



Natural  
Environment  
Research Council

## Minutes of the 20th meeting of NERC Council in UK Research and Innovation (redacted)

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### NATURAL ENVIRONMENT RESEARCH COUNCIL

Twentieth meeting of NERC Council in UK Research and Innovation held at Polaris House, Swindon on Thursday, 2 March 2023.

#### Members present:

Professor Sir Duncan Wingham (Executive Chair), Nick Folland (Senior Independent Member), Judith Batchelar, Dr Rebecca Heaton, Dr Matthew Harwood, Professor Sir Stephen Holgate, Michael Lewis, Professor Peter Liss, Clare Matterson, Gordon McGregor, Rashik Parmar (part), Professor John Pyle (via Zoom) (part), Professor Gideon Henderson, CSA, Defra, (part), Professor David Hannah, Chair, Science Committee

**NERC/UKRI Directors (Head Office):** Nigel Bird (Director, Major Projects), Alison Robinson (Deputy Executive Chair and Director, Business Delivery and Insight), Professor Susan Waldron (Director, Research and Skills) (via Zoom), Dr Iain Williams (Director, Strategic Partnerships)

**Apologies:** Professor Hannah Cloke

**Other attendees:** Dr Liam Haydon, Items 3 and 11, Sarah Turner, Items 3 and 11, Sir Keith O’Nions, Item 4, Professor Sir Paul Curran and Jess Pollitt, Item 7, Professor Melanie Welham, Executive Chair, BBSRC, Item 8, Kevin Dolby and Fiona Goff, Item 9, Jen Jennings, Item 12

**Secretariat:** Helen Page

#### Introductory items

##### 1. Executive Chair’s welcome and introductions (Oral)

- 1.1 Duncan Wingham welcomed members to the twentieth meeting of NERC Council and noted that apologies had been received from Professor Hannah Cloke.
- 1.2 Duncan Wingham welcomed Professor David Hannah to his first NERC Council meeting in his capacity as Chair, Science Committee and invited him to introduce himself.
- 1.3 Duncan Wingham congratulated those in the environmental science community who had been recognised in the King’s New Year Honours including:
  - **CBE: Professor Richard Bardgett**  
Professor of Ecology, University of Manchester for services to Soil Ecology and Climate Change Science
  - **CBE: Professor Christopher Stringer**  
Research Leader, Human Evolution, Natural History Museum for services to the Understanding of Human Evolution

- **OBE: Professor Bridget Emmett**  
Head of Soils and Land Use, UK Centre for Ecology and Hydrology for services to Soil and Ecosystem Science
  - **OBE: Professor Richard Jones**  
Science Fellow, Met Office, for services to Climate Science
  - **OBE: Professor David Price**  
lately Vice-Provost, Research, Innovation and Global Engagement, University College London for services to Science and to Research
  - **MBE: Professor Sarah Wanless FRSE**  
Emeritus Fellow, UK Centre for Ecology and Hydrology for services to Seabird Ecology
  - **MBE: Pauline Weatherall**  
Digital Atlas Manager, National Oceanography Centre for services to Bathymetry
- 1.4 Duncan Wingham informed Council that Professor David Vaughan, formerly BAS Director of Science, had passed away recently.
  - 1.5 Duncan Wingham asked members for any updates to their declared interests or any vested interests in the items being discussed today. None were declared.
  - 1.6 Duncan Wingham informed Council that this would be the last meeting for Nick Folland, NERC Council Senior Independent Member, as his tenure on NERC Council ended on 31 March 2023. He thanked him, on behalf of Council, for his valuable contribution to NERC over many years which included his roles as Chair of the NERC Audit and Risk Assurance Committee and the NERC Assurance Board.
  - 1.7 Duncan Wingham informed Council that Rashik Parmar would assume the role of NERC Council Senior Independent Member from 1 April 2023.
2. **Unconfirmed minutes of the 19<sup>th</sup> meeting of NERC Council and Decisions and Actions**
    - 2.1 Duncan Wingham asked members for any amendments and matters arising from the minutes of the previous meeting. No amendments were made, and the minutes of the nineteenth meeting were confirmed as a good record.
    - 2.2 Duncan Wingham advised that all of the actions from the previous meeting had been completed apart from one, related to international activity. He explained that a decision had been taken to consider this further once the Department for Science, Innovation and Technology (DSIT) had clarified its approach to international science and Horizon.
3. **Discussion of Council retreat outcomes (Oral/Slides) *Slides, item 3***
    - 3.1 Alison Robinson introduced this item and explained that Council was being asked to ensure the summary slides provided a reference point for any future discussions by capturing key points from each of the four discussion items at the Council retreat. The summary slides have been attached to the minutes as an annex as a record of the day. Liam Haydon and Sarah Turner observed this item.
    - 3.2 Council discussed the summaries of the Council retreat and the key points of the discussion are captured below.

