

A historical map of the East Midlands region, showing the Trent river system and its various mills and towns. The map is drawn in a simple, hand-drawn style with brown and red ink on aged paper. The Trent river is the central feature, flowing from the top right towards the bottom left. Several mills are depicted along the river, each with a red roof and a water wheel. Towns and castles are also shown, including Newark Castle in the bottom right and several smaller towns. The map is annotated with handwritten labels in cursive script, such as 'Trent', 'Newark', 'Chester', 'Stam', 'Two mylne of master Sutton', 'A bridge', 'Old Trent', 'A bridge out of Trent', 'Aqua de Dyke', 'In mylne', 'The flow mill', 'mylne of Newark', 'mylne of stoke', and 'Newark'.

East Midlands Heritage

An Updated Research Agenda and Strategy for the
Historic Environment of the East Midlands

DAVID KNIGHT, BLAISE VYNER AND CAROL ALLEN

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An Updated Research Agenda and Strategy for the
Historic Environment of the East Midlands

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

<http://www.tparchaeology.co.uk/east-midlands-research-strategy>

<http://www.english-heritage.org.uk/professional/research/strategies/external-research-frameworks/regional>

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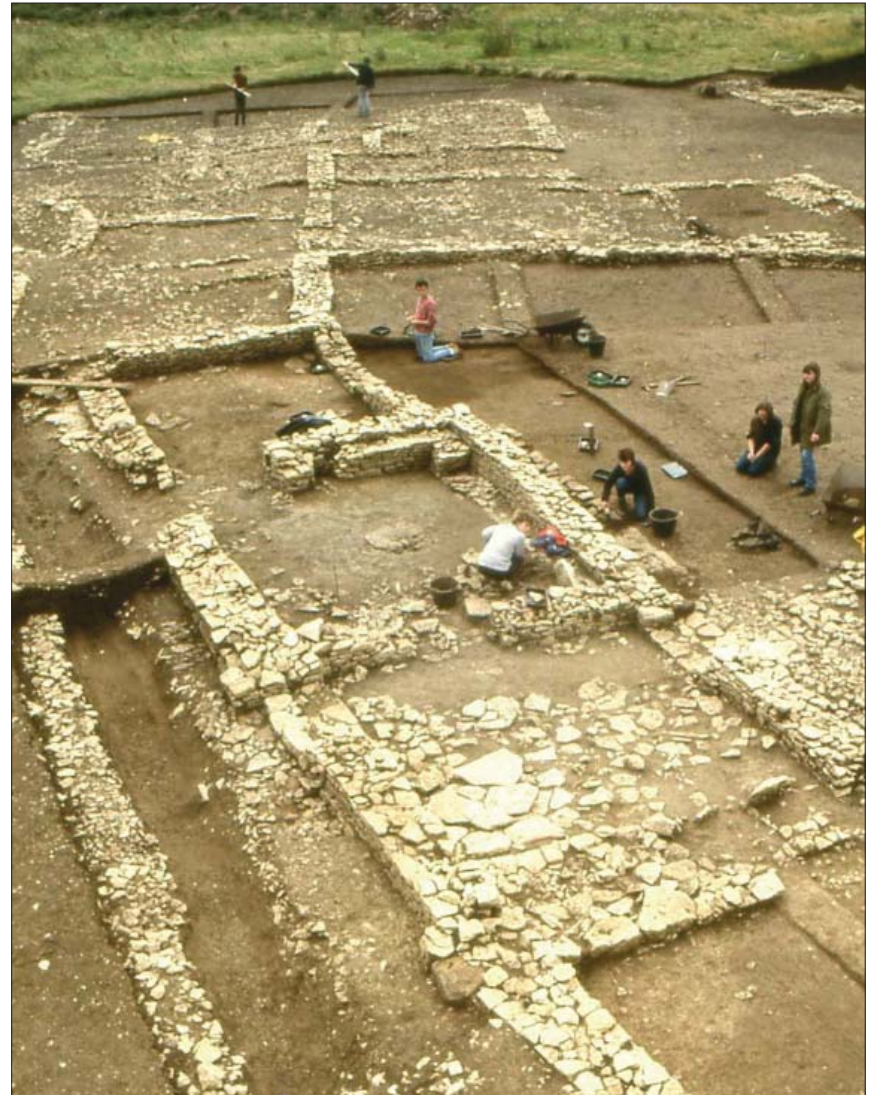
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Cover: detail of Tudor map (c.1500-1540) showing the two branches of the Trent near Newark, the Trent upstream to Nottingham and four of the rivers draining the Vale of Belvoir. Details are shown of mills, bridges and other riverine structures, including (on the back cover) an unusually early depiction of a fishweir across the River Devon between Markall Bridge and Hawton (© The British Library Board. Cotton Mss Augustus 1.i 65; Salisbury, C.R., 1983. An early Tudor map of the River Trent in Nottinghamshire. *Transactions of the Thoroton Society* 87, 54-59)

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West Cotton, Northamptonshire: revealing the built heritage. The photograph shows the domestic range of Tenement A (late 13th to 15th century), a late medieval drainage ditch along its frontage, and Tenement B (13th century) in the background (Chapman 2010, pl. 9; reproduced by permission of Northamptonshire Archaeology)

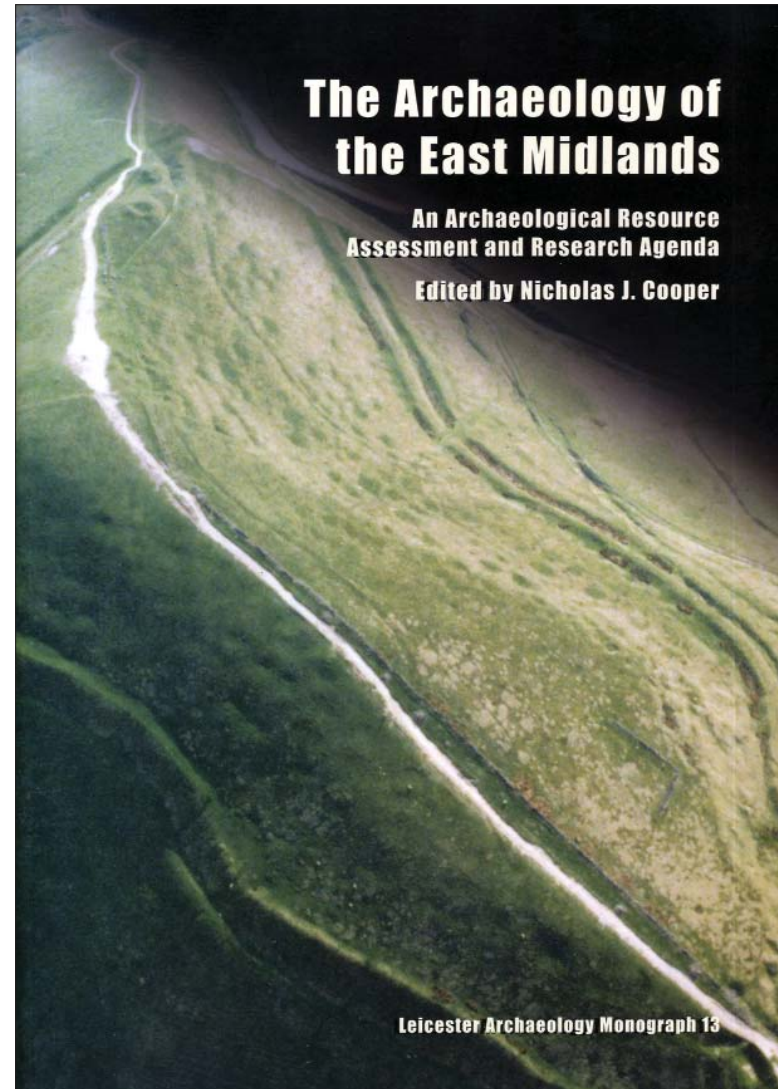
1 INTRODUCING THE RESEARCH AGENDA AND STRATEGY

Introduction

This project commenced in January 2008 and represents the final stage for the East Midlands of the Regional Research Framework initiative that was 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 region's 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 in order to integrate more closely archaeology and the built environment and to foster closer links between 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 such diverse bodies as English Heritage, the National Trust, The Institute for Historic Building Conservation, 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 Archaeology of 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*, 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 current philosophy⁵.



The drier, warmer summers that may be expected to accompany climate change increase the likelihood of fire damage to archaeological sites on moorlands across the country. In this photograph, water runoff has eroded the gully defining a rectangular Iron Age structure (4 x 5 m) exposed by fire on Fylingdales Moor, North Yorkshire (photograph: B. Vyner)

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 key research priorities⁶.

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: Richard 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 document that was disseminated widely 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. Environmental archaeology was discussed separately in *The Archaeology of the East Midlands*⁷, 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 Anglo-Saxon well with waterlogged plant remains found during dualling of the Fosse Way near Brough, Nottinghamshire (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 general themes identified in the period syntheses, such as the development of the agricultural economy or the growth of towns, overlap period boundaries. These 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)*⁸, the vision document that underpins *PPS 5*⁹ and English Heritage's *Practice Guide*.¹⁰

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, while progress on the Research Objectives defined in this document will be assessed and priorities revised where appropriate. We welcome on-going 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 project website¹¹ and from the section of the English Heritage website that is dedicated to regional research frameworks¹². Details of public seminars, workshops and other documents produced during consultation, information on stakeholder conferences and details of other events aimed at advancing the strategy may also be obtained from the project website.

References

- ¹ Olivier, A., 1996. *Frameworks for Our Past*. London: English Heritage.
- ² Cooper, N. (ed.), 2006. *The Archaeology of the East Midlands. An Archaeological Resource Assessment and Research Agenda*. Leicester: University of Leicester Archaeology Monograph 13 (referred to hereafter as *The Archaeology of the East Midlands*).
- ³ Cooper, N. and Clay, P., 2006. The national and regional context of the research framework, in *The Archaeology of the East Midlands*, 3-5.
- ⁴ e.g. Howard, A.J., Challis, K., Kincey, M.E. et al., 2008. The impact of climate

change on archaeological resources in Britain: a catchment scale assessment. *Climatic Change* 91, 405–22.

⁵ See Dept for Culture, Media and Sport, 2010. *The Government's Statement on the Historic Environment for England 2010*. London: The Stationery Office.

⁶ See <http://www.tparchaeology.co.uk/east-midlands-research-strategy/> for details of seminars, workshops and documents produced during consultation.

⁷ Monckton, A., 2006. Environmental Archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 259–86.

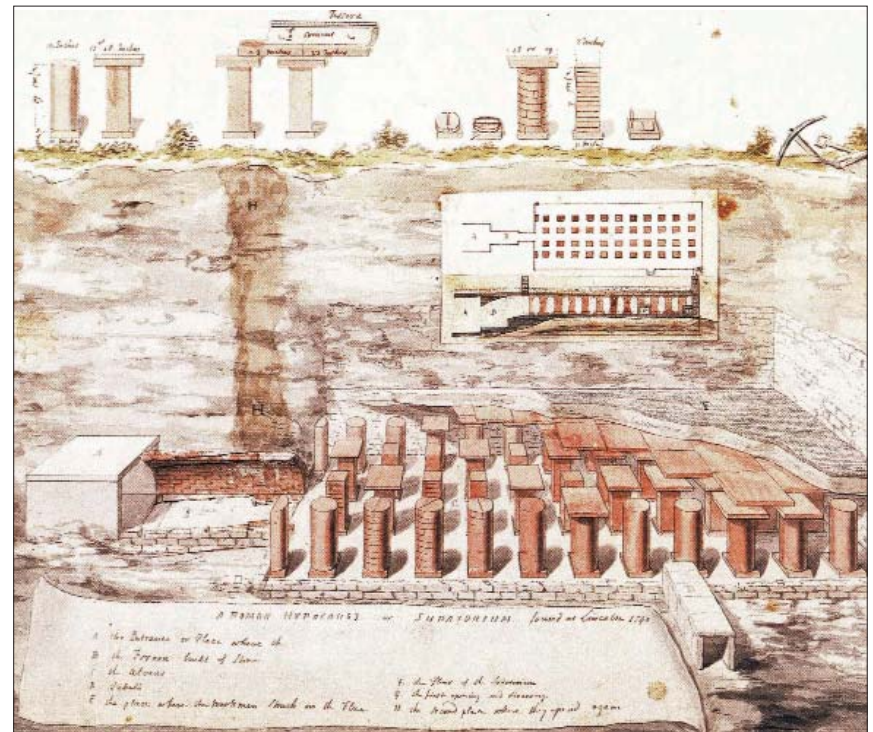
⁸ Dept for Communities and Local Government, 2010. *Planning Policy Statement 5: Planning for the Historic Environment*. London: The Stationery Office.

⁹ See footnote 5

¹⁰ Dept for Communities and Local Government, Dept for Culture, Media and Sport and English Heritage, 2010. *PPS 5 Planning for the Historic Environment: Historic Environment Planning Practice Guide*. London: English Heritage.

¹¹ <http://www.tparchaeology.co.uk/east-midlands-research-strategy/>.

¹² <http://www.english-heritage.org.uk/professional/research/strategies/external-research-frameworks/regional/>.



Early research in Roman Lincoln: drawing by George Vertue of a hypocaust revealed in 1769 (reproduced by permission of the Society of Antiquaries of London)

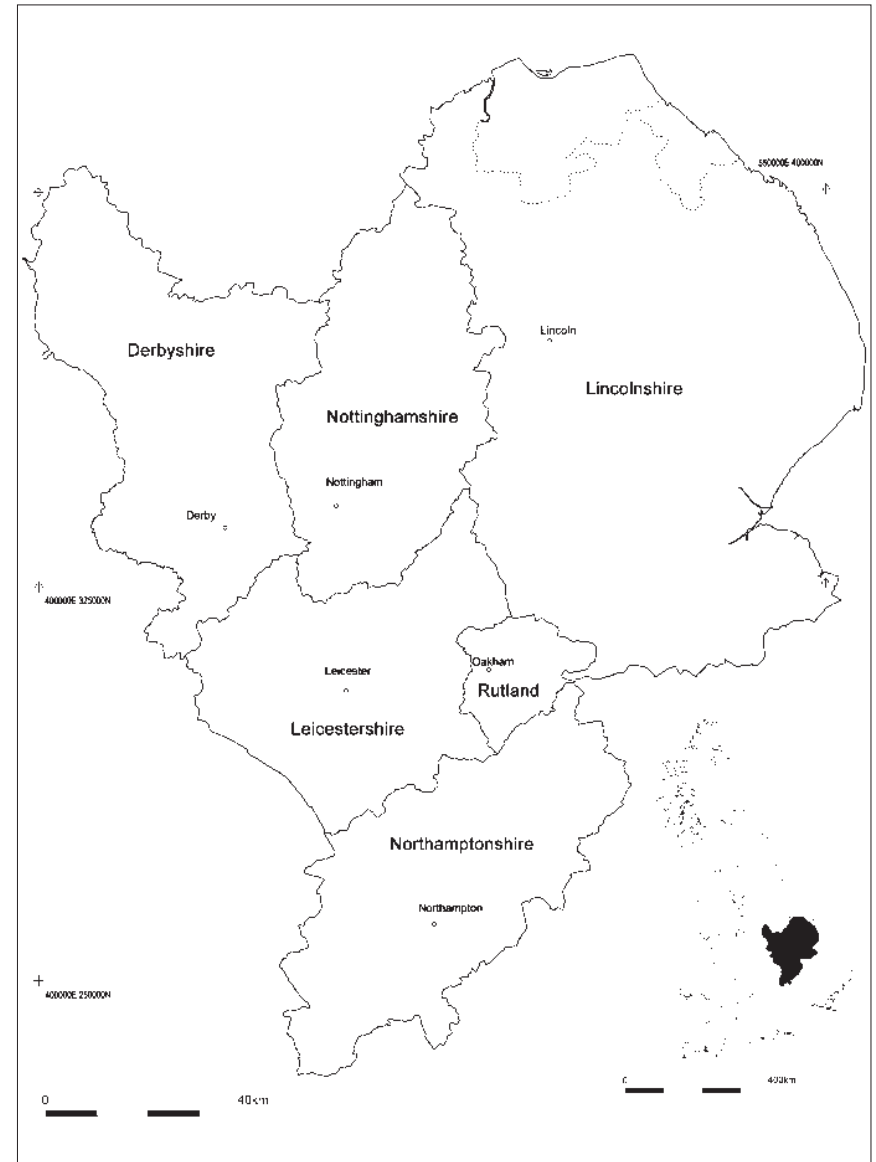
2 THE STUDY AREA

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. North Lincolnshire and North-East Lincolnshire, which form part of the on-going Yorkshire and Humberside Research Framework, were excluded from consideration. 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 Lindsey², 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, ranging from the gritstone moors of the Derbyshire Dark Peak to the low-lying fens and coastal marshes of Lincolnshire. This remarkably diverse region has justly been regarded as a microcosm of England³, making it an ideal field laboratory for studies of the interaction between human activity and the environment⁴. Its location adjacent to the submerged landscapes of Doggerland⁵ 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. and Clay, P., 2006. The national and regional context of the research framework, in *The Archaeology of the East Midlands*, fig. 1.
- ² e.g. Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 165.
- ³ Cooper, N. and Clay, P., 2006. The national and regional context of the research framework, in *The Archaeology of the East Midlands*, 5.
- ⁴ Cooper, N., 2006. Cross-period research and the foundation of a research strategy, in *The Archaeology of the East Midlands*, 287–89.
- ⁵ Gaffney, V., Fitch, S. and Smith, D., 2009. *Europe's Lost World: The Rediscovery of Doggerland*. York: CBA Research Report 160.



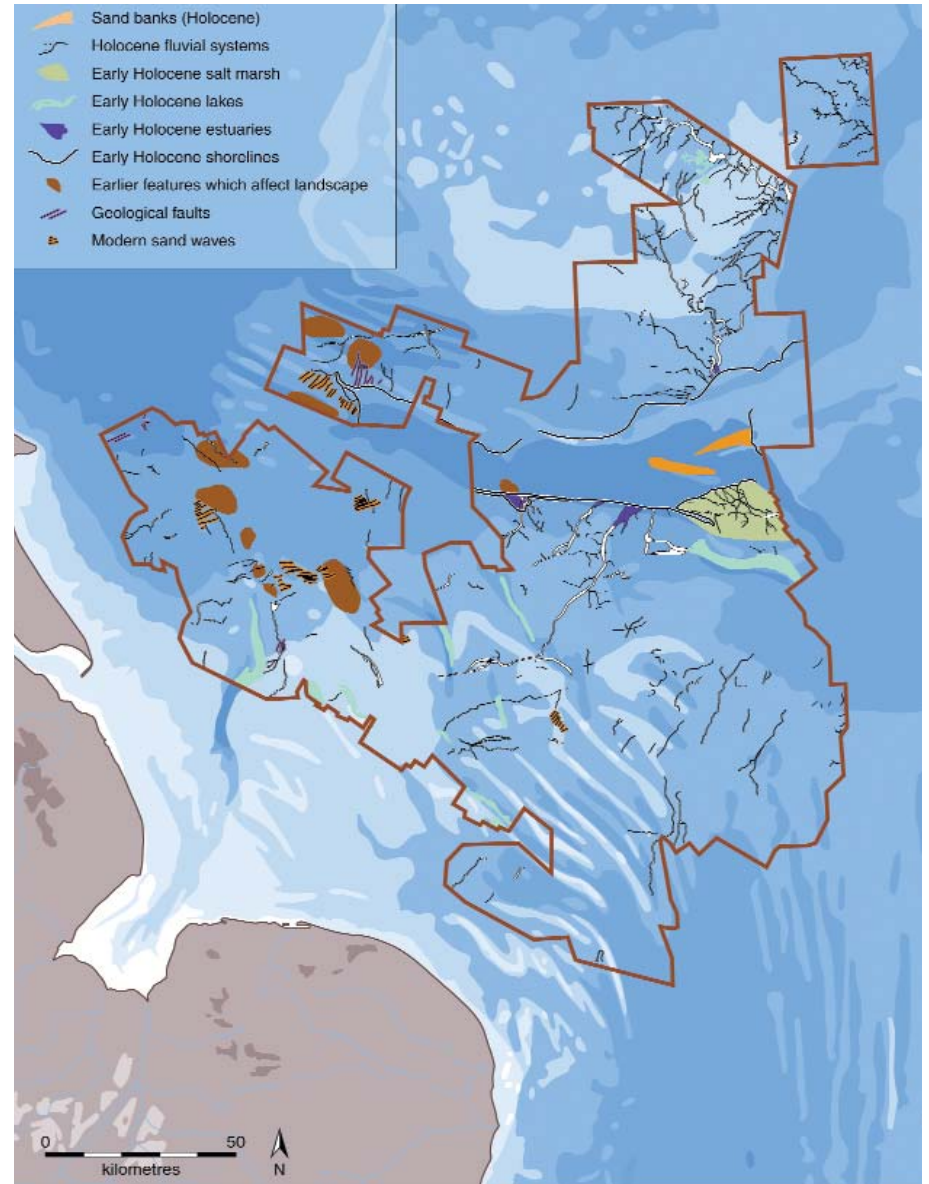
The East Midlands study area: county boundaries (© University of Leicester Archaeological Services)



Upland landscapes: Longstone Edge, Derbyshire. Bronze Age cairn on the Carboniferous Limestone plateau (photograph: Jonathan Last)



Lowland landscapes: Gonalston, Nottinghamshire. Iron Age boundary ditch flanked by sub-alluvial gravel bank, revealed during gravel extraction in the Trent Valley (photograph: Lee Elliott)



Submerged landscapes: seismic interpretation techniques have revealed extensive prehistoric landscapes that were drowned as the ice sheets of the last glaciation melted (Gaffney *et al.* 2009, fig. 3.17; reproduced by permission of the authors)

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 AD 793–1042 and

the re-establishment of the Anglo-Saxon monarchy prior to the Norman Conquest of AD 1066. 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 the limits of radiocarbon calibration)⁶</i> <i>cal BC: calibrated years BC (for periods where radiocarbon dates may be calibrated to an acceptable level of accuracy)⁷</i>	Comments
Palaeolithic (Old Stone Age)	Archaeological Period 1 (Cromerian and Early Intra-Anglian): c.950/850–c.450 kya (MIS25–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 <i>Archaeological Resource Assessment and Research Agenda</i> 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 (970–936 kya) or 21 (866–814 kya) 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.250 kya (MIS12–Early MIS8)	
	Archaeological Period 3 (Levallois Lower Palaeolithic): c.250–c.150 kya (Late MIS8–Early MIS6)	
	Archaeological Period 4 (Mousterian): c.60–c.40 kya (MIS3)	
	Archaeological Period 5a (Early Upper Palaeolithic): c.40–c.27kya (Late MIS3–Early MIS2)	
	Archaeological Period 5b (Late Upper Palaeolithic): c.13,000–c.9500 cal BC (Late MIS 2)	
Mesolithic (Middle Stone Age)	c.9500 - c.4000 cal BC	Post-glacial (Early Holocene) hunter-gatherer communities, characterised archaeologically by distinctive lithic artefact kits. Typological developments in lithic tool technology permit a distinction between an Earlier and Later Mesolithic, divided at c.8000 cal BC ¹¹ .
Neolithic (New Stone Age) and Early to Middle Bronze Age	Neolithic: c.4000 – 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 (the latter from c.2400–c.2200 cal BC).
	Early Bronze Age: c.2200–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–c.1150 cal BC		

Late Bronze Age and Iron Age	Late Bronze Age: c.1150–c.800 cal BC ¹²	Further developments of bronze-working technology and artefact typology.
	Iron Age: c.800 cal BC–AD 43	Replacement of bronze by iron as the main raw material for tools and weapons (developing from Late Bronze Age roots).
Romano-British	AD 43–c.AD 410	From the Claudian conquest to the collapse of Roman administration and the withdrawal of Roman political and financial support in the early fifth century. The conventional date of c. AD 410 is employed here, but the chronology of the ending of Roman Britain remains a subject of continuing debate ¹³ .
Early Medieval	c.AD 410–1066	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).
High Medieval	1066–1485	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	1485–1750	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.

References

¹ Cooper, N. and Clay, P., 2006. The national and regional context of the research framework, in *The Archaeology of the East Midlands*, 3.

² Parfitt, S.A. *et al.*, 2010. Early Pleistocene human occupation at the edge of the boreal zone in northwest Europe. *Nature* 466, 229–33; see also Parfitt, S., Ashton, N., and Lewis, S., 2010. Happisburgh. *British Archaeology* 114, 15–23.

³ Needham, S., 2007. 800 BC, The Great Divide, in C. Haselgrove and R. Pope (eds), *The Earlier Iron Age in Britain and the Near Continent*, 64. Oxford: Oxbow Books.

⁴ Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 161–84.

⁵ See Research Objective 7H.

⁶ As employed by McNabb, J., 2006. The Palaeolithic, in *The Archaeology of the East Midlands*, 13.

⁷ For radiocarbon dating, see e.g. Buteux, S., Chambers, J. and Silva, B. (eds), 2009. *Digging Up the Ice Age*, 107–108. Oxford: Archaeopress; also Renfrew, C. and Bahn, P., 2004. *Archaeology: Theories, Methods and Practice*, 141–149. London: Thames and Hudson.

⁸ McNabb J., 2006, 13–15.

⁹ McNabb J., 2006, 12–17; see also S. Buteux (ed.), 2009, 9–11, fig. 11.

¹⁰ Parfitt, S.A. *et al.*, 2010.

¹¹ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 53.

¹² See Needham, S., 2007 for current dating of Late Bronze Age–Iron Age transition.

¹³ See e.g. Moorhead, S., 2010. 410–2010: Rome and Britain. *British Archaeology* 111, 17–21.

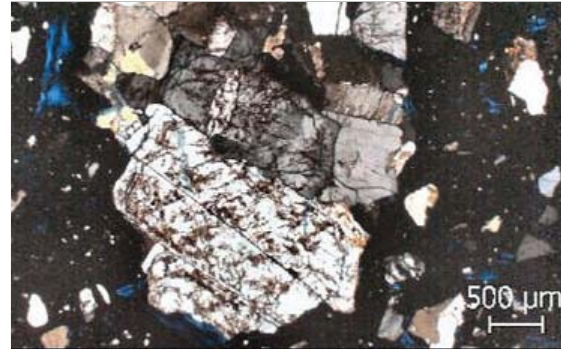
4 BUILDING THE RESEARCH FOUNDATIONS

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, together with training in the application of Bayesian analysis of radiocarbon dates and other scientific dating techniques².

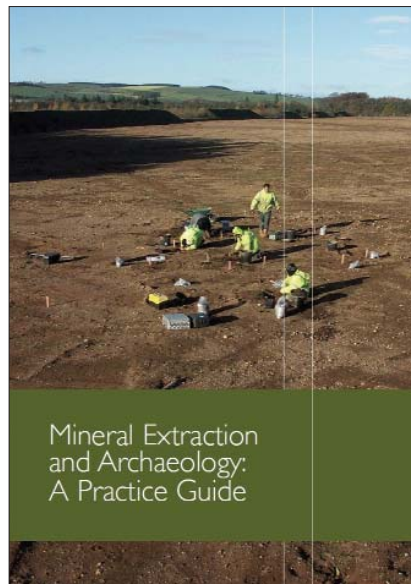


Thin section of Bronze Age sherd from Eye Kettleby, Leicestershire, showing rock inclusion derived from the Mountsorrel granodiorite outcrop of Charnwood Forest (reproduced by permission of John Carney)



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.



Planning Policy Statement 5: Planning for the Historic Environment (Dept for Communities and Local Government 2010; © Crown Copyright) and *Mineral Extraction and Archaeology: A Practice Guide* (Mineral and Historic Environment Forum 2008; © English Heritage)

- *Building materials analysis*: encourage the use of scientific techniques of materials analysis (e.g. mortar and stone or architectural paint analyses) and explore further the potential of optically stimulated luminescence and other scientific dating techniques for the dating of bricks and mortar⁴.



Tattershall Castle in Lincolnshire is one of several buildings of known date that have been employed in studies designed to develop luminescence dating techniques⁴ (photograph: D. Knight)

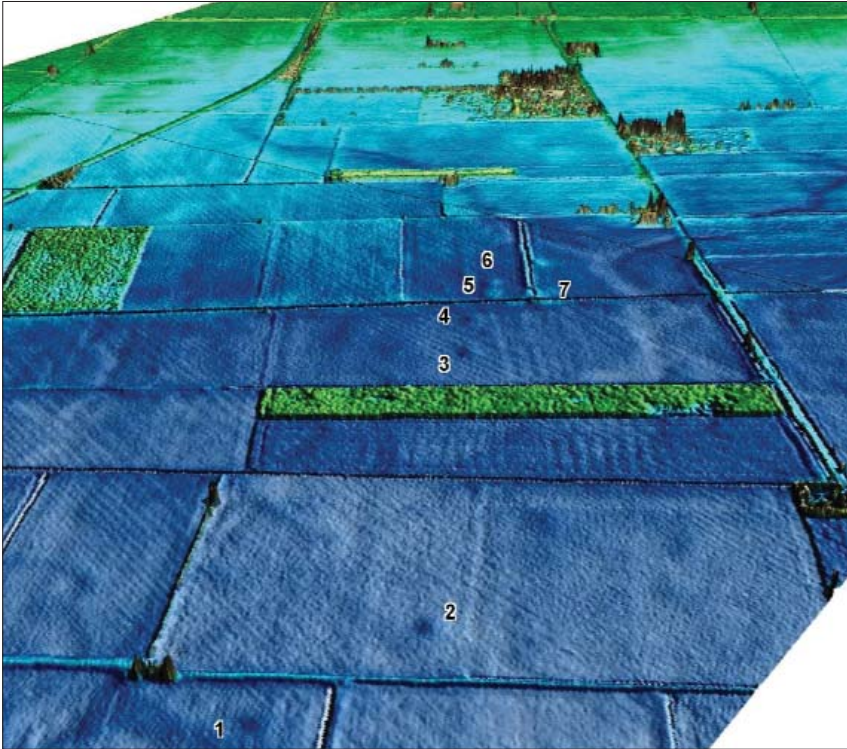
- *Monuments*: further refinements of monument classifications to be developed.
- *Blank areas*: resources to be focused upon investigating areas with little or no archaeological data.

- *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.
- *Building survey*: encourage the development of laser technology and modern photogrammetry for the high-definition surveying of historic buildings and develop 3D visualisation techniques for dissemination.



Laser scan of Staveley Hall, Derbyshire (reproduced by permission of Marcus Abbot; © ArcHeritage)

- *Site location and survey*: maximise the value of the air photographic record by continued air photograph mapping⁵ and investigate further the effectiveness of remote sensing techniques; encourage the use in site prospection of innovative terrestrial and offshore geophysics, airborne lidar, multispectral and hyperspectral imaging and ground-based scanning techniques⁶.



Market Deeping, Lincolnshire: lidar image showing the location of formerly peat-covered barrows (numbered 1-7) in relation to former watercourses running off the Fen edge (top of image; lidar data courtesy of Environment Agency; processed imagery by Archaeological Project Services)

Making better use of the archive

- *Historic Environment Records (HERs)*: improve long-term maintenance of the existing resource, ensure regular updating of records and enhance accessibility (including the provision of on-line resources)⁷.
- *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://archaeologydataservice.ac.uk/archives/view/greylit/>), County HER and other websites of unpublished reports.
- *Geographical Information Systems (GIS) mapping*: encourage the preparation and web publication of period and thematic maps derived from HER data.
- *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 on finds recorded by this scheme.
- *Academic studies and research*: the results of this work should be added to HERs in order to enhance their potential as research resources.
- **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 OASIS database be expanded to ensure inclusion of the Research Objectives addressed by each project, thereby facilitating annual 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.

ads ARCHAEOLOGY DATA SERVICE

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Nene Valley: Archaeological and Environmental Synthesis

Northamptonshire Archaeology, University of Exeter, 2009

Introduction
Overview
Downloads

Aggregates Levy Sustainability Fund

Data copyright © Northamptonshire Archaeology unless otherwise stated

Introduction
This project was designed by Northamptonshire Archaeology and Exeter University to present the evidence of the character of the relationship between the environmental and archaeological record and variations in the watertable for the Nene Valley from its source in Northamptonshire to Peterborough.

The project was funded by English Heritage from the Aggregates Levy Sustainability Fund (ALSF). The project funding allowed for work to be carried out in Northamptonshire Archaeology and Exeter University both collecting and collating data. Work was carried out by Dr Phil Allen and Professor A G Brown at Exeter and Ian Meadows and Karen Doughton at Northampton.

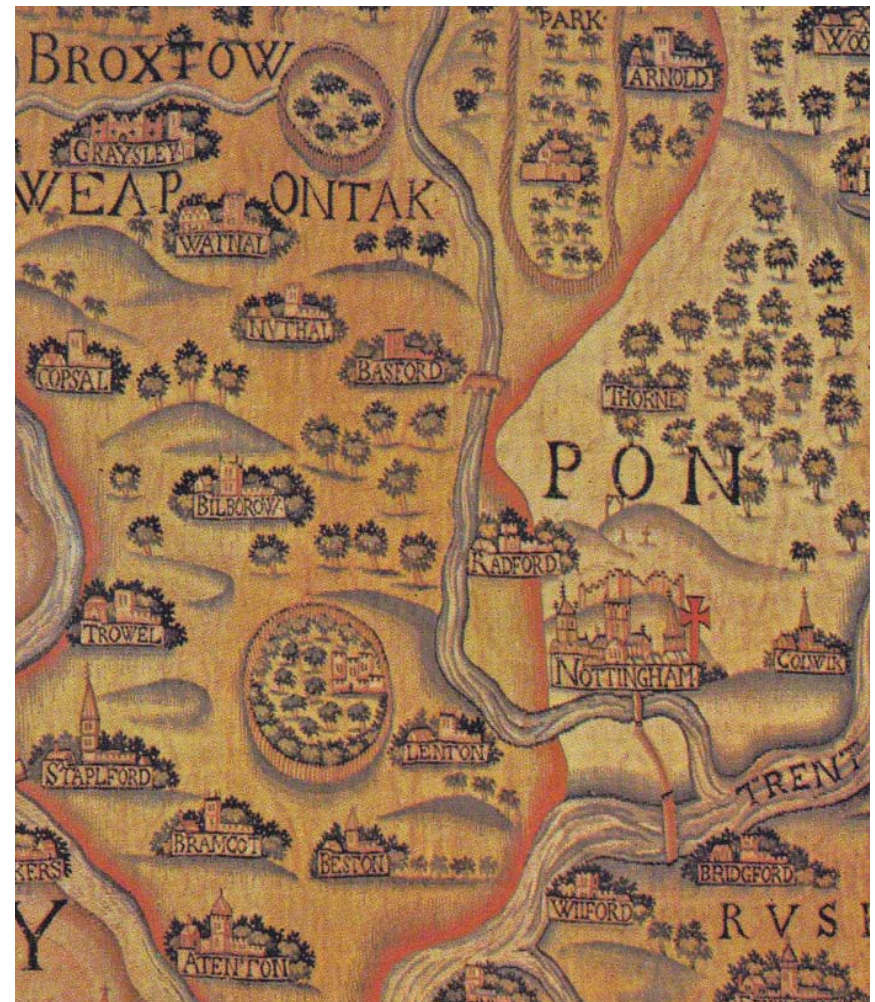
ALSF ONLINE

ENGLISH HERITAGE

One of many key East Midlands reports archived by the ADS (web image from the 'Nene Valley: Archaeological and Environmental Synthesis' archive page: © Northamptonshire Archaeology; http://archaeologydataservice.ac.uk/archives/view/nenevalley_ah_2009)

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



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 & Galleries)

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 fully aware of research work and should be closely involved in research projects.



Excavation of the rock-cut ditch flanking the rampart of Fin Cop Iron Age hillfort, 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, plant remains, animal bones and invertebrates)⁸.



Analyses of plant, insect and faunal remains from this Late Bronze Age brushwood layer and from underlying sediments have shed important light upon site formation processes and the changing prehistoric landscape (Allen, C., 2007. *Exchange and Ritual at the Riverside: Late Bronze Age Life in the Lower Witham Valley at Washingborough, Lincolnshire*, pl. 3.1. Lincoln: Pre-Construct Archaeology; reproduced by permission of Colin Palmer-Brown)

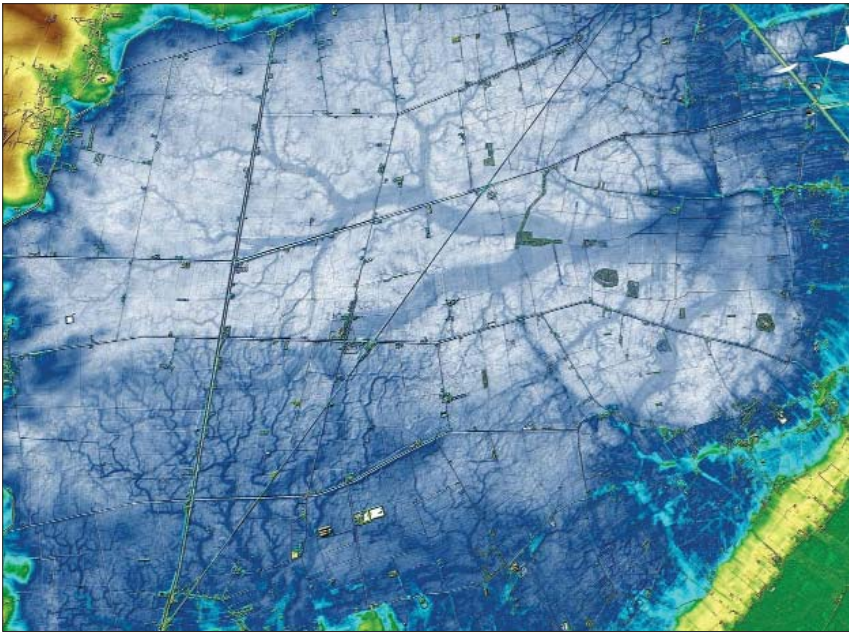
- Develop and maintain a regional environmental database. Regional research would benefit significantly from the provision of an up-to-date and comprehensive database listing published



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

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 Agenda*⁹, current English Heritage guidelines for the collection and analysis of palaeoenvironmental data and regional reviews of wood, microscopic wood charcoal and other environmental data¹⁰.

- Encourage regional syntheses of environmental data¹¹.
- 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 that has been retained.
- Ensure consistent implementation of systematic on-site sampling of feature fills, soils, sediments and organic deposits¹² 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 assemblages¹³.
- 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 individual site circumstances.
- Further characterise the environmental signature of key periods of change, including the Mesolithic–Neolithic transition, the Late Iron Age to early Roman era and the early post-Roman period.
- 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.



Lidar image showing roddons of former salt-marsh creeks in East Fen, north of Boston, Lincolnshire. White shades show low-lying land of the former peat fen, now below sea level. The roddons, which represent the high silty levées of ancient watercourses, now stand higher. Two patterns of drainage are evident, with an early dendritic pattern overlain by a pattern of southward-flowing streams (lidar data courtesy of Environment Agency; processed imagery by Archaeological Project Services)

- Assess from lidar and other sources 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 GeoArchaeology¹⁴.
- Encourage mapping of Pleistocene and Holocene landscapes, including the submerged landscapes of Doggerland.
- 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.



Structural remains and artefacts associated with fishing are regularly recorded during monitoring of gravel extraction in the region's river valleys. This medieval wicker basket was found during aggregates extraction at Hemington Quarry, Leicestershire, and is interpreted as an eel trap that would have been placed at the apex of a V-shaped fishweir (© University of Leicester Archaeological Services)

- 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 animals¹⁵.
- Encourage further DNA analyses of human remains to elucidate the genetic relationships between individuals (e.g. in cremation cemeteries)¹⁶.



Mesolithic human female femur stratified in palaeochannel deposits near Staythorpe, Nottinghamshire. Stable isotope analysis indicates a reliance upon animal protein and a wholly terrestrial range for the last ten years of life (© University of Sheffield)



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 (Radiocarbon Palaeolithic Europe Database, version 12: <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, J., 2009, 19; 21–22.
- ⁴ Williams, J., 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*. Leeds: West Yorkshire Archaeological Services (http://archaeologydataservice.ac.uk/archives/view/magnesian_eh_2010/).
- ⁶ Williams, J., 2009, 23–24; Crutchley, S. and Crow, P., 2009. *The Light Fantastic: Using Airborne Laser Scanning in Archaeological Survey*. Swindon: English Heritage.

⁷ English Heritage, 2009. *Sites and Monuments Record to Historic Environment Record. Local Authority Case Studies*. London: English Heritage.

⁸ Williams, J., 2009, 17–18.

⁹ Monckton, A., 2006. Environmental archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 262: Table E1.

¹⁰ 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*. English Heritage: Centre for Archaeology Report 23/2001.

¹¹ e.g. Albarella, U. and Pirnie, T., 2008. *A Review of Animal Bone Evidence from Central England*

(http://archaeologydataservice.ac.uk/archives/view/animalbone_eh_2007/).

¹² See Monckton 2006, 259–62.

¹³ Williams, J., 2009, 17.

¹⁴ e.g. Baker, S., 2003. *The Trent Valley: Palaeochannel Mapping from Aerial Photographs*, Nottingham: Trent and Peak Archaeological Unit.

(<http://www.tvg.bham.ac.uk/palaeochannels.pdf>).

^{15,16} Williams, J., 2009, 18–19.



Palaeochannels often yield rich assemblages of waterlogged organic remains. This channel near Market Deeping, Lincolnshire, yielded rich deposits of wood, animal bone, mollusc shells and plant and insect remains in association with Iron Age pottery, briquetage and other artefacts (Lane and Trimble 2010, pl. 22; reproduced by permission of T. Lane)

5 PRESENTING THE RESEARCH AGENDA AND STRATEGY

Format of the period syntheses

For ease of reference, updated Research Agenda themes and topics and the strategies recommended for the delivery of research are summarised in tabular form for each of the nine periods that form the framework of this document (Chapter 6: Periods 1-9). Up to ten research **themes** were identified by stakeholder consultation for each period. These themes were numbered consecutively by period (1.1, 1.2, etc) and for clarity have been colour-coded in the accompanying tables. More specific research **topics** were identified within each theme, and to facilitate referencing have been allocated unique numerical codes denoting respectively period, theme and topic (1.1.1, 1.1.2. etc.).

Tables summarising the **Research Objectives** for each period are displayed on the page facing the relevant Agenda table, permitting easy identification of correlations between Agenda priorities and Research Objectives. Each Research Objective has been allocated a unique alphanumeric code incorporating the relevant period number (1A, 1B, etc.).

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 Research Agenda: N. Cooper (ed.), 2006. *The Archaeology of the East Midlands: An Archaeological Resource Assessment and Research Agenda*. University of Leicester Archaeology Monograph 13 (for simplicity, referred to hereafter as *The Archaeology of the East Midlands*).
- Correlations with the research Sub-Programmes outlined in English Heritage's Strategic framework for Historic environment Activities and Programmes in English Heritage (SHAPE; <http://www.english-heritage.org.uk/publications/shape2008/>). This was first published in 2008 and is currently being revised.

- Correlations with the Measures listed in English Heritage's *National Heritage Protection Plan 2011* (NHPP; <http://www.english-heritage.org.uk/professional/protection/national-heritage-protection-plan/>).
- Correlations with key period and subject research frameworks (listed below).
- References. These are in footnote format and follow the conventions that were employed in *The Archaeology of the East Midlands*.

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

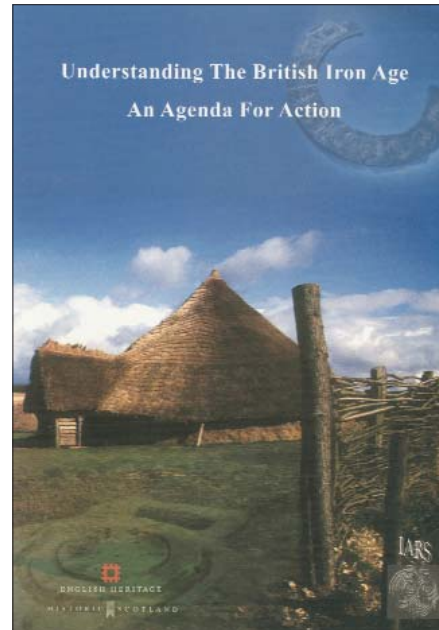
Correlations with other research frameworks

A wide range of period- and subject-based research frameworks has been prepared by English Heritage and other organizations. 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

- English Heritage, 2011. *Research Strategy for Prehistory*. London: English Heritage.
- Haselgrove, C., Armit, I., Champion, T. et al., 2001. *Understanding the British Iron Age: An Agenda for Action: A Report for the Iron Age Research Seminar and the Council of the Prehistoric Society*. Salisbury: Wessex Archaeology.
- Lithics Studies Society, 2004. *Research Frameworks for Holocene Lithics in Britain*. Salisbury: Wessex Archaeology.
- Peeters, H., Murphy, P. and Flemming, N. (eds), 2009. *North Sea Prehistory Research and Management Framework (NSPRMF)*. Amersfoort: English Heritage and Rijksdienst voor het Cultureel Erfgoed.

Understanding the Iron Age: cover reproduced by permission of the Prehistoric Society



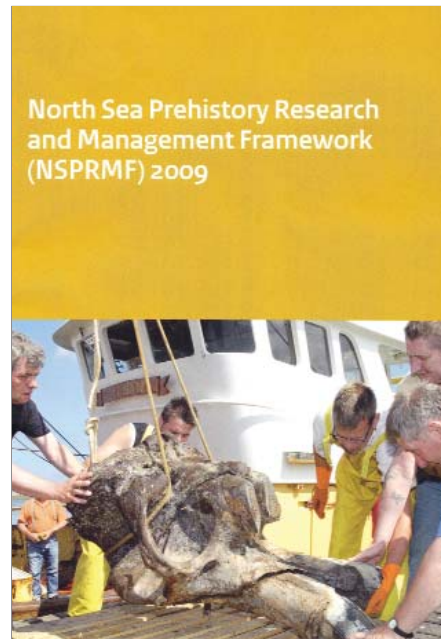
- Pettitt, P., Chamberlain, A. and Wall, I., 2010. *A Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area*. Creswell Heritage Trust.
- Pettitt, P., Gamble, C. and Last, J. (eds), 2008. *Research and Conservation Framework for the British Palaeolithic*. London: English Heritage and Prehistoric Society.
- Prehistoric Ceramics Research Group 2010 (3rd ed.) *The Study of Pottery. General Policies and Guidelines for Analysis and Publication*. PCRG Occasional Papers 1 and 2. Salisbury: Wessex Archaeology (<http://www.pcr.org.uk>).
- Working Party for the Palaeolithic and Mesolithic Annual Day Meeting and the Council of the Prehistoric Society, 1999. *Research Frameworks for the Palaeolithic and Mesolithic of Britain and Ireland*. Salisbury: Prehistoric Society.

