Mike Lovell, Professor Richard English, Professor Heiko Balzter and Dr Stewart Fishwick.

The University of Leicester welcomes the opportunity to respond to the consultation on the ownership and governance of NERC research centres. This response was compiled from an internal survey of NERC researchers within this College. NERC-funded research is located within several departments in the University. We host important NERC activities such as SEIS-UK, are key partners in the Integrated Ocean Drilling Program and have leading roles in the National Centres for Earth Observation and Earth Observation Instrumentation. There is an existing, well-established working relationship with the British Geological Survey, to which we second staff and engage in collaborative research. Therefore, the focus of this response is on BGS but also includes the National Oceanography Centre to some extent.

- It is not clear what the primary function of NERC centres is. NERC/BIS should decide on the purpose and remit of its centres before it considers the ownership issue.
- NERC centres, and BGS in particular, should exist to provide an independent source of technically sound geoscience information and views. This should represent excellence science that is balanced, robust, and unbiased by government or commercial interests.
- As such centres (e.g. BGS) should provide a national capability; there should be synergies between such centres and universities, but these relationships need to be well managed and must retain a degree of autonomy and integrity. Merging ownership with universities threatens that independence.
- Universities and research organizations should lead in pushing the boundaries of science; the suggestion that centres (BGS) become research centres of excellence as a main focus puts them in direct competition with universities, and puts their current independent role as advisor to government and industry in jeopardy.
- Developing research focus/foci of excellence within a centre, in conjunction with external partners is feasible under present ownership/governance. What would a change in ownership enable that isn’t possible now?
- The suggestion that universities may buy-in to the ownership of a privatised centre makes little sense. This proposed ownership change is about what is good for the NERC (and BIS/government) and perhaps for government statistics/ number of government employees, and not about what is best for the UK science base as a whole. Ensuring the independence and quality of the national capability roles should drive any change of ownership.
- NERC states “NERC appreciates that its research centres are recognised for... ...their role in the wider national context for providing a range of 'national' or 'public' good services that benefit a range of government departments and public policy formation”. This requires a degree of independence of centres from government, from industry, and crucially from academia. Government must have sound science based advice that it can turn to in order to develop environmental and fiscal policy. This advice should be provided without consideration of commercial interests, which inevitably would arise if the centres and surveys had to compete
with Universities and other private sector organisations for income. This role must not be compromised and must be safeguarded.

- It is not clear how independence will provide additional flexibility if the centres have to compete and rely on the open market for work/income. Issues of unfair competition may arise given that the BGS holds large amounts of publicly funded data and samples to which private sector organisations may have restricted or no access.

- If the NERC wants its centres to deliver high quality science, how is performance against targets to be monitored? If centres are associated with universities how will the relative contributions of the universities and the centres be assessed?

- Recently, the NERC has brought its services and facilities (e.g. SEIS-UK, NIGL) under the management of centres (e.g. BGS), as part of the “National Capability” theme. Access to and use of these services and facilities continue to be overseen by NERC convened steering committees. Either, safeguards need to be put in place to ensure access to the resources of the facilities and continue to be controlled by NERC steering committees or the services and facilities must be moved back under direct NERC management. There is a clear conflict of interest here if centres control access to services and facilities.

- The argument that the NERC will be able to ‘focus on its externally facing roles as a funder and champion for the environmental sciences’ is a rather weak reason for moving centres outside NERC control. There is no case made that the BGS and other centres are impeding the NERC in its role of funder and champion for the environmental sciences.

- There appears to be a loss of focus in the role of centres. For reasons, which have never been clearly articulated, they have become increasingly research oriented as opposed to baseline survey oriented. This is a good opportunity for NERC to review the role of its centres and surveys and, rather than move them out of the public sector, restructure them around their defined role to meet the needs of the UK. Such a move would be in the National interest.
Ms Judy Parker  
Head of Communications  
Natural Environment Research Council  
Polaris House  
North Star Avenue  
Swindon Sn2 1UH  

28 August 2013  

Dear Madam  

**Re: Call for evidence: The ownership and governance of NERC centres**  

I am writing to provide the response of the University of Manchester to the call for evidence on ownership and governance of the NERC centres. This was collated by Professor Hugh Coe and is attached on the following pages.  

As you will see we value very highly our existing substantial engagement with NERC centres which is key to our research strategy for environmental science.  

In the context of our commitment to grow our activities in environmental research we would be happy to continue to engage with NERC in strategic discussions on how to deliver the strongest possible national effort in terms of high quality science and provision of public good services.  

Yours sincerely  

Professor Luke Georghiou  
Vice-President for Research and Innovation
University of Manchester Response to NERC Call for Evidence of Centre Governance

The University of Manchester maintains a very strong portfolio of research in Environmental Science across the University, and has maintained close and effective relationships over many years with several NERC Centres to deliver these activities, notably in NCAS, BGS, CEH and BAS. Of these NCAS is the largest and most strategic relationship since Manchester hosts one of the major NCAS sub-contracts, which support 9 staff in the School of Earth, Atmospheric and Environmental Science, including the Head of NCAS Observations. As part of its strategic development, the University of Manchester is further growing its environmental science portfolio, with significant growth in staff the Faculty of Life Sciences, and the School of Earth, Atmospheric and Environmental Science within the Faculty of Engineering and Physical Science, which has energy, water, nuclear and atmospheric sciences as some of its major research themes. The University is very interested in NERC’s current call for evidence on the future governance of its Centres as we see NERC and its Centres as a key part of our research strategy in these major areas and are keen to assist NERC in their future development where possible.

NERC Centres provide the community with underpinning, long term measurements, strategic science programmes and major national infrastructure, such as the FAAM aircraft, ships, data centres, computational facilities, measurement stations and facilities. These activities enable UK HEIs, working closely with NERC, to deliver internationally excellent Environmental Science. It is certainly the case that in the past, where NERC Centres and the University have worked closely together, the benefits are clear to both parties. Whilst HEIs gain from the NERC Centres, the Centres benefit from student training, access to a broader base of science, technology, and skills, and can leverage the impact of their research through other applied fields in the University sector. These mutual benefits are important to the Environmental Sciences and the University of Manchester would strongly support further development and strengthening of these synergies under any future revision of the Governance and Ownership of NERC’s Centres.

The National Centre for Atmospheric Science (NCAS)
NCAS is of particular interest to the University. The University recognises that the strength of the Atmospheric Sciences community in the UK is distributed across a number of HEIs, each bringing unique areas of expertise and skills. The distributed nature of NCAS, with groups of key staff embedded in key HEIs and working closely with them, is a great strength and provides a very effective means for NCAS to access a much wider set of skills, infrastructures and opportunities than would otherwise be possible. It gains access to wider student training and benefits from cost savings and reduced liabilities on NCAS staff compared to its wholly owned Centres. In turn, NCAS offers strategic activity and infrastructure that HEIs can use and plays a very significant role in focussing the UK atmospheric community. The commitment of NCAS in providing long term support for activities has meant that the University of Manchester has been able to develop investment in key areas of atmospheric science that are strategically important to the University and NERC.

This synergy between host Universities and NERC delivers far greater returns to both than would be possible otherwise and needs to be retained in any future Governance structure of NCAS.

Nevertheless, it is our view is that it is time to review the structure and Governance of NCAS. Whilst the Universities have underpinned the success of NCAS to date, they have not had a formal role in the Governance of the organisation and yet carry the costs and risks associated with employing staff. As a result, we would very much welcome a review of the Governance structure of NCAS that reflects the contribution and commitment that all partners are making to its development, providing it with the flexibility to grow its research base and generate increased societal impact.

Furthermore, it is our experience that the NCAS leadership and strategic direction is delivered most effectively in large HEIs where there is significant NCAS investment, such as Manchester, Leeds,
York and Reading. **NERC should consider how wide the distribution of Universities should be in the development of any strategic partnership while allowing NCAS to utilise the skill base in a wider range of institutions as the need arises.**

**The relationship between the University and other NERC Centres**

Whilst NCAS is the NERC Centre with which the University has the greatest strategic interaction, the University nevertheless shares multiple synergies with BGS and CEH, both of whom are also part of the Centres Governance review. BGS and CEH both provide services and underpinning activity for the science community in their respective disciplines, for example BGS holds a very large quantity of geological data for the UK that can be accessed by the community. Our research groups in the areas of nutrient cycling in soils in the Faculty of Life Sciences and radionuclides in the environment in the Faculty of Engineering and Physical Sciences are collaborating closely with CEH and both Centres work closely with us on joint studentships, which have proved very effective as a means integrating activities. However, whilst the University recognises that BGS and CEH are very different organisations to NCAS, we would suggest that NERC consider implementing some aspects of the NCAS model of integration of Centre research within the University community. This could lead to strengthening of the research disciplines across the UK, would have the potential to expand the Centres, and utilise University skills and expertise, in particular in areas where the Centres wish to develop in the future.

**NERC Facilities into the future**

NERC Facilities are widely used by the whole UK research community and provide the necessary infrastructure to conduct internationally leading environmental science within the UK, not just by NERC’s Centres but also by University scientists. We understand that management of NERC facilities has recently passed to the Centres. **We recommend that a review of NERC Centre Governance and Management includes scrutiny of NERC oversight of the services and facilities to ensure that they deliver to the wider UK community and not only serve the needs of the host Centre.**

We very much look forward to seeing how NERC will develop the Governance and Management of its Centres and would be glad to provide further input into the process at a later stage.
1. UCL is grateful for the opportunity to respond to the call for evidence regarding the ownership and governance of NERC centres. We welcome NERC’s consideration and independent, external review of the merits of establishing its research centres as independent bodies, outside of the public sector.

2. We do not have any particular evidence to submit regarding experience of collaborating with the Centres. Like most research-intensive universities with a presence in environmental sciences, we have some piecemeal collaborations with them, and find them to be of variable research quality, including some excellent research elements, and others that are not as strong as would be required to be part of the research-intensive university sector. The recent NERC independent review seems to have confirmed this spread. We would certainly be averse to any change in ownership arrangements that weakened the excellent elements within the research centres.

3. We believe, however, that the implied remit of the review of ownership – apparently considering only the comparative risks and benefits of whether the centres should be autonomous and self-owned or maintain their present status – is too limited. We believe a fuller range of models should be explored, and in particular that partnerships and mergers with universities should be considered. It may well be that this is intended to be part of a second stage of the review process, once the first review is concluded. If so, we believe that the first stage should recommend exploring the full range of university partnerships in the second stage.

4. Quite simply, we believe that the widespread quality and excellence of the UK university system, as well as the flexibility of approaches to management of research shown across it, mean that there should be a strong presumption that any research to be funded by the UK government should be delivered within or closely associated with that system. Exceptions should be made only where there is a clear case that an alternative approach delivers unambiguous benefits, or where universities cannot or should not deliver the required research. Even in these cases, the potential for strong partnerships with universities is considerable. Some of the NERC research centres are already benefitting from strong partnerships with universities, but this seems to us to beg the question as to whether they might benefit even further from closer alignment.

