



East Midlands Heritage: A Research Agenda and Strategy for the Historic Environment

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Compiled on behalf of the region's historic environment community
by David Knight, Blaise Vyner and Carol Allen

Cover: Detail of Tudor map of the River Trent (dated 1500-1540), showing multiple river courses and contemporary mills, bridges and villages around Newark (© The British Library Board. Cotton Mss Augustus 1.i 65; Salisbury, C.R. 'An early Tudor map of the River Trent in Nottinghamshire', Transactions of the Thorton Society of Nottinghamshire 87, 54-59)

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Integrating archaeology and the built environment: the gardens of Lyveden New Bield in Northamptonshire preserve an exceptional range of earthworks and sub-surface remains permitting detailed study of this early garden landscape. The unfinished gardens, created by Sir Thomas Tresham from 1595 to his death in 1605, provide a rare insight into early garden design in England. Visitors would have been guided from nearby Lyveden Manor through an intricate complex of orchards, terraces, moats and viewing mounts, including this unusual spiral ('snail') mound, before reaching the imposing garden lodge that stands beyond the moat encircling the mound. Photograph: D. Knight

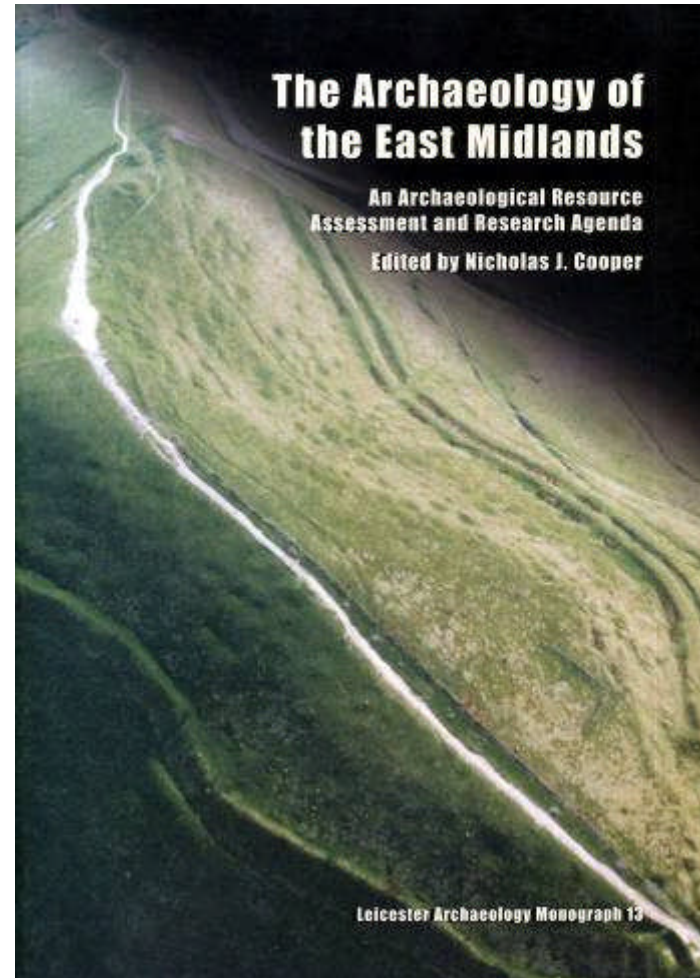
1 INTRODUCING THE RESEARCH AGENDA AND STRATEGY

Introduction

This project commenced in January 2008 and represents the final stage for the East Midlands of the Regional Research Framework initiative proposed in the English Heritage publication *Frameworks for our Past*¹. It builds upon the *Archaeology of the East Midlands*², which was published in 2006 after extensive consultation with the region's historic environment community³, and provides an updated Research Agenda and Strategy for the historic environment.

The project has been co-ordinated by David Knight and Blaise Vyner, with valuable input from Carol Allen in its earlier stages. It has been made possible by funding provided by English Heritage and has been guided by a Steering Group with members drawn from the curatorial, academic, contracting and consultancy sectors. The project has also benefited from the input of an advisory panel comprising a broad range of period and subject experts who have offered specialist advice on all aspects of the historic environment.

Beyond this, we have sought to consult widely with historic environment stakeholders across the region with the aim of integrating archaeology and the built environment and a broad range of academic disciplines. We have liaised closely with individuals and organisations with interests in the historic environment, including developers, consultants and voluntary bodies, together with archaeologists and buildings specialists from the academic, contracting, curatorial and museum sectors. Representatives of other national and regional organisations, including English Heritage, the National Trust, Natural England and the Environment Agency, have also been widely consulted. We currently have a contact list of over 500 consultees that continues to grow as additional organisations and individuals with a strong stake in the regional heritage are identified.