Romano-British

- James, S. and Millett, M. (eds), 2001. *Britons and Romans: Advancing an Archaeological Agenda*. London: CBA Research Report 125.
- Van der Veen, M., Livardi, A. and Hill, A., 2007. The archaeobotany of Roman Britain: current state and identification of research priorities. *Britannia* 38, 181–210.
- 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.

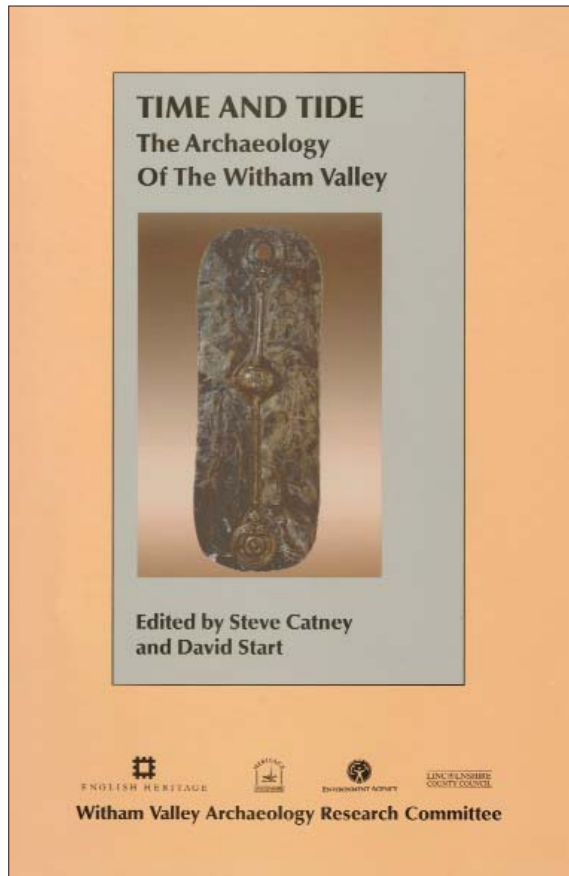
Early Medieval to Modern

- Cranstone, D., 2004. The archaeology of industrialization – new directions, in D. Barker and D. Cranstone (eds), *The Archaeology of Industrialization*, 313-320. London: Maney Publishing.
- English Heritage, 2010. *A Thematic Research Strategy for the Historic Industrial Environment*. London: English Heritage.
- English Heritage, 2010. *A Thematic Research Strategy for the Urban Historic Environment*. London: English Heritage.
- Irving, A., 2011. *A Research Framework for Post-Roman Ceramic Studies in Britain*. Medieval Pottery Research Group Occasional Paper 6.

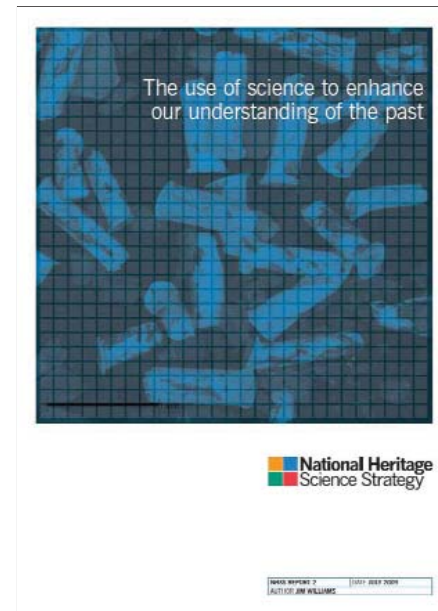


North Sea Prehistory Research and Management Framework: cover reproduced by permission of English Heritage and Rijksdienst voor het Cultureel Erfgoed (image © Wim van Vosren Fotografie)

- Palmer, M., 2005. Understanding the workplace: a research framework for industrial archaeology in Britain. *Industrial Archaeology Review* 27: 1.
- 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 J. Finch and K. Giles (eds), *Estate Landscapes: Design, Improvement and Power in the Post-Medieval Landscape*, 1-16. Woodbridge: the Boydell Press.



Time and Tide: The Archaeology of the Witham Valley; cover reproduced by permission of Witham Valley Archaeology Research Committee



National Heritage Science Strategy Report 2: cover reproduced by permission of English Heritage (cover image © Mary Davis)

Multiperiod and Sub-Regional Research Frameworks

- Canti, M., 2009. *A Review of Geoarchaeology in the Midlands of England*. London: English Heritage.
- Catney, S. and Start, D. (eds), 2001. *Time and Tide: The Archaeology of the Witham Valley*. Heckington: Witham Valley Archaeology Research Committee.
- Foard, G., 2008. *Conflict in the Pre-Industrial Landscape of England: a Resource Assessment*. University of Leeds.
- Jones, M.J., Stocker, D and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*. Oxford: Oxbow Books.
- 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>).

6 UPDATED AGENDA AND STRATEGY TABLES



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 mounds, including this unusual spiral ('snail') mound, before reaching the imposing garden lodge that stands beyond the moat encircling the mound (photograph: D. Knight)

This recently discovered 1944 Luftwaffe photograph of Lyveden New Bield shows the rich palimpsest of medieval village earthworks, ridge and furrow and parkland features around Tresham's uncompleted garden lodge (bottom right). Most remarkably, the photograph revealed the first evidence of the giant circular labyrinth planted by Tresham, in the polygonal field (a) towards the bottom of the photograph (http://www.nationaltrust.org.uk/main/w-global/w-news/w-latest_news/w-news-luftwaffe-photo-sheds-new-light.htm; © United States National Archive; reproduced by courtesy of the National Trust)



6.1 PALAEOOLITHIC (c.950/850 kya¹–c.9500 cal BC²): UPDATED RESEARCH AGENDA

1.1. *Archaeological Period 1: Cromerian and Intra-Anglian (c.950–450 kya¹)*

1. What may analyses of artefact assemblages contribute to studies of the material culture of the earliest colonisers of western Doggerland?
2. From how early may this material date?
3. Where is pre-Anglian material found, and what may we deduce from its distribution about the routes of movement of early colonisers (e.g. along the Bytham River and ancestral routes of the Trent)?
4. Can we detect traces of intra-Anglian activity within the region, and in particular how should we interpret rare finds of artefacts associated with Anglian outwash and till?
5. Can we define more closely the distribution of sediments likely to yield traces of Period 1 activity and organic remains (notably those relating to the River Bytham and precursors of the Trent and Witham)?

1.2 *Archaeological Periods 2 and 3: Pre-Levallois (c.450–250 kya) and Levallois (c.250–150 kya) Lower Palaeolithic*

1. Can we locate convincing evidence for Period 2 activity in the region?
2. Can we elucidate the distribution, topographic location, character and date of Period 3 material, especially in sealed contexts in terraces?
3. What is the range and variability of Levallois (prepared core) technology within the region, and what may East Midlands assemblages contribute to studies of the development of this technique?
4. What is the composition of Lower Palaeolithic assemblages of non-Levallois/Levallois type within the region, and how might this have changed over time?

1.3 *Archaeological Period 4: Mousterian (c. 60–40 kya)*

1. How can we locate additional caves and open-air sites with evidence for Mousterian activity?
2. How might caves and open-air sites have been related?
3. Can we refine by radiocarbon dating the chronology of Mousterian sites and key artefact types (e.g. *bout coupé* axes)?
4. Can we characterise more precisely the extant artefact collections from the region?
5. What may artefact analyses contribute to studies of relationships between Mousterian hunter-gatherer communities?

1.4 *Archaeological Period 5: Early (c.40–27 kya) and Late (c.13,000–9500 cal BC) Upper Palaeolithic*

1. How may studies of East Midlands sites contribute to testing and dating of the proposed EUP and LUP cultural succession?
2. How may studies of artefact typologies and raw materials contribute to our understanding of patterns of hunter-gatherer mobility?

3. What was the relationship between caves and open-air sites, and may we discern differences in artefact typologies?
4. How were EUP and LUP sites distributed across the landscape, and what contrasts may be observed with earlier and later (Mesolithic) periods?
5. What may artefact analyses contribute to studies of relationships between groups across Doggerland and of regional cultural traditions?
6. Can work at sites such as Creswell Crags elucidate the chronology of the recolonisation of western Doggerland after the Late Glacial Maximum?
7. May further important examples of Palaeolithic artwork be preserved in caves of the Magnesian Limestone or elsewhere?
8. How may lithic technology and typology have changed at the Terminal Palaeolithic–Mesolithic transition and what may this signify culturally?

1.5 *Pleistocene environmental change*

1. Can we shed further light upon the development of the pre-Anglian river systems that may have served as corridors of movement for the earliest hominines (especially the Bytham River and precursors of the Trent)?
2. How may studies of fauna, pollen and other organic material from palaeochannels, caves, terrace sediments and other deposits refine our understanding of the evolving environment, and how may this have varied spatially?
3. Where are resources for the identification, recording and study of organic remains best targeted?

1.6 *General themes*

1. How best may we extend and enhance regional fieldwalking or test-pitting programmes as means of prospecting for open-air sites?
2. How can we enhance the Historic Environment Record dataset for study of the Palaeolithic period?
3. How can we elucidate further the archaeological potential of the submerged landscapes of Doggerland?
4. How can we ensure that resources are focused upon monitoring quarries with the highest potential for unearthing Pleistocene cultural and environmental remains?
5. How can we maximise the research yield of Pleistocene sites investigated during developer-funded work?

Dating conventions (see Chapter 3; also McNabb, J., 2006. The Palaeolithic, in *The Archaeology of the East Midlands*, 13–17):

¹ kya: thousand years ago

² cal BC: calibrated years BC

PALAEOLOGIC (c.950/850 kya¹ to c.9500 cal BC²): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	1.1 Period 1: Cromerian and Intra-Anglian					1.2 Periods 2 and 3: Pre-Levallois and Levallois Lower Palaeolithic				1.3 Period 4: Mousterian					1.4 Period 5: Early and Late Upper Palaeolithic								1.5 Environmental change			1.6 General themes						
	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	7	8	1	2	3	1	2	3	4	5		
1A Refine knowledge of the earliest hominin activity in the region	●	●	●		●																								●		●	●
1B Test the hypothesis that hominines absent from East Midlands in pre-Levallois Lower Palaeolithic						●			●																				●		●	●
1C Confirm the extent and nature of early human activity in the region during the Mousterian										●	●	●	●	●															●		●	●
1D Further investigate Upper Palaeolithic open-air sites																	●	●	●	●	●	●							●	●		
1E Investigate Upper Palaeolithic use of the limestone caves of Derbyshire and Nottinghamshire																	●	●	●	●	●	●							●			
1F Investigate the annual patterns of movement of Late Upper Palaeolithic hunter-gatherers																	●	●	●	●									●			
1G Elucidate from terrestrial sources the changing Pleistocene environment of the East Midlands																													●	●	●	
1H Explore the submerged Pleistocene landscapes of Doggerland																			●	●									●	●	●	

Research Objective 1A

Refine knowledge of the earliest hominin activity in the region (pre-Anglian: Cromerian complex of Period 1)

Summary:

The East Midlands is located astride the former Bytham River, which prior to obliteration of established drainage networks by the Anglian glaciation around 425,000 years ago would have flowed eastwards towards East Anglia¹, and hence is critically situated to provide information relating to the earliest (pre-Anglian) hominin activity in Britain². It is recommended that wherever possible resources be focused during developer-funded work upon the identification and characterisation of cultural remains contained within deposits associated with the Bytham River³⁻⁴ and with more northerly pre-Anglian rivers (including precursors of the Trent, Witham and Humber⁵). This should enhance studies of the distribution and character of early hominin activity, including migration routes, and might identify distinctions within artefact assemblages that could elucidate spatial and chronological variability. Fieldwork should also focus upon the retrieval of associated organic remains with the aim of elucidating the variety of ecological zones exploited by early hunter-gatherers (see Objective 1G). Valuable guidelines for Palaeolithic prospection have been provided by Collcutt⁶, the 2008 *Research and Conservation Framework for the British Palaeolithic* and Buteux *et al.*⁷, and together these provide a sound basis for research projects aimed at synthesising current evidence and prospecting for additional data.

Agenda topics addressed: 1.1.1–1.1.3; 1.1.5, 1.5.1–1.5.3; 1.6.2; 1.6.4; 1.6.5.

Archaeology of the East Midlands: 41.

SHAPE 2008: New frontiers: the remote past (11112.310).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4G1).

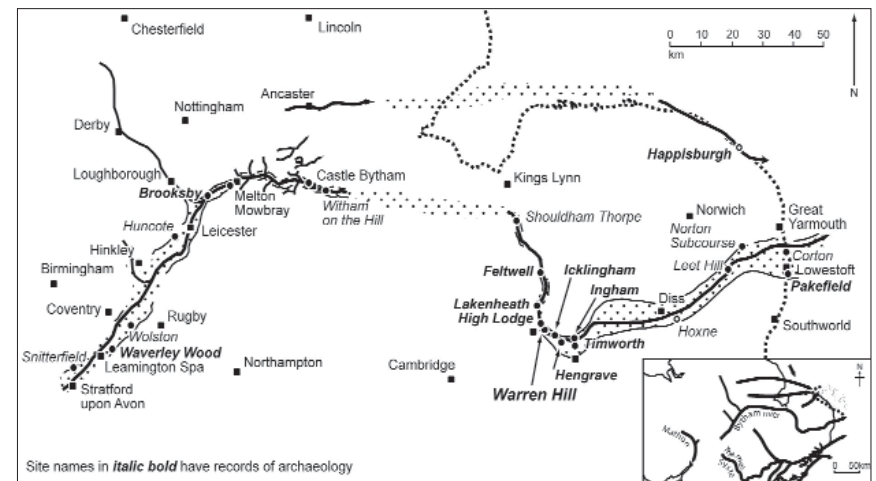
Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008:

Primary Research Themes 1 (Hominin environments and climate drivers) and 2 (Hominin demographics); Strategic Research/Conservation Theme 1 (Areas). *EH Research Strategy for Prehistory* 2011: Theme PR1, Topic 9 (Reconstructing Pleistocene and Early Holocene landscapes).

References:

- ¹ Rose, J., 2009. Early and Middle Pleistocene landscapes of eastern England. *Proceedings of the Geologists' Association* 120, 3-33.
- ² Buteux, S. Chambers, J. and Silva, B. (eds), 2009. *Digging Up the Ice Age*. Oxford: Archaeopress, 32–36.
- ³ Graf, A., 2002. Lower and Middle Palaeolithic Leicestershire and Rutland: progress and potential. *Transactions of the Leicestershire Archaeological and Historical Society* 76, 1–46.
- ⁴ e.g. Jarvis, W., Cooper, L. and Beamish, M., 2010. Brooksby Quarry, Melton Road, Brooksby. *Transactions of the Leicestershire Archaeological and Historical Society* 84, 349–350; Stephens, M., Challis, K., Cooper, L. *et al.*, 2008. New exposure of the Bytham River deposits at Brooksby, Leicestershire: context and importance. *Quaternary Newsletter* 115, 14–27.
- ⁵ e.g. White, T.S., Bridgland, D.R. and Howard, A.J., 2007. East Leake Quarry, in T.S. White, D.R. Bridgland and A.J. Howard *et al.* (eds), 2007. *The Quaternary of the Trent Valley and Adjoining Regions: Field Guide*, 84–87. London: Quaternary Research Association.
- ⁶ Collcutt, S., 2006. Palaeolithic prospection: some simple guidelines, in *The Archaeology of the East Midlands*, 46–49.
- ⁷ Buteux *et al* (eds), 2009, 111–120.



The Pre-Anglian Bytham and Ancaster river systems (Rose 2009, fig. 21; reproduced by permission of the Geologists' Association and Jim Rose)

Research Objective 1B

Test the hypothesis that hominines may have been absent from the East Midlands during Period 2 (Pre-Levallois Lower Palaeolithic)

Summary:

Despite abundant data from southern England¹, convincing evidence for hunter-gatherer activity in the East Midlands following retreat of the Anglian ice remains elusive². Hominines are known to have exploited more southerly river valleys and other ecological zones during temperate stages of Period 2, including the Thames and East Anglia³, and unless movements were impeded by obstacles such as the deep fjord-like feature into which the Nene flowed near Peterborough⁴ there seems no reason why the East Midlands should not also have attracted the attention of hunter-gatherers. Assessment of the extent of Period 2 hominin activity in the region is frustrated by an absence of evidence for deposits that may be dated securely to between late MIS12 and early MIS8⁵. It is recommended, therefore, that priority be accorded to the identification of deposits attributable to temperate stages of this period⁶, followed by prospection for associated cultural material. This could be achieved by ensuring that the potential for the preservation of Period 2 deposits is established at an early stage of quarry developments across the region. The strategy should aim to confirm the presence or absence of Period 2 deposits, and, if these are found to be present, evaluate the potential for evidence of hominin activity.

Agenda topics addressed: 1.2.1; 1.2.4; 1.6.2; 1.6.4; 1.6.5.

Archaeology of the East Midlands: 41.

SHAPE 2008: New frontiers: the remote past (11112.310).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4G1).

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008: Primary Research Theme 2 (Hominin demographies); Strategic

Research/Conservation Theme 2 (Understanding the Record).

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 9 (Reconstructing Pleistocene and Early Holocene landscapes).

References:

¹ Scott, B., 2011. *Becoming Neanderthals. The Earlier British Middle Palaeolithic*. Oxford: Oxbow Books.

² McNabb, J., 2006. The Palaeolithic, in *The Archaeology of the East Midlands*, 22–24.

³ e.g. Schreve, D.C., Bridgland, D.R., Allen, P., *et al.*, 2002. Sedimentology, palaeontology and archaeology of late Middle Pleistocene River Thames terrace deposits at Purfleet, Essex, UK. *Quaternary Science Review* 21, 1423–1464.

⁴ McNabb 2006, 24.

⁵ Although identified on the fringe of our area at, for example, Peterborough and near Stoke Goldington, Buckinghamshire: McNabb 2006, 24.

⁶ Compare Howard, A.J. and Knight, D., 2004. *The Pleistocene Background*, in Knight, D. and Howard, A.J., 2004. *Trent Valley Landscapes*, 15. Kings Lynn: Heritage Marketing & Publications.



Two rolled flint handaxes and a rolled quartzite handaxe (centre) from the Etwall Sand and Gravel (MIS 8) at Willington, Derbyshire. The source and date of deposition of artefacts from this terrace remain unclear, and they could derive from activity significantly predating deposition of the river gravels (© T.S. White and the Trent Valley Palaeolithic Project)

Research Objective 1C Confirm the extent and nature of early hominin activity during Period 4 (Mousterian)

Summary:

The East Midlands is one of few areas of Britain to have yielded a dataset for this period, albeit acquired principally by antiquarian explorations of limestone caves to the north and west of the region, and has significant potential for elucidating this poorly known period of prehistory¹. Classic Mousterian *bout coupé* axes² have been recovered from a variety of contexts, including examples from the ploughzone at Harlaxton and below blown sand at Risby Warren³ and a recently identified surface find from Marston Trussell⁴. The most extensive collection of Mousterian artefacts, however, remains that found during investigations of caves flanking the limestone gorge at Creswell Crags⁵. Further studies of extant artefact and faunal collections are recommended, particularly those recovered from Creswell Crags⁶, plus targeted excavations of sites likely to preserve significant stratified deposits with associated artefacts and environmental remains. Faunal or botanical data would sharpen our picture of the regional environment, which in Britain was characterised during this period by short, alternating, periods of cold and warm temperatures with rapid transitions and by dry open grasslands (the 'Mammoth Steppe')⁷. Caves and areas buried beneath scree deposits are particularly important for the preservation of *in situ* remains, and should be targeted for excavation⁸. The potential of lowland environments is exemplified outside the region by the remarkable collection of Mousterian artefacts and fauna recovered from a palaeochannel at Lynford in Norfolk⁹ and the woolly rhinoceros remains recovered from Late Pleistocene sands and gravels at Whitemoor Haye in Staffordshire¹⁰, and appropriate deposits should be identified and investigated prior to quarrying and other developments that might impact upon remains of Mousterian activity.

Agenda topics addressed: 1.3.1–1.3.4; 1.5.2–1.5.3; 1.6.2; 1.6.4; 1.6.5.

Archaeology of the East Midlands: 42, 264.

SHAPE 2008: Understanding artefacts and material culture (11111.510); New frontiers: the remote past (11112.310).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2).

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008: Primary Research Theme 2 (Hominin demographies); Strategic Research/Conservation Themes 1 (Areas) and 2 (Understanding the record).

EH Research Strategy for Prehistory 2011: Themes PR1, Topic 9 (Reconstructing Pleistocene and Early Holocene landscapes), PR2, Topic 13 (Understanding and protecting prehistoric caves, rock shelters and mines) and PR 3, Topic 18 (Technology and society in prehistory).

Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area 2010: Section 6.2.

References:

¹ McNabb, J., 2006. The Palaeolithic, in *The Archaeology of the East Midlands*, 29–31; White, M.J. and Pettitt, P.B., 2011. The British Middle Palaeolithic. An interpretative synthesis of Neanderthal occupation at the north-western edge of the Pleistocene World. *Journal of World Prehistory* 24, 25–97.

² Roe, D.A., 1981. *The Lower and Middle Palaeolithic Periods in Britain*, 240–267. London: RKP; White, M.J. and Jacobi, R.M., 2003. Two sides to every story: *bout coupé* handaxes revisited. *Oxford Journal of Archaeology* 21, 109–133.

³ Harlaxton, Lincolnshire and Risby Warren, Lincolnshire: Roe 1981, 261–62.

⁴ Marston Tressell, Northamptonshire: McNabb 2006, 31.

⁵ Jenkinson, R.D.S., 1984. *Creswell Crags: Late Pleistocene Sites in the East Midlands*. Oxford: British Archaeological Reports British Series 122; Pettitt, P.B. and Jacobi, R.M., 2009. The archaeology of Creswell Crags, in P. Bahn and P.B. Pettitt (eds), *Britain's Oldest Art: The Ice Age Art of Creswell Crags*, 16–35. London: English Heritage.

⁶ Wall, I. and Jacobi, R.M., 2000. *An Assessment of the Pleistocene Collections from the Cave and Rock Shelter Sites in the Creswell Area*. Creswell Heritage Trust.

(http://archaeologydataservice.ac.uk/archives/view/creswellcrags_ah_2006/).

⁷ McNabb 2006, 31.

⁸ Pettitt, P.B., Jacobi, R.M., Chamberlain, A.T. *et al.*, 2009. Excavations outside Church Hole, Creswell Crags; the first three seasons (2006–8). *Transactions of the Thoroton Society* 113, 35–53.

⁹ *Research and Conservation Framework for the British Palaeolithic* 2008, 17.

¹⁰ Schreve, D.C., Howard, A.J., Carrant, A.P. *et al.*, forthcoming. A Middle Devensian woolly rhinoceros from Whitemoor Haye Quarry, Staffordshire (UK): palaeoenvironmental context and significance. *Journal of Quaternary Science*.

Research Objective 1D Further investigate Upper Palaeolithic open-air sites

Summary:

Recent archaeological investigations in the region have located several nationally important open-air sites dating from the Early and Late Upper Palaeolithic¹. Further prospection and analysis is recommended to elucidate their character, spatial distribution and topographic settings, including assessment of the most appropriate fieldwalking and test-pitting methods. Key sites include an Early Upper Palaeolithic open-air site and hyaena den at Glaston² and *in situ* concentrations of Creswellian (Late Magdalenian) flintwork and debitage on a river terrace at Farndon Fields near Newark³, an *in situ* Creswellian lithic scatter found eroding out of a path in Bradgate Park near Leicester⁴ and an extensive *in situ* long-blade assemblage at Launde, Leicestershire⁵. These sites represent the open-air equivalents of the Derbyshire and Nottinghamshire cave sites (Objective 1E), and analyses of lithic artefacts from the ploughzone and buried contexts may shed important light upon hunter-gatherer movements (Objective 1F) and in particular the relationship between open-air and cave locations. Trace element analysis of flints from Farndon Fields, for example, indicates that at least some of the material may have derived from a source over 200km to the south, which has profound implications for the reconstruction of mobility patterns. Along with other Creswellian open-air and cave sites, this campsite may have formed part of an annual subsistence round extending southwards to the Severn basin and northwards to Creswell Crags and other sites on the Magnesian Limestone escarpment⁶.

Agenda topics addressed: 1.4.1–1.4.6; 1.4.8; 1.5.2; 1.5.3; 1.6.1; 1.6.2.

Archaeology of the East Midlands: 42.

SHAPE 2008: New frontiers: the remote past (11112.310); Fresh toolkits: methodological and theoretical research and innovation (14171.310).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2)

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008: Primary Research Theme 3 (How we became human); Strategic Research/Conservation Themes 1 (Areas) and 2 (Understanding the record).
EH Research Strategy for Prehistory 2011: Theme PR2, Topic 14 (Understanding and protecting 'sites without structures').
Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area 2010, Sections 6.1.6 and 6.2.7.

References:

- ¹ McNabb, J., 2006. The Palaeolithic, in *The Archaeology of the East Midlands*, 36, 39–41.
- ² Cooper, L.P., Thomas, J.S., Beamish, M.G. *et al.*, forthcoming. An Early Upper Palaeolithic open-air station and mid-Devensian hyaena den at Grange Farm, Glaston, Rutland, UK. *Antiquity*.
- ³ Garton, D. and Jacobi, R.M., 2009. An extensive Late Upper Palaeolithic flint scatter at Farndon Fields, near Newark, Notts. *Archaeological Journal* 166, 1–37.
- ⁴ Cooper, L.P., 2002. A Creswellian campsite, Newtown Linford. *Transactions of the Leicestershire Archaeological and Historical Society* 73, 91–97.
- ⁵ Cooper, L.P., 2006. Launde, a Terminal Palaeolithic campsite in the English Midlands and its Northern European context. *Proceedings of the Prehistoric Society* 72, 53–93.
- ⁶ Pettitt, P.B., 2008. The British Upper Palaeolithic, in J. Pollard (ed.), *Prehistoric Britain*, 41–42, fig. 2.10. Oxford: Blackwell.



Reconstruction of a temporary Early Upper Palaeolithic hunters' camp at Glaston, Rutland (reproduced by permission of University of Leicester Archaeological Services and English Heritage)

Research Objective 1E

Investigate Upper Palaeolithic use of the limestone caves of Derbyshire and Nottinghamshire

Summary:

The caves and rock shelters of the Magnesian and Carboniferous limestones of Derbyshire and Nottinghamshire preserve a nationally important Palaeolithic resource – most spectacularly at Creswell Crags, which in addition to the first parietal artwork in Britain (including engravings of bison, deer, horses and birds in Church Hole Cave) has yielded the most northerly Early Upper Palaeolithic lithic artefacts in Britain¹. Investigations in talus accumulations below Church Hole have revealed a hitherto unknown cave/rock shelter with stratified Creswellian lithic artefacts and an abundant fauna, including horse, reindeer, arctic hare and collared lemming², and emphasise the potential for preservation of other unexplored caves beneath slope deposits in limestone gorges within the region. Such caves may preserve crucial artefact evidence for Upper Palaeolithic activity and may shed important light upon the Early to Late Upper Palaeolithic cultural succession. Continued prospection for Upper Palaeolithic cave sites is recommended along the Magnesian Limestone escarpment of the Derbyshire-Nottinghamshire border and in the Carboniferous Limestone of the White Peak³⁻⁵, combined with targeted investigations of selected sites. Environmental records for this period remain sparse, and caves with stratified deposits provide important opportunities for the preservation of fauna, pollen and other remains that may elucidate variations in environmental conditions across the region and over time⁶.

Agenda topics addressed: 1.4.1–1.4.8; 1.5.2; 1.5.3; 1.6.2.

Archaeology of the East Midlands: 42, 264.

SHAPE 2008: New frontiers: understanding subterranean places (11112.210).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4GI).

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008: Primary Research Theme 3 (How we became human); Strategic Research/Conservation Theme 3 (Dating frameworks).

EH Research Strategy for Prehistory 2011: Theme PR2, Topic 13 (Understanding and protecting prehistoric caves, rock shelters and mines).

Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area 2010: Section 6.2.

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and the environment).

References:

¹ Bahn, P. and Pettitt, P.B., 2009. *Britain's Oldest Art: The Ice Age Cave Art of Creswell Crags*. London: English Heritage; Jenkinson, R.D.S., 1984. *Creswell Crags: Late Pleistocene Sites in the East Midlands*. Oxford: British Archaeological Reports British Series 122; Pettitt, P.B., Bahn, P. and Ripoll, S. (eds), 2007. *Palaeolithic Cave Art at Creswell Crags in European Context*. Oxford: Oxford University Press.

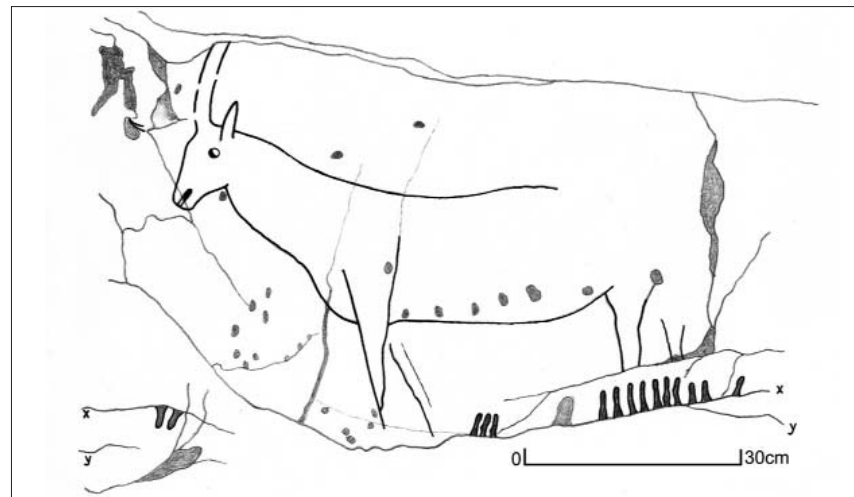
² Pettitt, P.B., Jacobi, R.M., Chamberlain, A.T. *et al.*, 2009. Excavations outside Church Hole, Creswell Crags; the first three seasons (2006–8). *Transactions of the Thoroton Society* 113, 35–53.

³ Chamberlain, A.T., 2007. Cave archaeology and palaeontology in the Creswell region, in Pettitt *et al.* (eds) 2007, 61–70.

⁴ Holderness, H., Davies, G., Chamberlain, A.T. *et al.*, 2006. *A Conservation Audit of Archaeological Cave Resources in the Peak District and Yorkshire Dales*. Sheffield: University of Sheffield, ARCUS Research Report 743b.

⁵ Davies, G., Badcock, A., Mills, N. and Smith, B. 2004 *Creswell Crags Limestone Heritage Area Management Plan*. Sheffield: University of Sheffield, ARCUS Research Report 719b.

⁶ Charles, R. and Jacobi, R., 1994. The Late Glacial fauna from the Robin Hood Cave, Creswell Crags: a re-assessment. *Oxford Journal of Archaeology* 13, 1–32.



Engraving of a stag recorded on the limestone wall of Church Hole Cave, Creswell Crags (drawing by Paul Brown; © English Heritage and courtesy of Paul Bahn and Paul Pettitt)

Research Objective 1F

Investigate the annual patterns of movement of Late Upper Palaeolithic hunter-gatherers

Summary:

The wide variety of evidence from the East Midlands for Late Upper Palaeolithic activity, including open-air sites¹, caves and rock shelters², raises the possibility of exploring settlement patterns, mobility and hunting strategies in ways that are possible in few other regions of the country. Systematic studies of Late Upper Palaeolithic lithic artefact morphology and technology could usefully be combined with scientific analyses aimed at establishing the potential sources of raw materials. Current collaborative work by the University of Sheffield and the British Geological Survey on artefact sourcing by trace element analyses of worked stone and potential source materials is of particular interest in this respect, and analyses at Farndon³ and elsewhere have identified possible linkages between sites distributed widely over the Trent and Severn catchments and beyond⁴⁻⁵. Trace element analysis may well be useful as a technique for unravelling the annual patterns of movement of hunter-gatherers within and beyond the East Midlands, and could potentially be extended to sites of the Early Upper Palaeolithic and other periods where we can be confident that the observed pattern of finds reflects the original distribution of activity foci. This technique might be augmented by isotopic studies of human bone to elucidate the movement of people, and their diets, and of animal bone to shed light upon migration routes⁶.

Agenda topics addressed: 1.4.2-1.4.5; 1.6.1.

Archaeology of the East Midlands: 42.

SHAPE 2008 Understanding artefacts and material culture (11111.510); Bright science: technical and technological innovation (14171.210).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4G1).

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008: Primary Research Theme 3 (How we became human); Strategic Research/Conservation Theme 2 (Understanding the record).

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 9 (Reconstructing Pleistocene and Early Holocene landscapes); Theme PR3, Topic 17 (Technology and society in prehistory); Theme PR5, Topic 27 (Developing scientific techniques for prehistory).

Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area 2010: Section 6.1.6.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

¹ e.g. Garton, D. and Jacobi, R.M., 2009. An extensive Late Upper Palaeolithic flint scatter at Farndon Fields, near Newark, Nottinghamshire. *Archaeological Journal* 166, 1-37.

² e.g. Creswell Crags: Bahn, P. and Pettitt, P.B., 2009. *Britain's Oldest Art: The Ice Age Cave Art of Creswell Crags*. London: English Heritage; Jenkinson, R.D.S., 1984. *Creswell Crags: Late Pleistocene Sites in the East Midlands*. Oxford: British Archaeological Reports British Series 122; Pettitt, P.B., Bahn, P. and Ripoll, S. (eds), 2007. *Palaeolithic Cave Art at Creswell Crags in European Context*. Oxford: Oxford University Press.

³ Garton and Jacobi 2009.

⁴ Pettitt, P.B., 2008. The British Upper Palaeolithic, in J. Pollard (ed.), *Prehistoric Britain*, 41-43. Oxford: Blackwell.

⁵ Rockman, M., 2003 *Landscape Learning in the Late Glacial Recolonization of Britain*. Tucson: University of Arizona, unpublished PhD dissertation.

⁶ *EH National Heritage Science Strategy Report 2*, 2009,10.



Creswellian flint artefacts found during fieldwalking at Farndon Fields, Nottinghamshire (photograph by G. Owen)

Research Objective 1G

Elucidate from terrestrial sources the changing Pleistocene environment of the East Midlands

Summary:

Further mapping and visualisation of the Pleistocene landscape is recommended in order to elucidate further the relationship between human populations and changes in climate, vegetation and landscape. This should be accompanied by the inclusion of further detail in Historic Environment Records, which at present often lack necessary information on the Pleistocene environment. There is significant scope in the East Midlands for further investigation of the changing environment, especially from the evidence of palaeochannels² and deposits in limestone caves³. Unpublished archive information from Creswell Crags has particular potential for elucidating changes in the Pleistocene environment, and merits further study in combination with excavations of *in situ* deposits⁴. Organic deposits associated with the Bytham drainage system also provide a critical resource for reconstructing the environment of the earliest hominin colonisers, as demonstrated by the discovery of organic remains associated with temperate deposits at Brooksby Quarry in Leicestershire⁵ and by discoveries of organic deposits and associated cultural remains from sites distributed widely across the Midlands and eastern England⁶.

Agenda topics addressed: 1.5.1–1.5.3; 1.6.4; 1.6.5.

Archaeology of the East Midlands: 41–42, 264.

SHAPE 2008: Understand the impact of past climate change (11111.410); Understanding ancient environments and ecologies (11111.420).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Identification of wetland/waterlogged sites (3A5); Pleistocene and Early Holocene archaeology (4G1); Enhancing the capabilities of HER Records (5C1).

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008: Primary Research Theme 1 (Hominin environments and climate drivers); Strategic Research/Conservation Theme 1 (Areas).

EH Research Strategy for Prehistory 2011: Theme PR6, Topics 30 (Human responses to environmental change in prehistory) and 31 (Human interactions

with plants and animals); Theme PR8, Topic 42 (Making HERs and related sources more accurate, relevant and useful for prehistory).

Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area 2010: notably Sections 6.1.1, 6.1.4 & 6.2.1. *EH National Heritage Science Strategy Report 2*, 2009: Section 3.3.1 (People and the Environment).

References:

¹ Monckton, A., 2006. Environmental archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 262–264.

² e.g. Howard, A.J. and Knight, D., 2004. The Pleistocene Background, in Knight, D. and Howard, A.J., 2004. *Trent Valley Landscapes*, 12–23. Kings Lynn: Heritage Marketing and Publications.

³ Charles, R. and Jacobi, R., 1994. The Late Glacial fauna from the Robin Hood Cave, Creswell Crags: a re-assessment. *Oxford Journal of Archaeology* 13, 1–32.

⁴ *Research Framework for the Archaeology and Palaeontology of Creswell Crags and the Limestone Heritage Area*, Sections 6.1 and 6.2.2.

⁵ Jarvis, W., Cooper, L. and Beamish, M., 2010. Brooksby Quarry, Melton Road, Brooksby. *Transactions of the Leicestershire Archaeological and Historical Society* 84, 349–350; Stephens, M., Challis, K., Cooper, L. et al., 2008. New exposure of the Bytham River deposits at Brooksby, Leicestershire: context and importance. *Quaternary Newsletter* 115, 14–27.

⁶ Rose, J., 2009. Early and Middle Pleistocene landscapes of eastern England. *Proceedings of the Geologists' Association* 120, 3–33.



Brooksby Quarry, Leicestershire: sampling of organic sediments exposed within the Thurmaston Member of the Baginton Formation during quarrying of Bytham Sands and Gravels (© University of Leicester Archaeological Services)

Research Objective 1H Explore the submerged Pleistocene landscapes of Doggerland

Summary:

Sea-level rises between around 13,000 and 7500 years ago, following the melting of ice sheets after the Last Glacial Maximum, have inundated vast tracts of the low-lying plains that for much of the Pleistocene and early Holocene would have extended from eastern England to the Continent. Some 23,000 square kilometres of this submerged landscape, known as Doggerland, have been mapped as part of the North Sea Palaeolandscapes Project, revealing through 3D seismic data a striking image of a lowland landscape subject to continuous and dynamic change¹. Large areas of the North Sea floor are the products of sediment reworking following submergence of low-lying areas, and may in many places seal preserved Pleistocene and early Holocene landscapes². Seismic interpretation techniques have permitted the identification of buried river channels with the potential for preservation of cultural and environmental remains that may elucidate landscape developments and changing lifestyles – both in the Palaeolithic and Mesolithic (Objective 2H). For both periods, therefore, there is a clear need to identify, target, date and sample submarine palaeochannels and pre-inundation land surfaces, and to record and date artefact, faunal and botanical material retrieved principally through dredging³. There is also an opportunity to recover palaeoenvironmental data and artefacts from the assessment and development of further wind-farm locations⁴, and from continuing liaison with the fishing industry.

Agenda topics addressed: 1.4.4; 1.4.5; 1.5.1–1.5.3; 1.6.2; 1.6.3.

SHAPE 2008: Understanding the impact of past climate change (11111.410); New frontiers: mapping our marine heritage (11112.110).

NHPP 2011: Unknown marine assets and landforms (3A1); Unknown coastal assets (3A2); Identification of wetland/waterlogged sites (3A5); Pleistocene and Early Holocene archaeology (4G1); Submerged heritage assets and landscapes (4H1).

Other research frameworks:

Research and Conservation Framework for the British Palaeolithic 2008:

Primary Research Theme 1 (Hominin environments and climate drivers); Strategic Research/Conservation Theme 1(Areas).

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 8 (Submerged prehistoric landscapes); Theme PR6, Topic 30 (Human responses to environmental change in prehistory).

North Sea Prehistory Research and Management Framework 2009, 28: Themes B (Palaeogeography and environment) and G (Representation of prehistoric hunter-gatherer communities and lifeways).

Canti, M. 2009. *A Review of Geoarchaeology in the Midlands of England*. 55: Priority 3.2 (Marine sediments).

EH National Heritage Science Strategy Report 2, 2009: Section 3.5.1 (Detecting and imaging).

References:

¹ Coles, B.J., 1998. Doggerland: a speculative survey. *Proceedings of the Prehistoric Society* 64, 45-81; Gaffney, V., Fitch, S. and Smith, D., 2009. *Europe's Lost World: The Rediscovery of Doggerland*. York: CBA Research Report 160.

² Peeters, H., Murphy, P. and Flemming, N., 2009. *North Sea Prehistory Research and Management Framework*, 19–24.

³ Peeters *et al.* 2009, 28; building in the East Midlands upon current work carried out in the Humberside region and along the East Coast as part of the ALSF Regional Environmental Characterisation project (<http://www.humberrecgis.org.uk/hu/>).

⁴ English Heritage, 2005. *Wind Energy and the Historic Environment*. London: English Heritage.



Mammoth skull recovered during dredging of the North Sea between eastern England and the Netherlands (© Wim van Vosren Fotografie)

6.2 MESOLITHIC (c.9500 - c.4000 cal BC): UPDATED RESEARCH AGENDA

2.1 *Periods of transition*

1. What can we deduce about the transition from late-glacial to early post-glacial hunter-gatherer societies?
2. What can analyses of sites contribute to studies of continuity and change during the Mesolithic period?
3. How may we elucidate further the transition from the later Mesolithic to the earlier Neolithic?

2.2 *Spatial distribution of activity*

1. How were open-air and cave/rock shelter sites distributed across the region, and how might the pattern of activity have changed over time?
2. How were sites distributed across low-lying and upland areas, and in particular how many sites might be concealed beneath alluvium, colluvium and other masking deposits or beneath the sea?
3. How can HER records be updated to permit study of changing activity patterns between the earlier and later Mesolithic periods?
4. How can we ensure the extension of fieldwalking surveys to previously untargeted areas, and in particular to comparatively poorly studied landscapes (e.g. Coal Measures)?

2.3 *Identification of site types*

1. How were caves and rock shelters utilised in this period and what was their relationship to open sites?
2. How far may studies of the size, shape and locational characteristics of lithic scatters and analyses of the associated lithic artefacts contribute to the identification of site types in the later and earlier Mesolithic?
3. What range of structural remains may survive on open-air sites across the region (particularly below alluvium and other masking deposits)?
4. How can we enhance the lithic scatter data retrieved during fieldwalking to clarify the size and shape of activity foci?
5. How far can we elucidate by targeted excavation the character of sites represented by surface lithic scatters?

2.4 *Lithic artefact chronologies*

1. Can we refine further by detailed typological analyses of survey and excavation the chronology of Mesolithic lithic industries, and in particular those overlapping Late Upper Palaeolithic and earlier Neolithic traditions?
2. How far may radiocarbon dating contribute to refinement of lithic artefact chronologies?
3. Can we elucidate the potential impact of environmental change upon lithic artefact technology?

4. Can we shed further light upon variations in the lithic assemblages surviving in earlier and later Mesolithic industries?

2.5 *Production, distribution and use of lithic artefacts*

1. How precisely can we define the sources of lithic raw materials and the routes of movement of raw materials and/or finished artefacts?
2. Can we define with greater precision the spatial extent of typologically distinctive lithic assemblage types (Star Carr-type, Deepcar-type, etc.) and what may these distribution patterns imply?
3. What light may further site-based studies of lithic reduction sequences shed upon spatial and temporal variations in the organisation of lithic production and changes in lithic technology?

2.6 *Environmental change and food procurement strategies*

1. What can analyses of cave deposits, palaeochannel fills, upland peats and other deposits with potential for preserved pollen, charcoal and other organic remains contribute to studies of the earliest stages of woodland clearance and plant domestication?
2. How can we maximise the potential of palaeochannels, upland or coastal peats and other organically rich deposits as sources of data on Early Holocene landscapes and changes in subsistence strategies and diet?
3. How far may studies of Mesolithic diet and mobility patterns be advanced by stable isotope analyses of human bone?



Bilaterally barbed later Mesolithic antler harpoon from the Trent riverbank at Long Eaton, Derbyshire or Thrumpton, Nottinghamshire; length 98mm (reproduced by permission of Ann Inscker, Nottingham City Museums & Galleries)

MESOLITHIC (c.9500 - c.4000 cal BC): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	2.1 Periods of transition			2.2 Spatial distribution of activity				2.3 Identification of site types					2.4 Lithic artefact chronologies				2.5 Production, distribution & use of lithic artefacts			2.6 Environmental change and food procurement		
	1	2	3	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	1	2	3
2A Enhance understanding of the environmental background to Mesolithic activity	●	●	●					●												●	●	●
2B Characterise the regional and local evidence for Mesolithic activity	●	●	●	●	●		●	●	●	●	●	●						●	●			
2C Investigate further the earlier Mesolithic lithic resource	●	●		●	●	●			●	●			●	●	●	●	●	●				
2D Identify changing patterns of lithic artefact use in the later Mesolithic		●	●	●	●	●			●				●	●	●	●		●	●			
2E Provenancing lithic raw materials: identify patterns of mobility																	●					
2F Develop a regional lithic raw material reference collection																	●					
2G Investigate the topographic locations of activity foci	●	●	●	●	●		●	●		●												
2H Investigate the transition from the Mesolithic to Neolithic			●										●	●						●	●	●
2I Exploring Doggerland: target submarine landscapes and the modern coastline				●	●					●										●	●	●

Research Objective 2A Enhance understanding of the environmental background to Mesolithic activity

Summary:

By comparison with some other areas of the country, the Mesolithic environment of the East Midlands is little known. In particular there is little evidence to indicate the extent to which tree cover may have been manipulated to encourage the development of vegetation suites for hunting and foraging. Research into ancient environments has focused on the Pennine uplands of Derbyshire¹ and more recently upon organic deposits retrieved from palaeochannels along the Trent and other major river valleys². In Derbyshire, dated pollen sequences have been obtained³, together with evidence for the potential modification of vegetation by fire around former lakes and mires⁴. The evidence obtained so far suggests that the deliberate creation of forest clearings is a feature of the later Mesolithic, from after about 8000 cal BC^{5,6}. There is a need to obtain more closely dated pollen sequences from upland, riverine and coastal peat deposits and to extend the investigation of ancient environments to include isotope studies of the organic fractions of coastal and riverine sediments. The submerged landscapes of Doggerland also present major opportunities for landscape analysis in the form of submarine palaeochannels, pre-inundation land surfaces and peats (Objective 2H)⁷. Coversand deposits, such as those flanking the eastern edge of the lower Trent Valley⁸, also merit special mention. Recent work suggests reworking of some late Devensian coversands in the Early Holocene as a result possibly of Mesolithic clearance and/or climatic change⁹. Additional optically stimulated luminescence (OSL) dating of coversands and pollen analysis may be recommended to elucidate further the chronology of coversand reworking and the history of vegetation change.