5. We think there are two fundamental current drivers in the evolution of environmental sciences that suggest closer alignment between the NERC research centres (as our key resources for long-term capability in environmental sciences) and universities. The first is skills development and education. The second is the increasing requirement for multi-disciplinary collaboration in environmental research. The third is the potential to maintain a broader range of research areas active within a model that includes an educational element.

6. There is clearly a considerable need across the developed world for skilled environmental professionals with high-quality quantitative modelling skills, a multi-disciplinary approach and the ability to engage with a variety of complex real-world problems. NERC’s own review of environmental skills needs, on behalf of the Environmental Research Funders Forum, showed this very clearly. At the moment, much of the UK research expertise in these areas is within the NERC research centres, and has far less contact with educating and developing the next generation of professionals than it would within a university context. This seems to us a very harmful separation that is only partially addressed by the educational collaborations that exist.
7. Similarly, environmental research is increasingly multi-disciplinary, requiring deep engagement with expertise across the physical, biological, social and medical sciences, and engineering and technology. NERC, and its partners in various initiatives, have done a great deal to recognise this. However, whilst the NERC research centres are multi-disciplinary in the sense of covering several environmental disciplines and some specialised expertise in technology areas, no separate environmental research lab can have the opportunities for multi-disciplinary interaction to be found within a larger multi-faculty university with excellence across a broad range of subject areas. Of course, some collaboration, especially on more substantial projects, is possible through joint grants between research centres and universities, but the level of exploratory or long-term interaction is very different, and the opportunity costs of developing collaborations much higher.

8. Similarly, often for environmental science research to have the impact on public policy that it should, there is a requirement for multi-disciplinary cooperation, especially with laws and the economic and social sciences. We think there needs to be serious cross-disciplinary work on joint outputs, linking the latest research findings to the insights of those who specialise on the legal, governance, policy and economic issues. We feel NERC and the other Research Councils show appropriate appreciation of this within their grant funding activities. However, whilst consortium grants can partially address the need for these connections, this will be on a far more patchy basis than would be possible if the whole of the core research capacity funded within the research centres had strong partnerships with the necessary expertise within universities.

9. As is widely appreciated, beyond these two clear benefits of closer interaction between the research centres and universities, inclusion within an institution with a mixed activity model combining research, education and enterprise activities generally allows for more efficient maintenance of a broad base of research expertise than that provided at a research institute. Staff whose main expertise is in research topics that are less relevant to research priorities or current commercial needs can spend substantial amounts of time on education activities, whilst keeping their research interests active. Many areas of research expertise have been kept alive in this way within the university system, in periods when research funding was negligible – most obviously, recently in the case of energy related research topics. Given the uncertainty about the future of environmental changes and the extraordinary range of possible future threats, it seems to us that maintaining the maximum possible breadth of such “latent” research capability should be a key goal for NERC’s vision of environmental sciences. We suggest that under any plausible future funding model, it is much more likely that this will be achieved through partnership with universities than through institutes that receive a mix of NERC and private funding.

10. In summary, we suggest that there should be a presumption of associating research activity in the UK with the strong, broad, diverse university base unless there is a clear reason why not. Moreover, there are good reasons for enhancing partnerships with university relating to the current priorities of the environmental sciences for skills development and multi-disciplinarity, both for the sake of research in itself, and for its impact upon public policy. Finally, the uncertainty of long-term environmental threats suggests the maintenance of a broad latent capability, again better done through university partnerships. Whatever ownership arrangements NERC eventually adopts for its research centres, we hope they will strongly encourage deeper partnerships with universities.

We are grateful for the opportunity to provide this response to the proposed NERC Strategy, hope that our comments are both informative and useful, and would be pleased to address any queries that its recipients may have.

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University of Liverpool’s Response to NERC consultation on Governance of NERC Centres.

Context. The University of Liverpool (UoL) acts as host to the National Oceanography Centre, Liverpool (NOCL). In the recent NERC Centre REF exercise, NOC performed well in terms of outputs (69% 3/4*), comparable with top universities for research excellence, and had a good outcome when considering impact (61% 3/4*). Here, UoL gives its considered response to the proposal currently with NERC Council that “NERC is considering the merits of establishing its Research Centres as independent bodies, outside of the public sector” is outlined below.

Response. UoL greatly values its relationship with NOC. It recognizes the importance and value of the Liverpool site, specifically through the opportunities that arise for collaborative research leading to joint world-class outputs, joint research grants and a vibrant Graduate School. Currently, UoL and NOCL have two joint appointments at Chair level, which provide a great opportunity for more synergy. It goes without saying, therefore, that UoL has considerable interest in a permanent presence in Liverpool of a world-class research establishment, with which it can collaborate, and grow. UoL is particularly interested in linking NOC scientific research with the new Institute of Risk and Uncertainty and with a new Liverpool Centre for Coasts and Oceans with particular focus on marine spatial planning and environmental impact.

NOCL has a distinct flavour relative to the Southampton Centre; specifically with expertise in Sea-level Science and Shelf-Sea Science, both with a substantial modeling element. It is crucial to UoL that the NOC mission is maintained in Liverpool, namely to undertake world-class marine research, especially strategic science with a long-term focus (5 – 10 year timescales, e.g. RAPID programme). UoL would be prepared to take an active role in maintaining the science and KE component here.

Other aspects of NOC’s remit include the maintenance of Research Infrastructure, Facilities, Services and Data Assets. Furthermore, through its critical mass and recognition as the National Centre for Marine Science, NOC leads in influencing marine policy both nationally and internationally. NOC plays an extremely important role in supporting Marine Science across the UK and UoL has an interest in this role being maintained. The devil will be in the detail. For example, if expensive facilities (e.g. ships, large equipment) are separated from science in some way (e.g. by moving to an outsourcing model), there will be a significant risk that they become decoupled and that capacity will be lost to the detriment of the UK marine science community. NERC will need to think carefully about the model that they adopt, in particular when in comes to delivery of science and investment in new capital as and when necessary.
CALL FOR EVIDENCE: THE OWNERSHIP AND GOVERNANCE OF NERC RESEARCH CENTRES

This document is in response to the letter received from Duncan Wingham, Chief Executive of NERC, in which he requested written evidence for the NERC Consultation on its research centres. In making our response, we will focus entirely on NOC as this is within our competence, noting that there may be parallels with other centres. The response is divided into four parts: (1) Our understanding of the issue; (2) The SAMS experience; are there parallels? (3) The challenges as we see them; and (4) Potential ways forward.

(1) Our understanding of the issue

NERC is almost unique amongst the Research Councils in having a large part of its budget and operations tied to maintaining large wholly-owned research institutes and their associated infrastructure. The institutions themselves are guaranteed some stability through this system but have to follow complex administrative and financial systems that are not necessarily fit for purpose for institutions operating in a highly competitive environment that is increasingly demanding flexibility and a greater level of entrepreneurship. The institutes have to provide a mix of ‘national good’, ‘national capability’ and competitively-funded research at a time when central budgets are decreasing (protected but not inflation-adjusted). Under these circumstances, it is reasonable to conduct a review providing the outcome is not heavily steered. Our response is based upon the assumption that it isn’t.

(2) The SAMS experience; are there parallels?

SAMS is the oldest marine research institute in the UK, having been founded in 1884 in the wake of the Challenger Expedition. By the late 1960s, it had two laboratories, an oceanographic laboratory in Edinburgh and a primarily marine biological laboratory in Millport. For most of its existence, it has been independent but became increasingly associated with NERC from 1967. NERC moved the Edinburgh laboratory to Plymouth (where it is now PML) and invested in a new site for the Millport operations in Dunstaffnage, near Oban. SAMS (then SMBA) moved to Dunstaffnage in 1970 and there were, in effect, two parallel operations on the site; the NERC wholly owned Dunstaffnage Marine Laboratory (DML) and the SMBA which had four Fellows. It was not until the creation of the NERC CCMS (Centre for Coastal and Marine Studies, which amalgamated POL, SAMS and PML) in 1998 that the two part of the operation merged. CCMS was a disastrous experiment and NERC decided to break it up in 2001. SAMS was paid a dowry and declared independent as a NERC Collaborating Centre (a considerable number of staff continued as NERC employees). NERC correspondence suggests that it regarded expectations for survival as low. It had followed a period where funding for long-term science was very unstable and where the purpose-built research vessel Challenger (based in Dunstaffnage) had been withdrawn as part of fleet consolidation.

Despite the gloomy predictions, SAMS has thrived and currently has 164 staff, some 130 students, an incubator centre for business development and adjacent, a newly constructed Highlands and Islands Enterprise Marine Science park. For the past 5 years, it has managed to post a small operating surplus and is consistently above the national average in NERC competitive awards. It is the largest provider of marine research in Scotland (beyond the statutory agency laboratory, Marine Science
Scotland) and operates globally, combining publically funded research (the largest segment), education and commercial activities. Its links with NERC have gradually evolved; in 2013 the remaining NERC staff moved to SAMS contracts but SAMS continues to deliver National Capability and National Facilities as a NOC Delivery Partner. All of the above suggest an increased level of resilience but the reality is that a lack of financial reserves (the assets are in the estate) and increasing difficulties for accessing capital funding potentially make the operation vulnerable to sudden external change. Management requires a high level of entrepreneurship and effective teamwork. SAMS also maintains a learned society role and we provide a public good through our new Ocean Explorer Centre, entirely funded by philanthropy.

The relative success following the ‘sink or swim’ decision point is due to a number of factors:

a. That, in addition to NERC, SAMS formed strong alliances with
   • University of the Highlands and Islands of which it was a founding partner and which enables access to RAE/REF funding and regional development funds as well as being the main basis for educational development.
   • Other Scottish marine science providers through the Scottish Funding Council’s MASTS and SAGES pools
   • Highlands and Islands Enterprise (the local regional development agency)
   • Most recently with the United Nations University, as its only Associate Institute for marine science.

b. The opportunity to invest in new premises and staff at a crucial time, including borrowing for a major building operation in 2004.

c. The charitable status, allowing some degree of VAT exemption.

d. A wholly-owned company (SRSLE), operating as an SME along strictly commercial lines and donating its profits to SAMS

e. Increasing operational flexibility, enabling relatively rapid adaption for change (occasionally anticipation).

f. Diversity of skills (important for commercial work) but a clear emphasis on focus and excellence for key research themes (some of which cover relatively niche areas).

g. Strong branding.

h. Scrupulous business planning and budgeting, together with cost cutting measures.

i. Use of external expertise in its governance system (see later)

j. Most importantly, a committed workforce that is increasingly knowledgeable about the challenges faced and willing to adapt to them (this is not easy, independence has added to individual responsibility and a heavy time-managed workload).

