Open Science and Open Data: Twenty Years of Preserving the Bits at the Archaeology Data Service

Professor Julian D Richards
Archaeology Data Service
University of York

Open Science and the Humanities,
Barcelona, 21 June 2018
Outline

• Challenges for Open Science:
  • Digital Preservation
  • Resource Discovery and Interoperability – finding & joining up fragmented and diverse data sets
  • Political (& Economic) Context of Open Data
• Opportunities for the Humanities:
  • Digital dissemination & electronic publication
• Case Study: The Archaeology Data Service & *Internet Archaeology* – linking Open Data and Open Access Publication
Digital Data Challenges

- Digital data are fragile
- They are often still archived as objects rather than computerised information
- Digital data standards
- What are the significant properties of our data?
Digital Data and Archaeology

- Archaeology is **destructive**
- Comprehensive records of field work are imperative
Losing things: Digital Preservation

**Media Types**

- Experience rapid change

---

3.5" Floppy

xD Picture Card

DG90M Tape

5.25" Optical Disk

MultiMedia Card

12" Optical Disk

Jaz Disk

SD Memory Card

Zip Disk

CD-ROM

Sparq Disk Cartridge

Ditto Max

4mm Tape

Smart Media

Travan

G2000 Tape

CD-ROM

7" Floppy

8" Floppy

5.25" Floppy

5.25" Optical Disk

8mmD-eight

Cassette tape

Click!

9-Track Reel

Floptical Disk

DC4_120

Punch Tape

IBM 3480

QIC DC600

Rectangular Hole Punch Card

Media Types

- Experience rapid change

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Information Entropy

Trusted Digital Repositories: NASA - Open Archival Information System

OAIS

Research

Accession

Preservation

Delivery preparation

Interface

Release

Publish

SIP

AIP

Deep Storage

Nearline backup

Delivery system

DIP

Picture from DLib
Published data are limited

Majority of data recorded in grey literature

Data are not easily searchable

Access to data is difficult
G8 Open Data Charter 2013

“a new era in which people can use open data to generate insights, ideas, and services to create a better world for all.”

1. Open Data by Default
2. Increase Quality and Quantity for re-use
3. Usable by All
4. Releasing Data for improved Governance
5. Releasing Data for Innovation
• 2014: Leiden workshop
• Sept 2017: endorsed by G7 Science Ministers, Turin
The Archaeology Data Service

• Set up in 1996
• Based within the University of York
• 12 staff
• Business model based upon charging policy
• Trusted Digital Repository: Data Seal of Approval
• Received Digital Preservation Coalition’s Decennial Award in 2012
• Oct 2016: 12Tb; 2,143,497 files; 21,327 recorded processes

http://archaeologydataservice.ac.uk
The Preservation and Re-use of Archaeological Data

The Archaeology Data Service

“Supporting research, learning and teaching with free, high quality and dependable digital resources”

- Collects and preserves datasets
- Provides easy and free access to datasets
- Provides guidance and support to data creators

15/05/2019

http://archaeologydataservice.ac.uk
The Preservation and Re-use of Archaeological Data

Guides to Good Practice

- GIS
- CAD
- Geophysics
- AP and Remote Sensing
- Excavation and Fieldwork
- Virtual Reality

Archaeology Data Service / Digital Antiquity
Guides to Good Practice

This new and revised series of Guides to Good Practice have been produced as the result of a two-year collaborative project between the UK Archaeology Data Service and Digital Antiquity in the US. The project has encompassed important revisions of the existing ADS Guides as well as the development of entirely new documents covering areas such as marine survey, laser scanning, close-range photogrammetry, digital audio and digital video. The project has involved previous Guides authors revising existing content alongside new authors, from both Europe and the US, also contributing to the development of the guides into new themes and areas.

