



Natural
Environment
Research Council

NERC Delivery Plan: Overview of progress 2020-21

Annex A

Approach to reporting

What we have sought to measure and the reporting structure

This second annual review of Delivery Plan progress is reported through two frameworks (lenses):

1. This report covers the period April 2020 to March 2021 inclusive. Reporting answers two key questions:
 1. Have we (NERC) met the ambitions set out in the Delivery Plan?
 2. What did we learn during the period of delivery and what action are we taking to ensure delivery?

Slides 3 and 4 set out a summary dashboard of progress to meeting NERC Delivery Plan ambitions, with each **research and innovation priority** and **operational commitment** with Red, Amber, Green (RAG) ratings. This is based on an assessment using quantitative and qualitative indicators (including what the indicator tells us about progress); and learning and action (plans to maintain or achieve a Green rating). **Quantitative indicators** use data selected to add value to assessment of progress and potential to indicate a direction of travel, in many cases establishing a **baseline** for future reporting. Slide 13 onwards are the detailed reporting that inform the summary dashboard.

We also include a financial summary slide (Slide 11) as a key part of this performance assessment.

2. Slides 5-10 reports against the UKRI balanced scorecard approach, being piloted in 2021. **1. Outcomes and Impacts; 2. Communities and Partners 3. Organisational Structures and Processes; 4. Resources, Learning and Growth.** This report draws on the same underlying data and indicators as (1.).

1. Delivery Plan: overall summary tracker

Key: holding the line
 progress towards ambitions
 backwards step

RAG rating definitions

RED – Significant gaps in the portfolio with significant activity required to achieve research priority / operational commitment.

AMBER – Activity towards achieving the ambitions is progressing but further activity is required to build the portfolio.

GREEN – Well balanced portfolio of activity with the potential to deliver the ambitions of the research priority / operational commitment assuming adequate portfolio management.

Delivering research & innovation priorities

	March 2020	Forecast March 2021	March 2021	Forecast* March 2022
Environmental solutions				
Pushing the frontiers of understanding				
Productive environment				
Healthy environment				
Resilient environment				
Digital environment				
Global environment				
Best environment for research and innovation				

Supporting evidence provided in Part 2

*Forecast to March 2022 based on successful delivery of activity currently in train and identified plans.

1. Delivery Plan: overall summary tracker

RAG rating definitions

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Operational commitments

	March 2020	Forecast March 2021	March 2021	Forecast* March 2022
Embed UKRI Transformation				
Work to the Responsibility framework				
Develop an inclusive, professional workforce				
Deliver independence for NOC and CEH				
Demonstrate impact of NERC research				
Undertake evaluation				

Supporting evidence provided in Part 2

*Forecast to March 2022 based on successful delivery of activity currently in train and identified plans.

1. NERC Delivery Plan: financial perspective

2020-21 Planned spend vs actual spend

(draft outturn figures accurate April 2021)

2020/21 was an unusual year, with the differences between our budget and actual spend being (in some cases) very large. The impact of COVID-19 was that significant amounts of our funded research was not able to continue as planned, therefore there is disparity between our planned and actual spend.

Funding line	Budgeted spend (£m)	Actual spend (£m)
Discovery Science	53.8	46.8
Strategic research & innovation	54.8	44.0
Postgraduate training	27.7	27.2
Fellowships	7.5	6.8
National Capability	105.8	107.3
ODA	10.0	9.7
World Class Labs (capital)	66.1	67.1
Public engagement	0.5	0.5
Enabling change	5.0	9.0

NERC Delivery Plan report conclusion

- Overall good progress has been made towards meeting NERC's Delivery Plan ambitions. Slide 3 indicates that delivery of the research and innovation ambitions in the Delivery Plan is mixed in terms of success in year. The 2020 Spending Review complexities, alongside funding shifts e.g. ODA cuts impacted planning to a degree (e.g. the idea for Productive Environment, *the Economics of Biodiversity* agreed by Council will be delivered in 2021). We also recognise the need to sharpen our ideas pipeline with a focus on readiness across all investment streams, to start to deliver our ambitions in the next year. Resource is being injected to Digital Environment and we are actively looking at how to bolster an international focus beyond ODA in the coming period.
- Slide 4 shows NERC strength in operational and organisational delivery. This period of reporting has been marked by the disruption of the COVID-19 pandemic and within that context our performance has on the whole been very good, with RAG ratings improving in all but one area. This area 'Develop an inclusive, professional workforce' is rated amber for two reasons: 1. the Black Lives Matter movement raised the profile of equality, diversity and inclusion for NERC and we identified the need for wider effort in this space and 2. the re-structuring of the UKRI HR function slowed progress in meeting some aspects e.g. a new learning & development offer for NERC in year. As part of this process we identified tangible actions that will be met in the next reporting period.

2. NERC report against UKRI Adapted Balanced Scorecard



1. Balanced Scorecard – Outcomes and Impacts

- Invested in infrastructure and facilities to support UK environmental science: UK Geoenergy Observatory Glasgow site opened its underground laboratory focused on the subsurface to help deliver clean energy; scoping an underground CO2 storage research laboratory to help understand the science behind long-term viability.
- *RRS Sir David Attenborough* was completed and formally handed over to NERC and BAS at the end of 2020.
- Invested (£3m) in a Productive environment programme focused on novel technologies for the sustainable extraction and understanding of mineral deposition (Philippines), and in Resilient Environment, an investment of £3.1m to understand the impact of plastic pollution on marine ecosystems in south-east Asia.
- The ambition to take a whole systems approach to environmental solutions has positioned us strongly within UKRI, with a £4m awarded with Innovate UK to deliver Climate and Environmental Risk Analytics for Resilient Finance (CERAF) and £20m invested in the pilot programme 'Changing the Environment' to deliver interdisciplinary solution-focused research at a number of key HEI institutes.
- In 2020, new systems increased the numbers within the environmental science community receiving Honours, with stronger and more diverse nominations, celebrating adventurous and ambitious researchers, and across a range of expertise e.g., ecosystem function, diversity and dynamics; climate science; environmental risk; metal supply security; mitigation of greenhouse gases; development of sustainable polymers; animal and plant biology; public engagement.
- We are currently piloting a new approach to evaluation across Head Office for investments and are implementing new approach to evaluating BGS against its role and purpose.
- As evidence of the excellence of NERC science, recent bibliometric analysis of NERC-funded research papers confirms our science is world-leading and NERC-funded papers outperform UK environmental science average
**Metrics: Citation impact for NERC papers is 2.0, UK average for environmental science is 1.5; Highest cited papers - NERC 4.3%, UK environmental science 2.9%.*

COVID-19 in waste-water: NERC facilitated an early-warning system for COVID-19, developed at express speed. Rolled out from June 2020, it has been used nationally by NHS Test and Trace and the health community to spot where new outbreaks may be happening to enable rapid action. This research showed that coronavirus fragments in wastewater can reveal when and where a spike is happening, particularly as these fragments are detectable even when people infected with the disease are not exhibiting symptoms when conventional testing could miss an outbreak. NERC worked in partnership with the Defence Science & Technology Laboratory and the Food Standards Agency to identify world-class microbiology expertise (e.g. expertise and technical capability via the NERC Environmental Omics Facility which allowed insights into virus variants from wastewater monitoring) and fast-tracked funding via Urgency Grants.