Agenda topics addressed: 2.1.1–2.1.3; 2.3.1; 2.6.1–2.6.3.

Archaeology of the East Midlands: 67, 265.

SHAPE 2008: Understanding the impact of past climate change (1111.410); Understanding ancient environments and ecologies (11111.420); New frontiers: mapping our marine heritage (11112.110).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Identification of wetland/waterlogged sites (3A5); Pleistocene and Early Holocene archaeology (4G1).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 9 (Reconstructing Pleistocene and Early Holocene landscapes); Theme PR6, Topics 30 (Human responses to environmental change in prehistory) and 31 (Human interactions with plants and animals in prehistory).
North Sea Prehistory Research and Management Framework 2009, 28: Theme B, 31.
Canti, M. 2009 *A Review of Geoarchaeology in the Midlands of England*. London: English Heritage Research Department Report Series 17, 55: Priorities 3.1 (Alluvium), 3.2 (Marine sediments) and 3.3 (Windblown sediments).
EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and the Environment).

References:

- ¹ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 61–62.
- ² Howard, A.J. and Knight, D., 2004. Mesolithic hunter-gatherers, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 33–35. Kings Lynn: Heritage Marketing and Publications.
- ³ Tallis, J.H. and Switsur, V.R., 1973. Studies on Southern Pennine peats VI: a radiocarbon dated pollen diagram from Featherbed Moss, Derbyshire. *Journal of Ecology* 61, 743–751.
- ⁴ Hicks, S.P., 1972. The impact of man on the East Moor of Derbyshire from Mesolithic times. *Archaeological Journal* 129, 1–21.
- ⁵ Simmons, I.G., 2006. *The Moorlands of England and Wales: An Environmental History 8000 BC to AD 2000*, 33–34. Edinburgh: Edinburgh University Press.
- ⁶ Myers 2006, 56.
- ⁷ Peeters, H., Murphy, P. and Flemming, N., 2009. *North Sea Prehistory Research and Management Framework*, 19–21, 28.
- ⁸ Howard and Knight 2004, 32.
- ⁹ Howard and Knight 2004, 32, 40–42; compare Baker, C.A. and Bateman, M.D., 2010. The residual coversand deposits of central Isle of Thanet, Kent, UK. *Quaternary Newsletter* 122, 16–34.

Research Objective 2B Characterise the regional and local evidence for Mesolithic activity

Summary:

The East Midlands is notable for the broad range of environments from which Mesolithic lithic artefacts have been recovered¹, yet this information has generally not informed national syntheses and has yet to be fully exploited in regional research. Early investigations of limestone caves and rock shelters in Derbyshire and Nottinghamshire yielded Mesolithic stone artefacts², while later work has revealed surface finds and sometimes deeply stratified collections of lithic artefacts across a wide variety of landscapes³. These extend from the Pennine spine to the eroding coastal peats of Lincolnshire, and include such diverse environments as the Coal Measures⁴, the terraces and coversands of the Trent Valley⁵, the wetlands of the Witham Valley⁶ and Humberhead Levels⁷, and the claylands of Leicestershire and Northamptonshire⁸. Further investigation by excavation⁹ has been very limited, however, while the detail of the surface scatters is often not known. It is important to identify the extent, size and shape of artefact distributions and investigate possible associations with sub-surface features¹⁰ in order to characterise these¹¹, and field methods should be adapted appropriately. Curatorial briefs should highlight areas where there has been little or no surface collection and should recognise the potential for wet sieving to recover artefacts and the role of geophysical prospection. The nature and chronology of the lithic material from the region merits separate consideration (Objectives 2C-2E), but it is clear that further review of the surface evidence, together with associated excavation, has much to contribute to our understanding of Mesolithic activity in the region.

Agenda topics addressed: 2.1.1-2.1.3; 2.2.1; 2.2.2; 2.2.4; 2.3.1-2.3.5; 2.5.2; 2.5.3.

Archaeology of the East Midlands: 67.

SHAPE 2008: Understanding place: researching regional diversity (11111.310).

NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 6 (Regional diversity in prehistory); Theme PR2, Topic 14 (Understanding and protecting 'sites without structures').

Lithic Studies Society 2004. *Research Frameworks for Holocene Lithics in Britain*, 2-3.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

¹ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 57-64.

² Myers 2006, 59.

³ Manby, T.G., 1963. Some Mesolithic sites in the Peak District and the Trent basin. *Derbyshire Archaeological Journal* 83, 10-23.

⁴ Myers 2006, 64; e.g. Unstone, Derbyshire: see note 9 below.

⁵ Howard, A.J and Knight, D., 2004. Mesolithic hunter-gatherers, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 31-39. Kings Lynn: Heritage Marketing and Publications; see also Objective 2A: notes 8 and 9.

⁶ e.g. Lincoln Eastern Bypass (Area B): Rylatt, J., forthcoming. *Archaeological Investigations along the Proposed Route of the Lincoln Eastern Bypass*. Heckington: Witham Valley Archaeology Research Committee; Brayford Pool, Lincoln: Rylatt, J. and Field, N., forthcoming. *Lincoln University: Excavation of the Delph Pond* 2006. Heckington: WVARC.

⁷ Van de Noort, R. and Ellis, S. (eds), 1997. *Wetland Heritage of the Humberhead Levels*, 455-456. Hull: University of Hull, Humber Wetlands Project.

⁸ e.g. Clay, P., 2002. *The Prehistory of the East Midlands Claylands*, 26-28. Leicester: University of Leicester Archaeology Monograph 9.

⁹ e.g. Unstone, Derbyshire: full Mesolithic toolkit, with microliths, awls, scrapers, burins and blades as well as a series of associated features; Ataman, K., 1978. *Excavations at Unstone, Derbyshire*, 1978. Unpublished report, North Derbyshire Archaeological Trust; Myers, A.M., 2001. *An Archaeological Resource Assessment of the Mesolithic in Derbyshire*

(<http://www.le.ac.uk/archaeology/ulas/publications/documents/emidmeso.pdf>)

¹⁰ e.g. Unstone: note 8; Lincoln Eastern Bypass (Area B): Rylatt, J., forthcoming and pers. comm. (includes pits yielding Later Mesolithic flintwork).

¹¹ Myers 2006, 67-68.

Research Objective 2C Investigate further the earlier Mesolithic lithic resource

Summary:

The East Midlands region is notable for the range and extent of distribution of lithic material, but much of this remains little studied. In particular, Historic Environment Records (HERs) commonly lack detailed information on the nature of artefact assemblages and the range of lithic types represented¹. There is, therefore, considerable constraint on the value of the lithic assemblages and of the HERs as resources for targeting excavation and research, and further assessment and review of the assemblages is needed². In addition to a few examples of tranchet axes, earlier Mesolithic assemblages are characterised in our region by non-geometric microliths in the form of oblique points, isosceles triangles and elongated trapezoids, together with scrapers and burins. It is suggested that these were collectively adapted for the hunting and butchering of forest species – as exemplified by the classic type sites of Star Carr in east Yorkshire³ and Deepcar in the Pennines of southern Yorkshire⁴. Further evaluation of the relationship between these assemblages and the latest Palaeolithic artefact groups is also necessary. The lithic artefact resource of the East Midlands thus offers significant scope for investigating the potential size of earlier Mesolithic hunting territories and key issues such as the relationship of upland lithic scatters to those of the lowlands or of cave to open-air sites⁵.

Agenda topics addressed: 2.1.1; 2.1.2; 2.2.1–2.2.3; 2.3.2; 2.3.3; 2.4.1–2.4.4; 2.5.2; 2.5.3.

Archaeology of the East Midlands: 67.

SHAPE 2008: Understanding artefacts and material culture (11111.510).

NHPP 2011: Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topics 17 (Technology and society in prehistory) and 18 (Prehistoric material culture in context); Theme PR8, Topic 37 (Realising the potential of prehistoric archives and collections).

Lithic Studies Society 2004 *Research Frameworks for Holocene Lithics in Britain*, 2-4, 7.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

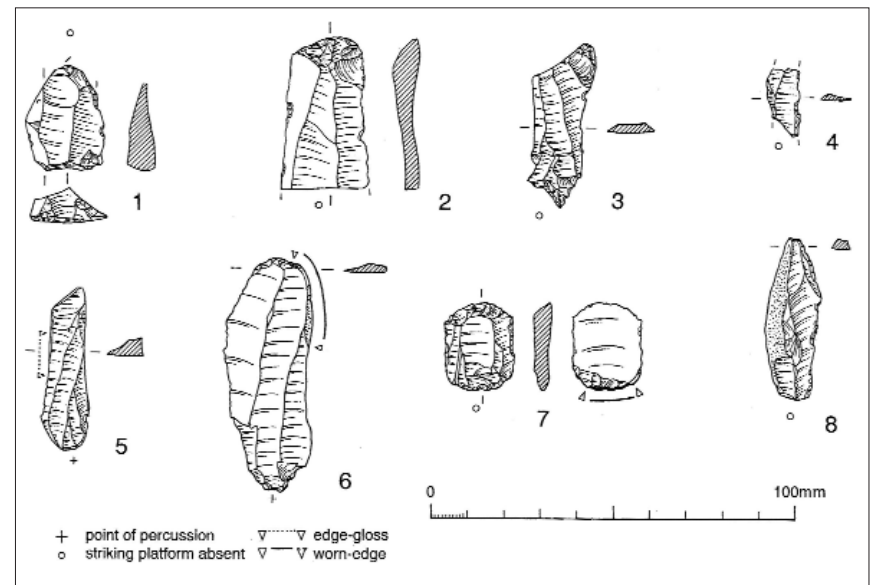
¹ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 59.

² Lithic Studies Society, 2004. *Research Frameworks for Holocene Lithics in Britain*, 7.

³ Clark, J.G.D., 1954. *Excavations at Star Carr: An Early Mesolithic Site at Seamer near Scarborough, Yorkshire*, 15–17. Cambridge: Cambridge University Press.

⁴ Jacobi, R.M., 1978. Northern England in the eighth millennium bc: an essay, in P. Mellars (ed.), *The Early Post-Glacial Settlement of Northern Europe*, 319–323. London: Duckworth.

⁵ Barton, N. and Roberts, A., 2004. The Mesolithic period in England: current perspectives and new research, in A. Saville (ed.), *Mesolithic Scotland and its Neighbours: The Early Holocene Prehistory of Scotland, its British and Irish Context and some Northern European Perspectives*, 349–350. Edinburgh: Society of Antiquaries of Scotland.



Earlier Mesolithic flint tools from Swarkestone Lowes (Elliott, L. and Knight, D., 1999. An early Mesolithic and first millennium BC settlement and pit alignments at Swarkestone Lowes, Derbyshire. *Derbyshire Archaeological Journal* 119, 106-124; reproduced by courtesy of the Derbyshire Archaeological Society)

Research Objective 2D Identify changing patterns of lithic artefact use in the later Mesolithic

Summary:

The shortcomings in our documentation and understanding of East Midlands lithic material have been noted above (Objectives 2B and 2C). Later Mesolithic assemblages are typified by a wide variety of smaller geometric forms, including scalene and isosceles triangles, rhomboids, crescents and backed rods¹. It has been suggested that changes in lithic styles between the earlier and later Mesolithic are indicative not of a change in the animals being hunted but of increasing complexity in the hunting weapons that were used². Detailed examination of microlith assemblages suggests the existence of 'style zones' independent of European traditions³, which might signify the development of sub-regional territories⁴. With ameliorating climate and enhanced plant and animal resources, hunting territories may have shrunk in size; this in turn may have encouraged a semi-sedentary life style, built around regular access to areas which had been cleared of trees to encourage more predictable supplies of game⁵. There are suggestions also that the traditional dichotomy between an earlier and a later Mesolithic may be an over-simplification of a more complex sequence, including an intermediate stage exemplified by Lincolnshire and Northamptonshire artefact assemblages related typologically to the so-called 'Horsham industries' of areas farther south⁶ and by a recently excavated assemblage from Asfordby in Leicestershire⁷. The opportunity exists, therefore, to refine knowledge of East Midlands later Mesolithic assemblages and to attempt definition of chronological, functional and cultural traits.

Agenda topics addressed: 2.1.2; 2.1.3; 2.2.1-2.2.3; 2.3.2; 2.4.1-2.4.4; 2.5.2; 2.5.3.

Archaeology of the East Midlands: 67.

SHAPE 2008: Understanding artefacts and material culture (11111.510).

NHPP 2011: Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topics 17 (Technology and society in prehistory) and 18 (Prehistoric material culture in context).
Lithic Studies Society 2004 Research Frameworks for Holocene Lithics in Britain, 2-4.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding Materials).

References:

¹ Clark, J.G.D., 1932. *The Mesolithic Age in Britain*, 53. Cambridge: Cambridge University Press; Myers, A.M., 2006, in *The Archaeology of the East Midlands*, 54.

² David, A., 1998. Two assemblages of later Mesolithic microliths from Seamer Carr, North Yorkshire: fact and fancy, in N. Ashton, F. Healey and P.B. Pettit (eds), *Stone Age Archaeology: Essays in Honour of John Wymer*, 196-206. Oxford: Oxbow Books.

³ Jacobi, R.M., 1976. Britain inside and outside Continental Europe. *Proceedings of the Prehistoric Society* 42, 80; Jacobi, R.M., 1978. Northern England in the eighth millennium bc: an essay, in P. Mellars (ed.), *The Early Postglacial Settlement of Northern Europe*, 295-332. London: Duckworth.

⁴ Myers 2006, 54.

⁵ As suggested in relation to Star Carr and the North York Moors, see Vyner, B.E., 2003. The Upper Palaeolithic and the earlier Mesolithic, in R.A. Butlin (ed.), *Historical Atlas of Yorkshire*, 33-34. Otley: Westbury Publishing.

⁶ Summarised by Myers 2006, 53.

⁷ Jarvis, W. and Cooper, L., 2010. Asfordby, Loughborough Road. *Transactions of the Leicestershire Archaeological and Historical Society* 84, 347.



Flint artefacts from Asfordby, Leicestershire, including obliquely truncated points harking back to the Early Mesolithic (bottom row), typologically distinctive points with inverse basal retouch (middle row) and large geometric forms looking forward to the Late Mesolithic (top row); maximum length 30mm; reproduced by permission of University of Leicester Archaeological Services)

Research Objective 2E

Provenancing lithic raw materials: identify patterns of mobility

Summary:

Studies of earlier Mesolithic stone artefacts from south Pennine sites such as Deepcarr in Yorkshire¹ and lowland sites such as Misterton Carr² and Swarkestone Lowes³ have provided persuasive evidence for the movement of raw materials within and beyond the East Midlands, and emphasise the potential of trace element and other scientific techniques for studies of changing patterns of mobility (e.g. by trace element analysis of worked stone and potential source materials)⁴. Determination of possible raw material sources is complicated by the possibility of glacial redeposition of hard rock, which in turn demands detailed study of the composition of local tills and fluvio-glacial deposits. In the case of Deepcar-type assemblages from the south Pennines, analysis has shown them to include pre-formed blade cores of a distinctive opaque, mottled, grey-cream flint brought from sources no closer than the Trent Valley and knapped on site, presumably to enhance the hunting kit⁵. This may imply regular annual movements within large territories spanning upland and lowland zones⁶. The evidence for movement of other raw materials such as grey chert is more ambiguous⁷, and further scientific research is needed to investigate potential sources. Particular emphasis should be placed upon refining our knowledge of earlier Mesolithic mobility patterns and testing the hypothesis that there was a shift in the later Mesolithic towards an emphasis upon more locally based resources⁸.

Agenda topics addressed: 2.5.1.

Archaeology of the East Midlands: 67.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Bright science: technical and technological innovations (14171.310).

NHPP 2011: Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topics 17 (Technology

and society in prehistory) and 18 (Prehistoric material culture in context); Theme PR5, Topic 27 (Developing scientific techniques for prehistory). Lithic Studies Society 2004 *Research Frameworks for Holocene Lithics in Britain*, 4-6.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

¹ Radley, J. and Mellars, P.A., 1964. A Mesolithic structure at Deepcar, Yorkshire, England, and the affinities of its associated flint industry. *Proceedings of the Prehistoric Society* 30, 1–24.

² Buckland, P.C. and Dolby, M.J., 1973. Mesolithic and later material from Misterton Carr, Nottinghamshire. *Transactions of the Thoroton Society* 77, 5–33.

³ Garton, D. and Brown, J., 1999. Flint, quartzite and polished stone artefacts, in Elliott, L. and Knight, D. An Early Mesolithic and first millennium BC settlement and pit alignments at Swarkestone Lowes, Derbyshire. *Derbyshire Archaeological Journal* 119, 106–124.

⁴ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 54–55, 67; see also Objective 1F.

⁵ Howard, A.J. and Knight, D., 2004. Mesolithic hunter-gatherers, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 40. Kings Lynn: Heritage Marketing and Publications.

⁶ Howard and Knight 2004, 40; Myers, A.M., 1989. Lithics, risk and change in the Mesolithic, in I. Brooks and P. Phillips (eds), *Breaking the Stony Silence*, 131–60. Oxford: British Archaeological Reports British Series 213.

⁷ e.g. Knight, D., Garton, D. and Leary, R. *et al.*, 1998. The Elmton fieldwalking survey: prehistoric and Romano-British artefact scatters. *Derbyshire Archaeological Journal* 118, 78–79.

⁸ Myers 2006, 54–55.



Waterswallows Lane, Buxton, Derbyshire: recent excavations of an early activity focus at the interface between the Dark and White Peak unearthed a wide range of later Mesolithic and Neolithic finds, including non-local grey chert artefacts that are the focus of current study (photograph: Mike Andrews; reproduced by permission of ArchHeritage)

Research Objective 2F Develop a regional lithic raw material reference collection

Summary

Studies of variations in lithic raw material use have been central to many discussions of Mesolithic assemblage chronology and provenance in the East Midlands and beyond¹ and this remains a key theme in the current Strategy. The region's lithic resource base needs to be explicitly researched as an aid to studies of material recovered during fieldwalking and other archaeological investigations, including the rich and largely untapped resource of unstudied artefact collections buried in museum archives. To facilitate this, our understanding of raw materials should be standardised through the establishment of a readily accessible reference collection. This should include material from areas beyond the region, bearing in mind the mobility of Mesolithic groups and hence the wide range of potential raw material sources, and it is hoped will address the plea of lithic specialists for increased awareness of available raw materials and their properties². This collection would also be useful for studies of the lithic resource of other prehistoric periods, and hence may be highlighted as a key cross-period priority.

Agenda topics addressed: 2.5.1.

Archaeology of the East Midlands: 67.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Realising the research dividend from past unpublished historic environment investigations (11113.110).

NHPP 2011: Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topics 17 (Technology and society in prehistory) and 18 (Prehistoric material culture in context); Theme PR8, Topic 37 (Realising the potential of prehistoric archives and collections).

Lithic Studies Society 2004 *Research Frameworks for Holocene Lithics in Britain*, 7.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

¹ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 54–55.

² Lithic Studies Society, 2004. *Research Frameworks for Holocene Lithics in Britain*, 5–6.



The diversity of potential raw materials is illustrated by this sample of water-worn rocks retrieved from the Trent gravels, deposited during various stages of the Pleistocene by meltwater-enriched rivers:

1. Conglomerate pebble from the Triassic ('Bunter')
2. Well cemented orthoquartzite
3. Poorly cemented orthoquartzite
4. Metaquartzite
5. Vein quartz
6. Schorl
7. Flint
8. Carboniferous chert
9. Rhaxella chert

(Source: Bridgland, D.R., Howard, A.J., White, M.J. and White, T.S., 2006. *The Trent Valley: Archaeology and Landscapes of the Ice Age*. Durham University; © Trent Valley Palaeolithic Project)

Research Objective 2G

Investigate the topographic locations of activity foci

Summary

More attention should be paid to the topographical attributes of Mesolithic activity foci, which have been recorded in a wide variety of locations. Prominent or elevated sites seem often to have been favoured for open-air sites¹, including hilltops and, in regions of subdued topography, subtle ridges and sand islands². Proximity to wetland resources may have been important, to judge by sites such as Misterton Carr³ and the many lithic scatters spread across river terraces⁴, and many more sites may lie buried beneath alluvium, colluvium, coversands or peat⁵. Fieldwalking and test-pitting surveys have also retrieved material from a wide range of other topographic zones across the region⁶, and there is much to be learnt about locational strategies during this period. There are significant opportunities to identify associations between specific activities and distinctive topographies, although many questions remain regarding the prevailing vegetation cover. Consideration should also be given to the nature of Mesolithic activity in locations attracting Neolithic settlement or burial. There may be differences between the two periods: Mesolithic finds at Lismore Fields, for example, spread across a low plateau that was later a focus of Neolithic settlement⁷, while the chambered cairn at Whitwell⁸ occupied a site that, in common with other cairn locations, yielded no trace of Mesolithic activity.

Agenda topics addressed: 2.1.1–2.1.3; 2.2.1; 2.2.2; 2.2.4; 2.3.1; 2.3.3.

Archaeology of the East Midlands: 67.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130) and researching regional diversity (1111.310).

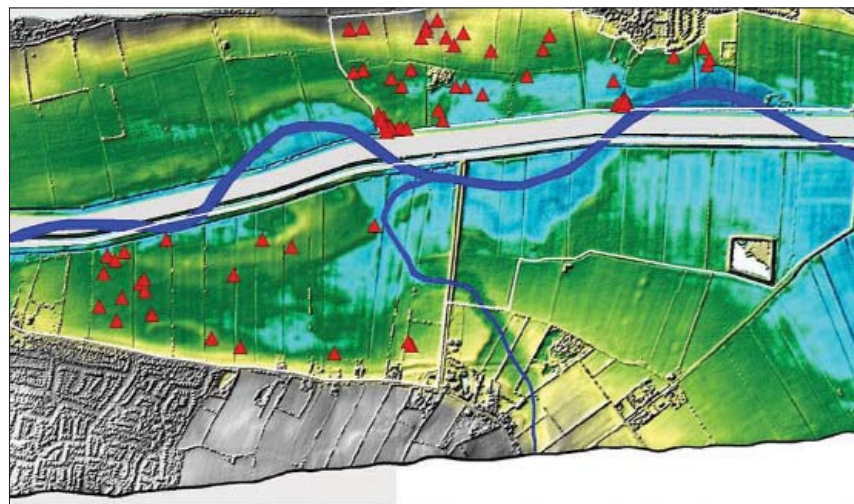
NHPP 2011: Deeply buried/subterranean Pleistocene and Early Holocene archaeology (3A3); Identification of wetland/waterlogged sites (3A5); Pleistocene and Early Holocene archaeology (4G1); Ploughzone archaeology (4G2)

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR2, Topic 10 (Setting prehistoric sites in context).

References:

- ¹ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 63.
- ² e.g. Lincolnshire Fens: Hall, D. and Coles, J., 1994. *Fenland Survey. An Essay in Landscape and Persistence*, 27–37. London: English Heritage.
- ³ Buckland, P.C. and Dolby, M.J., 1973. Mesolithic and later material from Misterton Carr, Nottinghamshire. *Transactions of the Thorton Society* 77, 5–33.
- ⁴ Garton, D., 2002. Walking fields in South Muskham and its implications for Romano-British cropmark landscapes in Nottinghamshire. *Transactions of the Thorton Society* 106, 27–37.
- ⁵ e.g. Witham Valley: French, C. and Rackham, J., 2003. Palaeoenvironmental research design for the Witham Valley, in S. Catney and D. Start (eds), *Time and Tide: the Archaeology of the Witham Valley*. 33–42. Heckington: Witham Valley Archaeology Research Committee; Rylatt, J. and Field, N., forthcoming. *Lincoln University: Excavation of the Delph Pond* 2006. Heckington: WVARC.
- ⁶ Myers 2006, 62–64.
- ⁷ Garton, D., 1991. Neolithic settlement in the Peak District, in R. Hodges and K. Smith (eds), *Recent Developments in the Archaeology of the Peak District*, 11–14. Sheffield: University of Sheffield Archaeological Monograph 2.
- ⁸ Vyner, B.E. and Wall, I., 2011. A Neolithic cairn at Whitwell. *Derbyshire Archaeological Journal* 131, 1–131.



Mesolithic fieldwalking finds recorded by the Washingborough Archaeological Group in the Witham Valley. The lidar image shows higher (>2m OD) areas of the valley floor (green), lower-lying areas and watercourses (blue shades). Much of the Mesolithic valley floor was later covered by peat, but modern drainage and peat wastage have exposed the earlier land surface (lidar data courtesy of the Environment Agency; processed imagery by Archaeological Project Services)

Research Objective 2H Investigate the transition from the Mesolithic to Neolithic

Summary:

Once it seemed easy: whatever the precise mechanics of the conversion, the Mesolithic was characterised by hunter-gatherers, while the Neolithic was populated by settled farmers. Hard and fast distinctions between the Mesolithic and Neolithic are now increasingly difficult to maintain, although the question of the extent to which societies were 'Mesolithic' or 'Neolithic' still seems valid¹. Key issues of concern include the continuity of essentially Mesolithic lifeways beyond the fifth millennium BC and the degree to which Early Neolithic populations engaged in agriculture. With notable exceptions such as Lismore Fields², evidence for arable farming in the form of querns or cereal grains of undoubted Early Neolithic date remains rare in the East Midlands³. Nevertheless, discoveries of early faunal remains indicate a new interest in domesticating animals and the processing of animal products in different ways⁴. In addition, the building of funerary and other ritual or ceremonial monuments, alongside the development of pottery and changes in lithic industries to encompass flake core artefacts and shaped arrowheads at the expense of bladelet types⁵, suggests that becoming Neolithic may have been a spiritual conversion as well as a socio-economic or technological one⁶. The issue of changing subsistence strategies and the relationship between Mesolithic and Neolithic lifeways can be addressed in part by consistent sampling of organic material preserved in palaeochannels and other waterlogged or wetland contexts spanning the transition period. Close examination of the occasional features found associated with Mesolithic and Early Neolithic lithic scatters⁷ should also be a priority, and should be combined wherever possible with radiocarbon dating and environmental sampling of associated deposits.

Agenda topics addressed: 2.1.3; 2.4.1, 2.4.2; 2.6.1–2.6.3.

Archaeology of the East Midlands: 67, 86, 265–266.

SHAPE 2008: New frontiers: clarifying poorly understood chronologies (11112.510).

NHPP 2011: Identification of wetland/waterlogged sites (3A5); Pleistocene and Early Holocene archaeology (4G1).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR4, Topic 23 (Key transitions in prehistory).

Lithic Studies Society 2004 Research Frameworks for Holocene Lithics in Britain, 6. *EH National Heritage Science Strategy Report 2*, 2009: Sections 3.2.1 (Chronology) and 3.3.1 (People and the environment).

References:

¹ Bailey, G., 2008. Mesolithic Europe: overview and new problems, in G. Bailey and P. Spikins (eds), *Mesolithic Europe*, 362–364. Cambridge: Cambridge University Press.

² Garton, D., forthcoming. *The Excavation of a Mesolithic and Neolithic Settlement at Lismore Fields, Buxton, Derbyshire*. Oxford: Oxbow Books.

³ Monckton, A., 2006. Environmental archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 265–266.

⁴ Monckton 2006, 265–266.

⁵ Myers, A.M., 2006. The Mesolithic, in *The Archaeology of the East Midlands*, 56–57.

⁶ Whittle, A., 1996. *Europe in the Neolithic*, 8. Cambridge: Cambridge University Press.

⁷ Howard, A.J. and Knight, D., 2004. Mesolithic hunter-gatherers, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 38. King's Lynn: Heritage Marketing and Publications; e.g. Lincoln Eastern Bypass (Area B): Rylatt, J., forthcoming. *Archaeological Investigations along the Proposed Route of the Lincoln Eastern Bypass*. Heckington: Witham Valley Archaeology Research Committee.



Holme Dyke, Gonalston, Nottinghamshire: Early Neolithic bowl placed in the bottom of one of several shallow pits distinguished principally from the terrace sands by their more compact fills and associated heat-shattered stones (Knight and Howard 2004, 66-67; photograph: Lee Elliott)

Research Objective 2I

Exploring Doggerland: target submarine landscapes and the modern coastline

Summary:

Post-glacial sea-level rises have inundated vast tracts of the low-lying plains that would once have connected eastern England with the Continent¹. Some 23,000 square kilometres of this submerged landscape, known as Doggerland, have been mapped as part of the North Sea Palaeolandscapes Project, revealing through 3D seismic data a striking image of a broad plain with meandering rivers and lakes². Seismic interpretation techniques have permitted the identification of buried river channels with the potential for significant preservation of cultural and environmental remains that may shed important new light upon landscape developments and changing lifestyles in the Mesolithic and late Palaeolithic. There is a clear need to identify, target, date and sample submarine palaeochannels, pre-inundation land surfaces, and intertidal and submarine peats, and to record and date the artefact assemblages retrieved mainly by dredging³. The potential of submerged landscapes along the North Sea coast is well illustrated by on-going investigations in the Humber Estuary⁴ and by the results of recently published work to the north of our region in Hartlepool Bay⁵. Investigations in the latter area yielded charcoal residues suggesting clearance of reeds to encourage wildfowl, faunal remains and footprints indicating the presence of aurochs and red deer, and a small collection of lithic artefacts indicating sporadic Mesolithic activity. Coastal erosion may also reveal Mesolithic deposits of environmental and cultural value, in some cases well preserved beneath blown sand, and it is recommended that priority be accorded to the identification and targeted investigation of such sites.

Agenda topics addressed: 2.2.1; 2.2.2; 2.3.3; 2.6.1–2.6.3.

SHAPE 2008: Understanding the impact of past climate change (1111.410); Understanding ancient environments and ecologies (1111.420); New frontiers: mapping our marine heritage (1112.110).

NHPP 2011: Unknown marine assets and landforms (3A1); Unknown coastal assets (3A2); Identification of wetland/waterlogged sites (3A5); Pleistocene and Early Holocene archaeology (4G1); Submerged heritage assets and landscapes (4H1).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 8 (Submerged prehistoric landscapes); Theme PR6, Topic 30 (Human responses to environmental change in prehistory).

North Sea Prehistory Research and Management Framework, 28-31: Themes B, E, F and G.

Canti, M., 2009 *A Review of Geoarchaeology in the Midlands of England*, 55: Priority 3.2 (Marine sediments). London: English Heritage.

EH National Heritage Science Strategy Report 2, 2009: Section 3.5.1 (Detecting and imaging).

References:

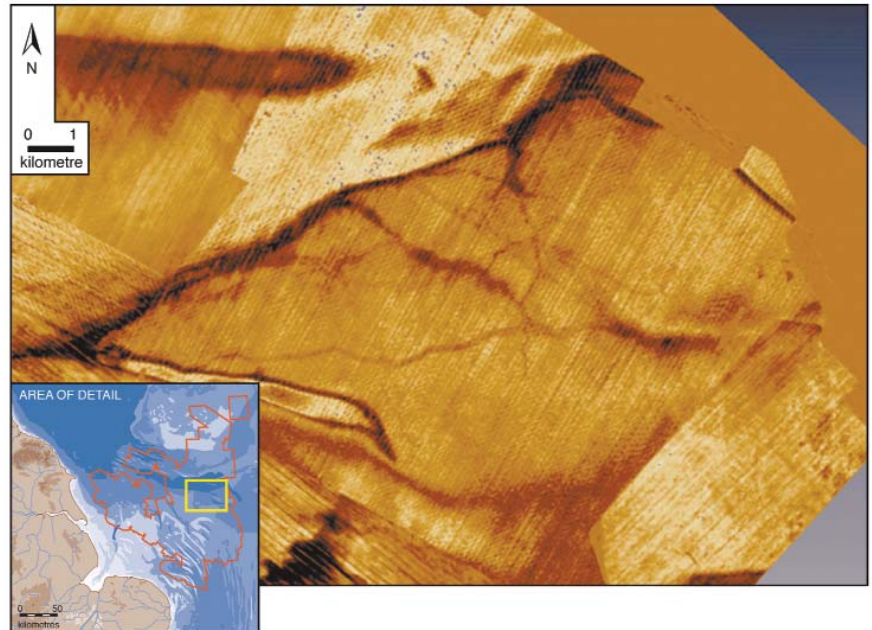
¹ Coles, B.J., 1998. Doggerland: a speculative survey. *Proceedings of the Prehistoric Society* 64, 45-81

² Gaffney, V., Fitch, S. and Smith, D., 2009. *Europe's Lost World: The Rediscovery of Doggerland*. York: CBA Research Report 160.

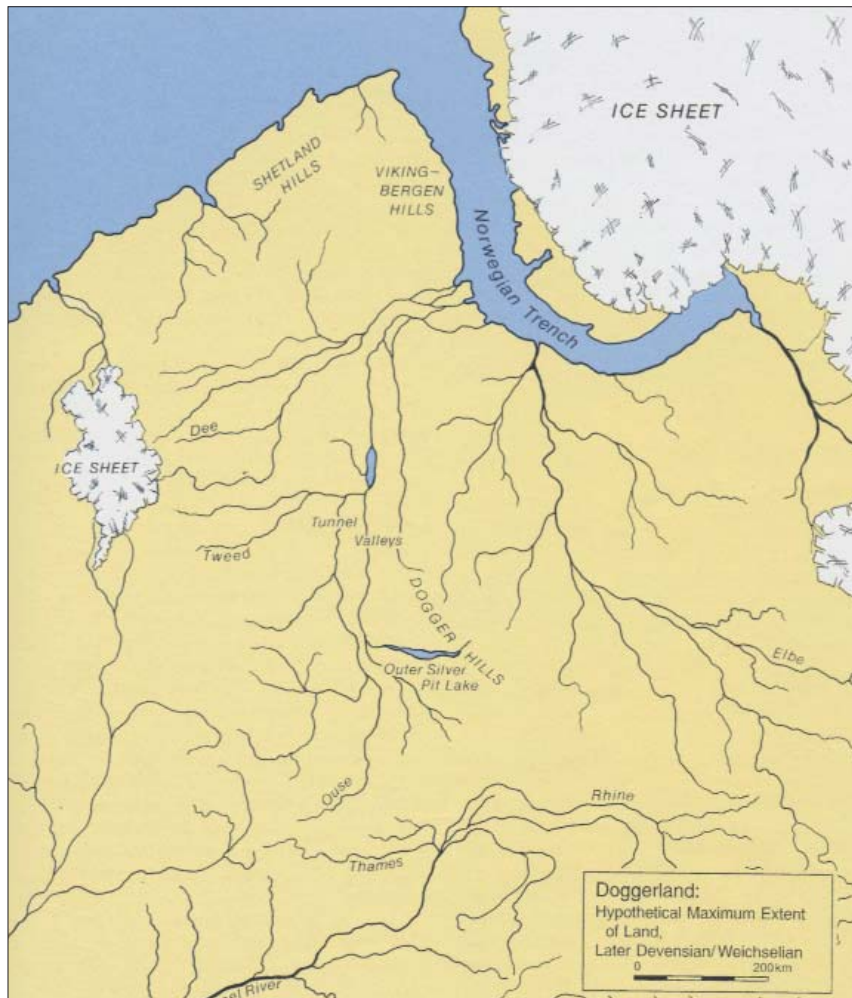
³ *North Sea Prehistory Research and Management Framework, 19–24.*

⁴ *Humber Regional Environmental Characterisation Project* (<http://www.humberrecgis.org.uk/hu/>).

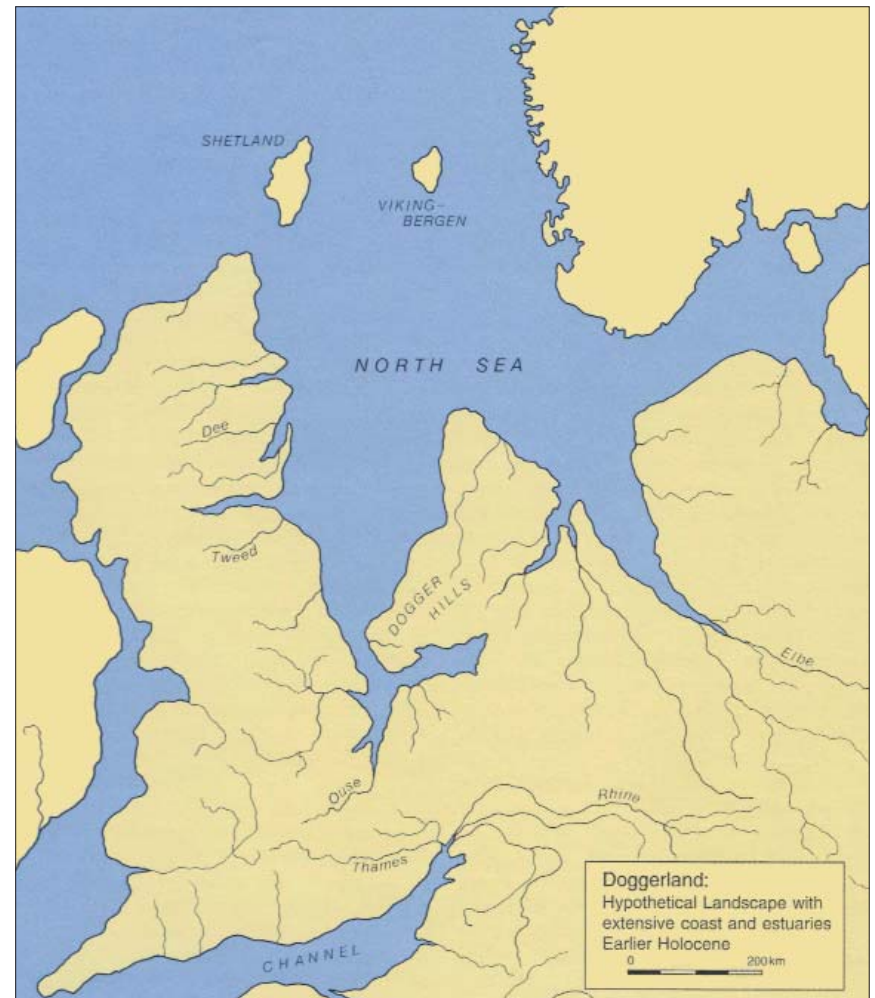
⁵ Waughman, M., 2005. *Archaeology and Environment of Submerged Landscapes in Hartlepool Bay, England*, 129–131. Hartlepool: Tees Archaeology Monograph 2.



Submerged channels recorded by seismic survey indicate extensive salt marshes that would have provided rich resources for Mesolithic communities (Gaffney, V. *et al.*, 2009, fig. 3.31; reproduced by permission of the authors)



The impact of the dramatic rises in sea level that followed melting of the ice sheets that formed during the last glaciation (Devensian) is shown by these maps published in Bryony Coles' seminal study of Doggerland (Coles, B.J.,



1998. Doggerland: a speculative survey. *Proceedings of the Prehistoric Society* 64, 45-81; reproduced by courtesy of Bryony Coles and the Prehistoric Society)

6.3 NEOLITHIC AND EARLY TO MIDDLE BRONZE AGE (c.4000–c.1150 cal BC): UPDATED RESEARCH AGENDA

3.1 Dating

1. How may radiocarbon and other scientific dating methods be applied most effectively to refining the period's imprecise chronological framework?
2. How can we date more precisely the various regional styles of Neolithic and earlier Bronze Age pottery?
3. Can we further refine lithic artefact chronologies within the region?
4. Can we define more precisely the chronology of the major monument classes (causewayed enclosures, barrows and cairns etc), and how might this have varied spatially?

3.2 Continuity of hunter-gatherer traditions

1. To what extent may hunter-gatherer subsistence traditions have continued into the Neolithic?
2. Can we discern continuities or discontinuities in the distributions of later Mesolithic and earlier Neolithic lithic scatters?
3. How may environmental sampling strategies assist in elucidating the transition from later Mesolithic to earlier Neolithic economies?
4. What light is thrown by isotope analysis on dietary change in the Neolithic?

3.3 Introduction, character and development of agriculture

1. When was the transition from nomadic to semi-sedentary and sedentary communities and to what extent did this vary in different landscapes?
2. Can we clarify the range of new crops, regional variations in the introduction of species such as spelt wheat, the relative importance of cultivated and gathered food and changes in diet?
3. What was the balance between domesticated animals and cultivated crops and how might this have varied within the region and over time?
4. When did the first field and boundary systems develop, how did this vary regionally and what processes may underlie their development?

3.4 Exploitation of different landscape zones

1. How may the region's remarkable variety of upland, lowland and coastal landscapes be surveyed in ways that would permit recognition of significant intra-regional variations in land use?
2. Can we identify locations with a high potential for elucidating variations in arable, pasture and woodland cover between ecological zones (e.g. palaeochannels; upland peats)?
3. Can we further refine our knowledge of the selective use of particular landscapes for ritual, agriculture and other activities?

3.5 Settlement patterns

1. How may we characterise more effectively the frequently ephemeral structural traces that might relate to settlement activity?

2. Can we obtain a clearer understanding of temporal and spatial variability in the duration of settlement activity?
3. How might settlement morphology and functions have varied regionally and over time, and in particular when, where and why may the first enclosed settlements have developed?
4. What may analyses of surface lithic scatters teach us about developing settlement patterns in the region?

3.6 Ceremonial and burial monuments

1. Why may monument complexes have developed, why were some short-lived and others of longer duration, and why do these incorporate such a wide variety of monument types?
2. Why were some monument types, such as causewayed enclosures, long cairns and henges, constructed in some areas but not others?
3. What roles may henges, causewayed enclosures, cursuses and other monument classes have performed in contemporary society?
4. To what extent can we relate monument types to particular artefact suites, and can such information usefully inform fieldwork strategies?

3.7 Riverine monuments and ritual foci

1. When did burnt mounds develop, what functions may they have performed and how might they relate to contemporary settlements?
2. What ceremonial or ritual roles may rivers or other watery locations have performed and how may this have varied regionally and over time?
3. How significant were river-crossing or confluence zones as foci for monument complexes?

3.8 Neolithic and Bronze Age societies

1. Can we identify intra-regional variations in the character of sites and artefacts and what might these signify in social or economic terms?
2. How far can studies of burials, grave goods, house and barrow/cairn structures contribute to studies of status variations within and between communities?
3. How far may DNA or isotope analyses of human bone shed light upon population mobility and in particular the Beaker phenomenon?

3.9 Raw material resources and exchange networks

1. Can we locate flint, chert, igneous rock and other lithic raw material sources and identify exchange networks (e.g. Group XX Charnwood axes)?
2. How far may petrographic and other scientific analyses contribute to our understanding of systems of ceramic production and distribution?
3. How far may studies of grave goods from barrows and other burial monuments contribute to studies of trade and exchange within and beyond the region?
4. How can we further refine our understanding of the production and distribution of copper, bronze and gold items?

NEOLITHIC AND EARLY TO MIDDLE BRONZE AGE (c.4000–c.1150 cal BC): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	3.1 Dating				3.2 Continuity of hunter-gatherer traditions				3.3 Introduction, character and development of agriculture				3.4 Exploitation of landscape zones			3.5 Settlement patterns				3.6 Ceremonial and burial monuments				3.7 Riverine monuments and ritual foci			3.8 Neolithic and Bronze Age societies			3.9 Raw material resources and exchange			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3	4
3A Compile database of scientific dates and extend Bayesian modelling	●	●	●	●					●	●	●	●					●	●		●				●	●								
3B Assess the fieldwalking resource			●		●	●			●				●		●				●								●			●			
3C Develop fieldwalking strategies and guidelines for landscape zones					●	●							●		●				●								●						
3D Assess the regional air photographic and lidar resource												●	●	●	●					●	●	●			●	●	●						
3E Target sites with Late Mesolithic and Early Neolithic organic remains	●				●		●		●	●	●		●	●	●																		
3F Identify monument complexes and prioritise for curatorial action															●					●	●	●	●		●	●	●						
3G Conduct additional investigations of earlier Neolithic funerary traditions				●				●							●						●	●	●				●	●	●			●	
3H Recover and analyse human remains	●			●				●		●															●			●	●				
3I Investigate the development and intensification of agriculture					●				●	●	●				●																		
3J Foster relevant artefact studies		●																									●	●		●	●	●	●

Research Objective 3A

Compile database of scientific dates and extend application of Bayesian modelling for radiocarbon dating

Summary:

Reviews of radiocarbon dates for the Neolithic and Bronze Age have been prepared for some areas of the East Midlands¹, but there is a pressing need for an up-to-date database for the entire region that could be employed as a springboard for prioritised dating programmes. These should take full account of progress in Bayesian modelling, which rests upon the acquisition of multiple radiocarbon dates and their analysis in the context of the excavated evidence². Existing archives should be reviewed to identify those most likely to contain data appropriate for Bayesian analysis. These techniques offer exciting new opportunities to refine the chronology of excavated sites and to provide reliable cross-referencing to dated sites from elsewhere in the country³. The method is particularly useful for periods such as the earlier Neolithic, which offers complex monument sequences and lengthy phases of conservatism in the manufacture of ceramic and lithic items, and could usefully be applied to such poorly dated monuments as the chambered and long cairns of the Peak District⁴. Successful applications of the technique in the East Midlands include a Neolithic funerary cairn at Whitwell, allowing it to be placed firmly within the continuum occupied by the Cotswold-Severn chambered tombs⁵, burnt mounds at Willington⁶ and the Raunds monument complex⁷.