There are some parallels with the situation facing NOC if it is to become independent but these are not as profound as one might initially suppose. For a start, NOC is a much larger organisation and the approach taken in SAMS cannot be automatically upscaled. Secondly, NOC has a complex array of ‘public good’ responsibilities that necessarily engage it with government processes. Thirdly, it administers and manages the biggest equipment assets of NERC (two research vessels) and, because of high and slightly unpredictable operation costs (because of the global fuel market) these could become ‘the tail that wags the dog’ (perhaps they already are) but at the same time a key part of NOC’s essential operations. Fourthly, NOC has undergone a ‘divorce’ with its University partner, exactly the opposite from SAMS where the University fling has become a long-term partnership.
This makes it ineligible for HEFCE REF funding. Fifthly, unlike SAMS, NOC has a number of ‘dependents’, arguably former POL (though it is an intrinsic part of the operation) but also its delivery partners, including SAMS. In conclusion, although a SAMS-like floatation could seem attractive, this is an oversimplification and the reality is inevitably more complex and this could limit the ability for a new organisation to respond quickly to change.

(3) The challenges as we see them

There are various aspects of NOC that need to be considered (in order of increasing dependency on public funding):

a. Its capability to be a ‘flagship’ leading institution in competitive UK marine science
b. Its role in ensuring a state-of-the art capability to conduct ocean-scale long-term research and observations in the UK.

Of these four aspects, we see no reason why (a) cannot be delivered equally or more efficiently by an independent body, provided that NOC has access to capital funding and has enough headroom in its initial budget to make key appointments. Access to REF funding or equivalent could be important because of the gap between full economic costs of projects and the funding provided by research councils and the EU.

Aspect (b) has to be a long-term investment and requires an element of stability. SAMS suffered the experience of ‘stop-start’ long term funding in the 1990s and it did huge damage to programmes that have subsequently proven to be important for understanding global change and the impact of human pressure on the ocean. We understand that NERC is taking serious steps to ensure longer-term funding for such work but it would be a key prerequisite for a successful independent NOC.

Aspect (c) (services to the oceanographic community) would be an enormous challenge for an independent institute and it is difficult to see how this could be achieved without a very innovative operational model (see the final section). A particular challenge would be the change in dynamic between the various actors at a national level. Currently, there is a strong element of cooperation and trust, largely because of the constructive and very objective role that Ed Hill has taken as NOC Director, enabling a balance between interests of NOC and of its partners. This is a responsibility bestowed on him by NERC but he has managed to develop a ‘community feel’ about the overall endeavour and a recognition of comparative advantages. With a change in status, this role would become more ambiguous; after all, the Director’s primary responsibility would be to keep his own institution solvent and at the forefront of its field. There is a strong risk of breakdown in the current cooperative environment, which would become more ‘hard-nosed’ in its competition and with constant suspicions of a ‘winner takes all’ strategy. For those of us running former NERC Collaborative Centres (now NOC Delivery Partners), this is not a trivial concern. The role of NOC Director and NC Coordinator would, in my view, become incompatible.
Aspect (d) (Public good) would require a frank assessment and potential redistribution of responsibilities. There is, in principle, no reason why most of the public good could not be sub-contracted to NOC (or any other major player). However, the situation is a little more complicated because the ‘Public good’ includes representation of the overall UK marine science community in international forums (such as the Intergovernmental Oceanographic Commission, POGO, Marine Science Coordinating Committee, etc). Again, there is a reasonable level of trust at this time and a high level of professionalism in how these responsibilities are handled. However, a new independent NOC would face a major conflict of interest with its national competitors who could see these roles as ‘privileged access’ to the information and contacts that should be shared in the national interest. Again, this could be a prelude to conflict and we find it difficult to see how these roles would fit in a restructured and independent NOC.

A final aspect that is not covered by the list above is the increased commercial role of NOC. A NOC that is free and relatively autonomous would sensibly seek to enhance its commercial engagement (to some extent this is already happening). In the commercial world, competition is particularly fierce; it is the nature of success. The dynamics of forming commercial partnerships, seeking market intelligence and outcompeting other organisations is quintessential to success. At SAMS, we are still learning how to become a multifaceted organisation with almost 30% commercial funding and currently keep our commercial business at arm’s length from research and education but it would still be practically impossible to work effectively to provide a level playing field for national good and services to other institutions if that were part of our remit.

(4) Potential ways forward

In our view, and for the reasons outlined above, NOC cannot be made fully autonomous and retain the four attributes listed in section (3) above. This does not imply that autonomy is impossible. However, it would not be an issue of simply establishing a new governance mechanism and dowry and casting it adrift (as NERC did with SAMS twelve years ago); there needs to be a more fundamental debate about how to fulfil its various roles.

Many of the responsibilities of NOC (particularly (c) and (d) above) are enmeshed within the NERC Charter. This incorporated the body that governed the National Institute of Oceanography (later Institute of Oceanographic Science) prior to 1967. As a National body, an autonomous NOC would need its own charter and governing body and an associated direct line of finance to cover its services and national good. The reconfiguration would require a change to NERC’s own charter and a debate on the key financial issue of who runs the ships and owns the risk in their management. Without a charter, it is difficult to conceive of a fully autonomous NOC. A chartered NOC is an attractive option for marine science as a whole but there would be a difficult debate on commercial activities with a fuzzy line between the development of commercially marketable IP (e.g. new instruments, new software) and competitive consultancy where privileged access to information provides an unfair advantage.

Another option would be to split the functions of NOC to create a level playing field nationally and to de-risk the nascent institute. In this scenario, NOC would develop activities grouped as (a) and (b) in the previous section and compete on a level playing field with other institutions in the UK, having the advantage of size, legacy and reputation. This would have some parallels with the autonomy.
given to SAMS or PML but would be a much better starting point. It could compete on the commercial stage and would probably be highly successful.

If this second scenario were to be developed, NERC would be left with the difficult part of the operation which is, to be frank, part of its key role in facilitating the development of natural science in the UK. It could choose to set up a national-scale body and ringfence the entire activity. However, there are lessons to be learned from the past when vessels were moved to a centralised Research Vessel Base in Barry docks (the decaying building is still there, abandoned and with papers pinned to the notice board). It was an expensive choice. There was also a suggestion in the House of Commons Select Committee report ‘Investigating the Oceans’ to establish a national-scale body to service the entire marine science community (all public sectors, including research councils). This would not violate the Haldane Principles but could lead to greater efficiency nationally and relieve some of the burden from NERC, particularly in ship operations. In that scenario, NERC would have to decide which elements of (c) and (d) could be comfortably placed beyond its remit and which it should retain in the interest of its own mandate.

We hope this response helps to reframe the discussion.

Prof Laurence Mee

Director of SAMS, 13 August, 2013
13 September 2013

Ms Judy Parker
NERC
Polaris House
North Star Avenue
Swindon SN2 1EU

Dear Ms Parker,

I write in response to Duncan Wingham’s letter dated 2 July 2013. I do apologize for not providing this letter to you by the requested deadline of August 30. I have, of course, all the usual excuses and few others as well. Regardless, I hope my input here remains sufficiently timely and useful. Please note that these notes represent my personal perspective as opposed to being a PML corporate response.

Having met Duncan at the end of July, I did comment that I would provide my comments in the form of a SWOT analysis. I have made the assumption that the likely end point for the Centres is independence as opposed to being subsumed into an HEI. To a certain extent they seem to be obvious statements and I acknowledge that they are quite succinct. No obstacles raised here are insurmountable, but must be considered / solved during the planning stage. I assume that the assessment / review period would be fairly long and involve various committees. I would be very happy to elaborate in person at some stage if it is deemed useful to your process.

As a preface to this project, an essential requirement would be to understand what NERC and its scientific community / constituents expect to be delivered / provided by the Centres going into the future. This will inevitably entail a funding line, but ensures a mutually beneficial outcome for NERC (future assurance that essential activities would continue) and for the Centres (some guaranteed income). The former point is important to consider in that NERC will eventually be one of the Centre’s customers instead of its prime benefactor.

SWOT Analysis for NERC Centres

Strengths
- Governance
  - Each centre will be able to create a governance structure best suited to serve its own needs in terms of the breadth of expertise and experience of its members
  - Board of Trustees (working title only) can include people with a wide range of skills and experience outside of academia
- Fiscal control / responsibility
  - The centre gains the ability to have long range financial planning that does not see each year end with a zero order balance sheet
o Departure (presumed to be both possible and preferable) from Shared Business Centre could provide better / speedier service at the corporate and individual level

Weakness
- Funding
  o Limited assured income from NERC, likely for maintaining National Capability, together with Services and Facilities
  o No assured access to capital funds
  o Depreciation costs for fixed assets can be very high, depending on the value of the assets transferred from NERC to a given centre
- Staff
  o Dual staffing regimes will persist for some considerable time, given that it is unlikely that current staff will opt out of their current NERC employment scheme
- Policy
  o Centres will need to establish bespoke policies covering a wide range of issues and activities no longer provided by head office or the Shared Service Centre; this may require additional staffing or expertise not currently present in a given centre

Opportunities
- Staff
  o Greater flexibility to reward non-NERC staff
  o Facilitate recruitment due to enhanced flexibility to offer competitive salaries
- Funding
  o More ready access to non-NERC RCUK funding
  o Better opportunities to profit from commercialising products and services

Threats
- Staffing
  o Potential inability of existing staff to respond to inevitable cultural changes in the organisation and work under a different regime
  o Divergence of benefits for NERC / non-NERC staff can lead to disgruntlement, particularly as regards pension privileges
  o Current NERC IMP promotion scheme poorly adapted to a more business-like organisation

Published reports outlining the benefits to organizations emerging from governmental ownership highlight governance and fiscal control. This will inevitably be true for NERC Centres should they become independent. The most challenging aspect will be to establish the long term financial liability of new Centres. NERC will have to allow for an extended period of financial support. The most crucial aspect will be asset management, including allowing for depreciation of major infrastructure and enabling capitalisation.
We live in interesting times. I hope that my thoughts here prove to be of value. Please do not hesitate to ask me for clarification or other assistance.

Yours sincerely,

[Signature]

Professor Stephen de Mora
Chief Executive
Dear Sir or Madam,

Please find below some responses considering the merits of establishing its research centres as independent bodies, outside of the public sector, from Arup geotechnics in London.

“I understand that the BGS is not for profit and this it receives money from the state (part state). As a tax payer I support part funding of the BGS so that it maintains an academic approach to its activities in the form of maintaining data and developing bases, dissemination of information, education and contribution to issues of national and world importance (e.g. geology in changing climatic conditions etc). As a tax payer I also have no objection to reduced tax payer contribution with so long as there is no reduction in the good work that the BGS does.

I am aware that BGS is partly restricted in its ability to make a profit from commercial work it carried out for industry. This I feel is a negative aspect of the current ownership arrangement. I would support changes that allow profits to be made on commercial activities and that these profits should be used to:

- Allow further research be carried out
- Increase its role as an educator
- Reduce the tax payers contribution

In other works the profits should be used to better allow the BGS to maintain and increase its works for the common good. If the BGS is not to be quasi state owned then its ownership structure should be a not for profit trust or similar structure that does not make it totally commercially driven or a take-over target.”

And:

- Freedom to respond to clients’ needs e.g. pricing of software and areas of research; and
- Probably able to get more funding to improve facilities and services.

- Impartiality and objectivity potentially lost or compromised, or at least perceived as such.

