

ADS/Internet Archaeology Annual Report 1 August 2014 – 31 July 2015

The Archaeology Data Service (ADS) supports research, learning and teaching with free, high quality and dependable digital resources. It does this by preserving digital data in the long term, and by promoting and disseminating a broad range of data in archaeology. The ADS promotes good practice in the use of digital data in archaeology, it provides technical advice to the research community, and supports the deployment of digital technologies. It also manages the ejournal 'Internet Archaeology', published under a Council for British Archaeology imprint. The ADS was established at the University of York in 1996, and currently has a staff of fourteen.

1. Highlights of the year

One of the major changes during 2014-15, though hardly a highlight, was the departure of Catherine Hardman, ADS Collections Development Manager and then Deputy Director for over 13 years. Catherine played an important role in the development of OASIS and the associated library of 'grey literature' fieldwork reports. When she joined ADS there were no reports in the unpublished fieldwork library; during 2014-15 it exceeded the 33,000 threshold, each with a permanent Digital Object Identifier, and excellent metadata. By the time of Catherine's departure we had also completed Phase One of the HERALD project, a User Needs assessment of the future of OASIS, which will ensure it is fit-for-purpose in the challenging environment that lies ahead. The project has been combined with a similar survey on BIAB, which will be managed by ADS from 2016. This work is now being overseen by Louisa Matthews, our new Collections Development Manager, with support from Jo Gilham.

A second significant completion has been the launch of the Roman Rural Settlement of Britain archive, in a collaborative project with the University of Reading and Cotswold Archaeology, and funding from the Leverhulme Trust and Historic England. This has made a major database and map-based query system available to researchers, with underpinning links to the fieldwork reports.

All this needs to be underpinned by secure long-term digital preservation which holds the confidence of the sector. The ADS was the second archive in the British Isles, after UKDA, to be awarded the Data Seal of Approval, in 2011. This has to be periodically re-validated, so we were pleased to have it re-confirmed for 2014-15. In addition in July 2015, *Internet Archaeology* was awarded the Directory of Open Access Journals (DOAJ) Seal; this is awarded to those journals which fulfil a number of criteria related to accessibility, openness, discoverability, reuse and author rights.

On the broader front, the ADS and *Internet Archaeology* now sit under the umbrella of York's Centre for Digital Heritage. This is a major inter-disciplinary grouping which brings together researchers from the Departments of Archaeology, History, Electronics, Computer Science and Theatre, Film and Television. Members of the Centre were part of a successful bid to the EPSRC to establish a Digital Creativity Hub in York, with over £4m of funding, over five years. The hub will help us explore and build new links between researchers and external partners.

2. Collections Development

Significant new collections

The Rural Settlement of Roman Britain: an online resource



This resource brings together the excavated evidence for the rural settlement of Roman Britain with the over-arching 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 Archaeology 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) and from Historic England to Cotswold Archaeology.

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 April 2017). These are being 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 2018.

Roman England includes some 3,482 reports, the vast majority of which were produced since the implementation of PPG 16 in 1990. However the project has reached back and includes some sites published as early as 1808. Each site is described with bibliographic entries, as well as information on chronology, settlement type and morphological form. The project has not included all investigations, such as watching briefs and small-scale evaluations producing Roman evidence, but has limited its scope to those that have yielded plan, chronology and quantified finds data susceptible to characterisation and synthesis. The cut-off for inclusion was publication before 31 December 2014.



Oval brooch which led to the discovery of the site © Oxford Archaeology Ltd

A Viking-age cemetery at Cumwhitton, Cumbria

In March 2004 a Cumbrian metal detectorist, Peter Adams, was given permission to examine farmland on the western edge of Cumwhitton, a small village in the Eden Valley, south-east of Carlisle. There he found an object in the ploughsoil which was subsequently identified as a Viking oval brooch of ninth or tenth-century date. These

are almost always found in pairs, and in a burial context. Adams therefore returned to the site and did indeed find a second brooch. Given the rarity of these in England, this was clearly of national importance, so funding was secured for an evaluation of the findspot, to ascertain whether the brooches really did come from a burial. A grave was located, containing only fragments of skull at the west end, which had clearly been disturbed by recent ploughing, although it was still richly furnished with grave goods. The presence of the oval brooches strongly implied that this was the burial of a high-status woman.

Several more artefacts of early medieval date were found in the surrounding ploughsoil by metal detecting during the evaluation. These included fragments of another oval brooch, a key, and part of a sword, suggesting that the grave had been part of a cemetery. Due to the threat of further plough damage an excavation to record this important site was then funded by English Heritage in the summer of 2004, as it was under immediate threat from ploughing. In total, six burials were found, all dating to the early tenth century, though almost no skeletal material survived because of the acidic nature of the soil. Though the material was poorly preserved, the careful and detailed process of excavation, conservation, and analysis was proposed to maximise the wealth of information that could be recovered from these objects concerning their original appearance, manufacture, and use.

The ADS archive includes rectified photographs of all the graves, X-rays of all objects, plans of all graves and other excavated contexts, CAD mapping of the site, and a database of all finds.

PaMELA: Palaeolithic & Mesolithic Lithic Artefact database

Released in October 2014, the PaMELA database consists of a digital transcription of Roger Jacobi's extensive card index of find-spots and collections of Upper Palaeolithic and Mesolithic artefacts. These originally formed the basis of the Council for British Archaeology (CBA) Gazetteer of Mesolithic Sites in England and Wales. Jacobi subsequently extended the card index begun for the CBA Gazetteer over many years of museum and private collection visits. PaMELA has created a digital 'back-up' of the only complete copy of Jacobi's index cards.

English Heritage Archaeological Monographs

This archive consists of a collection of PDF versions of English Heritage's illustrated archaeological monographs. At present, the ADS holds 84 titles covering some of the country's most iconic heritage sites and including a wide range of subjects, periods and specialisms. Some of our favourites include, *Yeavinger: An Anglo-British centre of early Northumbria*, by Brian Hope-Taylor, *Grimes Graves* by R. Mercer and *Birdoswald: Excavations of a Roman fort on Hadrian's Wall and its successor settlements* by Tony Wilmott.

New Collections Released

In total, 85 archives were released during 2014-15, which is approximately the same number of archives as were released during 2013-14 (87).

ADS-easy Archives

The number of collections being deposited via ADS-easy has steadily increased. Of the 85 archives released in 2014-15, 43 (50.5%) were deposited via ADS-easy or ADS-easy OASIS. The table below highlights archives deposited through ADS-easy, alongside those arriving by traditional methods.

	Title	Release Date	Accession Date	Funder	ADS-easy
1	Avon Historic Landscape Characterisation (HLC)	Aug-14	May-13	Historic England (HLC)	
2	Kent Historic Landscape Characterisation (HLC)	Aug-14	Jun-14	Historic England (HLC)	
3	Expanding the Neighbourhood Plan Evidence Base - Museums and HERS	Aug-14	Apr-14	Historic England	
4	Cornwall Historic Landscape Characterisation (HLC)	Aug-14	Dec-13	Historic England (HLC)	
5	Sussex Historic Landscape Characterisation (HLC)	Aug-14	Jun-14	Historic England	
6	South Yeo Farmhouse	Sep-14	Jun-14	Historic England (OASIS)	Yes
7	Exeter Skypark, Devon	Sep-14	Jun-14	Historic England (OASIS)	Yes
8	Exeter Skypark, RGF Site Clearance and Landscaping	Sep-14	Jun-14	Historic England (OASIS)	Yes
9	Palm Cross Green, Modbury	Oct-14	Apr-14	Developer	
10	Objects and Identities in Roman Britain and the North-Western Provinces	Oct-14	Feb-14	AHRC	
11	An Imperial Frontier and its Landscape: the Gorgan and Tammisheh Walls in North-East Iran	Oct-14	Apr-10	AHRC	
12	Greenwall Lane Railway Bridge	Oct-14	Jun-14	Historic England (OASIS)	Yes
13	Coombeshead Farm, Diptford, Devon	Oct-14	Jun-14	Historic England (OASIS)	Yes
14	The Later Prehistory of Northwest Europe: the Evidence of Recent Fieldwork	Oct-14	Sep-14	Leverhulme Trust	
15	Mesolithic Research and Conservation Framework of England	Oct-14	Nov-13	Historic England	
16	Palaeolithic and Mesolithic Lithic Artefact (PaMELA) database	Oct-14	Sep-13	Historic England	
17	English Heritage Archaeological Monographs	Oct-14	Apr-13	Historic England	

	Title	Release Date	Accession Date	Funder	ADS-easy
18	360-364 Shirley Road, Southampton	Oct-14	Jan-14	Developer (via Southampton Museum agreement)	
19	Bassett House, Bassett, Southampton	Oct-14	Jan-14	Developer (via Southampton Museum agreement)	
20	Ridge Cross, Stockland, Devon	Oct-14	May-14	Developer	
21	Watching brief Eastgate, Hexham	Nov-14	Sep-14	Historic England (OASIS)	Yes (via OASIS)
22	Land at Kiln Close, Leigh Sinton, Worcestershire	Nov-14	Oct-14	Developer	Yes
23	The Prehistory of Britain and Ireland	Nov-14	Sep-14	AHRC	
24	Cumbria and the Lakes Historic Landscape Characterisation (HLC)	Nov-14	Dec-13	Historic England (HLC)	
25	Terrestrial mineral resource assessment: Buckinghamshire and Milton Keynes	Nov-14	Jun-14	Historic England	
26	Winham Farm, Cullumpton	Dec-14	Oct-14	Developer	Yes
27	Shepherd's Farm, Clyst St. Mary, Devon, Evaluation	Dec-14	Oct-14	Developer	Yes
28	Extensive Urban Survey - Nottinghamshire	Dec-14	Aug-14	Historic England	
29	Hanley Hall, Gilberts End, Worcestershire	Dec-14	Oct-14	Developer	Yes
30	Coventry Historic Landscape Characterisation (HLC)	Dec-14	Sep-13	Historic England	
31	Memoir of Martyn Jope (Bibliography)	Dec-14	Jun-14	Peter Addyman	
32	Peterborough Historic Landscape Characterisation (HLC)	Dec-14	Jun-14	Historic England (HLC)	
33	The Prehistoric Stones of Greece: A Resource from Field Survey	Jan-15	Oct-13	AHRB	
34	Abbey Bridge and Viaduct, Evesham, Worcestershire Watching Brief and Building Recording	Jan-15	Oct-14	Developer	Yes
35	Bewdley Lane, Evesham, Worcestershire	Jan-15	Oct-14	Developer	Yes
36	Evaluation at Land off Chapel Lane, Upton Snodsbury, Worcs	Jan-15	Oct-14	Developer	Yes

	Title	Release Date	Accession Date	Funder	ADS-easy
37	Tempwood, Defford Road, Pershore, Worcestershire, Evaluation	Jan-15	Oct-14	Developer	Yes
38	Land at 52 Bretforton Rd, Badsey, Worcestershire	Jan-15	Oct-14	Developer	Yes
39	Shotton Triangle Site, Northumberland, Archaeological Evaluation	Jan-15	Sep-14	Historic England (OASIS)	Yes (via OASIS)
40	Waddeton Barton Barns	Feb-15	May-14	Developer	Yes
41	The origins of Nottingham: archaeological investigations in the Medieval town from 1969 to 1980	Feb-15	May-14	Historic England	
42	An Osteological Analysis & Social Investigation of the Cremation Rite at the Cemeteries of Elsham and Cleatham, North Lincs: PhD Thesis, University of Sheffield (2011)	Feb-15	Jan-15	AHRC	
43	Northumberland Historic Landscape Characterisation (HLC)	Feb-15	Jun-14	Historic England (HLC)	
44	Rural Settlement of Roman Britain	Apr-15	Apr-14	Historic England	
45	Land south of Badsey Road, Badsey Worcestershire Archaeological Evaluation	Apr-15	Dec-14	Developer	Yes
46	Rydon Farm, Ogwell, Devon, Evaluation	Apr-15	Dec-14	Developer	Yes
47	The Old Chapel off High Street, Newport Pagnell, Watching Brief	Apr-15	Dec-14	Developer	Yes
48	Whitchurch Reservoir, Whitchurch	Apr-15	Dec-14	Developer	Yes
49	Bugle Horn Public House, Stone, Building Recording	Apr-15	Dec-14	Developer	Yes
50	Land At Bumpers Farm, Ilmer, Buckinghamshire	May-15	Dec-14	Developer	Yes
51	Manx National Heritage HER data	May-15	Feb-15	Manx National Heritage	
52	Overgrass Tower consolidation monitoring	May-15	Feb-15	Historic England (OASIS)	Yes
53	Mill House, Sedgeberrow	May-15	Feb-15	Historic England (OASIS)	Yes
54	Place Barton Farm, Moreleigh, Devon	May-15	Apr-15	Historic England (OASIS)	

	Title	Release Date	Accession Date	Funder	ADS-easy
55	Northam Burrows HELS archaeological survey	May-15	Oct-14	Historic England (OASIS)	Yes (via OASIS)
56	Urubici Rock Art Project	May-15	Feb-15		
57	Atlas of Rural Settlement in England	Jun-15	Apr-15	Historic England	
58	Gas Main Replacement, High Street and Ramparts Walk, Totnes, Devon: Archaeological Watching Brief	Jun-15	Apr-15	Historic England (OASIS)	Yes
59	Exeter Drainage	Jun-15	Apr-15	Historic England (OASIS)	Yes
60	Land East of Tiverton, Devon	Jun-15	Apr-15	Historic England (OASIS)	Yes
61	Land South of the Met Office, Exeter, Devon	Jun-15	Apr-15	Historic England (OASIS)	Yes
62	Land at Elm Grove Road, Dawlish, Devon	Jun-15	Apr-15	Historic England (OASIS)	Yes
63	Land at Ottery Road, Feniton, Devon	Jun-15	Apr-15	Historic England (OASIS)	Yes
64	Elms Farm Portfolio Project	Jun-15	Aug-12	Historic England	
65	A Viking-age cemetery at Cumwhitton, Cumbria	Jun-15	Mar-15	Historic England	
66	Wales and West Utilities Gas replacement programme 2012-2014 Exeter	Jun-15	Apr-15	Historic England (OASIS)	Yes
67	ROMURBITAL - an archaeological database of higher-order settlements on the Italian peninsula (350 BCE to 300 CE)	Jun-15	Jun-15	Marie Curie Actions	Yes
68	Land off New Road, Teignmouth, Devon: Archaeological Evaluation	Jun-15	Apr-15	Historic England (OASIS)	Yes
69	Tithebarn Green, Monkerton, Devon: Archaeological Evaluation	Jun-15	Apr-15	Developer	Yes
70	Land at Sentry's Farm, Exminster, Devon: Archaeological Evaluation	Jul-15	Jun-15	Developer	Yes

	Title	Release Date	Accession Date	Funder	ADS-easy
71	Land at Dunkeswell Airfield, Dunkeswell, Devon: Archaeological Strip, Map and Sample Excavation	Jul-15	Jun-15	Developer	Yes
72	Land at Crowpits, Honiton, Devon	Jul-15	Mar-15	Historic England (OASIS)	
73	Land West of Combe Hayes, Sidmouth	Jul-15	Apr-15	Developer	Yes
74	The Lord Crewe Arms Historic Building Record	Jul-15	Nov-14	Historic England (OASIS)	
75	Virginstowe Bridge, Virginstowe, Devon	Jul-15	Apr-15	Historic England (OASIS)	Yes (via OASIS)
76	Land off Station Road, Feniton, Devon	Jul-15	Apr-15	Historic England (OASIS)	Yes
77	Castleward, Derby: Archaeological Recording	Jul-15	Apr-15	Historic England (OASIS)	Yes (via OASIS)
78	The Grand Western Canal, Halberton, Devon	Jul-15	Jun-15	Historic England (OASIS)	Yes
79	City of York Historic Environment Characterisation Project	Jul-15	Apr-15	Historic England	
80	Northamptonshire Historic Landscape Character Assessment	Jul-15	Feb-15	Historic England	
81	ENN107840 J582 Denton Lodge, Northamptonshire, Magnetometer Survey Report	Jul-15	Apr-15	Historic England (OASIS)	
82	Assessing the impact of water draw-down on archaeology in aggregate areas	Jul-15	Nov-14	ALSF	
83	Chard Junction Quarry, Dorset: Palaeolithic Archaeological Resource	Jul-15	Sep-14	ALSF	
84	A corpus of Anglo-Saxon cruciform brooches	Jul-15	Dec-14		
85	Geophysical Survey of Proposed Solar Park, Collacott Farm, Fremington, North Devon	Jul-15	Jun-15	Historic England (OASIS)	

