



Reuse and the Archaeology Data Service

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CAA Amsterdam
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Intro to the Archaeology Data Service

**Domain Specific Digital Archive
Set up in 1996
Based within the University of York**

Mission: Support research, learning and teaching with free, high quality and dependable digital resources.

- Digital preservation
- Free online access to data
- Guidance and support for data creators
- Research



UNIVERSITY
of York



**The digital repository
for archaeology and
heritage** *Supporting
access, innovation, and
research*

Screenshot

Excavation during the A1 Leeming to Barton Motorway Upgrade Scheme © Northern Archaeological Associates →

[🔍 Search the database →](#)

Search our freely available data rich project collections, reports, publications and metadata records.

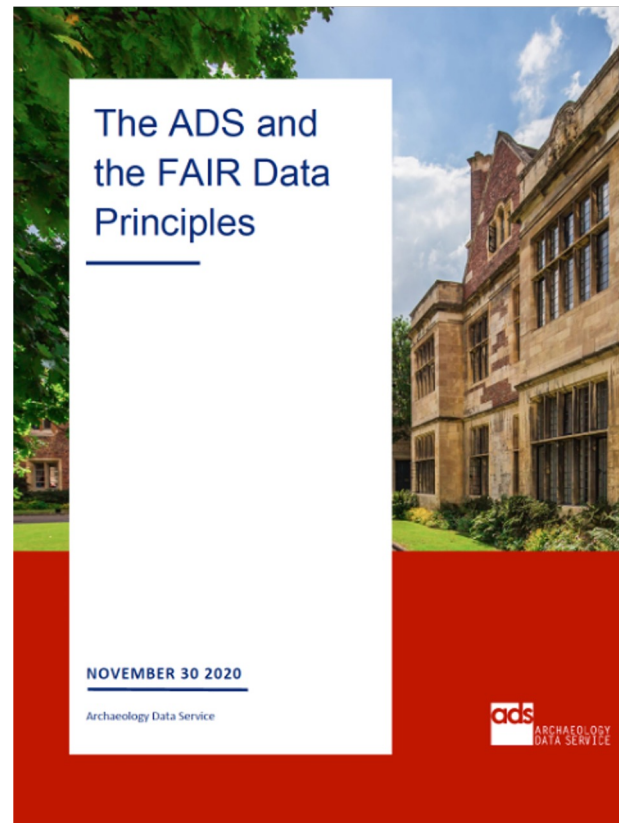
[📄 Deposit data with ADS-easy →](#)

Depositing your data with us ensures that they will be professionally curated in the long term and easily accessible for future reuse.

<https://archaeologydataservice.ac.uk>

ADS FAIR Audit

- Determined we should do an audit that would result in internally and externally-facing reports
- Internal report for ADS staff to inform our strategic planning process using the RDA FAIR Data Maturity Model tool, so that our progress can be measured over time
- External report for users/depositors to show how data deposited with ADS is FAIR data



Help & guidance Data access and reuse

Data access and reuse

■ [FAIR data](#)

[Identifying copyright](#)

[Data reuse case studies](#)

[Digital Object Identifiers \(DOI\)](#)

FAIR data

The ADS is an advocate for FAIR and the FAIR principles for data stewardship. As such the ADS recognise that while preservation and dissemination of data remain of core importance, stewardship should also include demonstrable quantitative and qualitative evidence for data reuse. The ADS is actively investigating how the datasets it curates can be fully compliant with the FAIR principles and is working within [SSHOC](#), [ARIADNEplus](#) and [E-RIHS](#) to promote this.

As a result when you deposit your datasets with the ADS, you can be confident that your data becomes FAIR data.

What is FAIR Data?

The [FAIR Principles](#) provide an important framework to evaluate and publish data in order to facilitate discovery, provide sustainable access to resources, and encourage and enable better sharing and reuse of data. To achieve these goals the core principles emphasise:

<https://archaeologydataservice.ac.uk/help-guidance/data-reuse/fair-data/>

Interoperable

11. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

- All resource discovery metadata is made available using a qualified Dublin Core in RDF/XML through the [ADS Linked Data repository](#).
- [External services](#) also consume and disseminate metadata.

12. (Meta)data use vocabularies that follow FAIR principles.

For a wider discussion on the vocabularies used in ADS metadata see our [Strategy and Standards](#) page.

The ADS uses a variety of sustainable, open vocabularies to qualitatively classify and identify resources and datasets, including:

- [Heritage Data](#) vocabularies, including those provided by the Forum on Information Standards in Heritage (FISH), Historic England (HE), Historic Environment Scotland (HES), and the Royal Commission on Ancient & Historical Monuments of Wales (RCAHMW)
- [Library of Congress Subject Headings](#) (LCSH)
- [Marine Environmental Data and Information Network](#) (MEDIN)
- [Getty Thesaurus of Geographic Names](#) (TGN)





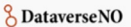

The ADS also utilises recognised technical vocabularies to denote and categorise preservation activities.