The Archaeological Resource Assessment and Research Agenda for the East Midlands provides the springboard for the strategy presented in this document. © University of Leicester Archaeological Services

Developing the Agenda and Strategy

Several years have passed since publication of *The Archaeology of the East Midlands*², and it was decided that the published Agenda should be updated prior to commencing work on the Strategy. This was deemed necessary to ensure the inclusion of important new research, to embrace new concerns such as climate change⁴ and to formulate a more holistic approach to the historic environment in keeping with the spirit of the draft Heritage Protection Bill⁵.

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Our first task was to summarise the published Agenda and to circulate the summary for comment. This provided a springboard for a public seminar in May 2008, which aimed to update the Agenda and to identify the key priorities for future research⁶.

Further consultation was recommended with built environment specialists, and a separate workshop on the built environment was convened in December 2008. This generated Agenda and Strategy documents for the built environment that, along with all other comments received, were integrated into an updated Research Agenda.



Nelson Pyramid, Thoresby Park, Nottinghamshire: built in 1799 to celebrate Nelson's victory at the Battle of the Nile, this curious monument sits in a parkland environment preserving a rich archaeological and built heritage. Photograph: R. Sheppard

Research strategies were discussed at a workshop convened in April 2009, following wide circulation of a document incorporating the updated Research Agenda and templates for the Strategy tables that form the core of this booklet. Strategies proposed by participants on the day were incorporated into a draft strategy document which was then widely disseminated for feedback.

Comments on the Strategy document were incorporated into a final draft, which was circulated to consultees for further feedback. All comments have been taken into account in this document, which represents a distillation of many opinions on the priorities for future research. Attention is restricted to questions that may potentially be answered by reference to the historic environment resource of the East Midlands.

Presenting the Research Agenda and Strategy

Attention is focused first upon the essential building blocks of research, without which the research strategies recommended in this document cannot easily be implemented. Following this, we present a series of tables aimed at summarising succinctly by period the agenda topics identified by consultation and the strategies recommended for addressing these topics. Environmental archaeology was discussed separately in the Archaeology of the East Midlands⁷, but in this document has been integrated fully into the period syntheses. This reflects concerns that environmental issues, which are central to our understanding of landscape change, should be taken fully into account when formulating research proposals.



Wattle-lined Roman well with waterlogged plant remains found during dualling of the Fosse Way near Brough, Notts. Photograph: B. Vyner



Recent excavations in The Crypt, outside Church Hole Cave at Creswell Crags, have yielded in situ Late Upper Palaeolithic stone tools and fauna of national significance. Photograph: D. Knight

Many of the topics identified in the period syntheses, such as the process of woodland clearance or the growth of towns, overlap period boundaries. These cross-period themes are brought together in a final section, which identifies a number of overarching research themes to which East Midlands sites can make an especially significant contribution.

Applying the Strategy

This document is intended as a resource for all individuals and organisations involved in historic environment research projects in the East Midlands. It also aims to assist curators, developers, archaeological contractors and consultants in the preparation of schemes to mitigate the impact of development, and thus complements HM Government's *Planning Policy Statement for*

the Historic Environment (PPS 5), the vision document that underpins this and English Heritage's Practice Guide to *PPS 5*⁸.

The Strategy identifies research priorities agreed by the region's historic environment community and will assist with research bids to funding bodies and the focusing of resources upon issues of key importance for understanding the historic environment of the East Midlands. It should not be regarded as in any way prescriptive, but rather as a tool for facilitating research and grant applications.

Reviewing and updating the Research Strategy

The Agenda and Strategy are seen as living documents which will evolve as research objectives are met and as priorities change, and we anticipate regular revisions of Agenda topics and Research Objectives. The Strategy will be reviewed annually by the Steering Group, initially over a five-year period, Progress on the Research Objectives defined in this document will be assessed and priorities revised where appropriate. We welcome continued input from stakeholders, who we hope will communicate with the project Steering Group via the project website.

Project website

A digital version of this publication in PDF format may be downloaded from the English Heritage website (<http://www.english-heritage.org.uk>), together with details of public seminars, workshops and documents produced during consultation. Information on stakeholder conferences and other events aimed at advancing further the strategy may also be obtained from this website.

References

- ¹ Olivier, A. 1996. *Frameworks for Our Past*, London: English Heritage.
² Cooper, N. (ed) 2006. *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, University of Leicester.

³ See Cooper, N.J. and Clay, P. 2006. The national and regional context of the research framework, in Cooper (ed) 2006, 1-9.

