BAS/NOC Merger

CONSULTATION DOCUMENT

Introduction

1. On June 7th 2012, the Natural Environment Research Council (NERC) announced that there is a strong strategic case for the merger of the British Antarctic Survey (BAS) and the National Oceanography Centre (NOC) to take place, creating a new Centre encompassing polar and marine science. The fundamental reasons for their conclusions were:

    - Growing awareness of the scientific synergies between marine and polar science and the opportunities to integrate these areas of science more closely to address the most ambitious scientific questions;
    - The need for a long term vision for translating ocean and polar science into timely, beneficial economic and social impact, given the critical role of these "frontier environments" in addressing the challenges of increasing pressures on natural resources and rapid environmental change;
    - Recognition of the increasing costs of providing major marine and polar infrastructure and of the need to plan and deliver this in the most cost-effective way, particularly at a time of downward pressure on public finances.

2. Consequently, NERC is consulting its staff and stakeholders to invite ideas on how to implement the intended changes to achieve the strategic objectives.

3. The proposed merger will ensure that NERC continues to deliver the scientific excellence required to underpin the UK's leading role in the governance of Antarctica and the Antarctic Treaty System.

4. The proposed merger would not change the commitment that NERC has already made to support the current level of UK activity in Antarctica and South Georgia. The merger will enable NERC (via BAS) to continue to perform the roles that it has in supporting UK participation and leadership in the Antarctic Treaty System and in providing the facilities and logistics supporting the delivery of the UK's programme of science in Antarctica.

5. Quantification of the expected costs and savings arising from the merger will form part of the business case that will be presented to Council in December. The numbers will depend on detailed assumptions which will be made, taking into account comments on the consultation document. It would thus be premature to pre-empt that process by offering figures at this stage.

6. This document provides an overview of what NERC proposes and forms the basis for consultation with staff and stakeholders:

    - The document is divided into sections that cover the main elements of creating the new Centre. It would be most helpful to receive comments section by section.
    - You are welcome to comment only on sections of interest to you rather than commenting on the whole document.

- Having commented on all or some of the sections, you are invited to make any general observations or to comment on any other relevant matters
- Where NERC has a clear view on how to proceed, this is stated.

7. Details of how to respond to this consultation are available on the NERC website www.nerc.ac.uk. Responses can be completed online, via e-mail or by letter.

8. The deadline for responses is Wednesday 10 October 2012.

9. NERC will take into account all responses received in preparing the scientific and business case for the merger of BAS and NOC. NERC Council will consider this scientific and business case in December 2012. The final decision on all issues related to the merger will be taken by NERC Council.

SECTION 1: Vision and Mission of the Centre

10. The oceans and polar regions (Arctic and Antarctic) are of ever-growing concern, interest and importance due to rapid environmental change affecting the whole planet and increasing pressures on natural resources.

11. The vision for the Centre is to become by 2020 a world- leading centre for integrated marine and polar science – from coast to deep ocean and from pole to pole. It will be distinctive for its own scientific excellence and also for its role in enabling the whole UK and international science community to work together to tackle some of the most exciting and important scientific challenges that are facing Earth today.

12. The Centre's mission would be:

to deliver, enable and support world-class marine and polar research for the advancement of knowledge of the Earth system for the benefit of human well-being, the national interest and the UK economy

13. The Centre will do this by:

- Undertaking ambitious programmes of basic, strategic and applied research in marine and polar science;
- Enabling the wider UK science community to undertake excellent, high impact marine and polar science by leading and facilitating the development of shared priorities, enabling collaborative national and international programmes and coordinating research activity;
- Translating new and existing knowledge for beneficial use by government, business and society in the national interest;
- Managing the provision of large research infrastructure and other facilities by the most efficient and effective means possible, in order to enable access to the oceans and polar regions by the UK science community on the basis of the quality and likely beneficial impact of the science proposed, and in the national interest;
- Supporting UK leadership and participation in the Antarctic Treaty System

SECTION 2: Aims and Objectives of the Merger

14. The overall aim in creating a merged Centre is to secure, as a priority, long-term UK international scientific competitiveness in marine and polar science in the national interest –

against a background of growing international scientific competition and more constrained funding resources. Understanding the key environmental issues in polar and marine science will require international partnerships; the new Centre will play an important role in developing and delivering international science initiatives.