NERC science equips government, business and wider society to tackle air pollution. The benefits are worth an estimated £1.2 billion/year, and include lives saved, better health, lower costs, and a cleaner environment, through contributions to air pollution policy decisions, informing the public with pollution forecasts, and rapid responses to public health emergencies. NERC research informed the UK's Clean Air Strategy 2019, which sets out how the government will meet legally binding air pollution targets, and monitoring and modelling by the NERC-funded Clean Air for London (Clearflo) project provides the basis for daily, detailed air-quality forecasts relied on by individual citizens and local government. NERC-funded research led to improved Met Office forecasts on the formation of ozone and other pollutants associated with heatwaves, saving an estimated 24 lives for every 10 days of heatwave. Furthermore, NERC rapid response awards enabled research under the Clean Air programme to be re-framed to consider how air pollution changed during lockdown, and NERC supported Defra decision-making on air quality management.

2. Balanced Scorecard – Our communities and partners

- In response to the pandemic NERC ran an ideas series to bring together our community to explore environmental solutions in a post COVID-19 world. This series generated ideas which informed the 2020 call for Highlight Topics in “environmental basis for the prevention of zoonotic pathogen emergence” and “environmental barriers to the spread of zoonotic pathogens” (funded research projects will start in November 2021). NERC funded 5 COVID-19 public engagement grants, including lessons for schools, interactive online story-development/ telling, an online observatory and citizen archaeology.
- NERC partnered with the UK Association for Science and Discovery Centres (ASDC) to deliver Operation Earth II, a national hands-on environmental science programme to promote careers in this space. The programme engaged with over 5,000 individuals across the UK and reached over 300,000 people through wider digital engagement. 33 NERC researchers were trained and developed their skills in developing and delivering public engagement.
- Engagement with our community transformed with virtual Town Hall meetings, panel review and HEI visits enabling more and effective engagement (e.g.14 virtual HEI visits in 2020/21). £10M *Constructing a Digital Environment* SPF programme and £10M *Digital Solutions* programme provided community insights now informing the UKRI roadmap for net-zero Digital Research Infrastructure. Use of NERC funded research centres by the communities supports research excellence.
- We will increase the use of senior scientists and continue to engage our community to increase quality of scientific input at early in HO idea development. This was effective in 20/21 informing the *Economics of Biodiversity* programme.

**Metrics: National Capability (NC) funding has resulted in more papers (than any of NERC's other funding streams), with ~30% of all NERC funded papers using our facilities. NC funded papers have an average citation impact score of 1.9; above the UK's average Environmental Science impact score of 1.5.*

3. Balanced Scorecard – Organisational structures & processes

- NERC's organisational structure of 5 Directorates is now well established; it was tested and operated well e.g., for the HMT Spending Review 2020 and COVID-19. Good business continuity planning meant we effectively transitioned to a virtual organisation and delivered while teams worked safely either remotely or adapted working environments. Re-prioritisation reduced pressure on teams during lockdown with an ongoing focus on staff wellbeing and connecting people. Productivity has remained high and NERC internal communications has been effective.
- NERC has embedded environmental sustainability considerations across our investments, e.g., as part of the 2020 Capital Call requiring demonstrable evidence that the potential of environmental harm from both procurement and ongoing operation has been considered for instance across energy use, conservation and management and asset lifecycle. NERC leads Environmental Sustainability for UKRI and we have invested in large scale environmental sustainability projects across NERC estates and infrastructure, including to improve the environmental performance of our polar research stations whilst boosting scientific capability, embedding environmental sustainability in funding call process and started works to deliver a NERC carbon pathway to net zero by 2040.
- We continue to improve Equality, Diversity, and Inclusion (EDI) in the environmental science sector. The next 12 months will see a focus on EDI Action Plans, governance and trusted research.
- The 2019/20 REF-style evaluation of 6 research centres (owned or supported by NERC) was successful both in terms of quality and in providing evidence for intervention to sustain world-class science.

**Metrics: In the two most recent UKRI 'pulse' surveys, NERC Head Office response rate was higher than the UKRI overall rate: 63% vs 54% and 76% vs 50%. Direct carbon investment in 20/21: £3.1m (including BEIS decarbonisation). Predicted benefit as the result of investment (tonnes of carbon for project lifetime) - 10,200 tCO₂e saving.*

3. Balanced Scorecard – Our resource, learning & growth

- NERC supports a skilled pipeline of professionals: 12 years after graduation, 40% of NERC PhDs are working outside academia, with 27% in the private sector. Almost all (92%) use environmental science in their work. NERC invests in 235 notional studentships through 18 Doctoral Training Partnerships across all regions of the UK. Investments by partners in our first cohort of Doctoral Training Programmes, for example, increased the number of studentships by approximately 31% (an additional 530 studentships, worth over £47m). DTP partners such as Lloyd's of London commend our approach.
- We trialled improving the efficiency of our processes, through the 'Pushing The Frontiers' pilot to understand how less paperwork may positively impact the assessment process. By focussing on ideas and the track record of researchers, we hope these streamlined processes will result in the best science being funded. This activity will be evaluated in summer 2021.
- We have improved data to establish meaningful baselines for EDI; we have developed frameworks to review ED&I data of the community we fund and workforce diversity is now incorporated into regular HR dashboard reporting. Female and male staff levels in HO remain constant over the last 2 years, 45 and 55% respectively. A rise of 22% females promoted in 2020/21 has been observed. There is a lack of diversity for remaining protected characteristics and this data is informing development of the NERC EDI Action Plan for 2021-24.
- In 20/21 NERC HO had the highest appraisal completion rate across UKRI. This provided assurance to both individuals and managers of delivery in a challenging period and supported good planning. Learning and development remains an area to improve and we are working with UKRI to develop a tailored NERC approach. We are also supporting apprenticeships and new forms of internships, both as part of our L&D offer and also to improve diversity.

**Metrics: Talent pipeline: i) supporting the very best researchers through process improvement - 63% of reviewers saved up to 20% of their time undertaking assessments using the streamlined process. ii) no. of apprenticeships joining NERC HO annually - established a baseline of 11 for 20/21*

Summary Report against UKRI Balanced scorecard

- NERC is able to evidence a strong contribution across common UKRI measures, with key strengths in demonstrating the impact and outcomes of NERC funded science and in organisational structures & processes with strong delivery mechanics (echoing the Delivery Plan report scorecard above).
- Reporting in this way was a useful exercise to improve data collection in NERC and test indicators with a wider audience. The new framework helped identify strengths and areas to capture in any future NERC Strategy refresh e.g. ensuring we frame our scientific contributions in outcome (e.g. case study) terms rather than focusing on internal process.
- Reporting via 2 different frameworks enabled us to measure progress towards NERC commitments and priorities, as well as reflect on our progress in the wider context of UKRI, using robust indicators. The development of indicators reinforced the need for a simplified approach to data and information management across NERC and UKRI to overcome fragmentation and improve reporting.
- There is more work to do to further improve indicators, and now we have a baseline, use these in a meaningful way to drive management interventions where data tells us this might be needed.
- Future annual reporting will include the UKRI perspective and we will factor in changes to the pilot framework as it evolves.