The project has been undertaken in collaboration with the Digital Antiquity initiative, a US-based project with the aim of enhancing the preservation of and access to digital records of archaeological investigations. A major aim of the Guides is to provide the basis for archaeological project workflows that will create digital datasets that can be archived and shared effectively by Digital Antiquity's IDAR archive and repository in the US and by the Archaeology Data Service in the UK. The development of the Guides involves close collaboration with teams at the University of Arkansas and Arizona State University.

Other ADS projects have also fed into the revision and development of the Guides. ADS involvement in the European VENUS projects has formed the basis of a guide focused on marine survey. In addition, the incorporation of findings from the ADS Big Data project, together with the revision of the existing guide on aerial photography and remote sensing data, has seen a significant contribution to the guides from English Heritage funded projects.

Previous versions of the ADS/GDS Guides to Good Practice have been archived and are still available on the old Guides to Good Practice page.

View the full new Guides to Good Practice Table of Contents.
Challenges for Archaeology in the Digital Age

Preservation Intervention Point Schema

Example of preservation meta for e.g. Sonar survey

Data archive (OAIS)

PIP requisites/criteria
1 Metadata - preservation
2 Metadata - resource discovery
3 Re-use case - known
4 Re-use case - potential
5 Repeatability and value

Data streams

‘In-device’ processing

‘In-field’ processing

Post-processing

Dissemination outputs

Preservation Intervention Point (PIP) Non exclusive.

Acquisition feedback
Welcome to the new ADS website. There are a number of new features of the website that will make it easier and more enjoyable to use. Please read the 'About' this site section for more details. This site works best with the Firefox, Chrome and Safari browsers. Why not register as a myADS user to take full advantage of the additional features. On registration these personal myADS features become available.

Workbook
Using the tools at the bottom of each page save your favourite resources and regular searches in the myADS Workbook.

History
Your recent exploration of the site and the archives is automatically saved in your myADS History.

Additional services
Registered ADS users can take advantage of a number of additional myADS services, such as tailored email alerts and download of configurable results sets.

March 2016: Call for Papers - Preservation and Re-Use of Digital Archaeological Research Data with Open Archival Information Systems
The ADS, IANUS, and DANS are pleased to invite submissions for the CHNT session on the preservation and re-use of data in Archaeology. This session will focus on the services and duties of existing repositories and archives and the implementation of the OAIS model within their day-to-day business of data curation, preservation and dissemination. Talks will address different aspects of how to pres... more

February 2016: A Unique Engraved Shale Pendant from the Site of Star Carr
Internet Archaeology is pleased to announce the publication of A Unique Engraved Shale Pendant from the Site of Star Carr: the oldest Mesolithic art in Britain by Nicky Milner et al. The artwork on the pendant is the earliest known Mesolithic art in Britain; the barbed line motif is comparable to styles on the Continent, particularly in Denmark. When it was first uncovered the lines were barely v... more
My pottery database here, on floppy disc
ArchSearch: Browse – 1.35m records
Down to 48 records in 3 clicks
Roman Amphorae: a digital resource
University of Southampton, 2005 (updated 2014)

Catalogue of Amphora
Choose a letter from the list below.
A B C D E F G H K L M O P R S T U V
This is the catalogue of preferred terms; if the term you are looking for is not here, please search the alternative classifications.

Amphora types beginning with A.

African 1 Piccolo
African 2A Grande
African 2B Grande
African 2B Pseudo-Tripolitanian
African 2C Grande
African 2D Grande
African 3A
African 3B
African 3C
Agora F65-66
Agora G199
Agora K109
Agora M54
Agora V27A
Almagro 51C
Almagro 51C Variant
Almagro 54
AM72
Amphorae Saumure d'Espagne
Amphore de Pamphylie
Amphore Egyptienne 1
Amphore Egyptienne 2
Amphore Egyptienne Bitronconique 3
Amrit amphora
Ancient Tripolitanian Amphora
Aquinoom 78
The Rural Settlement of Roman Britain: an online resource
Martyn Allen, Nathan Blick, Tom Brindle, Tim Evans, Michael Fulford, Neil Holbrook, Julian D Richards, Alex Smith, 2015

Introduction
This resource brings together the excavated evidence for the rural settlement of Roman Britain with the overarching aim to inform a comprehensive reassessment of the countryside of Roman Britain. It includes both traditionally published reports and 'grey literature' reports from developer-funded excavations since 1990.