15. From a UK perspective, the objectives of merging the two Centres include:

- Providing a clear focus to enable the UK science community to develop and deliver ambitious, integrated scientific research programmes in marine and polar sciences - fully capitalising on the capability of the whole UK science community;
- Tackling the scientific problems of greatest global significance involving the oceans and polar regions within the Earth system context, especially those where a long-term research focus is essential and recognising the close coupling between the polar regions and the oceans;
- Driving the timely translation of scientific knowledge into beneficial impacts for society. This is especially vital given the ever-growing importance that the oceans and polar regions will have for people in the coming decades, due to their key role in rapid environmental change, scientists' greater uncertainty in predicting these regions' future environmental response and the increasing pressure on natural resources in frontier regions;
- Stimulating the development and application of new observing technologies, recognising the common challenges of making measurements in the polar regions and oceans which are generally remote, hostile and sparsely sampled;
- Securing efficiency savings by combining similar activities and creating a single management structure;
- Maximising resources available for science through more coherent and efficient planning and management of the expensive large-scale research infrastructure and complex logistics needed for both ocean and polar science, especially research ships;
- Strengthening organisational resilience and operational flexibility to plan, operate and secure efficiencies across all areas of the new Centre's mission in the context of the constrained resources likely to apply within public finances for the foreseeable future.

SECTION 3: Scientific, Economic and Societal Impact Opportunities

16. The new Centre would encompass the breadth of polar and marine science, ranging from geology, glaciology, deep-sea biology, polar meteorology, upper-atmosphere processes and polar terrestrial and marine ecology through to global oceanography, marine biogeochemistry, benthic ecology and marine geoscience. NERC values this breadth – encompassing both the marine and non-marine dimensions of polar science - which is important for scientific vibrancy and to encourage a multi-disciplinary Earth-system approach to science.

17. There are obvious areas of scientific synergy between marine and polar science. There are significant opportunities for the UK science community to work more effectively together both domestically and internationally to develop ambitious, high-impact research programmes. Some key (but not exhaustive) areas of synergy and interface include:

- Ocean-polar coupling in an earth system context including ice melt sea-level rise;
- Identifying earth - climate system tipping points with better integration of observation and modelling;
- Carbon flow between different polar – sub-polar reservoir sinks and sources perturbed by global climate change;
- Teleconnection between polar and mid-latitude climate with specific focus to the Atlantic Ocean
- Ecosystem processes in extreme and rapidly changing environments;

- Ice and marine sediments as archives of past earth history;
- Seafloor processes in a warming world – hazards and resources;
- Integrated biogeochemistry and trophic interactions in oceans and coastal waters;
- Enhancement and integration of long-term observing of extreme, climate sensitive environments (e.g. a Southern Ocean "observatory");
- Technology challenges including sensors for extreme environments, autonomous measurement platforms, telemetry, low-power systems.

18. The oceans and the polar regions (particularly the Arctic) are "frontier" environments where, of necessity, there will be increasing economic activity in the coming decades - not least because of increasing pressures on natural resources. Marine living resource exploitation in Antarctica is regulated, and mineral resource extraction prohibited, by the Antarctic Treaty System to which the UK is strongly committed, but this region is nevertheless subject to increasing human influence (e.g. international scientific infrastructure, tourism, trans-boundary pollutants and climate change).

19. A long-term vision is needed to:
    - provide Government with the evidence base for the edge it will need in exercising leadership in the formulation of domestic and international policy to regulate sustainable economic development based on these environments (e.g. through the UN Convention on the Law of the Sea, the Antarctic Treaty System)
    - provide the critical underpinning knowledge and expertise to sustain the UK's strong commitment to the Antarctic Treaty System
    - support the UK Government's position as a State Observer to the Arctic Council, and
    - equip UK business and UK investors with the edge needed for de-risking major investment decisions in hostile, unfamiliar environments

20. Within this context, a key objective of the Centre will be to rapidly establish itself as a hub for innovation to harness and support growth of widely dispersed UK scientific and technological expertise to exploit these opportunities. Areas of high potential include:

    - Technologies (such as autonomous and robotic systems) for operational monitoring and survey in extreme environments;
    - Risk analysis and mitigation for extreme environment operations;
    - Real-time and forecasting systems for ice conditions;
    - High precision sea-floor and habitat mapping – in the deep sea and under ice