NERC digital – from a strategy to transforming environmental science

- 3.3 Council highlighted the importance of ensuring NERC remained up-to-date, noting that this might require drawing on intelligence from other routes which were different to those

currently utilised by the research councils.

- 3.4 Council asked for clarity on the relationship and level of interaction between the NERC data centres and asked whether there was any mechanism in place to ensure these centres were utilising the latest technology. Iain Williams responded that the NERC Environmental Data Service provided co-ordination across all five of the data centres with the aim of providing a singular service for the environmental community.
- 3.5 Council highlighted the example of Health Data Research UK (HDRUK) which had amalgamated a number of MRC centres into one organisation and suggested that there might be lessons to be learnt from this, including on how to secure additional funding.
- 3.6 Council emphasised the importance of sharing awareness of existing data sets and asked whether data was shared internationally.
- 3.7 Duncan Wingham commented that it would be useful to have a further discussion at Council on the NERC data centres. He added that the provision of scientific data to the community was effective and commented that the challenge was in integrating environmental data from the data centres with other data. He confirmed that there was highly developed integration of environmental data internationally.

**ACTION: an item on NERC data centres to be added to the rolling programme**

- 3.8 Council was supportive of the idea to get greater insight into the data centres and highlighted the importance of clear career structures to aid with recruitment and retention of employees with digital skills. Duncan Wingham informed Council that UKRI had embarked on developing a national Digital Research Infrastructure to look at data and computing provision at UKRI level.

#### How can we make the environmental science research and innovation system more diverse?

- 3.9 Council commented that it would be important for any interventions to be both granular and relevant for the target audience/community, adding that NERC should ensure that any partners shared our aims and ambitions.
- 3.10 Council noted that there were complexities surrounding the use of role models and noted that it would be important to ensure individuals were not overused and consider ways in which they might be compensated. Council added that it was also important to ensure that role models were realistic and not too aspirational.
- 3.11 David Hannah commented that consideration might also be given to reverse mentoring where senior leadership teams were mentored by diverse groups.
- 3.12 Duncan Wingham reminded Council that NERC provided funding from post graduate level onwards and influence at a lower level, such as within schools, was not within the remit of NERC although he commented that it might be useful for NERC to support an intervention in this area.
- 3.13 Alison Robinson reminded Council that the Future Leaders Council (FLC) would have responsibility for NERC Diversity and Inclusion, including the £1.5 million funding line for improving Diversity and Inclusion, and that this discussion would be shared with the FLC to take into consideration as part of their future work.

#### Ensuring the Council Dashboard is useful and effective

- 3.14 Council agreed that the summary slides reflected the discussion and that this had been a valuable discussion.

#### How can we ensure our infrastructure choices keep the UK at the forefront of environmental

science?

- 3.15 Council asked for the portfolio and forward look to be shared with Council in addition to Science Committee.
- 3.16 Council asked for clarity on the process for making decisions on infrastructure. Iain Williams explained that the pipeline of ideas was discussed by Science Committee with opportunities to bid for infrastructure taking place on an annual basis.
- 3.17 Duncan Wingham added that decisions were made at the UKRI level by the Infrastructure Advisory Committee and that the pipeline of ideas fed through to the UKRI Infrastructure Roadmap. He added that the role of NERC was to ensure mature ideas from the community were developed and added to the infrastructure roadmap. It was agreed to have a further discussion at Council on this subject.

**ACTION: an item on infrastructure choices and the UKRI infrastructure roadmap to be added to the rolling programme**

[Gideon Henderson joined the meeting]