Indicators (R&I priorities)

Common Indicators	Specific Indicators
Investment	Testimonial
Publications	Process Improvement
	Discipline heterogeneity

Investment (Leading Indicator)

- Number and value of funded projects and awards by start year
- Top funded Research Organisation's

Publications

- **No. of paper's (productivity):** From publications data reported in ResearchFish® 974 unique papers were matched with publications in the ESI Journal list in the five-year period 2016-2020 (**Lagging Indicator**).
- **Interdisciplinarity/heterogeneity:** Analysis of publications reported in ResearchFish® against Clarivate™ research fields shows that papers arising from NERC funding are being published across a wider range (**Lagging Indicator**).
- **Impact:** The Category Normalized Citation Impact (CNCI)* is a recognised unbiased indicator of publication impact (**Leading Indicator**).

*CNCI value of one represents performance at par with world average, values above one are considered above average, below one are considered below average and a value of two is considered twice the world average

Indicators (operational commitments)

Specific Indicators of progress

Operational commitment	Reporting area	Quantitative indicator	Qualitative indicator
	Embed UKRI Transformation	Employee Engagement (staff surveys) Onboarding effectiveness (Listening project)	Employee engagement
	Work to the Responsibility framework	Investment – reduction in Greenhouse Gas Emissions & biodiversity measures	Compliance with recognised standards
	Develop an inclusive workforce	Staff diversity – EDI dashboard	Performance management Attracting talent
	Deliver independence for NOC and CEH	Closed actions	Milestone accomplishment
	Demonstrate impact of NERC research	Impact & added value – no. of case studies Honours awards – successful nominations	Testimonials (UKRI) Media coverage (reach)
	Undertake evaluation	Training & development – delivery of training	Testimonial (Chair, Centre Evaluation Panel) Training & development

**Supporting evidence:
Reporting on our research & innovation
priorities and operational commitments
(2020-21)**



Narrative

Progress has been made in the last year, with the HEI-focussed £20M 'Changing the Environment' programme being rolled out, to undertake a whole-systems approach to complex problems. The portfolio of investments mapping to the Environmental Solutions theme has grown significantly (no baseline work done previously) with the Sustainable Plastics portfolio (SSPP and PRIF), Green Finance portfolio (CERAF), Changing the Environment and other solutions focussed work with users, including the Space Weather Instrumentation, Measurement, Modelling and Risk (SWIMMR) programme. The programme, RISE, has developed ambitious and inclusive partnerships that maximise research and innovation's contribution to local growth and opportunity. There will be further development and engagement with the Place and levelling up agenda through RISE award co-ordination and ongoing discussions with Defra and engagement at UKRI level. Flagship investments include the Climate and Environmental Risk Analytics for Resilient Finance (CERAF) programme, with Innovate UK, to support climate and environmental risk analytics capability in the UK. As part of this, the £10M UK Centre for Greening, Finance & Investment (CGFI) will support lenders, investors and insurers, enabling them to make environmentally sustainable decisions, and support a greener global economy. Furthermore, SWEEP has 191 partners including businesses, public sector bodies, charities and community groups, and has secured £48M of extra investment for the Southwest region; and iCASP has engaged 239 organisations, leveraged £14M of additional investment in the Yorkshire region

Quantitative indicator – as of 31/03/21

Indicator 1: Investment (CI,LI)

This theme leverages a collective investment of **£100M** of funding from NERC core funding, SPF, ISCF programme funding as well as that from partners (Innovate UK and STFC). Over 50% of the awarded programmes has leveraged investment into regions, contributing to the place and levelling up agenda.

This data provides us with a partial picture only. Therefore, as part of the work looking at barriers to interdisciplinary working (Q3 2021), we will focus on identifying investments that map directly to Environmental Solutions. The challenge is defining what sits in that portfolio to avoid double counting. Current systems do not allow for this.

Qualitative indicators – as of 31/03/21

Indicator 1: Testimonial

Ministerial quote for CERAF award announcement February 2021. Energy and Clean Growth Minister, Anne-Marie Trevelyan said: *"Climate change is the biggest issue that we need to tackle to protect our planet for our children and grandchildren.....The UK Centre for Greening Finance and Investment in London and Leeds will encourage financial services to turn the tide of their investments and focus on sectors and companies that have a smaller environmental footprint. Doing so will support industries and businesses to develop clean green innovations, creating thousands of jobs across the country – ensuring we build back greener."*

Indicator 2: Impact

Early policy impact from the ES portfolio includes input to the new edition of HM Treasury The Green Book, which guides government investments. In addition to water savings enabled via research that has informed Leeds City Council policy.

Narrative:

We have pushed ahead with our efforts to ensure the most excellent science and scientists are being funded. The delivery of the core Discovery Science funding stream, combined specifically with piloting of Pushing the Frontiers, represents a balanced portfolio of activity. This contributes to and justifies the first and second ambitions in the Delivery Plan: i) continuing to invest in excellence, challenging researchers to be adventurous and ambitious, to exploit new technologies and approaches, and to explore new ideas related to any environmental science topic; and, ii) ensuring the UK's breadth of expertise so we are prepared for the unknown challenges of the future is maintained. For our third ambition, to maintain and enhance the UK's position at the leading edge, ensure the most excellent science and scientists receive our funding by challenging our peer-review processes to take account of all aspects of scientific achievement – there remains work to do in the coming year.

Our Urgency Grants scheme enabled NERC to support our community by '[rapidly] investing in excellence [in response to the COVID-19 pandemic], challenging researchers to be adventurous and ambitious, to exploit new technologies and approaches, and to explore new ideas related to' COVID-19.

Quantitative indicators – as of 31/03/21

Indicator 1: Investment (CI, LI)

In the three-year period (Financial years 2018/19, 2019/20 and 2019/21) £149.8m of funding has been authorised for 266 projects in the Pushing the Frontiers portfolio. This breaks down as 338 grant awards to 61 different research organisations. The top 10 funded ROs: University of Leeds, University of Exeter, University of Oxford, University of Edinburgh, University of East Anglia, The University of Manchester, University College London, University of Cambridge, University of Bristol. Across the responsive mode/Discovery Science schemes (Pushing the Frontiers, Standard grants, Large grants and Independent Research Fellows) in FY 20/21 we have received 1,375 applications from 86 ROs.

Indicator 2: Publications no. (CI)

5977 unique papers were matched with publications in this five-year period (2016-2020). These data indicate a relatively constant publication rate from 2016 to 2019 (4-year average 1226 papers per annum ± 50) decreasing to 1073 matched papers reported in 2020. Research supported by NERC Discovery is published in journals across ~20 research areas with 78% papers published in journals in 3 subject areas (Geosciences 49%, Environment/Ecology 18%, Plant and Animal Science 11%).

Indicator 3: Process Improvement (SI)

Simpler Better Funding: 63% of reviewers saved up to 20% time when assessing the streamlined pilot applications compared with a similar equivalent scheme (source: Simpler Better Funder survey, 2020). This supports our understanding of how less paperwork in the pilot may positively impact the assessment process.

Qualitative indicator – as of 31/03/21

Indicator 1: Testimonial

"The streamlined requirements are fantastic, and the fact that they make the application so focussed is excellent" (pilot applicant, Simpler Better Funding, 2020).

This supports our understanding of the potential positive impact of the pilot streamlined processes. By focusing in on the necessary requirements to assess a new idea, in theory, we should be providing opportunities for more excellent science to be funded.

