

Memorandum of Understanding between the Natural Environment Research Council (“NERC”) and the Secretary of State for Environment, Food and Rural Affairs (“Defra”)

1. Purpose of the memorandum.

The NERC is a non-governmental public body whose purpose is to support in the UK, primarily through its funding decisions, excellent environmental science, to ensure its wider public understanding, and application to business and public policy. In pursuing this role, NERC supports research at Universities, Charities and Research Institutes, and maintains national-scale atmospheric, terrestrial and marine measurement infrastructures, services and capacities, that support research of basic and applied natures, that has an important role in informing present and future government policy and regulation. In its role as the primary commissioner of environmental science within the UK, NERC wishes to ensure that its strategic view of the future development of environmental science is informed by the present and future needs of government departments, and that it is mindful, in considering future changes to its funding, of those research infrastructures that are of particular importance and value to departments.

Defra

Defra is the UK Government Department responsible for policy and regulations on the environment, food and rural affairs. Defra focuses on supporting Ministers to achieve the outcomes they seek by developing and implementing policy, including legislation. The delivery of policies is largely delegated to Defra’s Network Bodies, including Executive Agencies and Non-Departmental Public Bodies. Defra is also a major funder of evidence, with annual investment split largely between research and development, monitoring and surveillance and analysis activities.

Defra is responsible for evidence both in England and Wales because the evidence budget has not been devolved to the Welsh Government. Defra works in close consultation with the Welsh Government in determining evidence requirements, including the statement of needs below.

2. Scope of the memorandum.

To identify:

- (i) Those elements, in the form of infrastructure, services and capacities, which NERC sustains through long-term *national capability* funding at National Oceanography Centre (“NOC”), Centre for Ecology & Hydrology (“CEH”), British Geological Survey (“BGS”) and National Centre for Atmospheric Science (“NCAS”), of which NERC should be mindful in considering changes of its funding or organization.

3. Statement of needs: present provision (infrastructure, services and capacities) of value to the Department

For all datasets and archives listed below, Defra attaches importance not only to their maintenance but also to continuing access under substantially the same terms and conditions as is currently the case. Rapid access to expertise in emergencies is also important.

British Geological Survey

1. BGS's earth science knowledge and expertise, and access to geological data archiving and mapping facilities. In particular:
 - the BGS-CEH joint programme to maintain the UK's surface and groundwater archive;
 - all datasets for DiGMapGB-50 and DiGMapGB-625 (onshore geology at 1:50 000 and 1:250 000 scale), DigSBS (seabed sediment data at 1:250 000), the BRITPIT mines and quarries database;
 - BGS science expertise on international committees, such as fulfilling the UK representative role for GEO.
2. BGS's groundwater science capabilities, in particular long term research (e.g. nitrate) and observation into sustainable drainage (e.g. feasibility of infiltration, including national mapping) and shale gas.

Centre for Ecology & Hydrology

3. CEH's multidisciplinary terrestrial ecological expertise including:
 - expertise and facilities for atmospheric modelling, hydrology and hydro-ecology, and radioactive substances research;
 - expertise for assessing the impacts of air pollution on ecosystems and behaviours of pollutants in the environment, including long-term monitoring, computer modelling and mapping, assessments of risk and research on impacts;
 - advanced aquatic modelling capability on endocrine disrupters.
4. Datasets, archives and software, including models and decision-support tools, in particular:
 - the Flood Estimation Handbook and associated software and other key databases;
 - the Integrated Hydrological Digital Terrain Model (IHDTM) and Peak Rivers Flow (QT) Grids and Land Cover Maps;

- the National River Flow Archive;
- the Hyrad advanced weather radar display system;
- Grid-to-Grid forecasting capability for development of higher resolution flood warnings;
- the Biological Records Centre.

National Oceanography Centre

5. NOC's large/long term global ocean observation platforms, in particular Research Vessels.
6. NOC's internationally respected ocean science expertise and advice e.g. on deep sea mining, on global climate change, shelf-sea biogeochemistry, ocean acidification, ocean hydrography and marine ecosystems.
7. Capabilities in autonomous underwater vehicle development and other new technologies to improve the efficiency of marine monitoring.
8. Maintenance of the Environment Agency's Tidal Gauge Network, which is a component of the Storm Tide warning service.
9. The contribution of NOC to the secretariat of the UK Marine Science Coordination Committee (MSCC) and its subgroups for which Defra is co-chair.
10. NOC Datasets, including:
 - astronomical tidal prediction data;
 - surge modelling and maintenance of the operational tidal surge model (which runs on the Met Office's supercomputer);
 - NOC support for the British Oceanographic Data Centre and the Marine Environmental Data and Information Network.

National Centre for Atmospheric Science

11. NCAS' atmospheric science knowledge, e.g. in hazardous weather, air quality and climate, and access to observational data and atmospheric modelling capability;
12. Access to NCAS atmospheric chemistry field measurement and laboratory facilities, along with a fixed observatory at Weybourne;
13. The contribution of NCAS to the secretariat of Defra's Air Quality Expert Group;
14. NCAS contributions to the joint NERC/Met Office National Climate Capability (including model components, observations and data services at BADC), which underpins Defra's climate prediction programme at the Hadley Centre.