Agenda topics addressed: 3.1.1–3.1.4; 3.3.1–3.3.4; 3.5.2; 3.5.3; 3.6.1; 3.7.1; 3.7.2.

Archaeology of the East Midlands: 86–87, 289.

SHAPE 2008: Understanding artefacts and material culture (11111.510); New frontiers: clarifying poorly understood chronologies (11112.510); Bright science: technical and technological innovation (14171.210).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topic 18 (Prehistoric material culture in context); Theme PR4, Topic 24 (Building chronologies for prehistory); Theme PR5, Topic 26 (Developing dating techniques).

EH National Heritage Science Strategy Report 2, 2009: Section 3.2.1 (Chronology).

Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 4.

References:

¹e.g. Barnatt, J., 1995. Neolithic and Bronze Age radiocarbon dates from the Peak District. *Derbyshire Archaeological Journal* 115, 5–19.

² Buck, C.E., Cavanagh, W.G. and Litton, C.D., 1996. *Bayesian Approach to Interpreting Archaeological Data*. Chichester: Wiley.

³ Whittle, A., Healy, F. and Bayliss, A., 2011. *Gathering Time: Dating the Earlier Neolithic Enclosures of Southern Britain and Ireland*. Oxford: Oxbow Books.

⁴ Barnatt, J. and Collis, J., 1996. *Barrows in the Peak District: Recent Research*. Sheffield: J.R. Collis Publications.

⁵ Marshall, P., Bayliss, A. and Wall, I., *et al.*, 2011. Radiocarbon dating, in Vyner, B. and Wall, I., A Neolithic cairn at Whitwell, Derbyshire. *Derbyshire Archaeological Journal* 131, 30–40.

⁶ Beamish, M.G., 2009. Island visits: Neolithic and Bronze Age activity on the Trent Valley floor. Excavations at Egginton and Willington, Derbyshire, 1998–1999. *Derbyshire Archaeological Journal* 129, 17–182.

⁷ Harding, J. and Healy, F., 2007. *The Raunds Area Project. A Neolithic and Bronze Age Landscape in Northamptonshire*. Swindon: English Heritage.



Burnt Mound 2, Willington: wood-lined trough cut into palaeochannel silts. Bayesian analysis indicates trough construction 1290–1100 cal BC and end of use 1130–1040 cal BC (95% probability; Beamish 2009, 67–68; reproduced by courtesy of Matt Beamish and the Derbyshire Archaeological Society)

Research Objective 3B Assess the fieldwalking resource

Summary:

There is a long tradition of fieldwalking across the region, but there has been comparatively little synthesis at the regional scale of the results of these surveys. Some of this information has been published¹ but most resides in museum collections or in Historic Environment Records. In neither case is the detail of the information always readily accessible. A review of the results of fieldwalking surveys is recommended as a means of highlighting intra-regional contrasts in the spatial distribution of artefacts, combined with further study of museum collections². Such work may contribute in turn to the development of future programmes of investigation. In Leicestershire and northern Northamptonshire, for example, lithic scatters indicate activity areas, many of them in clayland environments, at slightly lower elevations than Mesolithic lithic scatters but at much the same distance from water sources^{3,4}. In contrast, surveys in Derbyshire on the uplands and in some valley locations indicate a close correlation between the locations of earlier Neolithic and later Mesolithic lithic scatters⁵. Debate continues on the interpretation of artefact distribution patterns, but the potential of fieldwalking for developing our understanding of early settlement is illustrated by a number of intra-regional synthetic studies⁶ and by excavations of several scatters recorded during fieldwalking. These include Rothley, Leicestershire, where excavations of a clayland lithic scatter revealed domestic activity associated with Peterborough ware, Grooved Ware and an unusual carved stone plaque⁷, and Mount Pleasant, Kenslow, Derbyshire, where excavations of several lithic clusters revealed a group of four small pits and Grimston, Peterborough and Grooved Ware deriving probably from separate phases of occupation⁸. Close analysis of fieldwalking assemblages should, therefore, enable excavations of finds scatters to be better targeted⁹.

Agenda topics addressed: 3.1.3; 3.2.1; 3.2.2; 3.3.1; 3.4.1; 3.4.3; 3.5.2; 3.5.4; 3.6.4; 3.8.1; 3.9.1.

Archaeology of the East Midlands: 86-87.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Realising the research dividend from past unpublished historic environment investigations (11113.110); Fresh toolkits: methodological and theoretical research and innovation (14171.310); Systems research for HERs (41161.110).

NHPP 2011: Ploughzone archaeology (4G2); Enhancing the capabilities of HERs (5C1).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR2, Topic 14 (Understanding and protecting 'sites without structures'); Theme PR8, Topics 41 (Realising the potential of prehistoric archives and collections) and 46 (Making HERs and related sources more accurate, relevant and useful for prehistory). Lithic Studies Society 2004. *Research frameworks for Holocene Lithics in Britain*, 2-3, 7.

References:

- ¹ e.g. Knight, D, Garton, D. and Leary, R., 1998. The Elmton fieldwalking survey: prehistoric and Romano-British artefact scatters. *Derbyshire Archaeological Journal* 118, 69–85; Parry, S., 2006. *Raunds Area Survey: an Archaeological Study of the Landscape of Raunds, Northamptonshire*, 1985–94. Oxford: Oxbow Books.
- ² e.g. Buxton Museum: large collections of systematically collected lithic material from across the Peak District are ripe for analysis and publication.
- ³ Clay, P., 2006. The Neolithic and Early to Middle Bronze Age, in *The Archaeology of the East Midlands*, 73.
- ⁴ Clay, P., 2002. *The Prehistory of the East Midlands Claylands*, 109–114. Leicester: University of Leicester Archaeology Monograph 9.
- ⁵ Clay 2006, 73; Hart, C., 1981. *The North Derbyshire Archaeological Survey*, 24–47. Chesterfield: North Derbyshire Archaeological Trust.
- ⁶ e.g. Bradley, R. and Hart, C., 1983. Prehistoric settlement in the Peak District during the third and second millennia bc: a preliminary analysis in the light of recent fieldwork. *Proceedings of the Prehistoric Society* 49, 177–193; Garton, D., 2007. Flintwork and medieval pottery from fieldwalking over cropmarks on the Sherwood Sandstone of North Nottinghamshire. *Transactions of the Thoroton Society* 111, 15–32; Knight *et al.* 1998.
- ⁷ Cooper, L. and Hunt, L., 2005. An engraved Neolithic plaque with Grooved Ware associations. *PAST (Newsletter of the Prehistoric Society)* 50, 14–15.
- ⁸ Garton, D. and Beswick, P., 1983. The survey and excavation of a Neolithic settlement area at Mount Pleasant, Kenslow, 1980–1983. *Derbyshire Archaeological Journal* 103, 7–40.
- ⁹ See also Garton, D., 1989. Flintwork distributions: the excavation record, in I. Brooks and P. Phillips (eds), *Breaking the Stony Silence*, 91–108. Oxford: British Archaeological Reports British Series 213.

Research Objective 3C

Develop fieldwalking strategies and guidelines for landscape zones

Summary:

Synthesis of the results of fieldwalking (Objective 3B) should enable the development of more refined strategies for locating and interpreting the lithic scatters that provide crucial evidence for early prehistoric activity. There is a pressing need to investigate further the lithic signatures of monument types, as this may assist the interpretation of finds scatters. In addition, building upon projects in areas such as the Fens¹, the Nene and Ouse catchments around Raunds² and the Peak District³, and upon smaller-scale surveys such as Elmton in Derbyshire⁴, it would be useful if further surveys could be conducted across a wide spectrum of landscape zones. This would permit a more informed assessment of variations in the density and character of settlement and comparison of the lithic evidence with earthwork, cropmark and other remote sensing data across a wide range of geological and topographic zones⁵. It should also provide a secure foundation for the development of guidelines specific to particular landscape zones and aid identification of methodologies capable of detecting sites that are not easily located⁷. A review of the excavation record may also illuminate the nature of lithic assemblages recovered by fieldwalking⁸.

Agenda topics addressed: 3.2.1; 3.2.1; 3.4.1; 3.4.3; 3.5.4; 3.6.4; 3.8.1.

Archaeology of the East Midlands: 86–87.

SHAPE 2008: Fresh toolkits: methodological and theoretical research and innovation (14171.310).

NHPP 2011: Ploughzone archaeology (4G2); Underpinning local planning processes (5B2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR2, Topic 14 (Understanding and protecting 'sites without structures').
Lithic Studies Society, 2004. *Research Frameworks for Holocene Lithics in Britain*, 2–3.

References

¹ Hayes, P. and Lane, T., 1992. *The Fenland Project, No. 5: Lincolnshire Survey*,

The SW Fen. East Anglian Archaeology 55; Lane, T., 1993. *The Fenland Project, No. 8: Lincolnshire Survey, The Northern Fen Edge*. East Anglian Archaeology 66.

² Parry, S., 2006. *Raunds Area Survey: an Archaeological Study of the Landscape of Raunds, Northamptonshire, 1985–94*. Oxford: Oxbow Books.

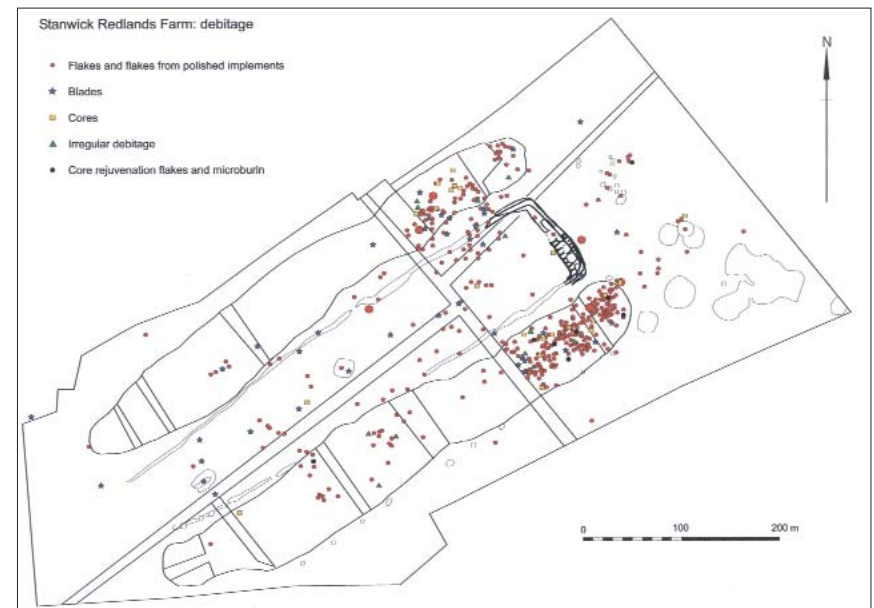
³ Barnatt, J., 1996. Moving beyond the monuments: paths and people in the Neolithic landscapes of the Peak District, in P. Frodsham (ed.), *Neolithic Studies in No-Mans Land: Papers on the Neolithic of Northern England from Trent to the Tweed*, 43–59. Northern Archaeology 13/14, Northumberland Archaeology Group.

⁴ Knight, D., Garton, D. and Leary, R., 1998. The Elmton fieldwalking survey: prehistoric and Romano-British artefact scatters. *Derbyshire Archaeological Journal* 118, 69–85.

⁵ Clay, P., 2006. Claylands Archaeology: summary and prospect, in J. Mills and R. Palmer (eds), *Populating Clay Landscapes*, 147–156. Stroud: Tempus.

⁷ e.g. earlier Neolithic scatters: Clay, P., 2006. The Neolithic and Early to Middle Bronze Age, in *The Archaeology of the East Midlands*, 87.

⁸ Garton, D., 1989. Flintwork distributions: the excavation record, in I. Brooks and P. Phillips (eds), *Breaking the Stony Silence*, 91–108. Oxford: British Archaeological Reports British Series 213.



Redlands Farm, Northamptonshire: dense struck flint, sherds and animal bone in the secondary fills of the long barrow ditch terminals and uneven distributions of pottery and flint between the terminals echo patterns observed elsewhere, and may imply periodic revisiting of the monument for eating, drinking and ceremonial activities (Harding and Healy 2007, 93-97, 110-111, 207-288; reproduced by permission of the authors and English Heritage)

Research Objective 3D Assess the regional air photographic and lidar resource

Summary:

Many of Britain's principal Neolithic and earlier Bronze Age monuments, which in the East Midlands include round and long earthen barrows or cairns^{1,3}, funerary enclosures⁴, henges, timber or stone circles⁵, cursus monuments⁶ and causewayed enclosures⁷, may be distinguished from the air by merit of their highly distinctive morphology⁸. Significant parts of the region are characterised by pasture or woodland, or are otherwise unsuited to cropmark formation on account of the underlying geology or the presence of masking deposits such as alluvium, colluvium or coversands. With this proviso, however, and with reference to English Heritage's National Mapping Programme, review of the region's air photographic resource should permit identification of many of the principal monument complexes, confirmation of their landscape settings and an initial indication of the range of components (Objective 3F). Significantly, all but one of the eight known Neolithic causewayed enclosures in the region have been revealed by air photography⁹, emphasising the effectiveness of this approach. The contribution of lidar, which may identify monuments preserved in pasture or concealed in dense woodland, bracken or heather¹⁰, and of other airborne remote sensing methods¹¹ should also be considered.

Agenda topics addressed: 3.3.4; 3.4.1–3.4.3; 3.6.1–3.6.3; 3.7.2; 3.7.3; 3.8.1.

Archaeology of the East Midlands: 87.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130) and assessment of regional historic environment components (11111.170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topics 2 (Political and ritual landscapes in prehistory) and 5 (Addressing gaps in our knowledge of prehistoric landscapes); Theme PR2, Topics 10 (Setting prehistoric sites in context) and 12 (Characterising and classifying prehistoric sites and monuments).

EH National Heritage Science Strategy Report 2, 2009: Section 3.5.1 (Detecting and imaging).

References:

- ¹ Jones, D., 1998. Long barrows and elongated enclosures in Lincolnshire: an analysis of the air photographic evidence. *Proceedings of the Prehistoric Society* 64, 83–114.
- ² Barnatt, J. and Collis, J. (eds), 1996. *Barrows in the Peak District*. Sheffield: J.R. Collis Publications.
- ³ Hart, C.R., 1986. Searches for the Early Neolithic: a study of Peakland long cairns, in T.G. Manby and P. Turnbull (eds), *Archaeology in the Pennines*, 127–136. Oxford: British Archaeological Reports British Series 158.
- ⁴ Jones 1998.
- ⁵ Barnatt, J., 1990. *The Henges, Stone Circles and Ringcairns of the Peak District*. Sheffield: University of Sheffield Archaeological Monograph 1.
- ⁶ Clay, P., 2006. The Neolithic and Early to Middle Bronze Age, in *The Archaeology of the East Midlands*, 13, 76; Barclay, A. and Harding, J. (eds), 1999. *Pathways and Ceremonies: the Cursus Monuments of Britain and Ireland*. Oxford: Oxbow Books.
- ⁷ Oswald, A., Dyer, C. and Barber, M., 2001. *The Creation of Monuments: Neolithic Causewayed Enclosures in the British Isles*. Swindon: English Heritage.
- ⁸ Darvill, T., 1996. *Prehistoric Britain From the Air: A Study of Space, Time and Society*, especially 29, 179 and 183. Cambridge: Cambridge University Press.
- ⁹ Clay 2006, 74.
- ¹⁰ Crutchley, S. and Crow, P., 2009. *The Light Fantastic: Using Airborne Laser Scanning in Archaeological Survey*. Swindon: English Heritage.
- ¹¹ Williams, J., 2009. *The use of Science to Enhance Our Understanding of the Past*. National Heritage Science Strategy Report 2, Section 3.5.1.



Ashby with Scremby, Lincolnshire: trapeziform enclosure, interpreted as a plough-levelled long barrow, adjacent to an undated, probably later, rectilinear ditched enclosure with entrance facing away from the monument (Jones 1998, 106: Site 1, fig. 8; photograph © English Heritage (NMR 1666/451))

Research Objective 3E

Target sites with Late Mesolithic and Early Neolithic organic remains

Summary:

Environmental remains attributable to the Late Mesolithic or Early Neolithic have been retrieved from a variety of contexts across the region¹, including rare examples of settlements spanning this transition period², upland peat bogs³ and organic palaeochannel deposits, notably along the Trent Valley at Bole Ings, Girton and Staythorpe in Nottinghamshire⁴ and in the Nene Valley at the Northamptonshire sites of Wellingborough, Wollaston and Stanwick⁵. However, significantly more organically rich contexts of this period need to be targeted for environmental analysis and radiocarbon dating to elucidate patterns of landscape change during this key transitional period. Particular attention should be focused upon sites preserving organic remains that may be threatened by de-watering, while the information gained from sites under threat from development should be maximised. Discoveries of organic remains from sites such as Aston-upon-Trent, Derbyshire, where Early Neolithic Grimston Ware sherds and prolific emmer wheat seeds survived beneath a much denuded Early Bronze Age barrow⁶, and the nearby site at Potlock⁷, where the lower fill of a cursus ditch yielded wheat and barley grains as well as seeds of blackberry, sloe, elder and hawthorn, emphasise the potential for environmental analysis. However, more sites of this period with the potential for preserved organic remains need to be sampled and carried through to publication if we are to unravel the transition from nomadic to semi-sedentary and sedentary communities and the impact of these changes upon the landscape.

Agenda topics addressed: 3.1.1; 3.2.1; 3.2.3; 3.3.1–3.3.3; 3.4.1–3.4.3.

Archaeology of the East Midlands: 86, 267–268.

SHAPE 2008: Understanding ancient environments and ecologies (11111.420); New frontiers: clarifying poorly understood chronologies (111112.510).

NHPP 2011: Identification of wetland/waterlogged sites (3A5).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topics 7 (Mobility and sedentism in prehistoric agricultural societies) and 9 (Reconstructing Pleistocene and Early Holocene landscapes); Theme PR4, Topic 23 (Key transitions in prehistory); Theme PR6, Topic 31 (Human interactions with plants and animals in prehistory).

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ Monckton, A., 2006. Environmental Archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 264–266.

² e.g. Garton, D., forthcoming. *The Excavation of a Mesolithic and Neolithic Settlement at Lismore Fields, Buxton, Derbyshire*. Oxford: Oxbow Books.

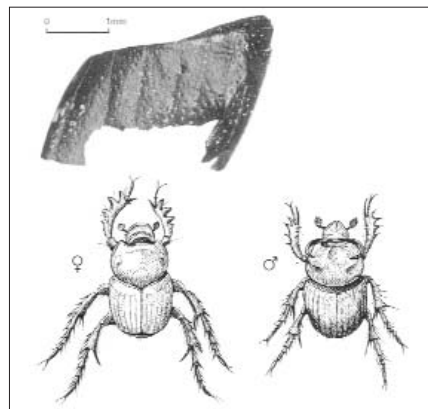
³ Hicks, S.P., 1972. The impact of Man on the East Moor of Derbyshire from Mesolithic times. *Archaeological Journal* 129, 1–21.

⁴ Howard, A.J. and Knight, D., 2004. Mesolithic hunter-gatherers, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 33–35. Kings Lynn: Heritage Marketing and Publications.

⁵ Brown, A.G., 2000. Floodplain vegetation history: clearings as potential ritual spaces? in A.S. Fairbairn (ed.), *Plants in Neolithic Britain and Beyond*, 49–62. Oxford: Oxbow Books; Allen, P., Brown, A.G., Meadows, I. et al., 2009. *Nene Valley: Archaeological and Environmental Synthesis*. Northamptonshire Archaeology and University of Exeter (http://archaeologydataservice.ac.uk/archives/view/nenevalley_ah_2009/).

⁶ Loveday, R., 2000. Aston: a barrow preserved. *Current Archaeology* 167, 438–439; Loveday, R., forthcoming. Aston-on-Trent 1 – a round barrow and protected cursus landscape. *Derbyshire Archaeological Journal* 132; Reaney, D., 1968. Beaker burials in south Derbyshire. *Derbyshire Archaeological Journal* 88, 68–81.

⁷ Guilbert, G., 1996. Findern is dead, long live Potlock – the story of a cursus on the Trent gravels. *PAST (Newsletter of the Prehistoric Society)* 24, 10–12.



Right elytron of scaraboid dung beetle. These beetles formed 6.6% of the terrestrial insects recovered from the ditches flanking a 4th millennium cal BC long barrow at Redlands Farm, Northamptonshire. They provide a valuable insight into the contemporary environment, suggesting lightly grazed grassland and large herbivores (Harding and Healy 2007, 25; reproduced by permission of the authors and English Heritage)

Research Objective 3F Identify monument complexes and prioritise for curatorial action

Summary:

Neolithic and Bronze Age monument complexes are poorly known by comparison with areas such as Wessex, but there is compelling evidence nonetheless for landscapes of equal complexity. Impressive earthwork complexes survive on the Derbyshire uplands, notably around the henge at Arbor Low¹ and on Stanton Moor², but lowland complexes must be deduced principally from cropmarks^{3,4}. It is important to identify surviving examples, establish the variety of monuments and ensure that appropriate curatorial decisions can be made concerning their preservation. This is particularly urgent in lowland areas such as the Nene Valley and Tame-Trent confluence, where quarrying and other pressures pose major challenges for the management of landscapes that in terms of their complexity rival the great Wessex monument complexes⁵. Much remains to be done on establishing the chronology and components of monument complexes, locational preferences and intra-regional variability in monument associations. Spatial variability is particularly difficult to demonstrate, but is indicated, for example, by the tight focus of cursus-based complexes in the Middle Trent and Soar Valleys⁶ and a propensity in the Lincolnshire Wolds for long funerary enclosures to be associated with mounds of various shapes⁷.

Agenda topics addressed: 3.4.3; 3.6.1–3.6.4; 3.7.2; 3.7.3; 3.8.1.

Archaeology of the East Midlands: 87.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130) and assessment of historic areas (11111.150) and regional historic environment components (11111.170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

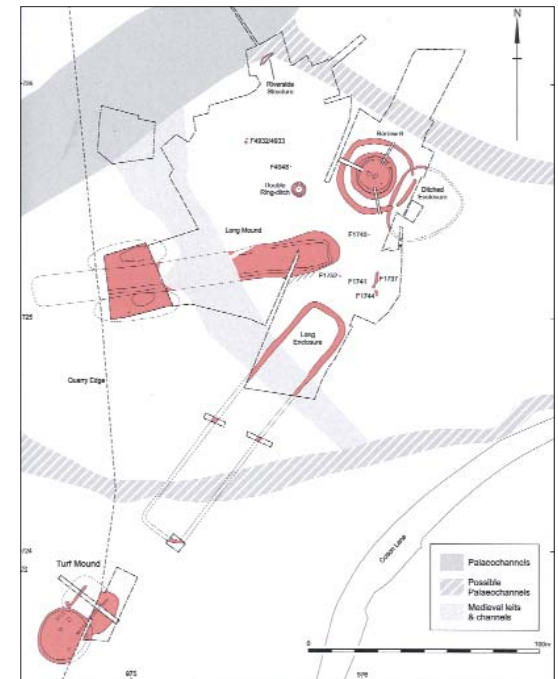
Other research frameworks:

EH Research Strategy for Prehistory 2011: Themes PR1, Topic 2 (Political and ritual landscapes in prehistory) and PR2, Topics 10 (Setting prehistoric sites in context) and 12 (Characterising and classifying prehistoric sites and monuments).

References:

- ¹ Barnatt, J., 1990. *The Henges, Stone Circles and Ringcairns of the Peak District*, 31–38. Sheffield: University of Sheffield Archaeological Monograph 1;
- Bradley, R. and Hart, C., 1983. Prehistoric settlement in the Peak District during the third and second millennia bc. *Proceedings of the Prehistoric Society* 49, 177–193.
- ² Barnatt 1990, 75–79; Hart, C.R., 1985. Stanton Moor, Derbyshire: burial and ceremonial monuments, in D. Spratt, and C. Burgess (eds), *Upland Settlement in Britain*, 77–99. Oxford: British Archaeological Reports British Series 143.
- ³ Clay, P., 2006. The Neolithic and Early to Middle Bronze Age, in *The Archaeology of the East Midlands*, 74–76, 79–81.
- ⁴ e.g. Harding, J. and Healy, F., 2007. *The Raunds Area Project. A Neolithic and Bronze Age Landscape in Northamptonshire*. Swindon: English Heritage;
- Thomas, J., 2008. *Monument, Memory and Myth: Use and Re-use of Three Bronze Age Round Barrows at Cossington, Leicestershire*. Leicester: University of Leicester Archaeology Monograph 14.
- ⁵ e.g. Buteux, S. and Chapman, H., 2009. *Where Rivers Meet. The Archaeology of Catholme and the Trent-Tame Confluence*. York: CBA Research Report 161.
- ⁶ Loveday, R., 2004. Contextualising monuments: The exceptional potential of the Middle Trent Valley. *Derbyshire Archaeological Journal* 124, 1–12.
- ⁷ Jones, D., 1998. Long barrows and elongated enclosures in Lincolnshire: an analysis of the air photographic evidence. *Proceedings of the Prehistoric Society* 64, 83–114.

West Cotton, Raunds, Northamptonshire: plan of Neolithic and Bronze Age monument complex (Harding and Healy 2007, fig. 1.6; reproduced by permission of the authors and English Heritage)



Research Objective 3G

Conduct additional investigations of earlier Neolithic funerary traditions

Summary:

Funerary traditions involving the construction of timber chambered barrows, as at Skendleby in Lincolnshire¹, and outside the region at the Cambridgeshire site of Haddenham², clearly relate to practices that are found extensively along the eastern side of England and Scotland. Cropmark evidence from Leicestershire and Northamptonshire suggests that similar monuments may be found in these areas³, but Derbyshire presents a very different picture. Here, there is seemingly a very wide range of stone-built monuments^{4,5}. Some of these, including the excavated monument at Whitwell⁶, bear comparison with the mainstream of cairns of western England. Others, however, are characterised by a confusing variety of poorly recorded evidence⁷. There is a need for further excavation to elucidate the details of cairn construction and to retrieve coherent skeletal assemblages, artefacts and samples for scientific dating and stable isotope analysis (see Objective 3H). It is recommended that this be undertaken in conjunction with fieldwork designed to identify associated activity areas and other related monuments.

Agenda topics addressed: 3.1.4; 3.2.4; 3.4.3; 3.6.2–3.6.4; 3.8.1–3.8.3; 3.9.3.

Archaeology of the East Midlands: 87.

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Ploughzone archaeology (4G2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR2, Topics 10 (Setting prehistoric sites in context) and 12 (New approaches to the classification of prehistoric sites and monuments); Theme PR3, Topic 20 (The place and role of the dead in prehistory).

EH National Heritage Science Strategy Report 2, 2009: Sections 3.2.1 (Chronology) and 3.3.1 (People and environment).

References:

¹ Evans, J.G. and Simpson, D.D.A., 1991. Giant's Hills 2 long barrow, Skendleby, Lincolnshire. *Archaeologia* 91, 1–45.

² Evans, C. and Hodder, I., 2006. *A Woodland Archaeology: Neolithic Sites at Haddenham*. Cambridge: MacDonald Institute for Archaeological Research.

³ Clay, P., 2006. The Neolithic and Early to Middle Bronze Age, in *The Archaeology of the East Midlands*, 75.

⁴ Barnatt, J. and Collis, J., 1996. *Barrows in the Peak District: Recent Research*. Sheffield: J.R. Collis Publications.

⁵ Hart, C.R., 1986. Searches for the Early Neolithic: a study of Peakland long cairns, in T.G. Manby and P. Turnbull (eds), *Archaeology in the Pennines*, 127–136. Oxford: British Archaeological Reports British Series 158.

⁶ Vyner, B.E. and Wall, I., 2011. A Neolithic cairn at Whitwell, Derbyshire, *Derbyshire Archaeological Journal* 131, 1–131.

⁷ Barnatt and Collis 1996; Hart 1986.



Linear mortuary deposit in the Neolithic cairn at Whitwell, Derbyshire. Bayesian analysis suggests that deposition took place between 3790 and 3710 cal BC (95% probability; source: B. Vyner)

Research Objective 3H Recover and analyse human remains

Summary:

Rare discoveries of human bone in Mesolithic contexts and more frequent discoveries on Neolithic to Middle Bronze Age sites highlight both their potential for analysis and the inadequacies of the current data set. Mesolithic material is especially sparse, and is best represented in the region by the discovery of a female femur associated with animal bone preserving evidence of butchery in the fill of a palaeochannel at Staythorpe in Nottinghamshire^{1,2}. This remarkable find was dated by radiocarbon to 5740-5620 cal BC (Beta-14401; 95% probability) and was shown by stable isotope analysis to derive from an individual heavily reliant on animal protein, with a surprising dearth of plant foods and no influence of coastal food resources. Neolithic and Bronze Age remains have been retrieved more frequently, particularly from funerary^{3,4} and watery⁵ contexts, but interpretation is seriously restricted by the limited scope of most analyses. It is recommended that more emphasis be placed upon appropriate sampling strategies and analyses, with the development of further ground-breaking programmes such as the isotopic analysis of Beaker skeletal remains that is currently being undertaken at the University of Sheffield⁶, alongside detailed studies of burial contexts, dentition and skeletal remains. Radiocarbon dating of human remains should be conducted as a matter of routine, with appropriate application of Bayesian modelling (Objective 3A).

Agenda topics addressed: 3.1.1; 3.1.4; 3.2.4; 3.3.2; 3.7.2; 3.8.2; 3.8.3.

Archaeology of the East Midlands: 87, 265 and 267.

SHAPE 2008: Revealing ancient cultures (11111.610); Understanding past populations of Britain: historical demography and human biology (11111.710); Bright science: technical and technological innovation (14171.210).

NHPP 2011: Identification of wetland/waterlogged sites (3A5).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topics 21 (Eating and drinking in prehistory) and 22 (Prehistoric communities and individuals); Theme

PR5, Topic 27 (Developing scientific techniques for prehistory). *EH National Heritage Science Strategy Report 2, 2009:* Section 3.3.1 (People and environment).

References:

- ¹ Davis, G., 2001. *Interim Statement on the Archaeological Works at Staythorpe Power Station*. Sheffield: University of Sheffield, ARCUS Report 438f.
- ² Howard, A.J. and Knight, D., 2004. Mesolithic hunter-gatherers, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 38–39. Kings Lynn: Heritage Marketing and Publications.
- ³ Barnatt, J. and Collis, J., 1996. *Barrows in the Peak District: Recent Research*. Sheffield: J.R. Collis Publications.
- ⁴ Garton, D., Howard, A.J. and Pearce, M., 1996. Neolithic riverside ritual? Excavations at Langford Lowfields, Nottinghamshire, in R.J.A. Wilson (ed.), *From River Trent to Raqqa*, 9–11. Nottingham: University of Nottingham, Nottingham Studies in Archaeology 1.
- ⁵ Knight, D. and Howard, A.J., 2004. From Neolithic to Early Bronze Age: the first agricultural landscapes, in Knight and Howard 2004, 54–56.
- ⁶ <http://www.shef.ac.uk/archaeology/research/beaker-isotope/>.



Langford Lowfields, Nottinghamshire: later Neolithic human skulls preserved within a logjam in a former channel of the Trent (Garton *et al.* 1996; photograph: Daryl Garton)

Research Objective 3I Investigate the development and intensification of agriculture

Summary:

Although traditionally seen as a period of agricultural innovation, evidence for a transition from a hunter-gatherer to an agricultural economy has proved stubbornly absent. Current interpretations assume a variable conversion in southern Britain to an agricultural economy that may have focused initially on cattle herding, with arable agriculture developing more slowly at a smaller scale¹. Within the East Midlands, there is some evidence to support this hypothesis, notably from north Derbyshire peat bogs preserving pollen that may indicate small-scale disturbances to vegetation in response to early animal herding². In addition, sites of this period generally yield very limited evidence for domesticated crops and animals³, reflecting perhaps a slow conversion to an agricultural economy. There are indications on some sites of a greater abundance of animal bones and botanical indicators of cultivation from the later Neolithic⁴, while studies of upland peats⁵ and palaeochannel deposits⁶ have yielded evidence for accelerating woodland clearance towards the end of the period. To clarify further the development of farming communities, additional targeted sampling of palaeochannels, peat bogs and other locations likely to preserve environmental remains of these periods is recommended. It is suggested that this be combined with studies of soil micromorphology and geochemistry, which may provide valuable information on the extension of cultivation and agricultural intensification. Special emphasis should be placed on the recovery of large assemblages of animal bone from excavations⁷.

Agenda topics addressed: 3.2.1; 3.3.1–3.3.3; 3.4.2; 3.5.3.

Archaeology of the East Midlands: 86.

SHAPE 2008: Understanding ancient environments and ecologies (11111.420); New frontiers: clarifying poorly understood chronologies (111112.510).

NHPP 2011: Identification of wetland/waterlogged sites (3A5).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 7 (Mobility and sedentism in prehistoric agricultural societies); Theme PR4, Topic 23 (Key transitions in prehistory); Theme PR6, Topic 31 (Human interactions with plants and animals in prehistory).

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ Bradley, R., 2007. *The Prehistory of Britain and Ireland*, 27–38. Cambridge: Cambridge University Press.

² Hicks, S.P., 1972. The impact of man on the East Moors of Derbyshire from Mesolithic times. *Archaeological Journal* 129, 1–21.

³ Monckton, A., 2006. Environmental Archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 265–267.

⁴ e.g. Evans, J.G. and Simpson, D.D.A., 1991. Giant's Hills 2 long barrow, Skendleby, Lincolnshire. *Archaeologia* 91, 21–23.

⁵ e.g. Long, D.J., Chambers, F.M. and Barnatt, J., 1998. The palaeoenvironment and the vegetation history of a later prehistoric field system at Stoke Flat on the gritstone uplands of the Peak District. *Journal Archaeological Science* 25, 505–19.

⁶ e.g. Smith, D.N., Roseff, R., Bevan, L., *et al.*, 2005. Archaeological and environmental investigations of a Late Glacial and Holocene river valley sequence on the River Soar at Croft, Leicestershire. *The Holocene* 15 (2).

⁷ Williams, J., 2009 *The Use of Science to Enhance Our Understanding of the Past*, National Heritage Science Strategy Report 2, Section 3.3.1



Palaeochannel at Shardlow Quarry, Derbyshire: the lower layers yielded pollen, macroscopic plants and insects suggesting pastoral activity and cultivation during the Neolithic and Early Bronze Age (Knight, D. and Howard, A.J., 2004. *Trent Valley Landscapes*, 52. Kings Lynn: Heritage Marketing and Publications; photograph: Andy Howard)

Research Objective 3J Foster relevant artefact studies

Summary:

Considerable advances in artefact studies have been made in recent years, but further research would be particularly welcome on the dating of ceramic and lithic artefacts, the production and distribution of pottery, stone tools and metalwork, and residue analyses of pottery. Resources could usefully be focused upon radiocarbon dating of carbonised accretions on pottery and of stratified lithic assemblages associated with pots preserving accretions datable by radiocarbon or short-life carbonised material. Petrographic analyses of lithic artefacts and pottery have demonstrated complex exchange networks, exemplified by a distinctive suite of stone axes and other artefacts around Arbor Low¹ in Derbyshire, Group XX polished stone axes derived from unlocated quarry sites in Charnwood Forest² and Neolithic and Bronze Age pottery tempered with granitoid inclusions derived from Mountsorrel and other Charnwood sources³. Further scientific analyses are recommended to refine our understanding of the production and distribution of these materials⁴. There is also significant scope for investigating further the exchange networks fossilised in the distribution of pottery and other artefacts of the Beaker 'package'⁵, while studies of Bronze Age metalwork may elucidate production and distribution systems extending far beyond the East Midlands⁶. Particular attention should also be paid to analyses of the surface and absorbed organic residues preserved in pottery, as these may provide important insights into vessel functions, the materials processed in pottery vessels, and the wider economy⁷. This potential is illustrated by analyses of Neolithic pottery from Willington in Derbyshire, where lipid analysis revealed traces of ruminant dairy and porcine fats⁸.

Agenda topics addressed: 3.1.2; 3.8.1; 3.8.2; 3.9.1–3.9.4.

Archaeology of the East Midlands: 86–87.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Revealing ancient cultures (11111.160); Bright science: technical and technological innovation (14171.210)

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topics 17 (Technology and society in prehistory), 18 (Prehistoric material culture in context) and 21 (Eating and drinking in prehistory); Theme PR5, Topics 26 (Developing dating techniques for prehistory) and 27 (Developing scientific techniques for prehistory).

Lithic Studies Society 2004. *Research Frameworks for Holocene Lithics in Britain*, 2-7.

Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidance for Analysis and Publication*, 4-5.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

¹ Bradley, R. and Hart, C.R., 1983. Prehistoric settlement in the second and third millennia BC: a preliminary analysis in the light of recent fieldwork. *Proceedings of the Prehistoric Society* 49, 177–193.

² Bradley, P., 1989. A Leicestershire source for Group XX, *Transactions of the Leicestershire Archaeological and Historical Society* 68, 1–5.

³ Knight, D., Marsden, P. and Carney, J., 2003. Local or non-local? Prehistoric granodiorite-tempered pottery in the East Midlands, in A. Gibson (ed.), *Prehistoric Pottery: People, Pattern and Purpose*, 111–125. Oxford: British Archaeological Reports International Series 1156.

⁴ e.g. microprobe analyses of granodiorite-tempered pottery: Knight *et al.* 2003, 122.

⁵ including, for example, assessment of the contrasts between funerary ceramic assemblages and collections of domestic pottery from sites such as Risby Warren and Dragonby, Lincolnshire: May, J., 1976. *Prehistoric Lincolnshire*, 65–68. Lincoln: History of Lincolnshire Committee; May, J., 1996. *Dragonby: Report on Excavations at an Iron Age and Romano-British Settlement in North Lincolnshire*, 44–46. Oxford: Oxbow Books.

⁶ Needham, S., 2000. The gold and copper metalwork, in Hughes, G., *The Lockington Gold Hoard: An Early Bronze Age Barrow Cemetery at Lockington, Leicestershire*, 23–47. Oxford: Oxbow Books.

⁷ Morris, E.L., 2002. Staying alive: the functions and use of prehistoric ceramics, in A. Woodward and J.D. Hill (eds), *Prehistoric Britain: the Ceramic Basis*, 54–61. Oxford: Oxbow Books.

⁸ Graham, N., Berstan, R. and Evershed, R.P., 2009. Organic residue analyses of pottery vessels, in Beamish, M.G., *Island visits: Neolithic and Bronze Age activity on the Trent Valley floor. Excavations at Egginton and Willington, Derbyshire, 1998–1999. Derbyshire Archaeological Journal* 129, 101–106.

6.4 LATE BRONZE AGE AND IRON AGE (c.1150 cal BC-AD 43): UPDATED RESEARCH AGENDA

4.1 Dating

1. How can we maximise the potential of scientific dating methods as tools for refining the regional chronological framework for the first millennium BC?
2. How can we refine further the ceramic chronology for the first millennium BC?

4.2 Site visibility, prospection and landscape exploration

1. What mechanisms may underlie intra-regional variations in site densities?
2. May the density and/or spatial extent of settlements of particular types and periods and within particular landscape zones be underestimated?
3. How can we expand our knowledge of first millennium BC activity in areas with a poor record of settlement (e.g. upland valleys of the Derbyshire Peak)?

4.3 Late Bronze Age and Early Iron Age settlements (c.1000 – 450 BC)

1. Why are sites of this period comparatively rare in the archaeological record?
2. What can we deduce about the morphology, spatial extent and functions of settlements, and in particular the processes underlying the development in some areas of enclosed occupation or activity foci?
3. How many hillforts might have developed during this period and what functions may they have performed?

4.4 Middle Iron Age settlements (c.450 – 100 BC)

1. Why were settlements increasingly enclosed during this period and to what extent may the progress of enclosure have varied regionally?
2. What were the functions of hillforts and analogous enclosed sites dating from this period, and how were these related to each other and to other settlements?
3. How and why did 'village' or 'ladder' settlements develop?

4.5 Late Iron Age settlements (c.100 BC – AD 50)

1. Why did large nucleated settlements emerge in areas such as Lincolnshire and Northamptonshire, and can we clarify further their character and functions?
2. How are the nucleated settlements related to one another and to other settlements of the period? In particular, is there evidence for a developing settlement hierarchy?
3. How may nucleated and other settlements have developed in the Roman period?

4.6 Field systems and major linear boundaries

1. Can we shed further light upon the development of field and boundary systems?

2. What were the economic, social or political roles of the pit alignments and linear ditch systems that characterised many areas of the East Midlands?
3. What may we deduce from studies of linear boundaries with respect to changes in the agrarian landscape?

4.7 Ritual and structured deposition and religion

1. What is the nature of structured deposits in this region and may sub-regional patterns or trends be discerned?
2. What roles may wet and other natural locations have performed and how might these have changed over time?
3. How may studies of boundaries within, around and between settlements contribute to analysis of structured deposits?

4.8 The agricultural economy and landscape

1. Can we chart more closely the processes of woodland clearance and agricultural intensification, their impact upon alluviation and colluviation, and variations between different areas?
2. How may diet and land-use have varied over time and between different ecological zones? Can we identify specialist pastoral zones and elucidate coastal resource exploitation strategies?
3. How may agricultural changes have impacted upon settlement patterns? Can the relationship between sedentary and mobile economies be clarified, and how did this vary spatially and over time?
4. What was the impact of climate change upon farming practices, especially in upland areas such as the Derbyshire Peak?

4.9 Finds, craft, industry and exchange

1. How can we add to our existing knowledge of industries and crafts in this region, particularly the extraction and smelting of iron and lead, salt production and quern manufacture?
2. How can we ensure adequate analysis and publication of artefacts, particularly those recorded under the Portable Antiquities Scheme?
3. What can we determine from artefact studies about trade and exchange and the role of coinage?

4.10 Social relations and society

1. What social and economic roles may open and enclosed sites have performed, and may the progression in some areas from open to enclosed settlements imply the development of less mobile societies?
2. What may further analyses of burials and of settlement architecture and morphology contribute to studies of social and political organisation?
3. How can we better understand the nature of the transition from the Late Bronze Age to the Early Iron Age and the socio-political changes of the later Iron Age.

LATE BRONZE AGE AND IRON AGE (c.1150 cal BC–AD43): RESEARCH OBJECTIVES

Updated Research Agenda	4.1 Dating		4.2 Site visibility, prospection & landscape exploration			4.3 LBA & EIA settlements			4.4 MIA settlements			4.5 LIA settlements			4.6 Field systems & major linear boundaries			4.7 Ritual & structured deposition & religion			4.8 The agricultural economy and landscape				4.9 Finds, craft, industry & exchange			4.10 Social relations & society		
	1	2	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	4	1	2	3	1	2	3			
4A Compile audit of radiocarbon, dendrochronological and other scientific dates	●	●				●																						●		
4B Refine ceramic chronology by additional radiocarbon dating and typological analyses	●	●				●																						●		
4C Characterise the LBA-EIA settlement resource and investigate intra-regional variability			●	●	●	●	●	●						●	●	●				●	●	●	●	●		●	●	●	●	
4D Assess the regional resource of hillforts and analogous sites				●				●	●	●													●		●					
4E Assess the evidence for the evolution of settlement hierarchies											●	●	●	●											●	●				
4F Investigate intra-regional variations in development of fields and linear boundaries				●										●	●	●	●	●	●	●	●	●						●		
4G Study the production, distribution and use of artefacts																							●	●	●	●		●		
4H Characterise placed deposits and sites of shrines or temples																	●	●	●											
4I Prospect for Iron Age settlement in upland areas of the Peak District			●	●	●	●	●	●	●	●											●						●	●		
4J Investigate settlement and environmental resource of the Witham Valley						●											●	●		●	●	●		●				●		

Research Objective 4A

Compile an audit of radiocarbon, dendrochronological and other scientific dates

Summary:

There is a pressing need for the compilation of a database of radiocarbon, dendrochronological, luminescence and archaeomagnetic dates from Late Bronze Age and Iron Age sites in the East Midlands, incorporating details such as material type, context and artefact associations. This could provide the basis for a review aimed at assessing the relative reliability of dates, identifying particular lacunae and problems, and highlighting priorities for future dating. A particular concern for this period, which should be central to the development of a scientific dating strategy, is the flattening of the calibration curve from around 800 to 400 cal BC and the particular problem of dating Early Iron Age sites¹. This baseline study would provide a secure basis for a regional guidelines document, building upon current recommendations for the scientific dating of first millennium BC sites² and the results of dating programmes at sites such as Rainsborough Camp in Northamptonshire³ and Market Deeping⁴ and Fiskerton⁵ in Lincolnshire. It would also permit the identification of sites offering a series of radiocarbon dates appropriate for Bayesian modelling⁶.

Agenda topics addressed: 4.1.1; 4.1.2; 4.3.1.

Archaeology of the East Midlands: 116, 128–29.

SHAPE 2008: Understanding artefacts and material culture (11111.510); New frontiers: clarifying poorly understood chronologies (11112.510); Bright science: technical and technological innovation (14171.210).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topic 19 (Prehistoric material culture in context); Theme PR4, Topic 24 (Building chronologies for prehistory); Theme PR5, Topic 26 (Developing dating techniques for prehistory).

Understanding the British Iron Age 2001: B2.1 (Dating audit).

EH National Heritage Science Strategy Report 2, 2009: Section 3.2.1 (Chronology).

Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 4.

References:

¹ Baillie, M.G.L. and Pilcher, J.R., 1983. Some observations on the high-precision calibration of routine dates, in B.S. Ottoway (ed.), *Archaeology, Dendrochronology and the Radiocarbon Curve*, 51–63. University of Edinburgh: Department of Archaeology Occasional Paper 9.

