

Space Weather Instrumentation, Measurement, Modelling and Risk (SWIMMR)

A NERC perspective

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Head of Business Partnerships

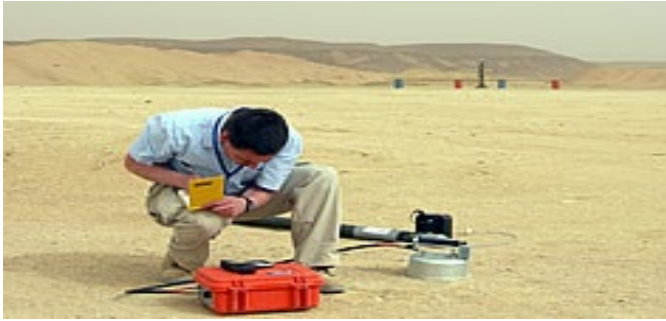
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Natural Environment Research Council

- NERC is the UK's leading public funder of environmental science
- We invest £330M each year in cutting-edge research, postgraduate training and innovation in UK universities and research centres



We support



- 3,000 scientists and over 1,500 PhD students

- 1,000 research projects and 60 UK or international programmes

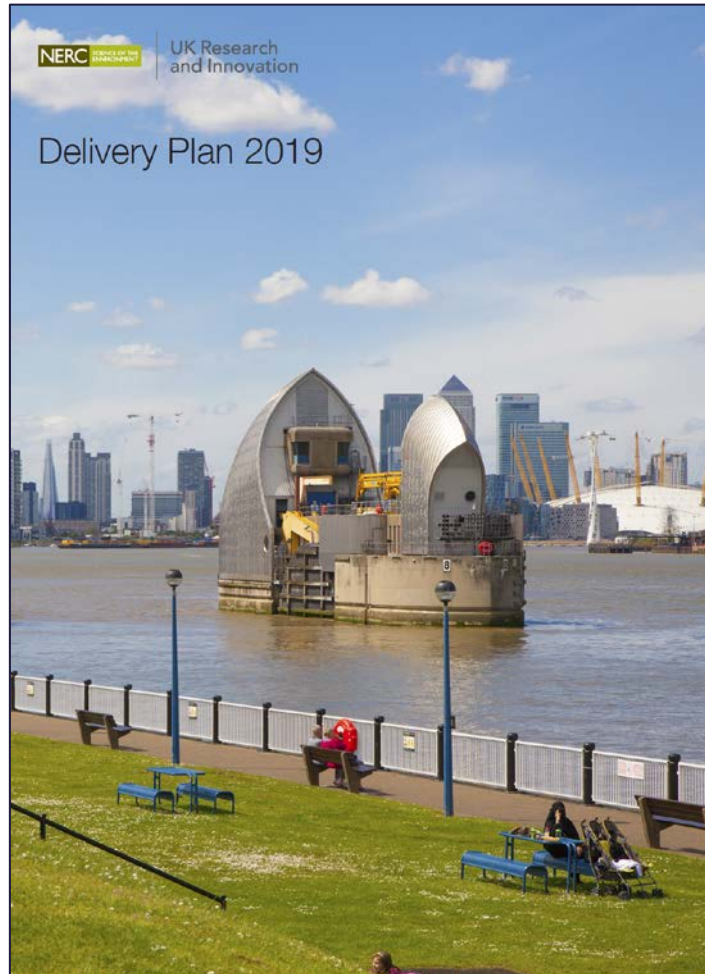


- 55 universities and 20 research institutes



- UK national capability: 3 ships (plus 1 being built), 6 aircraft, 6 polar bases, the NERC Data Service and 11 community research facilities

NERC Delivery Plan



- Recognises the transition to UKRI and NERC's role within a new agile organisation
- Highlights the importance of interdisciplinary working and global partnerships to respond to environmental challenges
- Articulates NERC ambitions for the future and identifies eight priority areas

NERC Priority Themes



Environmental Solutions

- Champion the importance of environmental solutions in contributing to clean growth across UKRI, and create initiatives that meet this aim



Resilient Environment

- Increase understanding of environmental hazards, environmental change and their interactions, to plan for and manage vulnerability, risk, response and recovery



Productive Environment

- Promote research and innovation to enable a shift to a circular, resource-efficient economy, working with partners to translate research into effective business models



Healthy Environment

- Increase understanding of the benefits of a healthy environment to health and wellbeing, and of feedback mechanisms between environmental systems and a healthy economy, society and culture

NERC Priority Themes



Pushing the frontiers of understanding

- Maintain the UK's considerable breadth of expertise across environmental science, to prepare for the unknown challenges of the future



Global Environment

- Provide leadership in, and bring UK expertise to bear on, global challenges, aiding international development and responses to environmental emergencies



Digital Environment

- Use cutting-edge technology to advance environmental outcomes, taking advantage of machine learning, miniaturisation, battery technology and wireless communications



Best Environment for R&I

- Ensure a talent pipeline in environmental science that has the skills and expertise to resolve future unknown challenges and to lead and influence broad, systemic thinking for environmental solutions

Resilient Environment

Forge collaborations that bring together the skills and expertise, for example in engineering, finance, economics and environmental science, that will bring about a more resilient environment and ensure capital markets, business and other financial systems are resilient to environmental risk in the short and long term.

Invest in research and innovation that advances understanding of environmental hazards, and the ability to plan, create policy, and manage vulnerability, risk, response and recovery in a changed and changing world. Through interdisciplinary partnerships and by bringing together outstanding researchers from different disciplines, we can devise solutions that make people, places, markets, systems and infrastructures safer and more resilient.

Environmental Risks to Infrastructure Innovation Programme 2016-2020

- Multi-sectoral, industry focused 'club' approach
- 3 calls for proposals, 60 projects funded, NERC investment £4.8m
- Searchable Project database held by CIRIA
- Case studies developed and published
- Webinars and other knowledge transfer activities
- BGS multihazards survey

ATKINS



edf

HS2

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sse



Translink

8

ARUP



Natural
Environment
Research Council



**Environment
Agency**



HR Wallingford

Working with water

NERC Highlight Topics, round 3 (2016)

- New insights into space weather impact on UK national grounded infrastructure SWIGS

<http://www.geomag.bgs.ac.uk/research/SWIGS/home.html>

- Modelling and forecasting the Earth's radiation belts

<http://www.rad-sat.ac.uk>

NERC national capability – programmes and facilities – BAS and others

WHY SWIMMR?

- Translating research and innovation into an operational service
- Pushing the frontiers of understanding
- Working in partnership across Councils and Government Departments to address a national strategic priority
- Contributing to national resilience
- Drawing on underpinning NERC funded national capability and facilities
- Enhancing UK capability and international leadership

SWIMMR

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