21. The merged Centre would seek to exploit opportunities to do this by

    - Strengthening the business and commercial expertise within a re-shaped senior leadership team;
    - Building and broadening business engagement, particularly in the seeking of regional innovation clusters;
    - Establishing explicit translational research programmes to turn data and research outcomes into innovative, timely information products;
    - Strengthening and focussing partnerships with key operational agencies and networks (e.g. Met Office, Natural Hazards Partnership) to maximise pull through of science to commercial and operational use;
    - Exploring scope for more imaginative use of NERC's physical estate at Cambridge, Southampton and Liverpool, as appropriate, for the creation of enterprise spaces within these campuses.

SECTION 4: Name of the new Centre

22. The effect of merging NOC and BAS would be to create a single new NERC Research Centre encompassing marine and polar sciences with a single scientific vision, a single Executive Director and a single integrated management team.

23. The name for the new Centre should reflect its broad scientific ambition in global marine science and polar science, in both the Arctic and Antarctic. The name should offer scope to build a recognisable identity around a strong single 'brand' that draws on the strengths of the BAS and NOC brands, both of which are recognised as representing world-class research institutions.

24. Since the new Centre will be wholly owned by NERC, there is a strong case for a name such as "the NERC Centre for Marine and Polar Science", to enable NERC to benefit from recognition of its investment. However, it is also recognised that a name that includes the term 'national' offers different benefits, notably in facilitating the development of international partnerships and collaboration. A name such as "the National (or British) Centre for Marine and Polar Science" is therefore a valid alternative.

25. NERC considers that it would make sense to develop a new Centre identity that will subsume the BAS and NOC brands. However, the value of these brands is recognised and it is conceivable that either or both of these brands might be retained in the longer term and be used in a clearly-defined way for specific purposes.

26. In particular, it is noted that the name "British Antarctic Survey" is internationally recognised and that its retention within the new Centre, to specifically identify the physical infrastructure and logistical and operational functions that provide support for the UK's programmes of science in Antarctica, is likely to be beneficial.

27. NERC Council will take the final decision on this taking into account views expressed in the consultation.

SECTION 5: Governance and Management

28. The Centre would be owned by NERC as is already the case for BAS and NOC. This means staff would be employed by NERC and NERC would continue to be the legal party for any contracts with third parties.

29. The Centre would have a single Executive Director who would report to the NERC Chief Executive, as is the case for all NERC-owned centres. They would operate under a management statement from NERC, again as with all other NERC-owned Centres. This would set out levels of delegated authority, etc. The Executive Director would be a member of the NERC Executive Board.

30. The Executive Director would be supported by a senior team, whose members would sit on the centre's Management Board and would include the Heads of the highest-level organisational units.

31. The Executive Director would be expected to have access to high-quality independent advice on all aspects of its mission, such as through a non-executive Advisory Council with an independent chair. The Executive Director would also take account of Her Majesty's Government (HMG) views in respect of the Centre's South West Atlantic and Antarctic operations. There would

remain a single nominated British senior Director responsible for the Centre's overall activity in the South West Atlantic and Antarctic region, including the Centre's interface with HMG interests in the Antarctic Treaty area, and international operators of Antarctic programmes.

32. The high-level functions of the Centre in pursuit and support of its mission would be:
    - Science;
    - Management of Large Research Infrastructure for marine and polar sciences, including ships, stations, aircraft, engineering and logistics;
    - Corporate Services.

33. The following other functions are also crucial to the delivery of the Centre's mission and their place within the overall management framework would need to be determined:
    - Impact through business and Government engagement, commercialisation and innovation;
    - Data and Information management and exploitation;
    - Communications;
    - Health, Safety & the Environment.

34. The Centre should have a fully integrated Corporate Services function to support its science and large research infrastructure delivery. As with other NERC Centres, this means that there would be single teams for each function, e.g. Finance, Human Resources, Communications, etc.

35. Teams to support formal international, Business, Government and science community engagement would be an important element of delivering impact and enabling the Centre to facilitate work widely with NERC, national and international scientific communities. Such teams should be closely allied to the Executive Director and be part of the Directorate function.