² Haselgrove, C., Armit, I., Champion, T., et al., 2001. *Understanding the British Iron Age: An Agenda for Action*, 4–5. Salisbury: Trust for Wessex Archaeology.

³ Clelland, S. and Batt, C., 2010. A re-investigation of the scientific dating evidence from the hillfort at Rainsborough. *Northamptonshire Archaeology* 36, 1–7.

⁴ Bayliss, A., Lane, T., Bronk Ramsey, C. et al., 2010. *Radiocarbon dating*, in T. Lane and D. Trimble (eds), *Fluid Landscapes and Human Adaptation: Excavations on Prehistoric Sites on the Lincolnshire Fen Edge 1991–1994*, 291–295. Heckington: Heritage Trust of Lincolnshire.

⁵ Field, N. and Parker-Pearson, M., 2003. *Fiskerton: an Iron Age Timber Causeway with Iron Age and Roman Votive Offerings*, 162–164. Oxford: Oxbow Books.

⁶ Buck, C.E., Cavanagh, W.G. and Litton, C.D., 1996. *Bayesian Approach to Interpreting Archaeological Data*. Chichester: Wiley.



Fiskerton, Lincolnshire: tree-ring dating of the timbers in this causeway across the Witham Valley provided evidence for construction and rebuilding from at least 456 to 321 BC (Field and Parker-Pearson 2003, 24–37; photograph: Naomi Field)

Research Objective 4B Refine first millennium BC ceramic chronology by additional radiocarbon dating and typological analyses

Summary

The synthesis of the East Midlands first millennium BC ceramic sequence published in 2002¹ requires updating to take account of the substantial body of new data that is now available for study. There is also considerable scope for refining the regional ceramic typology and developing an East Midlands ceramic type series as guidance for ceramic specialists, excavators and other researchers. This should be accompanied by a systematic programme of radiocarbon dating, with particular emphasis upon the carbonised residues that occur commonly on the inner and outer faces of first millennium BC domestic pottery². It is recommended that major published assemblages, with well-ordered archives including details of vessels preserving carbonised residues appropriate for radiocarbon dating, should be targeted initially. It is proposed that dating programmes focus upon typologically diagnostic vessels such as Scored Ware³ and pottery embellished with curvilinear and rectilinear designs inspired by the *La Tène* ornamental style⁴. In addition, sites with well-stratified ceramic assemblages should be accorded a high priority in future excavation programmes⁵.

Agenda topics addressed: 4.1.1; 4.1.2; 4.3.1.

Archaeology of the East Midlands: 116.

SHAPE 2008: Understanding artefacts and material culture (11111.510); New frontiers: clarifying poorly understood chronologies (111112.510); Bright science: technical and technological innovation (14171.210).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topic 18 (Prehistoric material culture in context); Theme PR4, Topic 24 (Building chronologies for prehistory); Theme PR5, Topic 27 (Developing scientific techniques for prehistory).

Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 4.

Understanding the British Iron Age 2001: B.2.2 (Scientific dating strategies).

EH National Heritage Science Strategy Report 2, 2009: Section 3.2.1 (Chronology).

References:

¹ Knight, D., 2002. A regional ceramic sequence: pottery of the first millennium BC between the Humber and the Nene, in A. Woodward and J.D. Hill, (eds), *Prehistoric Britain: The Ceramic Basis*, 118–142. Oxford: Oxbow Books.

² Willis, S., 2002. A date with the past: Late Bronze Age and Iron Age pottery and chronology, in A. Woodward and J.D. Hill (eds), *Prehistoric Britain: The Ceramic Basis*, 5–21. Oxford: Oxbow Books.

³ Elsdon, S.M., 1992. East Midlands Scored Ware, *Transactions of the Leicestershire Archaeological and Historical Society* 66, 83–91.

⁴ Elsdon, S.M., 1975. *Stamp and Roulette Decorated Pottery of the La Tène Period in Eastern England*. Oxford: British Archaeological Reports British Series 10.

⁵ e.g. Market Deeping, Lincolnshire: Knight, D., 2010. Iron Age pottery, in Lane, T. and Trimble, D., *Fluid Landscapes and Human Adaptation; Excavations on Prehistoric Sites on the Lincolnshire Fen Edge 1991–1994*, 244–282. Heckington: Heritage Trust of Lincolnshire.



Gamston, Nottinghamshire: excavations unearthed a wide range of ceramic types, including carinated jars with finger-impressed ornament, Scored Ware (bottom right) and wheel-made ovoid jars (top centre), but the chronology of these types remains hazy (Knight, D., 1992. Excavations of an Iron Age settlement at Gamston, Nottinghamshire. *Transactions of the Thoroton Society* 96, 16-90; photograph: Philip Dixon)

Research Objective 4C

Characterise the Late Bronze Age and Early Iron Age settlement resource and investigate intra-regional variability

Summary:

Further research is recommended to investigate the morphology and functions of settlements dating from this crucial transition period and to investigate the environmental evidence for seasonal or permanent settlement. Settlements of this period are represented over much of the region by extensive and seemingly random spreads of unenclosed roundhouses, pits, post-holes and other features¹. The picture is clouded by the difficulty of locating such ephemeral remains prior to large-scale excavation and by the growing evidence for significant intra-regional variability. Baseline surveys are recommended to define more precisely the distribution of enclosed settlements, which are known to have been constructed in this early period along the Lincolnshire Fen Edge and some other parts of the region², and their relationship to unenclosed settlements. It would also be useful to review the range of contemporary monument types, which in parts of the region may include ringforts³, hillforts⁴, palisaded enclosures⁵, middens⁶ and burnt mounds⁷. Many settlements of this period have been found by chance, often stratified beneath later settlements, suggesting protracted but not necessarily continuous use of preferred locations. It would be useful to review unpublished archive data with the aim of identifying hitherto undetected activity foci of this period and the resource for further analysis and publication⁸. From the management perspective, such work would also assist determination of the most appropriate evaluation techniques for locating settlements of this period.

Agenda topics addressed: 4.2.1–4.2.3; 4.3.1–4.3.3; 4.6.1–4.6.3; 4.8.1–4.8.4; 4.9.1; 4.9.3; 4.10.1–4.10.3.

Archaeology of the East Midlands: 130.

SHAPE 2008: Understanding place: researching regional diversity (11111.310) and assessing regional historic environment components (11111.170); understanding ancient environments and ecologies (11111.420).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topics 2 (Political and ritual landscapes in prehistory), 6 (Regional diversity in prehistory) and 7 (Mobility and sedentism in prehistoric agricultural societies).
Understanding the British Iron Age 2001: C2.1 (settlements).

References:

- ¹ e.g. Knight, D., 2007. From open to enclosed: Iron Age landscapes of the Trent Valley, in C. Haselgrove and T. Moore (eds), *The Later Iron Age in Britain and Beyond*, 190–218. Oxford: Oxbow Books.
- ² Chowne, P., Cleal, R.M.J. and Fitzpatrick, A.P., with Andrews, P., 2001. *Excavations at Billingborough, Lincolnshire, 1975–8: A Bronze-Iron Age Settlement and Salt-working Site*. East Anglian Archaeology 94.
- ³ Hull, G., 2001. A Late Bronze Age ringwork, pits and later features at Thrapston, Northamptonshire. *Northamptonshire Archaeology* 29, 73–92.
- ⁴ Avery, D.M.E., Sutton, J.E.G. and Banks, J.W., 1967. Rainsborough, Northants: excavations 1961–65. *Proceedings of the Prehistoric Society* 33, 207–306.
- ⁵ Hart, C., 1981. *The North Derbyshire Archaeological Survey, 77–78*. Chesterfield: North Derbyshire Archaeological Trust.
- ⁶⁻⁷ Knight 2007, 196.
- ⁸ Compare Gwilt, A., 1997. Popular practices from material culture: a case study of the Iron Age settlement at Wakerley, Northamptonshire, in A. Gwilt and C. Haselgrove (eds), *Reconstructing Iron Age Societies: New Approaches to the British Iron Age*, 153–166. Oxford: Oxbow Books.



Rainsborough Camp, Northamptonshire: Iron Age stone-faced rampart, viewed from the interior of the hillfort. The rampart sealed scattered post-holes and occupation debris deriving from early first millennium BC settlement of uncertain character (Avery *et al.* 1967, 212, pl. XXV; reproduced by courtesy of Michael Avery and the Prehistoric Society)

Research Objective 4D

Assess the regional resource of hillforts and analogous sites

Summary:

It is proposed that resources be focused upon characterising the heterogeneous group of defensible sites of the region¹, including hillforts², ringworks³, possible 'marsh forts'⁴ and other defensible lowland enclosures such as Aslockton in Nottinghamshire⁵, with a view to identifying further sites, examining their relationship to other settlements of the period and investigating sub-regional patterning. Comparatively few hillforts or analogous enclosures within the region have been excavated to modern standards, among them Mam Tor⁶ and Fin Cop⁷ in Derbyshire and Rainsborough⁸ and Thrapston⁹ in Northamptonshire, and many questions remain regarding their origins, functions and interrelationships. Further investigations, following the examples of on-going excavations at Burrough Hill in Leicestershire¹⁰ and Fin Cop in Derbyshire¹¹, should include geophysical survey, excavation and detailed studies of the associated pottery, other artefacts and environmental data. These sites may also provide appropriate foci for community projects, with opportunities for involvement in a broad range of fieldwork and post-excavation activities, as demonstrated by the Heritage Lottery Fund-supported investigations at Fin Cop (by the Longstone Local History Group in partnership with Archaeological Research Services Ltd).

Agenda topics addressed: 4.2.2; 4.3.3; 4.4.1; 4.4.2; 4.9.1; 4.9.3.

Archaeology of the East Midlands: 92–95.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130) and regional historic environment components (11111.170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 2 (Political and ritual landscapes in prehistory); Theme PR2, Topic 12 (Characterising and classifying prehistoric sites and monuments).

Understanding the British Iron Age 2001: C2.1 (settlements).

Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 5.

References:

¹ Willis, S., 2006. The Later Bronze and Iron Age, in *The Archaeology of the East Midlands*, 117–121.

² e.g. Fell, C.I., 1936. The Hunsbury hillfort, Northants: a new survey of the material. *Archaeological Journal* 93, 57–100.

³ e.g. Hull, G., 2001. A Late Bronze Age ringwork, pits and later features at Thrapston, Northamptonshire. *Northamptonshire Archaeology* 29, 73–92.

⁴ e.g. Chowne, P., Girling, M. and Greig, J., 1986. Excavations of an Iron Age defended enclosure at Tattershall Thorpe, Lincolnshire. *Proceedings of the Prehistoric Society* 52, 159–188.

⁵ Palmer-Brown, C. and Knight, D., 1993. Excavations of an Iron Age and Romano-British settlement at Aslockton, Nottinghamshire: interim report. *Transactions of the Thoroton Society* 97, 146–47; Willis 2006, 131.

⁶ Coombs, D.G. and Thompson, F.H., 1979. Excavation of the hillfort of Mam Tor, Derbyshire, 1965–69. *Derbyshire Archaeological Journal* 99, 7–51.

⁷ <http://www.archaeologicalresearchservices.com/projects/fincop.html>.

⁸ Avery, D.M.E., Sutton, J.E.G. and Banks, J.W., 1967. Rainsborough, Northants; excavations 1961–5. *Proceedings of the Prehistoric Society* 33, 207–306.

⁹ Hull 2001.

¹⁰ <http://www2.le.ac.uk/departments/archaeology/research/projects/burrough-hill-iron-age-hillfort>.

¹¹ <http://www.archaeologicalresearchservices.com/projects/fincop.html>.



Burrough Hill, Leicestershire: view from the south, showing the ramparts of the Iron Age hillfort silhouetted against the sky (photograph: D. Knight)

Research Objective 4E

Assess the evidence for the evolution of settlement hierarchies

Summary:

It is recommended that the character of Late Bronze Age and Iron Age settlement be assessed to identify sites that on the basis of landscape situation, structural remains or finds may represent sites of higher socio-economic status, and to investigate sub-regional variability. Potential higher status settlements include the Late Iron Age 'nucleated settlements' of Lincolnshire¹, many of which have yielded large quantities of metalwork, coins, mint debris and high quality pottery², 'aggregated' settlements in Northamptonshire (e.g. Crick and Stanwick³), Leicestershire^{4,5} and Nottinghamshire (e.g. Rampton and Collingham⁶), and some hillforts⁷ and analogous lowland enclosures⁸. Cropmark studies, combined with analyses of surface scatters of metalwork, coins and other artefacts recorded during fieldwalking and metal detecting may highlight high status settlement foci⁹. This may guide further targeted investigation by detailed geophysical survey and excavation, perhaps involving community groups. Coins and other metal objects recorded by the Portable Antiquities Scheme have particular potential as evidence for hitherto undetected high status sites.

Agenda topics addressed: 4.4.3; 4.5.1–4.5.3; 4.9.3; 4.10.1.

Archaeology of the East Midlands: 109–110.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130); assessing regional historic environment components (11111.170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topic 2 (Political and ritual landscapes in prehistory); Theme PR2, Topics 10 (Setting prehistoric sites in context) and 12 (Characterising and classifying prehistoric sites and monuments).

Understanding the British Iron Age 2001: F2.2 (Settlement expansion).

Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 5.

References:

¹ May, J., 1984 The major settlements of later Iron Age Lincolnshire, in N. Field and A. White (eds), *A Prospect of Lincolnshire*, 18–22. Lincoln: N.Field and A. White.

² e.g. Elsdon, S.M., 1997. *Old Sleaford Revealed*. Oxford: Oxbow Books.

³ Willis, S., 2006. The Later Bronze and Iron Age, in *The Archaeology of the East Midlands*, 110.

⁴ Clay, P., 1985. A survey of two cropmark sites at Lockington-Hemington, Leicestershire. *Transactions of the Leicestershire Archaeological and Historical Society* 59, 17–26.

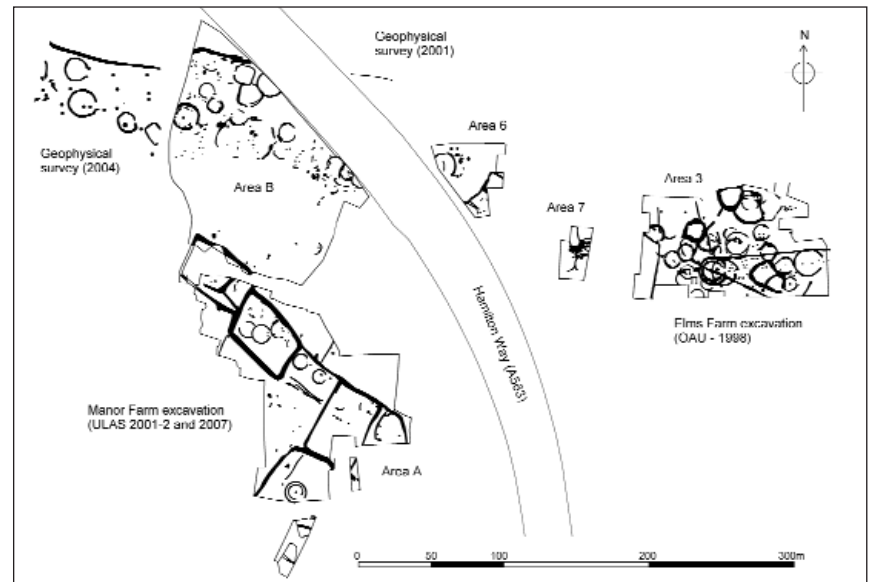
⁵ Thomas, J., 2011. *Two Iron Age 'Aggregated' Settlements in the Environs of Leicester. Excavations at Beaumont Leys and Humberstone*. Leicester: University of Leicester Archaeology Monograph 19.

⁶ Knight, D. and Howard, A.J., 2004. The later Bronze Age and Iron Ages: towards an enclosed landscape, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 99–100. Kings Lynn: Heritage Marketing and Publications.

⁷ e.g. Fell, C.I., 1936. The Hunsbury hillfort, Northants: a new survey of the material. *Archaeological Journal* 93, 57–100.

⁸ e.g. Palmer-Brown, C. and Knight, D., 1993. Excavations of an Iron Age and Romano-British settlement at Aslockton, Nottinghamshire: interim report. *Transactions of the Thoroton Society* 97, 146–147; Willis 2006, 131.

⁹ e.g. Parry, S., 2006. *Raunds Area Survey. An Archaeological Study of the Landscape of Raunds, Northamptonshire, 1985–94*. Oxford: Oxbow Books.



Humberstone, Leicester: plan of aggregated Middle to Late Iron Age settlement (Thomas 2011, fig. 5; reproduced by permission of University of Leicester Archaeological Services)

Research Objective 4F

Investigate intra-regional variations in the development of fields and linear boundary systems

Summary:

Extensive Bronze Age field systems are known in some upland and lowland areas of the region, including the Derbyshire gritstone moors¹ and the Lincolnshire Fen Edge², but these are very unevenly distributed. In the Trent Valley, for example, field systems are currently unknown before the mid-first millennium BC^{3,4}, whereas rectilinear ditched field systems appear to have developed in parts of the Middle Nene Valley from the Middle Bronze Age^{5,6}. These contrasts may reflect intra-regional variations in the agricultural economy and/or variable pressures upon land resources, and further investigations into the origins of field systems, developments over time, and intra-regional variations in landscape organisation remain priorities for research. Linear land divisions are a particularly distinctive feature of the East Midlands⁷, and further research on the origins, functions and interrelationships of pit alignments⁸ and linear ditched boundaries and the relationship of these boundaries to field systems is a major priority. Work is also recommended to investigate the uses to which the fields were put, variations within the region and their relationship to contemporary settlements. Further information on the spatial extent of these boundary systems should be recovered from air photography, lidar and other remote sensing techniques, but only targeted excavation can hope to unravel the development of field systems and their relationship to other linear boundaries. Particular attention should also be focused upon the impact of topography, which in Nottinghamshire, for example, could explain the contrasting spatial organisation of the Late Iron Age to Roman coaxial field systems around Newark^{9,10} and the broadly contemporary 'brickwork plan' systems of the Sherwood Sandstones^{11,12}.

Agenda topics addressed: 4.2.2; 4.6.1–4.6.3; 4.7.1; 4.7.3; 4.8.1–4.8.4; 4.10.3.

Archaeology of the East Midlands: 121–125, 132, 268, 272.

SHAPE 2008: Understanding place: researching historic areas (11111.150) and regional diversity (11111.310); understanding ancient environments and ecologies (11111.420).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Field systems (4F2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topics 1 (Moving beyond the site: landscape themes in prehistory), 6 (Regional diversity in prehistory) and 7 (Mobility and sedentism in prehistoric agricultural societies). *Understanding the British Iron Age* 2001: C2.2 (landscapes).

References:

- ¹ Barnatt, J., 1987. Bronze Age settlement on the East Moors of the Peak District of Derbyshire and South Yorkshire. *Proceedings of the Prehistoric Society* 53, 393–418.
- ² Yates, D., 2007. *Land, Power and Prestige: Bronze Age Field Systems in Southern England*, 110–112. Oxford: Oxbow Books.
- ³ Knight, D. and Howard, A.J., 2004. The later Bronze Age and Iron Ages: towards an enclosed landscape, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 100–106. Kings Lynn: Heritage Marketing and Publications.
- ⁴ Knight, D. and Elliott, L., 2008. Towards a bounded landscape: excavations at Gonalston, Nottinghamshire, and the development of the earliest field systems in the Trent Valley, in A.M. Chadwick (ed.), *Recent Approaches to the Archaeology of Land Allotment*, 160–183. Oxford: British Archaeological Reports International Series 1875.
- ⁵ Parry, S., 2006. *Raunds Area Survey. An Archaeological Study of the Landscape of Raunds, Northamptonshire*, 1985–94, 272. Oxford: Oxbow Books.
- ⁶ Harding, J and Healy, F., 2007. *The Raunds Area Project: A Neolithic and Bronze Age Landscape in Northamptonshire*. Swindon: English Heritage.
- ⁷ Willis, S., 2006. The Later Bronze and Iron Age, in *The Archaeology of the East Midlands*, 121–125.
- ⁸ Thomas, J., 2003. Prehistoric pit alignments and their significance in the archaeological landscape, in J. Humphrey (ed.), *Re-searching the Iron Age*, 79–86. University of Leicester: Leicester Archaeology Monograph 11.
- ⁹ Whimster, R.P., 1989. *The Emerging Past: Air Photography and the Buried Landscape*. London: RCHME.
- ¹⁰ Garton, D., 2002. Walking Fields in South Muskham and its implications for Romano-British cropmark-landscapes in Nottinghamshire. *Transactions of the Thorton Society* 106, 17–39.
- ¹¹ Riley, D.N., 1980. *Early Landscape from the Air: Studies of Cropmarks in South Yorkshire and North Nottinghamshire*. University of Sheffield: Department of Prehistory and Archaeology.
- ¹² Garton, D., 2008. The Romano-British landscape of the Sherwood Sandstone of Nottinghamshire: fieldwalking the brickwork-plan field-systems. *Transactions of the Thorton Society* 112, 15–110.

Research Objective 4G

Study the production, distribution and use of artefacts

Summary:

Further petrographic and other scientific analyses are recommended to elucidate the production and distribution of artefacts that may be tied to specific raw material sources. Examples of closely provenanced finds include prehistoric pottery tempered with granitoid inclusions derived from Mountsorrel granodiorite and quartzdiorite sources in Charnwood Forest¹, ceramic salt containers originating from production centres in the Droitwich area or in the Cheshire Plain², and querns of Millstone Grit, granite, greensand and other materials that may be tied to specific raw material sources³. Typological analyses of artefacts may also elucidate medium to long distance exchange networks, as demonstrated by studies of Glastonbury Ware pottery from Weekley, Northamptonshire⁴, coins attributed to the Corieltavi⁵ and metalwork deriving from other regions of Britain and the Continent⁶. Further systematic study of the residues occurring on Late Bronze Age and Iron Age pottery should also be encouraged as an aid to understanding their use⁷.

Agenda topics addressed: 4.9.1–4.9.3; 4.10.1; 4.10.3.

Archaeology of the East Midlands: 134.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Bright science: technical and technological innovation (14171.210); Realising the research dividend from past unpublished historic environment investigations (111113.110).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR3, Topic 17 (Technology and society in prehistory); Theme PR 5, Topic 27 (Developing scientific techniques for prehistory); Theme PR8, Topic 37 (Realising the potential of prehistoric archives and collections).

Prehistoric Ceramics Research Group 2010. *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 4-5.

Understanding the British Iron Age 2001: D2.1 (production and distribution).

Lithic Studies Society 2004. *Research Frameworks for Holocene Lithics in Britain*, 4.

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References:

¹ Knight, D, Marsden, P. and Carney, J., 2003. Local or non-local? Prehistoric granodiorite-tempered pottery in the East Midlands, in A. Gibson (ed.) *Prehistoric Pottery: People, Pattern and Purpose*, 111–25. Oxford: British Archaeological Reports International Series 1156.

² Morris, E.L., 1994. Production and distribution of pottery and salt in Iron Age Britain: a review. *Proceedings of the Prehistoric Society* 60, 371–393.

³ Wright, M.E. and Firman, R.J., 1992. The quernstones and rubbing stones, in Knight, D., Excavations of an Iron Age settlement at Gamston, Nottinghamshire. *Transactions of the Thoroton Society* 96, 70–74; Wright, M.E., 1996. Querns, in May, J., *Dragonby: Report on Excavations at an Iron Age and Romano-British Settlement in North Lincolnshire*, 365–76. Oxford: Oxbow Books.

⁴ Williams, D.F., 1987. Weekley, Northamptonshire: petrological examination of Iron Age pottery, in Jackson, D. and Dix, B., Late Iron Age and Roman settlement at Weekley, Northants. *Northamptonshire Archaeology* 21, microfiche 124–126.

⁵ May, J., 1994. Coinage and the Settlements of the Corieltavi in East Midland Britain. *British Numismatic Journal* 64, 1–21; Daubney, A., 2010. The use of gold in Late Iron Age and Roman Lincolnshire, in S. Malone and M. Williams (eds), *Rumours of Roman Finds: Recent Work in Roman Lincolnshire*, 64–74. Heckington: Heritage Trust of Lincolnshire.

⁶ e.g. Fiskerton, Lincolnshire: Field, N. and Parker Pearson, M., 2003. *Fiskerton. An Iron Age Timber Causeway with Iron Age and Roman Votive Offerings*, 49–85, 171–78. Oxford: Oxbow Books.

⁷ Morris, E.L., 2002. Staying alive: the function and use of prehistoric ceramics, in A. Woodward and J.D. Hill (eds), *Prehistoric Britain: The Ceramic Basis*, 54–61. Oxford: Oxbow Books.



Mountsorrel, Leicestershire: augering of alluvial clays in the Soar floodplain. This was conducted as part of an on-going project to investigate the raw material sources of granitoid-tempered prehistoric pottery from the East Midlands (Knight *et al.* 2003; photograph: D. Knight)

Research Objective 4H

Characterise placed deposits and sites of shrines or temples

Summary:

A wide range of ritual activities may be implied by discoveries of metalwork and other artefacts that appear to have been deliberately deposited in riverside and other watery locations¹, notably along the Trent and at such remarkable sites as the timber causeway at Fiskerton in the Witham Valley². Further evidence for ritual activity may be provided by the discovery in pits and other occupation features of human and animal remains³ and artefacts such as pots or querns⁴ that appear to have been deliberately placed. Further work is required to characterise the variety of placed deposits, analyse their spatial and chronological distribution and review their relationship to settlements and other sites. The relatively common discoveries of metalwork in watery contexts contrast with the apparent paucity of deliberately placed human and animal remains and may suggest specific regional characteristics. Research may usefully be extended to the rare examples of possible shrines or temples, among them a probable late Roman temple at Red Hill, Nottinghamshire, which is thought to have had an Iron Age predecessor⁵. Little is known of the landscape setting of placed deposits and possible shrines or temples, or of their relationship to settlement features. There is a strong likelihood that some shrines were sited, without associated buildings, at significant locations in the landscape, as postulated at the nationally important site of Hallaton in Leicestershire⁶, and hence may be significantly underrepresented in the archaeological record.

Agenda topics addressed: 4.7.1–4.7.3.

Archaeology of the East Midlands: 132.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Understanding artefacts and material culture (11111.510); Revealing ancient cultures (11111.610).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topics 5 (Addressing gaps in our knowledge of prehistoric landscapes) and 11 (Intra-site studies in

prehistory); Theme PR3, Topics 18 (Prehistoric material culture in context) and 20 (The place and role of the dead in prehistory).
Understanding the British Iron Age 2001: D2.3 (Deposition).
Prehistoric Ceramics Research Group 2010 *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, 4.

References:

- ¹ Willis, S., 2006. The Later Bronze and Iron Age, in *The Archaeology of the East Midlands*, 126.
- ² Field, N. and Parker Pearson, M., 2003. *Fiskerton: An Iron Age Timber Causeway with Iron Age and Roman Votive Offerings*. Oxford: Oxbow Books.
- ³ e.g. Chowne, P., Cleal, R.M.J. and Fitzpatrick, A.P., with Andrews, P., 2001. *Excavations at Billingborough, Lincolnshire, 1975–8: A Bronze-Iron Age Settlement and Salt-working Site*, 94–95. *East Anglian Archaeology* 94.
- ⁴ Marsden, P., 1998. The querns, in Beamish, M., *A Middle Iron Age site at Wanlip, Leicestershire. Transactions of the Leicestershire Archaeological and Historical Society* 72, 62–63.
- ⁵ Elsdon, S., 1982. Iron Age and Roman sites at Red Hill, Ratcliffe-on-Soar, Nottinghamshire: Excavations by E. Greenfield, 1963, and previous finds. *Transactions of the Thoroton Society* 86, 31.
- ⁶ Score, V., 2006. Rituals, hoards and helmets: a ceremonial meeting place of the Corieltavi. *Transactions of the Leicestershire Archaeological and Historical Society* 80, 197–207; Hargrave, F., 2009. The Hallaton Treasure. *Current Archaeology* 236, 36–41.



Iron Age torc of electrum (an alloy of gold and silver), deposited in a pit on a settlement near Newark, Nottinghamshire; internal diameter 130mm (© The Trustees of the British Museum)

Research Objective 4I Prospect for Iron Age settlement in upland areas of the Peak District

Summary:

Iron Age settlement in upland areas of the East Midlands is poorly known, especially across the gritstone and limestone moors of the Peak District¹. Recent discoveries of first millennium BC buildings on Gardoms Edge², together with finds of first millennium BC pottery and structural remains during investigations on other sites in the Peak³, suggest that this absence of activity may in fact be more apparent than real. This would fit better with the growing environmental evidence that many of the densely distributed earlier Bronze Age settlements and field systems of the eastern gritstone moors had continued in use into the first millennium BC⁴, and further research on the chronology of the many Bronze Age sites that have been identified in these areas may be flagged as a research priority. We may speculate also on how many of the well-preserved Romano-British earthworks that have been recorded in the Dark and White Peak might have earlier ancestries⁵. There is a need, therefore, to review the field evidence across the Peak District and to encourage further field survey, airborne remote sensing and excavation, with particular emphasis upon the retrieval of environmental evidence. This should extend to the use of caves, which in the White Peak have yielded important collections of pottery and other finds⁶. Much of this material seems to date from the later Iron Age, but reassessment of the range and variety of artefacts and their dating is long overdue.

Agenda topics addressed: 4.2.1–4.2.3; 4.3.1–4.3.3; 4.4.1; 4.4.2; 4.8.4; 4.10.2; 4.10.3.

Archaeology of the East Midlands: 132, 272.

SHAPE 2008: Understanding Place: assessing historic areas (11111.150) and regional historic environment components (11111.170); researching regional diversity (11111.130).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Field systems (4F2).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR1, Topics 1 (Moving

beyond the site: landscape themes in prehistory), 5 (Addressing gaps in our knowledge of prehistoric landscapes) and 6 (Regional diversity in prehistory). *Understanding the British Iron Age 2001:* E2.3 (Areas without a framework). *EH National Heritage Science Strategy Report 2, 2009:* Section 3.5.1 (Detecting and imaging).

References:

¹ Bevan, B., 2000. Peak practice: whatever happened to the Iron Age in the southern Pennines? in J.R. Harding and R. Johnston (eds), *Northern Pasts*, 141–155. Oxford: British Archaeological Reports British Series 302.

² Bevan, B., 2007. The Early Iron Age of the Peak District: re-reading the evidence, in Haselgrove, C. and Pope, R., *The Earlier Iron Age in Britain and the Near Continent*, 254–256. Oxford: Oxbow Books.

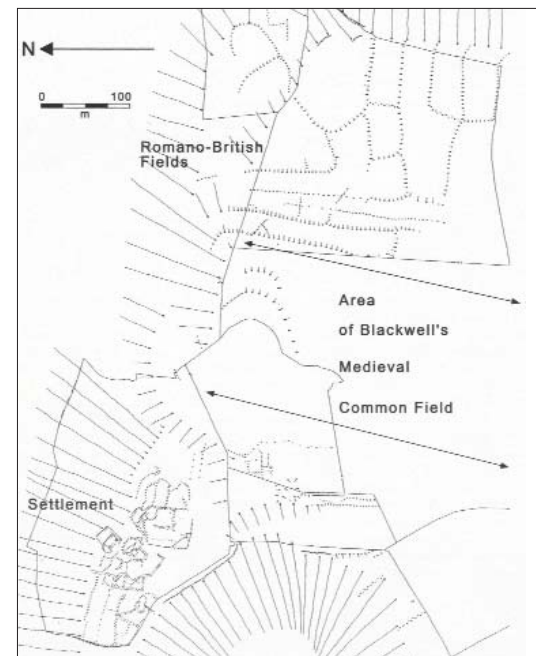
³ e.g. Coombs, D.G. and Thompson, F.H., 1979. Excavation of the hillfort of Mam Tor, Derbyshire, 1965–69. *Derbyshire Archaeological Journal* 99, 7–51; Fin Cop, Derbyshire:

<http://www.archaeologicalresearchservices.com/projects/fincop.html>.

⁴ Long, D.J., Chambers, F.M. and Barnatt, J., 1998. The palaeoenvironment and the vegetation of a later prehistoric field system at Stoke Flat, on the gritstone uplands of the Peak District. *Journal of Archaeological Science* 25, 505–519.

⁵ Bevan, B., 2005. Peaks Romana: the Peak District Romano-British rural upland settlement survey, 1998–2000. *Derbyshire Archaeological Journal* 125, 36–37.

⁶ e.g. Storrs-Fox, W., 1909. Harborough Cave, near Brassington. *Derbyshire Archaeological Journal* 31, 89–114



How many of the numerous earthwork sites in the Peak District that are thought to date from the Roman period might have earlier origins? This plan shows the well preserved earthworks of a Romano-British settlement and field system at Chee Tor, Blackwell, Derbyshire, which survive either side of the village's medieval common field (Bevan 2005, fig. 4; reproduced by courtesy of Bill Bevan and the Derbyshire Archaeological Society)

Research Objective 4J Investigate the settlement and environmental resource of the Witham Valley

Summary:

The Witham Valley is well-known as a focus of activity from Mesolithic and Neolithic times, but has yielded an especially impressive battery of evidence for the exploitation of this wetland zone during the Late Bronze Age and Iron Age periods¹. An exceptional collection of riverine metalwork² is rivalled in quantity only by finds from the Thames. The region has also yielded logboats³, later Bronze Age ritual and ceremonial sites such as Washingborough⁴ and, most remarkable of all, the Iron Age timber causeway with associated votive finds at Fiskerton⁵. A valley-wide palaeoenvironmental research design has been published by the Witham Valley Archaeology Research Committee and provides a valuable springboard for studies of landscape change during the first millennium BC and beyond^{6,7}. Other key themes include the development of later Bronze Age and Iron Age rural settlement, the changing agricultural economy, the role of the river as a focus for ritual activity, trade and transport and, in view particularly of the proximity of Roman Lincoln⁸, the impact of the Roman Conquest upon the rural landscape.

Agenda topics addressed: 4.3.2; 4.7.1; 4.7.2; 4.8.1–4.8.3; 4.9.1; 4.10.3.

Archaeology of the East Midlands: 268, 272, 285–286.

SHAPE 2008: Understanding place: researching regional diversity (11111.310); Understanding ancient environments and ecologies (11111.420).

NHPP 2011: Identification of wetland/waterlogged deposits (3A5).

Other research frameworks:

EH Research Strategy for Prehistory 2011: Theme PR 1, Topics 1 (Moving beyond the site: landscape themes in prehistory) and 6 (Regional diversity in prehistory); Theme PR6, Topic 31 (Human interactions with plants and animals in prehistory).

Jones, M.J, Stocker, D. and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*: Archaeological Research Agenda Zones 5.8 and 5.9.

Catney, S. and Start, D. (eds), 2003. *Time and Tide: the Archaeology of the Witham Valley*, 33-42.

References:

¹ Catney, S. and Start, D. (eds), 2003. *Time and Tide: the Archaeology of the Witham Valley*. Heckington: Witham Valley Archaeology Research Committee.

² Field, N. and Parker-Pearson, M., 2003. *Fiskerton: an Iron Age Timber Causeway with Iron Age and Roman Votive Offerings*, 162–164. Oxford: Oxbow Books.

³ Field and Parker-Pearson 2003, 158–59.

⁴ Allen, C.S.M., 2009. *Exchange and Ritual at the Riverside: Late Bronze Age Life in the Lower Witham Valley at Washingborough, Lincolnshire*. Lincoln: Pre-Construct Archaeology Monographs 1.

⁵ Field, N., Parker-Pearson, M. and Rylatt, J., 2003. The Fiskerton Causeway: research-past, present and future, in Catney and Start (eds), 16–32.

⁶ French, C. and Rackham, J., 2003. Palaeoenvironmental research design for the Witham Valley, in Catney and Start (eds), 33–42.

⁷ Stocker, D. A. and Everson, P., 2003. The straight and narrow way: Fenland causeways and the conversion of the landscape in the Witham valley, Lincolnshire, in M. Carver (ed.), *The Cross Goes North: Processes of Conversion in Northern Europe, AD 300–1300*, 271–88. York: York Medieval Press.

⁸ Jones, M.J, Stocker, D. and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*. Oxford: Oxbow Books.



Washingborough, Lincolnshire: remnants of finds-rich layer of heat-shattered stones, burnt animal bones and Late Bronze Age pottery overlying timber-lined tank. The latter may have held water heated by hot stones and could have been used for purposes such as cooking, leather-working or brewing (Allen 2009, fig. 3.6; reproduced by permission of Colin Palmer-Brown)

6.5 ROMANO-BRITISH (AD 43-c.410): UPDATED RESEARCH AGENDA

5.1 Chronology

1. How can we enhance our knowledge of developing pottery industries, particularly during the Conquest period and 3rd to 4th centuries?
2. How may information on temporal and regional variations in pottery typology and vessel fabrics best be disseminated?
3. How may our understanding of sites known only from metal-detected and fieldwalking finds be enhanced?
4. How can we advance our knowledge of the chronology of metal finds, particularly brooches?
5. What are the priorities for scientific dating, particularly radiocarbon, and how may targeted dating programmes be developed?

5.2 The military impact

1. How far was the military conquest a motor of social and economic change?
2. To what extent is the pivotal location of the region between civil south and military north reflected in the archaeological record?
3. Can we define more closely the distribution of early military sites and their periods of use?
4. How did the supply needs of military garrisons and armies along the northern frontier affect the economy and transport infrastructure?
5. How did the withdrawal of Roman political and financial support impact upon the established society and economy?

5.3 Growth of urban centres

1. What spurred the foundation of extramural settlements (vici) next to early forts and how was the development of vici and forts related?
2. How does the distribution of towns correlate with Iron Age foci, and how far may their social, political and economic roles have overlapped?
3. What processes drove the growth of secondary urban centres?
4. How were towns organised, what roles did they perform and how may their morphology and functions have varied over time?
5. How and why did the urban landscape change in the late Roman period, and what roles may fortifications have played in this period?

5.4 Rural settlement patterns and landscapes

1. How did the Conquest impact upon rural settlements and landscapes?
2. How and why did settlement forms and building traditions vary within the region and over time?
3. How did rural settlements relate to each other and to towns and military sites, and how may this have varied regionally and over time?
4. How did field and boundary systems relate to earlier systems of land allotment, and how did these boundary networks develop over time?
5. What patterns can be discerned in the location of settlements in the landscape?
6. Can we elucidate further the daily life of settlements and their role in the processing and marketing of agricultural products?

5.5 The agricultural economy

1. How is the upland-lowland divide manifested in the regional agricultural economy and other aspects of the archaeological record?
2. How did integration into the Roman Empire impact upon the agrarian economy, including the introduction of new crops, herbs and fruits?
3. What is the evidence for the diet of people of high and low status in urban and rural settlements, especially those close to military sites?
4. Can we chart more closely the processes of agricultural intensification and expansion and the development of field systems?
5. Can we define more precisely the networks developed for the trade and exchange of agricultural produce and fish?

5.6 Artefacts: production, distribution and social identity

1. What resources moved in and out of the region during this period?
2. How can we add to our understanding of the nationally important iron and lead industries?
3. How may studies of the production, movement and consumption of pottery contribute to understanding of the regional economy?
4. What production techniques and exchange networks were involved in the manufacture and marketing of salt and building materials?
5. How can we utilise most effectively the regional coin resource as evidence for the transition to a monetary economy?
6. What can artefact research contribute to studies of eating, drinking and other manifestations of social identity?

5.7 Roads and waterways

1. Can the chronology of road construction and links between road building and campaigns of conquest be clarified?
2. How were roads, rivers and artificial waterways integrated?
3. To what extent may communication routes have been influenced by Late Iron Age settlement patterns and routes of movement?
4. How may roads and waterways have impacted upon established communities and how may roads have influenced urban morphology?

5.8 Ritual and religion

1. How far is the location of religious sites related to Late Iron Age activity and to what extent may structured deposition of human/animal bones in settlement/boundary features have continued?
2. How far may data from surveys and the Portable Antiquities Scheme assist in locating religious or ritual sites?
3. Can we elucidate the beliefs and practices associated with religious or ritual foci and may certain classes of site have been associated with particular activities?
4. Why have so few early Roman burials been found, and may practices have varied regionally and between different communities?
5. What may studies of later Roman inhumation cemeteries teach us about changing burial practices and demography?

ROMANO-BRITISH (AD 43-c.410): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	5.1 Chronology					5.2 The military impact					5.3 Growth of urban centres					5.4 Rural settlement patterns and landscapes						5.5 Agricultural economy					5.6 Artefacts: production, distribution and social identity						5.7 Roads and waterways				5.8 Ritual and religion										
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	1	2	3	4	5						
5A Create regional pottery corpora and publish key production centres	●	●	●		●	●	●	●	●	●					●				●								●		●			●	●														
5B Support dissemination and synthesis of information on Roman finds	●	●	●			●	●	●	●	●					●				●								●	●	●	●	●	●	●										●				
5C Promote systematic application of scientific dating techniques	●			●	●				●						●	●	●	●	●														●								●	●					
5D Support scientific analysis of human remains																																						●				●	●				
5E Promote integration of studies of subsistence, diet and health												●	●	●							●	●	●	●	●	●	●																				
5F Develop access to Lincoln and Leicester Urban Archaeological Databases	●			●		●	●	●	●	●	●	●	●	●	●				●								●						●	●	●	●	●	●				●	●				
5G Promote further synthesis and analysis of secondary urban centres	●			●		●	●	●	●	●	●	●	●	●	●				●								●						●	●	●	●	●	●				●	●				
5H Investigate landscape context of rural settlements																●	●	●	●	●	●	●																									
5I Support research and publication of landscape syntheses																●	●	●	●	●	●													●	●	●											
5J Instigate regional scale characterisation study of industry	●								●	●	●	●	●	●	●						●						●	●	●	●			●		●												

Research Objective 5A

Create regional corpora of Roman pottery and publish information on key production centres

Summary:

The East Midlands was an important area for the manufacture of pottery, which in the case of Nene Valley colour-coated wares and mortaria produced in the Hartshill and Mancetter kilns of the Leicestershire-Warwickshire border were distributed nationally¹. Several regionally important production sites have also been identified, together with a variety of pottery fabrics whose production location is less well understood². Comparative studies of the chronology, production and distribution of local and regional wares are hindered by inconsistencies in terminology and variability in recording methodologies³. Research on these subjects would benefit from the development of a region-wide fabric and form series⁴, building upon existing county schemes and the National Roman Fabric Collection⁵. The compilation of a catalogue of pottery in museum collections and publication of key groups from sites such as Stanwick and Ashton in Northamptonshire would also strengthen the infrastructure for research⁶. Syntheses of the nationally important Lower Nene Valley and Mancetter-Hartshill industries are long overdue, together with synthetic studies of the key regional industries represented by the Swanpool, Knaith, Bourne and Market Rasen kilns of Lincolnshire, Upper Nene Valley greywares, the Lower Trent valley kilns, Derbyshire wares, the problematic shell-tempered fabrics of Lincolnshire and south Nottinghamshire⁷, and the mid-first century fineware industries of Northamptonshire⁸. Such work would greatly enhance knowledge of the pottery industry in the region and beyond, and by assisting the development of training programmes would address the growing skills shortage in Roman ceramic analysis⁹.

Agenda topics addressed: 5.1.1- 5.1.3; 5.1.5; 5.6.2.

Archaeology of the East Midlands: 154.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Realising the research dividend from past unpublished historic environment excavations (11113.110).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

Willis, S.H., 2004. The Study Group for Roman Pottery research framework document for the study of Roman pottery in Britain 2004. *Journal of Roman Pottery Studies* 11, 1–20 (especially Sections 3.5.2-3, 3.6.2 and 5.3.2-3).

References:

¹ Swan, V., 1984. *The Pottery Kilns of Roman Britain*, 95–101. London: Royal Commission on Historical Monuments, Supplementary Series 5.

² Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 151–152.

³ Taylor 2006, 140–41; Darling, M., 2004. Guidelines for the archiving of Roman pottery. *Journal of Roman Studies* 11, 67–74.

⁴ Willis 2004, 5–6: 3.3.2; Taylor 2006, 152.

⁵ Tomber, R. and Dore, J., 1998. *The National Roman Fabric Reference Collection: A Handbook*. London: Museum of London Archaeological Services.

⁶ Willis 2004, 5: 3.2; Taylor 2006, 152; see Darling, M. and Precious, B., forthcoming. *A Corpus of Roman Pottery from Lincoln*. Oxford: Oxbow Books.

⁷ Taylor 2006, 151–152; Willis 2004, 10: 4.4.1.

⁸ e.g. Woods, P. and Hastings, S., 1984. *Rushden: The Early Finewares*. Northampton: Northamptonshire County Council.

⁹ Willis 2004, 7–8: 3.6.2; 14: 5.3.2; Allason-Jones, L., 2001. Material culture and identity, in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda*, 24–25. London: CBA Research Report 125.



Reconstruction by the predecessor of the Society for Lincolnshire History and Archaeology of one of the kilns at Swanpool, Lincoln (source: Michael J. Jones; photograph: Ken Wood)

Research Objective 5B Support the dissemination and synthesis of information on Roman finds

Summary:

Opportunities should be taken to encourage appropriate recording and typological and scientific analyses of pottery, metalwork, coinage, querns and other finds derived from fieldwalking and metal-detecting¹, including finds deposited in museums, and the wider dissemination of this information². This has particular potential for enhancing our understanding of regional exchange networks and wider social issues such as eating and drinking³ and the development of social identities. By providing greater opportunities for public engagement in the research process, this would also promote the role of the voluntary sector in the regional Research Strategy.⁴⁻⁶ The Portable Antiquities Scheme is well placed to promote the dissemination of information and to assist in the formulation of guidelines for the recording and analysis of finds. In addition, as much of this material continues to elude county Historic Environment Records, there are opportunities for ensuring closer liaison between the public, Historic Environment Record staff and other heritage professionals. The importance of finds as an educational resource should also be emphasised, bearing in mind particularly the inclusion of the Roman period as a National Curriculum subject⁷.