Research & Innovation Priority

Narrative

This year has seen good progress towards all three Productive Environment ambitions through program and capital investments, partner engagement, and collaboration, with extensive achievements delivered towards closing gaps identified last year. However, COVID-19, and budget implications have delayed programmes and the scoping of investments (specifically the Economics of Biodiversity). Resource availability has been impacted within NERC for delivery and stakeholder engagement. In addition, partner priorities have been diverted to COVID-19.

Achievements in research centre funding contribute particularly to ambitions in the circular- and resource-efficient economy sector, as well as decarbonisation: *NERC contribution to cross-council/government SPF Circular Economy Centres Investment (ensure Environmental Sciences contribution. Five Centres funded and announced; NERC-funded capital investment in the UK Geoenery Observatories (co-funding of independent research Centre 'UK EneRgy Research Centre (UKERC)*

Highlight programs: Awarding of all projects within the Landscape Decisions SPF programme; investment in 7 Landscape Decisions Fellows; £2m NERC investment to partner with EPSRC in a £12m Decarbonising Heating and Cooling.

Productive Environment

Current
RAG rating
R/A

21/22



Quantitative indicators – as of 31/03/21

Indicator 1: Investment (CI,LI)

In the three-year period (Financial years 2018/19, 2019/20 and 2019/21) **£42.8M** has been authorised for 56 projects within the Productive Environment theme. 136 awards to 51 different Research Organisations. The top 10 funded ROs: UK Centre for Ecology & Hydrology, British Geological Survey, National Oceanography Centre, British Antarctic Survey, Newcastle University, Heriot-Watt University, University of Exeter, University of Leicester, University of Birmingham, Newcastle University and The Natural History Museum.

Indicator 2: Publications no., interdisciplinarity & impact (CI)

Data indicates a steady year on year increase, with the **no. of papers** rising from 79 papers in 2016 to 202 in 2020. The **impact** of journal papers matched to this theme is over 1.5 times (1.77) world average. **Interdisciplinarity:** papers arising from NERC funding, in the HE area, are being published across a wider range (outside of NERC 'core') journals - publications in 12 research areas in 2016 to 15 in 2020; research areas include Economics & Business, Materials Science and Social Sciences. The latter demonstrates that research is having wider reach reflecting the transdisciplinary nature of the productive environment.

Qualitative indicators – as of 31/03/21

The following statements indicate the importance of the environment as a driver for success in the SPF interdisciplinary circular economy centres investment.

Indicator 1: Testimonial

(Then) Energy Minister Kwasi Kwarteng: 'We want to further the UK's status as a world-leader in finding green solutions to industrial challenges....I am pleased to support these new cutting-edge research centres that will transform the way industry reuses and recycles materials – another great step forward as we build back greener from coronavirus and achieve net zero emissions by 2050.'

Indicator 2: Testimonial

Environment Minister Rebecca Pow: 'Creating a more circular economy for our waste and resources lies at the heart of this government's transformative agenda for the environment, and we are committed to going further and faster to reduce, reuse and recycle more of our resources. ...helping us to better protect the environment and leave it in better shape for the next generation.'



Responsible director: SW
Last updated 14/05/21

Learning and Action: Progress has been made on closing gaps towards the ambition to build understanding of the coupled economic and environmental systems. As a result a new programme will be commissioned, the Economics of Biodiversity, and scoping is underway for a potential programme around balancing the environment and economy across supply chains. We are increasing the impact and influence of our work with partners, such as the 47.5M SPF Transforming UK Food Systems Programme. National Capability Multi-Centre round 2 will be commissioned. Research will emerge from SPF Sustainable Management of UK Marine Resources programme. Valuing Nature Programme will publish a Gold standard Open Access guide to valuing nature. Secure Georesources programme (also delivering into circular economy theme).

Research & Innovation Priority

Narrative

Strong progress has been made in delivering Healthy Environment ambitions. All major planned investments have been delivered and a significant contribution was made to the COVID-19 research response. Investments were made across the life-cycle on the first delivery plan ambition, to tackle issues such as pollution and degradation to improve a healthy environment. This includes a £2.2M Centre for Doctoral Training on ecotoxicology, £8M in highlight topic projects on ecosystem restoration, remedies for insect decline and solutions for biodegradable plastic pollution; and £1.5m on research synthesis and policy translation to support decisions on how to ensure healthy functioning ecosystems in land use planning. Research outcomes included evidence to support conservation of old-growth forest for climate change mitigation. Responsive actions to generate research opportunities precipitated by the pandemic, aligned with the second delivery plan ambition to sustain a healthy environment and benefit health.

The UKRI COVID-19 research response aligned well with the second ambition to sustain a healthy environment to benefit health. NERC invested £3m in rapid response awards, ensured environmental dimensions were captured in MRC-led calls on viral origin and transmission, reframed Clean Air research to consider lockdown effects on air pollution; and developed two highlight topic ideas on zoonoses through the community COVID-19 Ideas Series. Research outcomes included the Government's national COVID-19 wastewater monitoring programme, which grew from NERC-funded proof-of-concept grants.



Responsible director: SW
Last updated 14/05/21

Healthy Environment

Current
RAG rating

2021/22



Quantitative indicators – as of 31/03/21

Indicator 1: Investment (CI,LI)

Between 2018-21 **£60M** has been authorised for 68 projects within the Healthy Environment theme. 126 awards to 50 different Research Organisations. The top 10 funded ROs: UK Centre for Ecology & Hydrology, King's College London, University of Birmingham, University of York, Imperial College London, University of Sheffield, University of Exeter, University of Leeds, Cranfield University, University of Essex.

Indicator 2: Publications no., interdisciplinarity & impact (CI)

Data indicates a steady year on year increase, with the **no. of papers** rising from 99 papers in 2016 to 295 in 2020. **Interdisciplinarity:** papers arising from NERC funding, in the HE area, are being published across a wider range (outside of NERC 'core') journals - publications in 14 ESI research areas in 2016 to 18 in 2020; research areas include Clinical Medicine, Pharmacology and Toxicology, Materials Science and Social Sciences. The **impact** of journal papers matched to the Healthy Environment is almost 2.5 times that of the world average.

Qualitative indicator – as of 31/03/21

Indicator 1: Testimonial

The NERC community supported the Government's COVID-19 national wastewater monitoring programme by working alongside Test and Trace to provide local advice for core cities and the NERC Environmental Omics Facility provided unique expertise and technical capability, which allowed insights into virus variants from wastewater monitoring.

Dr Jazz Grimsley, Head of Science and Research, Joint Biosecurity Centre, a part of NHS Test & Trace, said "The wastewater academic community has really stepped up to the challenge and are making a vital contribution to both the national and local programmes, and to insights provided to SAGE".

Learning and/or Action: Some planned activities were slowed to prioritise COVID-19 research. To achieve future HE ambitions, NERC is using public dialogue in this space to inform research priorities, engage NERC Catalysts (external experts) to scope research opportunities in a systems approach to reduce the environmental risk from chemical lifecycles, soil health and health inequalities. As the year continued, stakeholder interest has grown in health inequalities and the value of connecting with nature, leading to plans to strategically develop this area.



Narrative

New investments, calls and research outcomes contribute to a green progress rating for this year's report for the Resilient Environment (RE).