- [PREservation Metadata: Implementation Strategies \(PREMIS\)](#)
- Getty metadata types ([Baca 2016](#))

13. (Meta)data include qualified references to other (meta)data.

- The ADS supports the qualified referencing with and between publications, datasets and resources. Where available the repository uses sustainable referencing, e.g. DOIs.

Collaboration with FAIRsFAIR and testing the F-UJI Tool

Pilot Repository	Certification	Subject Areas	Repository Representatives
	CoreTrustSeal WDS Regular Member	Earth and Environmental Science	Uwe Schindler Michael Diepenbroek
	CoreTrustSeal	Cultural Heritage	Yuri Carrer Cristiana Bettella GianLuca Drago Giulio Turetta
	CoreTrustSeal	Multiple disciplines	Mikaela Lawrence Dominic Hogan Cynthia Love
	CoreTrustSeal WDS Regular Member	Earth System Science	Andrej Fast Amandine Kaiser Hannes Thiemann
	CoreTrustSeal	Multiple disciplines	Philipp Konzett (Uit/DataverseNO) Gustavo Durand (Harvard/Dataverse) Julian Gautier (Harvard/Dataverse)
	-	Multiple disciplines	Laura Huis in 't Veld Marion Wittenberg Paul Boon



F-UJI is a service based on REST, piloting a programmatic assessment of the FAIRness of research datasets



REUSABLE



R1. (Meta)data are richly described with a plurality of accurate and relevant attributes

R1.1. (Meta)data are released with a clear and accessible data usage license

R1.2. (Meta)data are associated with detailed provenance

R1.3. (Meta)data meet domain-relevant community standards

REUSABLE

R1. Meta(data) are richly described with a plurality of accurate and relevant attributes

R1.1. (Meta)data are released with a clear and accessible data usage license

- Clearly define the terms of access and reuse within the collection interface and within metadata records
- Creative Commons Attribution 4.0 licence (CC-BY 4.0) but data may also be disseminated under other licences on request.

The image is a screenshot of the ADS (Archaeology Data Service) website. At the top, there is a blue header with the ADS logo and the text 'ARCHAEOLOGY DATA SERVICE'. Below the header is a navigation bar with links for 'HOME', 'SEARCH', 'DEPOSIT', and 'RE'. The main content area displays the title 'Area A3, Castleward Phase' and the OASIS ID 'wessexar1-3286'. Below the title, it says 'Wessex Archaeology, 2020'. There are several links: 'Introduction', 'Downloads', 'Metadata', and 'Usage Statistics'. A copyright notice states 'Data copyright © Wessex Archaeology unless otherwise stated'. A red box highlights the text: 'This work is licensed under a Creative Commons Attribution 4.0 International License.' Below this text is the Creative Commons Attribution 4.0 International License logo (CC BY). At the bottom, there is a 'Primary contact' section for Wessex Archaeology, Portway House.

REUSABLE

R1. Meta(data) are richly described with a plurality of accurate and relevant attributes

R1.2. (Meta)data are associated with detailed provenance

- Provide detailed provenance metadata for all data. At a collection level this is expressed in the archive interface and discovery metadata, at file level within the technical metadata disseminated alongside the data.

Downloads

[Reports](#) | [Images](#) | [CAD \(Vector graphics\)](#) | [Spreadsheets](#) | [GIS](#) | [Harris Matrices](#)

Spreadsheets

Spreadsheet metadata	CSV	9 Kb
Spreadsheet conventions	PDF	111 Kb

Please also consult the [MOLA Conventions, Attribute Definitions, and Validation Tables \(Crossrail\)](#) where required.

REUSABLE

R1. Meta(data) are richly described with a plurality of accurate and relevant attributes

R1.3. (Meta)data meet domain-relevant community standards

- Dublin Core metadata for collection level metadata.
- Data must be accompanied by appropriate, file specific 'technical' metadata derived from recognised community standards and standardised templates provided to ensure consistency.
- All (meta)data is accepted, preserved and disseminated in sustainable, open formats.
- Use appropriate vocabularies to qualitatively describe datasets and document preservation actions.

Things we have learned:

- How to make data **Findable, Accessible** and **Interoperable** are well understood, with examples of well-implemented methodologies and technologies
- Still lots of work to do on **Reusable**: Can measure quantitative reuse with web stats, but how to measure qualitative reuse is the next frontier
- FAIR makes each element of equal importance
- FAIR principles are just a useful lens for understanding your own situation with regard to current best practice for machine actionability

Transforming data rE-use in ARCHaeology (TEtrARCHs)

A central tension exists between the need to preserve cultural resources, and the dynamic potential for their use and reuse in democratic, just and compelling ways. At the same time, the introduction of the **tetrarchy** of FAIR Guiding Principles (Findable, Accessible, Interoperable, Reusable) for scientific data management and stewardship as set an important challenge: that each of the four principles is of equal importance and must therefore be engaged with equally.