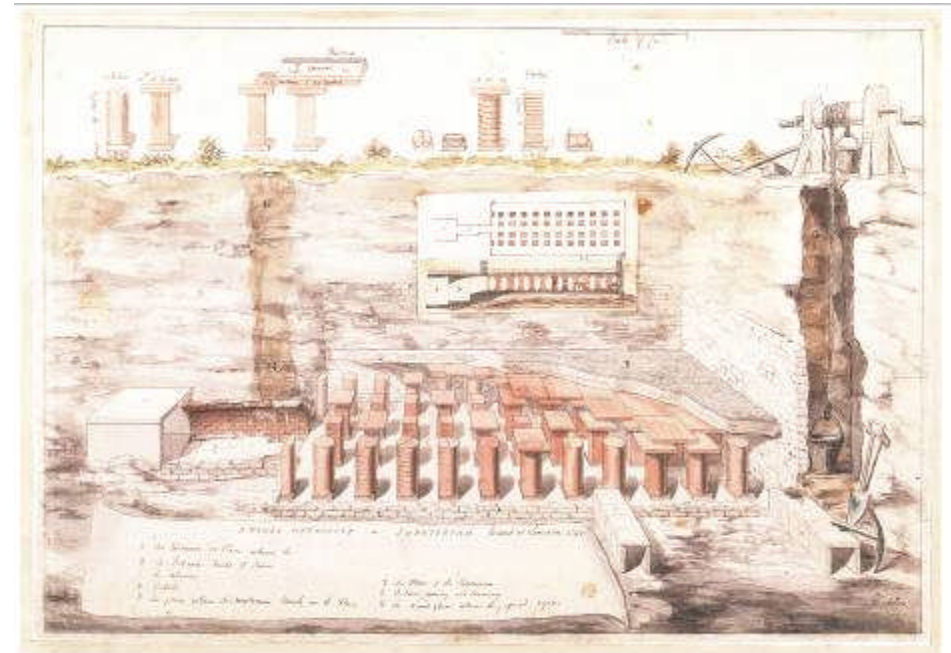
⁴ e.g. Howard, A.J., Challis, K., Kincey, M.E., Holden, J. and Passmore, D.G. 2008. The impact of climate change on archaeological resources in Britain: a catchment scale assessment, *Climatic Change* 91, 405-422.

⁵ http://www.english-heritage.org.uk/professional/designation/heritage-protection-reform/history_of_hpr/.

⁶ See <http://www.english-heritage.org.uk> for details of seminars and workshops plus documents produced during consultation.

⁷ Monckton, A. 2006 Environmental Archaeology in the East Midlands, in Cooper (ed) 2006, 259-286.

⁸ <http://www.britarch.ac.uk/conservation/heritagereform>



Early research in Roman Lincoln: drawing by George Vertue of hypocaust revealed in 1769. Reproduced by permission of the Society of Antiquaries of London

2 THE STUDY AREA

The Research Assessment and Agenda focused upon the East Midlands region as defined by central Government, comprising the modern counties of Derbyshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire and Rutland, together with the unitary authorities of Derby, Leicester and Nottingham¹. The districts of North Lincolnshire and North-East Lincolnshire, which fall within the Yorkshire and Humberside region, were excluded from consideration². The exclusion of North and North-East Lincolnshire from the resource assessment posed a number of difficulties, most notably for study of the Early Medieval kingdom of Lindsey³, and for the purposes of preparing this strategy we have taken into account where relevant the historic environment resource of the whole of the historic county of Lincolnshire.

The salient feature of the study area is its location astride the interface of upland and lowland England. This has contributed to the development of a wide variety of ecological zones, embracing at one extreme the gritstone moors of the Derbyshire Dark Peak and at the other the low-lying fens and coastal marshes of Lincolnshire. This remarkably diverse region has justly been regarded as a microcosm of England⁴, making it an ideal field laboratory for studies of the interaction between human activity and the environment⁵. Its location adjacent to the submerged landscapes of Doggerland⁶ adds to its unique character, and provides valuable opportunities for study of the relationship between the terrestrial and marine archaeological resource.

References

¹ Cooper, N.J. and Clay, P. 2006. The national and regional context of the research framework, in Cooper, N.J. (ed) 2006. *The Archaeology of the East Midlands*, Leicester Archaeology Monographs. 13, University of Leicester 1, fig.1

² These form part of the on-going Yorkshire and Humberside Archaeological Research framework

³ e.g. Vince, A.G. 2006. The Anglo-Saxon period, in Cooper (ed) 2006, 165.