Updates and new editions

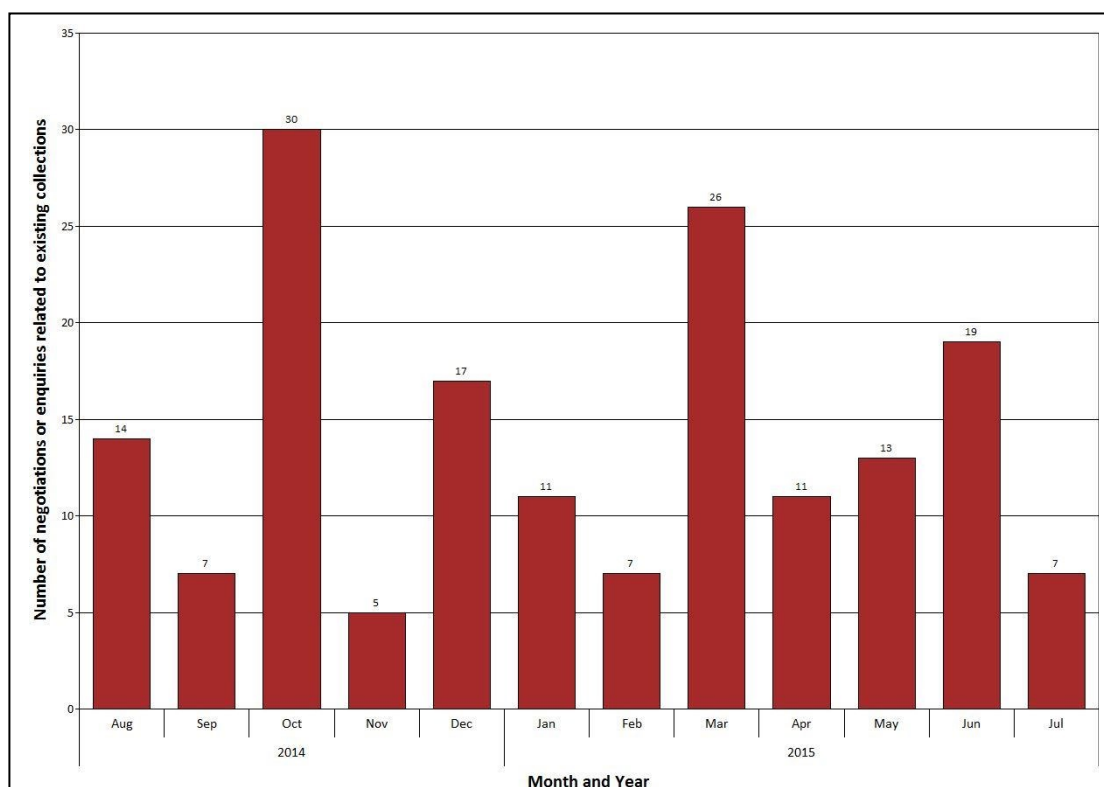
A number of local and national journals have continued to be deposited and disseminated via ADS.

	Title	Description	Date of last Update	Funder/ Owner
1	<i>Proceedings of the Society of Antiquaries of Scotland</i>	Volume 143 added	2015	Society of Antiquaries of Scotland
2	<i>Surrey Archaeological Collections</i>	Volume 96 released; abstracts for Volumes 97 and 98 added	2015	Surrey Archaeological Society
3	<i>London Archaeologist</i>	Updated with first half of Volume 13	2015	(London Archaeologist Association)
4	<i>Sussex Archaeological Collections: Relating to the history and antiquities of the counties of East and West Sussex</i>	Volume 150 added	2015	Sussex Archaeological Society
5 (new)	English Heritage Archaeological Monographs	84 titles released	2014	Historic England
6	<i>Scottish Archaeological Internet Reports (SAIR)</i>	SAIR 57 and 58 added	2014	Society of Antiquaries of Scotland
Archive data updates				
7	Vernacular Architecture Group Dendrochronology database update and Cruck database update		2015	ADS/ Vernacular Architecture Group
8	Greater London HER Loaded to the Heritage Gateway		2015	Historic England
9	Church Wilne Deserted Medieval Settlement, Derbyshire: updated		2014	Historic England
10	Roman Amphora: a digital resource: updated		2014	ADS/AHRC

Grey Literature Library

During 2014-15 the ADS archived 4161 grey literature reports via OASIS.

New negotiations or enquiries related to changing existing collections



The graph shows the number of negotiations August 2014 - July 2015. Of a total of 167 potential archives, 41 resulted in an accessioned deposition, and 39 resulted in a deposition and release of the archive within the same year (total 80).

Internet Archaeology

As noted in the 2013-14 Annual Report, *Internet Archaeology* became a Gold Open Access journal at the end of August 2014. The journal income stream remains a mix of APCs (Author Processing Charges), advertising, and project income. During 2014-15 APCs came from a wide range of sources: Bournemouth University; Carleton University (Canada); COMPLEX (EU) project; Durham University; Michigan State University (USA); Norwegian University of Science and Technology Publication Fund; Swedish Research Council; UCL (via AHRC block grant); University of Kiel and University of York. We envisage APCs becoming the main source of income during 2015-16. The journal was awarded the Directory of Open Access Journals (DOAJ) Seal in July 2015; this is awarded to journals that fulfil various criteria related to accessibility, openness, discoverability, reuse and author rights.

During 2014-15, *Internet Archaeology* published 3 complete issues with one currently still open (we previously averaged 2 issues a year). These consist of 2 themed issues and a combined total of 31 articles, 1 data paper and 2 reviews plus editorials.

Issue 37: Human Exploitation of Aquatic Landscapes

- Editorial - Ricardo Fernandes and John Meadows

- Beneath Still Waters - Multistage Aquatic Exploitation of *Euryale ferox* (Salisb.) during the Acheulian
Naama Goren-Inbar, Yoel Melamed, Irit Zohar, Kumar Akhilesh and Shanti Pappu
- 4200 New Shell Mound Sites in the Southern Red Sea
M.G. Meredith-Williams, N.Hausmann, R.H.Inglis and G.N. Bailey
- Fishing and Fish Consumption in the Swahili Communities of East Africa, 700–1400 CE
Eréndira M. Quintana Morales and Mark Horton
- The 'Wretched Poor' and the Sea: Contest and exploitation of Achill Island's historic maritime landscape
Shannon Dunn and Chuck Meide
- Direct Evidence for Bottom-fishing in Archaeological Whelks (*Buccinum undatum*)
Greg Campbell and Michael Russell
- Shellfish from the Bronze Age Site of Clos des Châtaigniers (Mathieu, Normandy, France)
Caroline Mougne, Catherine Dupont, David Giazzon, Laurent Quesnel
- Late Mesolithic-Early Neolithic Sealers: a case study on the exploitation of marine resources during the Mesolithic-Neolithic transition in the south-western Baltic Sea
Aikaterini Glykou
- Exploitation of Aquatic Resources in Ahanve, Badagry, south-western Nigeria
E.A. Orijemie
- Inland Ertebølle Culture: the importance of aquatic resources and the freshwater reservoir effect in radiocarbon dates from pottery food crusts
Bente Philippsen and John Meadows
- Increasing Mobility at the Neolithic/Bronze Age Transition - sulphur isotope evidence from Öland, Sweden
Anna Linderholm, Elin Fornander, Gunilla Eriksson, Carl-Magnus Mörtz and Kerstin Lidén

Issue 38

- Editorial - Judith Winters
- Landscape Structures and Human Evolutionary Ecology: space, scale and environmental patterning in Africa
Isabelle C. Winder
- A New Record of Pre-Columbian Engravings in Urubici (SC), Brazil using Polynomial Texture Mapping
Philip Riris and Rafael Corteletti
- Digital Media, Power and (In)Equality in Archaeology and Heritage
Sara Perry, Lucy Shipley and Jim Osborne
- Understanding Archaeological Authority in a Digital Context
Lorna-Jane Richardson
- Insular artefacts from Viking-Age burials from mid-Norway. A review of contact between Trøndelag and Britain and Ireland
Aina Margrethe Heen-Pettersen
- Reconstructing Rebellion: Digital Terrain Analysis of the Battle of Dussindale (1549)
Alexander Hodgkins
- Data Papers
- UAV Aerial Survey - Blackquarries Hill Long Barrow (Data Paper)
Stephen Gray (Referee statement by Toby Driver)

- Reviews
- Review of Dactyl [app] - Alison Atkin
- Review of Never Alone [game] - Andrew Reinhard

Issue 39: Critical Blogging in Archaeology

- Introduction: Critical Blogging in Archaeology - Colleen Morgan and Judith Winters
- Mapping the Structure of the Archaeological Web
Shawn Graham (with comments by Andrew Bevan)
- Micro-blogging and Online Community
Lorna-Jane Richardson (with comments by Gareth Beale)
- Vlog to Death: Project Eliseg's Video-Blogging
Joseph Tong, Suzanne Evans, Howard Williams, Nancy Edwards and Gary Robinson (with comments by Seren Griffiths, Mark Hall, Ben Marwick and Katy Meyers Emery)
- Online Resistance to Precarious Archaeological Labour
Sam Hardy (with comments by Paul Mullins)
- Bones, Bodies, and Blogs: Outreach and Engagement in Bioarchaeology
Katy Meyers Emery and Kristina Killgrove (with comments by Scott D. Haddow and Lisa-Marie Shillito)
- Crime, Controversy and the Comments Section: Discussing archaeological looting, trafficking, and the illicit antiquities trade online
Meg Lambert and Donna Yates (with comments by Neil Asher Silberman)
- From Blogs to Books: Blogging as Community, Practice and Platform
William Caraher and Andrew Reinhard (with comments by Suzanne E. Pilaar Birch and Michael E. Smith)
- Blogging the Field School: Teaching Digital Public Archaeology
Terry P. Brock and Lynne Goldstein (with comments by Whitney Battle-Baptiste)
- Changing the Way Archaeologists Work: Blogging and the development of expertise
Sara Perry (with comments by Whitney Battle-Baptiste and Stuart Jeffrey)
- A Figurine and its Scale, a Scale and its Figurine
Fotis Ifantidis (with comments by Jesse W. Stephen and Steven P. Ashby)

Issue 40 (current issue)

- Information Policy for (Digital) Information in Archaeology: current state and suggestions for development
Lisa Börjesson, Bodil Petersson and Isto Huvila
- Google Under-the-Earth: Seeing Beneath Stonehenge using Google Earth - a Tool for Public Engagement and the Dissemination of Archaeological Data
Kate Welham, Lawrence Shaw, Mark Dover, Harry Manley, Mike Parker Pearson, Josh Pollard, Colin Richards, Julian Thomas, Chris Tilley
- Urbanism in Ancient Peninsular Italy: developing a methodology for a database analysis of higher order settlements (350 BCE to 300 CE)
Jamie Sewell and Robert Witcher
- Complexity, Compassion and Self-Organisation: Human Evolution and the Vulnerable Ape Hypothesis
Nick P. Winder and Isabelle C. Winder
- A Reassessment of Archaeological Grey Literature: semantics and paradoxes
Tim N.L. Evans

3. Collections Management and Preservation

Systems Developments

During 2014-15 we continued to migrate all systems to University of York IT Services (ITS) hosted solutions of Virtual Machines (VMs) and database instances. The migration should be completed by 2016. The previous systems architecture was one monolithic production server with a number of smaller legacy servers. This had become unsustainable and difficult to manage, particularly when hardware failed.

The new systems architecture is as follows:

- 4 Web Server VMs hosting Apache, 2 of which have Lucee (Open source ColdFusion server) for oasis.ac.uk and intarch.ac.uk domains
- 11 Application Server VMs hosting Glassfish, Tomcat & TomEE instances
- 1 ESRI VM hosting ArcGIS Server and Oracle with SDE
- 2 Database VMs hosting a MySQL backend for Piwik and the triple store backend to our LOD
- 2 Backend Application Server VMs hosting our CMS, internal wiki, and code repository
- 1 Development VM for testing software
- 1 Windows Server VM hosting PDF conversion/validating software used by all CATs
- 1 ITS managed VM hosting our own dedicated Oracle instance, with all of our production schemas
- 1 shared Oracle instance for development schemas
- 1 shared MySQL instance as a Wordpress backend
- 3 extensible NFS shares for preservation, dissemination and shared systems data
- 2 physical servers hosting legacy systems

Over the past year 5 physical servers have been decommissioned, and the final 2 physical servers should be ready to be decommissioned by 2016. Therefore our systems architecture has been transformed from 7 physical servers to 22 focussed VMs with small resource footprints.

The new architecture has already been far more robust. The uptime for our primary web application Redsquid has increased to an average of 99.5% after the move to a dedicated VM, and is approaching an industry standard 99.9% uptime, from a previous average of around 98% (average of 28 minutes downtime per day). This improved performance was mostly due to isolating the Redsquid application server on its own VM. A further benefit of isolation was isolating the JVM which underpins the application server. Analysis of the server performance indicated that the JVM garbage collector was spiralling in an uncontrolled fashion which led to the server requiring regular restarts. This conclusion was made possible by using the New Relic service, and enabled the reconfiguration of the application server and VM, significantly improving performance.

The move of all database schemas to a VM was another significant migration. This has provided expert advice on configuration and performance, and has enabled us to identify inefficient database queries. We have also migrated the vulnerable and bug-ridden ColdFusion Server to an open source ColdFusion engine, Lucee. This was a large task given the amount of inconsistent legacy code that existed in the OASIS and *Internet Archaeology* websites. Both migrations went seamlessly thanks to sufficient testing beforehand. We also now have 3 NFS shares hosted by ITS, which

provide 35Tb of storage for preservation, dissemination, and systems data. Of that, 20Tb is available for active storage across workstations, removing the need for ads25 (a workstation converted into a file server), and enabling easy sharing and data transfer between staff. The fileserver that hosts the NFS shares is a large array of HDDs with good redundancy, so hardware failure is no longer of major concern. All NFS shares also have easily accessible snapshots of data, going back 3 months without the need for any ITS intervention. Each share is extended automatically when it approaches 80% of capacity, effectively offering unlimited storage (within reason) as the ADS repository grows.

We are also migrating old ADS and *Internet Archaeology* ArcIMS interfaces to Geoserver/Open Layers interfaces. Work on the *Internet Archaeology* interfaces is being undertaken by an intern from the Computer Science Department and should be completed by Autumn 2015. Work on the ADS interfaces will be undertaken by a postgraduate student from the University of York's Department of Archaeology during 2015-16. We have built two new mapping interfaces (Roman Grey Literature, Ipswich Backlog), both using GeoServer and Open Layers to good effect, providing more features than ArcIMS was capable of, while being easier to maintain and manage.

With most of the systems migration is now done, one major outstanding task is the migration of DNS records and Apache for our primary archaeologydataservice.ac.uk domain. Additionally there are a number of legacy applications dotted around the remaining physical servers that need addressing. It was originally thought that load balancing would be required, but given current performance, it appears that this will not be necessary. Exact replicas of VMs can be created for development purposes, which will be done once the migrations are complete.

During 2014-15 the ADS deep storage at the UK Data Archive (UKDA) reached its limits, requiring a slight re-organisation of the storage hosted by them. When we set up the previous storage system, it was configured in a RAID 10 array which offered 9Tb of storage and significant redundancy against hardware failure. Due to recent large deposits of scanned TIFFs (2.5Tb of data in the AIP and SIP for one archive), the 9Tb of available storage has been exhausted. Our current agreement with UKDA lasts until 2017, and we have decided to downgrade the system to a RAID 6 array which doubles our available storage to 18Tb. The downside is the disk array is lower performance and can only survive 2 HDD failures before data loss could occur. It was agreed, however, that performance was less of an issue for deep storage, and we are confident in the systems and mechanisms in place to address hardware failure at the UKDA, so the likelihood of 2 HDD failure in fast succession is a low and acceptable risk. This new arrangement should suffice until 2017, when deep storage requirements can be revisited.