Many thanks,

Ben Gilson
Geotechnical Engineer | Geotechnics and Tunnelling London

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13 Fitzroy Street London W1T 4BQ United Kingdom
t +44 20 7636 1531  d +44 20 7755 3621
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www.arup.com
Dear Judy

We are writing on behalf of the NERC Geophysical Equipment Facility and Field Spectroscopy Facility, which are hosted by the University of Edinburgh School of GeoSciences, in response to the call for evidence on ownership and governance of NERC centres. We are eager to embrace new opportunities to support high-quality research, but it is very difficult to assess the challenges that would be faced without seeing a model of how independent centres would operate, how they would manage equipment facilities and how HEIs, such as ours, would be expected to participate.

Our facilities support research across the range of NERC science and often outside the remits of the centres under which they are now managed. Maintaining this broad and responsive support will require continuing funding of facilities by NERC for recurrent and capital costs and continuing oversight by external steering committees.

Richard Essery (GEF contract holder)
Alan Hobbs (GEF Manager)
Alasdair MacArthur (FSF Operations Manager) Ian Woodhouse (FSF Director)

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The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336.
Dear Judy,

I am responding to your call for evidence on a potential move to establish research centres as independent bodies.

I am director for the S&F NERC Biomolecular Analysis Facility (NBAF) node at University of Liverpool, providing genomic support to NERC responsive mode grants, fellowships and studentships.

Like many, I have been wary of the transfer of S&F from Swindon Office to the NERC Centres (CEH in our own case). The main concern is that the services we provide are to the community as a whole -- covering marine, freshwater and terrestrial remits -- but would be managed by a Centre with a narrower, or at least a somewhat different, set of priorities. Establishing Centres as independent bodies would only serve to accentuate this gap; the risk is that their own objectives would be prioritised over that of serving the wider NERC community through S&F.

I would also comment that this is the latest of a series of management changes proposed that would impact our facility, but one which I only discovered by chance.

Sincerely,

Steve Paterson

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Prof Steve Paterson
Institute of Integrative Biology
University of Liverpool
Liverpool,
L69 7ZB, UK
Tel +44 151 795 4521
Fax +44 151 795 4408
Mob +44 797 024 7668
s.paterson@liv.ac.uk
http://www.liv.ac.uk/genomic-research/
Dear Judy,

We are responding to your call for evidence on the ownership and governance of NERC Centres, in which you particularly encourage responses from organisations with interactions or partnerships with the Research Centres. SUERC has close interactions with NERC’s Research Centres as host institution for five of NERC’s 21 Services and Facilities (S&F), the management of which is in the process of being transferred from NERC SO to its Centres. Over the past 40 years SUERC staff, and the hosted S&F, have had strong scientific links with BGS, CEH, NOC and BAS demonstrating a high level of cross-sectorial interdisciplinarity.

The primary objective of S&F is to facilitate research and PhD student training by underpinning the national scientific community’s access to expertise, research equipment and techniques which broaden the UK’s Earth and Environmental science opportunities and provide cost-effective and internationally competitive scientific capabilities. The scientific direction of S&F has always been strongly aligned with NERC’s research programmes and strategies. Independent scientific overview has been provided through NERC-owned peer review of Facility support (Steering Committees) and the uniqueness, quality of science, training and services, and need for Facilities competitively assessed by the Service Review Groups.

Some of the fundamentally important merits of S&F (evidence for which is provided by easily accessible existing data) would be at risk by a move of the Centres away from NERC ownership because of the loss of independent, cross-sector scientific oversight and the inevitable requirement for S&F to develop strategies aligned with the particular Centre by which they are managed. These merits include:

1. NERC Facilities are widely accessed by UK Universities and Research Centres, via grants and commissions. They are used by more than 1000 users per year across all of NERC’s science sectors. Most individual Facilities have user communities from more than one science area.

2. Services and Facilities operate much closer to their theoretical capacity than is generally the case with analogous facilities within universities or Centres, due to the close oversight that NERC Service Review Groups undertake; this ensures a fiscally-efficient mechanism of research delivery across scientific sectors for NERC.

3. The peer review cost of facilities (expressed as cost of Swindon Office peer review and management divided by the allocated research resource to Facilities or value of grants awarded) is less than half of the peer review cost of the NERC grants programme.

4. The research publication output attributable to S&F is on par with that of NERC’s responsive mode grants; in 2010 output approached 500 peer-reviewed publications, corresponding to an average of ~£20 k/paper.

5. Consecutive Services Review Groups have remarked that the S&F are amongst the most closely monitored programmes in NERC. There is a widely-held view by the UK science community that this has resulted in an efficient and productive set of cutting-edge analytical facilities, that undergo continuous renewal and refreshing to fit the demands of the evolving user community and NERC priorities.
6. The model of management and operation of the S&F portfolio is regarded worldwide as remarkable in effectiveness (evidence for which includes comments from international referees for the Service Review Group). These cost-effective yet cutting-edge facilities, deliver training, expertise and international impact that is the envy of countries trying to replicate their success. The effectiveness of S&F can be attributed to the close management and scientific oversight, and the evolution of high quality scientific community access, training and service across facilities in return for relatively stable funding and critical mass infrastructure.

S&F Heads and Steering Committee Chairs voiced strong opposition (October 2011 meeting with NCAG and NERC representatives) to moving S&F management from NERC SO to the Centres, primarily because of the concern about future S&F direction being driven by Centre, rather than cross-disciplinary NERC priorities and UK scientific needs. We believe that NERC should retain overall ownership and associated independent scientific oversight of S&F to enable stability and continuity in the provision of support to the UK scientific community. We are concerned that the strategic priorities and operational models of independent Research Centres will not be compatible with the scientific breadth, excellence and national contribution provided efficiently and effectively by S&F.

We request that our comments be forwarded in their entirety.

Yours Sincerely,

Prof RM Ellam
Director SUERC and CIAF Head

Prof A. Boyce, Dr C. Bryant, Dr Delia Gheorgiu, Dr D. Mark, Dr J. Newton, Dr. A. Rodes, Prof F. Stuart
Facility Heads/Managers
Dr Judy Parker  
Head of Communications  
Natural Environment Research Council  
Polaris House  
North Star Avenue  
Swindon SN2 1EU  

30th August 2013  

Dear Judy,  

We are responding to your call for evidence on the ownership and governance of NERC Centres. In this instance our response is provided to represent the perspective of a NERC S&F facility that is internationally recognised as a global leader in its area of science.

The Edinburgh Ion Microprobe Facility (EIMF) forms a major part of the Edinburgh Materials Micro Analysis Centre (EMMAC), which is based in and supported through the School of GeoSciences at the University of Edinburgh. The EIMF operates to fulfil the principal objectives of NERC S&F, which are to facilitate research and PhD student training by enabling access to expertise, instrumentation and techniques which broaden the UK’s Earth and Environmental science opportunities and provide internationally competitive scientific capabilities.

Approximately 60% of the operational funding for the ion microprobes under EIMF is provided by NERC through the ‘direct access’ route, and the other 40% provided through large UK grants, international users for R&D, and commercial users. The EIMF is scrupulously monitored and assured for the quality of the science carried out, and the delivery of that quality, through peer-review via its Steering Committee and through 5-year SRG reviews. Access is highly competitive. The EIMF has gained complete 5 ratings across all the assessment criteria in each of its SRG reviews, confirming its international reputation for being at the leading edge of microanalysis applications across a wide range of Earth and Environmental science. The strategic direction of the EIMF, overseen by the Steering Committee, is driven by UK user demand and our own horizon-scanning underpinned by the principles of excellence and innovation.

The recent and on-going change to management and support under the Research Centre, in our case BGS, presents challenges for S&F facilities which have not yet been assessed or addressed. The chief challenge in our case is to assure provision of at least the same quality of microanalytical underpinning to the UK science community, which is largely University-based, when funding is controlled by a Research Centre (the BGS) that hitherto has been a relatively minor user of these instrumental and science capabilities. This issue will only be amplified by a move of the Centres away from NERC ownership, for two key reasons: firstly, the loss of independent, cross-sector scientific oversight; and secondly, the likelihood that S&F facilities will be required to aligned their science strategies with their managing Centre. In order to support the UK science community the Centres will actually need to develop and enhance their relationships with the University sector, whereas dissociation of the Centres from NERC is likely to work in the opposite sense.

We believe that SUERC have written to you separately and have clearly articulated the merits of S&F as it has been managed by and through NERC. We agree fully with the points made by Professor Ellam on behalf of SUERC. With respect to the EIMF we emphasise that consecutive Services Review Groups and international assessors recognise that it provides a world-class and
innovative service that is responsive to the demands of its user community and NERC priorities. We consider that the framework of S&F management and scientific oversight developed by NERC prior to the moving of S&F management from NERC SO to the Centres has been critical to this success.

We have previously expressed our general concerns about future S&F direction being driven by strategic priorities established by individual Centres, rather than cross-disciplinary NERC priorities and UK scientific needs. We believe that NERC should retain overall ownership and associated independent scientific oversight of S&F to enable stability and continuity in the provision of support to the UK scientific community. Given that the decision has been made to move S&F to the Centres, we feel it is even more imperative that those Centres remain closely bound within NERC. To detach the Centres from NERC can only, in the long term, undermine the UK’s internationally competitive scientific capabilities, training and research that has been developed through NERC S&F.

Yours sincerely,

[Signature]

Professor Simon L Harley
PI, Edinburgh Ion Microprobe Facility

On behalf of: Dr. J Craven and Prof. R.Wood (also PI’s of the EIMF)
Dr Judy Parker  
Head of Communications  
Natural Environment Research Council  
Polaris House  
North Star Avenue  
Swindon SN2 1EU

Dear Ms Parker,

I am writing as Chair of the Steering Committee of the NERC Radiocarbon Facility based at East Kilbride and Oxford, in response to your call for evidence on the ownership and governance of NERC Centres. As you will know, the NRF is now one of the facilities managed by the British Geological Survey.

My main point is to stress the importance of the S & Fs not getting lost in the process, whatever the eventual outcome, for the following reasons:

(1) S & Fs serve a very wide user base which does not necessarily map on to the main specific remits of the Centres. Whatever governance arrangements are in place for the Centres, it is important that their stewardship of this broad range of facilities is seen as an integral part of their mission.

(2) S & Fs have an important role in supporting research students and training early career scientists, a function that they carry out primarily in collaboration with the academic community. For the future health of the latter it is therefore important that their engagement with the S & Fs is maintained alongside Centres’ links with industry and other external partners.

(3) The primary purpose of the S & Fs is to support academic research in areas where outright ownership of facilities, instruments and expertise is not practical or an efficient use of resources. It is important that the academic user-base is fully engaged with the management and strategies of the S & Fs.

All three points emphasise the desirability of NERC and its council retaining the strategic management of the S & F portfolio, oversight of access to them, and performance review, whatever governance arrangements emerge for the Centres. The Centres are in effect being sub-contracted to manage a portfolio of services, and the critical measures of their success in this task will be the quality of the research supported by the S & Fs and the future generations of scientists trained with their help.