#### **4. British Geological Survey (BGS) report by the Chair, BGS Board Slides Item 4**

- 4.1 Duncan Wingham welcomed Sir Keith O’Nions, Chair, BGS Board to NERC Council and invited him to say a few introductory remarks before inviting questions from Council.
- 4.2 Keith O’Nions informed Council that BGS operated under a Memorandum of Understanding (MoU) with NERC which defined the role of the BGS Board and that he would be presenting the view of the board in his report.
- 4.3 Keith O’Nions presented slides to outline: the strengths and weaknesses of BGS as an organisation; the main achievements over the past three years; the main opportunities for the organisation and the effectiveness of the BGS Board.
- 4.4 Duncan Wingham asked whether the BGS Board had encountered any difficulties in the boundaries set out in the MoU. Keith O’Nions commented that the balance was appropriate, adding that there was a level of support required to educate board members, especially from the private sector, particularly with regard to the financial arrangements for public sector organisations.
- 4.5 Council asked whether BGS was considering opportunities to increase private sector income to support capacity growth and whether the members of the BGS Board had the required expertise to enable this. Keith O’Nions explained that the BGS income was 50% National Capability and 50% earned income. He added that stakeholder events helped to raise visibility of the work of BGS and that there was wide collaboration between BGS and the university sector.
- 4.6 In response to a query on whether there was co-ordination across the observatories, such as the UK Geomagnetic Observatory run by BGS, Keith O’Nions confirmed this was the case.
- 4.7 Duncan Wingham commented that the UK was unique in having its geological survey owned by a research council given its primary activity was not research. He added that the MoU had been written to outline the purpose of BGS and provide a list of activities for which it was responsible.
- 4.8 Duncan Wingham thanked Keith O’Nions for his contribution, both in establishing the BGS Board and ensuring its ongoing effectiveness.

#### **5. Update from CSA, Defra (Oral)**

## 5.1 Gideon Henderson provided an update under five headings:

### a) Government

Gideon Henderson commented that the Department for Business, Energy and Industrial Strategy (BEIS) had now been separated into three departments: the Department for Business and Trade (DBT); the Department for Science, Innovation and Technology (DSIT) and the Department for Energy Security and Net Zero (DESNEZ). He added that a new Secretary of State for Science, Innovation and Technology had been appointed, Rt Hon Michelle Donelan MP, with a new Chief Scientific Advisor for the department yet to be appointed.

Whilst the changes were positive in emphasising the importance of science for the UK, he noted that it would be important for other Government departments, such as Defra, to continue to highlight that they also conduct scientific activity.

### b) EU/Northern Ireland

Gideon Henderson commented that the recent negotiations on the Northern Ireland protocol may open up the opportunity for association to Horizon Europe which had put plans for a domestic alternative on hold.

### c) Biosecurity

Gideon Henderson informed Council that the new Biosecurity Strategy was due to be published soon and would be of relevance to NERC. He added that the situation with avian flu remained of concern, with ongoing surveillance and planning taking place.

Gideon Henderson informed Council that the Defra-led Plant Biosecurity Strategy had been published in January 2023.

### d) COP15

Gideon Henderson informed Council that the UK had a strong voice at COP15 which had taken place at the end of 2022 and that some ambitious targets had been agreed.

### e) Defra

Gideon Henderson advised that the targets under the Environment Act on air quality, water quality, biodiversity, waste and trees had been published in December 2022.

Gideon Henderson advised that Defra had a continued focus on the crab deaths in North East England. He added that the Genetic Technology (Precision Breeding) Bill would soon be approved.

Finally, he informed Council that good progress on Government co-working with UKRI had been made over the past year.

5.2 Council asked whether the targets set at COP15 would be mandatory. Gideon Henderson commented that the targets were voluntary at national level, but some components were already contained in UK law and policy.

5.3 Council asked whether Defra had a role to play when there was a divergence of ideas about environmental policy across the devolved nations. Gideon Henderson responded that there was active discussion with the devolved nations about such policy and some particular cases where changes were not happening at the same time in nations, but that the direction of environmental policy remained aligned.

## 6. **Executive Chair's update (Oral) Slide, item 6**

6.1 Duncan Wingham gave an oral update on some of the key activities since the previous Council meeting.

a) Government

Duncan Wingham commented on the recent changes at Government level and emphasised the importance of continued positive engagement. He added that the move of digital from the Department for Culture, Media and Sport to DSIT had been a positive outcome.

b) Antarctica

Duncan Wingham informed Council that he had recently visited the Antarctic and noted that good progress had been made on the building programme which was anticipated to be weatherproof by the end of the season. He noted the positive interaction between the scientific staff and those involved in the building programme at Rothera.

Duncan Wingham invited Nigel Bird to provide an update on the *Sir David Attenborough* (SDA) Polar Science trials. Nigel Bird explained that testing had been taking place on the SDA using the winches and presented a slide to illustrate.

Duncan Wingham added that, due to delays in building activity and testing of the ship, the use of these facilities would be limited over the next few years. Iain Williams explained that, whilst there was a full programme of science activity over the next five years, this did not include capacity for many new, large projects and that NERC had recently made an announcement to communicate this.

c) Environmental Sustainability

Duncan Wingham informed Council that he had recently co-hosted a dinner attended by a range of Vice-Chancellors in order to seek broad support for a voluntary agreement across the university sector on achieving net zero. He added that this activity was being undertaken as part of the UKRI requirement to ensure those we fund are moving towards to net zero.