Hardware purchases:

- 1 new workstation;
- 2 replacement monitors;
- 3 purchases under the Staff Laptop Scheme

Software acquisitions:

- AllegroGraph licence - Developer licence increasing our capacity to 50 million triples;
- New Relic subscription - 1 year subscription to help monitor and improve application performance;
- Apple Developer subscription - Annual subscription for iOS app development;
- WebDrive - convenience application for curatorial team connecting to servers;
- A number of technical books for staff skills development were also purchased.

Attacks: SQL Injection attacks happen with regularity, but all code has now been protected against it; during 2014-15 we had a Denial of Service attack or a harvest attempt from Russia. The ADS website struggled during the incident, but Apache was reconfigured to block the IP range.

Uptime

- Redsquid Uptime: 98.82%
- Intarch Uptime: 99.83%
- Oasis Uptime: 99.85%
- G2GP Uptime: 99.78%

NB Previous uptime reports were not representative, as they were dependent upon a physical note of when the system was down or unavailable. New Relic provides constant monitoring giving more precise information on downtime.

Notable system downtimes

System	Date	Downtime (mins)	Cause	Effect
Network (all websites)	2015-07-07	60	JANET network issues	All ADS/Intarch websites were unavailable during that time
Piwik	2015-06-18	5	Database VM updated with restart	Piwik stats were not collected during that time
Piwik	2015-06-19	30	Upgraded the VM OS to 14.04	Piwik stats were not collected during that time
Network (all websites)	2015-02-21	60	JANET network issues	All ADS/Intarch websites were unavailable during that time
Redsquid	2015-01-31	240	JVM garbage collector issues	Redsquid website was unavailable during that time
Network (all websites)	2014-12-11	30	DDOS attack on University of York	All ADS/Intarch websites were unavailable during that time
Piwik	2014-11-01	30	Migrated piwik database to new VM	Piwik stats were not collected during that time
Network (all websites)	2014-10-07	210	JANET network issues	All ADS/Intarch websites were unavailable during that time
Redsquid	2014-10-03	90	Redsquid failed for unknown reasons (likely JVM issues)	Redsquid website was unavailable during that time

Curation

- All deposited datasets were accessioned into the CMS
- During the course of the year preservation and resource discovery metadata was prepared for all new collections.
- Preservation copies of all data continue to be synchronised offsite into our deep storage facility within UKDA at the University of Essex.
- The ADS curatorial team continue to use a series of checklists to audit all ingest tasks; archives are signed off by the appropriate project manager on completion.
- Preservation manuals and internal data procedures were kept under ongoing review.

Data Migration

We are currently undertaking a migration of all CAD files, although this is not a 'standard' migration, in that files are being moved to a new preservation format (AutoCAD 2010 DWG) and new dissemination formats (AutoCAD DWG & DXF & PDF along with thumbnails and previews). As the old preservation format was DXF (R14) we are going back to the original CAD files for the migration; this complicates things as they can be in a non-standardised folder structure and deposited as either DXF or DWG (or both) in a range of versions. This complicates automating the migration process; standard migration would simply pick up the DWG/DXF folders in Preservation/Dissemination and batch migrate them. The process requires replacing dissemination and preservation files with updated and additional versions. This also requires interface re-wiring (which is approximately 50% of the task). There are nearly 6000 CAD files in the archives (including original, preservation and dissemination versions), representing c.2000 objects. Around 80% of the migration has been completed, and the migration should be completed by mid-September. Updating of interfaces will take a bit longer, but is a less pressing issue.

4. Advisory services

New guidelines

This year two new Guides to Good Practice have been released:

Close-Range Photogrammetry: Guide to Good Practice

This provides a guide to the documentation and archiving of close-range photogrammetry (CRP) datasets and the additional derived products produced by digital photogrammetry in cultural heritage applications. It builds upon existing documentation standards and specifies basic elements of a CRP survey considered important to possible future users of the data. The guide is organized around the typical steps for a CRP project and the metadata that can be applied to those specific steps. Each time a step is taken, the surveyor should aim to create the necessary metadata for that given step. References are given to more information about standards for methods and documentation. The guide also covers preparation of data for archiving (including the minimum required for any CRP survey, how to stay organized with the naming of files, and what file formats should be used and avoided); a case study gives examples of what the final files should look like.

Dendrochronology: Guide to Good Practice

This provides a good-practice guide for the collection and archiving of dendrochronological data in the context of archaeological and historical research. It is aimed both at those creating datasets, and those commissioning analyses. It does not cover the methods involved in dendrochronological analyses, but focusses on how to describe and archive the data and metadata involved in these analyses. It is

concerned with best practice for the curation of digital information rather than the equally important aspects of the curation of physical samples.

Work has also focussed on the development of several new Guides to Good Practice due to be released during 2015-16 on the following topics:

- Thermoluminescence
- Structured Light
- Reflectance Transformation Imaging (RTI)
- CIDOC-CRM
- 3D Data
- Structure from Motion (SfM)

Number of AHRC projects seeking advice (meeting/email/phone)

12 Projects involving 4 phone calls, 21 external emails sent.

Workshops

Opportunities within the ARIADNE Network

Julian Richards and Holly Wright organised a workshop held at CAA 2015 in Siena, attended by 80 people.

Digital Data and Archaeology: Management, Preservation and Publishing Workshop

This workshop is part of the Heritage Practice training courses in partnership with Historic England and the University of Leicester. It aims to provide data creators and curators with the essential knowledge and skills necessary to carry out digital preservation and data management. The workshop held on the 3-4 March 2015 had full attendance with 16 students and we received excellent feedback. The course featured speakers from ADS, *Internet Archaeology* and Historic England who highlighted the importance of digital preservation and data standards in archaeology, introduced best practices for data creation and management, and interrogated case study examples of digital archives.

WROCAH Data Management Training workshop

ADS staff were involved in leading breakout sessions for the White Rose Libraries and White Rose College of the Arts & Humanities postgraduate training event held in Leeds on 22 June 2015. The event was attended by over 80 postgraduate students from the Universities of Leeds, York and Sheffield. ADS staff led sessions on preparing data for deposit and data re-use.

Digital Heritage Workshop 2015

ADS participated in the 2015 Center for Digital Heritage workshop held on 8 July 2015 in York. ADS participation highlighted the use of Natural Language Processing to extract metadata from grey literature reports.

5. Publicity and promotion

Conference and Workshop Appearances

In addition to general conference attendance, ADS staff presented a combined total 39 papers, chaired three sessions and organized two workshops, at 27 different events throughout the year. These included major international conferences such as: EAA 2014 Istanbul where ADS staff presented on 'Opportunities and Challenges with Open Access and Open Data in the UK' and organised a workshop on a session on 'Opportunities within the ARIADNE Network'; CAA 2015 Siena where ADS staff presented a paper entitled 'dB Trendlust: or how I learned to stop worrying and love the spreadsheet' and chaired a session on 'Supporting researchers in the use and reuse of archaeological data'; and SAA 2015 San Francisco where ADS staff presented on 'Encouraging Open Methods via Data Repositories' and 'Mobile App Development at the Archaeology Data Service', and acted as a discussant in the session 'Lithics Cowgirl, Household Archaeologist, Digital Doyenne: A Session Dedicated to Ruth Tringham'. Judith Winters and Julian Richards spoke at an Open Access Day organised by the Society of Antiquaries of Scotland on 25 February in Edinburgh.

A full list of conferences, workshops and other significant meetings attended is available in Appendix E.

University visits

ADS staff gave lectures or seminars at the following universities over the past year: Bradford, Reading, Leeds, Southampton, Manchester, Aberystwyth and York. Most of these visits included two talks, one to undergraduates and another to postgraduates. The number of visits has remained the same as in previous years, but a new effort to encourage universities to take advantage of ADS workshops and presentations is currently underway ready for the new academic year. A work pack is available and is kept up to date, which includes a presentation on ADS, Data Management and Digital Archiving, a step-by-step workbook that guides a student through ADS resources and a data management plan workbook for postgraduates.

MOOCs

ADS has continued to support the Universities of Southampton and Leicester which have offered MOOCs which reference ADS data. The Hadrian's Wall MOOC by Newcastle University also references ADS data and the organisers have been contacted to formalise this relationship.

Archaeology of Portus: Exploring the Lost Harbour of Ancient Rome (6000+ learners)

<http://moocs.southampton.ac.uk/portus/mooc/>

England in the Time of King Richard III (10,000+ learners)

<https://www.futurelearn.com/courses/england-of-richard-third>

Hadrian's Wall: Life on the Roman Frontier

<https://www.futurelearn.com/courses/hadrians-wall>

These courses bring new audiences to the ADS website as can be seen in these selected user comments:

"I think the Archaeology Data Service is going to be my new favourite website. It's such a great learning resource. Thank you!"

"This is the first I've heard of the ADS. I shall certainly look through it in the future."

"I have also just joined the ADS which looks to be a font of information, once again, thank you to the team for providing the link to this resource."

"I used the ADS quite a lot on the Hadrian's Wall course and found it very useful, both for material directly related to Hadrian's Wall and more general Roman background."

"I've just signed up to the Archaeology Data Service which was very easy to do. If possible please would you pass on how clear and helpful the guidance is to Katie Green and her colleagues?"

The ADS website user statistics also clearly show significant impacts of MOOCs upon user numbers. For example in July 2015 an article referenced by the Richard III MOOC was requested **969** times and articles in the same journal issue were requested over **300** times as opposed to an average of **20** times in other months.

Newsletter

Issue 27 of the ADS hardcopy newsletter was published in March 2015. Over **500** copies were sent to university archaeology departments, Historic Environment Record (HER) offices, major archaeological services and key ADS stakeholders. Over **300** additional copies have been distributed during conferences, seminars and workshops.

E-Newsletter

Eight issues have now been published with Issue Nine due to be released in October 2015. This e-newsletter is distributed to all registered users via the ADS-managed Jisc mail lists and is publicised via ADS social media accounts.

Email Lists

The ADS general list ads-all@jiscmail.ac.uk which is used to publicise key events and activities posted **21** emails over the past year and membership has continued to grow with **2743** members currently registered, an increase of over **1000** from last year's **1718** members. ADS also regularly posts to the Britarch, Antiquist, HER Forum, FISH and the IfA IMSIG lists.

Internet Archaeology's email list intarch-interest@jiscmail.ac.uk is used to publicise new releases and other related news to its steady membership (**c.300**). New members continue to sign up to the email list, but clearly social media outlets, especially Twitter, have taken over the publicity role the email list once played.

RSS News Feed

The ADS RSS news feed continues to run with an average of three new news items per month (**c.28** in the last year) and is consumed by Wessex Archaeology amongst others. The *Internet Archaeology* RSS news feed posts an average of **1-2** news items per month, used primarily to list new content as and when it is published.

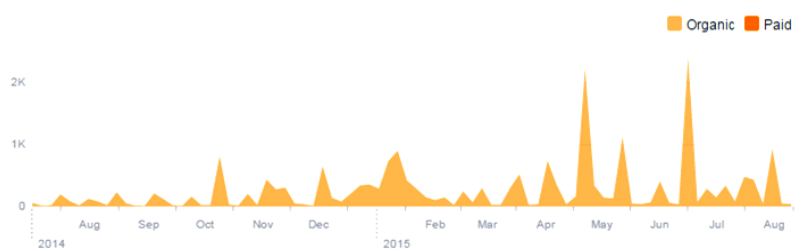
Social Media

The ADS social media strategy revolves around four main services; Facebook, Twitter, Wordpress and Pinterest. *Internet Archaeology's* social media outlets include a Facebook account and Twitter.

The social media activity highlight this year has been the **12 Days of Christmas** archaeology photo competition. This asked people to send in Christmas themed archaeology photographs. Three winners received an ADS/*Internet Archaeology* USB trowel and 12 photos were published on our social media channels. This competition was very popular. Following on from the popularity of the photo competition we instigated a **Friday Photo** activity which highlights a photo from our archives once a week across all our social media channels.

Facebook

The ADS Facebook account publishes all new archive releases, featured collections, ADS events and links to news items related to ADS. The Facebook account is also used to post relevant news from *Internet Archaeology* and our project partners. The account currently has **1501 Likes** an increase of **523** from last year. The average post reach is **300** with a high of **3954** with the release of the Atlas of Rural Settlement in June 2015. This post was shared **27** times, and **3298** of the people reached were not ADS Facebook page fans, showing the impact of fans sharing posts can have beyond ADS fans.



Graph showing daily interaction with ADS facebook posts.

Top ten most popular posts are:

1. NEW RELEASE: Atlas of Rural Settlement in England. The Atlas of Rural Settlement in England (**3954 people reached**).
2. UPDATED ARCHIVE: Several new records have been added to the Vernacular Architecture Group Dendrochronology Database. (**2616 people reached**).
3. The NEARCH Project has just announced the You(r) Archaeology Competition. (**2132 people reached**).
4. York to head world-leading digital creativity centre! (**2055 people reached**).
5. ADS are pleased to announce the release of a new Guide to Good Practice for Dendrochronological Data in Archaeology. (**1552 people reached**).
6. Exciting opportunity to come work with us here in York. We are looking for a Collections Development Manager. (**1374 people reached**).
7. The Grey Literature Library exceeds 30,000 reports! (**1336 people reached**).
8. To coincide with today's conference we have released the 1st data-set from the Rural Settlement of Roman Britain Project (**1331 people reached**).
9. ADS Collections Development Manager Vacancy closes this Saturday the 18th Jan. (**1293 people reached**).
10. NEW Unmanned Aerial Vehicle Guide to Good Practice out now! (**1180 people reached**).

As in previous years the majority of ADS Facebook fans are in the 25-44 age bracket. This suggests that ADS could increase its user base by targeting a younger undergraduate level audience. The trend between the frequency of Facebook posts and people accessing ADS resources is continuing. The simplicity of clicking on a link to learn more about a post increases the traffic to the resource. This suggests that the more we publicise via Facebook and other social media channels the more traffic to the website.

Internet Archaeology's Facebook page currently has **4528** fans up from only **708** last year. This is a result of a popular article being advertised on the BBC and *Internet Archaeology* gaining lots of publicity for going Open Access. ADS and *Internet Archaeology* also posts on other popular archaeology related Facebook pages, including, Bronze Age, Wessex Archaeology, Defence of Britain, Council for British Archaeology, and Mesolithic Miscellany.

Twitter

@ADS_Update has **3398** followers on Twitter; up from **2703** in 2013/14. All new archive releases, events, project updates and major Grey Literature Library updates are announced via our corporate channel (**@ADS_Update**).

@ADS_Chatter is used for less formal communications at conferences etc. and currently has **485** followers.

@ArchBritApp has **451** followers and is used to promote the Archaeology Britain App and ADS Friday Photos and certain *Internet Archaeology* and *ADS News* items.

@Intarcheditor has **7814** followers on Twitter, up from **5792** last year and is used both to promote past and existing journal content, as well as for conference tweeting, engaging in conversation and posting links about e-publishing and open access publishing more generally.

All the accounts see frequent re-tweets and clearly shows that daily communication is the key to growing engaged followers. The Twitter announcements also see a similar correlation between the increases in people accessing ADS and *Internet Archaeology* resources following tweets. In particular *Internet Archaeology's* move to Open Access was very popular on Twitter.

Wordpress Blogs

ADS runs three blogs, **ADS SoundBytes**, the **ADS-easy blog** and the **OASIS blog**.

The ADS Blog 'SoundBytes' is intended to be a platform for ADS staff to write short articles discussing technical issues as well as disseminating updates on ADS research activities. Over the past year **29** articles have been published. Articles have covered topics from conferences and workshops reviews, to the work behind archive creation, curation and dissemination, European and UK projects, and new themes and technologies in digital heritage. Piwik web analytics show that the blog has had **4523** unique page views over the last year. This is an increase from the **4289** unique page views last year and includes a month where blogs were posted but statistics were not available. The article 'Archaeological Drones' announcing the release of the new UAV Guide to Good Practice was the most popular blog post with **642** unique page views since its posting in November 2014. The vast majority of readers come to the blog via the e-newsletter or links from our Facebook page or our Twitter updates, continuing to emphasize the importance of social media in the growth of our audience.

