

NERC EDS Data Preservation and Withdrawal Policy



Introduction

The NERC (Natural Environment Research Council) EDS (Environmental Data Service) encompasses five Environmental Data Centres (EDCs) collectively responsible for managing and disseminating environmental data of long-term value generated through NERC funding or deposited by third parties. The five EDCs are:

- British Oceanographic Data Centre (marine)
- Centre for Environmental Data Analysis (atmospheric, earth observation, and solar and space physics)
- Environmental Information Data Centre (terrestrial and freshwater)
- National Geoscience Data Centre (geoscience)
- UK Polar Data Centre (polar and cryosphere)

The aim is to ensure the longevity of the digital information assets held by the EDS in a sustainable way by addressing the factors which risk making them unusable and/or inaccessible. Digital data submitted to the NERC EDS will be covered by this preservation policy.

Purpose

The aim of this policy is to ensure the longevity of the digital data held by the EDS in a sustainable way by addressing the factors which risk making them unusable and inaccessible. It demonstrates that the EDS is aware of the need to comply with relevant standards to ensure the user requirements of its designated user community and other stakeholders are fulfilled. It also establishes the principles by which data may be removed from direct public access and/or disposed of.

The benefits of long-term access to the environmental data, held by the EDS for re-use, are both scientific and financial and apply equally to all users. The economic, reputational and cultural risks of failing to address long-term accessibility through digital preservation are minimised through this preservation policy.

Mandate

The NERC EDS are designated within the [NERC Data Policy](#) as the place of deposit for NERC-funded research data. Each Environmental Data Centre (EDC) may also be subject to separate legislation (mandates) which govern the activities of each EDC specific to their scientific discipline. This policy helps the NERC EDS meet its legislative and accountability requirements and the expectations of its user community.

Scope

This covers data resources, and associated metadata where appropriate, accepted and held within the NERC EDC operated through the NERC EDS. This policy details the approach of the NERC EDS to preservation of digital forms of data only. Although certain EDCs within the NERC EDS may also accept physical samples and data, they are beyond the scope of this policy. The policy only covers actions required for the preservation of data and will not cover those necessary for acquisition of or access to data resources.

Details

Policy Principles

The NERC EDS implements the FAIR data principles (Findability, Accessibility, Interoperability, and Reusability) throughout its data preservation activities laid out in this policy. The NERC EDS follows the TRUST principles (Transparency, Responsibility, User Focus, Sustainability and Technology). The CARE principles should also be considered, to protect the rights of Indigenous Peoples, in collaboration with the appropriate NERC EDC, these are: Collective Benefit, Authority to control, Responsibility and Ethics and have been developed to be complementary to the FAIR principles.

This policy follows the main principles of digital curation:

- Authenticity:** The data is what it purports to be, is created or sent by the purported person, and at the purported time. This is shown e.g. in the provenance of data and preservation metadata.
- Integrity:** The data is complete and unaltered. This is achieved by appropriate ingestion processes and using digital signatures, fixity checks, and persistent identifiers for the data.
- Reliability:** The data accurately reflects the original context of data creation and is trustworthy. This is achieved by documenting and capturing the contextual metadata and ensuring its completeness.
- Usability:** The data can be located, retrieved, presented and interpreted. This would be achieved through the use of preferred and open file formats, preparation of associated usage metadata and monitoring of obsolescence (software and hardware).

Acceptance of Responsibility

The five EDCs that comprise the EDS accept designated responsibility from NERC to manage NERC funded digital environmental data of value and make it accessible and exploitable for the long-term.

Custody transfer / data set tracking

The same data value procedure is used for all data resources and no judgement is made on the scholarly value of the datasets once they have been identified as suitable for deposit with the EDS. All datasets accepted for deposit must be accompanied by supporting documentation of sufficient quality to enable re-use over the long-term. To reduce the risk of obsolescence, files are only accepted in non-proprietary formats, unless there is a supported need for a proprietary format.

Online storage for the EDCs is administered by dedicated IT infrastructure teams. The environmental parameters which control the storage media are tightly controlled to reduce vulnerability and data are backed up continuously. Copies of archives are kept securely off site, providing for recovery of data and infrastructure under commonly anticipated threats (e.g. cyber-attack, technical failure, human error). These systems also ensure the safety of the data in the event of a more serious incident if, for example, the buildings housing the EDC and/or major IT infrastructure were to be rendered inoperable.

Technological obsolescence

The EDCs retain the right to change data format or structure to ensure long-term preservation and avoid technological obsolescence. The NERC EDS strives to remain up to date with any relevant technological advances to ensure continued access to the collections.

Retention policy

The EDCs, in line with [NERC data policy guidance](#), have a minimum retention period of ten years after completion of the research. Further information can be found in the individual EDCs Retention Policies, where they exist.