Duncan Wingham informed Council that he had received support for the proposal which included an element of reporting and that engagement with the Department for Education had already taken place to make use of their reporting, enabling single reporting to take place. Duncan Wingham advised that an agreement was expected by the Autumn.

He cautioned that it would be difficult to gain agreement without an element of offsetting being included and Council suggested that limitations on offsetting might be introduced or that it might be limited to specific activities. Duncan Wingham noted that the role of UKRI was to offer guidance rather than regulation. Alison Robinson added that the UKRI position was that the use of grants to fund offsets would not be permitted by UKRI.

Duncan Wingham commented that NERC intended to trial the use of biofuel in its ships and was ensuring that there was both sufficient supply and the ability to mix fuels. Council welcomed this initiative which would significantly reduce the carbon footprint for NERC.

d) Future Leaders Council

Alison Robinson informed Council that the Chair for the Future Leaders Council (FLC) had now been appointed, adding that interviews for the members would take place next week.

Alison Robinson added that the search agency, Gatenby Sanderson, had commented that applicants for the FLC were some of the most diverse they had seen in a campaign. Council congratulated NERC on developing and taking forward this innovative approach

which was the first of its kind in UKRI. Alison Robinson confirmed that the intention was for the Chair, FLC, to attend Council meetings from June 2023, subject to pre-employment screening.

e) NERC Executive Chair

Duncan Wingham informed Council that the recruitment campaign for his successor was now live with interviews planned for April 2023. Whilst the timeline indicated that a successor might be appointed by July 2023, planning was in place for an interim solution if the timeline was delayed.

Duncan Wingham added that the Head Office Plan was currently being refreshed and this would help to establish a clear pathway for NERC following his departure. Alison Robinson added that there would also be a role for the NERC advisory structures to play during the interim period.

[Rashik Parmar left the meeting]

### **Items for discussion**

#### **7. Increasing world-class, cutting-edge research in NERC centres: Advisory Group recommendations (NERC 23/03)**

7.1 Iain Williams introduced this item and reminded Council that, following the 2020 Centre Evaluation Exercise, it had been decided to establish an advisory group to review approaches to recruitment and retention of scientific leadership at NERC centres. He explained that Professor Sir Paul Curran had been invited, as Chair of the Advisory Group, to outline the recommendations from the Advisory Group. Jess Pollitt observed this item.

7.2 Paul Curran explained that the advisory group had reviewed the centres' approaches to recruiting, retaining, motivating and developing world leading scientists and had made some recommendations to further develop these plans. He added that an independent research agency had been commissioned to review remuneration of NERC centres and comparator centres with a report due to be completed soon.

7.3 Paul Curran outlined the recommendations for the NERC centres which related to:

- detailed approaches and planning
- prioritising competitive salaries and scientific opportunities
- strategic management of science portfolio
- amplifying reputation
- developing externally recognised titles of esteem
- flexible approaches to reward, such as pay and pensions (where contractually possible)

7.4 Paul Curran added that the recommendations for the NERC Executive were to continue to monitor progress at the centres and to consider providing flexible support for recruitment.

7.5 Paul Curran expressed his thanks to the advisory group and the NERC HO team for co-ordinating this activity.

7.6 Council asked about the value of the Individual Merit Programme (IMP) scheme as this was an established route for increasing salaries. Paul Curran commented that, whilst the IMP framework had value, the salary ranges for IMP were limited and titles of esteem, such as Distinguished Research Scientist, carried more prestige. Duncan Wingham added that criteria for the IMP scheme were narrow and did not cover the broader range of skills associated with, for example, team building. In its current form, the scheme could not, therefore, address the issues being encountered.

- 7.7 Council asked whether consideration had been given to developing skills in the leadership teams of NERC centres. Paul Curran responded that it would be important to ensure training was available and that it would be useful to learn from comparisons with commercial creative workforces.
- 7.8 Council agreed that the ambitions set out in the recommendations were important and noted that progress was being made. Council emphasised that the varied models of the centres, for example, some employees at centres are employed by host universities, complicated salary comparisons.
- 7.9 Council highlighted the importance of attracting people to roles in other ways too, such as the attractiveness of brand, location and lifestyle. Paul Curran noted that the independent review would provide evidence on benefits, in addition to salaries.
- 7.10 Duncan Wingham thanked Paul Curran and the Advisory Group for their report and the clear recommendations.