Press releases and news items

The ADS and *Internet Archaeology* were also mentioned in several international press releases and newsletters:

Internet Archaeology Open Access:

<http://www.york.ac.uk/news-and-events/news/2014/open-access-archaeology-journal/>

Internet Archaeology receiving the Directory of Open Access Journals Seal:

<http://archaeologydataservice.ac.uk/blog/2015/07/internet-archaeology-doaj-seal/>

ADS and Day of Archaeology:

<http://www.arte.it/calendario-arte/firenze/mostra-day-of-archaeology-2015-18389>

ADS and Open Data:

http://napoli.repubblica.it/cronaca/2014/09/08/news/pompei_ora_social_cos_i_restauri_e_gli_appalti_non_avranno_segreti-95247473/

Democrata:

<http://www.computerweekly.com/feature/Businesses-dig-for-treasure-in-open-data>

Future deposit:

<http://www.harlowstar.co.uk/Harlow-Museum-awarded-4k-grant-Roman-temple/story-26641972-detail/story.html>

Blog Mentions

The ADS has been mentioned in many blog posts over the past year, including those of the DCC, ACCORD, Introspective Digital Archaeology, Open Data in Archaeology, Heritage Futures, Computational Archaeology, Day of Archaeology 2015, and Doug's Archaeology.

Selected user comments on ADS

Just found the Defence of Britain archive! It is amazing! Thanks @ADS_Update! I will be going on mini adventures for years to come! #History

Stuart Featherstone @StuartFeathers (Twitter)

Totally exciting news [regarding GLL reaching 30,000] and totally valuable service !

Dr. Allen W. Hatheway (email-help)

Keep up the good work, ADS has been a fantastic tool in our very demanding part of the world.

Cambridgeshire contracting unit (email-personal)

This is absolutely amazing stuff, thank you so much.

Sian O'Neill (email-help)

Finally reading Archaeology 2.0 and drooling over @ADS_Update Archaeotools-like poss. for mining Virginia #crunch reports. World = oyster.

Jolene Smith @aejolene (Twitter)

@ADS_Update great post - I hope the 1000 or so files left let you get away this evening though!

@ADS_Update @IntarchEditor @m_law @BU_BAArchAnth always a pleasure to read what you've been up to!
ScARF @ScARFHub (Twitter)

Great to see the ADS Grey Literature Library growing its a fantastic resource
Martin Newman @MartinInfoMan (Twitter)

Nice demo of new @ADS_Update #ADS3DViewer by #FabrizioGaleazzi. V cool. Excited abt launch of this. @cdhyork
Nicole Beale@nicolebeale (Twitter)

Fabrizio Galeazzi speaking about v interesting work on 3D object/strat viewers @ADS_Update #DigitalHeritage2015_3D pic.twitter.com/9C8S0He8Pa
Frank Lynam@flynam (Twitter)

Fascinating talk by @ADS_Update's Tim Evans @UofYArchaeology Research Forum. PPG16 hasn't had the impact we thought.
Lee G. Broderick@LeeGbroderick (Twitter)

You've opened my eyes to a universe beyond the world I thought knew @GreyLitNet @ADS_Chatter @ADS_Update #greyliterature
Caradoc Peters@CaradocPeters (Twitter)

Fantastic research resource: the first Rural Settlement of #Roman Britain Project dataset is now on ADS. @ADS_Update
Roman Finds Group@RomanFindsGrp (Twitter)

@HE_Archaeology @ADS_Update I really appreciate all the work gone into ADS. Makes researching local history a lot easier. Thanks!
Sarah Doyle@Singing Ginger (Twitter)

Selected user comments on *Internet Archaeology*

Open Access Responses:

Great news and delighted to hear that the decision was not purely on principle but also because it had become the obvious thing to do.
Leif Isaksen (email-Antiquist list)

Judith's announcement about this move by IA is really inspiring because of its positivity, instead of an impression of their being dragged into it against their will. I for one will be passing the email around my colleagues saying "See? there is some hope".
Sebastian Rahtz (email-Antiquist list)

People are looking for good examples of how to transition to OA, so it's great to hear about your process and to see your success!
Sarah Whitcher Kansa (email):

Big brave move, and the right timing - leading the way again!
Melissa Terras (email)

This is a fantastic new development - and with the move to open access across the board, it is great to have our own archaeology journal out there. good luck Judith! Now we just need to find new sources to help finance journal publication. (the universities have set up funds for this for their staff, the units and the statutories need to follow)
Mark Horton (Britarch list)

The respected on line journal Internet Archaeology has taken the brave and utterly commendable decision to go fully Open Access. Mortimer is a long term supporter of open access for data and academic articles- we believe that to make Our Past, Our Future, Our Choice! a reality everyone should have free and full access to the information they need to make informed decisions; not just the magic circle who have a corporate or University Log In or who can afford the eye watering prices charged by some pay wall publishers for even single papers. Of course there are challenges for all of us in this approach- not least good research and professionalism should be rewarded in a way which acknowledges the investment of time and skills which go into producing first rate work and allows people to earn a living. However, if this move brings the day closer when archaeologists and researchers can control the publication and distribution of their own data and talk to the audiences they choose, rather than be forced to conform to business models which see the rewards heading to publishing monocultures and the executives who maintain them then that can only be good. Discuss!

Mortimer archaeology group (Facebook group)

@precatlady @Write4Research @PhDForum thank goodness @IntarchEditor is now true gold #OpenAccess: brave decision with foresight

Spencer Carter @EmreCan_TR (Twitter)

The best things in life are free 1: @IntarchEditor has gone fully open access, for reasons explained beautifully here http://intarch.ac.uk/open_access.html

Rob Briggs @surreymedieval (Twitter)

Props to @IntarchEditor they are now fully open (which actually fits working archs budgets)

Shovelbums @ShovelBums (Twitter)

#Archaeology journal goes #OpenAccess - a great story of adaptation to technology & sustainability. <http://bit.ly/ZpwyXQ>

Office of Scholarly Communication and Publishing
at the University of Pittsburgh @OSCP_Pitt (Twitter)

Internet #Archaeology journal becomes #openaccess, making a wealth of research freely available <http://bit.ly/1rROvbt> @IntarchEditor

Jisc @Jisc (Twitter)

<http://bit.ly/1yCw40F> Uno dei più longevi e-journal sull'#archeologia e le sue tecnologie diventa #openaccess!

Geo Data Service @GeoDataService(Twitter)

Congratulations to Internet Archaeology for going fully Open Access. Academic publishing monocultures are on notice! http://intarch.ac.uk/open_access.html

Andy Brockman @pipelinenews (Twitter)

Gran iniciativa! @EHArchaeology: Congratulations to Internet Archaeology on becoming a fully open access journal. <http://ow.ly/C6kSC>

ArqueoToledo @arqueotoledo (Twitter)

Congratulations to Internet Archaeology on becoming a fully open access journal. <http://ow.ly/C6kSC>

EH Archaeology @EHArchaeology (Twitter)

Hooray! Internet Archaeology is now an open access journal http://intarch.ac.uk/open_access.html ...

ChesterArchSoc @ChesterArchSoc (Twitter)

Been hoping for this for a long time! Thanks @IntarchEditor! Let's dig out those bookmarks...

Martin Greaney @histliverpool (Twitter)

Full marks to @IntarchEditor: 'Internet Archaeology' is now fully open access! http://intarch.ac.uk/open_access.html #iaopen' #openaccess #archaeology

Paul Belford @PaulBelford (Twitter)

Congrats and kudos to @IntarchEditor for going open access (default CC-BY license) <http://bit.ly/2baLQw>

Ethan Watrall @captain_primate (Twitter)

Good news! Internet Archaeology is Open Access!! :) http://intarch.ac.uk/open_access.html ... @IntarchEditor

Tom Brughmans @tombrughmans (Twitter)

6. Resource discovery

Interoperability

The ADS continued to develop its service-orientated architecture approach throughout the year, both internally and externally. The ADS hosts eight web service targets for the Historic England Heritage Gateway. Both the TAG and ARENA2 services have been maintained via our main interface ('external' services) demonstrating interoperability at a service level with partner institutions in the US and in Europe.

The ADS had also been funded to become a pilot national data archive in the forthcoming UK Research Data Discovery service. In order to be re-used, research data must be discoverable. Universities are making research data assets available through repositories or other data portals. The Engineering and Physical Sciences Research Council (EPSRC) requires research organisations to maintain a data catalogue.

It is likely that some mechanism for aggregation will be necessary to increase visibility, to promote discovery and linking between datasets in related subject areas held in different institutions. Whereas document repositories can, in principle, make articles open to full-text searching by Google, this recourse is not available to data archives relying on metadata. As UK universities become more involved in the management of research data and capacity develops, the requirement for a UK research data discovery service has grown. Work on the service is being led by the Digital Curation Centre (DCC) and UKDA.

Number of aggregated records, external data sources and consumers of web services

<u>Service</u>	<u>Current Count</u> <u>(Previous Year</u> <u>Count)</u>	<u>Comments</u>
ArchSearch records	1,608,914 (1,332,622)	New additions are Greater London & Merseyside HERs and Historic Milestones database

Hosted external datasources	44 (53)	ArchSearch collections with more than 10 records
OAI-PMH	7/17/6 (5/11/6)	(Targets/Sets/Schemas) NB ArchSearch target is not publically accessible
SOAP	8 (7)	Added Greater London & Merseyside HER and Historic Milestones but removed 2 others
WMS	3 (0)	Started hosting Web Mapping Service layers for ADS services in the Heritage Gateway
RESTful	2 (1)	Added a RESTful API for use by our mobile app, but could be reused by other ADS systems
External APIs	4 (4)	DataCite, Heritage Data, Google Maps, Open Street Map
External Aggregators	9 (7)	data.gov, NERC, MEDIN, DataCite, Keeper's Registry, Ariadne Europeana, DES, and the Heritage Gateway
LOD Triples	2,531,302 (680,500)	ADS archives, Roman Amphora & Colonisation of Britain

7. Resource delivery

User Interface developments

There have been no major modifications to the user interface this year, but general maintenance has been ongoing.

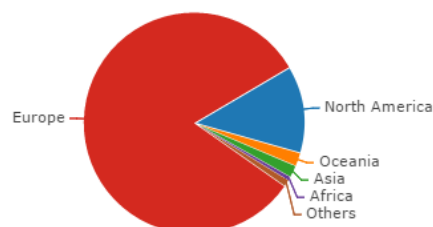
Access statistics

Who is visiting the ADS website?

The ADS website had **596,793** unique visits in 2014/15. This is a significant increase on previous years as can be seen in the table below.

2014-2015	2013-2014	2012-2013	
596,793	370,866	207,735	Visits to the site (one individual with multiple page views and actions)

The vast majority, **82%**, of those visitors are from Europe as can be seen in the pie chart to the right, and **69%** of all visitors are from the UK. The list below shows the top 20 countries that users access ADS from.



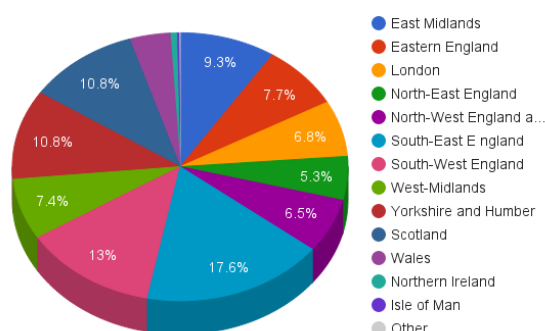
1.	United Kingdom	69%
2.	United States	11.5%
3.	Australia	1.6%
4.	Italy	1.5%
5.	France	1.4%
6.	Germany	1.4%
7.	Spain	1.3%
8.	Canada	1.2%
9.	Netherlands	0.7%

10.	Ireland	0.6%
11.	Poland	0.4%
12.	India	0.4%
13.	Greece	0.4%
14.	Russia	0.4%
15.	Portugal	0.4%
16.	New Zealand	0.4%
17.	Belgium	0.3%
18.	Turkey	0.3%
19.	Sweden	0.3%
20.	Norway	0.2%

Italy is the highest non-English speaking country and also has the highest actions per page, the highest average time spent on the website and a lower bounce rate than any other country suggesting very targeted use of the website. This may be a result of the multiple European partners ADS has in Italy and their active advertisement of ADS, but it may also be a result of the Roman Amphora Project Archive being used in teaching as high usage from Italy is often associated with high usage of this collection.

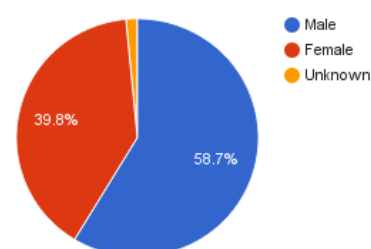
Registered users for the website have now reached **7061** compared with **5623** this time last year. Registered users are predominantly from the UK as in previous year with a significant number from Italy which can also be seen in the location of visitors to the ADS website as a whole. UK registered users, which can be seen in the pie chart to the right, are fairly evenly spread across the UK, however, there is an unusually small percentage of Northern Irish users.

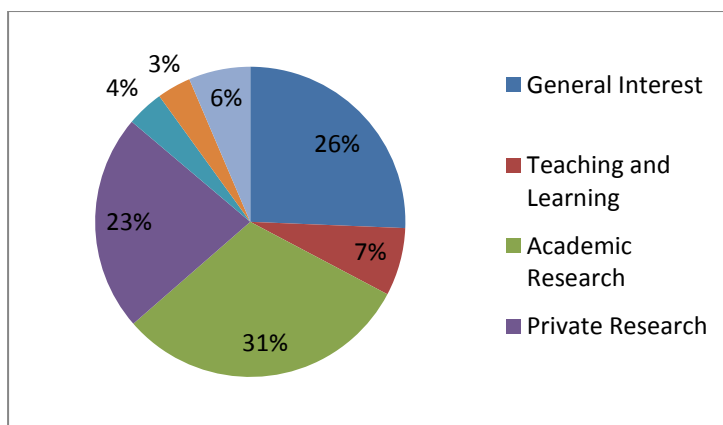
Location of UK registered users



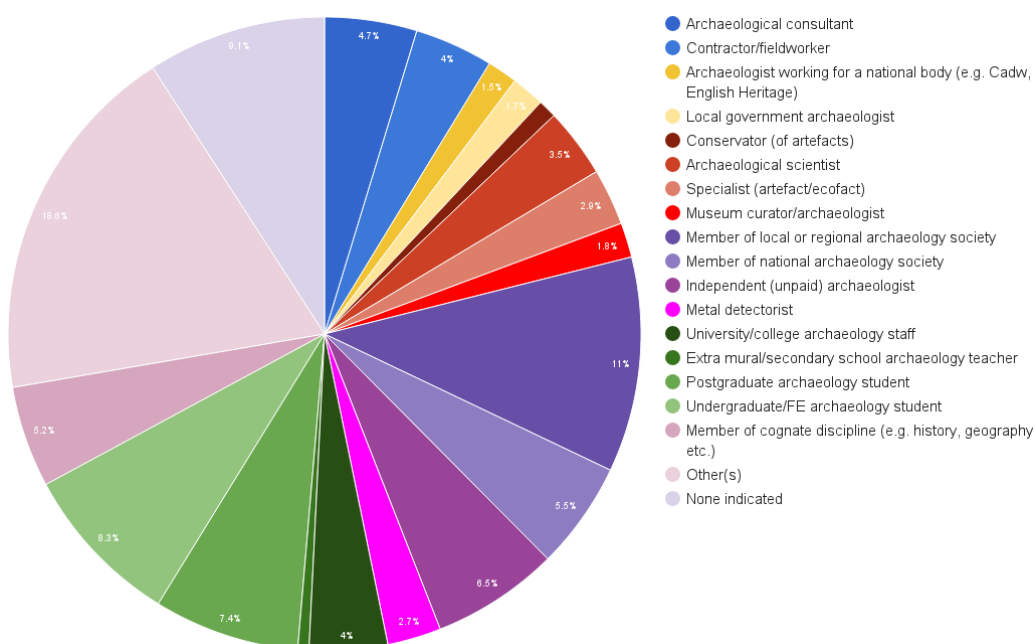
ADS does not directly collect the gender of registered users but the following can be determined by the title they used and then by the existence of gender specific name. This shows a higher proportion of male registered users to female. This is unexpected as Facebook statistics and user survey responses have a much more equal ration of **48%** female to **49%** male. However, the use of gender specific names to determine sex is not perfectly reliable. From this anaysis we can also see that **11%** of registered users have a PhD or professoral status.