36. To give an idea of the size of the Centre, the present annual operating budgets of BAS and NOC are each c£40-50m per year. Based on 2012/13 staff numbers in BAS and NOC, the overall breakdown of staff (full time equivalent) numbers across the major functions of the Centre would be approximately:

FUNCTION	Staff FTE
Science	370
Large Research Facilities	400
Corporate and Directorate Services	170
Other functions	60
TOTAL	**1,000**

37. The precise form of the high-level organisational structure of the Centre and the degree of integration that is necessary or desirable to achieve the Centre's aims, and over what timescale changes would be made, would be a matter for the Executive Director to determine in consultation with NERC.

38. The Centre would be based on the three existing NERC sites at Cambridge, Southampton and Liverpool (in addition to the polar stations). The development of positive, mutually beneficial relationships and partnerships (formalised as appropriate) between the Centre and its neighbouring/hosting Universities at Southampton, Liverpool and Cambridge would continue to be strongly encouraged.

39. The Centre would have a headquarters at one site (as is the case for all of NERC's multi-site Research Centres). The Executive Director and Head of Corporate Services would be based at

the headquarters as would be the Heads of each of the major corporate services support teams (eg Finance, HR). Other senior roles would be based in the most appropriate location, but with responsibilities across the whole of the organisation.

40. Consolidation of some Corporate Services functions will be essential on formation of the Centre e.g. finance, whereas others would be consolidated during the first year of the new Centre. It would be desirable for the Heads of Corporate Services functions to be based at the headquarters from the outset.

41. It is recognised that some functions – including elements of some Corporate Services functions – will need to be delivered at sites other than the headquarters. Likewise some sites might be designated as centres of expertise for particular activities and functions.

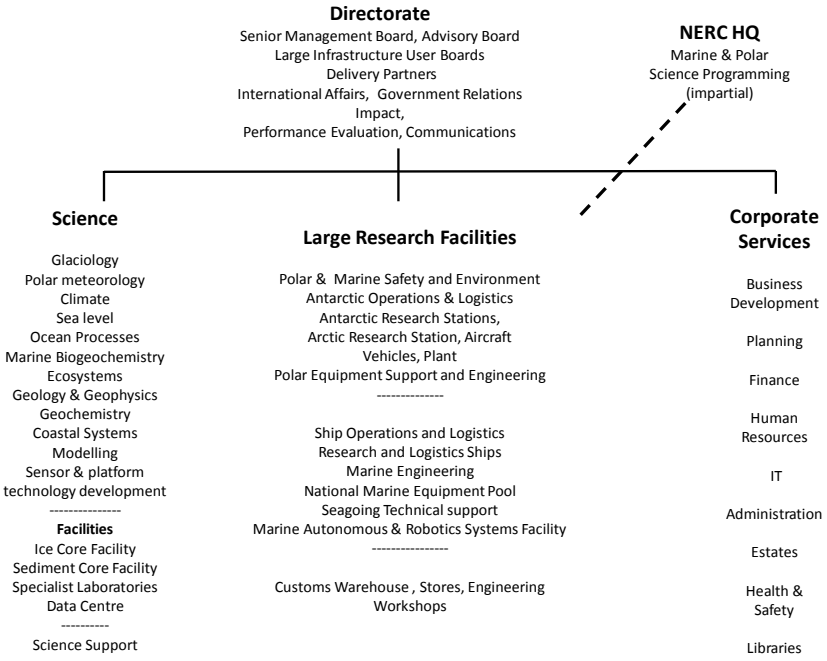

Figure 1

42. Figure 1 illustrates the Centre's high-level organisational structure. It is not a comprehensive list of all activities. Leadership and management structures and grades within the new organisation would need to be determined by the Centre's Director and management in consultation with NERC, but would be generally consistent with practice in other NERC Centres. The split between Corporate Services and Directorate Services is indicative.

43. NERC proposes that there should be a single, real (not virtual) headquarters of the Centre and that it be based at Southampton. The main reasons for this are:

- it is considered optimal to site a headquarters at one of the existing parts of the Centre rather than a completely new location
- the NOC headquarters is already at Southampton (rather than Liverpool)
- looking at a variety of factors (transport links, availability of labour, cost of labour, proximity to organisations working in related areas, building costs/taxes/rates etc) and acknowledging that it is a fine balance between Cambridge and Southampton on these factors, NERC believes that Southampton is best identified as the Centre's headquarters;

44. NERC Council will make the final decision on this issue.

45. A specific issue that will need to be resolved is whether there should be a single overall Science Director reporting to the Executive Director (covering Marine & Polar Science) or whether this role should be divided between two or more Directors. Views on this are welcomed.