⁴ Cooper and Clay 2006, 5.

⁵ Cooper, N. 2006. Cross-period research and the foundation of a research strategy, in Cooper (ed) 2006, 287-289.

⁶ Gaffney, V., Fitch, S. and Smith, D. 2009. *Europe's Lost World: The Rediscovery of Doggerland*, York: CBA Research Report 160



The East Midlands study area: county boundaries.
© University of Leicester Archaeological Services



Upland landscapes: Longstone Edge, Derbyshire. Bronze Age cairn on the Carboniferous Limestone plateau. Photograph: J. Last



Valley landscapes: Gonalston, Nottinghamshire. Iron Age boundary ditch flanked by sub-alluvial gravel bank. Photograph: L. Elliott

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3 CHRONOLOGICAL FRAMEWORK

The chronological framework employed in this study follows broadly the period divisions of the 2006 *Archaeological Resource Assessment and Research Agenda*¹. Minor revisions to this scheme have been made to take account of more recent prehistoric research, notably the chronology of early hominin colonisation² and reassessment of the Bronze Age-Iron Age transition³. For simplicity, the 'Anglo-Saxon' period of the earlier study⁴ has been subsumed into an 'Early Medieval' period embracing the imposition of the Danelaw from AD793-1042 and

the re-establishment of the Anglo-Saxon monarchy prior to the Norman Conquest of AD1066. To permit closer correlation with commonly used and widely understood historical chronologies, we have linked the inception of the Post-Medieval period to the establishment by Henry VII of the Tudor dynasty after the defeat of Richard III at Bosworth Field in 1485 – one of several pivotal battles which have left enduring traces in the archaeological record of the East Midlands⁵. Details of the nine periods that form the framework of this study are provided in the table below.

| Period name | Date range <i>kya: thousand years ago (period beyond limits of radiocarbon dating)</i> ⁶ <i>BP: uncalibrated years before present (for periods datable by radiocarbon; measured according to convention from AD1950)</i> ⁷ <i>cal BC: calibrated years BC</i> ⁷ | Comments |
|--|---|---|
| Palaeolithic (Old Stone Age) | Archaeological Period 1 (Cromerian and early Intra-Anglian): c.950/850 - c.450kya (MIS 25 - MIS12) | Pleistocene hunter-gatherer communities: intermittent occupation, correlating with periods of warmer climate. Periods 1 to 5 follow the scheme of archaeological periods outlined by McNabb in the East Midlands Assessment and Agenda ⁸ and are dated broadly by correlations with Marine Isotope Stages (MIS) ⁹ . In Britain, the earliest cultural remains of Period 1 may be correlated currently with either Marine Isotope Stage 25 (970-936kya) or 21 (866-814kya) ¹⁰ . Period 1 activity is known in the East Midlands, but cannot yet be closely dated within the broad time bracket assigned to this period. |
| | Archaeological Period 2 (Pre-Levallois Lower Palaeolithic): c.450 - c.250kya (MIS12 - Early MIS8) | |
| | Archaeological Period 3 (Levallois Lower Palaeolithic): c.250 - c.150kya (Late MIS8 - Early MIS6) | |
| | Archaeological Period 4 (Mousterian): c.60 - c.40kya (MIS3) | |
| | Archaeological Period 5a (Early Upper Palaeolithic): c.40,000 - c.25,000 BP (Late MIS3 - Early MIS2) | |
| | Archaeological Period 5b (Late Upper Palaeolithic): c.13,000 - c.9,700 BP (Late MIS 2) | |
| Mesolithic (Middle Stone Age) | c.9700BP to c.4000cal BC | Post-glacial (early Holocene) hunter-gatherer communities, characterised archaeologically by distinctive lithic artefact kits. |
| Neolithic (New Stone Age) and earlier Bronze Age | Neolithic: .c.4000 cal BC- c.2200 cal BC | Further changes in lithic artefact technology, coinciding with a gradual shift from a hunter-gatherer to an agricultural subsistence base and other key changes such as the development of pottery and the development of copper metallurgy in the later Neolithic (c.2400 - c.2200 cal BC). |