Registered Users Gender



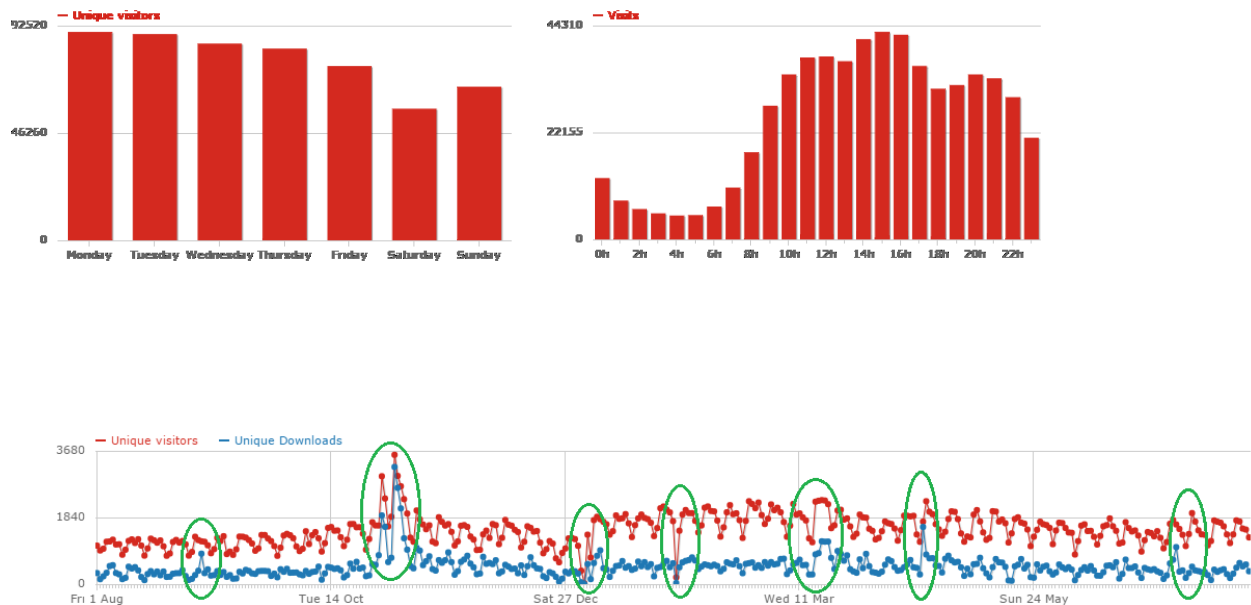


The pie chart above reveals what registered users say they use the ADS website for. Compared to previous years there has been a rise of **1%** in private research, **7%** in general interest and **2%** in family history with a corresponding decrease in the proportion of academic research of **6%**, **2%** for heritage management and **2%** for commercial research. This could be a result of Google's increased indexing of ADS bringing us to the notice of a wider audience. The pie chart below details what registered users determine their constituency to be.



When are people visiting the ADS?

The graphs below presents the usage pattern for 2014-15 based on unique visits to the ADS website. The graph on the left reveals that the first working day of the week is the most popular day to visit the ADS website, with visitors least active on Saturdays. These regular weekend dips in usage can also be clearly seen in the graph, as well as the gentle reduction of visitors during the Christmas period. The number of visitors visiting the ADS website begins to increase at 4am (GMT) peaking at 3pm then decreasing until 4am, with a slight increase between 7pm and 10pm. These figures reflect general work patterns in the UK and Europe.



The graph also clearly indicates several significant events that affected visit numbers highlighted by green dots. These are, from left to right:

1. **3 September 2014.** Peak in downloads coincides with increased visitors to the Medieval Archaeology pages. Reason unknown.
2. **30 October-November 2014.** This increase in unique visits to the website is the result of the release of the English Heritage Monographs archive. The slight dip in the middle of this peak on Sunday 2 November is the result of the high traffic and increased downloads affecting our systems and the need to switch the DB to a new server.
3. **2 January 2015.** This decrease in visits was a combination of lack of use on New Year's Day and some server glitches.
4. **31 January 2015.** This decrease in visits in January is the result of server downtime, which was possibly a result of too many server requests for the Roman Amphora archive via the Portus MOOC.
5. **16-20 March 2015.** Elongated peak of visitors coincides with English Heritage Monograph advertisement.
6. **19 April 2015.** Peak in downloads of related to an article in the proceedings of Society of Antiquaries of Scotland. Possibly being used in teaching.
7. **8 July 2015.** Peak in downloads related to the Richard III MOOC.

What are people doing on the ADS website?

Although there has been a general increase in visitors to the website over the past year there has also been an increase in the number of visits that bounce out of the site after one page. This is probably a result of our records becoming more visible in Google. This is further reflected in the increase of visitors to the ADS website coming from search engines. These one page visits have, as a result, decreased the average visit duration and the average actions per visit. Despite this the average duration of a visit for a returning visitor is much higher at nearly 6 minutes. The following figures represent overall usage of the ADS website for the past three years.

2014-15	2013-14	2012-13	
56%	48%	35%	Visits that bounce (left the website after one page)
3 min 20s	3 min 54s	6 min 8s	Average visit duration
5	6.5	10.7	Average actions (page views, downloads, outlinks and site searches) per visit
1566	1541	2,022	Max actions in one visit
198,227	126,628	94,898	Returning visits
33%	44%	46%	Of all visitors are return visitors
43%	36%	30%	Return visit bounce
5 min 46s	6 min 54s	8min 22s	Average return visit duration
803	10.6	13.2	Average actions per return visit
2,725,665	2,206,308	2,018,710	Page views
1,531,587	1,198,177	997,734	Unique page views
44%	52%	65%	Of all visits view two or more pages
200,989	160,014	174,717	Downloads,
172,878	136,186	152,861	Unique downloads

Roman Amphora is the most popular resource as the table below indicates with **323,422** page views. This resource is made up of many web pages providing short specific pieces of information and no downloads. The Library of Unpublished Fieldwork reports is the second most popular archive and the most popular collection that provides downloadable files. The table below highlights the top ten archives by page views.

Page	Page views	Unique Page views	Bounce Rate	Average time on page	Exit rate	Previous rank
Roman Amphorae: a digital resource http://dx.doi.org/10.5284/1000021	337,324 (323,422)	207,500 (99,157)	26% (23%)	42 (43)	8% (7%)	1
Grey Literature Library http://archaeologydataservice.ac.uk/archives/view/greylit/	224,690 (175,284)	125,050 (95,790)	32% (35%)	58 (1:05)	16% (19%)	2
EH Monographs http://dx.doi.org/10.5284/1028203	98313	66741	52%	1:01	31%	NEW
Proceedings of the Society of Antiquaries of Scotland http://dx.doi.org/10.5284/1000184	95,645 (86,484)	51,439 (47,356)	20% (16%)	1:08 (1:11)	16% (16%)	4
Defence of Britain http://dx.doi.org/10.5284/1000327	76,494 (88,131)	34,082 (40,486)	37% (25%)	1:27 (1:14)	22% (16%)	3
Medieval Archaeology http://dx.doi.org/10.5284/1000320	31,481 (35,923)	17,938 (20,654)	27% (24%)	51 (51)	17% (17%)	5
Rural Settlement of Roman Britain http://dx.doi.org/10.5284/1030449	3439	16829	51%	1:39	23%	NEW
CBA Research Reports http://dx.doi.org/10.5284/1000332	(20,225)	(13,701)	(38%)	(1:06)	(28%)	8
The Archaeological Journal http://dx.doi.org/10.5284/1018054	(28,834)	(14,370)	(31%)	(1:02)	(19%)	6

London Archaeologist http://dx.doi.org/10.5284/1000168	(14,796)	(7,378)	(24%)	(45)	(13%)	10
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How are people finding and accessing the ADS website?

2014-2015	2013-2014	2012-2013	
153,979 (26%)	128,398 (34.6%)	89,739 (43%)	Direct entries, (percentage of total visits)
353,935 (59%)	166,786 (45%)	52,055 (25%)	From search engines, (percentage of total visits)
88,830 (15%)	75,595 (20.4%)	65,938 (32%)	From websites, (percentage of total visits)

Direct entries to the ADS website and entries arriving via links from other websites have been steadily increasing over the past three years. However, when compared to the extremely large number of entries from search engines, direct and website link entries make up a much smaller percentage of entries than in the past. This coincides with increased Google indexing of the ADS website. ADS ArchSearch metadata records, PDFs as well as webpages, are now being frequently indexed by Google. There has also been a shift in recent years in how users access resources in general. Keyword searching has become increasingly accurate and the results tailored to individuals; as a result users are now much more likely to use a quick keyword search than type a URL even when they know the URL.

Website referrals to the ADS come from a variety of sources and we actively encourage people to link to ADS resources. The following list shows the top 20 ADS referrers by ranking:

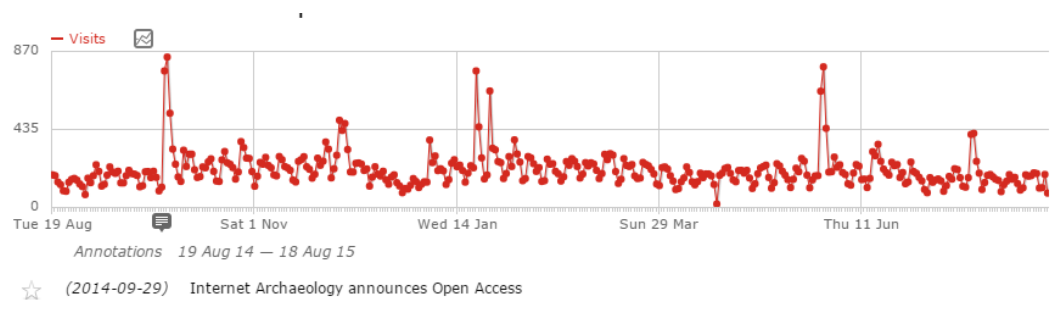
1. Facebook
2. Wikipedia
3. Pasthorizons
4. Twitter
5. AHDS
6. Heritage Gateway
7. BAJR
8. Society of Antiquities Scotland
9. OASIS
10. Lake District
11. Europeana
12. Royal Archaeological Institute
13. Archaeology UK CBA
14. BIAB
15. CJs Metal Detecting
16. Internet Archaeology
17. Potsherd
18. Gatehouse
19. DataCite
20. York University

This year Wikipedia has dropped to 2nd behind Facebook. This may be a result of Wikipedia introducing HTTPS which hides where traffic is coming from. Facebook has risen from 4th to 1st reflecting the high profile and larger reach ADS now has in

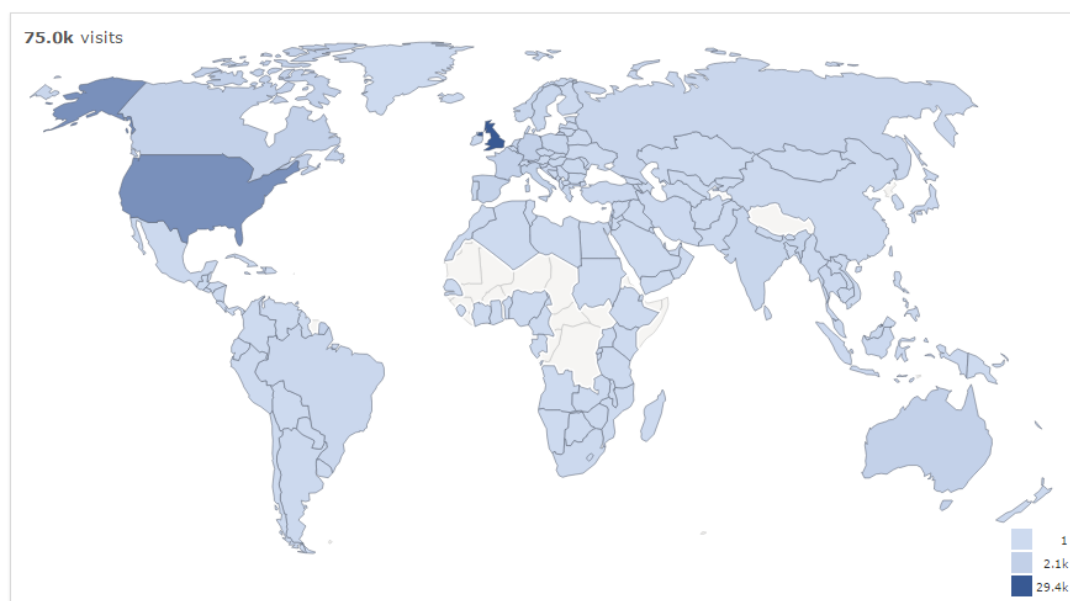
this social media outlet. The old ads.ahds website links has dropped from **2nd** place to **5th** hopefully reflecting the gradual change to newer links by website editors and Heritage Gateway has dropped 1 place, but this may be a result of a problem they experienced during the year which broke some of their links. Europeana has also dropped from **7th** place to **11th**. New on the list are DataCite, the CBA and *Internet Archaeology*.

Internet Archaeology usage statistics

There has been a considerable jump in usage of *Internet Archaeology* since it switched to open access. The journal served over **74,987** unique visitors during the report period (up from **39,000** previous year). It receives on average **200** visits a day (up from **c.150** in previous year). Announcements of new articles cause a spike in usage, often peaking at over **700** visits or more. Visits on average last around **3 mins 13 secs** per page, indicating that readers are spending time exploring content (as we intend them to do, rather than a quick visit to save/download for later).



The majority of readers still come from UK (39%) and USA (22%).



8. Partnerships and collaboration

United Kingdom

Heritage Information Access Strategy

The ADS has become a key partner in the development of England's Heritage Information Access Strategy. Delivery of the strategy is being co-ordinated by Historic England but will ultimately be delivered by partnerships and collaborations between key historic environment information stakeholders and partners. Phase 2 of the strategy began in early 2015, and will result in the delivery of a number of synergistic Work Packages. The ADS is leading the 'Collecting and Validation' work package, which incorporates the re-design of the British and Irish Archaeological Bibliography (BIAB), and the redevelopment of OASIS as part of the HERALD project (see below). It is envisaged that the BIAB will formally transfer to the ADS in Spring 2016, with the BIAB Advisory Committee merging with the OASIS Management Board. The ADS is represented on the Heritage Information Access Strategy Advisory Board and will therefore feed into higher level strategic decision-making over the course of the strategy.

HERALD

Since January 2014 ADS staff have been engaged in the HERALD project. This represents the next stage of development of OASIS: a collaborative venture between the ADS and Historic England to provide information about archaeological events and access to unpublished archaeological fieldwork reports or 'grey literature', especially those produced as a result of planning/development control related fieldwork. ADS completed Phase 1 of the HERALD project in May 2015. A report outlining user needs, requirements and a design specification was submitted to Historic England and has subsequently been made available on the OASIS webpage.

BIAB

The ADS, Historic England and CBA have been in discussion about the future of the British and Irish Archaeological Bibliography (BIAB). Historic England commissioned ADS to undertake the first phase of work involved in the redevelopment of BIAB, with a view to its eventual transfer from the CBA to the ADS in 2016. The BIAB report is due for completion in September 2015 and will outline the vision for turning the resource into a modern resource discovery tool, incorporating both published and unpublished archaeological information.

Roman Grey Literature, Reading University & Cotswold Archaeology

This project was reported in the previous annual report for 2013-14. The ADS has continued to be key to the delivery of *The Rural Settlement of Roman Britain: an online resource*. April 2015 saw the end of phase 1 of the project and the launch of the interactive mapping and database interface (see *Significant New Collections above*).

CITiZAN (HLF)

In 2015 the ADS negotiated with the HLF funded *Coastal and Intertidal Zone Archaeological Network* (CITiZAN). The project aims to address increased threats to coastal and intertidal heritage assets by delivering community-based training and creating an infrastructure and network of volunteers with the skills and systems to be able to monitor and survey the highly significant but threatened archaeological sites around England's coast and foreshores. A significant volume of archaeological information is likely to be generated by the project and ADS are in the process of helping to establish procedures for its deposition and preservation.