46. The merging of BAS and NOC would offer the prospect of developing synergetic science opportunities to tackle the research agenda outlined in Section 3. The new organisation would have some 370 scientists that are currently structured in six science groups at BAS and five science groups at NOC (with three of the latter working across both the Southampton and Liverpool sites). These current eleven science groups vary in size from 16 to 55 staff.

47. The merged organisation would have existing science areas / topics where there is: (i) obvious and immediate benefit from integrating the science (e.g., sea-level rise, polar oceanography, marine ecosystems including biogeochemistry), (ii) emerging benefit over the medium term (e.g., ocean-atmosphere interactions, new observation technology in extreme environments, climate change perturbation of polar – sub-polar carbon flux), and (iii) where there is no existing overlap and none will emerge (e.g. space weather).

48. Given that science staff will remain at the three sites of Cambridge, Liverpool and Southampton, the organisation / management of the science teams will likely require a matrix structure with a mix of local site-based management and also a strong mandate of science integration across sites, where appropriate.

49. Additionally, any newly-formulated structure of the science teams will need to consider aspects of group identity, especially for those science groups where there is no current overlap between BAS and NOC, whether groups should be based around science discipline or research theme (or even impact outcome), the management "cost" of potentially leading a science group across three sites and the most effective structure for science leadership and efficient / optimum size of research groups.

50. Given that strategic science integration is a major objective of the merger (so as to realise new and enhanced research opportunities for the UK), views are welcomed from BAS and NOC staff (and the wider research community) on what are the more important determinants and considerations for structuring science groups across the three sites of Cambridge, Liverpool and Southampton.

Financial implications

51. The following drivers of costs and savings have been identified and can be considered in two aspects – those associated with the transition and those that will be features of the new Centre.

52. In terms of transition costs, the costs of relocation and /or of redundancy of staff depend on the detail of plans which are still to be developed, but as the proposals envisage maintaining all three current UK sites, these are not expected to be significant and are certainly affordable without any impact on NERC's funding for science.

53. In terms of on-going savings post transition, savings arising from merging management structures, from merging some functions and from the more coherent and efficient planning of large scale infrastructure are to be expected. There may be increased costs of travel associated with operating across three sites, but these are expected to be small compared to the savings and will be mitigated by effective use of ICT.

SECTION 6: Large Research Infrastructure

54. Between them, NOC and BAS manage virtually all of NERC's large research infrastructure (research ships, polar research stations and aircraft and the associated logistics and engineering).

55. Widening access to research infrastructure for the NERC-funded scientific community is important to enable the highest quality science to be delivered by the best researchers. NERC's intention is that all large research infrastructure (marine and polar) should be managed as explicitly science-community-facing facilities with access by a transparent process, based primarily on the quality and quantity of funded science.

56. The long-standing approach whereby transparent scientific programming and access to marine large research infrastructure and facilities for all scientists (inside and outside NOC and BAS) is managed independently by NERC Swindon Office is one model that might be extended to polar facilities and logistics. Views are welcomed on how best to undertake scientific programming and access to polar and logistics. Further work with the wider UK research community will be undertaken, taking into account existing best practice in both BAS and NOC, to develop a suitable model.

57. NERC's four Royal Research Ships (RRS *Ernest Shackleton,* RRS *James Clark Ross,* RRS *Discovery,* RRS *James Cook*) would become a single fleet within the new Centre with unified management of ship-related functions (e.g. marine operational activities, marine HR, marine engineering maintenance and ship fuel procurement) .

58. The focus for ship management would be at Southampton. In order to operate NERC's fleet in an effective and fully-integrated way it will be desirable to harmonise marine staff and a variety of ship management processes and procedures over time.

59. Cambridge would be the focus for all polar facilities (polar research stations and aircraft), polar logistics and operations and related engineering and technology other than for ships. Some marine operations staff would also need to be based at Cambridge to ensure satisfactory interaction of the ships with other polar logistics (eg resupply of research stations).