## **8. UKRI Strategic Theme: Tackling infections (Oral) Slides, item 8**

- 8.1 Duncan Wingham welcomed Professor Melanie Welham to NERC Council to provide an overview of the UKRI theme she was leading on.
- 8.2 Melanie Welham presented slides which provided an overview of the challenges, some current UKRI investments and future opportunities for tackling infectious diseases using an integrated and coordinated approach.
- 8.3 Melanie Welham explained that the aims of the UKRI strategic theme were to:
- better understand how infectious diseases emerged and spread through natural environments, agriculture and water systems, supply chains and societies
  - develop innovative diagnostics and effective tools to prevent and disrupt emergence and transmission
- 8.4 Melanie Welham explained that £75 million would be invested under this theme and highlighted the two flagship activities which would be developed in two phases:
- epidemic preparedness
  - antimicrobial resistance (AMR)
- 8.5 Gideon Henderson commented that, whilst the BBSRC focus on AMR was primarily in animal populations, there was also an environmental element and he asked whether there might be opportunities to work with NERC under this heading. Melanie Welham acknowledged that there would be opportunities to discover how infectious diseases and AMR emerged and spread through the environment.
- 8.6 Council commented that it would be important to ensure the knowledge learnt from recent pandemics was incorporated into the activity on epidemic preparedness. Melanie Welham responded that many institutions were looking to establish centres for pandemic preparedness and sharing and harnessing this knowledge would be critical.
- 8.7 Council asked what progress had been made on the investment to create a Novel Technologies Network and what the scope and timeline would be for this activity. Melanie Welham responded that the establishment of the network had recently been approved and it was expected to be operational within the next few months.
- 8.8 Council asked whether there was any consideration of the use of surveillance under this theme, such as air or waste water surveillance which was used successfully during recent



pandemics. Melanie Welham responded that there was a joint Defra/Food Standards Agency programme on surveillance with Gideon Henderson adding that the Biosurveillance Network would co-ordinate this activity. Melanie Welham acknowledged, however, that surveillance was outside of the scope of this theme.

- 8.9 Susan Waldron commented that NERC had recently funded a Highlight Topic on emerging anti-fungal resistance.
- 8.10 Duncan Wingham thanked Melanie Welham for her attendance at NERC Council, noting that there was scope for environmental input under this theme.

## **9. Researchfish Presentation (Oral) Slides, item 9**

- 9.1 Kevin Dolby, MRC lead analyst and Chair, UKRI Research Outcomes Management Board, introduced this item which was to provide Council with an overview of how Researchfish was used by UKRI and to outline the benefits of the system. Fiona Goff observed this item.
- 9.2 Kevin Dolby presented slides to outline why UKRI required outcome data and explained that Researchfish was the system used by UKRI to gather cross-UKRI harmonised data on the outcomes from its investments.
- 9.3 Kevin Dolby informed Council that a project to agree the future approach to collecting UKRI outcomes data was underway with a decision due before May 2024 when the current Researchfish contract ended.
- 9.4 Duncan Wingham noted that there was some resistance within the community to using Researchfish and asked if the reasons for this were known so that they could be addressed when considering an alternative system. Kevin Dolby commented that any future approach would consider any feedback received from the community.
- 9.5 Council noted that Researchfish was capable of producing sophisticated impact data, such as showing whether research had an influence on policy, led to Intellectual Property or spinout companies and asked whether UKRI had captured such data. Kevin Dolby responded that Researchfish had contributed to such data, when viewed alongside additional data.
- 9.6 Council asked whether the risk of underreporting was mitigated by routine sampling of data and why Researchfish was not used for decisions on grant applications. Kevin Dolby responded that grant holders were not currently sampled to test completeness of Researchfish returns, acknowledging that this may lead to gaps in reporting. He added that, while information on individual grant holders was available through Researchfish, it was not routinely used in making funding decisions.
- 9.7 Council commented that, in order for Researchfish to be viewed in a more positive light by the community and to help elicit more comprehensive information, it would be important to ensure the community understood why the information was required and to receive feedback on how the data was used. Kevin Dolby informed Council that it was a requirement of UKRI funding to submit information on Researchfish and acknowledged that further consideration of providing feedback was needed.

Duncan Wingham added that, one consequence of the community not fully understanding what the data was used for, was that it was viewed as a bureaucratic exercise and UKRI might better highlight the importance and benefits to the community. Council added that one benefit to the community might be the opportunity to benchmark against peers which might provide a motivating factor for submitting data.

- 9.8 Council asked whether Innovate UK also used Researchfish and Kevin Dolby responded that they used a different system as Researchfish was not appropriate for their needs.