Activities delivering on aims to evolve whole-systems research on natural hazards and climate change have been realised, including the £31.5m SPF Greenhouse Gas Removal Demonstrators programme and research outcomes from the SPF UK Climate Resilience (UKCR) programme coming to fruition. This includes work with the National Grid on climate-resilience of electricity towers, and use of the Nowcasting surface water flooding tool by the London Fire Brigade.

COVID-19 and Spending Review uncertainty delayed both the commissioning and delivery of research in the last year. However, in adapting and offsetting the impacts of both factors, research continues, for example by researchers collaborating virtually to complete international field work for the Newton 'Understanding the Impacts of Hydrometeorological Hazards in SE Asia'.

Quantitative indicators - as of 31/03/21

Indicator 1: Investment (CI,LI)

In the three-year period (Financial years 2018/19, 2019/20 and 2019/21) **£72.7m** has been authorised for 98 projects within the Resilient Environment theme. 187 awards to 49 different Research Organisations. The top 10 funded ROs: University of Exeter, British Antarctic Survey, University of Leeds, The University of Manchester, University of East Anglia, University of Edinburgh, University of Reading, University of Bristol. National Oceanography Centre, University of Oxford.

Indicator 2: Publications no., interdisciplinarity & impact (CI)

Productivity: Data indicates a steady year on year increase (rising from 257 papers in 2016 to 608 in 2020).

Interdisciplinarity: papers arising from NERC funding, in the RE area, are being published across a wider range (outside of NERC 'core') journals - publications in 9 research areas in 2016 to 16 in 2020; research areas include Social Sciences and Space Science). The **impact** of journal papers matched to this theme is over twice that of world average.

Qualitative indicators – as of 31/03/21

Indicator 1: Testimonial

NERC investment was central in enabling researchers in comprehensively gathering urgently-needed climate data in the region of the world hardest hit by climate change, the Arctic. As part of the MOSAiC (Multidisciplinary drifting Observatory for the Study of Arctic Climate) expedition, the research icebreaker Polarstern returned to port after a year frozen in ice for the first ever voyage near the North Pole over winter. ' utilise ship berths that are compatible with the Multidisciplinary drifting Observatory for the Study of Arctic Climate Science Plan.

German Federal Minister of Research Anja Karliczek said: "Climate change is the greatest challenge facing humanity. A challenge that we can only overcome together – by transcending the borders of disciplines and nations alike. The international MOSAiC mission, which brought together researchers from 20 nations, shows that, despite all the setbacks, at the international level there is a willingness to rise to this challenge. MOSAiC, the greatest Arctic expedition of all time, is an historic milestone for climate research".



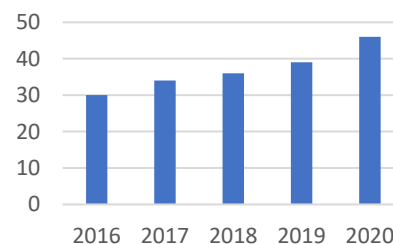
Narrative: The focus of the last year was business delivery and process innovations (given our core need to report on ODA-research). The impact of the pandemic has been minimised across the year, as demonstrated by the fact that all science disciplines within NERC remit engage internationally. However, certain activities have ceased due to funding cuts by FCDO.

A pipeline of programme ideas for potential future Newton bids (including but not limited to deforestation, 'One Health' air quality, water quality, and aquaculture) have been developed in collaboration with the Strategic Programme Delivery teams, spanning Healthy, Productive, Resilient and Digital Environment portfolios. The International Team ran the Global Partnerships Seedcorn Fund (2020) successfully, to expedite future collaborations amongst researchers. 2 awards have been made under The Changing North Atlantic Ocean programme, the first co-designed, co-funded and co-delivered marine strategic research programme between NERC and NSF's Division of Ocean Sciences. We have continued to work across UKRI and delivery partners to identify opportunities for enhancing impact, adding value to NERC investments and informing future research strategy e.g. through the GCRF Challenge Portfolios. Other highlights include 3 grants (£11.2m total) funded under the NERC-led UKRI-GCRF Multi-hazards and Systemic Risks programme, 5 grants (£20M total) funded under the NERC-led UKRI-GCRF Reducing the Impacts of Plastic Waste in Developing Countries.

Quantitative indicators – as of 31/03/21

Indicator 1: Investment (CI/LI)

International engagements between 2016 and 2020 have been supported by NERC awards totalling £476 million, which leveraged more than £305 million from international partners with 37% of the contributions in cash and the remaining 63% in kind. In the last 12 months we have utilised collective funding and also the commonality of opportunities and alignment with research priorities, to grow our international partnerships. Collaborations with Indian partners have grown significantly from total investments with Indian partners at just under £35M in 2016/17 to over £730M in 2019/20.



In 2016, the proportion of NERC awards involving formal international partners was around 30%. By 2020, this has increased to over 46%.

Identifying activities that directly maps to Global Environment is a challenge as this theme cuts across all of our areas for reporting progress in research and innovation.

Qualitative indicators – as of 31/03/21

Indicator 1: Testimonial

We are seen as credible subject matter experts in the wider research community which creates opportunities for new partnership building: “Thank you for giving me such good [climate related] advice over the last year, I will continue to do so as Climate will continue to be a theme for the Gates [Foundation]” Grace Lang, UKRI (China Office).

Indicator 2: Testimonial

We are recognised as experts to offer advice on research opportunities: “Thank you for putting us in touch and for explaining the Science and forwarding the [research] papers” SIN Congo, FCDO.

This demonstrates that NERC is recognised for the global leadership we provide in two key areas:

- facilitating partnerships to address global challenges
- the provision of UK expertise in environmental science



Narrative: In the last year there has been some progress in driving forward the ED ambitions. A funding gap for Digital Environment-focussed investments was identified during the first Delivery Plan review. As a result of varying factors there has not been additional funding available to fill this gap, despite significant effort and time devoted to the development of proposals. There is substantial uncertainty for existing and future programme funding in 2021/22 given the recent Spending review outcome, reductions in SPF programme budgets and in ODA spend. This will require creative approaches toward the development of new programmes of work and the management of existing resource in the face of increasing demand.

In a sign of growing momentum within the digital environment landscape, towards the end of 2020 we saw the establishment of a new Alan Turing Institute Interest Group in Environment and Sustainability. This follows the joint NERC-ATI workshop on environment and sustainability in December 2019. UKRI Digital Research Infrastructure strategy, 'approved, without budget': i) Net Zero DRI' is an initial two-year UKRI-wide scoping study to develop a survey of the digital carbon landscape ii) Living Lab to ensure that our data infrastructure can achieve net-zero. Iii) 'JASMINx' will deliver a high-performance data intensive computing

Quantitative indicator – as of 31/03/21

Indicator 1: Investment (SI, LI)

We currently have 19 Digital Environment projects funded to a value of £20.3M over their life span, engaging 41 Institutions and 54 Project Partners (includes academic, government, commercial/industrial partners), with over 30 digital technologies used, including environmental sensors and distributed sensor networks, internet of things (IoT) devices, remote sensing, cloud computing, edge processing, artificial intelligence, machine learning, nowcasting, data intensive simulations, web and smartphone applications, microelectronics, and citizen science approaches

Indicator 2: Discipline heterogeneity

Principal and Co-Investigators on Digital Environment grants extend far beyond the typical NERC disciplines to represent more than 35 disciplines and sub-disciplines from Statistics to Plant Science. This shows progress in working with partners and experts from other disciplines to realise the benefits of a digital environment, as articulated in the Delivery Plan

Qualitative indicator – as of 31/03/21

Indicator 1: Testimonial

Facilitation work to bring the digital environment community together: During 'Constructing a Digital Environment' workshops to bring together team members from across CDE funded projects attendees strongly supported the mission to bring them together alongside the Champions and Expert Network to share their research and best practice for multi-/interdisciplinary working. They voiced appreciation for a cross-cutting programme which was digitally focussed with the freedom to apply from across all of NERCs remit rather than being restricted to a single theme.