Agenda topics addressed: 5.1.1-5.1.3; 5.6.1-5.6.4; 5.8.2.

Archaeology of the East Midlands: 139, 154, 158, 290.

SHAPE 2008 Understanding artefacts and material culture (11111.510); Realising the research dividend from past unpublished historic environment excavations (11113.110).

Other research frameworks:

Willis, S.H., 2004. The Study Group for Roman Pottery research framework document for the study of Roman pottery in Britain 2004. *Journal of Roman Pottery Studies* 11, 2: Section 1.2.1.
EH National Heritage Science Strategy Report 2, 2009, 19, 21.

References

¹ Cooper, N.J., 2005. Promoting the study of finds in Roman Britain: democracy, integration and dissemination. Practice and methodologies for the future, in R.

Hingley and S. Willis (eds), *Roman Finds: Context and Theory*, 34–51. Oxford: Oxbow Books.

² e.g. Daubney, A., 2010. The use of gold in Late Iron Age and Roman Lincolnshire, in S. Malone and M. Williams (eds), *Rumours of Roman Finds. Recent Work in Roman Lincolnshire*, 64–74. Heckington: Heritage Trust for Lincolnshire.

³ Cool, H.M., 2006. *Eating and Drinking in Roman Britain*. Cambridge: Cambridge University Press.

⁴ Cooper, N.J., 2006. Cross-period research and the foundations of a research strategy, in *The Archaeology of the East Midlands*, 290.

⁵ BHTA (Bingham Heritage Trails Association): survey of Bingham parish, Nottinghamshire, including fieldwalking of Roman sites in the hinterland of the small town of *Margidunum* (<http://www.binghamheritage.org.uk>); Allen, P., Ashton, G. and Henstock, A., 2010. *Bingham Back in Time: a History of Settlement in the Parish of Bingham, Nottinghamshire*. Bingham: Bingham Heritage Trails Association.

⁶ CLASP (Community Landscape and Archaeology Project): fieldwalking survey of Roman sites in the Upper Nene Valley (<http://www.claspweb.org.uk>).

⁷ Willis 2004, 2: 1.2.1



Fieldwalking by members of the Bingham Heritage Trails Association of a Roman pottery scatter near Bingham, Nottinghamshire (photograph: Peter Allen)

Research Objective 5C

Promote the systematic application of scientific dating techniques to sites of the Roman period

Summary:

The chronology of the Roman period is fairly well established, although complicated for the non-specialist by inconsistencies in dating terminology and hindered by an over-reliance upon pottery, imprecise dating of much metalwork and a continuing reluctance to embrace scientific dating methods¹. The problem is especially acute in the Peak, where both Iron Age and Roman artefacts are scarce², and is compounded by the longevity of native artefact traditions³ and the particular problems of dating 3rd and 4th century pottery⁴. Further problems, arising from a paucity of regional pottery corpora and non-publication of key assemblages, are discussed above (Objective 5A). Radiocarbon dating has particular potential for refining chronologies, especially through the application of Bayesian analysis⁵, and despite calibration difficulties in the late Roman period, systematic programmes of dating should be encouraged. Resources should also be targeted upon dendrochronology, which has significant potential for dating the waterlogged wood recovered from deeply stratified urban contexts and rural sites with favourable conditions of preservation. These and other scientific techniques such as archaeomagnetic or rehydroxylation dating⁶ are especially relevant for the late Roman period, which, with the cessation of Roman coin supply from around AD402, loses an important dating tool and have particular potential for elucidating the tradition of late and post-Roman inhumations lacking associated grave-goods⁷.

Agenda topics addressed: 5.1.1; 5.1.4; 5.1.5; 5.2.1; 5.2.2; 5.3.4; 5.4.1-5.4.4; 5.5.3; 5.7.1; 5.8.1; 5.8.4; 5.8.5.

Archaeology of the East Midlands: 140–141, 154.

SHAPE 2008: New frontiers: clarifying poorly understood chronologies (11112.510).

Other research frameworks:

Willis, S.H., 2004. The Study Group for Roman Pottery research framework document for the study of Roman pottery in Britain 2004. *Journal of Roman Pottery Studies* 11, 13: Section 5.1

EH National Heritage Science Strategy Report 2, 2009: Section 3.2.1 (Chronology).

References:

¹ Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 140–141, 154.

² Bevan, B., 2005. Peaks Romana: the Peak District Romano-British rural upland settlement survey. *Derbyshire Archaeological Journal* 118, 26-58; Makepeace, G.A., 1998. Romano-British rural settlement in the Peak District. *Derbyshire Archaeological Journal* 118, 95–138.

³ e.g. Friendship-Taylor, R.M., 1998. *Late La Tène Pottery of the Nene and Welland Valleys, Northamptonshire*. Oxford: British Archaeological Reports British Series 280.

⁴ Taylor 2006, 141, 154; Willis 2004, 13: 5.1.

⁵ e.g. Lawrence, S. and Smith, A., 2009. *Between Villa and Town. Excavations of a Roman Roadside Settlement and Shrine at Higham Ferrers, Northamptonshire*, 140-145. Oxford: Oxford Archaeology Monograph 7.

⁶ Wilson, M.A., Carter, M.A., Hall, C., et al., 2009. Dating fired-clay ceramics using long-term power law rehydroxylation kinetics. *Proceedings of the Royal Society A*, 1-9

(<http://rspa.royalsocietypublishing.org/site/misc/RSPA20090117.pdf>).

⁷ Taylor 2006, 154, 159; Esmonde-Cleary, S., 2001. The Roman to medieval transition, in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda*, 96. London: CBA Research Report 125.



Archaeomagnetic dating of a Romano-British hearth or oven at Wygate Park, Spalding, Lincolnshire (reproduced by permission of Archaeological Project Services)

Research Objective 5D Support the application of scientific analysis to human remains

Summary:

Despite the excavation of a number of moderately extensive Roman cemeteries in the region¹ and of isolated burials on and around settlements, sometimes in boundary features², there has been little analysis of skeletal remains of this period. The application of radiocarbon and isotopic analysis³ would enable these burials to be placed more securely in their chronological and environmental contexts, while DNA analyses of bone samples have the potential for elucidating the genetic relationships between individuals preserved in cemeteries⁴. To some extent, because of the antiquity of many excavations, such analysis may have to await the discovery of new large-scale cemeteries. Of the many burials recorded from Lincoln, for example, relatively few have survived for modern analysis⁵. It is recommended, in view of the potential research value of such remains, that adequate provision for appropriate scientific analysis be included as a standard requirement in archaeological schemes of treatment relating to sites likely to yield evidence of Roman activity.

Agenda topics addressed: 5.5.2; 5.8.1; 5.8.4; 5.8.5.

Archaeology of the East Midlands: 158–159.

SHAPE 2008: Understanding past populations of Britain (11111.710).

NHPP 2011: Churchyards, cemeteries and burial grounds (4D2).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ e.g. Leicester: Cooper, L., 1996. A Roman cemetery in Newarke Street, Leicester. *Transactions of the Leicestershire Archaeological and Historical Society* 70, 1–90; *Margidunum*, Nottinghamshire: Todd, M., 1969. Margidunum: excavations 1966–8. *Transactions of the Thoroton Society* 73, 7–104.

² Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 154; e.g. Ashton, Northamptonshire: Dix, B., 1985. Ashton. *Northamptonshire Archaeology* 20, 148–149.

³ e.g. Leach, S., Eckardt, H., Chenery, C., *et al.*, 2010. A 'lady' of York: migration, ethnicity and identity in Roman York. *Antiquity* 84, 131–45; see also: <http://www.reading.ac.uk/archaeology/research/projects/arch-HE-diaspora.aspx>.

⁴ Esmonde-Cleary, S., 2001. The Roman to medieval transition, in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda*, 96. London: CBA Research Report 125.

⁵ Jones M.J., Stocker, D. and Vince, A. (eds), 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*, 108–14. Oxford: Oxbow Books.



Navenby, Lincolnshire: male skeleton, placed with arms folded in a rectangular timber coffin, dated to 40 cal BC - cal AD 210 (Wk-28777; 95% probability). A sheep/goat humerus placed in the pelvic area was interpreted as possibly a votive deposit (Palmer-Brown, C. and Rylatt, J. 2011. *How Times Change: Navenby Unearthed*. Lincoln: Pre-Construct Archaeological Services Monograph 2, 59; reproduced by permission of Colin Palmer-Brown)

Research Objective 5E

Promote the integration of specialist studies of material relating to subsistence, diet and health

Summary:

Excavations have generated a substantial body of data that may be applied to studies of intra-regional and temporal variations in subsistence and diet, and hence to assessment of the impact of Roman cultural traditions upon the dietary preferences of native communities¹⁻³. The full potential of this information may only be realised by ensuring adequate dialogue between specialists and by promoting the integration of disparate specialist data in site reports and regional syntheses. Particular emphasis should be placed upon the integration of studies examining the functional composition of pottery groups and the residues preserved on pottery⁴, querns and other material associated with food production, processing and storage⁵, and associated faunal and palaeobotanical remains⁶. Scientific analyses with significant potential for the reconstruction of ancient diet and health, exemplified by residue analyses of ancient pottery and stable isotope analyses of human remains⁷, need to be encouraged as routine practice⁸. There is also considerable scope for enhancing the palaeoenvironmental record – notably by encouraging regular sieving for fish bones and by ensuring that bulk samples are large enough to yield sufficient floral and faunal data to permit meaningful analysis⁹.

Agenda topics addressed: 5.3.2-5.3.4; 5.4.3; 5.5.1-5.5.3.

Archaeology of the East Midlands: 277.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Understanding past populations of Britain (11111.710).

NHPP 2011: Identification of wetland/waterlogged sites (3A5).

Other research frameworks:

Dobney, K., 2001. A place at the table: the role of vertebrate zooarchaeology within a Roman research agenda for Britain, in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda*, 36–45. London: CBA Research Report 125.

Van der Veen, M., Livarda, A. and Hill, A., 2007. The archaeobotany of Roman Britain: current state and identification of research priorities. *Britannia* 38, 181–210 (especially 202–207).

Willis, S.H., 2004. The Study Group for Roman Pottery research framework document for the study of Roman pottery in Britain 2004. *Journal of Roman Pottery Studies* 11, 6: Section 3.4.1–3.4.2; 15: Sections 5.5 & 5.6.

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ Dobney 2001, 36–37; Monckton, A. 2006. Environmental archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 273–279.

² Cool, H.M., 2006. *Eating and Drinking in Roman Britain*. Cambridge: Cambridge University Press.

³ Stallibrass, S. and Thomas, R. (eds), 2008. *Feeding the Roman Army*. Oxford: Oxbow Books.

⁴ Willis 2004, 15: Section 5.6; 6: Section 3.4.2.

⁵ Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 153.

⁶ Monckton A., 2006. Environmental archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 262: Table E1, 273–277; Albarella, U. and Pirnie, T., 2008. *A Review of Animal Bone Evidence from Central England* (http://archaeologydataservice.ac.uk/archives/view/animalbone_ah_2007/).

⁷ e.g. Richards, M.P., Hedges, R.E.M., Molleson, T.I. *et al.*, 1998 Stable isotope analysis reveals variations in human diet at the Poundbury Camp cemetery site. *Journal of Archaeological Science* 25, 1247–1252.

⁸ Willis 2004, 6: Sections 3.4.1–3.4.2.

⁹ e.g. Dobney 2001, 41–42; Locker, A., 2007. *In piscibus diversis*; the bone evidence for fish consumption in Roman Britain. *Britannia* 38, 141–80.



Langford, Nottinghamshire: stone-lined Roman well preserving a humic silty fill with associated animal bone and leather. The original cut for the well through river terrace sands is visible either side of the stone lining (photograph: Lee Elliott)

Research Objective 5F

Develop public and professional access to Lincoln and Leicester Urban Archaeological Databases as a basis for further work

Summary:

On-line access to the UADs for Lincoln and Leicester, together with the continuing publication of excavation backlogs for these cities, is proposed as a springboard for hinterland and community archaeology projects focused upon these major public towns¹. At Lincoln, both the early legionary fortress and the later *colonia*² have been extensively excavated. A review and a research agenda have been produced for the initial military phase of Lincoln and the subsequent period of civil consolidation³, and much information on the Roman heritage of the city is now available on the innovative Heritage Connect website⁴. The major public town at Leicester has seen extensive recent excavations⁵, the results of which are incorporated in a UAD that is now an integral part of the Historic Environment Record. It is proposed that the information contained in these databases be made available on-line and revised regularly, ensuring that they remain up-to-date research resources. In terms of further work, it is recommended that particular emphasis be placed initially upon characterising the Late Iron Age settlements known to have existed at both locations and exploring the impact of urbanisation upon the hinterlands of these towns.

Agenda topics addressed: 5.1.1; 5.1.4; 5.2.1; 5.2.3; 5.3.1-5.3.5; 5.4.3; 5.5.1; 5.5.2; 5.5.4; 5.6.2; 5.7.1-5.7.4; 5.8.1; 5.8.3; 5.8.5.

Archaeology of the East Midlands: 155-157.

SHAPE 2008: Realising the research dividend from past unpublished historic environment excavations (11113.110); Realising the research dividend of community research (11113.210).

NHPP 2011: Historic towns and suburbs (4A1).

Other research frameworks:

Burnham, B., Collis, J., Dobinson, C., *et al.*, 2001. Themes for urban research,

in S. James and M. Millett (eds), 2001. *Britons and Romans: Advancing an Archaeological Agenda*, 67-76. London: CBA Research Report 125.

Jones, M.J., Stocker, D. and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*, 54-55 (The Roman military era) and 138-140 (The *Colonia* era). Oxford: Oxbow Books.

Millett, M., 2001. Approaches to urban societies, in James and Millett (eds), 60-66.

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priorities UR1 (Synthesis of developer-funded research into the urban historical environment) and UR2 (urban characterisation).

References:

¹ Compare Gaffney, V. and White, R., 2007. *Wroxeter, the Cornovii and the Urban Process*. Journal of Roman Archaeology Supplement, vol. 68.

² Founded to house those who had completed their military service and had been granted Roman citizenship (Hurst, R. (ed.), 1999. *The Coloniae of Roman Britain*. Journal of Roman Archaeology Supplement, vol. 36).

³ Jones *et al.*, 2003, 54-55 and 138-140.

⁴ <http://www.heritageconnectlincoln.com>.

⁵ Morris, M., Buckley, R. and Codd, M., 2011. *Visions of Ancient Leicester*. Leicester: University of Leicester Archaeological Services.



Roman Leicester (*Ratae Corieltavorum*) as it may have looked during the late 3rd century AD (Morris *et al.* 2011; reproduced by permission of University of Leicester Archaeological Services)

Research Objective 5G

Promote further synthesis of secondary urban centres and targeted post-excavation analysis and publication

Summary:

The secondary urban settlements of the region are comparatively poorly known, but formed an important tier of the regional settlement hierarchy that was closely integrated with the developing road network¹. They represent a particularly prominent element of the East Midlands landscape, of interest within and beyond the region, and a detailed review is recommended to elucidate further their character and to explore comparisons with towns elsewhere in Britain. This could build upon important work undertaken for Northamptonshire² and could be combined with analysis and publication of key sites such as Ancaster, Lincolnshire³, Ashton, Northamptonshire⁴, Thistleton, Rutland⁵ and Brough-on-Fosse, Nottinghamshire⁶. Detailed analyses of the structural remains, artefacts and environmental data from these secondary urban centres should enhance significantly our understanding of their origins, morphology and socio-economic, political and religious functions, their relationship to roads, rural settlements, villas and larger public towns, and their impact upon the rural landscape. Many of these secondary urban centres may have developed from nucleated Late Iron Age settlements, and there is significant potential for study of the origins of urbanisation and the balance between military and indigenous motors of change⁷.

Agenda topics addressed: 5.1.1; 5.1.4; 5.2.1- 5.2.3; 5.3.1-5.3.5; 5.4.3; 5.5.1; 5.5.2; 5.5.4, 5.6.2; 5.7.1-5.7.4; 5.8.1; 5.8.3; 5.8.5.

Archaeology of the East Midlands: 155–157.

SHAPE 2008: Understanding place: assessing the national resource (11111.140) and regional historic environment components (11111.170); Realising the research dividend from past unpublished historic environment excavations (11113.110); Tapping the motherlode: supporting synthesis of key commercial project research (11113.410).

NHPP 2011: Historic towns and suburbs (4A1).

Other research frameworks:

Burnham, B., Collis, J., Dobinson, C., *et al.*, 2001. Themes for urban research,

in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda*, 67–76. London: CBA Research Report 125.

Millett, M., 1995. Strategies for Roman small towns, in A.E. Brown (ed.), *Roman Small Towns in the East of England and Beyond*, 29–38. Oxford: Oxbow Monograph 5.

Millett, M., 2001. Approaches to urban societies, in James and Millett (eds), 60–6.

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priority UR1 (synthesis of developer-funded research).

References:

¹ Brown, A.E. (ed.), 1995. *Roman Small Towns in the East of England and Beyond*. Oxford: Oxbow Books; Burnham, B.C. and Wachter, J., 1990. *The Small Towns of Roman Britain*. London: Batsford; Taylor, J., 2007. *Atlas of Roman Rural Settlement in Britain*. York: CBA Research Report 151.

² Foard, G., Ballinger, J. and Taylor, J., 2002. *The Northamptonshire Extensive Urban Survey*. London: English Heritage and Northamptonshire County Council
³⁻⁴ Burnham and Wachter 1990, 235–240 and 279–81.

⁵ Greenfield, E., 1962. Thistleton. *Journal of Roman Studies* 52, 173–75.

⁶ Jones, H., 2002. Brough, Glebe Farm. *Transactions of the Thoroton Society* 106, 147–48; Vyner, B. (ed.), in prep. *Archaeology on the A46 Fosse Way: Newark to Lincoln*.

⁷ Taylor 2006, 149, 155–157.

Magnetometer survey of Roman town at Irchester, showing the enclosing wall, roads, stone buildings and other internal features (Butler, A., Meadows, I. and Fisher, I., 2010.

Archaeological Geophysical Survey at Chester Farm, Irchester. Northampton: Northamptonshire Archaeology; reproduced by permission of Northamptonshire Archaeology)



Research Objective 5H Investigate the landscape context of rural settlements

Summary:

Further synthetic studies are required to develop further our understanding of the Roman agrarian landscape, and in particular to investigate how landscapes and rural settlements had varied between the upland and lowland zones¹. Where detail is available, as at Long Bennington² and Stanwick³, there are suggestions that in some areas villas or Romanised farms had developed from Iron Age settlements with no significant reorganisation of the surrounding countryside. In other areas, by contrast, there are indications of major landscape reorganisation linked to agricultural expansion; this is exemplified by the integration of settlements and boundaries in the 'brickwork-plan' field systems of the Sherwood Sandstones^{4,5} and the coaxial field patterns of the Trent Valley downstream of Newark^{6,7}, both of which systems appear to have developed principally in the Roman period. Fieldwalking, metal detecting, cropmark plotting, geophysical survey, lidar and targeted excavation all have important parts to play in mapping and interpreting these landscapes. Appropriate survey programmes, building upon and enhancing earlier investigations in areas such as the Lincolnshire Fens⁸ and Peak District^{9,10}, should be developed alongside the dissemination of key unpublished datasets and synthetic studies aimed at contextualising current data¹¹. In addition, appropriate environmental sampling strategies need to be encouraged to accumulate botanical and faunal data that will provide a secure foundation for studies of changing landscape context and site location strategies (Objective 5E).

Agenda topics addressed: 5.4.1-5.4.4; 5.5.1-5.5.3.

Archaeology of the East Midlands: 157-158, 277.

SHAPE 2008: Understanding ancient environments and ecologies (11111.420); Realising the research dividend from past unpublished historic environment excavations (11113.110); Tapping the motherlode: supporting synthesis of key commercial project research (11113.410).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Identification of wetland/waterlogged sites (3A5); Field systems (4F2).

Other research frameworks:

Taylor, J., 2001. Rural society in Roman Britain, in S. James and M. Millett (eds), 2001. *Britons and Romans: Advancing an Archaeological Agenda*, 46-59. London: CBA Research Report 125.

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ See recent general synthesis in Taylor, J., 2007. *Atlas of Roman Rural Settlement in Britain*. York: CBA Research Report 151; also Bewley, R.H. (ed.), 1988 *Lincolnshire's Archaeology from the Air*. Society for Lincolnshire History and Archaeology: Occasional Papers in Lincolnshire History and Archaeology 11.

² Leary, R., 1994. *Excavations at the Romano-British Settlement at Pasture Lodge Farm, Long Bennington, Lincolnshire, 1975-77 by H.M. Wheeler*. Society for Lincolnshire History and Archaeology: Occasional Papers in Lincolnshire History and Archaeology 10.

³ Neal, D.S., 1989. The Stanwick villa, Northants: an interim report on the excavations of 1984-88. *Britannia* 20, 149-168.

⁴ Garton, D., 2008. The Romano-British landscape of the Sherwood Sandstone of Nottinghamshire: fieldwalking the brickwork-plan field-systems. *Transactions of the Thoroton Society* 112, 15-110; http://archaeologydataservice.ac.uk/archives/view/brickworkplan_eh_2009/

⁵ Riley, D.N., 1980. *Early Landscape from the Air: Studies of Cropmarks in South Yorkshire and North Nottinghamshire*. Sheffield: University of Sheffield, Department of Prehistory and Archaeology.

⁶ Garton, D., 2002. Walking fields in South Muskham and its implications for Romano-British cropmark-landscapes in Nottinghamshire. *Transactions of the Thoroton Society* 106, 17-39.

⁷ Whimster, R.P., 1989. *The Emerging Past. Air Photography and the Buried Landscape*. London: RCHME.

⁸ Malone, S., 2010. Rumours of Roman finds: updating Roman Lincolnshire, in S. Malone and M. Williams (eds), *Rumours of Roman Finds. Recent Work in Roman Lincolnshire*, 1-14. Heckington: Heritage Trust for Lincolnshire; <http://www.apsarchaeology.co.uk/services/lidar/>.

⁹ Bevan, B., 2005. Peaks Romana: the Peak District Romano-British rural upland settlement survey. *Derbyshire Archaeological Journal* 118, 26-58.

¹⁰ Makepeace, G.A., 1998. Romano-British rural settlement in the Peak District. *Derbyshire Archaeological Journal* 118, 95-138.

¹¹ Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 137-140, 143-145, 149-150 and 157-158.

Research Objective 5I

Support research and publication of landscape syntheses

Summary:

A variety of landscapes within the region, including the major river valleys of the Nene¹, Welland², Witham³ and Trent⁴, have been the subject of long-term and extensive investigations in advance of quarrying and other developments and of landscape-based research targeted upon the Roman period. Additional synthetic studies of the major river valleys would be particularly welcome, and could provide useful comparisons with studies of upland areas such as the Peak⁵, Lincolnshire Wolds⁶ and Northamptonshire Uplands⁷. Key research themes include the use of rivers and associated artificial waterways⁸ for the transport, across and beyond the region, of commodities such as lead and pottery⁹, the role of rivers as foci for industrial production¹⁰ and, more generally, the significance of riverine communication networks as drivers of landscape change¹¹. Opportunities should also be taken to collate the comparatively neglected evidence for riverside installations such as mills, bridges and fords¹². Such studies could usefully be combined with palaeochannel surveys comparable to that conducted in the Trent Valley¹³, which may assist in locating Roman river courses and hence areas of potential interest for the preservation of riverside installations.

Agenda topics addressed: 5.4.1-5.4.4; 5.5.3; 5.6.1-5.6.3; 5.7.2-5.7.4.

Archaeology of the East Midlands: 153, 157.

SHAPE 2008: Understanding place: assessing historic areas (11111.150); Understanding place: researching regional diversity (11111.310); Understanding ancient environments and ecologies (11111.420).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Transport and communications (4B3).

Other research frameworks:

Taylor, J., 2001. Rural society in Roman Britain, in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda*, 46–59. London: CBA Research Report 125.

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ Upex, S., 2008. *The Romans in the East of England: Settlement and Landscape in the Lower Nene Valley*. Stroud: Tempus.

² Pryor, F.M.M. and French, C.A.I., 1985. *Archaeology and Environment in the Lower Welland Valley*. East Anglian Archaeology 27.

³ Catney, S. and Start, D. (eds), 2003. *Time and Tide: the Archaeology of the Witham Valley*. Heckington: Witham Valley Archaeology Research Committee.

⁴ Knight, D., Howard, A.J. and Leary, R., 2004. The Romano-British landscape, in Knight, D. and Howard, A.J. *Trent Valley Landscapes*, 115-51. Kings Lynn: Heritage Marketing and Publications.

⁵ Bevan, B., 2005. Peaks Romana: the Peak District Romano-British rural upland settlement survey, 1998–2000. *Derbyshire Archaeological Journal* 125, 26–58.

⁶ Jones, D., 1998. Romano-British settlements on the Lincolnshire Wolds, in R. H. Bewley (ed.), *Lincolnshire's Archaeology from the Air*, 69–80. Society for Lincolnshire History and Archaeology: Occasional Papers in Lincolnshire History and Archaeology 11.

⁷ Mudd, A., 2008. *Iron Age and Roman Settlement on the Northamptonshire Uplands*. Northampton: Northamptonshire Archaeology Monograph 1.

⁸ Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 157.

⁹ e.g. Wallis, H., 2002. *Roman Routeways across the Fens*. East Anglian Archaeology Occasional Paper 10.

¹⁰ Knight, Howard and Leary 2004, 121–122: Lower Trent pottery kilns.

¹¹⁻¹² Taylor 2006, 153, 157.

¹³ Baker, S., 2006. Cultural heritage management and the palaeo-environmental resource: surveying the surface-visible palaeochannel record in the Trent Valley, UK (http://archaeologydataservice.ac.uk/archives/view/palaeo_eh_2006/).



Chee Tor, Blackwell, Derbyshire: Romano-British field system, located close to an earthwork complex interpreted as probably a contemporary settlement (see Objective 4I; photograph © Peak District National Park)

Research Objective 5J Instigate regional scale characterisation study of industry

Summary:

The East Midlands preserves nationally important evidence not only for pottery production (Objective 5A) but also for ironworking, centred upon Northamptonshire, Leicestershire and Rutland¹, lead mining and processing in Derbyshire², and salt manufacture throughout the coastal areas of Lincolnshire³. Other noteworthy industries include quarrying for querns⁴, other stone artefacts and building materials, ceramic tile production, copper alloy smelting, and craft industries utilising wood and secondary agricultural products such as bone, antler, leather and textiles⁵. Understanding of some of these industries, notably salt and pottery production, has greatly improved in recent years, but many questions remain to be answered on the chronology, technology, infrastructure and socio-economic contexts of these and other industries⁶. A regional-scale assessment of the current evidence for Roman industrial activities is recommended as a springboard for further studies of specific industries (see also Objectives 5A and 5B).

Agenda topics addressed: 5.1.1; 5.3.3; 5.3.4; 5.4.3; 5.6.1-5.6.3; 5.7.2; 5.7.4.

Archaeology of the East Midlands: 158.

SHAPE 2008: Understanding artefacts and material culture (11111.510); Realising the research dividend from past unpublished historic environment excavations (11113.110); Tapping the motherlode: supporting synthesis of key commercial project research (11113.410).

NHPP 2011: Traditional industry modern industry, mining and associated housing (4B2).

References:

¹ Schrufer-Kolb, I., 1999. Roman iron production in the East Midlands, England, in S.M.M. Young, A.M. Pollard, P. Budd *et al.* (eds), *Metals in Antiquity*. Oxford: British Archaeological Reports International Series 792, 227–33; also Schrufer-

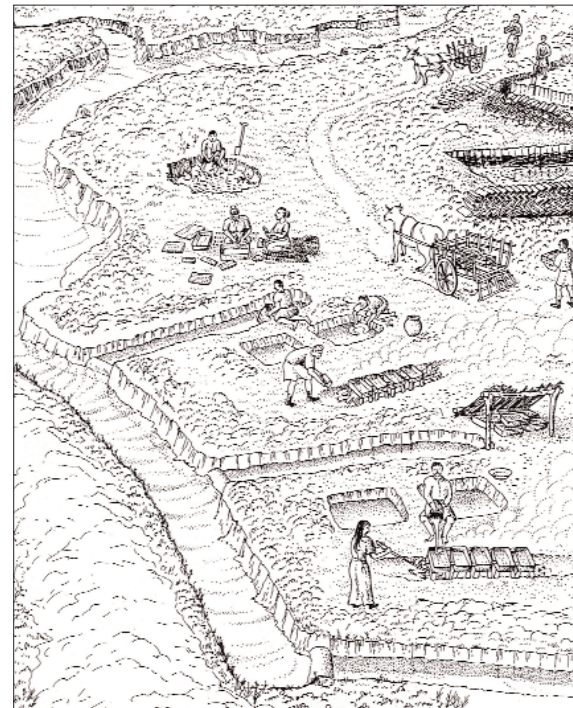
Kolb I., 2004. *Roman Iron Production in Britain: Technological and Socio-Economic Developments along the Jurassic Ridge*. Oxford: British Archaeological Reports British Series 380.

² Taylor, J., 2006. The Roman period, in *The Archaeology of the East Midlands*, 152; e.g. Dearne, M.J. (ed.), 1993. *Navio – the Fort and Vicus at Brough-on-Noe, Derbyshire*, 158-161. Oxford: British Archaeological Reports British Series 234.

³ Lane, T. and Morris, E.L., 2001. *A Millennium of Saltmaking: Prehistoric and Romano-British Salt Production in the Fenland*. Heckington: Heritage Trust of Lincolnshire; Morris, E.L., 2007. Making magic: later prehistoric and early Roman salt production in the Lincolnshire fenland, in C. Haselgrove and T. Moore (eds), *The Later Iron Age in Britain and Beyond*, 430–443. Oxford: Oxbow Books.

⁴ e.g. Heslop, D.H., 2008. *Patterns of Quern Production, Acquisition and Deposition: a Corpus of Beehive Querns from Northern Yorkshire and Southern Durham*. Leeds: Yorkshire Archaeological Society Occasional Paper 5; Palfreyman, A. and Ebbins, S., 2007. A Romano-British quern-manufacturing site at Blackbrook, Derbyshire. *Derbyshire Archaeological Journal* 127, 33–48.

⁵⁻⁶ Taylor 2006, 152–53.



Morton, Lincolnshire:
reconstruction drawing
by David Hopkins of
2nd century AD saltern
(reproduced by
permission of
Archaeological Project
Services; for Morton
excavations see Lane
and Morris 2001, 99-
161).

6.6 EARLY MEDIEVAL (c. AD 410–1066): UPDATED RESEARCH AGENDA

6.1 *Demography and the identification of political and social groups*

1. What may be deduced about changes in diet, mortality and other demographic variables from osteological studies of Anglo-Saxon cemeteries, and how might this have varied spatially and over time?
2. What was the relationship between indigenous and Germanic populations, and how may this have varied spatially and over time?
3. How may studies of sites yielding late Roman metalwork elucidate further the relationship between indigenous and Germanic populations?
4. How far may studies of dress be advanced by analyses of inhumations, and how may dress accessories reflect social or political groupings?
5. How can we refine our understanding of the chronology and process of Scandinavian immigration during the ninth and tenth centuries?
6. What may we deduce from Anglo-Saxon and Anglo-Scandinavian sculpture about ethnic and religious affiliations?
7. Can we identify social/political boundaries (e.g. surviving linear earthworks and natural barriers) and/or estate centres?

6.2 *Ritual and belief*

1. Can we shed further light upon burial practices in areas north and west of the Trent?
2. Can 'sub-Roman' or 'British' cemeteries and cemeteries dating from the late seventh to ninth centuries be identified?
3. Can we characterise more precisely Anglo-Saxon and Viking cemeteries and identify temporal or spatial variability in funerary traditions?
4. How may 'princely' barrow burials relate to flat cemeteries and settlements, and what were the preferred landscape settings?
5. What was the relationship between pagan temples and other contemporary or later sites?
6. How can we enhance further our understanding of the development of pre-Viking churches, cathedrals and monasteries?

6.3 *Roads and rivers: transport routes and cultural boundaries*

1. To what extent were Roman roads used and maintained from the fifth century, and may some have acted as social or political boundaries?
2. Can we identify re-used or newly developed unmetalled routeways (e.g. by the identification of metalled fords or bridges)?
3. What roles may rivers have played as corridors for the movement of goods and people, and how might these have varied over time?
4. To what extent may rivers such as the Trent or Witham have served as major political and social boundaries during the Anglo-Saxon period?

6.4 *Rural settlement patterns*

1. What impact may Germanic and Scandinavian immigration have had upon rural settlement patterns, and how may place-name evidence contribute to studies of settlement evolution?
2. Can we elucidate the pattern of early medieval settlement north and west of the Trent?

3. Can spatial and temporal variations in the morphology, functions and status of settlements be defined more precisely?
4. What factors may underlie the progression from dispersed to nucleated settlement and the growth of settlement hierarchies?
5. May settlement have retreated from areas of heavier soils in some areas (e.g. Leicestershire and Northamptonshire)?

6.5 *Inland Towns, 'central places' and burhs*

1. How may Anglo-Saxon and British communities have utilised late Roman towns and their immediate environs?
2. Can we identify middle Anglo-Saxon defensive works, including new foundations and refurbishments of Roman walled towns?
3. What was the impact of the Danish occupation upon urban development and what were the differences between Danish and non-Danish burhs and other urban settlements?
4. How did Nottingham develop during the Anglo-Saxon and Viking periods?

6.6 *Industry, trade and the emergence of a monetary economy*

1. Can we identify centres of seventh- and eighth-century cross-channel and North Sea trade and/or riverside trading centres?
2. To what extent may differences in the quantity and quality of imported goods correlate with status variations between sites, and how may analyses of exotic imports in cemeteries assist this study?
3. Can we elucidate the production and distribution of Early Medieval salt and glass, and in particular establish the date of the Lindsey salt-hills?
4. How may the adoption of coinage reflect or have stimulated socio-economic changes and how far may its use have varied regionally?
5. How may we enhance our understanding of the lead industry, the extraction and smelting of iron ore and the environmental impact of these activities?
6. Can additional fabric analyses clarify further the production and distribution of Anglo-Saxon pottery, particularly that produced in Charnwood Forest.

6.7 *The agricultural economy and rural landscape*

1. Is there evidence for new crops and other agricultural changes during the Roman/Saxon transition?
2. Is there evidence for a hiatus in cultivation in the mid-sixth century and for later arable expansion?
3. How early may crop rotation and the open-field system have developed, and how may this relate to other agricultural innovations such as mouldboard ploughs, water meadows and land-drainage?
4. How may animal husbandry practices have developed and how were wild food resources such as fish and wild fowl utilised?
5. To what extent did woodland regenerate in the post-Roman period and how were woodlands used and managed?

EARLY MEDIEVAL (c. AD 410–1066): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	6.1 Demography and the identification of political and social groups							6.2 Ritual and belief						6.3 Roads and rivers				6.4 Rural settlement patterns					6.5 Towns, central places and burhs				6.6 Industry, trade and emergence of monetary economy						6.7 Agricultural economy and rural landscape					
	1	2	3	4	5	6	7	1	2	3	4	5	6	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5	6	1	2	3	4	5	
6A Elucidate the chronology and demography of Roman to Anglo-Saxon transition period	●	●	●	●				●		●																												
6B Assess the landscape settings of Anglo-Saxon burial sites			●	●				●	●	●	●	●	●																									
6C Review the evidence for developing settlement hierarchies																					●	●	●	●	●													
6D Investigate Anglo-Scandinavian settlement by reference to stone sculpture																					●	●	●	●	●											●		
6E Undertake further research on Anglo-Saxon and Viking urban development					●	●							●													●	●	●	●	●	●							
6F Identify cultural boundaries in the Early Medieval period							●										●				●																	
6G Elucidate development of the parochial system							●										●				●	●																
6H Assess the evidence for extractive industries in late Anglo-Saxon and Viking periods																																						●
6I Review the nature and distribution of Anglo-Saxon imported goods							●	●		●											●	●																
6J Update and expand East Midlands Anglo-Saxon Pottery Project																																						

Research Objective 6A

Elucidate the chronology and demography of the Roman to Anglo-Saxon transition period

Summary:

The Roman–Anglo-Saxon transition has been identified as a key research theme, encompassing many of the Agenda topics highlighted above¹. Study of this critical period of demographic and social change has been hampered by an over-reliance upon later and often flimsy historical sources². It is proposed that current models of population change be tested by the application of radiocarbon dating and other scientific techniques to excavated material spanning the fifth and sixth centuries. In view of the paucity of confirmed early settlements, it is recommended that attention be focused upon identifying further settlements likely to date between the fifth and seventh centuries. By contrast, early cemeteries are common in the lowland zone, although many were excavated in the nineteenth century and have limited potential for more detailed study. Moreover, although some key sites have been fully published³, the material from many cemeteries has yet to be fully analysed or made generally accessible⁴. An initial assessment of published and unpublished material is recommended to identify early burials yielding pots with charred residues suitable for high precision radiocarbon dating and/or human bones appropriate for stable isotope or DNA analyses. The compilation of a regional database of early cemeteries would also provide a useful framework for formulating strategies to ensure the publication of key backlog sites such as Loveden Hill in Lincolnshire⁵. Further insights into this period may also be gained from assessments of the finds recorded through the Portable Antiquities Scheme, which may highlight sites spanning this complex transition period.

Agenda topics addressed: 6.1.1–6.1.4; 6.2.1; 6.2.3; 6.4.4; 6.4.5.

Archaeology of the East Midlands: 166–167.

SHAPE 2008: Revealing ancient cultures (11111.610); Understanding past populations of Britain: historical demography and human biology (11111.710); New frontiers: clarifying poorly understood chronologies.

NHPP 2011: Churchyards, cemeteries and burial grounds (4D2).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Sections 3.2.1 (Chronology) and 3.3.1 (People and environment).

Medieval Pottery Research Group 2011: National Priority A8 (Increasing the provision for scientific analysis of ceramics).

References:

¹ Vince, A.G., 2006. The Anglo-Saxon period, in *Archaeology of the East Midlands*, 163, 184: Table 7.

² Vince 2006, 161, 163.

³ e.g. Kinsley, A.G., 1989. *The Anglo-Saxon Settlement at Millgate, Newark-on-Trent, Nottinghamshire*. Nottingham: University of Nottingham Archaeological Monographs 2; Liddle, P., Glaswell, S.J. and Cooper, N.J., 2000. Empingham I Early Anglo-Saxon Settlement and Cemetery, in N.J. Cooper (ed.), *The Archaeology of Rutland Water*, 23-45. Leicester: University of Leicester Archaeology Monographs 6.

⁴ e.g. Bruce-Mitford, R., 1993. Late Celtic hanging-bowls in Lincolnshire and South Humberside, in A. Vince (ed.), *Pre-Viking Lindsey*, 54. Lincoln: Lincoln Archaeology Studies 1; Leahy, K., 1993. The Anglo-Saxon settlement of Lindsey, in A. Vince (ed.), *Pre-Viking Lindsey*, 33, 40. Lincoln: Lincoln Archaeology Studies 1; Vince 2006, 169.

⁵ Compare Cleatham in North Lincolnshire, recently analysed and published by Kevin Leahy (Leahy, K., 2007. *Interrupting the Pots: The Excavation of Cleatham Anglo-Saxon Cemetery*. York: CBA Research Report 155).



Early Anglo-Saxon cemetery at Empingham, Rutland: adult male, buried with pot, copper alloy-bound wooden bucket, iron spearheads and other finds (Liddle *et al.* 2000, 33-35; photograph courtesy of Nick Cooper)

Research Objective 6B

Assess the landscape settings of Anglo-Saxon burial sites

Summary:

Most publications of Anglo-Saxon cemeteries, barrows and other burial monuments have neglected landscape setting in favour of detailed descriptions of grave goods and burials and, with rare exceptions¹, investigations of burial sites have included little field investigation of the surrounding landscape and environment². There is a pressing need for an assessment of current work on landscape setting and the contemporary environment, which in this region may be traced back to the pioneering work of Collis at the rich burial of Wigber Low in Derbyshire³. This should be followed by a detailed study of cemeteries and their settings through field surveys, ground-based geophysical surveys and aerial remote sensing techniques such as air photography and lidar. Particular emphasis should be placed upon the local geology and topography, with consideration of the relationship of cemeteries to physical features such as river channels and slopes and intervisibility with prominent landscape features and monuments. Recent palaeochannel surveys of the Lincolnshire Fens⁴ and the Trent Valley⁵ provide useful frameworks for analyses of the relationship of cemeteries to contemporary watercourses, and the collection and analysis of appropriate palaeoenvironmental data from these and other wetland environments should be encouraged. Consideration should also be given to local place names and folklore as well as the positioning of burials relative to contemporary settlements⁶ and earlier funerary or ritual complexes, parish boundaries and Roman roads⁷.

Agenda topics addressed: 6.1.3; 6.1.4; 6.2.1–6.2.6; 6.4.2.

Archaeology of the East Midlands: 170, 278–279.

SHAPE 2008: Understanding Place: assessing regional historic environment components (11111.170); Understanding past populations of Britain: historical demography and human biology (11111.710).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Identification of wetland/waterlogged contexts (3A5); Churchyards, cemeteries and burial grounds (4D2).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Sections 3.3.1 (People and environment) and 3.5.1 (detecting and imaging).

References:

- ¹ e.g. Guilbert, G., 2006. Excavations at Holme Pierrepont Quarry, Nottinghamshire, in 2002–03: preliminary summary of a multi-period palimpsest on the Trent gravels. *Transactions of the Thoroton Society* 110, 15–48; Leahy, K., 2007. *Interrupting the Pots: The Excavation of Cleatham Anglo-Saxon Cemetery*. York: CBA Research Report 155.
- ² Elliott, L., Jones, H. and Howard, A.J., 2004. The medieval landscape, in Knight D. and Howard A.J., *Trent Valley Landscapes*, 163–65. Kings Lynn: Heritage Marketing and Publications.
- ³ Collis, J., 1983. *Wigber Low, Derbyshire: a Bronze Age and Anglian Burial Site in the White Peak*. Sheffield: University of Sheffield, Department of Prehistory and Archaeology.
- ⁴ <http://www.apsarchaeology.co.uk/services/lidar/>.
- ⁵ Baker, S., 2007. Cultural heritage management and the palaeo-environmental resource: surveying the surface-visible palaeochannel record in the Trent Valley (http://archaeologydataservice.ac.uk/archives/view/palaeo_eh_2006/).
- ⁶ Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 170.
- ⁷ Kinsley, A.G., 1993. *Broughton Lodge. Excavations on the Romano-British Settlement and Anglo-Saxon Cemetery at Broughton Lodge, Willoughby-on-the-Wolds, Nottinghamshire, 1964–8, 73–74*. Nottingham: University of Nottingham Archaeological Monographs 4.



Wigber Low, Derbyshire: excavations of a Bronze Age cairn showed it to have been disturbed in the 7th century by the excavation of at least five graves, each associated with one or two inhumations with associated grave goods. The upland setting, with panoramic views of the White Peak, may have been a key factor in the choice of site (photograph: John Collis)

Research Objective 6C

Review the evidence for developing settlement hierarchies

Summary:

A review is recommended of the evidence for changes in the morphology of settlement and the development of settlement hierarchies¹, drawing in particular upon the data obtained from developer-funded excavations over the last two decades. This substantial body of evidence has for the most part not been assessed in the light of information obtained from landscape features, air photography, sculpture, place-names and data on metallic stray finds generated by the Portable Antiquities Scheme. Large-scale surveys of areas such as the Lincolnshire Fens², Northamptonshire³ and Leicestershire⁴ demonstrate the extent of settlement of this period, but the detail of chronology is masked by the limited typological variability of ceramic assemblages. This makes it difficult to establish whether structural agglomeration represents nucleation or simply successive occupation in approximately the same location⁵. An extension of landscape surveys, combined with published reviews of the wider evidence and the dissemination of information on settlement morphology and functions obtained from recent large-scale excavations at settlements such as Raunds⁶ and Higham Ferrers⁷ in Northamptonshire and Brough in Nottinghamshire⁸ should be encouraged as a means of elucidating further these issues⁹.

Agenda topics addressed: 6.4.1–6.4.5; 6.6.1; 6.6.2.

Archaeology of the East Midlands: 172–174.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Tapping the motherlode: supporting synthesis of key commercial project research (11113.410).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

References:

¹ Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 172–73.

² Hayes, P. and Lane, T., 1992. *The Fenland Project, No.5: Lincolnshire Survey, The South-West Fens*. East Anglian Archaeology 55.

³ Parry, S., 2006. *Raunds Area Survey: An archaeological study of the landscape of Raunds, Northamptonshire 1985–94*. Oxford: Oxbow Books.

⁴ Knox, R., 2004. The Anglo-Saxons in Leicestershire, in P. Bowman and P. Liddle (eds), *Leicestershire Landscapes*, 95–104. Leicester: Leicestershire Museums Archaeological Fieldwork Group Monograph 1.

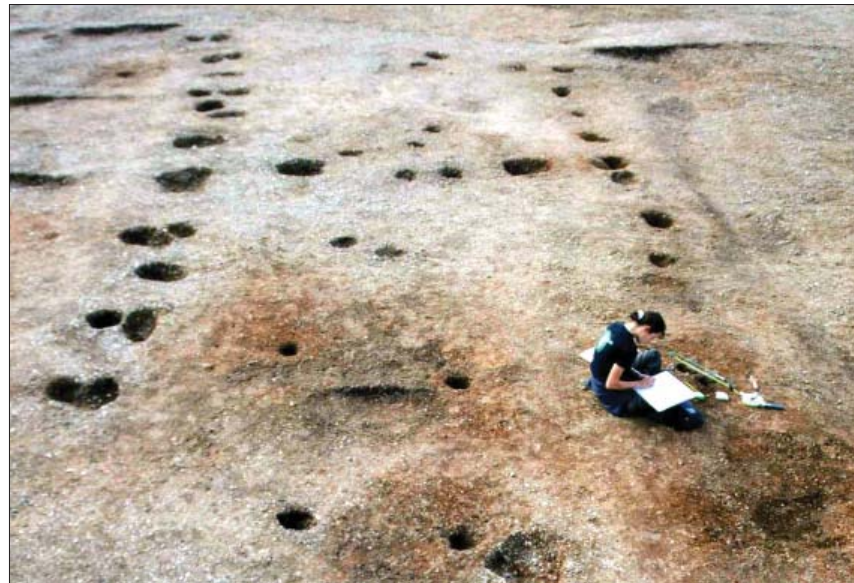
⁵ Vince 2006, 172–173.