Continuing Collaborations

- We continue to support AHRC, NERC and MEDIN, including contribution of metadata to the NERC Data Catalogue Service (DCS) and MEDIN data portal, and as an accredited Data Archive Centre (DAC) we have continued to archive marine archaeological data sets.
- We have continued our involvement in a number of UK networks of digital archives, including the Digital Preservation Coalition and the Research Data Management Forum.
- We have continued to work with other heritage information bodies via FISH (the Forum for Information Standards in Heritage), HEIRNET (Historic Environment Information Resources Network), and the AAF (Archaeological Archives Forum).
- We continue to host the online library catalogue of the Society of Antiquaries of London, as well as their online catalogue of prints and drawings.

Europe

Our three European projects, all begun in 2013, are either well under way, or nearing their conclusion. The past year has seen some critical periods, as planning phases have moved to implementation. We have been working hard through these implementations, and continue to build solid working relationships with over 60 European partners across these projects. Beyond building important partnerships and increasing our visibility within Europe, European projects represent our main avenue for research and development work. This allows ADS staff to be part of, and contribute to, research that is both at the forefront of our sector, and potentially useful to developing our core services. This year we have focussed on a variety of avenues, including using Natural Language Processing to create better metadata for resource discovery within our Library of Unpublished Fieldwork Reports, and further forays into mobile application development, this time to allow users to access information we hold about what is nearby.

As part of the NEARCH project ADS hosted partners from France, The Netherlands, Spain, Poland, Belgium, Sweden, Italy, Germany and Greece. We also hosted an extended visit from several delegates from the Swedish National Heritage Board (SNHB) as part of the Digital Archaeological Processes (DAP) project. DAP is an ambitious five-year project to create a digital workflow for the SNHB, including archiving and dissemination. ADS staff gave support and expertise on these processes, while also learning about DAP. We are looking forward to hosting delegates from the German Archaeological Institute's IANUS project for a similar visit in November 2015.

North America

The ADS continues to work closely with the Digital Antiquity consortium in the United States, and Julian Richards is a member of the Board of Directors, participating in quarterly meetings via Skype, and an annual face-to-face meeting in Arizona. We also hosted an extended visit from Adam Brin, Digital Antiquity's Technical Director, who wanted to learn about the ADS technical infrastructure and Collections Management System prior to implementing an equivalent system for Digital Antiquity's repository, tDAR.

9. Research and development

ARIADNE is a four-year EU FP7 Infrastructures funded project, coordinated by PIN at the University of Florence and ADS (Deputy Coordinators), and made up of 24 partners across 16 European countries. ARIADNE aims to bring together and integrate existing archaeological research data infrastructures, so researchers can use these distributed datasets and technologies as an integral component within archaeological research. As Deputy Coordinators, ADS continues to be heavily involved in the overall planning and management of the project across all 17 workpackages. Highlights of our involvement over the past year include the completion of another deliverable: *First Report on Natural Language Processing*, highlighting work by the ADS and the University of South Wales. As the workpackage leaders for Transnational Access and Training, we successfully organised and/or oversaw organisation of four physical transnational access workshops: EAA in Istanbul, Mediterranean Exchange of Archaeological Tourism in Paestum, CAA in Siena and an Expert Forum in Athens. We also contributed to organising the second year of 'summer schools' held by the participating technical providers (PIN, CNR and ATHENA RC). In addition, ADS played key roles in the development of other workpackages, especially in dealing with how subjects, space and time will be handled within the infrastructure, and testing the new tool for mapping vocabularies to the Getty Art & Architecture Thesaurus, developed by our partners at the University of South Wales.

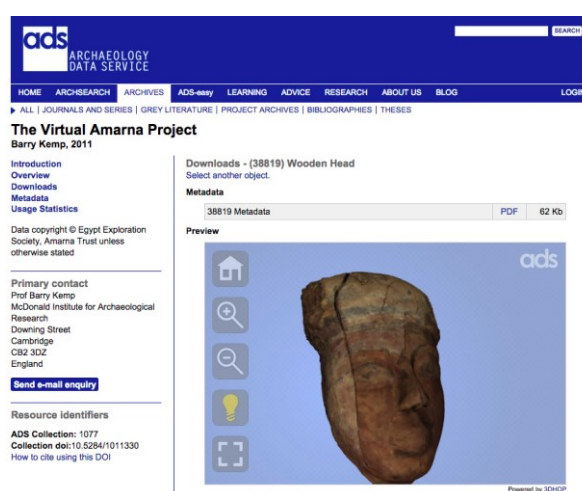
Local Content in a Europeana Cloud (**LoCloud**) is a three-year EU Competitiveness and Innovation Framework Programme (CIP) best practice network. LoCloud is coordinated by the National Archives of Norway and is made up of 32 partners across 26 European countries. Now in its final year, LoCloud followed on directly from the CARARE project (in which ADS was also a partner) and EuropeanaLocal, another recently completed best practice network, which played an important role in ensuring the digital content provided by Europeana's local and regional cultural institutions were represented in Europeana. LoCloud combines updated versions of the metadata mapping tools and methodology developed as part of CARARE, with cloud computing technology (along with other microservices), to help small-to-medium sized heritage organisations make their content discoverable within Europeana. In our role as aggregator for the UK, ADS is providing additional metadata to make a larger part of our archives discoverable within Europeana, and is exploring the possibility of working with HERs to do so as well. As leaders of the Dissemination and Exploitation workpackage, over the last year ADS oversaw the dissemination planning and implementation, including an international dissemination workshop held at the 18th ICOMOS General Assembly in Florence, during November, 2014. ADS also presented two workshops at Digital Past in Swansea in February, as part of our national dissemination efforts. Currently, ADS is overseeing planning of the final international dissemination event to be held in September; a workshop with 13 speakers, representing partners from 10 countries, to be held at Digital Heritage 2015 in Granada.

New Scenarios for a Community-involved Archaeology (**NEARCH**), is a five-year EU Culture Programme project, coordinated by the Institut National de Recherches Archéologiques Préventives (INRAP) in France, and is made up of 14 partners, across 10 European countries. NEARCH follows on directly from the ACE project (in which ADS was also a partner), and aims to assess the implications of the recent economic crisis in the fields of Archaeology and Heritage, and to propose new ways of working and interacting, in particular within different dimensions of public

participation. Over the last year ADS worked with the organisers of the digital 'Day of Archaeology' and NEARCH partners, to expand participation throughout Europe. This year, partners were simply asked to participate, in preparation for acting as moderators and helping with multilingualism in following years. This resulted in 22 new blog posts representing eight countries. The partners from Poland were so inspired by the digital Day of Archaeology they also decided to try their own experimental Day in the Polish language. ADS has also begun working on mobile app development, to help the public engage with historic records and archaeological resources based on their current location, and in partnership with *Internet Archaeology*, developing ideas for alternative forms of publication, adapted for different audiences. ADS also welcomed the partners for a NEARCH plenary meeting in York in December, which included the first of the discussion workshops, titled *Archaeology and communication technologies: Enabling community involvement*. It was an excellent meeting, the details of which can be found in the blog post at <http://archaeologydataservice.ac.uk/blog/2015/01/ads-welcomes-the-nearch-partners-to-york/>.

DADAISM brings together researchers from the diverse fields of archaeology (ADS, University of York), human computer interaction (University of York), image processing, image search and retrieval (University of Saskatchewan), and text-mining (University of Amsterdam) to create a rich interactive system to address the problems of researchers finding images relevant to their research. This project is now in its final stages; contextual interviews have been carried out; algorithms to automatically recognize images have been written; and an interface is in development ready for user-testing after the summer.

ADS3DV is a two-year project funded under the 'Marie Curie Actions' Seventh Framework Programme, and benefits from the collaboration with the Italian Visual Computing Lab (ISTI-CNR; <http://vcg.isti.cnr.it>) in the framework of the ARIADNE European project. In the past ten years the use of new technologies for the 3D documentation and reconstruction of cultural heritage has changed how we approach archaeological research. Presently, the main challenge is the preservation and dissemination of 3D data in archaeology. Up to now, a large number of 3D digital data resources have been produced and most focus on the preservation of the information over time without thinking about the accessibility of these data by the scientific community. The aim of the ADS 3D Viewer is to fill this gap, by developing an interactive 3D web-based working environment for the management and analysis of archaeological data, for all kinds of users, including those who are unfamiliar with these technologies. The first accomplishment of the ADS 3D Viewer project was the development of a beta version of the viewer that extends the web-based browsing functionality of the ADS project archives. The ADS 3D Viewer exploits the 3DHOP tool developed by the Visual Computing Lab and now enables users to browse 3D geometry directly. The next aim of the project is to improve the viewer to allow the visualization and analysis of a very specific kind of 'aggregated' data such as different layers of archaeological stratigraphy. Increasing the accessibility of 3D



metric reproductions of the excavation process and the interpretations made by different scholars of the same context on the web, this new tool will be a useful tool for the remote, collaborative study of complex archaeological datasets promoting the use of 3D representations for analysis, interpretation and knowledge production in archaeology.

10. Service management

During the year 1 August 2014-31 July 2015 the ADS had total income of £678,927 and total expenditure of £858,707 (including £24,745 transferred to reserves). An additional £11,607 was received as the ADS share of University of York overheads. A credit balance of £261,535 had been carried forward from the 2013-14 financial year, leaving a credit balance of £93,362 to carry forward to 2015-16. The majority of this relates to income received in advance of work undertaken, and it is planned that this will be expended during 2015-16. Additionally, £233,411 is now held in the ADS reserves account. The full accounts for 2014-15 are available as a separate document.

The internal management team held quarterly meetings to review finances, and all ADS staff met for project updates on a monthly basis, with separate meetings of the curatorial and technical staff to resolve specific issues. In addition we have continued the informal series of lunchtime staff seminars to look at blue skies developments. All staff has one-to-one meetings under the University of York's Performance Review scheme. In addition, a staffing skills audit was undertaken to inform future training needs. The opportunity has also been taken to enhance job titles, particularly amongst the Digital Archivists, to indicate special areas of responsibility, and these are reflected in the staffing list below.

As noted above, Catherine Hardman also left at the end of February 2015, to take up a role in the Parliamentary Archives. Louisa Matthews joined in March as Collections Development Manager, with responsibility for developing our collections. Louisa is now the main point of contact for depositors wishing to deposit with the ADS. During the year we have also benefited from being able to employ Georgie Field on a temporary basis, as a Trainee Digital Archivist. The other staff departure during the year was Paul Young, Applications Developer, architect of the current ADS Collections Management System. Paul has now returned to the Borthwick Institute for Archives, still within the University of York.

Appendices

(A) STAFFING LIST

J D Richards, Director
M Charno, Lead Applications Developer
T Evans, Digital Archivist (Preservation Lead)
G Field, Trainee Digital Archivist
J Gilham, Digital Archivist; HERALD Project Manager
K Green, Communications & Access Manager
C Hardman, Deputy Director (Collections) (until March 2015)
L Matthews, Collections Development Manager (from March 2015)
R Moore, Digital Archivist (ADS-easy Manager; Lead archivist)
K Niven, Digital Archivist (Standards Editor)
J O'Brien, Digital Archivist (OASIS officer)
D Page, Administrator
J Winters, Internet Archaeology Editor
H Wright, European Projects Manager
L Xia, Applications Developer
P Young, Web Developer (until December 2014)

(B) ADS MANAGEMENT COMMITTEE MEMBERSHIP

Met on 24 September 2014 and 24 March 2015

Corresponding members are indicated with an asterisk

Sam Turner, Chair, University of Newcastle
Mike Heyworth, MBE Vice-Chair, Council for British Archaeology
Jeremy Huggett, Vice-Chair, University of Glasgow
Diana Murray, Vice-Chair, RCAHMS

Gail Lambourne, Arts and Humanities Research Council
Gail Falkingham, ALGAO (until March 2015)
Barry Cunliffe*, British Academy
Dan Pett*, British Museum
Nick Poole, Collections Trust
Marion Meek*, Dept of the Environment for Northern Ireland
William Kilbride, Digital Preservation Coalition
Keith May, Historic England
Mike Evans, Historic England (NMR)
Anthony Sinclair, Higher Education Academy
Rebecca Jones, Historic Scotland
Edmund Southworth*, Manx National Heritage
Clare Postlethwaite, MEDIN
Mark Thorley, Natural Environment Research Council
Gary Lock*, Oxford University
David Thomas, RCAHMS
Ortrun Peyn, Society of Antiquaries of London
Simon Gilmour/Erin Osborne-Martin, Society of Antiquaries of Scotland
Paul Miller, The Cloud of Data
Andrew Bevan, UCL Institute of Archaeology
Vince Gaffney*, University of Birmingham
Tim Darvill OBE, Bournemouth University
Graeme Barker, University of Cambridge (until March 2015)

Richard Higgins, University of Durham
 Nick Ryan, University of Kent at Canterbury
 Mark Gillings*, University of Leicester
 Graeme Earl, University of Southampton
 Steve Mills* University of Wales – Cardiff
 Deborah Smith, PVC for Research, University of York

(C) INTERNET ARCHAEOLOGY ADVISORY EDITORS

Prof Mark Aldenderfer	University of California, Merced
Dr Graeme Earl	University of Southampton
Dr Mike P Heyworth	Council for British Archaeology (Co-director)
Dr Jeremy Huggett	University of Glasgow
Dr Ian Johnson	University of Sydney
Dr Hans Kamermans	University of Leiden
Dr Sarah May	Independent researcher
Dr Francis P McManamon	Director, Digital Antiquity
Prof Franco Niccolucci	University of Florence
Dr Alistair Paterson	University of Western Australia
Prof Julian D Richards	University of York (Co-director)
Mr Pete Rowsome	Freelance consultant
Dr Seamus R Ross	University of Toronto
Dr Claire Smith	Flinders University
Mr J. Stephen Town	Director of Information, York
Prof Dr Frank Vermeulen	University of Ghent
Dr Sarah Whitcher Kansa	Alexandria Archive Institute
Dr Stephanie Wynne-Jones	University of York

(D) LIST OF COLLECTIONS RELEASED: 1 August 2014–31 July 2015

August 2014

Avon Historic Landscape Characterisation (HLC): The Avon Historic Landscape Characterisation was undertaken between 1995 and 1998. The main aim was to produce a map which displayed the current (1998) character of the landscape by revealing the historic processes whereby the present plan form of the current landscape had been initiated and developed.

Cornwall Historic Landscape Characterisation (HLC): The Historic Landscape Characterisation Project in Cornwall provides a commentary on each of the Historic Landscape Character Types mapped in the 1994 Cornwall HLC, the first Historic Landscape Characterisation to be undertaken for a whole county in Britain. It is intended to help users better understand the origins and components of Cornwall's historic landscape character and the issues affecting it.

Expanding the Neighbourhood Plan Evidence Base - Museums and HERS (6419): English Heritage commissioned Locus Consulting to undertake the Neighbourhood Plan Evidence Base Project. The project sought to understand how communities preparing a Neighbourhood Plan are able to access, interpret and use heritage information held by local authority Archives, Museums and Historic Environment Records (HERs). The project is part of an ongoing initiative to promote the use of heritage information in community-led planning.

Kent Historic Landscape Characterisation (HLC): Oxford Archaeological Unit (now Oxford Archaeology) was commissioned by English Heritage and Kent County

Council to undertake an Historic Landscape Characterisation of Kent including Medway. The primary aim was to produce a digital map of Kent's Historic Landscape Types with associated explanatory text that would: a) enhance the formulation of development plans, structural planning programmes, development control and conservation activities and b) establish a framework in conjunction with the complimentary countrywide landscape assessment for future historic landscape.

Sussex Historic Landscape Characterisation (HLC): The Sussex Historic Landscape Characterisation project identified areas or units of land based on their key historic landscape attributes. It was a desk-based exercise aimed at providing a first step to understanding the historic time.

September 2014

Church Wilne Deserted Medieval Settlement, Derbyshire: updated: Additional files have been added to this archive, the result of archaeological investigations of a deserted medieval village undertaken in 1974 and 1975 by the Trent Valley Archaeological Research Committee.

Exeter Skypark, Devon (OASIS ID: wessexar1-179082): Wessex Archaeology was commissioned by St Modwen Developments Ltd on behalf of Skypark Development Partnership LLP (the Client) to carry out historic building recording prior to the removal of remnant WWII buildings and structures and redevelopment at the Exeter Skypark (Exeter Airport), Clyst Honiton, Devon.