9.9 Duncan Wingham asked whether the deadline of May 2024 to replace Researchfish was achievable and Kevin Dolby responded that there would be an option to extend the contract if required.

**10. STEM pay remit: financial implications and planning (Oral) Slides, item 10**

10.1 Duncan Wingham introduced this item and presented slides to illustrate the potential impact of the STEM pay remit for the British Antarctic Survey (BAS) and British Geological Survey (BGS). Council noted that the STEM pay remit was subject to HM Treasury approval at the time of the meeting.

10.2 Duncan Wingham informed Council that, in response to STEM salaries at UKRI institutes and research centres becoming increasingly non-competitive, HM Treasury had indicated it may be open to considering additional flexibility for STEM salaries, subject to a business case in the form of a pay remit.

10.3 Duncan Wingham explained that, in order for BAS and BGS to absorb the impact of the potential pay increase, NERC was recommending that it provide some funding to BAS and BGS to allow them to manage the transition in a sustainable way. Council agreed to this proposal, supportive that it would assure financial sustainability of the research centres in the short to medium term.

10.4 Council asked whether there was any mechanism to address NERC revenue given the pressure of inflation on pay remit. Duncan Wingham confirmed that budgets were set as part of the Spending Review with pay remits being negotiated separately.

10.5 Duncan Wingham illustrated the headcount reduction required by Government to 2024/25 which was currently being achieved through 'natural wastage'. He informed Council that, in response to the proposed reduction in NERC headcount, NERC had initiated a 'Ways of Working' programme to ensure NERC continued to deliver its core outcomes.

10.6 Duncan Wingham outlined the four priorities for NERC and the programme work packages, adding that a substantive discussion on the programme was planned for the June Council meeting. He added that a culture change would be required to achieve the aims of the programme and a plan would need to be in place before his departure.

10.7 In response to a Council query on whether this programme was aligned with the work at UKRI level on the Operating Model, Duncan Wingham confirmed that NERC was seeking to implement any changes ahead of any outcomes from the Operating Model. Council welcomed this activity and encouraged NERC to continue at pace.

[John Pyle left the meeting]

**11. NERC portfolio mapped to the Strategic Delivery Plan 2022-25 (NERC 23/04) Slides, item 11**

11.1 Alison Robinson presented this item, reminding Council that the NERC Strategic Delivery Plan (SDP) had been launched in 2022. She added that this item was to review the NERC investment portfolio against the ambitions outlined in the SDP and identify priorities for future investment. Liam Haydon and Sarah Turner observed this item.

11.2 Alison Robinson explained that a mapping exercise had taken place to map the current NERC investment portfolio to the ambitions of the SDP and that this had helped to identify some gaps. She used a slide to illustrate the available headroom for NERC strategic science, assuming agreement to co-funding under the UKRI themes, to demonstrate affordability to address these gaps. Alison Robinson also used a slide to outline the potential partnerships between NERC and UKRI Strategic themes, set out in the context of

future headroom for the Strategic Research and Innovation funding line. Council discussed and agreed that the balance of the emerging shape of NERC investment in UKRI themes was proportionate and in balance with overall NERC spend, and encouraged the Executive to continue with this approach. Council also noted that the agreed and emerging investment in UKRI themes also contributed to meeting some of the gaps identified in the mapping exercise shared with Council.

11.3 Alison Robinson informed Council that it would be provided with an annual review of the SDP using a scorecard approach for each year of the plan.

11.4 Council asked for some clarity on the links between the information provided on the slide and the information contained within the paper. Alison Robinson explained that there were two points to illustrate: paragraph 16 of the paper highlighted that, to fill the gaps in the portfolio, NERC would need to work in partnership with others under the UKRI themes, whereas paragraph 13 of the paper detailed gaps which would need to be addressed by NERC investment. Duncan Wingham added that there was available headroom to address the gaps beyond investment in the UKRI themes.

## **12. Balancing NERC Doctoral Training investments to best support UK environmental science (NERC 23/05) Slides, item 12**

12.1 Susan Waldron introduced this item and reminded Council that it had previously discussed this topic in September 2022. Jen Jennings observed.

12.2 Susan Waldron explained that Council was being asked to advise on the proposed strategy to direct NERC funding to collective talent funding across UKRI which would be realised by redirecting some funding from the future Doctoral Training Partnership (DTP) investment.

12.3 Susan Waldron used slides to illustrate: the current NERC Centres for Doctoral Training (CDTs); the cross-council CDTs; the timeline for the move to collective working.