Staffing and skills

Digital preservation work will be undertaken by staff in the EDCs. Those staff involved in digital preservation are expected to share best practice across the EDS and seek opportunities to acquire and develop the required knowledge in digital preservation, such as technical expertise in specific data and file formats or preservation tools, outreach and communications, and management skills as appropriate. All staff working on digital data are aware of their role in long-term digital continuity.

Legal basis

As per the UKRI/NERC Data Policy the EDS aims to make all data openly available, wherever possible. There are safeguards in place for sensitive and commercially restricted data, including agreed embargo periods and access restrictions. The EDS must have legal rights to preserve any digital content kept in its archives and will not ingest new materials that have unclear ownership or unresolved rights issues. In preserving its data collections, the EDS follows:

- Data Protection Act 2018 <https://www.legislation.gov.uk/ukpga/2018/12/contents>

- The Environmental Information Regulations 2004
<https://www.legislation.gov.uk/uksi/2004/3391/contents>
- The Freedom of Information Act 2000
<https://www.legislation.gov.uk/ukpga/2000/36/contents>
- Public Records Act 1958 <https://www.legislation.gov.uk/ukpga/Eliz2/6-7/51>
- Public Records Act 1967 <https://www.legislation.gov.uk/ukpga/1967/44>
- English/UK law for commercial agreements and contract law

Additionally, there is some legislation that affects the NERC EDCs:

- The Antarctic Treaty Article III 1(c) <https://www.ats.aq/e/antarctictreaty.html>
- Statutory rights enabling the British Geological Survey to obtain geological and other scientific information <https://nora.nerc.ac.uk/id/eprint/14875/>

Continuity of Service

The [NERC Data Policy](#) states that NERC is committed to supporting long-term environmental data management to enable continuing access to the environmental data funded by NERC. The EDCs are commissioned by NERC as a single environmental data service (currently for a five-year period until 2028). The EDCs are working together to increase integration and use of common processes and software tools. This provides much needed financial stability and resilience, thus helping to ensure continuity of service (both short and longer term). Furthermore, each component data centre is also an integral part of a well-established UK research institute, adding further stability to the data service. Risk registers are maintained at the local and EDS level and are a key tool in managing the required resources underpinning the environmental data service and to mitigate against any perceived challenges to service continuity.

Withdrawal and disposal

There may be infrequent cases where it is not desirable for an asset curated by an EDC to continue to be made available publicly or retained by the EDC.

Reasons for withdrawal from direct public access or disposal of a data asset might include:

- Proven copyright violation or plagiarism
- Falsified research
- Legal requirements
- National security
- Planned deaccession for data that are no longer needed
- Data are found to contain errors
- Identified/planned data obsolescence (e.g. by subsequent replacement versions)
- Technological changes that prevent the online delivery of data
- To reduce overall environmental impact of the assets

In addition, whilst NERC is proactive in its duty of care for data assets entrusted and associated hardware and software infrastructure, a data asset may become no longer retrievable in a usable and useful form.

In such circumstances, as far as possible, metadata (e.g. publication details) associated with a withdrawn/disposed item will be retained for long-term provenance and to support the scientific record along with a withdrawal notice. DOI-ed assets must, where feasible, retain their required metadata in line with DOI requirements. The withdrawal notice will clearly state the reason for the withdrawal, and where possible, the date of withdrawal. Where an item has been removed from public access but resides within an EDC's infrastructure, users may still be able to submit a request for a copy of the data resource to the responsible EDC.

Levels of Withdrawal

A data asset may be withdrawn from direct public access in whole or in part at one of the following levels:

- Moved to cold(er) forms of online storage, supported by request and caching mechanisms for delayed-response access
- Have lossless compression applied
- Have file aggregation applied
- Moved to off-line back-up copies only
- Alternative delivery route

Disposal of data

Whilst data removed from public access may be retained in off-line systems, there are cases where data disposal may take place. Such data disposal may take one of the following forms:

- Transfer to another archive, repository, data centre or other custodian
- Active deletion from direct public access and, where required, internal copies and back-ups

Note, the data's nature may, for legal reasons, necessitate secure destruction.

Where required, the above points may also apply to the associated metadata.

Any withdrawal or disposal action outside of the scope of pre-existing arrangements (e.g. data management plans, contracts etc) or policies must be in agreement with the relevant management of the EDC or via the NERC EDS. Individual staff must not act alone. The EDC/EDS will ensure that any disposal process is carried out with openness and transparency.

Glossary

Withdrawal - removal of direct public access to a data asset.

Disposal - active removal of a data asset.

Cold(er) storage - this is utilisation of storage media that have a less carbon intensive footprint (e.g. tape as compared to spinning disk)

Lossless compression - this is application of data compression algorithms that do not reduce the resolution of the information held

References

None

Contact

Please send any queries about this policy to data@nerc.ukri.org

Document control

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Written by: Mark Hebden, Richenda Houseago-Stokes, Graham Parton, Dan Wright, James Ayliffe, Polly Hadziabdic, Charlotte Pascoe, Lucy Stephenson and Rachel Talbot

Approved by:

Policy Owner: EDS

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