⁶ Chapman, A., 2010. *West Cotton, Raunds. A Study of Medieval Settlement Dynamics AD 450–1450*. Oxford: Oxbow Books.

⁷ Hardy, A., Charles, B.M. and Williams, R.J., 2007. *Death and Taxes: The Archaeology of a Middle Saxon Estate Centre at Higham Ferrers, Northamptonshire*. Oxford: Oxford Archaeological Unit.

⁸ Vyner, B. [ed.], in prep. *Archaeology on the A46 Fosse Way: Newark to Lincoln*.

⁹ See also the recently published reports on excavations at Flixborough, North Lincolnshire, which provide important comparative evidence for the development of Early Medieval settlement just outside our area: Loveluck, C. and Atkinson, D., 2007. *The Early Medieval Settlement Remains from Flixborough, Lincolnshire: The Occupation Sequence, c.AD 600–1000*. Oxford: Oxbow Books; Loveluck, C., 2007. *Rural Settlement, Lifestyles and Social Change in the Later First Millennium AD: Anglo-Saxon Flixborough in its Wider Context*. Oxford: Oxbow Books.



Brough, Nottinghamshire: excavations immediately north of the Roman town of *Crococalana* revealed a cluster of Anglo-Saxon sunken-floored structures and at least one post-pit building (above). As on so many sites, it remains unclear whether the density of structural remains reflects nucleation or successive rebuilding (photograph: Ray Holt; Vyner, B. [ed.], in prep.)

Research Objective 6D

Investigate further the nature and extent of Anglo-Scandinavian settlement by reference to stone sculpture

Summary:

Determination of the nature and extent of Scandinavian rural settlement and of the impact of Danish occupation upon the development of towns such as Lincoln¹ and Nottingham² remain major research priorities³. The region has revealed the only known Scandinavian cremation cemetery in Britain, at Ingleby in Derbyshire⁴, but archaeological evidence for Viking settlement remains stubbornly elusive. Much, however, may be learned from the place-name evidence⁵. In addition, publication of the *Corpus of Anglo-Saxon Stone Sculpture* for Lincolnshire has highlighted the potential of sculptured stonework as a data source for more detailed consideration of the extent and nature of Anglo-Scandinavian settlement⁶. Studies continue of stone sculpture across other East Midlands Counties⁷, and when completed may identify distinctive settlement and artefact evidence elucidating the location and identity of Anglo-Scandinavian settlement. Overarching themes that might emerge from completion of this work, which could usefully be combined with a detailed reassessment of place-name data⁸, include evidence for sub-regional variations in settlement patterns and the extent and nature of Hiberno-Norse contacts (both of which themes have been advanced from analysis of the sculptured stonework of Lincolnshire⁹).

Agenda topics addressed: 6.4.1–6.4.5.

Archaeology of the East Midlands: 210–212.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Understanding place: researching regional diversity (11111.310); Revealing ancient cultures (11111.610).

References:

¹ Jones, M.J., Stocker, D. and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*. Oxford, Oxbow Books.

² Roffe, D., 2006. The Anglo-Saxon town and the Norman Conquest, in J. Beckett (ed.), *A Centenary History of Nottingham*, 24–42. Chichester: Phillimore.

³ Lewis, C., 2006. The medieval period, in *The Archaeology of the East Midlands*, 188, 191, 210–12.

⁴ Richards, J.D., 2004. Excavations at the Viking Barrow Cemetery at Heath Wood, Ingleby, Derbyshire, 1998–2000. *Antiquaries Journal* 84, 23–116; site archive: Richards, J. D., 2004. *Excavations at the Viking Barrow Cemetery at Heath Wood, Ingleby, Derbyshire, 1998–2000*

(http://archaeologydataservice.ac.uk/archives/view/ingleby_soa_2003/).

⁵ Cameron, K., 1975. *Place-name Evidence for the Anglo-Saxon Invasion and Scandinavian Settlements*. Nottingham: English Place Name Society.

⁶ Everson, P. and Stocker, D., 1999. *Corpus of Anglo-Saxon Stone Sculpture 5: Lincolnshire*, 76–79. Oxford: Oxford University Press.

⁷ Corpora for Derbyshire (Hawkes, J. and Sidebottom, P.) and Leicestershire & Northamptonshire (Cramp, R. and Story, J.) in progress. For Leicestershire see Cramp, R., 2010. New directions in the study of Anglo-Saxon sculpture. *Transactions of the Leicestershire Archaeological and Historical Society* 84, 1–25.

⁸ Lewis 2006, 211.

⁹ Everson and Stocker 1999, 80–87.



Crowle, Lincolnshire: interpreted as 'the most purely Scandinavian sculpture that survives in Lincolnshire', the design on the front of this cross-slab perhaps harks back to the story of Sigurd, showing the encounter of Sigurd and Mimir and Sigurd's journey to kill the dragon Fafnir. The opposing face displays an intricate interlace pattern (Everson and Stocker 1999, 147-152; reproduced courtesy of *Corpus of Anglo-Saxon Stone Sculpture*)

Research Objective 6E

Undertake further research on urban development in the Anglo-Saxon and Viking periods

Summary:

There is little evidence for intensive occupation in the early Anglo-Saxon period at the Roman public towns of Lincoln¹ and Leicester² or for urban-scale activity at other Roman towns, and a survey of the evidence for nucleated settlement at former Roman towns is long overdue. This should collate excavation, environmental, fieldwalking, metal-detecting, geophysical and other remote sensing data in order to clarify current knowledge and provide a sound basis for future work. Key questions for later periods include the growth from Middle Saxon times of defended urban centres such as Nottingham and commercial foci such as Torksey in Lincolnshire³. There is an especially urgent need for the publication of past excavations in Nottingham, as these have major potential for advancing knowledge of the Anglian town and the impact of Danish occupation⁴, and an updated review of the evidence for Viking activity at the Five Boroughs of the Danelaw would be most welcome⁵. At Torksey, further archaeological investigations may be proposed to elucidate the growth of the important riverside trading centre and pottery production site that developed from the late eighth century⁶.

Agenda topics addressed: 6.1.5; 6.1.6; 6.2.6; 6.5.1–6.5.6; 6.6.1; 6.6.2.

Archaeology of the East Midlands: 174–176.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Realising the dividend from past unpublished historic environment investigations (11113.110); Tapping the motherlode: supporting synthesis of key commercial project research (11113.410).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Historic towns and suburbs (4A1).

Other research frameworks:

Medieval Pottery Research Group, 2011: 34–35, especially Research Aims EM12 (Leicester) and 22–23 (Nottingham).

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priorities UR1 (Synthesis of developer-funded research), UR2 (urban characterisation) and UR 3 (Survival of early form and fabric in historic towns).

References:

¹ Vince, A.G., 2003. Lincoln in the Early Medieval Era between the fifth and ninth centuries, in M.J. Jones, D. Stocker and A. Vince (eds), *The City By The Pool: Assessing the Archaeology of the City of Lincoln*, 143. Oxford: Oxbow Books.

² Courtney, P., 1998. Saxon and medieval Leicester: the making of an urban landscape. *Transactions of the Leicestershire Archaeological and Historical Society* 73, 110–45.

³Ulmschneider, K., 2000. Settlement, economy and the 'productive' site. *Medieval Archaeology* 44, 53–60; Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 174–176.

⁴ Young, C., 1982. *Discovering Rescue Archaeology in Nottingham*. Nottingham: Nottingham City Museums; Roffe, D., 2006. The Anglo-Saxon town and the Norman Conquest, in J. Beckett (ed.), *A Centenary History of Nottingham*, 24–42. Chichester: Phillimore.

⁵ Building upon Hall, R.A., 1985. The Five Boroughs of the Danelaw: a review of present knowledge. *Anglo-Saxon England* 18, 149–206.

⁶ Vince 2006, 176.

Northampton Anglo-Saxon palace: excavations of the 8th century timber hall of Phase 1, with St Peter's Church in the background (Williams, J., Shaw, M. and Denham, V., 1985. *Middle Saxon Palaces at Northampton*. Northampton Development Corporation Archaeological Monograph 4; reproduced by permission of Northamptonshire Archaeology)



Research Objective 6F Identify cultural boundaries in the Early Medieval period

Summary:

Further archaeological and historical research is proposed to investigate the pattern of regional and sub-regional boundaries in the Early Medieval period. The foremost of these is the boundary of the Danelaw, although the location of this changed over time and can be variously defined depending upon the relative weight that is attached to documentary, place-name or archaeological evidence (e.g. Anglo-Scandinavian sculpture: Objective 6D) ¹. It is possible that the north-western boundary of the Danelaw mirrored to some extent earlier boundaries focusing on the Trent Valley, and that the distinctive settlement patterns and material culture of this period to the north and west of our region had a deep-rooted history (see Objectives 6D and 6I)². The arrangement had been preceded by smaller kingdoms and petty princedoms that appear to have had their origins in the fifth and sixth centuries, perhaps based in part upon Roman secondary towns³. Further study of settlement morphology and material culture, together with place-name studies and investigations wherever possible of potential earthwork boundaries, may permit refinement of this very broad picture. Earthwork boundaries of this period are thought to be rare⁴, but there is a strong possibility that some prehistoric earthworks retained their boundary functions for long periods, as may have some roads and rivers. It may also prove possible to identify natural barriers that had served as social or political divides, correlating for example with rivers such as the Trent⁵ or in low-lying regions with areas of uninhabitable fen⁶.

Agenda topics addressed: 6.1.7; 6.3.1; 6.3.4; 6.4.2.

Archaeology of the East Midlands: 163–167, 216.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Revealing ancient cultures (11111.610).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

References:

- ¹ Hill, D., 1981. *An Atlas of Anglo-Saxon England*, Maps 58–61, 68, 83–90. Oxford: Blackwell.
- ² Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 163.
- ³ Foard, G., 1985. The administrative organisation of Northamptonshire in the Saxon period. *Anglo-Saxon Studies in Archaeology and History* 4, 185–222.
- ⁴ Vince 2006, 167.
- ⁵ Elliott, L., Jones, H. and Howard, A.J., 2004. The medieval landscape, in Knight D. and Howard A.J., *Trent Valley Landscapes*, 159–160, 163. Kings Lynn: Heritage Marketing & Publications.
- ⁶ e.g. SW Lincolnshire Fens: Hayes, P. and Lane, T., 1992. *The Fenland Project, No.5: Lincolnshire Survey, The South West Fens*, 213–15, fig. 127. East Anglian Archaeology 55.



Grey Ditch, Derbyshire: intermittent bank and ditch, extending for c.1.6km across the valley of the Bradwell Brook, which has been interpreted as most probably the remains of a major Early Medieval boundary work (Guilbert, G. and Taylor, C., 1992. *Grey Ditch, Bradwell, Derbyshire. 1992 Excavation: Preliminary Report*. Nottingham: Trent & Peak Archaeological Trust; O'Neil, B.H. 1945. Grey Ditch, Bradwell, Derbyshire. *Antiquity* 19, 11–19; photograph: Graeme Guilbert)

Research Objective 6G Elucidate the development of the parochial system

Summary:

The origin of this most basic building block of the medieval landscape remains poorly understood¹, yet there is significant potential for further multi-disciplinary enquiry into the landscape, archaeological, sculptural and documentary evidence for these units. Archaeologically, the parish is manifested most obviously by its boundaries, which commonly follow ancient watercourses, roads and linear earthworks, and by its churches². The existence of tenth or eleventh century sculptural fragments at some 15% of Lincolnshire parish church locations has been cited as possible evidence for the early development of the parochial system³, and additional work on the region's rich resource of sculptural stone is recommended to investigate further this relationship (see also Objective 6D). This should be accompanied by further field investigations of landscape features associated with parish boundaries, which may identify relationships with datable archaeological features such as former Roman roads and prehistoric linear earthworks⁴ and highlight opportunities for targeted excavations to investigate stratigraphic relationships between features and retrieve material suitable for dating.

Agenda topics addressed: 6.1.7; 6.3.1; 6.3.4; 6.4.1.

Archaeology of the East Midlands: 216.

SHAPE 2008: Understanding place: assessing historic areas (11111.170) and regional historic environment components (11111.150); Revealing ancient cultures (11111.610).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4).

References:

¹ e.g. Elliott, L., Jones, H. and Howard, A.J., 2004. The medieval landscape, in Knight D. and Howard A.J., *Trent Valley Landscapes*, 165–166. Kings Lynn: Heritage Marketing and Publications.

² e.g. Raunds Furnells, Northamptonshire: Boddington, A., 1996. *Raunds Furnells. The Anglo-Saxon Church and its Churchyard*. London: English Heritage.

³ Everson, P. and Stocker, D., 1999. *Corpus of Anglo-Saxon Stone Sculpture 5: Lincolnshire*, 76–79. Oxford: Oxford University Press; Stocker, D. and Everson, P., 2001. Five town funerals: decoding diversity in Danelaw sculpture, in J. Graham-Campbell, R. Hall, J. Jesch et al. (eds), *Vikings and the Danelaw: Select papers from the proceedings of the Thirteenth Viking Congress*, 226–229. Oxford: Oxbow Books.

⁴ e.g. The Fosse Way, which for much of its course from Newark southwards to Leicestershire correlates with parish boundaries, notably around the Roman town of *Vernemetum*: Kinsley, A.G., 1993. *Broughton Lodge. Excavations on the Romano-British Settlement and Anglo-Saxon Cemetery at Broughton Lodge, Willoughby-on-the-Wolds, Nottinghamshire, 1964–8*, 73. Nottingham: University of Nottingham Archaeological Monographs 4.



Sheep Walks Lodge, Thorpe-on-the-Hill, Lincolnshire: slightly sinuous linear earthwork, possibly forming part of a boundary system predating construction of the Roman Fosse Way. This earthwork is followed by a parish boundary that defines the edge of a tiny sliver of land isolated by the Fosse from the remainder of the parish, and may indicate a land division of considerable antiquity (Vyner, B. [ed.], in prep. *Archaeology on the A46 Fosse Way: Newark to Lincoln*; photograph: D. Knight)

Research Objective 6H Assess the evidence for extractive industries in the late Anglo-Saxon and Viking periods

Summary:

Industries that were important during the late Roman period appear on current evidence to have been largely or wholly abandoned until growing demands for commodities such as lead for church windows and roofs spurred a resurgence from the later seventh century¹. Little is known of the extraction and production techniques associated with key industries of the seventh to tenth centuries, although we know from documentary sources that some, such as the Derbyshire lead industry, were probably well established by the early eighth century². An assessment of current evidence is proposed as a first step towards developing a strategy for future fieldwork and targeted excavation. Key research questions include the development of lead mining and the smelting of lead ores in the Derbyshire uplands, the growth of iron-working, building upon work in areas such as Rockingham Forest³ and around Medbourne⁴, and the origin and character of the 'salt-hills' that it has been suggested were accumulating from before the early to mid-tenth century in the Lindsey marshes⁵.

Agenda topics addressed: 6.3.3; 6.6.2; 6.6.5; 6.6.6; 6.7.5.

Archaeology of the East Midlands: 176–178.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Understanding place: researching regional diversity (11111.310); Understanding artefacts and material culture (11111.510).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Traditional industry, modern industry, mining and associated housing (4B2).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priority IND 1 (Origins of industrialisation: understanding early industry).

References:

¹ Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 176–78.

² Barnatt, J. and Penny, R., 2004. *The Lead Legacy: The Prospects for the Peak District's Lead Mining Heritage*, Chapter 2.7. Peak District National Park Authority,

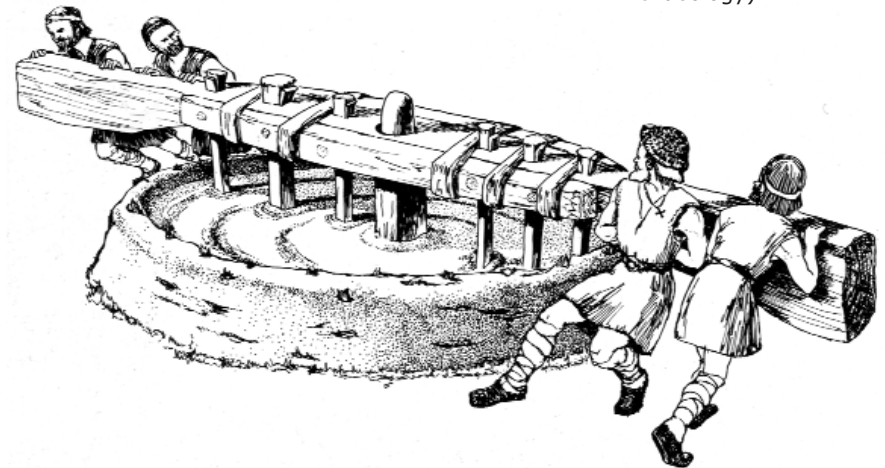
³ Foard, G., 2001. Settlement, land use and industry in Medieval Rockingham Forest, Northamptonshire. *Medieval Archaeology* 45, 41–96.

⁴ Knox, R., 2004. The Anglo-Saxons in Leicestershire, in P. Bowman and P. Liddle (eds), *Leicestershire Landscapes*, 100. Leicester: Leicestershire Museums Archaeological Fieldwork Group Monograph 1.

⁵ Vince 2006, 177; Healey, H., 1993. Saltmaking II: Saxon and Medieval, in Bennett, S. and Bennett, N., *An Historical Atlas of Lincolnshire*, 28–29. Hull: University of Hull Press.



Northampton: remains of two mortar mixers recorded during excavations of late Anglo-Saxon palace complex, with reconstruction drawing (Williams, J., 1979. *St Peter's Street, Northampton*. Northampton Development Corporation Archaeological Monograph 2, 123-128; images reproduced by permission of Northamptonshire Archaeology)



Research Objective 6I

Review the nature and distribution of exotic imported goods in Anglo-Saxon contexts

Summary:

The range and distribution of exotic material, reviewed some time ago¹, should be reassessed in the light of the many finds that have been recorded by the Portable Antiquities Scheme and during more recent excavations. There is also a need for a review of the cemetery at Sleaford², which with its exceptional record of amber and crystal beads and ivory rings is currently without parallel in this region³, and for the publication of important excavated assemblages such as those retrieved from excavations of the Anglo-Saxon borough of Nottingham⁴. Further clarification of trade routes and exchange mechanisms should assist in the formulation of future excavation and fieldwork strategies, and in particular should enhance our understanding of the role of the Trent as a possible cultural boundary (see also Objective 6F). Current information on the distribution of exotic goods suggests a fundamental contrast between areas south and east of the Trent Valley, where exotic finds are widely distributed, and parts of Derbyshire and Nottinghamshire to the north and west, where examples occur rarely⁵. These distribution patterns appear not to correlate with distances from maritime and inland distribution routes or with variations in the extent of archaeological fieldwork. However, bearing in mind other contrasts in the archaeological record either side of the Trent corridor⁶, the artefact patterns might have a cultural explanation.

Agenda topics addressed: 6.1.6; 6.2.1; 6.2.3; 6.3.3; 6.3.4; 6.6.1; 6.6.2; 6.6.5.

Archaeology of the East Midlands: 179–180.

SHAPE 2008: Understanding artefacts and material culture (11111.510).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

References

¹ Huggett, J.W., 1988. Imported grave goods and the Anglo-Saxon economy, *Medieval Archaeology* 32, 63–96.

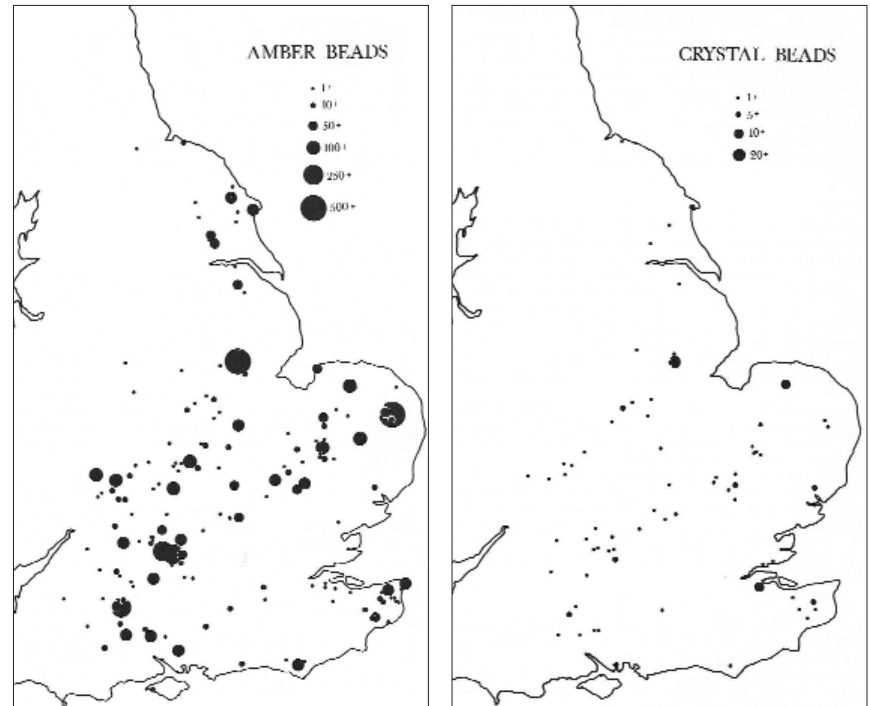
² Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 180.

³ Huggett 1988, 64–71.

⁴ Roffe, D., 2006. The Anglo-Saxon town and the Norman Conquest, in J.V. Beckett (ed.), *A Centenary History of Nottingham*, 24–42. Chichester: Phillimore; Young, C.S.B., 1982. *Discovering Rescue Archaeology in Nottingham*. Nottingham: Nottingham City Museums.

⁵ Huggett 1988; e.g. Wigber Low, Derbyshire: Collis, J., 1983. *Wigber Low, Derbyshire: a Bronze Age and Anglian Burial Site in the White Peak*. Sheffield: University of Sheffield, Department of Prehistory and Archaeology; Foster, P. and Collis, J., 1988. Kniveton, Wigber Low. *Medieval Archaeology* 32, 235–237.

⁶ Vince 2006, 163–164.



Distribution of amber and crystal beads in early Anglo-Saxon cemeteries (Huggett 1988, figs 1 and 4; maps reproduced by courtesy of J. Huggett and the Society for Medieval Archaeology)

Research Objective 6J Update and expand the East Midlands Anglo-Saxon Pottery Project.

Summary:

Pottery represents a critical cultural and chronological marker with impacts on many Agenda items, and there is a need to build on existing work to create a standardised fabric series and ceramic typology across the region. In particular, the East Midlands Anglo-Saxon Pottery Project¹, which surveyed pottery fabrics in Lincolnshire, the Trent Valley and Derbyshire, should be extended to include Leicestershire and Northamptonshire². The development of standard fabric classifications should enable confirmation of the extent of pottery use in north-west Nottinghamshire and Derbyshire, where there is currently limited ceramic evidence, and will permit further investigation of the contrasting archaeological record of lands north and west of the Trent and the remainder of the East Midlands. It would also elucidate the location and extent of pottery production in the upper Trent Valley, Lindsey, Kesteven and Charnwood Forest³. In the case of Charnwood, this would permit comparison with the results of current petrographic and electron microprobe analyses of granitoid-tempered prehistoric pottery derived from multiple production sources in this area of Leicestershire (compare Objective 4G)^{4,5}.

Agenda topics addressed: 6.3.3; 6.3.4; 6.4.2–6.4.5; 6.6.1; 6.6.6.

Archaeology of the East Midlands: 178.

SHAPE 2008: Understanding artefacts and material culture (11111.510).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

Medieval Pottery Research Group, 2011: Regional Research Aim EM1; National Priority A6.

References:

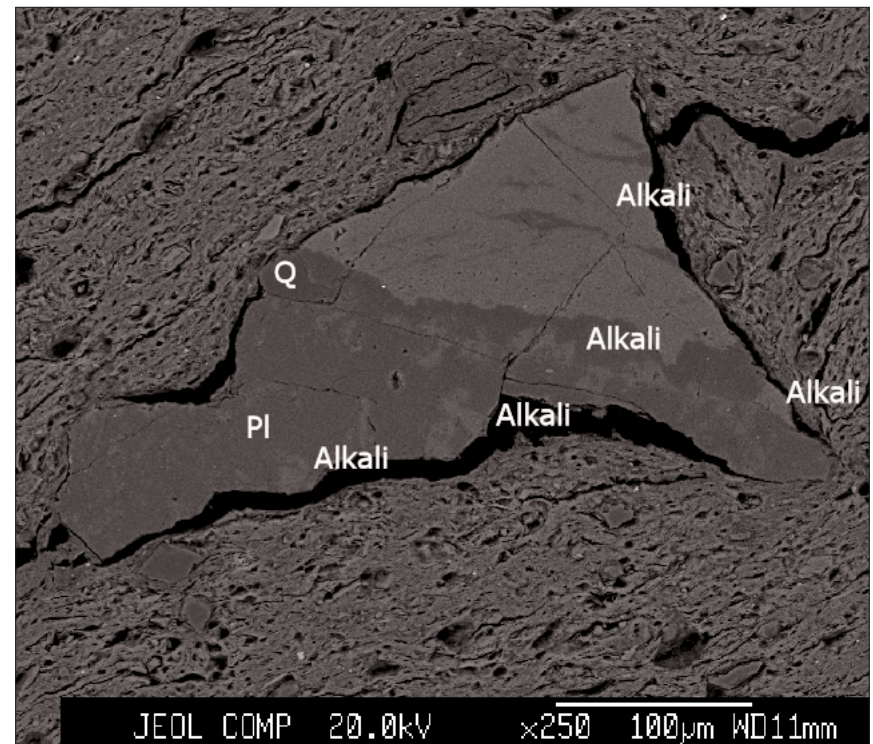
¹ Vince, A. and Young, J., 1991. East Midlands Anglo-Saxon Pottery Project. *Lincoln Archaeology* 3, 38–39.

² Vince, A.G., 2006. The Anglo-Saxon period, in *The Archaeology of the East Midlands*, 178.

³ Williams, D.F. and Vince, A., 1997. The characterisation and interpretation of early to middle Saxon granitic tempered pottery in England. *Medieval Archaeology* 61, 214–220.

⁴ Knight, D., Marsden, P. and Carney, J., 2003. Local or non-local? Prehistoric granodiorite-tempered pottery in the East Midlands, in A. Gibson (ed.), *Prehistoric Pottery: People, Pattern and Purpose*, 111–125. Oxford: BAR International Series 1156.

⁵ Knight, D., Faber, E., Carney, J., Marsden, P. and Henderson, J., 2012. *Prehistoric Pottery Production in Charnwood Forest*. Report for English Heritage (submitted to ADS: <http://ads.ahds.ac.uk>).



Granodiorite inclusion revealed by electron microprobe analysis of Anglo-Saxon cremation urn from Kingston-upon-Soar, Nottinghamshire. The inclusion exhibits a similar microstructure to Mountsorrel granodiorite but not the complete mineral suite (Pl: plagioclase; Q: quartz; © Edward Faber, University of Nottingham)

6.7 HIGH MEDIEVAL (1066–1485): UPDATED RESEARCH AGENDA

7.1 Urbanism

1. How did the major towns and smaller market towns of the region develop after the Norman Conquest, both within the urban core and in suburban and extra-mural areas?
2. Can we define more closely the industrial and trading activities associated with towns and the nature and extent of urban influence upon the countryside?
3. How may we enhance our understanding of the chronology, functions and morphology of caves, and in particular the outstanding subterranean resource of medieval Nottingham?
4. Can we shed further light upon the commercial role of fairs, markets, ports and other trading centres (notably Boston)?

7.2 Rural settlement

1. How can we elucidate further the development of nucleated villages, and in particular the contribution of the Danelaw to changes in village morphology?
2. How can we shed further light upon the origin and development of dispersed hamlets and farms in champion and pastoral areas?
3. How can we improve our understanding of the form, evolution and functions of buildings within rural settlements and establish the extent of surviving medieval fabrics?
4. Can we clarify further the processes of settlement desertion and shrinkage, especially within zones of dispersed settlement?

7.3 Manors and manorial estates

1. How can the classification of moated and non-moated manorial sites be improved?
2. How did the medieval manor and manorial estates develop from the Anglo-Saxon period, and what was the impact of the Danelaw?
3. Can we improve our knowledge and classification of moated sites in the region, and how can environmental data add to our knowledge?
4. What standing buildings are present on moated sites and what functions may associated features found during survey have performed?
5. How did manor buildings develop over time, how may architectural styles have varied, and what can we learn about traditional constructional skills and designs?

7.4 Castles, military sites and country houses

1. How can studies of the region's buildings contribute to an understanding of castle origins, and can we identify local typologies of castles and country houses?
2. What was the date and function of currently undated minor motte and bailey castles?
3. How many castle sites have been lost within the region?
4. Was there continuity of location between castles and country houses, and are earlier structures concealed in later buildings?

5. What local resources were used for building and maintenance and what was the environmental context and economic impact of these buildings?
6. How should battlefield sites be further investigated?

7.5 Religion

1. Can we identify additional pre-Conquest church, minster and monastic sites and elucidate the development of later monastic settlement (particularly the regionally important Gilbertine and Templar orders)?
2. Can we discern significant differences in the planning, economy and landscape impact of the different monastic orders (e.g. Witham Valley)?
3. Can we elucidate further the development of hospitals and colleges?
4. Can we shed further light upon the distribution and development of early churches or chapels and the origins and growth of the parish system?
5. How can we refine our understanding of local and regional architectural styles, including sculptured stonework, decorations and monuments?
6. What may we deduce from scientific analyses of cemetery populations about changes in diet, mortality and other demographic variables, both within the region and between social groups?

7.6 Industry and trade

1. How and where was post-Conquest pottery manufactured and distributed, and what communication systems were employed?
2. By what means were the extractive mineral industries controlled or organised by royal, monastic or lay lords?
3. Can we identify, investigate and date sites associated with the region's key extractive industries (especially iron, coal, lead and alabaster), the production and distribution of cloth and leather-work, and freshwater or marine fishing?
4. Can we develop a typological classification of buildings associated with medieval industrial and commercial activities and can we identify sub-regional and chronological patterning?

The agrarian landscape and food-producing economy

1. Can we shed further light upon the origins and development of the open-field system and its impact upon agricultural practices?
2. Can we establish the character and extent of the field systems of non-champion landscapes (e.g. upland Derbyshire)?
3. What can we deduce about changes in woodland management and animal or crop husbandry (including new crops, crop rotation, field systems, more intensive cultivation of clay soils and larger animals, particularly sheep)?
4. What can environmental remains teach us about diet and living conditions in urban, rural and coastal communities?
5. What may fish bones and other environmental data contribute to studies of the exploitation and distribution of freshwater and marine fish?
6. How best may we enhance study of the origins and development of early land reclamation and drainage, particularly in Lincolnshire?

HIGH MEDIEVAL (1066–1485): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	7.1 Urbanism				7.2 Rural settlement				7.3 Manors and manorial estates					7.4 Castles, military sites and country houses						7.5 Religion						7.6 Industry and trade				7.7 The agrarian landscape and food-producing economy					
	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	1	2	3	4	5	6
7A Undertake syntheses of urban and suburban excavation, survey and documentary data	●	●	●	●										●			●	●				●	●	●	●	●				●				●	●
7B Enhance record of urban and suburban secular standing buildings and subterranean structures	●	●	●	●																										●					
7C Investigate provisioning of the medieval town	●	●		●																					●									●	●
7D Investigate further the role of markets, fairs and ports and trading routes	●	●		●																						●		●						●	
7E Investigate the morphology of rural settlements					●	●	●	●																●											
7F Investigate development, structure and landholdings of manorial estate centres					●			●	●	●	●	●	●											●										●	●
7G Investigate relationship between castles and great houses and their estates	●	●												●	●			●																	
7H Investigate location and character of medieval battlefields																																			
7I Investigate development of the open-field system and woodland management					●	●				●														●						●	●	●			
7J Research the regional communications infrastructure		●		●																						●	●							●	

Research Objective 7A

Undertake syntheses of urban excavation, survey and documentary data to develop understanding of town development

Summary:

The East Midlands is particularly important as the location for the establishment in the ninth and tenth centuries of the five defended towns at Derby, Leicester, Lincoln, Nottingham and Stamford (the celebrated Five Boroughs of the Danelaw)¹, together with Northampton². These centres continued as major urban foci into the Post-Conquest period, which saw also the development of a range of smaller towns³. Archaeological excavation has been undertaken to a varying extent in these larger towns, but much less so in the smaller urban settlements, and the emerging knowledge remains fragmentary⁴. Syntheses of the results of excavation, successfully completed for Lincoln⁵, remain largely absent elsewhere, while comparative data and detail are lacking on key ceramic assemblages crucial for developing regional chronological frameworks and for elucidating trading networks. Better understanding is needed of the development of urban centres and the nature and variations of industrial and economic activity. Completion of Urban Archaeological Databases for major centres, comparable to those developed for Lincoln, Leicester and Nottingham, is an urgent requirement in order to provide a foundation for further research and to assist in understanding the existing evidence⁶.

Agenda topics addressed: 7.1.1–7.1.4; 7.4.1; 7.4.4; 7.4.5; 7.5.3–7.5.6; 7.6.1; 7.6.3; 7.6.4; 7.7.4; 7.7.5.

Archaeology of the East Midlands: 7, 210–11.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Realising the dividend from past unpublished historic environment investigations (11113.110); Tapping the motherlode: supporting synthesis of key commercial project research (11113.410).

NHPP 2011: Historic towns and suburbs (4A1).

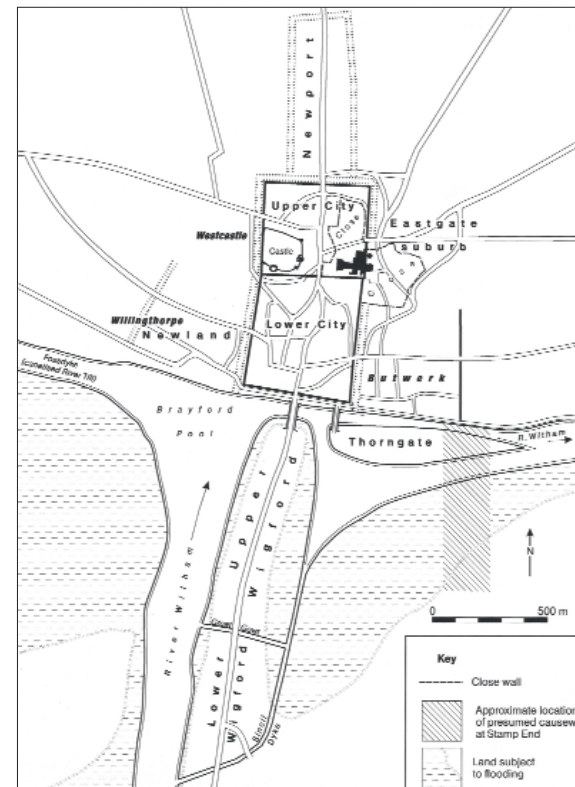
Other research frameworks:

EH Thematic Research Strategy for the Urban Historical Environment 2010: Priorities UR1 (Synthesis of developer-funded research), UR2 (Urban

characterisation) and UR 3 (Survival of early form and fabric in historic towns). *EH Thematic Research Strategy for the Historic Industrial Environment 2010:* Priority IND1 (Origins of industrialisation: understanding early industry). *Medieval Pottery Research Group 2011*, 22 (Priority A7) and 34–35, especially Research Aims EM 12 (Leicester) and EM 22–23 (Nottingham).

References:

- ¹ Hall, R.A., 1985. The Five Boroughs of the Danelaw: a review of present knowledge. *Anglo-Saxon England* 18, 149–206.
- ² Williams, J., 1977. The early development of the town of Northampton, in A. Dornier (ed.), *Mercian Studies*, 131–152. Leicester: Leicester University Press.
- ³ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 53–67, 89–98. London: Longman.
- ⁴ Lewis, C., 2006. The medieval period, in *The Archaeology of the East Midlands*, 188–189.
- ⁵ Jones, M.J., Stocker, D. and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*. Oxford: Oxbow Books.
- ⁶ Cooper, N.J. and Clay, P., 2006. The national and regional context of the research framework, in *The Archaeology of the East Midlands*, 5–7.



Lincoln in the period from c.900 to c.1350, showing its principal elements (Jones *et al.* 2003, fig. 9.1; reproduced by permission of the authors)

Research Objective 7B

Enhance the record of urban and suburban secular standing buildings and associated subterranean structures

Summary:

Surviving medieval urban secular buildings are few in number within the region, and are perhaps best represented by a variety of well-preserved buildings of twelfth century and later date surviving in Lincoln^{1,2}. Dendrochronology³ and detailed investigations of building plans can contribute significantly to our knowledge of the date and status of individual buildings, and cumulatively can contribute to greater understanding of the history and character of urban development. These techniques can usefully be combined with surveys and documentary studies of associated cellars, caves and other subterranean structures, which at Nottingham in particular have the potential for developing further our understanding of urban morphology and functions⁴. A review of urban and suburban standing buildings with the potential to contain medieval structural elements, and of associated subterranean structures, is recommended in order to enhance current Urban Archaeological Databases⁵ and Historic Environment Records⁶. This will provide the basic information that is required to inform planning decisions and to guide the application of appropriate research techniques.

Agenda topics addressed: 7.1.1–7.1.4; 7.6.4.

Archaeology of the East Midlands: 211, 216.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); New frontiers: understanding subterranean places (11112.210).

NHPP 2011: Historic towns and suburbs (4A1); Public, civil and communal buildings (4A4).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priorities UR2 (urban characterisation) and UR3 (Survival of early form and fabric in historic towns).

EH National Heritage Science Strategy Report 2, 2009: Sections 4.2.1 (Chronology) and 4.5.1 (Detecting and imaging).

References:

¹ Jones, R.R., Major, K. and Varley, J., 1984. *Survey of Ancient Houses 1 to 3*. Lincoln: Lincoln Civic Trust.

² Jones, S.R., Major, K., Varley, J. *et al.*, 1996. *Survey of Ancient Houses 4*. Lincoln: Lincoln Civic Trust.

³ Arnold, A.J., Howard, R.E, Laxton, R.R. *et al.*, 2002. *The Urban Development of Newark-on-Trent: A Dendrochronological Approach*. English Heritage Centre for Archaeology Report 95/2002; Hurford, M., Jones, M. and Tyers, C., 2010. Tree-ring dating and the historical and social contexts of timber-frame buildings, Norwell, Nottinghamshire. *Transactions of the Thoroton Society* 114, 31–62.

⁴ Hamilton, A., 2004. *Nottingham's Caves*. Nottingham: Nottingham Civic Society; Waltham, T., 2008. *Sandstone Caves of Nottingham*. Nottingham: East Midlands Geological Society; see also Objective 8B and Nottingham Caves Survey (<http://www.nottinghamcavessurvey.org.uk>).

⁵ e.g. Jones, M.J., Stocker, D. and Vince, A., 2003. *The City by the Pool: Assessing the Archaeology of the City of Lincoln*. Oxford: Oxbow Books.

⁶ Cooper, N.J. and Clay, P., 2006. The national and regional context of the research framework, in *The Archaeology of the East Midlands*, 7.



Jew's House, Steep Hill, Lincoln: a rare survival of a two-storied stone house of the later 12th century (photograph: Richard Sheppard)

Research Objective 7C

Investigate the provisioning of the medieval town by further detailed study of environmental data and human remains

Summary:

The increasing use of cess-pits in medieval towns means that there is extensive evidence for the diet of the population in medieval Leicester, Lincoln and other urban centres¹. At Causeway Lane in Leicester, for example, cess-pits and other contexts yielded remains of apple, blackberry, damson, grape, plum and pear, while vegetables included bean, leek and pea. Domestic animals and fowl were augmented by sea fish and oysters². The evidence of diet may be used to identify the various social groups of the town and their access to food, and, together with isotope analysis, may identify elements of the population born and brought up elsewhere. There are also many other aspects of economy, trade and craft that can be illuminated by the further study of this evidence, as has been suggested for Lincoln³. For the medieval urban centres, environmental analyses may be supported by isotopic and other scientific studies of human remains obtained from cemeteries and by documentary research. This research objective has the potential to be expanded to cover Roman and Saxon urban centres, this longer time-frame allowing the use of data from rural and other sites which may be represented more sparsely in a narrower chronology⁴.

Agenda topics addressed: 7.1.1; 7.1.2; 7.1.4; 7.5.6; 7.7.4; 7.7.5.

Archaeology of the East Midlands: 211, 283.

SHAPE 2008: Understanding ancient environments and ecologies (11111.420); Understanding past populations of Britain: historical demography and human biology (11111.710).

NHPP 2011: Identification of wetland/waterlogged sites (3A5); Historic towns and suburbs (4A1); Churchyards, cemeteries and burial grounds (4D2).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priorities UR1 (Synthesis of developer-funded research) and UR2 (urban characterisation).

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

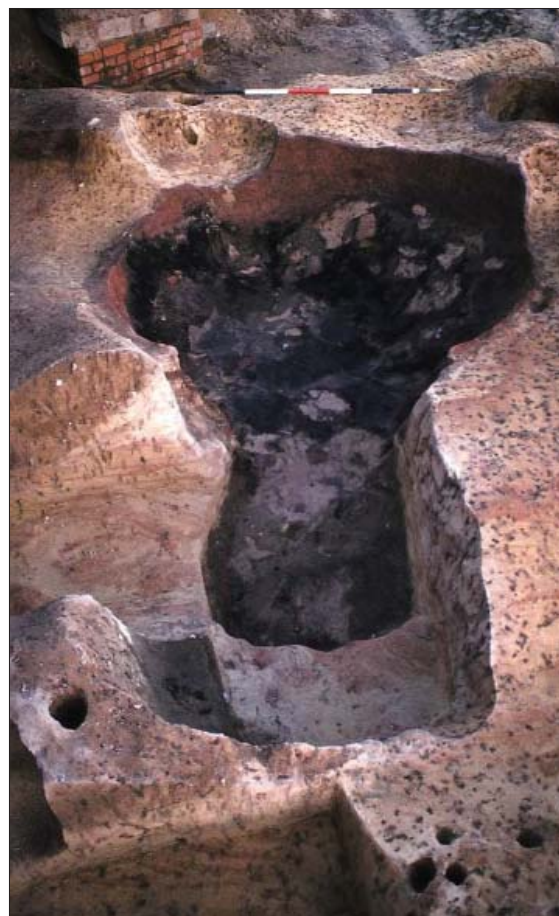
References:

¹ Monckton, A., 2006. Environmental archaeology in the East Midlands, in *The Archaeology of the East Midlands*, 281–283.

² Connor, A. and Buckley, R., 1999. *Roman and Medieval Occupation at Causeway Lane*. Leicester: University of Leicester Archaeology Monograph 5.

³ Stocker, D., 2003. The archaeological agenda: an introduction to the Research Agenda Zone entries, in M.J. Jones, D. Stocker and A. Vince (eds), *The City By The Pool: Assessing the Archaeology of the City of Lincoln*, 297–299. Oxford: Oxbow Books.

⁴ Monckton 2006, 284–286.



Fisher Gate, Nottingham: excavations revealed the remains of a corn-drying kiln dating from around 1200. This had burnt down and yielded an abundance of charred emmer wheat along with burnt wood and daub (photograph © Nottingham City Museums)

Research Objective 7D Investigate further the role of markets, fairs and ports and trading routes

Summary:

Markets played a key role in the development of medieval towns¹, as demonstrated recently at Lincoln², and it has been suggested that regularised market places with their links to road networks and wharves may provide important evidence of early planning³. Coastal and inland ports and fairs performed broadly similar functions to markets and provided foci for communal economic and social activity on a regular basis. There is a need to focus inquiry on fairs and ports, which have generally been accorded little attention⁴, and in particular upon such regionally important sites as the long-lived Lenton Fair⁵ in Nottingham and the inland port at Boston in Lincolnshire⁶. There needs to be more targeting of deposits yielding environmental remains (particularly fish bones, which are especially poorly represented in the archaeological record). Excavations and landscape assessments could usefully be carried out alongside metal-detecting programmes, since port and fair sites in particular have traditionally served as foci for metal-detecting. In addition, further scientific analyses of pottery and other traded commodities such as building stone from quarries at Collyweston in Northamptonshire and Ketton in Rutland⁷ or the internationally important alabaster of Nottinghamshire and Derbyshire⁸ may shed further important light upon trading networks in Britain and beyond and assist in the identification of exchange foci.

Agenda topics addressed: 7.1.1; 7.1.2; 7.1.4; 7.5.6; 7.7.4; 7.7.5.

Archaeology of the East Midlands: 211, 283.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.130); Understanding artefacts and material culture (11111.510).

NHPP 2011: Historic ports, dockyards, harbours and coastal resorts (4A3); Identification of wetland/waterlogged sites (3A5).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010:

Coastal towns and historic ports (UR6); Survival of early form and fabric in historic towns (UR3).

EH National Heritage Science Strategy Report 2, 2009: Sections 3.3.1 (People and environment) and 3.4.1 (Understanding materials).

Medieval Pottery Research Group 2011, 22–23 (Research Priority A8); see also regional priorities: 34–35.

References:

¹ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 53–67. London: Longman.

² Stocker, D., 2003. The High Medieval Era – the archaeological agenda. An introduction to the Research Agenda Zone entries, in Jones, M.J., Stocker, D. and Vince, A., *The City By The Pool: Assessing the Archaeology of the City of Lincoln*, 297. Oxford: Oxbow Books.

³ Stocker 2003, 297.

⁴ Lewis, C., 2006. The medieval period, in *The Archaeology of the East Midlands*, 190, 211.

⁵ Beckett, J.V. (ed.), 2006. *A Centenary History of Nottingham*, 69, 97, 133, 145. Chichester: Phillimore; Grieg, P., 1992. The layout of Lenton fairground, 1516. *Transactions of the Thoroton Society* 96, 130–134.