| | | |
|------------------------------|---|--|
| | Early Bronze Age: c.2200 cal BC – c.1500 cal BC | Expansion of bronze-working technology; technological and typological developments evident in bronze artefact assemblages distinguish the Early from the Middle Bronze Age. |
| | Middle Bronze Age: c.1500 to c.1150-cal BC | |
| Late Bronze Age and Iron Age | Late Bronze Age: c.1150 –c.800 cal BC ¹¹ | Further developments of bronze-working technology and artefact typology. |
| | Iron Age: c.800 cal BC to AD 43 ¹¹ | Replacement of bronze by iron as the main raw material for tools and weapons (developing from LBA roots). |
| Romano-British | AD 43 to c.AD410 | From the Claudian conquest to the collapse of Roman administration and the withdrawal of Roman political and financial support in the early fifth century (conventional date of c.AD 410 employed here but the chronology remains a subject of continuing debate ¹²) |
| Early Medieval | c.AD 410 to 1066 | From the withdrawal of Rome to the defeat of King Harold by William I. This embraces a 'sub-Roman' period of uncertain duration, preceding the settlement from the fifth century of Germanic migrants, Viking raids culminating in establishment of the Danelaw in eastern and northern England (793-1042) and re-establishment of the Anglo-Saxon monarchy following the defeat of Cnut (1042). |
| Highr Medieval | 1066 to 1485 | From the Norman Conquest to the Battle of Bosworth. This crucial East Midlands battle saw the defeat of Richard III by Henry Tudor (crowned Henry VII) and the beginning of the Tudor dynasty. |
| Post-Medieval | 1485 to 1750 | From the Battle of Bosworth to the beginnings of the Industrial Revolution. |
| Modern | 1750 to present | The Industrial Revolution, driven by developments from the mid-eighteenth century along the Derwent Valley, Ironbridge Gorge and elsewhere, heralds the beginning of the Modern period. |

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References

- ¹ Cooper, N.J. and Clay, P. 2006. The national and regional context of the research framework, in Cooper, N.J. (ed) 2006. *The Archaeology of the East Midlands*, Leicester Archaeology Monographs No. 13, University of Leicester, 3.
- ² Parfitt, S.A. *et al.* 2010. Early Pleistocene human occupation at the edge of the boreal zone in northwest Europe, *Nature* 466, 229-233; see also Parfitt, S., Ashton, N. and Lewis, S. 2010, Happisburgh, *British Archaeology* 114, 15-23.
- ³ Needham, S. 2007. 800BC, The Great Divide, in Haselgrove, C. and Pope, R. (eds) *The Earlier Iron Age in Britain and the Near Continent*. Oxford: Oxbow, 39-64.
- ⁴ Vince, A.G. 2006. The Anglo-Saxon period, in Cooper, N.J. (ed) 161-184.
- ⁵ See Research Objective 7H
- ⁶ As employed by McNabb, J. 2006. The Palaeolithic, in Cooper, N.J. (ed) 2006. *The Archaeology of the East Midlands*, Leicester Archaeological Monographs No. 13, University of Leicester, 13.
- ⁷ For radiocarbon conventions, especially where applied to the Pleistocene, see e.g. Buteux, S. (ed.) 2009. *Digging Up the Ice Age*, Oxford: Archaeopress, 107-108.
- ⁸ McNabb 2006, 13-15.
- ⁹ McNabb 2006, 12-17; see also Buteux, S. (ed.) 2009. *Digging Up the Ice Age*, Oxford: Archaeopress, 9-11, fig.11.
- ¹⁰ Parfitt *et al* 2010.
- ¹¹ See Needham 2007 for current dating of later Bronze Age-Iron Age transition
- ¹² See e.g. Moorhead, S. 2010, 410 – 2010: Rome and Britain, *British Archaeology* 111, 17-21.

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4 BUILDING THE RESEARCH FOUNDATIONS

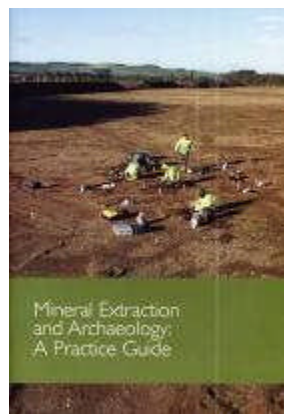
Adequate foundations need to be laid in order that the recommended research strategies can be implemented. The following recommendations have emerged from discussions with stakeholders and are regarded as essential prerequisites for the successful application of the research strategies discussed on the following pages.

Enhancing data quality

- *Planning briefs in advance of development:* ensure that curatorial recommendations for the recording of archaeological sites, historic buildings, etc. are consistent across the region.
- *Standards and guidelines:* ensure recommendations of appropriate subject and period groups are taken account of and adhered to.
- *Dating:* audit of radiocarbon dates to be pursued for all periods¹; Bayesian statistical modelling to be encouraged; training in application of Bayesian analysis of radiocarbon dates and other scientific dating techniques².