Indicator 2: Testimonial

Similarly, the webinar for the Dynamic World Map received positive feedback from the World Resource Institute who, "...wanted to thank (us) for hosting the... briefing on Dynamic World Map (DWM)...it was an impressive group. Thanks again for all your support and interest...". This has led to a further discussion on a Bezos Earth Fund 'Land and Carbon Watch' initiative which will be presented at COP26.

Learning and/or Action: The Digital Environment theme is cross-cutting and the technologies supported through it have the capacity to support research-driven challenges across the full range of ambitions detailed within the Delivery Plan. Alongside continued delivery of existing programmes, idea development and engagement, in the next year we plan to: i) Review the overall carbon footprint of funded Digital Environment projects and demonstrators, as calculated by the existing software employed by the NERC Sustainability team ii) Undertake an Equality Impact Assessment of all funded Digital Environment programmes will be completed, which would look at projects, demonstrators, the Network of Experts and Webinar Series.



Narrative

Over the last 12 months all major activities have been completed, commissioning is on track for the next financial year and the capital pipeline is maturing. Our activities continue to support the health and international competitiveness of the UK science base. Throughout 2020-21 we have maximised opportunities, improved visibility and increased the depth of the National Capability (NC) portfolio. To ensure a skilled and expert environmental science talent pipeline. NERC continues to invest in 235 notional studentships through 18 Doctoral Training Partnerships across the breadth of the environmental science remit and covering all regions of the UK. Actions are being taken towards NERC 's business responsibility e.g. a Capital-funded scoping project led by the National Oceanography Centre (NOC) has launched to investigate how to move towards low or zero-carbon oceanographic research. An evaluation of NERC Services and Facilities (S&A) and Large Research Infrastructure (LRI), by an independent panel, assessed that 9 out of 11 of these (S,A & LRI) were rated as good or excellent in the 'Added Value' that they offer. A 2020 independent evaluation of the research excellence and impact of our Research Centres concluded that all our centres produced "world-leading outputs" and every centre was found to be an 'internationally excellent institution" Milestones seen in the Antarctic Infrastructure Modernisation Programme: Sir David Attenborough Royal Research Ship (RRS SDA) was officially handed over from the Cammel Laird shipyard, and a new £40 million wharf to moor it has been commissioned.

Quantitative indicator – as of 31/03/21

Indicator 1: Investment (CI,LI)

Over the last 12 months NERC has invested ~£180m in delivering the Best Environment for Research and Innovation. NERC analysis in 2020 highlighted the strength of the UK's R&I landscape for environmental science, revealing that over the last decade national capability funding has resulted in more papers than any of NERC's other funding streams with ~30% of all NERC funded papers using our facilities. NC funded papers have an average citation impact score of 1.9; above the UK's average Environmental Science impact score of 1.5.

Qualitative indicators – as of 31/03/21

Indicator 1:

Following a request from DEFRA for air quality experts to provide rapid scientific evidence to support decision-making on air quality management during the covid pandemic, Rebecca Pow MP, Parliamentary Under Secretary of State at DEFRA remarked that: "The government is truly grateful for the response to date and I would personally like to pass on my thanks, and those of my officials, to all who have been in contact." NERC was acknowledged in the following statement: "my officials, working closely with our independent Air Quality Expert Group and the Natural Environment Research Council, are requesting the help of researchers to explore those impacts".



Operational commitment

Narrative

NOC and UKCEH became independent companies, Limited by Guarantee, with charitable status in November and December 2019, respectively.

Since April 2020, a further 17 implementation actions have been completed which support the establishment of NOC and UKCEH as independent organisations. Key highlights include: Hypercare for both Centres was completed in June 2020; ongoing Strategic Relationship and Assurance Meetings (SRAMs) established with both centres from June 2020; and completion accounts for both Centres were agreed by October 2020. Data migration actions were pushed back due to COVID pressures on resourcing.

Remaining delivery actions are progressing, however some of these have been impacted and delayed due to COVID-19. For example, data migration activities for NOC have been delayed, as it was decided that completing migrations at the current time presents too much risk whilst staff are working away from the office.

Deliver independence for NOC & CEH

Current
RAG
rating

2021/22



Quantitative indicator – as of 31/03/21

Indicator 1: Milestone accomplishment

Since April 2020, and the closure of programme workstreams in March, 16 of 28 remaining implementation actions have been closed, which support the establishment of NOC and UKCEH as independent organisations.

The remaining implementation actions mainly relate to the following:

- (Legal) Novation of income and supplier contracts
- (Property) Finalising lease agreements for UKCEH and NOC sites
- (IT) Data migration activities

These actions should conclude by Spring 2022.

Qualitative indicator – as of 31/03/21

Indicator 1: Milestone accomplishment

In September 2020, the GRO Programme, responsible for delivering independence for NOC and CEH, met the required criteria to complete the 'Implementation' phase and progress into the final 'Monitoring and Closure' phase.

Learning and/or Action: A GRO Programme Board will take place to provide governance on the remaining aspects of the GRO Programme, with activities having transferred to Business As Usual teams to complete. 12 actions remain relating to contract novation, property and data migration. The majority of the actions should complete this year with the exception of some of the data migration actions which have been heavily impacted by COVID and have therefore been pushed back – these should all be concluded by Spring 2022. A Gateway 5 review will be conducted to assess if the benefits set out in the Business Case are being achieved and that operational service is running smoothly, currently planned Autumn 2021.

Operational commitment

Narrative

NERC is fully engaged across the breadth of the UKRI Transformation and Reforming Our Business (RoB) portfolio. However, there is insufficient clarity and priority ratings of the in-scope change initiatives impacting on the structure, governance and associated operational arrangements for projects that form part of the RoB portfolio.

We continue to build on the strong legacy of our Change network to support staff through the full-range of change initiatives. However, the lack of information available on specific projects can lead to dis-engagement and anxiety. Business partnering functions are now in full operation with those interfaces being developed to maturity. Work is needed to bring some interfaces to an optimum level to ensure smoother decision-making, understanding of NERC-specific issues (particularly relating to our Centres), communication and implementation across UKRI.

We continue to communicate consistent messaging and engage with NERC staff via a number of different strands - Employee Engagement Plan, NERC C-19 Recovery Action Plan, UKRI Staff Survey, NERC Staff questionnaire action plan and the Listening Project. The latter was commissioned in June 2020 to provide support to new starters as an informal part of the onboarding process.