Transforming data rE-use in ARCHaeology (TEtrARCHs)

Within archaeology, much work has been done over the last 20 years to make data Findable, Accessible and Interoperable, but very little is understood about whether data are Reusable—and by whom. The impact of this gap in knowledge is profound, as cultural heritage data are increasingly drawn into divisive debates, dangerous speech, cross-border misinformation-sharing and xenophobia, therein compromising human solidarity and social cohesion.

Transforming data rE-use in ARCHaeology (TEtrARCHs)

TEtrARCHs will provide those who capture, curate and apply cultural heritage data with critically aware methodologies to prepare their data for enhanced reuse, then experiment with such reuse through storytelling scenarios involving cross-European audiences. As both an early adopter and user of a wide range of digital methods, archaeology is an ideal lens through which to develop and test these methodologies and scenarios.

TETRARCHS and the ADS

Infrastructures allow static resources to be updated and cross-searched, but the metadata for these assets must be mapped in a centralised and controlled way. This reflects the types of terminology and relationships defined by the data creators, and those charged with archiving and disseminating the data (like ADS) not those who might use the data in new and innovative ways.

TEtrARCHs and the ADS

Structure and reliability are maintained, but relevance and accessibility to the wider world remain limited.

Such change must begin from the moment the data are conceived (as opposed to the moment they are deposited into a repository).

Transforming data rE-use in ARCHaeology (TEtrARCHs)

Three year project

Eight WPs

Six partners representing five countries

Project Leader – Sara Perry

Anna Simandiraki-Grimshaw

MOLA (Museum of London Archaeology)

ADS (Holly Wright) + Department of Archaeology (James Stuart Taylor and Colleen Morgan)

United Kingdom

Funding organisation: UKRI

Partners

**Rimvydas Laužikas, Ingrida
Kelpšienė and Indrė Jovaišaitė-
Blaževičienė**

Vilnius University
Lithuania

Edisa Lozić and Benjamin Štular
Znanstvenoraziskovalni center
Slovenske akademije
Department Inštitut za arheologijo
Slovenia

Nicoló Dell'Unto
Lund University
Sweden

**Hélène Verreyke, Piraye Hacigüzeller
and Aida Fadioui**
University of Antwerp
Belgium

Christophe Verbruggen and Lise Foket
Ghent University
Belgium

Workpackages

- **WP1: Project Management and Communication (Lead: MOLA + all PIs)**
- **WP2: Co-Design and User-Centred Development and Evaluation (Lead: MOLA + all PIs and CPs)**
- **WP3: Data Mapping Strategy (Lead: Antwerp + Ghent, MOLA, and all CPs)**
- **WP4: Data Capture Strategies (Lead: ZRC SAZU + York, Lund University)**
- **WP5: Data Experimentation (Lead: Lund + York, ZRC SAZU)**
- **WP6: Repository Experimentation (Lead: York + Vilnius, all PIs and CPs)**
- **WP7: Quality in Use Analysis for Archaeologists (Lead: Vilnius + York, MOLA, CPs)**
- **WP8: Storytelling and Creative reuse (Lead: MOLA + all PIs and CPs)**

WP6: Repository Experimentation

Focuses on resolving the point of central tension between the need to preserve cultural resources, and the dynamic potential for their use and reuse. Using the Archaeology Data Service as a test bed, this WP aims to determine how data optimised for co-designed and user-centred reuse can be incorporated into digital preservation workflows.

WP6: Repository Experimentation

Data Evaluation (Lead: York + all PIs) Evaluate the data optimised for reuse as mapped by WP3 and trialled by WP5, with regard to its appropriateness for accessioning, preservation and dissemination in an accredited repository.

Workflow Evaluation (Lead: York) Compare the optimised data with existing ADS workflows to determine what could be included without modification to existing workflows, and recommendations for changes.

FAIR Evaluation (Lead: York + all PIs) Evaluate and review the impact of the experimental data acquisition techniques on implementation of the FAIR Principles (especially reuse) on ADS workflows.

WP6: Repository Experimentation

Dynamic reuse for Digital Archives (Lead: York + Ghent, Antwerp, Lund)

Experiment with the potential for dynamic reuse of archaeological data held in digital archives using the Omeka S interface developed by Antwerp/Ghent and/or the Dynamic Collections/3DHOP interface customisation by Lund.

Quality in Use Alignment (Lead: York + Vilnius, all PIs and CPs) Recommend potential workflow improvements based on the results of the Quality in Use Analysis



Thank You!

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Transforming Data Reuse in Archaeology

<https://www.tetrarchs.org/>



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