Planning Policy Statement 5 and English Heritage guidance document for mineral extraction and archaeology



Two Palaeolithic flint handaxes and a pointed quartzite handaxe (centre) from Willington, Derbyshire (© T.S. White and Trent Valley Palaeolithic Project)



Early Bronze Age gold armlets from pit at Lockington, Leicestershire (reproduced by permission of Birmingham Archaeology)

- *Artefacts:* further work to be conducted on the classification and dating of finds for all periods (particularly radiocarbon dating of carbonised accretions on pottery); facilitate synthetic studies by promoting the inclusion of finds drawings or photographs as standard components of archive as well as published reports; promote the use of scientific techniques to investigate changes in technology, production, use, etc (including lipid analysis of ceramics and compositional analysis of pottery, metals, glass, organic artefacts and other materials)³
- *Building materials:* encourage the use of scientific techniques of materials analysis (e.g. mortar and stone or architectural paint analyses)⁴.
- *Monuments:* further refinements of monument classifications to be developed
- *Blank areas:* resources to be focused upon investigating areas with little or no archaeological data.

- *HLC and LCA*: Historic Landscape Characterisation and Landscape Character Assessments to be regionally compatible, current and readily accessible.
- *Built environment*: provide assessments of built environment resources that are currently poorly understood, and ensure full integration in historic environment research of the archaeological and built environment resource.
- *Site location and survey*: maximise the value of the air photographic record by continued air photo mapping⁵ and investigate further the effectiveness of remote sensing techniques; encourage the application of innovative terrestrial or offshore geophysics, airborne lidar, multispectral and hyperspectral imaging and ground-based scanning techniques⁶.

Making better use of the archive

- *Historic Environment Records (HERs)*: improve long-term maintenance of the existing resource, regular updating of records and ease of access (including provision of on-line resources).
- *Grey literature*: improve accessibility by historic environment stakeholders to this rich body of evidence by encouraging and supporting the addition to the Archaeological Data Service (<http://ads.ahds.ac.uk/catalogue/library/greylit>), HER and other websites of unpublished reports.
- *Geographical Information Systems (GIS) mapping*: encourage the preparation and web publication by HERs of period and thematic maps.
- *Backlog investigations*: unlock this information through further analysis and conventional paper or digital publication; archives should be made available on-line wherever possible.
- *Portable Antiquities Scheme*: enhance access to information.
- *Academic studies and research*: the results of this work should be added to HERs.

- ***Online Access to the Index of archaeological investigationS (OASIS)***: ensure that the requirement for OASIS entries is specified in project briefs, costed by all tendering organisations, and submitted prior to the completion of each project. It is recommended that the database be expanded to ensure inclusion of the Research Objectives addressed by each project, thereby facilitating monitoring of progress on the Research Strategy.
- *Archaeological Data Service (ADS)*: further enhance the representation of East Midlands studies, including supporting digital archive data, and ensure that information from the region may be easily accessed.

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Enhancing published and on-line services

- *Local journals*: lists of contents and contributions to be made available on line.

- *Publication*: explore the options for creating a regional publishing medium for archaeological reports.
- *Regional bibliography*: an East Midlands bibliography, building upon that prepared as part of the regional Research Framework, should be made available on-line and maintained as a long-term research resource.



Historic maps appear sometimes in unexpected guises, as shown by this unusual tapestry map of part of south Nottinghamshire. Dating from 1632, it reveals a landscape now transformed by the modern expansion of Nottingham and its suburbs (© Nottingham City Museums and Galleries)

- *Enhance accessibility of historic maps*: catalogues of maps and digital copies to be provided on-line (and added to GIS databases) where possible

Improving communications

- *East Midlands Forum*: an annual meeting for all stakeholders has been recommended as a forum for reviewing progress on the Strategy and reporting on new research projects.
- *Voluntary bodies*: societies and volunteers should be kept aware of research work and should be closely involved in research work (e.g. through the Heritage Lottery Fund).



Excavations of rock-cut ditch of Iron Age hillfort, Fin Cop, Derbyshire; funded by the Heritage Lottery Fund and conducted by Archaeological Research Services in partnership with Longstone Local History Group © Archaeological Research Services Ltd

- *Exhibitions*: museum and travelling exhibitions of recent research work should be encouraged, enhancing the dissemination of knowledge.

- *Volunteer projects*: establish minimum standards for fieldwalking to ensure the recovery of comparable data.
- *Closer liaison between stakeholder groups*: encourage more dialogue between curators, academics, contractors, consultants and the voluntary sector, and forge closer links between diverse academic disciplines.
- *Recognise and enhance the central research role of HERs*: encourage the involvement of HERs in the development of research programmes and the enhancement of HER data through research projects aimed at upgrading existing data (e.g. character and date of lithic scatters).