The project arose from pilot projects undertaken by Cotswold Archaeology¹ and funded by Historic England and it began in 2012. It is funded by grants from the Leverhulme Trust to the Universities of Reading and York (ADS)² and from Historic England to Cotswold Archaeology.³

Phase 1 (April 2015) publishes the settlement evidence from Roman England. Subsequent phases will add Roman Wales (by December 2015) and the related finds, environmental and burial data (by 1st April 2017). These will be used alongside the specific site data in a series of integrative studies on rural settlement, economy, people and ritual to be published by the Society for the Promotion of Roman Studies as Britannia Monographs between 2016 and 2016.
Ipswich 1974-1990 Excavation Archive
Suffolk County Council Archaeological Service, 2015

Introduction
The modern town centre of Ipswich, centred at Ordnance Survey grid point TM 1590 4060, lies on the site of its Middle Saxon predecessor (Gipeswic).

Despite the recognition of the town’s early foundation in the 1950s, little opportunity was taken to undertake archaeological excavation within the historic core until the 1970s. The recognition at this time that Middle Saxon Ipswich was one of only a handful of trading settlements displaying urban characteristics (emporium / wics) elevated the town’s archaeological status to one of international importance.

Between 1974 and 1990 the 36 excavations on 34 sites archived here were carried out by the Suffolk Archaeological Unit (subsequently Suffolk County Council Archaeological Service) under the direction of Keith Wade. Much analysis had been done but further work towards publication was delayed and deferred...
## elm Street, Ipswich - IAS3902

Suffolk County Council Archaeological Service, 2015

### Downloads

- Reports | Images | GIS

### Images

Select from the options below to see the various images related to this site.

- Plan Drawings | Section Drawings | Site Photos | Finds Images | Finds X-rays

### Plan Drawings

**Records 1 - 8 of 8**

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</table>

### Primary Contact

Suffolk County Council Archaeological Service
9-10 Churchyard
Bury St Edmunds
Ipswich
IP33 1RX

**Send e-mail enquiry**

### Resource Identifiers

- ADS Collection: 1916
- DOI: [https://doi.org/10.5284/1034350](https://doi.org/10.5284/1034350)
Introduction
The aim of this resource is to make available unpublished fieldwork reports in an easily retrievable fashion. There are currently 45953 reports available and this number is increasing steadily through the OASIS project in England and Scotland.

The grey literature here is now searchable alongside other archaeological publications in the ADS Library. These pages now search the reports stored in the ADS library and link through to the record details pages there.

Through this resource it is possible to list the reports by contractor, using the browse by contractor option and also to do a more advanced search filtering these reports by period, monument/artefact type and location using the search option. These unpublished reports cover archaeological interventions such as: watching briefs, excavation reports and building surveys. Desk-based assessments and specialist analysis are also included.
Unpublished Fieldwork Reports (Grey Literature Library)

Introduction
Browse by contractor
Search reports

Details of Document

Bibliographic Reference and files

Click on a button to open a file, or right click and use file --> save as from your browser menu to save the file to your computer. Alternatively, if the report is available online, click on the link to open the resource in a new window:

oxfordar2-35728_1.pdf

Primary contact
Archaeology Data Service
King's Manor
Exhibition Square
York
YO1 7EP
England
Tel: 01904 323954
Fax: 01904 323939

Send e-mail enquiry

Resource identifiers
doi:10.5284/1000746
How to cite using this DOI

Site details

Location
Site name: The Limes, Ribchester
Parish: RIBCHESTER
District: RIBBLE VALLEY
County: LANCASHIRE
Country: ENGLAND
Grid reference: SD 65861 35410 (point)