Exeter Skypark, RGF Site Clearance and Landscaping (OASIS ID: wessexar1-179582): An archaeological evaluation by Wessex Archaeology; the evaluation consisted of nine machine-excavated trial trenches measuring 30m x 2m. No archaeological features or deposits were identified within the evaluation trenches.

Roman Amphora: a digital resource: updated: Two new amphora types have been added to this resource, Melos and Sagalassos.

South Yeo Farmhouse (OASIS ID: acarchae2-160456): Historic building recording was carried out by AC Archaeology during repairs to the roof of South Yeo Farmhouse, Poughill, Devon (SS 86498 08502). South Yeo is a late medieval farmhouse that was altered in the 16th, 17th and 20th centuries. It is Grade II* listed (National Heritage List no.1250718), and the work was required as a condition of the grant of listed building consent.

The Excavation of the Cleatham Anglo-Saxon Cemetery, North Lincolnshire: Additional GIS files have been added to this archive. This archive presents the results of excavations between 1984 and 1989 at the Anglo-Saxon mixed rite cemetery at Cleatham, in the parish of Manton, North Lincolnshire. This work resulted in the recovery of 1204 urns and 62 inhumations together with boundary ditches and other features.

October 2014

Mesolithic Research and Conservation Framework of England: A project was set up with the aims of improving understanding of the Mesolithic period in England and setting out priorities for future work. This was to be carried out by undertaking widespread research and consultation in order to develop and publish a Research and Conservation Framework for the period, comprising resource assessment, agenda.

360-364 Shirley Road, Southampton (SOU1577): Orchard Homes was granted planning approval for the redevelopment of land at 360-364 Shirley Road, Southampton. A condition for an archaeological watching brief was placed on the approval and the Archaeology Unit of Southampton City Council carried out the archaeological work between January and October 2012. Post-excavation work was undertaken from October 2012 to June 2013.

An Imperial Frontier and its Landscape: the Gorgan and Tammisheh Walls in North-East Iran: The overall objective of the project was to date and place within their strategic and landscape context the Gorgan and Tammisheh Walls in NE Iran. At 195 km length the Gorgan Wall forms the longest continuous ancient linear barrier between the German Limes and the Chinese linear earthworks.

Bassett House, Bassett, Southampton (SOU1610): Prior to demolition and redevelopment of the site, the University of Southampton commissioned an archaeological building recording survey of Bassett House in August 2012. The digital archive from this survey consists of the descriptive and photographic record alongside full planar and elevational drawings.

Coombeshead Farm, Diptford, Devon (OASIS ID: wessexar1-167261): Trial trench evaluation comprising 16 trenches targeting geophysical anomalies, including large sub-oval enclosure. Trenching recovered slight dating evidence suggesting that the enclosure is Romano-British.

English Heritage Archaeological Monographs: English Heritage has a long tradition of producing highly illustrated archaeological monographs about key sites and topics of importance to the understanding of the historic environment in England. Many of the past titles have long been out of print, English Heritage is now making these titles available as ebooks, available from their website, and as PDFs which can be accessed from the ADS for free.

Greenwall Lane Railway Bridge (OASIS ID: acarchae2-164228): Historic building recording was carried out prior to the demolition of Greenwall Lane Bridge, Doddiscombsleigh. The bridge was situated on an extension of the Teign Valley Railway that opened in 1903. It had a short lifespan of 55 years and no alterations were made to the structure.

Objects and Identities in Roman Britain and the North-Western Provinces: Appendices and additional information released in conjunction with Dr Hella Eckardt's *Objects and Identities in Roman Britain and the North-Western Provinces* released in autumn 2014. The material presented here is the result of data collection on a range of object types from Roman Britain and the Roman north-western provinces for the book.

Palaeolithic and Mesolithic Lithic Artefact (PaMELA) database: The PaMELA database consists of two main parts: a literal digital transcription of Roger Jacobi's card index (the Jacobi Archive), and a searchable database with typological and chronological keys (the Colonisation of Britain database).

Palm Cross Green, Modbury: An archaeological evaluation was carried out by Oakford Archaeology on land adjacent to Palm Cross Green, Modbury, Devon. Excavation revealed three ditches, two discrete features and the remains of a hedgebank of probable post-medieval date. All the linears and the hedgebank had been identified by the geophysical survey.

Ridge Cross, Stockland, Devon: An area was stripped over an area in which an agricultural building was to be built after a gradiometer survey by Substrata Limited indicated the presence of a number of anomalies possibly indicating archaeological features.

The Later Prehistory of Northwest Europe: the Evidence of Recent Fieldwork: During the research for the book 'The Later Prehistory of Northwest Europe: the Evidence of Recent Fieldwork', reports on recent fieldwork on later prehistoric sites in continental northwest Europe were systematically collected. All reports that could be obtained were recorded in a database. An edited version of this database is presented here to accompany the book and provide a tool for further research.

November 2014

Cumbria and the Lakes Historic Landscape Characterisation (HLC): The Cumbria and Lake District National Park Historic Landscape Characterisation Project includes the mapping of the Lake District National Park (completed in 2005) and the mapping for the rest of Cumbria (2008).

Land at Kiln Close, Leigh Sinton, Worcestershire: An archaeological evaluation was undertaken by Cotswold Archaeology in October 2013 on land off Kiln Lane, Leigh Sinton, Worcestershire.

Terrestrial Mineral Resource Assessment: Buckinghamshire and Milton Keynes: This document details a project that mapped past, current and future mineral extraction areas in Buckinghamshire and Milton Keynes.

The Prehistory of Britain and Ireland: The Prehistory of Britain and Ireland project aimed to provide a new account of the later prehistory of these islands based on the results of development-led fieldwork. The spreadsheets list the reports consulted and give basic details of the date and character of the prehistoric archaeology from each site.

Watching brief Eastgate, Hexham (OASIS ID: gerrymar1-175289): A watching brief was maintained by Gerry Martin Associates along Eastgate, Hexham, between 15 January and 4 February 2014 for RSK Environment Ltd on behalf of Northern Gas Networks during the replacement of an existing gas main.

December 2014

Coventry Historic Landscape Characterisation (HLC): The Coventry HLC project covers an area of 9834 hectares, 7789 hectares of which is urban and aims to ensure that the historic environment is fully incorporated into all future development for the city.

Extensive Urban Survey – Nottinghamshire: Derbyshire and Nottinghamshire County Councils launched a survey of small towns in the two counties in 1997 as part of the national EUS programme instigated and funded by English Heritage. In Nottinghamshire 18 small towns were surveyed to provide high quality data about the archaeological potential of the towns and their historical development for archaeologists and the local planning authorities.

Hanley Hall, Gilberts End, Worcestershire: In October 2013 Cotswold Archaeology was commissioned to carry out an Historic Building Recording programme at Hanley Hall. A 15th-century date is proposed for the early elements of the building. Sites have been tentatively identified for Dendrochronological sampling.

Memoir of Martyn Jope (Bibliography): Edward Martyn Jope (1915-96), founder of the Department of Archaeology at the Queen's University of Belfast, was a medievalist and specialist in the study of the Iron Age art of the British Isles. The archive includes a biographical memoir and a bibliography of his published works.

Peterborough Historic Landscape Characterisation (HLC): Using the extensive Historic Landscape guidelines created by Lynne Dyson Bruce and English Heritage, this project aimed to create an Historic Landscape Assessment for Peterborough Unitary Authority and to compare the methodology to traditional landscape archaeological results.

Scottish Archaeological Internet Reports (SAIR): updated: Reports on Excavation across the Dere Street Roman Road at Dun Law, Scottish Borders (SAIR 57) and Excavations at Jeffrey Street, Edinburgh (SAIR 58) have been added to the Open Access publication.

Shepherd's Farm, Clyst St. Mary, Devon, Evaluation: An archaeological evaluation was undertaken by Cotswold Archaeology in April 2014 at Shepherd's Farm, Clyst St Mary, Devon. A total of eight trenches was excavated.

Winham Farm, Cullumpton: An archaeological evaluation was undertaken by Cotswold Archaeology in May 2014 at Winham Farm, Cullompton, Devon. A total of six trenches was excavated.

January 2015

Abbey Bridge and Viaduct, Evesham, Worcestershire Watching Brief and Building Recording: A programme of Archaeological Building Recording to English Heritage Level 3 was undertaken by Cotswold Archaeology in March 2013 at Abbey Bridge, Evesham, Worcestershire.

Bewdley Lane, Evesham, Worcestershire: An archaeological evaluation was undertaken by Cotswold Archaeology in May 2013 at Bewdley Lane, Evesham, Worcestershire.

Evaluation at Land off Chapel Lane, Upton Snodsbury, Worcestershire: An archaeological evaluation was undertaken by Cotswold Archaeology in May 2014 at land off Chapel Lane, Upton Snodsbury, Worcestershire. A total of three trenches were excavated.

Land at 52 Bretforton Rd, Badsey, Worcestershire: An archaeological evaluation was undertaken by Cotswold Archaeology in February 2013 at Land at Bretforton Road, Badsey, Worcestershire. Sixteen trenches were excavated.

Shotton Triangle Site, Northumberland, Archaeological Evaluation (OASIS ID: adarchae1-163165): AD Archaeology was commissioned by Banks Mining to undertake an archaeological trenching evaluation in advance of a proposed extension of Shotton Surface Mine, to the south and west of Shotton Village.

Surrey Archaeological Collections: The archive of the journal 'Surrey Archaeological Collections' has been updated. The articles from Volume 96 have been released, while the contents page and abstracts from Volume 98 (2014) have also been added.

Sussex Archaeological Collections Volume 150: The archive of the journal 'Sussex Archaeological Collections' has been updated with Volume 150. This includes articles on the 'Exploration of the Sussex coastal plain through time' by Chris Clarke, a piece on Georgian engineer 'Cater Rand' and field archaeologist 'William Sabatier'.

London Archaeologist Volume 13: The archive of the journal 'London Archaeologist' has been updated with the first half of Volume 13.

Tempwood, Defford Road, Pershore, Worcestershire, Evaluation: An archaeological evaluation was undertaken by Cotswold Archaeology in November 2013 at Tempwood, Defford Road, Pershore, Worcestershire.

The Prehistoric Stones of Greece: A Resource from Field Survey: An online database of primarily Palaeolithic and Mesolithic sites in Greece, describing the field survey projects which resulted in the discovery as well as the material culture including tools and other objects, structures and features, along with fauna and flora documented.

February 2015

An Osteological Analysis and Social Investigation of the Cremation Rite at the Cemeteries of Elsham and Cleatham, North: In 2008, Kirsty Squires obtained PhD funding from the Arts and Humanities Research Council to conduct an in-depth assessment of the Elsham and Cleatham cremated bone assemblages at the University of Sheffield.

Northumberland Historic Landscape Characterisation (HLC): The Northumberland Historic Landscape Characterisation (HLC) project was carried out between July 2005 and February 2008 by staff of the Conservation Team, Northumberland County Council with support of English Heritage and Northumberland National Park. The project was undertaken to characterise and understand the human activities that have shaped the current landscape of Northumberland.

Proceedings of the Society of Antiquaries of Scotland: The journal series has been updated with volumes 141 and 142 now fully released.

The origins of Nottingham: archaeological investigations in the Medieval town from 1969 to 1980 The digital archive of six unpublished excavations within Nottingham city centre.

Waddeton Barton Barns: A record of four barns was prepared prior to their conversion to accommodation. Three of the barns were constructed in the mid-late 19th century and two were designed as cowhouses with lofts over.

April 2015

Bugle Horn Public House, Stone, Building Recording: Historic Building Recording was undertaken by Cotswold Archaeology for Mitchells and Butlers of the boundary wall of the car park to the Bugle Horn Public House, Stone, Buckinghamshire. The wall was erected at the same time as the main estate wall of nearby Hartwell House (1855), to which the ground enclosed once belonged, and shared its characteristic of the inclusion of geological specimens.

Land at Bumpers Farm, Ilmer, Buckinghamshire: In August 2014, Cotswold Archaeology carried out an archaeological evaluation at Bumpers Farm, Ilmer, Buckinghamshire. Nineteen trenches were excavated.

Land south of Badsey Road, Badsey Worcestershire Archaeological Evaluation: An archaeological evaluation was undertaken by Cotswold Archaeology in February 2014 at Land south of Badsey Road, Badsey, Worcestershire. A total of seven trenches were excavated. Evidence for ridge and furrow field systems were recorded in the eastern part of the site. No significant archaeological features or artefacts were recorded.

Mill House, Sedgeberrow (OASIS ID - archaeol5-201471): In January 2015 Archaeological Research Services Ltd. (ARS Ltd.) was commissioned by Mr Andrew Thomas to undertake an archaeological watching brief during the groundworks stage of the construction of a proposed two storey extension to the rear of the existing property of traditional construction at Mill House, Winchcombe Road, Sedgeberrow, Evesham, Worcestershire.

Overgrass Tower consolidation monitoring (OASIS ID: alanwill1-199578): Archaeological monitoring during a staged scheme of works to record, repair and consolidate the tower house. Consolidation works were carried out at the Tower between spring and autumn of 2014. These works included stabilisation of the Tower walls by initial removal or cutting back and poisoning of substantial embedded tree roots; the dis-assembly and re-building of some adjacent sections of masonry; re-contouring of the profile of deposits over the eastern end of the vault adjacent to the tumbled entrance to stabilise the area; and extensive re-pointing and deep tamping of both face and core work.

Place Barton Farm, Moreleigh, Devon, Magnetometer Survey Report (OASIS ID: archaeol20-206143): Archaeological Surveys Ltd was commissioned by British Solar Renewables Ltd, at the request of the Environmental Dimension Partnership, to undertake a magnetometer survey of an area of land at Place Barton Farm, Moreleigh in Devon.

Rydon Farm, Ogwell, Devon, Evaluation: An archaeological evaluation was undertaken by Cotswold Archaeology in December 2013 at Rydon Farm, Ogwell, Devon. A total of sixteen trenches were excavated. The evaluation identified a number of archaeological features which generally correlated well with a preceding geophysical survey.

The Old Chapel off High Street, Newport Pagnell, Watching Brief: An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with the residential redevelopment of the Old Chapel, off High Street, Newport Pagnell, Milton Keynes. The watching brief identified the remains of a possible post-medieval/modern brick wall to the north-east of the standing Old Chapel

VAG Dendrochronology Database update: The database now holds almost 3500 dates for buildings in the United Kingdom.

Whitchurch Reservoir, Whitchurch: In July 2014, Cotswold Archaeology carried out an archaeological watching brief at Whitchurch Reservoir, near Whitchurch, Buckinghamshire. The work, which was commissioned by Thames Water Utilities Ltd, was undertaken during groundworks associated with improvement works to the reservoir infrastructure. No archaeological deposits or features were encountered

within the site and no archaeologically significant artefacts were noted in the excavated spoil.

May 2015

Northam Burrows HELS archaeological survey (OASIS ID: acarchae2-167239):

An archaeological survey of Northam Burrows was prepared as part of a Higher Level Environmental Stewardship Scheme. The survey was carried out to inform future management, with particular emphasis on the control of vegetation. A total of 27 heritage assets were previously recorded within the holding, and the survey identified a further seven sites.

Urubici Rock Art Project: The Urubici Rock Art Project aimed to document pre-Columbian petroglyphs located in the Avenal 1 site (São Joaquim National Park, Brazil) using Polynomial Texture Mapping (PTM). An associated article evaluates the application of PTM in terms of information gain over traditional techniques. Avenal is one of the most recognised petroglyph sites in the southern Brazilian highlands.

June 2015

A Viking-age cemetery at Cumwhitton, Cumbria: In March 2004, a Cumbrian metal detectorist was given permission to examine farmland on the western edge of Cumwhitton (NY 503 525), a small village in the Eden Valley, south-east of Carlisle. There he found an object in the ploughsoil which was subsequently identified as a Viking oval brooch of ninth or tenth-century date.

Atlas of Rural Settlement in England: The Atlas of Rural Settlement in England GIS comprises the results of two projects based on Brian K Roberts and Stuart Wrathmell's *An Atlas of Rural Settlement in England* (2000).

Cruck Database update: The Vernacular Architecture Group have updated the Cruck database to contain a total of 6,132 entries - 4,231 true and 1,056 jointed crucks. In this update, two pairs of counties (Hereford & Worcester, and Leicestershire & Rutland) combined in 1974 but later divided again have been separated into their components.