12.4 Susan Waldron outlined the proposed move to four CDTs a year and explained that the aim would be to launch a call in March 2023, subject to Council agreement, and that at least one CDT would be NERC specific and at least one cross-council. She added that, whilst the number of DTPs would reduce, it would still be possible to retain geographical coverage across the NERC remit.

12.5 Council asked for clarity on the proposed timescales and Duncan Wingham confirmed that this was to allow for co-ordination of NERC calls with the other research councils.

12.6 In response to a query on the number of the CDTs, from those illustrated on the slide, which were currently active, Susan Waldron responded that there were about five.

12.7 Susan Waldron confirmed that the community had been made aware of the proposed changes. David Hannah added that communication had been clear and the community would welcome an increase in CDTs.

12.8 Council commented on the destination of the CDT graduates, noting that a significant number go on to careers in industry or UK Government roles and asked whether this caused any issues for universities. Susan Waldron responded that there did not appear to be any significant concern as university positions were limited.

12.9 Council agreed to the re-balancing of NERC Doctoral Training investments.

**DECISION: Council supported the proposal to re-balance NERC Doctoral training investments**

## **13. NERC Council forward agendas (rolling programme of business) Slides, item 13**

13.1 Nick Folland introduced this item and thanked Council members for their responses, as illustrated on the slide, which had been submitted in advance.

13.2 Nick Folland explained that suggestions had been divided into four groups:

- topics for discussion at Council
- topics for discussion about the operation of Council
- wider initiatives
- Council member role

13.3 Council agreed with the topics suggested for discussion at Council:

- joint sessions with other councils
- deep dive on EU/Horizon Europe
- update on the UKRI Operating Model
- increased scientific discussion at Council, including pre-dinner speakers

13.4 In addition, Council suggested the following topics:

- joint sessions with other funders and/or business end users
- item on infrastructure
- National Capability, such as how it is scoped and making sure its fit for purpose
- international (once outcome of Horizon Europe is known)

13.5 Council was supportive of the wider initiatives which were proposed:

- convene environmental regulators to identify research and innovation required
- provide additional opportunities for Council member involvement in NERC activities

13.6 Duncan Wingham agreed to include these suggestions in the planning for Council meetings over the coming year.

**ACTION: NERC Executive to include Council suggestions in the rolling programme**

#### **14. Report from the NERC Assurance Board**

14.1 Nick Folland highlighted some of the items which had been discussed at the February meeting of the NERC Assurance Board (NAB) including:

- risk management
- assurance overview
- funding assurance
- UKRI's Integrated Governance, Risk and Assurance Framework (IGRAF) submission

14.2 Nick Folland informed Council that NAB was supportive of the work being carried out in NERC on the 'ways of working' programme.

14.3 Nick Folland commented that there had previously been some difficulties in other organisations who had adopted the Services for HR, Accounting, Reporting & Procurement (SHARP) service and NAB would monitor this carefully.

14.4 Nick Folland commented that the IGRAF submission to UKRI was a complex and time consuming exercise. NAB had suggested that the six monthly re-fresh be lighter touch in future given it was for internal compliance rather than submission to UKRI.

14.5 Nick Folland informed Council that NAB would have a deep dive on the aircraft at their next

meeting.

**15. Agenda and unconfirmed minutes of Science Committee including Science Committee Terms of Reference (NERC 23/07) (NERC 23/08)**

15.1 David Hannah introduced this item to update Council on the first Science Committee meeting he had chaired which was held in January 2023 via zoom. He thanked Graham Underwood for his excellent chairmanship of the committee.

15.2 David Hannah informed Council that Science Committee had reviewed the following topics at their last meeting: the Science Committee Terms of Reference; UKRI themes; SDP mapping; Highlight Topic outcomes including EDI update; community EDI report response; NC Science Multi-Centre (Hydro-JULES); net zero oceanographic capability; outcome of the Science Committee annual self-assessment and the Science Committee forward agenda.

15.3 David Hannah reminded Council that they had been provided previously with the updated Science Committee Terms of Reference at their meeting in December but these changes had not been tabled officially. David Hannah asked Council to formally approve the amendments.

David Hannah added that, although the formal requirement for a Council member to attend Science Committee meetings was being removed from the Terms of Reference, Council members were welcome to attend Science Committee meetings at any point.

**DECISION: Council agreed the amendments to the Science Committee Terms of Reference**

**ACTION: Secretariat to share the dates of future Science Committee meetings with interested Council members**

15.4 David Hannah informed Council that a recruitment campaign for Science Committee members would launch very soon (proposed for March 2023).