Enhancing the environmental resource

- Ensure full integration of environmental research with other site work (including analyses of soils and deposits, palaeobotanical remains, animal bones & invertebrates)⁷.
- Develop and maintain a regional environmental database. Regional research would benefit significantly from the provision of an up to date and comprehensive database listing published and unpublished reports and archaeobotanical and zooarchaeological datasets for the East Midlands. This could build upon existing databases, including the list of sites prepared as part of the East Midlands Resource Assessment and Research Agenda⁸, current English Heritage guidelines for the collection and analysis of palaeoenvironmental data and regional reviews of environmental data⁹.
- Encourage regional syntheses of environmental data¹⁰.
- Ensure better access to national and regional environmental reference collections and digital resources
- Enhance Historic Environment Records by ensuring the incorporation of information on environmental data. Guidelines would need to be agreed on the level of documentation, but as a minimum we would recommend inclusion of information on the range of samples collected, specialist analyses and information on the location of the reports, datasets and material retained.



Microscopic examination of waterlogged plant remains from a Roman settlement in the lower Trent Valley near Tiln, Nottinghamshire. © Trent & Peak Archaeology

- Ensure consistent implementation of systematic on-site sampling of feature fills, soils, sediments and organic deposits¹¹ and of off-site locations such as palaeochannels, upland peat bogs, lowland lakes and meres. This should improve understanding of the palaeoeconomy and the local and regional landscape.
- Ensure that sufficiently large samples are taken for effective analyses of environmental samples, and in particular for the statistical analysis of animal bone assemblages¹².

- Recognising that generic sampling strategies can fail to address specific research issues and can be too broad to interrogate satisfactorily the information from specific sites, develop period-specific regional, local and site-based strategies that may be modified further in the light of site potential and scale.
- Assess the regional palaeochannel resource, and develop and maintain a palaeochannel database to inform future research and management. This could usefully build upon the palaeochannel database prepared on behalf of Trent Valley GeoArchaeology¹³.
- Encourage mapping of Pleistocene and Holocene landscapes, including the submerged landscapes of Doggerland.
- Further characterise the environmental signature of key periods, notably the Mesolithic – Neolithic transition and the early Roman, early post-Roman and early industrial periods.
- Obtain data that may elucidate historic environment change and permit monitoring of on-going climate change.
- Encourage studies of the environmental impact of Modern and earlier industrial activity.
- Further research past climatic variability (e.g. from studies of dated palaeochannel fills) as a background to studies evaluating the potential impact of future climate change upon the historic environment resource.
- Ensure systematic recovery of freshwater and marine fish bones for all periods to redress their currently poor representation in the archaeological record.
- Encourage stable isotope analyses of human bones to study variations in diet and population movements and of plants and animals to investigate issues such as manuring practices and seasonal movements of animals¹⁴
- Encourage further DNA analyses of human remains to elucidate genetic relationships between individuals (e.g. in cremation cemeteries).¹⁵



Late prehistoric palaeochannel uncovered during excavations at Girton Quarry, Nottinghamshire. © Trent & Peak Archaeology

References

- ¹ As developed in a wider European context for the Palaeolithic: <http://ees.kuleuven.be/geography/projects/14c-palaeolithic/>
- ² e.g. dendrochronology and optically stimulated luminescence (OSL), archaeomagnetic and rehydroxylation dating: Williams, J. 2009. *The use of Science to Enhance Our Understanding of the Past*, National Heritage Science Strategy Report 2, English Heritage, 15-16, 26-27.
- ³ Williams 2009, 19, 21-22.
- ⁴ Williams 2009, 28.
- ⁵ See for example: Deegan, A. and Foard, G. 2007. *Mapping Ancient Landscapes in Northamptonshire*. Swindon: English Heritage: <http://www.english-heritage.org.uk/publications/mapping-ancient-landscapes-northamptonshire>; Roberts, I., Deegan, A. and Berg, D. 2010. *Understanding the Cropmark Landscapes of the Magnesian Limestone*. West Yorkshire Archaeological Services (http://archaeologydataservice.ac.uk/archives/view/magnesian_ah_2010/index.cfm)

⁶ Williams 2009, 23-24; Crutchley, S. and Crow, P. 2009. *The Light Fantastic: using Airborne Laser Scanning in Archaeological Survey*. Swindon: English Heritage.

⁷ Williams 2009, 17-18.

⁸ Monckton, A 2006. Environmental archaeology in the East Midlands, in Cooper, N.J. (ed.) *The Archaeology of the East Midland*, 262: Table E1.