Yours sincerely,

Professor Graeme Barker FBA
Dear Judy,

Hello. I am writing as a researcher, supervisor and Head of the SAGES (http://www.sages.ac.uk/) graduate school to strongly urge NERC Council to very carefully consider the merits of establishing its research centres as independent bodies. I am extremely concerned, as a former member of one of the NERC facilities steering panels, that the proposed change in management of these centres will directly impact upon the services and facilities arm of NERC-funded science.

I was very recently obliged, in the lead-up to our REF submission, to list the institutes and international research links to other countries which underpin my research collaborations. I can say without hesitation, and I include my experience as a member of one of the facility panels, that the underpinning of UK science that derives from competitive, peer-reviewed support through the NERC facilities is hugely significant. Our current system yields competitive advantage and has huge benefits for the nurturing and training of young researchers, some of whom achieve scientific break-through from a very modest base-line of resourcing. As the head of the SAGES graduate school, I have first-hand experience of excellent (internationally competitive) science being delivered directly (and in some cases only) via NERC facilities support. The great strength of the current system is that it is capable of recognizing and supporting excellence no matter where it comes from and it does this in a transparent and extremely supportive manner of our next scientific generation.

I am concerned that removing these facilities from the governance and structure of NERC will have negative consequences for UK science and particularly for young researchers, developing new avenues of enquiry from a sometimes diverse and often poorly-resourced HEI-base.

Please forward my entire letter to whom it may concern. I am happy for my identity to be made known and please do not hesitate to contact me if you require further information.

Yours sincerely,

William Austin
Call for evidence: The Ownership and Governance of NERC Centres

Evidence submitted by Gwyn Griffiths

Relevant Personal Background

1. I was employed by NERC from 1976-2012. From 1993-95 I was a member of the Senior Management Team of the Institute of Oceanographic Sciences Deacon Laboratory (IOSDL) preparing for transition to the Southampton Oceanography Centre (SOC), and a member of the Senior Management Team of the SOC from 1995-2003. My role was to lead the technology development group, which meant I worked closely with stakeholders and researchers in universities, businesses and the public sector.

NERC’s ability to initiate and complete successfully major change

2. I am not aware of any public document with a thorough review of NERC’s ability to initiate and complete successfully major change, drawing on changes it has made, and sought to make, over the last decade. All of the individuals and organisations that could be affected by the changes being considered need to be assured that NERC senior staff and Council have identified deficiencies, understood how and why they arose and know how to develop and use credible methods to avoid repeating past mistakes.

3. NERC invested heavily in its Change Management Programme within Leadership for NERC. However, the indications (e.g. responses to questions at the Science and Technology Select committee) are that when used at an institutional level (e.g. the proposed NOC BAS merger), only lip service was paid to the processes and tools within the NERC Change Management Programme (in particular, inadequate Terrain Mapping and identification and briefing of Reinforcing Change Leaders and Influencers). A formal study of the take-up and effectiveness of the NERC Change Management Programme should be undertaken and the results published.

Lessons from the formation and development of the SOC

4. NERC needs to be clear what exactly it means by “allowing them [its research centres] to develop freely and in line with their overall business and science objectives.” In my view, one of the major reasons for protracted difficulties with the SOC was that NERC (and, to a lesser extent, the University of Southampton) did not allow the new institution to develop freely.

5. The expert review should determine what would be sufficient checks and balances in any new arrangements for ownership and governance so that that the organisations would have a degree of stability, and not be subject to external or internal ill-judged swings in their future arrangements.

Alternative forms of ownership and governance

6. The external review should examine a wide range of options for ownership, not only those that have been used previously by the Research Councils, including Company Limited by Guarantee and Research Council owned, contractor (university) operated but also models that include for-profit private sector components.

7. The recent review of NERC research centres’ research and impact demonstrates that a great deal of economic impact has flowed from the work of NERC research centres. It follows that there could be significant commercial value to some parts of some NERC

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research centres, and it would be folly to ignore realising that value for the public good (HM Treasury) in a study of other models of ownership and governance.

8. Consequently, the NERC expert review should look at the Dstl/Qinetiq model, where the majority of public sector defence research was encapsulated in Qinetiq as a private sector, for-profit company, and the proceeds of the sale returned to the Treasury.

9. The subsequent concerns raised about Qinetiq being sold too cheaply should remind the expert review group that NERC could be criticised in future if changes in ownership result in too little return to the Treasury, or a complete failure by NERC to capitalise on the economic impact demonstrated in the recent statements.

10. In this context, the expert group might look at the possible future ownership of industry-facing research and applications sections in BGS and CEH (especially in Hydrology), for example.

11. It should be clarified at the earliest opportunity how potential changes in ownership and governance could affect the ability of the organisations to receive research councils grant funding, or could affect which modes of research funding the organisations could receive. The panel should be informed as to why the complexity of the current arrangements\(^2\), what are the determining factors, and how various options for ownership and governance influence future eligibility.

NERC-retained research capacity

12. Lacking proper information, given that NERC has not provided the arguments, the situation where BAS is retained within NERC is nonsensical from the viewpoint of scientific research, and only becomes marginally less so when the politics are factored in. The expert group should be able to review and report publically on the reasons for the exclusion of BAS from this review.

13. The review group should look at the case for NERC retaining a core of research capability and knowledge across its entire portfolio, encapsulated as a single distributed centre. This would be akin to the Dstl/Qinetiq model for the MOD. BAS as part of that retained core research capability could make sense.

Management

14. The review panel should suggest how proposed alternatives to ownership and governance could strengthen the management and scientific vision of the centres, recognising that various options may need very different styles of management and individuals with very different talents from those of incumbents.

15. The review panel should have access to the collected views of NERC staff on research centre management and governance. If the panel has been provided with the recently produced Research and Impact Environment statements from the research centres, they should be told of the limitations of those statements. (For example, for the case of NOC, that it is a senior management statement that glosses over a myriad of deficiencies key to the working of an effective organisation. These self-written statements do not have the critical, perceptive insights of a Science and Management Audit external review).

16. The expert panel should seek to answer the question: To what extent are the research and impact outputs achieved by staff at NERC’s centres because of, or despite, the management and present ownership and governance arrangements? Only with this understanding can the panel assess the likely consequence of changes on future research and impact outputs.

Large Facilities - Ships

17. The review group should have the clout to get NERC to sort out its research ship and logistics ship provision once and for all, and NERC should have the courage and the resilience to wind the arguments by vested interests. It would be incredibly silly of NERC to end up with a one-ship retained/BAS ship fleet, for example.

Link to NERC Strategy

18. It is not clear at all how this review fits in with the new NERC strategy currently under development.
Consultation on the Ownership and Governance of NERC Centres & Surveys  
Evidence submitted by Professor Harry L. Bryden FRS  
August 2013

Introduction

Harry L. Bryden worked for 25 years in the United States, principally at Woods Hole Oceanographic Institution but also at a variety of government laboratories and universities including US Naval Oceanographic Office, US Naval Underwater Sound Laboratory, Oregon State University and University of Washington. In 1992 he moved to the UK to participate in the development of the new Southampton Oceanography Centre. He initially worked within the Institute of Ocean Sciences, forerunner of National Oceanography Centre, and later moved across to the University of Southampton. For the past 10 years he has been mainly involved with the Rapid project measuring the seasonal to interannual variability in the Atlantic Meridional Overturning Circulation. He partially retired in 2011.

International Context

Every major country bordering the sea has marine laboratories to provide long-term, strategic research on subjects of relevance to national policy and interests and to provide effective interaction with international institutions and organisations. With environmental science issues at the forefront of modern societies, the need for strategic marine research and the need for international collaboration on global environmental policies are growing. The UK will continue to require a substantial marine science research centre to address societal issues. The benefits of existing NERC centres are well documented in the recent NERC strategy "The Business of the Environment".

In most countries, marine science laboratories are government-owned, with the exception being the United States where two major marine laboratories (Scripps Institution of Oceanography and Woods Hole Oceanographic Institution) are private sector bodies. In some countries (eg Spain and Italy where I have had extensive collaborations), strategic marine science work is done at a number of distributed centres in each coastal province. My view is that fewer but larger laboratories are more effective at delivering strategic deep-ocean research than a larger number of smaller laboratories.

Historical Context

100 years ago, marine science laboratories in the UK were largely small summer institutions associated with university departments. After World War II, the National Institute of Oceanography was set up to coordinate and develop strategic marine research and provide a national focus for national policy and international interactions. The rationale for the development of NIO is set out by Margaret Deacon in the introduction to a recent book Of seas and ships and scientists. In 1973 under NERC ownership, NIO transformed into the Institute for Ocean Science (IOS) with largely unchanged mission. Following the broad recommendations of a House of Lords Select Committee on Science and Technology in 1985-86, IOS joined with the University of Southampton in 1994 to set up an integrated Southampton Oceanography Centre. Re-reading the Committee report recently, I find it difficult to disagree with the arguments made by the Select Committee on the merits of combining strategic and blue skies research with undergraduate and graduate training in marine science. Within
Southampton Oceanography Centre, strategic research was delivered in rolling 5-year strategic research programmes that were developed by Centre scientists and managers subject to independent review and oversight. Suddenly on 1 February 2010 without public consultation, NERC withdrew from the joint Centre and formed the National Oceanography Centre (NOC) combining NERC units in Southampton and Liverpool. The present NOC is a governmental research laboratory with rigid financial structures; it has limited educational mission; and it cannot accept charitable donations. Strategic research is broadly delivered under the umbrella of National Capability.

**Recommendations:**

It is essential that the UK continues to have a national marine science centre to provide long-term, strategic research on subjects of relevance to national policy and interests and to provide effective interaction with international institutions and organisations. I recommend that the national marine science centre (like the present National Oceanography Centre) should combine strategic and blue skies research, because they feed off each other: top quality research is often triggered by operational problems and new advances can improve operational practice. Furthermore, some of today's major "blue skies" scientific problems (e.g., the causes of seasonal, interannual and decadal climate variability, ocean acidification, geoengineering) are also strategic issues that require sustained observations and modelling to unravel.

To improve on the present National Oceanography Centre, a reconstituted national marine science Centre should also be large enough to welcome additional blue skies researchers (and teachers) with other funding to work alongside the strategic researchers within the Centre. Centre work should be done in the presence of and collaboration with students who regularly pass through the Centre (i.e., the Centre should be linked with a university), providing a growing network of educated scientists and humanitarians who appreciate the importance and complexity of environmental science. Finally the Centre should be able to accept charitable donations (i.e., it should be non-profit) in addition to government and corporate grants and contracts in order to provide a diversity of world-class marine research.

Since the national marine science centre envisaged here would have educational and charitable elements in addition to strategic research responsibilities, sole ownership of the Centre by NERC may not be appropriate. The Centre could be joint or collaborative between NERC and a university and/or a charitable organisation. Management of the Centre would need to ensure that strategic marine research (likely to be primarily funded by NERC) has high profile/priority within the Centre. I imagine NERC would provide a funding stream to the Centre for ship operations which would be financially "ring-fenced" within the Centre for sea-going work and a funding stream for strategic marine research to be delivered against prescribed deliverables. Additional funding from the educational and charitable elements of the Centre for strategic research and sea-going activities would act as a multiplier for NERC's basic investment in strategic marine science. Blue skies research, educational opportunities and charitable work will each benefit from working alongside strategic marine researchers working toward national and international leadership on environmental marine science.