**16. Any Other Business (Oral)**

16.1 There was no further business.

# NERC digital – from a strategy to transforming environmental science

## Common themes and areas of agreement

- Data platforms – the biggest challenge, creating gravitational pull of our data
  - Interoperable data of recognised provenance and quality, FAIR\*
  - Shift from PI-collected and ‘owned’ data to data as a service, cultural and funding implications
  - Digitalisation
- Skills and professionalism in software engineering and data-led environmental science
- Partnerships
  - Interdisciplinarity through data integration and analysis
  - New private sector collaboration opportunities and managing the risks

\* Findable, Accessible, Interoperable, Reusable

## NERC digital (2)

- Fast pace of change and its unpredictability; we will not control the pace of change and there will be unpredictable advances, how will NERC be prepared to take advantage of this change?
- The importance of 'not getting left behind' as technology advances

### **Less consensus:**

- The role of the private sector and philanthropy
- New large 'centre of excellence' investment to integrate advanced infrastructure, cutting-edge data science and addressing environmental challenges
- The role of NERC in creating the environment for ambitious use of digital tools vs primary role of data custodian

# Making environmental research more diverse

- This is a long term / generational challenge
  - Environmental science is inclusive but not diverse
  - The pipeline isn't diverse
  - This shouldn't stop us acting
- NERC can have a strong convening role by working in partnership at a scale
  - Learning from and influencing research community to grow best practice
  - Working with business as they face the same problems and have emerging career opportunities around organisational sustainability etc.
  - Partnering with other organisations – Sports England, NHM /RHS for outreach, connecting with schools and hard to reach groups



## Making environmental research more diverse (2)

- There is an opportunity to change perceptions of what environmental careers look like
  - Baselines – undergraduates, other country profiles,
  - Understand why people drop out / never join environmental science
  - Promote environmental issues that resonate with hard to reach groups
  - Realistic role modelling / cohort tracking
  - Expanding accessibility e.g. through longer-term internships

# Ensuring the Council dashboard is useful & effective

- Dashboard needs to map to the role and remit of NERC Council (or NMB):
  - Focus on what need to advise, make decisions, be confident in delivery – risk as well as data
  - Design around Council remit as advisory board (be clear it is not an executive board function)
  - Don't let it grow too big, be ruthless on this principle - needs to be resource effective
- Clear benchmarks and trends: *'How do we know we are on track?'*
- Include early indicators re impact on NERC of Opex / headcount constraints so we are alert to potential failure of systems
- It's not only about data – the key is to remain intelligent and vigilant in ensuring relevance, be open to change, don't just turn the handle
- Ensure readability / 'glance-ability'
  - It's fine if complexity is under the bonnet but needs to be simple at a glance

# Ensuring the Council dashboard is useful & effective (2)

- Other data requirements:
  - Access to data to inform specific, big decisions e.g., future infrastructure, large programmes.
  - Ensure that we learn past lessons to add to benchmarking e.g., international 'competitors' and other UK initiatives to ensure effectively targeted spend
- Impact, outcomes and evidence of success are useful
  - Not for a dashboard, but there is a balance between short, focused needs of Council with a desire to be able to advise on an informed basis with good information.
  - Help Council be confident that we are serious in how we evidence NERC funding value, opportunity to critique approach and evidence
  - Access to impact evidence to assist Council shape their role as brand ambassadors with guidance on what NERC would like from Council in this role

# How can we ensure our infrastructure choices keep the UK at the forefront of environmental science?

## What were the common themes of the discussion?

- Periodic sharing of the portfolio (including forward look) with Science Committee to provide advice on prioritisation and portfolio management.
- Systematically exploring collaboration as a means to increase the possibility of transformation
  - International partnerships (environmental sci)
  - Engagement with business – what is business already doing that we could piggy back on to, especially in areas that are transforming very quickly
  - With other Research Councils (multidisciplinary, potentially challenge-led?)
- Identifying lessons from previous infrastructure projects
  - How do we capture what we're good at? Can that help us understand opportunities?
  - How do we prioritise effectively? We can learn from others e.g. MoD, industry (prioritising gaps and opportunities); being in the right fora (WEF)
  - Level of ambition – scale, step change in capability, innovation in capability, maintenance.

# Infrastructure choices (2)

## Questions to consider

- How can we line up infrastructure with policy drivers/social challenges?
- How can NERC and its community be more ambitious in thinking about infrastructure?
- How can we better understand the interaction between ‘infrastructure’ and ‘digital’?
  - How can we drive technological innovation for environmental science?
  - What is the role of autonomy, digital and AI in transforming or supporting large research infrastructures for environmental science?