Monuments and Finds

Other details
Description: A4 Document
Associated Identifier: oxfordar2-35728
Number 1 Poultry (ONE 94)

The site of 1 Poultry is located near the Bank of England, in the heart of the City of London. During the 1990s, one of the largest excavations in the City recovered a remarkable archaeological sequence from the 1st to the 20th century AD. This was augmented by findings from nearby sites at Bucklersbury, Lothbury, Lombard Street, 72-75 Cheapside, 76-80 Cheapside, 36-37 King Street and Mansion House. 1 Poultry lies immediately west of the point where the main east-west road through Roman London bridged the Walbrook stream and uncovered an unparalleled sequence of buildings, roads, and open spaces. A timber drain of AD 47 beneath the main road is the earliest, securely dated structure yet known from Londinium, and a pottery shop, destroyed in the Boudican revolt, gives a snapshot of life in AD 60/61. A 2nd-century AD writing tablet preserves the only evidence for the sale of a slave found in Britain to date, while the 3rd- and 4th-century AD buildings on the site provide a rare demonstration of the continuities and changes that occurred in Roman urban life.

Read more

Metadata

Identifier 19138479
Language English
Resource type Fieldwork archives
Type Collection
Publisher Archaeology Data Service [Organization]
Issued 2013
Contributor Museum of London Archaeology [Organization]

License Information

Access Rights ADS Terms and Conditions
Access Policy http://archaeologydataservice.ac.uk/advice/termsOfUseAndAccess

Geographically similar

Thematicaly similar

Maltings Lane, Witham, Essex Archaeological Excavation
The evolution of Romes maritime facade: archaeology and geomorphology at Castelporziano
Framework Archaeology Heathrow Terminal 5 Excavation Archive
Mill Close, Grantham, Lincolnshire. Archaeological Watching Brief
Mersham ARC MSH 98
Archeological and cultural heritage investigations on the site of the London 2012 Olympic and Paralympic Games
Roman Pearcebridge
**Number 1 Poultry (ONE 94)**

Museum of London Archaeology, 2013

### Introduction

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**Number 1 Poultry (ONE 94)**
Museum of London Archaeology, 2013

### Downloads

The downloads are split into separate sections for each site (see overview for details). Please note that each site has separate file metadata, however conventions and codes for CAD and spreadsheet files are common to all sites and are presented as overarching metadata below. The concordance document gives further details of the relationships between ONE94 and the satellite sites.

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<tr>
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**ONE94 | BOL94 | BUC87 | CID90 | DOC87 | LOM88 | BRD88 | KNG85 | LHY88 | SON85 | MHO92 | PLY87**

**ONE 94 (1 Poultry)**

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**Spreadsheet files**

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All our content is Open Access.

Please select an issue and then access full text via the Summary or Table of Contents links for each article

Internet Archaeology has been publishing on the web since 1996 and is the premier e-journal for archaeology. Internet Archaeology is an open access, independent, not-for-profit journal. It publishes quality academic content and explores the potential of electronic publication through the inclusion of video, audio, searchable data sets, full-colour images, visualisations, animations and interactive mapping. Internet Archaeology is international in scope, a journal without borders, and all content is peer-reviewed. Internet Archaeology is hosted by the Department of Archaeology at the University of York and digitally archived by the Archaeology Data Service. Internet Archaeology has been awarded the Directory of Open Access Journals Seal in recognition of our high standards in publishing best practice, preservation and openness.
A Unique Engraved Shale Pendant from the Site of Star Carr: the oldest Mesolithic art in Britain