In terms of governance, all staff should be employed by the Centre, management should be able to allocate science and technical staff to strategic or blue skies research, to teaching or to charitable work as appropriate using appropriate funding to maximise the effectiveness of each element. The Centre must be able to recruit at all levels as required to deliver strategic and blue-skies research, charitable work and government
and industrial contracts. Management must be capable of reporting successes in strategic and blue-skies research, in ship operations, in educational achievements and in charitable contributions and of emphasising the synergies of combining all elements in a single Centre to the owners of the Centre.

Summary

The views expressed here are broadly compatible with the original Southampton Oceanography Centre set up by the recommendations of the House of Lords Select Committee on Science and Technology: a partnership between NERC and a university that combines blue-skies and strategic marine research in an educational environment stimulated by students of all ages and with a charitable component. While I appreciate it is difficult to go back in time, I believe the broad principles were and are correct.
Consultation on the Ownership and Governance of NERC Centres & Surveys
Evidence submitted by Professor John Shepherd CBE FRS
7 August 2013

Summary, Conclusions & Recommendations

NERC’s attitude to its Centres & Surveys has varied greatly over several decades, and has consistently undervalued the importance of their history and institutional independence and identity. A review of the status and governance of the NERC research institutions is therefore not unwelcome. The information provided in the Call for Evidence is however very sketchy. Potential consultees have not been provided with complete and accurate information about the whole NERC portfolio of institutions or their current status. The fate of an institution is largely determined by the funding available to support it, only modulated by its Ownership, Governance and Management arrangements. Structural rearrangements rarely achieve much that is very useful, and are given far too much attention in comparison to the vitally important issues of maintaining adequate funding and achieving positive motivation of staff.

1) Public Sector Research Organisations (PSROs) exist to undertake long-term and nationally-coordinated strategic research on subjects of relevance to public policy and interest. They also provide effective liaison with international institutions and programmes. The need for such work in relation to the environment, and suitable institutions to deliver it has not declined and is not expected to do so.

2) PSROs often undertake long-term operational scientific work (e.g. monitoring & forecasting) but it is neither necessary nor desirable to attempt to restrict the range of their work to this alone. There is a synergy between operational and research activities that should be fostered and exploited, not ignored or suppressed.

3) It is impossible to consider “the merits of establishing (NERC) research centres as independent bodies, outside of the public sector” without specifying clearly what is envisaged.

4) Private sector (commercial) entities do not generally operate for the public good and cannot normally fulfil this role (or would not be trusted to do so). It is extremely unlikely that a fully privatised (for profit) ownership model would be appropriate for research on the environment for the public good.

5) The evidence from the full range of NERC institutions, including PML, SAMS/SMI and BAS, needs to be considered in any review, even if there is no intention to change their status.

6) Consideration of any proposal to alter the ownership & governance arrangements of the NERC institutions should take careful account of the need to maintain core funding and build on institutional history, identity, esprit-de-corps and staff morale.

7) It is regrettable that the NERC review should be mainly concerned with Ownership & Governance, which are arguably much less important issues than Self-determination, Management and Funding.

8) Greater independence and self-determination for the institutions is desirable, and this could be achieved without major changes or full privatisation. The merits and deficiencies of the CLG model adopted for PML and SAMS/SMI should be carefully evaluated.
University management processes in the UK are mostly not well adapted to deal with the management of a large PSRO (especially in relation to its staff, who have a mission that is distinct from that of academics). Transfer of institutions to universities does not provide an easy solution and would require very careful design and execution of the terms of agreement.

For several institutions (BGS, CEH, NOC) the CLG option appears to be the most promising. However, given the diversity of the NERC institutions and their histories, locations, missions and character, there is no reason to suppose that a “one size fits all” approach is either necessary or desirable.

Declaration of Interests and relevant experience
I served as the first Director of the Southampton Oceanography Centre from 1994 to 1999, before it was designated/renamed as the National Oceanography Centre. In that role I was responsible for most of the detailed negotiations on the Memorandum of Understanding under which it was established as a Joint Venture between NERC and the University of Southampton. I was at that time an employee of the University of Southampton, and I continue to work in the NOC as a part-time re-employed member of the university staff. From 2000 to 2010 I was a part-time Deputy Director of the Tyndall Centre, and from 2008 to 2011 I served as an independent non-executive member of the Board of the British Antarctic Survey.

Introduction
NERC’s attitude to its Centres & Surveys has varied greatly over several decades, from periodic enthusiasm for divestment, to tight control verging on micro-management. It has lacked a clear and consistent overall strategy, and has consistently undervalued the importance of history and institutional independence and integrity, and their effect on staff morale and performance. This is significant because the institutions concerned mostly pre-date NERC and its successive parent departments. A thorough and unbiased review of the status and governance of the NERC institutions is therefore not unwelcome in principle. However, the consultation exercise now in progress gives little cause for confidence that the “independent, external review” that is now planned will be thorough and soundly based, or receive well-founded opinions from consultees.

Scope of Review & information provided
The Call for Evidence states that “NERC is considering the merits of establishing its research centres as independent bodies, outside of the public sector” (emphasis added). It does not fully or adequately explain how “outside of the public sector” is to be construed. I suggest that it is impossible to consider the merits of such a change without clarification of what is envisaged, nor is it clear why the possibility of establishment as operationally independent bodies within the public sector is excluded. Moreover the statement that “Council considers that this change may offer potential advantages to NERC in ensuring that it can focus on its externally facing roles as a funder… (etc)” strongly suggests that this is an attempt by NERC to divest itself of responsibility for its institutions. Any attempt to continue to exercise control without responsibility is unlikely to succeed.

The information provided in the Call for Evidence is moreover very sketchy. Potential consultees have not been provided with complete and accurate information about the whole NERC portfolio of institutions or their current status. For example, the Plymouth Marine Laboratory (PML) is still essentially a NERC-funded institution, although now established as a Company Limited by Guarantee (CLG), but it is not mentioned and is presumably to be excluded from the review. The British Antarctic Survey (BAS) is also explicitly excluded but the reasons for this are not stated. The information about the National Oceanography Centre (NOC) is incomplete and misleading, since (despite recent changes...
of nomenclature) this remains *de facto* a joint operation with the University of Southampton (and now also Liverpool and others).

**The Role of NERC Research Institutions**

Public Sector Research Organisations (PSROs) have generally been established to undertake *long-term and nationally-coordinated strategic research on subjects of relevance to public policy and interest*. They also often provide effective liaison with international institutions and programmes. If they did not exist we should almost certainly need to invent them. Private sector (commercial) entities do not generally operate for the public good and cannot normally fulfil this role (or would not be trusted to do so). As presently constituted universities in the UK operate primarily in competition with their peers in the UK and elsewhere, largely on the basis of short-term (3 to 5 year) funding. They can and do collaborate in an *ad hoc* way, but where coordinated activity and/or investment in infrastructure at the national level is required, PSROs have historically been created, both by Government Departments and by Research Councils. More recently university consortia (often also called Centres) have been established by one or more Research Councils (e.g. the UK Energy Research Centre and the Tyndall Centre for Climate Change Research). In both modes, the establishment of institutions with longer-term remits (and/or long-lived facilities) leads to responsibilities attaching to their owners, and difficulties in downsizing or terminating them. These are not necessarily much reduced by less direct “ownership” which leads to less formal responsibility coupled with less managerial control. The major NERC Research Institutions (Centres & Surveys) are fairly typical PSROs, established when a need was perceived for coordinated work at a national level, investment in large infrastructure, or a nationally coordinated contribution to a global effort. This is arguably natural & inevitable for research on the environment, a classic public good, whose value is not generally or easily monetised. The NERC Centres are also far from unique, even within the UK: the Hadley Centre was established by the Met Office (then within the MoD) which is now “owned” by BIS. The need for such work and suitable institutions to deliver it has not declined and is not expected to do so. The most appropriate institutional model to satisfy the need is a matter for discussion.

PSROs often undertake long-term operational scientific work (e.g. monitoring & forecasting) but it is neither necessary nor desirable to attempt to restrict the range of their work to this alone. Good research is often triggered by operational problems, and new advances can improve operational practice. There is a synergy between operational and research activities that should be fostered and exploited, not ignored or suppressed. This is best achieved by maintaining a broad spectrum of related activities. In particular every effort should be made for theoretical/modelling work to co-exist with observational studies, so that each can be confronted with and stimulated by the other. Attempts to force institutions to concentrate on a narrow range of activities are likely to be counter-productive.

**Ownership, Governance, Independence and Management**

The fate of an institution is largely determined by the funding available to support it, and is only modulated by its Ownership, Governance and Management arrangements.

**Ownership** is almost certainly the least important of these. The evidence for this is pervasive in both the public & private sectors: institutions such as BGS and BAS have been “owned” by several government entities, but have continued to operate and execute their basic functions with only incremental & evolutionary change, which has been largely determined by changes in the sources and purpose of funding. The Research Councils including NERC itself have been “owned” by several government departments with little change in their structure, function or mode of operation.
I would argue that ownership is in practice largely irrelevant except insofar as it affects Funding, Governance or Management\(^1\). It is however extremely unlikely that a fully privatised (for profit) ownership model would be appropriate for research on the environment for the public good. Governance is of more significance, but is arguably not a primary determinant of institutional success. Most venerable scientific institutions (e.g. Rothamsted) have operated under governance regimes that have evolved over time from unimpeded control by autocratic Directors answerable only to a Minister or senior official, to elaborate systems of management and supervisory Boards. Any system that ensures both effective teamwork by the senior managers, as well as provision for strategic advice and oversight from representatives of the owners, major funders, and independent externals is probably adequate. In any case, changes of governance arrangements are highly unlikely to be sufficient to overcome deficiencies in management or funding.

Independence and self-determination are additional attributes, referred to but not highlighted in the Call for Evidence. I am not aware of any formal study of their role in the success of institutions, though there is much in relation to individuals. My personal observation would be that they are vitally important. The most successful and admired institutions in my field (Woods Hole, Scripps and the Lamont-Doherty Earth Observatory) all operate with a high degree of autonomy, and have flourished especially under strong leadership (though less so when there is less funding available). Indeed the perceived intellectual vibrancy of (some) university departments may be attributable not just to the presence of students but because they are entities that are to a greater extent able to determine their own future scientific and organisational strategy and aspirations. Complete independence (as for WHOI) is clearly not essential: a high degree of autonomy (Scripps & LDEO) is sufficient. Numerous counterexamples can be found in centrally-controlled government laboratories in almost every country I can think of. A formal study of this issue would be of great interest & potential value.