Elms Farm Portfolio Project: The Late Iron Age, Roman and Early Saxon settlement at Elms Farm, Heybridge, Essex was excavated in the mid-1990s in advance of the construction of a large housing estate by Bovis Homes Ltd. The total development area comprised c.29 hectares, of which some 18 hectares were subject to varying degrees of investigation by the Essex County Council Field Archaeology Unit (ECC FAU). The large-scale of the excavations is matched by the substantial and important artefact assemblage recovered, which included 6.4 tonnes of Late Iron Age and Roman pottery, 2910 Roman coins and over 9000 animal bones.

Exeter Drainage (OASIS ID: cotswold2-145081): A watching brief was maintained by Cotswold Archaeology during repair works to the surface drainage and highways enhancements in Exeter High Street.

Gas Main Replacement, High Street and Ramparts Walk, Totnes, Devon: Archaeological Watching Brief (OASIS ID: cotswold2-152608): An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with gas main replacement on the High Street and Ramparts Walk, Totnes, Devon. The remains of an undated north/south aligned wall were identified to the west of St Mary's Church in the High Street.

Land at Elm Grove Road, Dawlish, Devon (OASIS ID: cotswold2-133318): A programme of archaeological works was undertaken by Cotswold Archaeology in March and July 2012 at land at Elm Grove Road, Dawlish, Devon. A total of eight trenches were excavated.

Land at Ottery Road, Feniton, Devon (OASIS ID: cotswold2-106411): An archaeological evaluation was undertaken by Cotswold Archaeology in January 2011 on land at Ottery Road, Feniton, Devon. A total of four trenches was excavated.

Land East of Tiverton, Devon (OASIS ID: cotswold2-154888): An archaeological evaluation was undertaken by Cotswold Archaeology in October and November 2012 at land east of Tiverton, Devon. Thirty trenches were excavated. A pit cluster was identified. Radiocarbon analysis of charcoal fragments recovered from one of the pits indicates an Early Bronze Age date.

Land East of Tiverton, Devon (OASIS ID: cotswold2-154888): An archaeological evaluation was undertaken by Cotswold Archaeology in October and November 2012 at land east of Tiverton, Devon. Thirty trenches were excavated. A pit cluster was identified. Radiocarbon analysis of charcoal fragments recovered from one of the pits indicates an Early Bronze Age date.

Land off New Road, Teignmouth, Devon: Archaeological Evaluation (OASIS ID: cotswold2-124259): An archaeological evaluation was undertaken by Cotswold Archaeology in February 2012 at Land off New Road, Teignmouth, Devon. Twenty three trenches were excavated.

Land South of the Met Office, Exeter, Devon (OASIS ID: cotswold2-151429): An archaeological evaluation was undertaken by Cotswold Archaeology in October 2012 on land to the south of the Met Office in Exeter, Devon. A total of four trenches were excavated. Two ditches previously recorded as geophysical anomalies were identified but neither contained dating material.

ROMURBITAL - an archaeological database of higher-order settlements on the Italian peninsula (350 BCE to 300 CE): ROMURBITAL's data-files are the product of a two-year research project to create an analytical database and GIS of 583 (proto-) urban centres on the Italian peninsula that existed between 350 BCE and 300 CE.

Tithebarn Green, Monkerton, Devon: Archaeological Evaluation: An archaeological evaluation was undertaken by Cotswold Archaeology in February 2012 at Tithebarn Green (Monkerton), Devon. The fieldwork comprised the excavation of 13 trenches.

Wales and West Utilities Gas replacement programme 2012-2014 Exeter (OASIS ID - cotswold2-201931): Archaeological watching briefs were undertaken by Cotswold Archaeology during groundworks associated with gas main replacement works located at Cathedral Green I, Bartholomew Street West, Bedford Street, Northernhay Street, North Street and Cathedral Green II (and in most cases works extended into neighbouring streets) within Exeter city centre.

July 2015

Land at Crowpits, Honiton, Devon (OASIS ID: archaeol11-188876): A geophysical (magnetometer) survey, covering approximately 23 hectares, was carried out south of Honiton to inform planning proposals for a solar park development at Crowpits.

Virginstowe Bridge, Virginstowe, Devon (OASIS ID: acarchae2-199200): An historic building record of a former railway bridge was made prior to infilling of the track below the arch. The bridge carried a local road over the North Cornwall Railway.

A corpus of Anglo-Saxon cruciform brooches: This dataset represents a digital companion to the book *The Cruciform Brooch and Anglo-Saxon England* published by Boydell and Brewer in 2015. This book establishes not only a new typology and chronology for these items, but also investigates their social context in some detail, considering aspects such as production, exchange and repair; social identity and social structure; and dress and burial..

Assessing the impact of water draw-down on archaeology in aggregate areas: This ALSF funded project was designed to develop a Dynamic Baseline Methodology (DBM) to assist in the basic interpretation of water environment monitoring data in order to differentiate background changes (both natural and anthropogenic) in the water environment within sand and gravel deposit areas.

Castleward, Derby: Archaeological Recording (OASIS ID: ecusltd1-200276): Ecus Ltd. were commissioned by Consortium Living in November 2014 to undertake a programme of archaeological recording at Area B5 of the Castleward Urban Village regeneration scheme in Derby.

Chard Junction Quarry, Dorset: Palaeolithic Archaeological Resource: This ALSF funded project reports on the monitoring of aggregates extraction at the site of Chard Quarry in the Axe Valley, Dorset. The report includes dating and contextualization of recovered bifaces.

City of York Historic Environment Characterisation Project: The City of York Historic Environment Characterisation Project has created a narrative and graphic base-line understanding of the character and significance of the suburban areas of York: part of the setting of the historic core. It has also added an archaeological component to the character area statements contained within the York Central Historic Core Conservation Area Appraisal.

ENN107840 J582 Denton Lodge, Northamptonshire, Magnetometer Survey Report (OASIS ID: archaeol20-209815): A detailed magnetometry survey was carried out at Denton Lodge, Denton near Northampton, by Archaeological Surveys Ltd at the request of CgMs Consulting. The survey covered a 1ha block centred on the proposed location of a single wind

Land at Dunkeswell Airfield, Dunkeswell, Devon: Archaeological Strip, Map and Sample Excavation: An archaeological strip, map and sample excavation was undertaken by Cotswold Archaeology in July 2014 at Land at Dunkeswell Airfield, Devon, whereby Areas 1, 2, 3 and 4 were machine excavated. The strip, map and sample excavation identified an extensive series of sixteen pits and a ditch.

Land at Sentry's Farm, Exminster, Devon: Archaeological Evaluation: An archaeological evaluation was undertaken by Cotswold Archaeology in November 2013 on Land at Sentry's Farm, Exminster, Devon. Four trenches were excavated. The evaluation has identified a small number of archaeological features within the proposed development area.

Land off Station Road, Feniton, Devon (OASIS ID: oxfordar1-178779): Between the 15th and the 17th of May 2013 Oxford Archaeology (OA) carried out a field evaluation within two adjoining fields at land off Station Road, Feniton, Devon.

Land West of Combe Hayes, Sidmouth: An archaeological evaluation was undertaken by Cotswold Archaeology in July 2013 at land west of Combe Hayes, Sidmouth, Devon. Eight trenches were excavated. A large shallow feature, probably representing a naturally infilled combe or hollow, was identified in the south-western corner of the site.

Northamptonshire Historic Landscape Character Assessment: The Northamptonshire Historic Landscape Character Assessment provides a detailed review and description of the historic character of the Northamptonshire Landscape. The Northamptonshire HLCA seeks to analyse the general surviving historic character of the County and group areas of broadly similar character into Character Types, and then to sub-divide these into geographically distinct Character Areas.

The Grand Western Canal, Halberton, Devon (OASIS ID: cotswold2-179157): An interpretative earthwork survey, photographic survey and watching brief were undertaken on a section of the Grand Western Canal, Halberton, Devon in association with restoration work around a breach in the canal embankment. Detailed plans, elevations and sections as well as a photographic record of the exposed fabric of the canal and associated infrastructure were completed.

The Lord Crewe Arms Historic Building Record (OASIS ID: jbherita1-194250): JB Heritage Consultancy was commissioned to carry out a Level 2 Historic Building Record of The Lord Crewe Arms, The Square, Blanchland, Consett, County Durham.

Geophysical Survey of Proposed Solar Park, Collacott Farm, Fremington, North Devon (OASIS ID: archaeop1-197543): A magnetic survey was commissioned by CgMs Consulting to prospect land at Collacott Solar Park, Newton Tracey, Devon for buried structures of archaeological interest.

(E) CONFERENCES & PRESENTATIONS

July 2015		
20-22 July	Linked Pasts , London	Presentation by Holly Wright 'Introduction to ARIADNE'
15 July	DPC Event, Preserving Documents Forever: When is a PDF not a PDF? , Weston Library, Oxford.	Presentation by Tim Evans 'Preserving PDF at the coalface. PDF/A at the Archaeology Data Service'
14 July	MEDIN DAC working group , Swindon	Presentation by Louisa Matthews 'Archiving Marine Data and MEDIN'
13-14 July	Research Data Spring , London	Attended by Katie Green and Michael Charno
8 July	Centre for Digital Heritage Workshop , York	Presentation by Michael Charno 'Plan, Features, Sections: Using NLP to remove ambiguity from Grey Literature'. Attended by Julian Richards, Holly Wright, Judith Winters. Presentation by Marie Curie fellow Fabrizio Galeazzi '3D Web-Based Dynamic Platforms in Archaeology'
June 2015		
30 June	Connecting the Bits , York	Attended by Jo Gilham and Jenny O'Brien

25-26 June	NEARCH Project Plenary , Thessaloniki	Attended by Holly Wright and Julian Richards
22 June	WRoCAH Research Data Management Training , Leeds	Breakout groups led by Katie Green and Tim Evans
May 2015		
27 May	Archives Exchange , Sheffield	Attended by Louisa Matthews
21-22 May	Digital Heritage 2015 , Aarhus	Attended by Julian Richards. Presentation by Marie Curie fellow Fabrizio Galeazzi 'From research archives to web-based visualization: the ADS 3D viewer'
April 2015		
23 April	UK Research Data Discovery Service Workshop , London	Attended by Katie Green and Michael Charno
15-19 April	SAA , San Francisco	Presentations by Julian Richards 'Encouraging Open Methods Via Data Repositories', and Holly Wright 'Mobile App Development at the Archaeology Data Service'. Julian Richards session discussant in 'Lithics Cowgirl, Household Archaeologist, Digital Doyenne: A Session Dedicated to Ruth Tringham'
15-16 April	CifA Conference , Cardiff	Presentation by Jo Gilham 'UK-level data collection ADS and OASIS, workflow and best practice'. Attended by Katie Green and Louisa Matthews
14 April	The Rural Settlement of Roman Britain: project conference , University of Reading	Presentation by Tim Evans 'Introducing the online resource'
3 March-2 April	CAA , Siena	Presentation by Michael Charno 'dB Trendlust: or how I learned to stop worrying and love the spreadsheet'. Session chaired by Julian Richards and Holly Wright - 'Supporting researchers in the use and reuse of archaeological data: following the ARIADNE thread'
March 2015		
31 March	DPC Event, Getting Started in Digital Preservation , Leeds	Presentation by Ray Moore 'Making sense of a collection: what happens when things don't go to plan?'
25-26 March	MEDIN meeting , Edinburgh	Attended by Louisa Matthews
25 March	CIFA Archaeological Archives Group , Birmingham	Attended by Ray Moore
16-18 March	DPTP , London	Attended by Louisa Matthews
12 March	Archaeological Archives Forum , Truro	Attended by Katie Green
9-10 March	Digital Data Management Workshop , Leicester	Taught by Katie Green, Judith Winters and Michael Charno
6-7 March	CAA UK , Bradford	Presentations by Michael Charno 'Plan, Features, Sections: Using NLP to remove ambiguity from Grey Literature' and Tim Evans 'What have the Romans ever done for us? Digital strategies for bridging research syntheses and fieldwork reports'
30 March-3 April	CAA , Siena	Session chaired by Julian Richards and Holly Wright 'Supporting researchers in the use and reuse of archaeological data: following the ARIADNE thread' and presentation 'dB Trendlust: or how I learned to stop worrying and love the spreadsheet' by Michael Charno

February 2015		
26 February	ICOMOS UK , York	Presentation by Julian Richards 'Digital Data in archaeology: long term preservation and access - the work of the Archaeology Data Service'
24 February	Society of Antiquity Scotland Open Access Day , Edinburgh	Presentation by Julian Richards 'Opportunities and Challenges of Open Access in Archaeology' and Judith Winters
11-12 February	Digital Past , Swansea	Presentation by Holly Wright 'LoCloud Collections'. Attended by Judith Winters
9-11 February	IDCC , London	Attended by Katie Green
December 2014		
17 December	The rural settlement of Roman Britain: Northeast + Northwest Seminar , Durham	Presentation by Tim Evans 'Digital Dissemination Strategies'
11-12 December	NEARCH Meeting , York	Presentations by Julian Richards 'Turning the Grey Literature White', Michael Charno 'Mobile technologies' and Judith Winters 'Exploring Multiple forms of Dissemination'. Attended by Katie Green and Holly Wright
3-5 December	NEARCH Meeting , Paris	Attended by Holly Wright
2 December	Austrian Days of Digital Humanities , Vienna	Presentation by Catherine Hardman 'Archiving archaeological data in the UK: the ADS experience'
November 2014		
28-29 November	Data Management Workshop , Cologne	Presentation by Katie Green 'Digital Data in archaeology: preservation, access and reuse – the work of the Archaeology Data Service'
25 November	FISH Terminology Working Group , London	Attended by Kieron Niven
19-21 November	LoCloud Technical Workshop , Poznan	Attended by Holly Wright
18-19 November	RDMF: Linking Data and Repositories , Leicester	Attended by Michael Charno
18 November	HEIRNET , Cardiff	Presentation by Katie Green 'Implementing LOD Vocabularies at ADS'
17-18 November	Investing in Opportunity: Policy Practice and Planning for a Sustainable Digital Future , London	Presentation by Catherine Hardman 'What sustainability means in practice: A repository perspective from the ADS'
13-15 November	European Research Infrastructures Conference , Rome	Presentation by Julian Richards 'Good Data Management and Online Access'. Attended by Holly Wright
9-12 November	ICOMOS 18th General Assembly , Florence	Presentation by Holly Wright 'LoCloud Collections'
October 2014		
31 October	Making Progress in Digital Preservation , London	Presentation by Catherine Hardman 'Organisational alignment: How the ADS responds to external change'
22 October	Archaeological Archives Forum , Edinburgh.	Attended by Katie Green
15 October	The rural settlement of Roman Britain: Yorkshire Seminar , York	Presentation by Tim Evans 'Digital Dissemination Strategies'

8 October	8th Congress of Archaeology , Berlin	Presentation by Julian Richards 'Measuring the impact of long term archaeological data archiving and re-use'
7 October	ALGAO HER Committee	Attended by Catherine Hardman
September 2014		
24 September	Archaeological Archives Group Plenary , London	Attended by Kieron Niven
10-14 September	EAA2014 , Istanbul	Presentation by Julian Richards 'Opportunities and Challenges with Open Access and Open Data in the UK'. Workshop organised by Holly Wright 'Opportunities within the ARIADNE Network'
1-2 September	Preserving PDF identify, validate, repair , Hamburg	Attended by Jo Gilham
August 2014		
26-27 August	DataCite ODIN ,	Presentation by Michael Charno

(F) PUBLICATIONS

- Evans, T.N.L. and Moore, R.H. (2014) 'Beyond 'The Preserving machine': Promoting Use and Reuse of Grey Literature and Grey Data'. *The Archaeological Review from Cambridge*. Vol 29.2. 212-225.
- Green, K. (2014) 'Use of a Digital Archive: The Archaeology Data Service'. 'The Archaeological Review from Cambridge. Vol 29.2. 226-243.
- Evans, T.N.L. and R.H. Moore (2014) 'The Use of PDF/A in Digital Archives: A Case Study from Archaeology' *International Journal of Digital Curation*. Vol. 9, No. 2, pp. 123-138. DOI: [10.2218/ijdc.v9i2.267](https://doi.org/10.2218/ijdc.v9i2.267)