⁹ e.g. Murphy, P. 2001. *Review of Wood and Macroscopic Wood Charcoal from Archaeological Sites in the East and West Midlands and the East of England*, Centre for Archaeology Report 23/2001, English Heritage.

¹⁰ e.g. Albarella, U. and Pirnie, T. *Zooarchaeology of Central England*
[http:// www.shef.ac.uk/archaeology/research/animals-past](http://www.shef.ac.uk/archaeology/research/animals-past):

¹¹ See Monckton 2006, 259-262.

¹² Williams 2009, 17.

¹³ e.g. Baker, S. 2003. *The Trent Valley: Palaeochannel Mapping from Aerial Photographs*, Trent & Peak Archaeological Unit
(<http://www.tvg.org.uk/palaeochannels.pdf>).

^{14,15} Williams 2009, 18-19.

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5 PERIOD SYNTHESSES

Using the Agenda and Strategy tables

For ease of reference, Updated Research Agenda topics and the strategies recommended for the delivery of research (Research Objectives) are summarised in tabular form for each of the nine periods that form the framework of this document.

Updated Research Agenda topics are colour-coded and, within each topic, key research questions are listed. Tables summarising the Research Objectives for each period are displayed next to the relevant updated Research Agenda table, permitting easy identification of the correlations between the Agenda priorities and Research Objectives for each period.

The Strategy tables are accompanied by summary descriptions of each Research Objective and by details of the following:

- Correlations with updated Research Agenda topics.
- Correlations with the published Resource Assessment and Agenda: Cooper, N. (ed) 2006. *The Archaeology of the East Midlands: An Archaeological Resource Assessment and Agenda*. Leicester: University of Leicester Archaeology Monograph 13 (for simplicity, referred to hereafter as *The Archaeology of the East Midlands*).
- Correlations with the research programmes outlined in English Heritage's **S**trategic framework for **H**istoric environment **A**ctivities and **P**rogrammes in **E**nglish Heritage (SHAPE). This was first published in 2008 (<http://www.english-heritage.org.uk/publications/shape2008>) and is currently being revised.
- Correlations with other period and subject research frameworks.
- References (in footnote format).

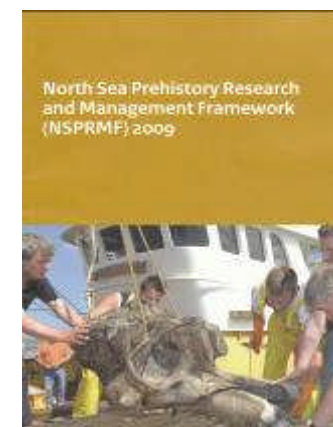
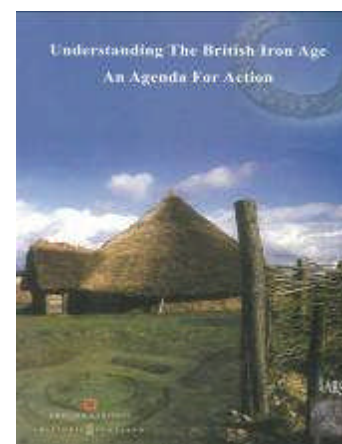
It is hoped that this will provide for each Research Objective a readily accessible source of information that will facilitate further research and funding applications by stakeholders.

Correlations with other research frameworks

A wide range of period- and subject-based research frameworks is now available. These have been consulted to establish potential synergies with the Strategy proposed here. For convenience of reference, key documents of relevance to the East Midlands are listed below.

Prehistory

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- James, S. and Millett, M. (eds) 2001 *Britons and Romans: Advancing an Archaeological Agenda*. London: CBA Research Report 125.
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- Willis, S. 2004. The study group for Roman pottery: research framework document for the study of Roman pottery in Britain. *Journal of Roman Pottery Studies* 11, 1-20.

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- Schofield, J. 2004. *Modern Military Matters. Studying and managing the twentieth-century defence heritage in Britain: a discussion document*. York: Council for British Archaeology.

- Williamson, T. 2007. Archaeological perspectives on landed estates: research agendas, in Finch, J. and Giles, K. (eds) *Estate Landscapes: Design, Improvement and Power in the Post-Medieval Landscape*. Woodbridge: the Boydell Press.

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- Foard, G. 2008. *Conflict in the Pre-Industrial Landscape of England: a Resource Assessment*. University of Leeds.
- Williams, J. 2009. *The Use of Science to Enhance Our Understanding of the Past*. National Heritage Science Strategy Report 2. London: English Heritage (<http://www.heritagesciencestrategy.org.uk>).