Management

The quality of management of institutions is clearly of great importance. However, it is the far-sighted leadership of inspirational individuals that is crucially important (as the armed forces know well), provided it is accompanied by a willingness to make sure that the beans are properly counted. Respected scientists who are willing to shoulder the chore of management, and who exhibit a healthy lack of regard for higher authority appear to me to have been the most successful leaders of scientific institutions. Some internal structural arrangement is inevitably required, with appropriate subsidiary leadership. No structure is ideal, and whatever is adopted will create undesirable divisions and difficulties: formal mechanisms to deal with these should be designed in at the outset. Structural rearrangements rarely achieve much that is very useful, and are given far too much attention in comparison to the vitally important issue of maintaining adequate funding and achieving positive motivation of staff. The esprit-de-corps of the institution is a vital and sadly neglected factor that can contribute to this.

Overall: I find it strange and seriously unsatisfactory that it is apparently intended that the NERC review be mainly concerned with Ownership & Governance, which I consider are much less important issues than Self-determination, Management and Funding.

\(^{1}\) Note: for the past several decades NERC has apparently generally aspired to be a funding agency without responsibility for institutions, i.e. to be “more like the NSF” or the EPSRC. These “institution-free” funding agencies are however largely a matter of historical accident (EPSRC could easily have inherited institutions like the NPL or the UKAEA). They are relatively uncommon in a European or global context, and so far as I am aware they have not been demonstrated objectively to be superior.
Evidence from the UK and Elsewhere

The NERC portfolio already contains a wide diversity of institutions, and there is no a priori reason to suppose that that is undesirable. The range is from wholly owned (BAS, BGS & CEH) through collaborative (NOC) and quasi-autonomous\(^2\) (PML and SAMS/SMI) to institutions and consortia in universities (SMRU, NCAS, NCEO). Not all of these are mentioned in the Call for Evidence. This states that the objective is to allow the institutions “to develop freely and in line with their overall business and science objectives”, i.e. to allow them greater independence and scope for self-determination. Any review should therefore consider carefully the evidence available in relation to the success of the previous partial divestment of PML and SMI, which were intended to have precisely that effect, without full privatisation (*sensu stricto*). The Company Limited by Guarantee (CLG) model used for PML and SAMS/SMI is an extremely flexible model that confers greater independence without full for-profit privatisation, while allowing NERC to retain influence as a major funder. It would also permit clear formal arrangements with other potential partners (e.g. the University of Southampton for NOC, and the FCO for BAS). The merits and deficiencies of the CLG model adopted for PML and SAMS should be carefully evaluated. There are numerous other PSROs in the UK with a range of legal status, that could & should also be considered to inform any proposals (e.g. Rothamsted Research is another CLG). It would be premature to propose a preferred option before appropriate evidence has been gathered by the review team. However, for several institutions (BGS, CEH, NOC) the CLG option appears to be the most promising. Given the diversity of the NERC institutions and their histories, locations and missions and character, there is no reason to suppose that a “one size fits all” approach is either necessary or desirable, and the assurance that the review will be “will be carefully considering the potential benefits on a centre by centre basis” is therefore welcome.

Public Sector Research Organisations are also common in other countries (including the USA, Europe and the Commonwealth countries). In the USA it is common for government labs (including for example NCAR and the ex-weapons laboratories at Oak Ridge and Lawrence Livermore) to be established by government departments and Agencies, but operated by universities (or subsidiaries thereof). The evidence that is available on the advantages & disadvantages of this arrangement should also be relevant to the review.

Physical Location: Cohabitation with Universities

It is widely accepted that it is beneficial for PSROs to have close relationships with universities, and ideally to be located on university campuses. This was explicitly the reason for the creation of the Southampton Oceanography Centre (now the NOC) in 1994/5, and I believe that this has been a very successful venture. The successful integration of the NERC and University activities has however been impeded by inconsistency in the NERC approach to the Centre. It started as a collaborative joint venture (a management arrangement under a Memorandum of Understanding (MoU)), followed by an attempt to hand over almost all management functions to the University, subsequently reversed with most being taken back “in-house” when the NOC was expanded to incorporate POL (Liverpool) in 2010. In my view the original middle way (i.e. shared responsibilities according to needs and capabilities) has been

\(^2\) It is not obvious how best to describe the status of some of the NERC institutions (and the NERC preferred terminology has varied considerably and is still not wholly consistent). PML and SAMS/SMI are technically privatized but not for-profit institutions, and NERC retains influence and responsibilities as a major customer, with residual liabilities for staff and infrastructure in some cases.
the most successful approach, and could be re-established within the legal framework provided by a CLG without great difficulty.
Whether or not it is worth the (very considerable) costs to relocate existing institutions to campuses is very doubtful, unless (as was the case with the IOS moving to the SOC) the existing buildings become unavailable or no longer fit-for-purpose. The staff losses caused by institutional moves have become more serious now that working couples have become much more common (and the people who leave “in transit” may well be those whom one would most wish to keep). Closer relationships with universities without relocation are however difficult to achieve without strenuous efforts on both sides. In general university management processes in the UK are not well adapted to deal with the management of a large PSRO (especially in relation to its staff, who have a mission that is distinct from that of academics), and I do not believe that simply handing over such institutions to a university is likely to be successful except in exceptional circumstances. Transfer of institutions to universities does not provide an easy solution and would require very careful design and execution of the terms of agreement. Careful study of the arrangements used in the USA (e.g. for UCAR) and their merits and deficiencies should be an essential part of any serious consideration of this option.

**Conclusions & Recommendations:** See above
Hello,

I would ask that the problems which AWE are now having should be seen as danger for any 'selling off' of national research stations.

The management of AWE is currently with three privately owned companies (none of which is clearly British in its ownership). AWE now has problems with its day to day management and increasingly more and more external consultants are now loathed to work there.

If this was to become a model for NERC funded work in the future this would be a serious problem for future research.

We have some pseudo autonomous bodies which have an excellent reputation including CEFAS. It has a clear mandate and a clear public ownership. This works so why change it.

Regards

Jenny Swainston
Judy Parker
Head of Communications

Dear Ms Parker

I have heard of your request for evidence from the website http://www.nbn.org.uk

Firstly I am not sure that I can provide the sort of Evidence that you require as I retired as a lowly HSO from BBSRC in 2000. However I feel quite strongly that although there are great advantages in "establishing research centres as independent bodies, outside of the public sector," there are significant risks if this change is not planned extremely carefully.

I used to work at Rothamsted Experimental Station, which was owned by the Lawes Agricultural Trust. This had great advantages both in maintaining the connection to the Station’s founder and founding principals, and in the quality of the members that the Trust could recruit to advise and represent the management. It also gave the management a little more freedom to maintain core staff and projects that may have been lost had the station been entirely dependent on Government funding.

However, there were also grey areas of funding, which meant that some essential maintenance to buildings and facilities not currently used directly (though of considerable indirect and potential future importance) was unfunded. The Lawes Trust funds being legally restricted to use in Agricultural Research and Government funding restricted to specific projects. I don’t know whether this is still the case, but it was certainly a problem in the 1970s. However it indicates that any change in the ownership of NERC Research Centres needs to be very carefully thought out. Not only is it essential to get the change of ownership and the duties of the various parties clearly defined in the short term, but thought must be given to how future changes in funding and the legal duties of landlords, tenants and employers can be accommodated.

The leak of Foot and Mouth virus from the Animal Disease Lab at Pirbright in 2001 is another good example of what can happen if the ownership (particularly future sub letting) of Research Centres is not properly planned.

I would also like to mention the affect of major changes in the status of Research Centres on the recruitment, retention, moral and management of junior staff.

The reputation of Rothamsted and of the NERC Research Centres is considerable, and I am quite sure that any job advert will produce 100s of enquiries, but I am quite sure that many good applicants will be put off by a badly handled transfer of ownership. If you don’t want recruitment problems then the entire staff must be fully in support of the changes. That means explaining and consulting at every stage and at every level. (And not just a consultation with the unions. Directors must consult with Heads of Division, and they with Heads of Department and they with project leaders and so on down to the lowliest cleaners and maintenance staff. Feedback from the bottom must also reach the top! A lip-service only consultation will not do.) Don’t forget that many project leaders will be giving lectures at Universities and scientific conferences, and junior technical staff will have children in the local schools. If they are enthusiastic about the changes they will sell the changes for you. If they are worried about the changes, whether they talk about their worries or not, others will detect that they have “problems at work”. The worst possible situation is where these changes are forced on staff who are then ordered not to talk about them.
Obviously a badly handled change will destroy staff moral. They will worry about their future at the Centre. They will want to know if the change is just an excuse to degrade their terms and conditions, and if NERC is like BBSRC then staff terms and conditions are hidden in the enormous "staff code" which very few read, and even fewer understand. Your staff are proud to work for you partly because on the whole they feel that you will look after them. I certainly can't recall meeting any barrack room lawyers, who knew every dot and comma of the staff code during my 25 years at Rothamsted. If you betray their trust staff moral will plummet and their work will suffer. Not only that, but good staff will find it relatively easy to find new jobs in Universities or abroad.

The nightmare for the staff will be that the "privatisation" (as they might well see it) will lead to the introduction of more disastrous supermarket style management techniques such as the three year contract. (The staff get replaced by someone who spends a year learning the job, a year doing it, and the third year looking for the next job, and in the fourth year all the skills are lost, and others have to cover until a new person is recruited.) Or Performance Related Pay(PRП). When PRП was introduced we were aware that in supermarkets the qualification for a bonus is being able to do the job of one line manager. Well in Research, as you well know, that is a normal requirement; as this years discoveries become next years routine. After the first annual review most staff were put forward for a bonus, so management introduced quotas, immediately upsetting about three quarters of the staff. It was then found that in weather-dependent research it is impossible to stick rigidly to the annual plan, and as unpredicted weather often entails extra emergency work there is rarely time for extra job planning meetings. In the end those who refused to help out in emergencies got the bonuses, while those who did the extra work to save the project got nothing. People who teach contract workers and cover between contracts are also unlikely to be rewarded under PRП, because the exact time that a contract worker leaves is often difficult to predict.

To retain the other advantages of semi independence it is essential that management is appropriate to the situation in which people are actually working. Borrowing management techniques from elsewhere will not work unless they are modified by people who are properly trained to do so. Semi independence should not be seen as an excuse to cut costs by changing management. If it is it will backfire.

In short I think that there are great advantages in the changes that you are proposing, but only if they are planned and carried out very carefully.

But there is one more thing to think about, and that is how future Governments will think of semi-independent Research Centres. When I started at Rothamsted it employed 1000 people. this number declined gradually over the 25 years that I was there, but there were probably over 600 when I left. Then, as far as I can tell, the government felt that it was only obliged to support the Centres it actually owned and cut half the funding and half the staff. Yes they have some pretty new buildings on the main campus, but the last time I visited, I made the mistake of visiting the farm first, and the obvious neglect (not the fault of the skeleton farm staff, I hasten to add) was so devastating that I could not bring myself to speak to my old friends.

To end on a more cheerful note, I should say that I am very proud of my time working at Rothamsted, and admire all the work of the Research Councils. While I have had to highlight some disasters to make a point, I should also say that I had great sympathy with friends and colleagues who had to make some of the local decisions, and had I been in their shoes I would probably have done the same. But I hope that by raising these points we can learn from them. It would have been nice if us lowly workers could have discussed such points with the Research Councils at the time that things were going wrong!