Embed UKRI Transformation

Current
RAG rating

2021/22



Quantitative indicator – as of 31/03/21

Indicator 1: Employee Engagement

In the two most recent UKRI 'pulse' surveys, NERC Head Office response rate was higher than the UKRI overall rate: 63% vs 54% and 76% vs 50%. This data suggests NERC employee engagement is growing and levels are better than the UKRI wide average.

According to Forbes (2020) the average employee survey response rate is 30-40%. Anything between 60 – 70% is considered good, with over 70% as very good. Anything below 50% is considered poor, demonstrating a lack of engagement. NERC is keen to maintain high response rates using the number of different communication channels that exist to encourage participation and feedback.

Indicator 2: Onboarding effectiveness

In the last 9 months 45 new starters volunteered to take part in the Listening Project. One to interviews with new staff provide useful insights which are fed back into the induction process.

Qualitative indicator – as of 31/03/21

Indicator 1: Employee Engagement

In February 2021 NERC rolled out a Staff Survey Action Plan resulting from the UKRI pulse surveys, ahead of some other parts of UKRI. The focus of which is - 'You have spoken, we have listened, and this is what we are doing.'

There are 5 areas for improvement (championed by senior NERC staff) including staff feel valued and listened to, line managers feel empowered to support their teams, staff have necessary tools to help them maintain their physical and mental health, success is shared and celebrated, confidence that staff needs are considered in the approach to returning back to work. This Plan is reported on quarterly and progress is communicated to staff via Head Office briefings and reports to EEG.



Responsible director: VM
Last updated 14/05/21

Learning and/or Action: We will develop a NERC Change Programme to create a co-ordinated and controlled approach to prioritising and managing operational change in NERC, accompanied by a communication and engagement plan. We will also ensure a stronger connection to Centres to assess the case for, impact of, and overseeing delivery of change in NERC driven through the Reforming our Business programme. This year we will influence the development of new Target Operating Models for the Corporate Hubs and its specific functional areas to achieve optimal Business Partnering interfaces.

Operational commitment

Develop an inclusive, professional workforce

Current
RAG rating

2021/22



Narrative

Our focus on staff well-being and connectivity in the last year has been well received as a way to support colleagues through the challenges of the pandemic. Staff feedback (via surveys, through teams and NERC's Employee Engagement Group) is positive, reporting greater connection with and visibility of the leadership teams. Staff have appreciated a stronger focus on health and wellbeing, and the support available throughout this challenging period, including from their line managers.

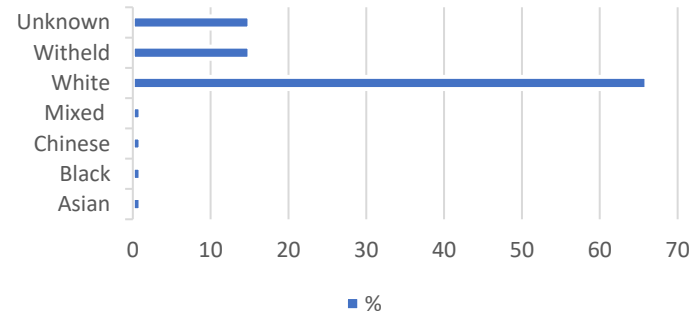
We have established a NERC EDI Champions and EDI Working Group to encourage collaboration and empower staff to take action to enhance our performance. The Senior Leadership Team have taken part in and will continue to participate in EDI leadership sessions to build capacity and confidence. The outputs of these strands of work will form the basis of our NERC EDI Action Plan. We recognised that external expertise would help NERC identify and articulate our focus for this action plan, therefore we commissioned an evaluation of our approach by established EDI business-psychology experts.

Workforce diversity is now incorporated into regular HR dashboard reporting but not yet at a sufficiently granular level to be able to draw out issues for HO, BAS and BGS. To conclude, performance related pay across the whole of NERC has been successfully introduced to align with UKRI policy.

Quantitative - as of 31/03/21

Indicator 1: Staff diversity

We have now established the baseline for NERC EDI, providing a reference point for future DP reporting and also highlighting gaps in data. There is some data available for 2019/20 (based on 51% disclosure rate). Female and male staff levels remain constant over the last 2 years, 45 and 55% respectively. A rise of 22% females promoted in 2020 has been observed. It is not mandatory for employees to disclose ethnicity or disability. Baseline ethnicity data is included below.



Further work is required on data capture and NERC is working with UKRI to understand whether barriers to underrepresented groups exist at application and/or recruitment.

Qualitative indicator – as of 31/03/21

Indicator 1: Performance improvement

The appraisal completion rate is higher in NERC HO than any other part of UKRI in 20/21. Anecdotally, it has been fed back that this tool helped to provide certainty, in a challenging period, and the opportunity for optimism and forward planning. We are keen to maintain these engagement levels in the future. NERC HO has also introduced a co-signatory as a mandatory requirement into appraisals to ensure a fairer and stronger appraisal process.

Indicator 2: Attracting talent

We have established the baseline for NERC apprenticeship's. 11 apprentices joined us on the 1st April 2020 until March 2021.

We hope to improve diversity through apprenticeships, as this offers individuals the opportunity to experience NERC and the wider field of environmental science.



Learning and/or Action: NERC is developing its new EDI approach (21-24) to deliver practical actions to enhance EDI performance including diversity of our workforce. Attracting a diverse workforce continues to be a challenge for NERC with targeted action planned over the next year. Performance management training will be reviewed, with NERC-specific content, whilst providing better support to managers. With UKRI, we will develop a new approach to apprenticeships to increase participation, as well as influence the UKRI L&D strategy and a new UKRI-wide Leadership Programme. We will support introduction of 'New Ways of Working' as part of Future Workspace Project.

Operational commitment

Demonstrate impact of NERC research

Current
RAG
rating

2021/22



Narrative

NERC has a healthy and innovative pipeline of evidence demonstrating the impact of our funding, which is used and commended by target audiences.

Citations analysis was completed and shared widely. This has been well received by Head Office teams, who are using it to inform their work and requesting specific analysis. Bibliometric analysis of NERC-funded papers demonstrated the excellence of NERC science (see case study) and providing insight on the performance of different aspects of NERC. NERC impact evidence prominent in UKRI impact communications including the recently launched [Responding to climate change](#) campaign (COP26) and in two of the five [UKRI impact stories](#).

BEIS Communications team and UKRI Head of Content have said that the NERC evidence is very clear and easy to use. An ongoing issue is the lack of insight into how our evidence is used at the highest levels, as this is often confidential or several steps removed from the original requester (e.g. spending review case, Ministers). We regularly ask for feedback, and look out for and record uses of our evidence e.g. in UKRI and government documents.

Quantitative Indicators –as of 31/03/21

Indicator 1: Impact & added value

4 Impact Series instalments published on the NERC website – shows progress with documenting and sharing high level messages and examples about how NERC benefits the economy, society and the environment. Below target (5), which was not achievable due to constraints on team resources (evaluation of Centres, pandemic pressures on resources). 4 added value case studies completed – shows progress with demonstrating the outcomes and benefits of NERC's leadership and action. Exceeded target (3)

Indicator 2: Honours Nominations

2020 Queen's Birthday Honours: 4 NERC nominations were successful. **2021 New Year Honours:** UKRI submitted 11 nominations to the Government Office for Science. **6** successful nominations were received from NERC. In these rounds there have been a total of **10 successful NERC nominations:** 4 OBE, 4 MBE and 2 CBE which demonstrates the breadth and level of achievement that is being recognised (6 males, 4 females).