Nicky Milner¹, Michael Bamforth¹, Gareth Beale¹, Julian C. Carty¹, Konstantinos Chatzipanagis², Shannon Croft¹, Chantal Conneller³, Ben Elliott¹, Laura C. Fitton⁴, Becky Knight¹, Roland Kröger², Aimée Little¹, Andy Needham¹, Harry K. Robson¹, Charlotte C.A. Rowley¹, Barry Taylor⁵

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2. Department of Physics, University of York, Heslington, York, YO10 5DD, UK
3. Archaeology (SALC), University of Manchester, Mansfield Cooper Building, Oxford Road, Manchester M13 9PL, UK
4. Centre for Anatomical and Human Sciences, Hull York Medical School, University of York, York, YO10 5DD, UK
5. Department of History and Archaeology, University of Chester, Chester, CH1 4BJ, UK

Corresponding author: nicky.milner@york.ac.uk
http://orcid.org/0000-0001-6391-9127

Cite this as: Milner, N. et al. (2016). A Unique Engraved Shale Pendant from the Site of Star Carr: the oldest Mesolithic art in Britain, Internet Archaeology 40. http://dx.doi.org/10.11141/ia.40.8

Summary

In 2015 an engraved shale pendant was found during excavations at the Early Mesolithic site of Star Carr, UK. Engraved motifs on Mesolithic pendants are extremely rare, with the exception of amber pendants from southern Scandinavia. The artwork on the pendant is the earliest known Mesolithic art in Britain; the 'barbed line' motif is comparable to styles on the Continent, particularly in Denmark. When it was first uncovered the lines were barely visible but using a range of digital imaging techniques it has been possible to examine them in detail and determine the
Star Carr Archives Project
Nicky Milner, Hayley Saul, Ben Elliott, 2013

Introduction
Star Carr is an internationally renowned, Early Mesolithic site in the Vale of Pickering, North Yorkshire. It was first discovered by a local amateur archaeologist, John Moore, but became known worldwide after the excavations of Professor Grahame Clark, 1949-1951, due to the well preserved, rare artefacts which were uncovered. More recent excavations by the Vale of Pickering Research Trust (in the 1980s and since 2004), have led to further important discoveries such as a timber platform (the earliest evidence of carpentry in Europe) and a structure (the earliest known "house" in Britain).

One of the biggest stumbling blocks to conducting further research is access to the archive from the earlier excavations. Moore's paper archive is missing. There is no known paper archive from Clark's excavations and it is thought that all records must have been destroyed once the monograph (Clark 1954) had been published. The only surviving records are some of the photographic slides which are held in the Museum of Archaeology and Anthropology, Cambridge (MAA) and a small number held by Scarborough Archaeology and Historical Society. In addition, Clark's excavated assemblage has been dispersed across many museums and there is no over-arching catalogue. The paper archive for the Vale of Pickering Research
making the LEAP: 
linking electronic archives and publications

The aim of the project is to investigate novel ways in which electronic publication over the Internet can provide broad access to research findings in the arts and humanities, and can also make underlying data available in such a way so that readers are enabled to 'drill down' seamlessly into online archives to test interpretations and develop their own conclusions.


"Making the LEAP" is funded by the Arts and Humanities Research Council (AHRC) under the ICT Strategy Programme.
The Urban Landscapes of Ancient Merv, Turkmenistan

Tim Williams, Sjoerd van der Linde, 2008

Introduction
Ancient Merv, in Turkmenistan, is one of the most complex and well-preserved urban centres on the Silk Roads of Central Asia. A succession of major cities at Merv started in the 4th century BC and continued until the Mongol sack of 1221 AD, although Mongol occupation, a resurgent Timurid city of the 15th century, and expansion in the 10th century continues the urban sequence. Together the walled urban areas covered more than 1000 ha.

The Institute of Archaeology, University College London, has had a long collaboration with the Turkmenistan Ministry of Culture, focused on archaeological research and approaches to the conservation and management of the Ancient Merv Archaeological Park, which since 1999 has been a World Heritage Site.