Yours

Huw Jones

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FROM: -
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Using Opera’s mail client: http://www.opera.com/mail/
1. **Public sector status and funding provides leverage for additional income**

BGS’s national capability funding provides leverage for our substantial external income and this is exactly what the government wants. Using BGS expenditure figures for 2012/13 that were circulated to all staff, the NERC funding we receive provides leverage for external income which is 105% of that from NERC. I also looked at all the research councils and NERC come out top in this regard ([Cabinet Office, Public Bodies, 2012](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/74803/cabinet_office_public_bodies_2012.pdf)) with an equivalent leverage figure of 22% (=100 x (gross expenditure-government funding)/government funding using figures from this report).

It’s not as though we would suddenly be able to attract more external income by having a significantly different ownership or governance status. In fact, quite the opposite. The external income that I am involved with has grown over my whole career (24 years) and this is, in part, because our clients understand that we are doing public-good science and are a non-profit-making organisation. This is borne by the fact that in the last three years we have significant competition (from outside UK) and yet our external income has been sustained. The national capability funding we receive continues to play a pivotal role in gaining this external income.

2. **BGS and BAS are similar in terms of strategic science for the UK government**

BGS has not too dissimilar science objectives from those of BAS and much of what we do is also of strategic importance to the UK government. It is unfair to ring-fence BAS’s public sector status when BGS are doing similar science of strategic importance.

3. **NERC are wasting public funds**

On the other hand at the present moment I am witnessing NERC waste outrageous amounts of public funds moving the BGS Edinburgh office to Heriot Watt university. This is a completely unnecessary move costing NERC > £10M (new buildings have to be built). It also involves unaccountable costs to the environment due to employees commuting to an out-of-town location and the possible demolition of the existing, perfectly functioning, building. Any new science synergies, and it is generally agreed there are few and possibly only for marine sciences and these arguably would have happened anyway, will be offset by the diminution of existing good relationships with Edinburgh University and potential loss of science synergies there.

In summary I would like to see BGS remain in the public sector as a not-for-profit organisation but that we should no longer be owned or governed by NERC. If it wasn’t for point 3 I would argue for the status quo. One option would be to seek to have the same status as the Ordnance Survey or the Met Office, namely an independent non-ministerial government department with Executive Agency status operating as a Trading Fund. We would be accountable to Parliament though the Secretary of State for Business, Innovation and Skills and ministers there would approve the policy and financial framework within which BGS would operate.

Regards

Susan

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Trade Union Response to NERC Deliberations on Ownership and Governance of the Research Centres and Surveys

Dear Professor Allison

Many thanks for your invitation of 13th August to input to the current call for evidence on the ownership and governance of NERC research centres.

Prospect and PCS are the major Trade Unions in the Research Councils. Nationally, we have over 300,000 members in both the private and public sectors. We have experience of transfers of research providers from the public to private sectors in the Research Councils and other Government Departments.

On the 22nd May 2013, Jonathan Bates wrote to me, as Chair of the NERC Trade Unions, to outline the developments in relation to the issue of governance and ownership within NERC.

He raised two areas for consideration:

- Whether the public sector is the best place in which to carry out excellent, world-leading science, in light of the increasing constraints upon it, and;
- Constraints, which result from a public sector finance and accounting model.

On behalf of both PCS and Prospect, I will give our views on both. Whilst Prospect and PCS accept that priorities can and do change, a key principle should be that no major decision should be taken without central knowledge by government of the range and value of work undertaken and a risk assessment of failure to continue it.

We are conscious that our submission is rather brief in some areas, due to the page constraint. We are also aware that there are some particular issues that will be highly dependent on the ownership model under discussion, such as the relationship of the centres with NERC and the responsibilities of staff at NERC headquarters and those at research centres remaining in NERC.

We would welcome an opportunity to meet with you to discuss further aspects of the submission.

Yours Sincerely

Dr Helen Snaith
Chair, NERC Trade Unions
Public or Private Sector?

Jonathan Bates sets out the definition of the public sector as “those organisations owned and/or under the control of government” and the private sector as including “Universities, charities, not-for-profit organizations etc” and we accept this.

We also accept Jonathan Bates comment that “we both – management and Unions – find (it) equally frustrating in terms of our ability to reward and motivate our staff.” However, our members do not see this as leading to the conclusion that they would be better rewarded in the private sector. Our experience suggests that the private sector reward package is generally inferior after a change in ownership. In the University sector (specifically Warwick and Aberystywth Universities) we have experienced pressure to remove our members terms and in the newly privatised BBSRC Institutes and PML the reward package for new entrants is worse than that enjoyed by seconded staff.

On the key point as to whether NERC Centres should be in the public or private sectors we firmly believe they should be in the former. Only the public sector can support the long term research and data collection carried out at NERC Centres. This type of research is firmly in the area of national or international good and produces few commercial opportunities. Overwhelmingly the funding is from the public sector, particularly the UK Government and the European Union. A distinct requirement of the NERC Research Centres is their ability to carry out the long term monitoring and science programmes essential to climate studies, activities not well suited to the short-term cycles of funding typical in the private sector.

We are also conscious that Ministers appear to believe that government research can and should be done by universities, but it is dangerous to assume that expertise lost through cuts in government research would transfer to the university sector. In reality they are both vital and often work in close collaboration, but fulfil distinct needs. One reason for establishing government research institutes was to ensure the maintenance and establishment of facilities across a wider base, and as a service to a broader range of scientists. This was recognised as a serious tension within the Southampton Oceanography Centre and was a key deciding factor in forming the National Oceanography Centre, Southampton, back under full NERC management. In addition, Research Institutes do not have the demands of undergraduate teaching.

The NERC mission covers primary areas of climate and environmental science. These are areas where there is the potential for huge conflict between ‘public good’ and ‘commercial enterprise’, and where it is important to maintain the public perception of the independence of research. For example, if the UK government were to ask for scientific advice on the dangers of ‘fracking’ from a private institution that was largely funded by oil companies, it is doubtful that input would be seen as independent. This could be the case were BGS to become a private company. Similarly, CEH produces national greenhouse gas inventories to satisfy the UK’s international obligations. CEH science directly underpins the land use policies required to achieve the required emission reduction targets, and any funding from private farming, energy or forestry companies could present a significant conflict of interest to the independent policy analysis currently provided. These are all areas where NERC provides critical science to government that helps drive policy, which may be contrary to maximising pure financial return. The general public need to be able to trust that these decisions are being made on truly unbiased and independent science. Taking such key areas of science out of public ownership and into private sector may cast doubt on the integrity of the message, especially where research supports commercial activity.

The NERC mission also includes a responsibility for collecting and maintaining environmental data and sample collections (eg cores and biological material), from across the UK research community. This includes not only NERC funded data, but a range of data from both public-funded and commercial sources. It is not clear how the continuation of these services would be managed within a changed ownership model. This function is maintained within the public centre for all comparative countries. Separating data centre activity from the research carried out within the research centres would be detrimental to UK science.

We have heard the argument that moving to the private sector allows research providers to bid for alternative funding streams not available to public sector organisations. This was one of the arguments used to justify the privatisation of the BBSRC Institutes among others. However, we now have experience of privatised research providers over a period of more than 20 years, starting with the transfer of the then NRI to Greenwich University. The examples of privatisation we are aware of have not yet led to large increases in private funding, as was expected, and we have yet to see the evidence of significant new funding streams and diversified income. Funding remains predominantly public sector. For example, despite an excellent record in commercial activity, PML still obtains the majority of its funding from the public sector. This has been made worse by the state of the global economy in recent years. In times of hardship the private sector ceases to fund research as an easy target for cut back.
We also believe that moving NERC’s research out of the public sector has more risk than benefit. Currently government funding on Science and RCUK allocation can be used to transfer funds between Councils, their Centres and research projects as necessary. Such control and direction would not be possible between private research providers.

We have seen examples of “mission drift” where privatised research providers radically change their areas of science to attract funding or align with their University Departments. For example, Horticulture Research International was the UK’s major provider of horticultural research to the farming community. Within a few years of its transfer to the University of Warwick it had almost ceased to do any horticultural research in an attempt to fit with the peer review requirements of its department. Consequently many of the staff were made redundant and horticultural capability was lost to the UK. In Prospect’s view, the university’s decision was made on the basis of a report that did not present a coherent case on economic, public health, food security or environmental grounds. Further, it focused on basic research instead of key disciplines in agricultural science recognised by the Royal Society as being in urgent need of investment. It also ignored the translation of research into practice. Similar pressures will also exist for centres outwith university governance, as research areas will tend to ‘follow the funding’, rather than being driven by long term strategic requirements.

Private sector research providers could not benefit from the Government being “banker of last resort” and commercial failure would lead to the loss of national capability. It is not clear how the large infrastructure requirements of some NERC Centres would be funded in the private sector, particularly with European Union tendering requirements.

NERC Research Centres currently provide a number of services and facilities for the wider research community, including operation of data centres, large infrastructure and laboratory services on behalf of NERC, thereby supporting the delivery of science beyond their own centre. For example, the ships operated by NOC and the CEH stable isotope/analytical chemistry facilities. The effectiveness of these functions could be seriously compromised without the clear role of NERC in their control and operation. If the Research Centres are seen as ‘competition’ rather than coordinators and sector champions, there is a real danger of strategic science delivery suffering. For example, commercial oil companies may not lodge data with the BGS data centre.

**Public Sector Finance and Accounting Constraints**

We assume that the primary constraints being considered are the need to balance the accounts annually and the limited ability to carry over funding from one year to another. Of course, we expect the Comprehensive Spending Review process to impact on the Centres or Surveys whether they are in the public or private sectors.

We accept that this and other public sector finance constraints can be an issue. However, we do not believe it is a justification for moving to the private sector. In our experience, most of the finance difficulties can be removed by adoption of trading fund or similar status whilst remaining within the public sector.

In reality, whatever funding model is adopted, the value of research will depreciate without proper care and maintenance. This requires continuing investment in the science itself, the staff who do it and the facilities they work in. Yet decision-making is largely devolved to departments and research institutes that can proceed to cut or close facilities on the basis of business cases that have no regard to the impact on national scientific capability. Nobody in government appears to be prepared to take on this key responsibility of care for the national science base.

Within the NERC Research Centres, there is currently the flexibility to reallocate funding to allow continuity of key science areas, maintaining capability and UK expertise in these areas over short time periods where there is a temporary dip in funding. Such flexibility would not be possible across independent Research Institutes. It is also difficult to see how large, jointly owned and operated infrastructure investment could be developed across Independent Centres.

There have been significant developments across NERC Research Centres to move towards shared resources, for example computing facilities and wider administration and support functions, which may be located at a single centre. Moving from NERC ownership could lead to significant increases in costs for the centres to provide the same level of service. In general, it would be expected that there would be an increased cost in providing expertise and equipment in a range of support services across separate centres.