Future indicator: Reach Using communication tools we will be able to track coverage in the media more comprehensively.

Qualitative indicators – as of 31/03/21

Indicator 1: Evidence of impact

In December 2020, the Met Office reported that due to climate change, most of the UK (with the exception of higher areas in the North and Scotland) may completely cease to have snow by 2060. For Southern England the 'no snow' prediction date is even sooner - 2040. The level of detail in the models, supported by NERC funding, mean it is possible to see how the climate might change in neighbourhoods across the country. This report received coverage in mainstream news including [BBC](#) news, the world's most visited news site, with a global readership of 112m.

Indicator 2: Testimonial

In March 2021 a briefing for new officials and Ministers at BEIS was commissioned which NERC fed into. 'NERC impact syntheses have been submitted through UKRI to BEIS as part of a ministerial briefing (including Secretary of State, Kwasi Kwarteng). In particular to showcase tangible work programmes that deliver impact. These include Helping the Insurance industry thrive' and 'Cleaning up air/cutting costs of pollution'. Jane Sykes - Strategy Business Partner (NERC, UKRI).

Learning and/or Action: Continue with the successful approach of selecting projects based on both the pull (e.g. NERC/UKRI messaging priorities, gov/public interest, events) and the push (where we have a strong story to tell). innovate in our methods to provide new data and find more efficient ways of generating data. Respond quickly to priority evidence requests drawing on our strong database of evidence; and influence UKRI central to ensure a pragmatic approach to the balanced scorecard and to capitalise on the opportunities presented by existing internal and external data sources. Build insight of how our evidence is used at the highest levels using a communication and dissemination tool.



Operational commitment

Undertake evaluation

Current
RAG rating

2021/22



Narrative

Evaluation of NERC Centres 2020 was successfully completed, with the results published in January 2021. This 7-yearly evaluation of the excellence and impact of six research centres (owned or funded by NERC), was conducted virtually (acting as an exemplar for future evaluations). The results demonstrated that centre performance is broadly commensurate with research-intensive HEIs.

Our Evaluation Policy is now operational for new investments and has been introduced to R&S and SP Directorates, including training and support in developing evaluation plans for business cases and future programmes, particularly for the Capital and DE teams. BGS Evaluation Framework approved and scoping of outline monitoring and evaluation plan and ongoing support around Major Projects AIMP business case. Provision of support for the development of an evaluation framework for R&S Highlight Topics. NERC chairing the cross-council UKRI Performance & Evaluation Network (as of January 2021).

Retrofitting of new evaluation procedures to active investments is a known challenge. This is because it is much easier to design in measurable, focussed and realistic evaluation activities at the beginning of a programme.

Quantitative indicators – as of 31/03/21

These forward looking indicators will provide some data on the take up and usage of the new evaluation procedures across NERC and show documented evidence that evaluation has been built into programmes from the outset.

Indicators 1a, b, c: Training & Development

Indicator 1a:

As a baseline, the current teams provided evaluation training and support are 2 in 2020 (regarding provision of support of the SPF programme evaluations and BGS).

Indicator 1b:

As a baseline, the current NERC-led programmes using NERC Evaluation templates are 0 in 2020.

Indicator 1c:

As a baseline, the current NERC-led programmes using NERC Outline M&E templates are 0 in 2020.

Qualitative indicator – as of 31/03/21

Indicator 1: Testimonial

In the NERC Council meeting (Dec 2020), Professor Mary Fowler (chair of the NERC Research Excellence panel) commended the 'efficient and effective process'. Council noted that, although a direct comparison was not possible, the results showed that the quality of the centres' science as a whole was broadly commensurate to HEI's. Council used the results to inform investment decisions and drive improvement in Centres.

Future indicator (training & development): Feedback on NERC M&E plans from NERC teams, UKRI and BEIS – notes and commentary from reviewers of NERC Business cases

This indicator will provide an assessment of whether the quality of evaluations match external expectations from UKRI and government. The introduction of consistent M&E templates is due for Q1 2021 which will be matched to the expectations of external requirements and therefore require less modifications.

Learning and/or Action: Ensuring that approaches to evaluation are consistent between councils and partners can be challenging due to the differing evaluation approaches (pragmatic vs. precautionary approaches) and differences between disciplines. We will embed new NERC Evaluations into HO procedures by providing training and support to NERC teams on evaluation, templates and best practice documents on evaluation, exploring NERC's requirements for analytical capabilities and procedures for evaluation. We will also pilot NERC evaluation procedures and gather data (including light touch and extended evaluations of investments in R&S (Highlight Topics, Treescapes, Major Projects (AIMP and FAMM), Capital and BGS) .



Responsible director: IW/AR

Last updated 14/05/21

Operational commitments

Narrative

NERC has made progress by enhancing its public commitment to corporate social responsibility. Our Responsible Business Statement has been expanded in scope, from 'our operations' to 'all investments', and places a stronger focus on improving our ED&I.

Social responsibility: Through the 2020/21 NERC EDI plan, NERC has for the first time a detailed understanding of the diversity of our funded community.

Environmental sustainability: NERC agreed a comprehensive response to the UKRI Environmental Sustainability Strategy to ensure we make our fair contribution and where possible go beyond the commitments set. We have invested in large scale sustainability projects across NERC estate and infrastructure. NERC has also initiated works to deliver the NERC carbon pathway to net zero by 2040.

Responsible research: NERC is embedding sustainability into to its funding call and evaluation processes. For example, in our national capability evaluation process 'Benefits Realisation'. This gives greater recognition for those in the national capability community who demonstrate good responsible research practices.

Work to the Responsibility Framework

Current
RAG rating

2021/22



Quantitative Indicators – as of 31/03/21

Indicator 1: GHG emissions

Direct carbon investment in 20/21: £3.1m (including BEIS decarbonisation). Predicted benefit as the result of investment (tonnes of carbon for project lifetime) - 10,200 tCO_{2e} saving*. Ships and aircraft are the vast majority of the NERC carbon footprint. There was no direct investment for carbon reduction in this infrastructure in 20/21. NERC is working on this costed carbon pathway to reach net zero by 2040. To deliver this NERC will need to make tough decisions about how we operate and invest more in step-change carbon interventions.

Indicator 2: Biodiversity preservation

Direct biodiversity enhancement investment on the UK estate in 20/21: £0. This indicates that current investment is not in line with our commitment to enhance biodiversity on the UK estate. Noting that the new estates strategy will support this commitment as will the future biodiversity fund (although this small fund is for staff led activities and will not support large scale interventions).

***Includes all emissions from a NERC's direct operations, including its energy and heat consumption are measured in metric tons of carbon dioxide equivalent (t CO_{2e}).**

Qualitative Indicators – as of 31/03/21

NERC operational management of environmental impact continues to meet externally recognised standards as indicated below:

Indicator 1: Compliance of Greening Government Commitments (GGC)

NERC was fully compliant with reporting requirements (with no outstanding data queries) for the period and provided direct support to established UKRI compliance reporting.

Indicator 2: Compliance with external standards

NERC has good systems in place to collect, check and report environmental performance data required for the GGCs. We have maintained ISO14001 maintained at the NERC Centres and the Carbon Trust standard.