The collection of monument photographs (dating from 1850 onwards) was first compiled by Georgina Hermann, former director of the International Merv Project, who published some of them in ‘Monuments of Merv: Traditional Buildings of the Karakum’1. In 2002 an expanded version of the photographic collection was published in ‘The Monuments of Merv: A scanned archive of photographs and plans’, which included a CD-ROM with low resolution digital versions of the photographs. Since 2001 the Ancient Merv Project has added new images of the monuments, showing their current condition and conservation work, and more detailed metadata for the photographs has been assembled. More information on the Ancient Merv Project can be found at the UCL website.

This digital archive was undertaken in conjunction with an electronic publication through the Linking Electronic Archives and Publications (LEAP) project. The corresponding article is ‘The urban landscapes of Ancient Merv, Turkmenistan: Where to draw the line?’ by Tim Williams & Sjoerd van der Linde, which can be found in Internet Archaeology 25.


The landscapes of Islamic Merv, Turkmenistan: Where to draw the line?

Tim Williams

Institute of Archaeology, University College London, 31-34 Gordon Square, London WC1H 0PY. Email: tim.williams@ucl.ac.uk

Summary
This article outlines approaches for interpreting the Islamic city of Sultan Kala (Merv), c. 8th–13th centuries AD, based upon aerial photographic and satellite imagery. Hierarchies of assumptions (identification of individual wall lines, which frame spaces, rooms and courtyards; which are grouped as parts of specific buildings; which are part of urban blocks) and ontologies (information about these assumptions and the variable confidence of interpretation, from the position of lines to spatial function) provide a dynamic structure for the presentation of data, interpretation and theory.

The article establishes procedures and protocols within two sample areas (selected to represent the diverse features of the urban and suburban landscapes) to:

- Explore the theory and methodology of documenting interpretation (and uncertainty) in the transcription of aerial photographic and satellite imagery
- Develop ontological approaches to structuring interpretations and assumptions, within a hermeneutic model
- Provide a textual and graphic narrative of the development of the areas
- Explore the use of other forms of electronic archival material, in particular, how imagery and audio flies can be used to develop the discussion of landscapes and buildings.

Features
This article will appeal to: those interested in the presentation of data, interpretation and theory. Keywords: Merv; Silk Route; Turkmenistan; interpretation; uncertainty; aerial photographs; satellite.

Find more publications on the Silk Route in the British and Irish Archaeological Bibliography (BIAB)
3. A short introduction to the city of Sultan Kala

With the coming of Islam, in the 7th century AD, Merv became the capital of Khurasan (the 'eastern land') (for an overview of the history see Kennedy 1990; Williams forthcoming). In the 740s the Abbasid revolution began here, and while Baghdad was established as the capital of the new empire, Merv’s status grew, as the capital of Khurasan, from east of the Great Desert to the frontiers of India. In the same decade, the governor, Abu Muslim, commissioned a mosque to be built alongside the Madjan Canal, which flowed about a kilometre to the west of the old city of Gyaur Kala. Thus began the new city of Marv al-Shahjian (Merv the great, today Sultan Kala) (Fig. 7 - opens GIS). It is tempting to see the mosque as part of the planning for the heart of the new city, and by the 9th century it lay at the centre of a thriving metropolis. The city was planned, with a street system and a carefully managed water supply with numerous canals and reservoirs in each district (Williams forthcoming). It seems likely that the new status of Merv, coupled with new ideas and beliefs that identified the need for public
Framework Archaeology (comp) - Heathrow Terminal 5 Excavation Archive (Data Paper)

Re-use potential

The dataset was constructed with two main approaches to re-use in mind:

- Supportive: in that it provides the detailed raw data to support both the interpretations arrived at by Framework Archaeology and those of others wishing to re-interpret the history of the landscape at Heathrow.

- Comparative: as far as possible Framework Archaeology attempts to structure all its digital archives identically so that data from Heathrow (Fra) recovered from Stansted (Framework Arch) possible allows the data to be re-worked to comparisons with data derived from other sites.

Referee Statement

Nicholas J. Cooper, University of Leicester Archaeological Services LE1 7RH

Cite this as: Cooper, N.J. 'Referee Statement' in Framework Archaeology (2014). Heathrow Terminal 5 Excavation Archive (Data Paper). Internet Archaeology, (36). http://dx.doi.org/10.11141/ia.36.8

This data paper flags up the publication of the third level of information relating to the Terminal 5 excavations undertaken by Framework Archaeology at Heathrow and joins their other major archived projects at Stansted. The publication of the full digital archive provides an opportunity to explore the entire and updated record of the excavations that was previously only partially available on the Free Viewer CDs accompanying the two published site narrative volumes in 2006 and 2010.

Framework Archaeology was founded on the principle of undertaking 'academically-driven projects within the commercial environment' which place the previous inhabitants at the heart of the story; ditches did not continue in an easterly direction on their own but, instead, were dug by people who, as a community, made choices about living in a landscape, which consequently evolved around them over time. The mechanism driving this principle was to develop a hand-held on-site recording system that would allow interpretation to evolve in an informed way during the excavation itself and right through the post-excavation phase. At the heart of the digital archive is therefore a GIS package accompanied by stratigraphic, finds and environmental datasets, allowing the user to reconstruct the excavation of the site and potentially re-interpret it. Considerable time has therefore been devoted to making the system work effectively and this greatly enhances its usability.
If a visitor comes to the website for the first time, or if they visit a page (or download a file) more than 30 minutes after their last page view, this will be recorded as a new visit. A unique visitor making multiple visits per day will register as several visits.

**File downloads**

Click and drag in the plot area to zoom in

![File downloads chart]

A download is a click on a link to something other than a web page, file extensions include: csv, doc, docx, gif, jar, jpg, jpeg, mp3, mp4, mov, odb, odt, pdf, png, ppt, pptx, txt, wav, wma, wmv, wpd, xls, xlsx, xml, zip but this is not an exhaustive list.

**Page views within the archive**

Click and drag in the plot area to zoom in

![Page views chart]

Pages viewed is the number of HTML pages or scripts that visitors have looked at. A "page" is a hit that is not an image, JavaScript or CSS file and which was not loaded by a search engine robot.

**Totals since May 2013**

![Totals chart]

Statistics start from May 2013 but if the values are zero to start with they are not shown. Zero values after the start of use for the archive are shown.
Who is Using the ADS?

- Education: 42%
- Commercial: 29%
- Nat/Local Gov.: 12%
- Independent: 9%
- Metal Detector: 5%
- Museums: 3%
Data Re-Use

• Data collection is expensive!
  • Fowler: estimated only able to take account of 5% of information gained in last 20 years
  • Bradley: British & Irish Prehistory – 3 person years
  • Richards: Viking and Anglo-Saxon Landscape and Economy Project – using Portable Antiquities Scheme data – 2 person years of data cleaning
  • Fulford: Roman Rural Settlement project – 6 person years of data collection
ADS: % respondents

- 84% - ADS has had an impact on data sharing
- 79% - reduced time required for data access and processing
- 51% - New intellectual opportunities
- 56% - Permitted new types of research
- 94% - Data very or quite important for their research
Economic Impact

Beagrie/ Houghton 2014:

- Investment value £1.2m pa
  - £698,000 pa funding from sponsors
  - £465,000 pa indirectly contributed by depositors
- Direct use value £1.4m pa
- But efficiency impacts £13m-£58m per annum
- Research efficiency gains = 7 hours per person per week
- £1 investment provides up to £8.30 return
Conclusions

• Digital data preservation has a cost – but data collection / data loss is more expensive
• Digital data is re-used – and studies show research and economic return
• Sustainable business models for data archives are possible
• New models for publication / dissemination
• Need to work at European level
Thank-you for listening

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