⁶ Lewis 2006, 211; Beckett 1988, 70–71.

⁷ Lewis 2006, 206.

⁸ Stocker, D., 2006. *England's Landscapes: The East Midlands*, 170–171. London: Collins.



Derbyshire and Nottinghamshire alabaster was used widely for church monuments, such as this fine monument to Sir Sampson de Strelley (d.1390) and his wife (d.1405) that is preserved in All Saints Church, Strelley, Nottinghamshire (photograph: Richard Sheppard)

Research Objective 7E

Investigate the morphology of rural settlements

Summary:

The East Midlands preserves evidence of a complex landscape, including zones dominated by a hierarchy of nucleated villages, hamlets and farmsteads, mainly in Northamptonshire, Lincolnshire, eastern Derbyshire and southern and eastern parts of Leicestershire and Nottinghamshire¹. Away from these zones, landscapes are characterised by dispersed farmsteads and hamlets, notably in Charnwood, Whittlewood and Sherwood Forests, north and west Derbyshire, the Coal Measures of Nottinghamshire and Derbyshire, and the coastal marshes and fenlands of Lincolnshire. This spatial complexity has yet to be fully characterised or explained, and priorities for further work include assessment of the date of establishment of nucleated settlement, the date of origin of the region's many planned villages, and the factors underlying observed variations in settlement morphology². Nucleated settlement appears to have developed, in some areas at least, no later than the ninth century³, but the date of establishment of the more obviously planned villages remains unclear. Concentrations of royal estates in eastern Leicestershire, northern Nottinghamshire and north-west Derbyshire, documented in Domesday Book but acquired over a period of time, are suggested to have been a springboard for the development of planned villages during the eleventh century⁴. They particularly merit further detailed investigation by techniques such as test-pitting in gardens and open spaces in village cores, as has been undertaken at Kibworth in Leicestershire⁵ and as part of the Whittlewood project in south Northamptonshire and north Buckinghamshire⁶.

Agenda topics addressed: 7.2.1–7.2.4; 7.5.4; 7.7.1; 7.7.2.

Archaeology of the East Midlands: 211–212.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170) and researching regional diversity (11111.310).

NHPP 2011: Rural historic buildings and their settings (4F1).

References:

¹ e.g. Chapman, A., 2010. *West Cotton, Raunds. A Study of Medieval Settlement Dynamics AD 450–1450*. Oxford: Oxbow Books.

² Lewis, C., 2006. The medieval period, in *The Archaeology of the East Midlands*, 190–193.

³ Rippon, S., 2007. Emerging regional variation in historic landscape character: the possible significance of the 'long eighth century', in M. Gardiner and S. Rippon (eds), *Medieval Landscapes: Landscape History After Hoskins*, 118. Macclesfield: Windgather Press; Lewis, C., Mitchell-Fox, P. and Dyer, C., 1996. *Village, Hamlet and Field: Changing Medieval Settlements in Central England*, 202–23. Macclesfield: Windgather Press.

⁴ Roberts, B.K., 2008. *Landscapes, Documents and Maps: Villages in Northern England and Beyond, AD 900–1250*, 280. Oxford: Oxbow Books.

⁵ <http://www.arch.cam.ac.uk/aca/kibworth.html>; Wood, M., 2010. *The Story of England*. London: Penguin.

⁶ Jones, R. and Page, M., 2006. *Medieval Villages in an English Landscape. Beginnings and Ends*. Macclesfield: Windgather Press.



West Cotton, Northamptonshire: general view of excavations, showing the wall trenches of a 10th to late 11th century timber courtyard manor and in the foreground the leat feeding a mid-10th to 12th century watermill complex (Chapman 2010, pl. 4; reproduced by permission of Northamptonshire Archaeology)

Research Objective 7F Investigate the development, structure and landholdings of manorial estate centres

Summary:

Regional manorial centres, whether secular or lay, remain poorly investigated and merit further systematic study. The East Midlands preserves a rich resource of manorial sites, ranging in status from castles and granges to more modest establishments that, relative to neighbouring regions, are comparatively rarely moated¹. Moated sites have received the greatest attention from researchers, and where excavated may preserve elaborate structural remains. Saxilby, for example, was provided with a timber hall and solar², while Epworth preserved an impressive stone-constructed complex³. The silted ditches of moated enclosures may also preserve waterlogged artefactual and environmental remains with significant potential for the reconstruction of past environments⁴. Non-moated sites have proved less attractive to archaeologists, with occasional exceptions such as Holyoak in Leicestershire, which preserved a two-storey main building of the thirteenth century⁵. The landholdings associated with these establishments have seldom been examined by excavation, although earthworks often survive well and in many cases have been the subject of field survey. It is recommended that the results of survey should in selected instances be tested by excavation. It is hoped that this will confirm the identity of features and clarify the chronology of manorial development, which in some instances may have roots in the pre-Conquest period.

Agenda topics addressed: 7.2.1; 7.2.4; 7.3.1–7.3.5; 7.5.4; 7.7.3–7.7.5.

Archaeology of the East Midlands: 212–21, 283.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Understanding ancient environments and ecologies (11111.420).

NHPP 2011: Rural historic buildings and their settings (4F1); Identification of wetland/waterlogged deposits (3A5).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

- ¹ Lewis, C., 2006. The medieval period, in *The Archaeology of the East Midlands*, 193–194.
- ² Whitwell, J.B., 1969. Excavations of the site of a moated medieval manor house in the parish of Saxilby, Lincolnshire. *Journal of the British Archaeological Association* 32, 135–142.
- ³ Hayfield, C., 1984. Excavations of the site of the Mowbray manor house at the Vinegarth, Epworth, Lincolnshire, 1970–1976. *Lincolnshire History and Archaeology* 19, 5–28.
- ⁴ Hazell, Z. and Robison, D.E., 2011. *Moats, Ponds and Ornamental Lakes in the Historic Environment*. Swindon: English Heritage.
- ⁵ Brown, G., 1973. Medieval manor of Holyoak, in McWhirr, A., 1973. *Archaeology in Leicestershire and Rutland 1970–1972. Transactions of the Leicestershire Archaeological and Historical Society* 47, 70.



Padley Hall, Hathersage, Derbyshire: surviving range of 14th century manorial hall, now in use as a chapel (photograph: Anna Badcock; reproduced by permission of ArchHeritage)

Research Objective 7G

Estates, architecture and power: investigate the relationship between castles and great houses and their estates

Summary:

The architecture of many castles and great houses is relatively well-known, but there remains a need to investigate the relationship between these structures and the estates in which they are located. For example, are particular forms of building plan associated with particular magnates, such as William Peverel of Derbyshire¹, and do the similarities encompass estate components and layout? There are over 250 castles in the region, many of which started as motte and bailey earthwork and timber fortifications in the late 11th and 12th centuries. The date of establishment of the earliest castles, which were important not only for their role in battle but also as visually dominating symbols of overlordship, has long been debated, and the possibility of pre-Conquest origins for some remains a topic for further research. The investigation of Barnard Castle points the way forward in castle and estate studies, emphasising the need to examine the estate core within the context of the estate lands, the wider countryside and the local community². There have been several recent studies of castles in their wider environment³, but the approach has yet to be applied to castles and manorial centres in the East Midlands.

Agenda topics addressed: 7.1.1; 7.1.2; 7.4.1; 7.4.5.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130).

References:

¹ Associated with the Norman castles at Bolsover and Castleton in Derbyshire and Castle Rock, Nottingham: Beckett, J.V., 1988. *The East Midlands from AD 1000*, 25–26, 58. London: Longman; Hart, C., 1981. *The North Derbyshire Archaeological Survey*, 145, 148. Chesterfield: North Derbyshire Archaeological Trust; Hart, C. R., 1988. *Bolsover. A Town is Born: its Origins, Change and Continuity*. Bolsover: Bolsover District Council.

² Austin, D., 2007. *Acts of Perception: A Study of Barnard Castle in Teesdale*. Archaeological and Architectural Society of Durham and Northumberland Research Report 6; Stocker, D., 2008. Review article. *Landscapes* 9, 82–85.

³ Liddiard, R., 2005. *Castles in Context: Power, Symbolism and Landscape, 1066–1500*. Macclesfield: Windgather Press.



Peveril Castle, Castleton, Derbyshire: late 12th century stone keep (photograph: Richard Sheppard) and aerial view of the castle (NMR20450/18; SK1482/39; 9/11/05; © English Heritage. NMR). The latter shows the location of the keep atop the ridge dividing Cave Dale (above) from the medieval town; Peak Cavern dissects this ridge and separates the eastern stone-walled bailey and keep from the ditch and rampart enclosing the western bailey (right)



Research Objective 7H Investigate the location and character of medieval battlefields

Summary:

Medieval battlefield sites have long remained the preserve of the local historian more concerned and more familiar with documentary evidence than the landscape. Aside from castle sites that acted as foci for military actions, the region preserves a number of important battlefield sites that would repay further investigations. These include two key battlefields of the Wars of the Roses: a period which has been identified as a key focus of archaeological interest (in particular for evidence of the introduction of gunpowder weapons in England)¹. The first is the pivotal Battle of Bosworth in Leicestershire, where Henry VII's defeat of Richard III in 1485 marks the beginning of the Tudor period². The second is Stoke Field in Nottinghamshire, marginally beyond this period, where in 1487 Henry VII's forces crushed a Yorkist rebellion³. At both of these sites, the evidence for the locations of battlefields would benefit from careful reviews of documentary sources and of the topographical and archaeological evidence (primarily in the form of unstratified artefact scatters and mass graves)⁴. Direct archaeological investigations of battle archaeology through metal detecting, as demonstrated at Bosworth⁵ and Towton⁶, should be undertaken. Prospecting for mass graves through geophysical survey and excavation should also be considered.

Agenda topic addressed: 7.4.6.

Archaeology of the East Midlands: 196, 213.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111.130).

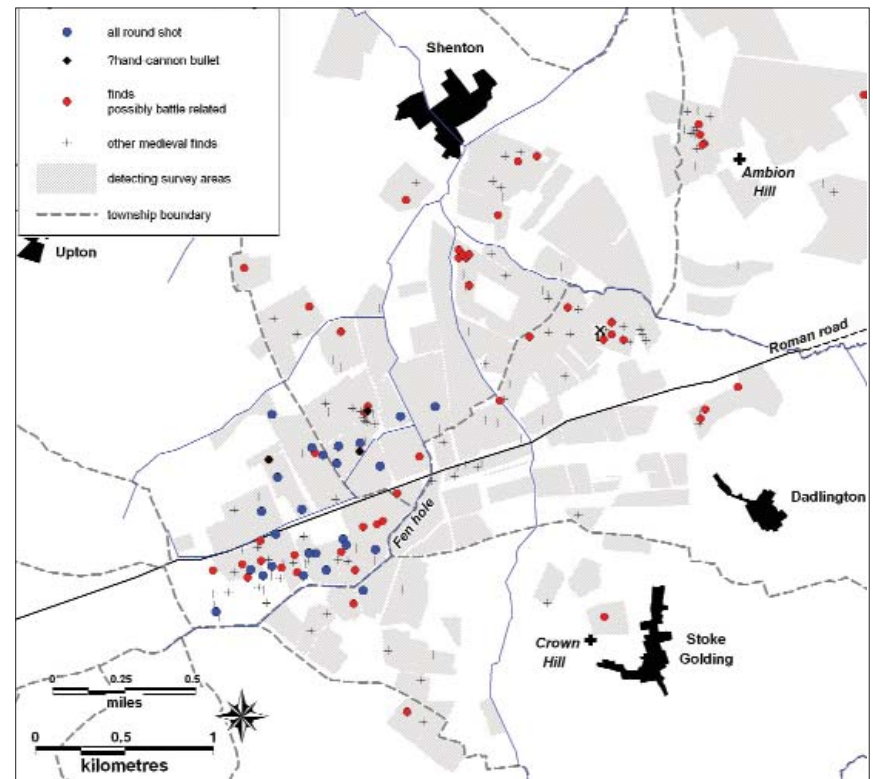
NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Battlefields (4E1).

Other research frameworks:

Foard, G., 2008. *Conflict in the Pre-Industrial Landscape of England: a Resource Assessment*. University of Leeds, 265–269.

References:

- ¹ Foard 2008, 269: Section 7.14.
² Foard 2008, 100–104; Foard, G.R. and Curry, A., forthcoming. *Bosworth: A Battlefield Rediscovered*. Oxford: Oxbow Books.
See also: <http://www.bosworthbattlefield.com/>
³ Bishop, M., 1987. *The Battle of East Stoke 1487*. Nottingham: Nottinghamshire County Council.
⁴ Foard 2008, 24–59; e.g. Stoke Field mass graves: Foard 2008, 52–53, fig. 14.
⁵ Foard 2008, 100–104; Foard, G., 2010. Discovering Bosworth. *British Archaeology* 112, 26–31 (revised plans in Foard and Curry forthcoming).
⁶ Sutherland, T.L. and Schmidt, A., 2003. Towton, 1461: an integrated approach to battlefield archaeology. *Landscapes* 4, 15–25.



The Battle of Bosworth (1485): interim plan, showing the distribution of lead munitions and other battle-related artefacts in relation to the main terrain features (*British Archaeology* 112, 2010, 29; reproduced by permission of Glenn Foard and *British Archaeology*)

Research Objective 7I

Investigate the development of the open-field system and medieval woodland management

Summary:

The origins of the open-field system have long attracted discussion, and are nowhere better addressed than in the East Midlands¹. Large areas of the lowland zone were dominated in this period by unhedged open fields rotating between arable and pasture and, particularly in Leicestershire and Northamptonshire, ridge and furrow earthworks remain important elements of the landscape character. The only English village where open-field farming is still conducted under the guidance of a court leet is to be found at Laxton in Nottinghamshire², and detailed surveys here and elsewhere have enhanced significantly our understanding of the origins of this flexible and long-lived agricultural system, developments over time, and the relationship between arable, pasture and woodland³. Fieldwalking⁴, targeted excavation, and earthwork, geophysical, air photographic and lidar surveys can elucidate the origins and development of field systems and their relationship to earlier systems of land allotment⁵, and should be encouraged. There is also much potential for further investigations of woodland, including hunting parks, by documentary research, earthwork surveys and remote sensing. Studies have been undertaken of Rockingham Forest⁶ and of Leicestershire⁷ and Lincolnshire⁸ woodlands. Building upon these, further work should aim to integrate documentary and landscape evidence, with emphasis upon the evidence for former management and exploitation, access and changing boundaries. There is also a need to compare and contrast the information on woodland management and exploitation in the Champion lands with that in less favoured upland areas. Woodlands offer particular opportunities for a wide range of local fieldwork as well as potential partnerships with the Woodland Trust, National Trust and community groups, which are often concerned with the amenity value of woodlands.

Agenda topics addressed: 7.2.1; 7.2.2; 7.3.2; 7.5.4; 7.7.1–7.7.3.

Archaeology of the East Midlands: 215, 286.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Understanding place: researching regional diversity (11111.310).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey; (3A4); Field systems (4F2).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

- ¹ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 46–51. London: Longman.
- ² Beckett, J.V., 1989. *A History of Laxton*. Oxford: Blackwell.
- ³ e.g. Whittlewood Project: Jones, R. and Page, M., 2006. *Medieval Villages in an English Landscape. Beginnings and Ends*. Macclesfield: Windgather Press.
- ⁴ e.g. Jones, R., 2005. Signatures in the soil: the use of pottery in manure scatters in the identification of medieval arable farming regimes. *Archaeological Journal* 161, 159–188.
- ⁵ e.g. Elliott, L., Jones, H. and Howard, A.J., 2004. The medieval landscape, in Knight, D. and Howard, A.J., *Trent Valley Landscapes*, 168–169. Kings Lynn: Heritage Marketing and Publications.
- ⁶ Foard, G., Hall, D. and Partida, T., 2009. *Rockingham Forest. An Atlas of the Medieval and Early-Modern Landscape*. Northampton: Northamptonshire Record Society.
- ⁷ Squires, A.E., 2004. Parks and woodland in medieval Leicestershire, 1086–1530, in P. Bowman and P. Liddle (eds), *Leicestershire Landscapes*, 141–153. Leicester: Leics. Museums Archaeological Fieldwork Group Monograph 1.
- ⁸ Lane, T., 1995. *The Archaeology and Developing Landscape of Ropsley and Humby, Lincolnshire*. Heckington: Lincolnshire Archaeology and Heritage Series 2.



The White Cross: a unique survival of a medieval forest boundary cross, mentioned in a 1299 perambulation of the forest. The cross stands on the boundary between the Northamptonshire townships of King's Cliffe and Blatherwycke (photograph © Glenn Foard; see Foard *et al.* 2009, 21).



Ridge and furrow earthworks preserved in pasture outside Burrough Hill hillfort, Leicestershire (photograph: D. Knight)



Laxton in Nottinghamshire is the only English parish where open-field farming is still conducted under the guidance of a court leet, and provides a landscape resource of international significance (Beckett, J.V., 1989. *A History of Laxton: England's Last Open Field Village*. Oxford: Blackwell). This illustration shows

part of a map recording the cultivation strips and other features of the open fields, compiled in 1635 by Mark Pierce (© Manuscripts and Special Collections Section, University of Nottingham), with an inset showing classic ridge and furrow earthworks in Leicestershire

Research Objective 7J Research the regional communications infrastructure

Summary:

The medieval period is important for the study of communication routes, which may well have varied in importance from one time to another and intra-regionally¹. The physical infrastructure, comprising roads, rivers and related appurtenances such as bridges and wharfs, and associations of these with landscape features, are under-investigated. In addition, the evidence that pottery and other artefacts can provide for the use of inland and coastal waterways such as the Trent and Nene has also not been maximised². At Hemington Quarry near Castle Donington, Leicestershire, three phases of timber and stone bridge piers dated to 1090, 1215 and 1238 respectively have been recorded and fully investigated during gravel extraction in the river floodplain³. Such investigations are rare, however, and many communications features are not listed in Historic Environment Records. Landscape features, such as hollow-ways, fords and bypassed stretches of major and minor highways, also remain little researched, while roads are seldom accorded archaeological excavation⁴.

Agenda topics addressed: 7.1.2; 7.1.4; 7.6.1; 7.6.2; 7.7.5.

Archaeology of the East Midlands: 216.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111.170); Understanding artefacts and material culture (11111.510).

NHPP 2011: Historic water management assets (4B1); Transport and communications (4B3).

Other research frameworks:

EH Thematic Research Strategy for the Historic Industrial Environment 2010: IND4 (Impact of industrialisation: transport systems, communications and public utilities).

Medieval Pottery Research Group 2011, 22–23 (Priority A8); see also 34–35).

References:

¹ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 46–51. London: Longman.

² Lewis, C., 2006. The medieval period, in *The Archaeology of the East Midlands*, 209–210.

³ Ripper, S. and Cooper, L., 2009. *The Hemington Bridges: The Excavation of Three Medieval Bridges at Hemington Quarry near Castle Donington*. Leicester: University of Leicester Archaeology Monograph 16.

⁴ For Lincoln see Stocker, D., 2003. The archaeological agenda: an introduction to the Research Agenda Zone entries, in M.J. Jones, D. Stocker and A. Vince (eds), *The City By The Pool: Assessing the Archaeology of the City of Lincoln*, 267–269. Oxford: Oxbow Books,



Bridge I, Hemington Quarry, Leicestershire: foundations of a late 11th to early 12th century timber bridge across a former course of the Trent, revealed during gravel extraction. The photograph shows two 'caisson' pier bases (hollow boxes sunk into the river bed and filled with sandstone rubble) and in the right foreground the remains of a trestle that had been lifted by flood over the adjacent caisson (Ripper and Cooper 2009, pl. 2; this and photographs of Bridge III reproduced by permission of University of Leicester Archaeological Services and Leicestershire County Council)

Bridge III, Hemington Quarry (Ripper and Cooper 2009, pls 8 and 11): pier bases of a mid-13th century bridge, built upstream of Bridge I after the destruction by flood of both this bridge and a replacement timber bridge built in the late 12th century (Bridge II)



Pier Base 1 (above): plinth stones after initial cleaning.

Pier Base 4 (right): hexagonal setting of timber piles and sandstone infill. The rectangular timber structure may have acted as a buffer to prevent damage to the bridge from river traffic, flotsam, etc., and by displacing river flow may have prevented scouring around the pier bases



6.8 POST-MEDIEVAL (1485–1750): UPDATED RESEARCH AGENDA

8.1. *Urbanism: morphology, functions and buildings*

1. Can we elucidate the roles of towns as social, administrative, industrial and commercial centres, their integration within regional marketing systems and their relationship to communication routes?
2. How were towns organised and planned, and how did population growth impact upon their internal spatial organisation?
3. What was the impact of religion, urban government, civic pride and class structures upon town planning and architecture (e.g. public buildings such as town halls or prisons and water management structures)?
4. What can studies of environmental data, artefacts and structural remains tell us about variations in diet, living conditions and status?
5. Can we recognise the emergence of the poorer classes in the developing suburbs?
6. How can we advance studies of building plans and standing remains, especially where hidden inside later buildings, and of caves and cellars?

8.2 *Landscapes of display: country houses and gardens*

1. Can we elucidate further the use of social space in buildings and across the landscape, the manipulation of vistas and the integration of gardens with the wider landscape?
2. How were garden designs influenced by changing fashions and by a familiarity with Continental garden styles?
3. What horticultural methods, planting schemes and water management methods were employed by garden planners?
4. How are tenants and servants reflected in the surviving material culture?
5. Can we establish regional typologies of parklands, parkland structures and the villages and cottages associated with estates?

8.3 *Agricultural landscapes and the food-producing economy*

1. How can we improve our understanding of the early landscapes of enclosure and improvement and the interrelationship between arable, pasture, woodland, commons and waste?
2. How did water management and land drainage change the landscape during this period?
3. What changes and improvements occurred in animal husbandry and the use of animals (e.g. new breeds, traction and traded animal products)?
4. What garden plants and crops were grown in the countryside and urban market gardens, and what new types were introduced?

8.4 *Rural settlement patterns and building traditions*

1. Can we enhance our understanding of the houses of the rural poor?
2. Can we develop as an aid to academic study and conservation management a regional typology of farmhouses, barns and other rural vernacular buildings?
3. Can we discern intra-regional or temporal variations in the pattern of rural vernacular architecture?

4. What was the impact of industrialisation upon established settlement patterns and the rural landscape, and how did this vary regionally?
5. How did the diet, living conditions and status of rural and urban communities compare?

8.5 *Industry and communications*

1. Can we elucidate the organisation of the workplace, gender differences at work and the development of industrial processes (especially the nationally important lead, coal and tanning industries)?
2. Can we shed further light upon the developing technology of the regionally important early stoneware potteries?
3. Can we identify domestic buildings adapted for the textile industry?
4. How were transport infrastructures improved and how was this related to the developing urban and market hierarchy?
5. What may be learned of the material culture of industrial workers?
6. What can we deduce from factory/non-factory production data about the changing economy (especially patterns of marketing and consumption)?

8.6 *Ecclesiastical structures, estates and burials*

1. What was the impact of the Reformation upon ecclesiastical buildings and monastic estates?
2. Can a typology of church-related and non-Anglican buildings be devised?
3. How can we ensure appropriate recording of churches and chapels, graveyards, artefacts of burial and remembrance and human remains (with their major potential for elucidating diet, health and demography)?
4. Can we devise a typology to record and classify more effectively the interiors of ecclesiastical buildings, their decoration and monuments?

8.7 *Battlefields and fortifications*

1. How best can we record and study battlefield sites, particularly of the Civil War period (e.g. Naseby)?
2. How can we refine our knowledge of Civil War defences and siege works?
3. What was the impact of the Civil War upon urban development (notably the demolition of suburbs, as at Leicester, and post-siege development)?

8.8 *Material culture*

1. How was pottery distributed across the region and can we identify competition between regional potteries?
2. Can we establish a dated type series for ceramics (building in particular upon unpublished urban pit and well groups)?
3. Can we identify the changing material culture of the urban and rural poor, the emerging middle classes and the aristocracy?
4. Were there different patterns of consumption between town and countryside and between different agricultural regions?
5. What may be deduced about the symbolic use of material culture (e.g. in social competition)?

POST-MEDIEVAL (1485-1750): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	8.1 Urbanism: morphology, functions and buildings						8.2 Country houses and gardens					8.3 Agricultural landscapes and economy				8.4 Rural settlement patterns and building traditions					8.5 Industry and communications						8.6 Ecclesiastical buildings, estates and burials				8.7 Battlefields and fortifications			8.8 Material culture				
	1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	1	2	3	1	2	3	4	5
8A Identify and research the landless urban and rural poor		●			●											●			●																			
8B Further research the morphology and use of caves	●				●																●																	
8C Establish a typology of regional building traditions					●											●	●	●		●			●															
8D Investigate developments in estate and garden design and their landscape contexts							●	●	●	●	●																											
8E Identify agricultural improvements of the sixteenth to eighteenth centuries												●	●	●	●	●																	●					
8F Research the development of industry and its impact upon landscape and settlement morphology																			●		●	●	●	●	●	●												
8G Study post-Dissolution re-use of monastic structures and continuity of monastic estates																											●											
8H Investigate graveyards and other burial sites																													●		●							
8I Develop further the study of ceramic assemblages																																		●	●	●	●	●
8J Investigate Civil War defences, siege works and battlefields																															●	●	●					

Research Objective 8A

Identify and research the landless urban and rural poor

Summary:

The landless poor, with few possessions and often inhabiting insubstantial structures, have left few traces in the archaeological or documentary record, and identification of this largely invisible social class has been highlighted as a key priority for research. Even for the nineteenth century, the rural poor are hard to see¹, and for the Post-Medieval period they are most clearly visible by inference – as carriers, for example, of night soil to the fields, or as protagonists in the 1607 Midlands Revolt and other civil unrests reflecting antagonism to enclosure of the medieval open fields²⁻³. Some of these communities are potentially identifiable in the countryside by small, irregular enclosures on the edges of pasture, wood or road, depicted but not remarked upon by the surveyors of tithe or enclosure maps and now worth surveying for insubstantial earthworks or particular colonies of plants that might betray flimsy dwellings and other structures⁴. Wastes and commons, identifiable from documentary and cartographic sources, also provide possible locations for squatter settlements that might be revealed by detailed field investigations⁵. In urban areas, investigations of vacant plots and open areas on the edges of settlement may also reveal insubstantial structures associated with the poor⁶. Related groups include gypsies and travellers, whose temporary encampments are sometimes known through tradition, along with itinerant charcoal burners, shepherds and herdsfolk. These settlement locations have seldom formed the focus of archaeological inquiry, and all are under pressure from intensifying agriculture, forestry and urban development.

Agenda topics addressed: 8.1.2; 8.1.5; 8.4.1; 8.4.4.

Archaeology of the East Midlands: 232–233.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4);

Historic towns and suburbs (4A1); Rural historic buildings and their settings (4F1).

References:

¹ Reay, B., 2004. *Rural Englands: Labouring Lives in the Nineteenth Century*. Basingstoke: Palgrave Macmillan.

² Blomley, N., 2007. Making private property: enclosure, common right and the work of hedges. *Rural History, Economy and Society* 18, 10–14.

³ Stocker, D., 2006. *England's Landscapes: The East Midlands*, 81-86. London: Collins.

⁴ Courtney, P., 2006. The Post-Medieval period, in *The Archaeology of the East Midlands*, 233.

⁵ Courtney 2006, 233.

⁶ e.g. possible squatter settlement identified at Cloud Hill, Leicestershire: Clay, P. and Courtney, P., 1995. *An Archaeological Desk-Based Assessment of Cloud Hill Quarry Extension, Breedon-on-the-Hill and Worthington, Leicestershire*. University of Leicester Archaeological Services (unpublished report).



Single-storey stone building on Hollow Way, Anstey Green, originating as a pair of squatter cottages encroaching on an ancient common at the west end of Anstey village, Leicestershire. The exact date of construction is unknown, but cartographic evidence indicates construction between 1762 and 1886. The cottages have been extended and modernised in recent years, but the rubble construction of the wall is still clearly visible (photograph: Paul Courtney; see Courtney, P., 2003. Between two forests: the social and topographic evolution of medieval Anstey. *Transactions of the Leicestershire Archaeological and Historical Society* 77, 35-64)

Research Objective 8B Further research the morphology and use of caves

Summary:

The East Midlands preserves significant evidence for Post-Medieval usage of caves, most notably at Nottingham. The soft sandstone which underlies the modern city preserves a remarkable collection of over 500 artificially created caves¹, many of which were utilised in the Post-Medieval period for purposes such as habitation, storage, malting and tanning². Their chronology extends at least from medieval to modern times, when some caves were utilised as Second World War air-raid shelters³, and this unique resource has been highlighted as a key priority for cross-period research. A detailed laser survey of the caves is currently being conducted by Trent & Peak Archaeology alongside an assessment of the documentary resource⁴, and will provide a secure foundation for future management of the resource and further research (including analyses of finds obtained during unpublished excavations and integration of the evidence from subterranean and standing structures). Comparable surveys may usefully be extended to other caves in the region whose period of use may have spanned the Post-Medieval period. Artificial caves are a distinctive feature of sandstone outcrops elsewhere in the region, including the Anchor Church⁵ near Foremark and the Hermit's Cave near Dale Abbey⁶, both in Derbyshire. In addition, natural caves with evidence for human activity spanning many millennia are abundantly distributed across the Carboniferous limestones of the Derbyshire Peak and the Magnesian Limestone escarpment that straddles the Derbyshire-Nottinghamshire boundary. A review of post-medieval use of the above sites would complement well the ongoing work at Nottingham and would provide a useful basis for further survey work and assessments of caves used in the medieval and other periods.

Agenda topics addressed: 8.1.2; 8.1.6; 8.5.1.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170); New frontiers: understanding subterranean places (11112.210).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Historic towns and suburbs (4A1).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priority UR3 (Survival of early form and fabric in historic towns).

EH National Heritage Science Strategy Report 2, 2009: Section 4.5.1 (Detecting and imaging).

References:

¹ Hamilton, A., 2004. *Nottingham's Caves*. Nottingham: Nottingham Civic Society; Waltham, T., 2008. *The Sandstone Caves of Nottingham*. Nottingham: East Midlands Geological Society.

² Waltham, T. and MacCormick, A.G., 1993. The caves, malt kiln and tannery at the Black's Head site, Nottingham. *Transactions of the Thoroton Society* 97, 64–73. See also Objective 7B.

³ Waltham 2008, 39.

⁴ <http://www.nottinghamcavessurvey.org.uk>.

⁵ Pevsner, N. and Williamson, E., 1978. *The Buildings of England: Derbyshire*, 217. Harmondsworth: Penguin.

⁶ Pevsner and Williamson 1978, 162.



Willoughby House, Nottingham: laser plan of circular cave with central carved column and table, benches around the wall and entrance flanked by pilasters, constructed by Rothwell Willoughby in the mid-18th century below his Georgian townhouse (© Trent & Peak Archaeology)

Research Objective 8C Establish a typology of regional building traditions

Summary:

Further research is recommended to establish a typology of regional vernacular buildings and to investigate temporal and spatial variations in building styles and materials (as indicated, for example, by the distinctive Lincolnshire tradition of mud or cob built structures with timber studs¹). Dating is particularly problematic for many building types, and it is recommended that further use be made where possible of dendrochronological data – as, for example, in the recent exemplary studies of Newark and Norwell in Nottinghamshire². Further information on the antecedents of post-medieval vernacular buildings could be obtained from the investigation of early structural remains concealed within gentrified urban buildings³ and by the excavation of deserted or shrunken rural settlements. Reviews of vernacular architectural traditions tend to focus on extant higher status buildings⁴, and survey could usefully be extended to the broad range of lower status structures that survive. A number of valuable sub-regional and local studies have been conducted⁵, some such as the buildings survey published by the Norwell Parish Heritage Group⁶ combining effectively the evidence of documents and maps with archaeological, dendrochronological and architectural information. These are complemented by the *Buildings of England* volumes, which include reviews of building styles and the range of building materials used⁷, and in north Northamptonshire by a systematic RCHME survey of architectural monuments⁸. Themes which deserve greater consideration include the transformation of individual wealth as reflected in buildings, the impact of church ownership⁹, the transition from timber-framed to brick or stone construction¹⁰ and the study of local landscape settings¹¹.

Agenda topics addressed: 8.1.6; 8.2.5; 8.4.1–8.4.3; 8.5.3.

Archaeology of the East Midlands: 232–233.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170); Understanding place: researching regional diversity (11111:310).

NHPP 2011: Public, civil and communal buildings (4A4); Rural historic buildings and their settings (4F1).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priority UR3 (Survival of early form and fabric in historic towns).

EH National Heritage Science Strategy Report 2, 2009: Sections 4.2.1 (Chronology) and 4.5.1 (Detecting and imaging).

References:

¹ Cousins, R., 2000. *Lincolnshire Buildings in the Mud and Stud Tradition*. Heckington: Heritage Lincolnshire.

² Arnold, A.J., Howard, R.E, Laxton, R.R. *et al.*, 2002. *The Urban Development of Newark-on-Trent: A Dendrochronological Approach*. English Heritage Centre for Archaeology Report 95/2002; Hurford, M., Jones, M. and Tyers, C., 2010. Tree-ring dating and the historical and social contexts of timber-frame buildings, Norwell, Nottinghamshire. *Transactions of the Thoroton Society* 114, 31–62.

³ Courtney, P., 2006. The Post-Medieval period, in *The Archaeology of the East Midlands*, 220.

⁴ e.g. Quiney, A., 1990. *The Traditional Buildings of England*. London: Thames and Hudson.

⁵ Courtney 2006, 225–226.

⁶ Jones, M., 2009a. *Norwell Buildings*. Nottingham: Norwell Parish Heritage Group; Gregory, D. and Jones, M., 2009. *Norwell Mills*. Nottingham: Norwell Parish Heritage Group; Jones, M., 2009b. *Norwell Farms*. Nottingham: Norwell Parish Heritage Group.

⁷ e.g. Clifton-Taylor, A. and Barley, M., 1979. Building materials, in Williamson, E., *The Buildings of England: Nottinghamshire*, by N. Pevsner, 46–50; also Roberts, D., 1989. Lesser rural building, in Antram, N., *The Buildings of England: Lincolnshire*, by N. Pevsner and J. Harris, 33–41. Harmondsworth, Penguin.

⁸ Royal Commission on Historical Monuments England, 1984. *An Inventory of the Historical Monuments in the County of Northampton*, Vol. 6: *Architectural Monuments in North Northamptonshire*. London: HMSO.

⁹ As at Norwell: Hurford *et al.* 2010.

¹⁰ Courtney 2006, 226.

¹¹ Longcroft, A., 2007. The importance of place: placing vernacular buildings into a landscape context, in P.S. Barnwell and M. Palmer (eds), *Post-Medieval Landscapes: Landscape History After Hoskins*. Macclesfield: Windgather Press.

Research Objective 8D Investigate developments in estate and garden design and their landscape context

Summary:

The East Midlands preserves numerous estates where a grand mansion sits at the centre of a tract of private land¹, as for example at Chatsworth in Derbyshire^{2,3}. The study of estates has often been polarised between social and art historic evaluation of the mansion house and agricultural and horticultural assessment of the estate. There has commonly been little attempt to link these approaches or to consider relationships with the wider landscape and with more distant but closely intertwined interests of the estate owner⁴. Williamson has identified three phases of estate development, embracing the Post-Medieval and Modern periods, and hence this Research Objective spans both of these periods⁵. The first of these phases spanned the mid-seventeenth to mid-eighteenth centuries, during which time some of the larger estates developed, sometimes on post-Dissolution sites. The second part of the eighteenth century saw the development of Neo-Classical mansions associated with private parks from which public roads and settlements had been diverted. A third phase may be identified in the early nineteenth century, and was based on the landscaping ideas of Humphrey Repton⁶. Estate design owed much to local topographic and landscape factors, as well as to local tenurial and social traditions. Regional and sub-regional characteristics should be identifiable⁷ and study of these variations should be encouraged. Particular attention should be paid to the impact of other landholdings and economic interests such as mining upon estate design and management, and to the influence of large estates upon the numerous and less commonly researched small estates⁸.

Agenda topics addressed: 8.2.1–8.2.5.

Archaeology of the East Midlands: 232–233.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170) and researching regional diversity (11111:310).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Sport and entertainment buildings and landscapes (4C1).

References:

- ¹ Courtney, P., 2006. The Post-Medieval period, in *The Archaeology of the East Midlands*, 221–222; Beckett, J.V., 1988. *The East Midlands from AD 1000*, 108–111, 195–200. London: Longman.
- ² Barnatt, J. and Williamson, T., 2005. *Chatsworth: A Landscape History*. Macclesfield: Windgather Press.
- ³ Barnatt, J. and Bannister, N., 2009. *The Archaeology of a Great Estate. Chatsworth and Beyond*. Oxford: Oxbow Books.
- ⁴ Williamson, T., 2007. Archaeological perspectives on landed estates: research agendas, in J. Finch and K. Giles (eds), *Estate Landscapes: Design, Improvement and Power in the Post-Medieval Landscape*, 8. Woodbridge: Boydell and Brewer.
- ⁵ Williamson 2007, 9–12; see also Objective 9F.
- ⁶ Repton, H., 1816. *Fragments on the Theory and Practice of Gardening*. London: Taylor.
- ⁷ Williamson, T., 2004. Designed landscapes: the regional dimension. *Landscapes* 5, 20–24.
- ⁸ Spooner, S., 2009. 'A prospect two fields distance': rural landscapes and urban mentalities in the eighteenth century. *Landscapes* 10, 101–22.



Chatsworth, Derbyshire: William Talman's south front (1687-89), overlooking the Canal Pond, dug in 1702. The pond was embellished in 1843 by Joseph Paxton's dramatic Emperor Fountain (photograph: Hannah Knight)

Research Objective 8E

Identify agricultural improvements of the sixteenth to eighteenth centuries

Summary:

Enclosure of the open fields, waste and commons took place increasingly from the sixteenth century, along with reclamation of the Lincolnshire Fens¹ and other marshy areas and the development of water meadows, although physical evidence of these changes is not always clearly visible until the late eighteenth and early nineteenth centuries². Additional investigations are required to shed further light upon the development of early enclosures, water meadows, fenland drainage schemes and other landscape evidence of the agricultural improvements that characterised this period³ – and the extent of intra-regional variability. Environmental analyses of palaeobotanical and faunal assemblages should be encouraged as means of enhancing our knowledge of changes in crop and animal husbandry⁴, including identification of the famously large sheep of the region that have so far eluded detection in archaeological excavations⁵. A variety of other direct and indirect evidence for agricultural improvement may also be expected, and should be sought for. The success of the Ticknall pottery in Derbyshire, for example, which produced substantial quantities of dairy ceramics throughout the seventeenth century in the face of Staffordshire competition⁶, may reflect in part the growing importance and success of dairy farming in the region. Research should also be focused upon the identification of specialist agricultural buildings that may provide indirect evidence for agricultural change, such as beast houses which may reflect the growing importance of dairying and beef cattle production.

Agenda topics addressed: 8.3.1–8.3.4; 8.4.2; 8.4.5.

Archaeology of the East Midlands: 233, 284.

SHAPE 2008: Understanding ancient environments and ecologies (11111:420).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Historic water management assets (4B1); Rural historic buildings and their settings (4F1); Field systems (4F2).

Other research frameworks:

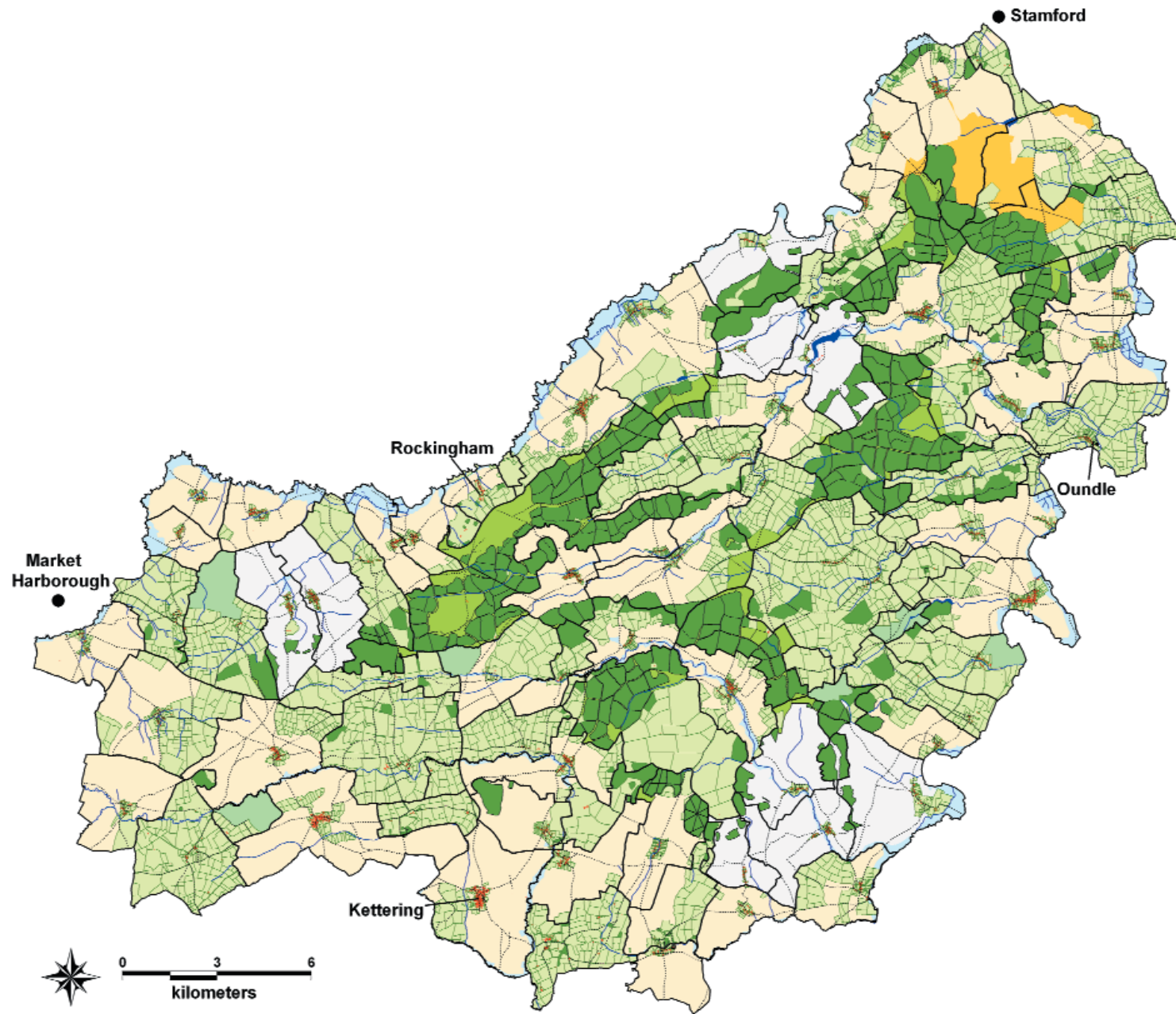
EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

- ¹ Darby, H.C., 1982. *The Changing Fenland*. Cambridge: Cambridge University Press.
- ² Courtney, P., 2006. The Post-Medieval period, in *The Archaeology of the East Midlands*, 223.
- ³ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 121–30. London: Longman.
- ⁴ Albarella, U., 1997. Size, power, wool and veal: zooarchaeological evidence for late medieval innovations, in G. de Boe and F. Verhaghe (eds), *Environment and Subsistence in Medieval Europe: Papers of the Medieval Europe Brugge 1997 Conference*, 19–30.
- ⁵ Gidney, L., 1999. The animal bones, in Connor, A. and Buckley, R., *Roman and Medieval Occupation at Causeway Lane, Leicester*, 310–329. University of Leicester: Leicester Archaeology Monograph 5.
- ⁶ Brears, P.C.D., 1971. *The English Country Pottery*, 175. Newton Abbot: David & Charles.

Rockingham Forest: key to map on facing page (Foard, G., Hall, D. and Partida, T., 2009, *Rockingham Forest. An Atlas of the Medieval and Early-Modern Landscape*, 72. Northampton: Northampton Record Society XLIV; reproduced by permission of the authors, the Northamptonshire Record Society and the Rockingham Forest Trust)

- Ridge and furrow strips
- Headlands
- Open field
- Open field pasture
- Meadow
- Heath
- Wood
- Wood pasture
- Settlement area (medieval)
Buildings (early-modern)
- Ancient enclosure
- Enclosure extent
[internal boundaries not known]
- Rivers, streams
and slades
- Lakes and ponds
- Roads
- Township
- No data



Rockingham Forest, Northamptonshire: map showing the extent of enclosure c.1750 on this dissected plateau between the Rivers Welland (NW) and Nene (SE); the surviving open field was enclosed after 1750 mainly by

Parliamentary act (Foard, Hall and Partida 2009, fig. 17; reproduced by permission of the authors, the Northamptonshire Record Society and the Rockingham Forest Trust)

Research Objective 8F

Research the development of East Midlands industry and its impact upon landscape and settlement morphology

Summary:

Coal, lead, iron, leather-working and textile production were foremost among a number of industries which in the Post-Medieval period came to characterise the East Midlands¹, and in the case particularly of coal and lead may be regarded as of national importance. A key area of required research is the transition of industry from an adjunct of the agricultural economy to the economic driver of the rural economy and the stimulus for urbanisation². Rural sources of industry require further assessment of their locations, as well as the recording of detail. Particular interest attaches to the extensive coal-mining remains of Derbyshire, Leicestershire and Nottinghamshire³, the landscape evidence for which has yet to be fully identified and recorded. Linkage to efficient communications networks and labour resources played a key role in the development of the coal industry, but the scale and chronology of the extraction of coal and other materials also depended on tenurial arrangements and the availability of labour. Processing frequently took place within settlements, including cloth-making and framework-knitting in rural settlements and leather-tanning in urban locations. All of these activities, which required open space and separation from domestic settlement, influenced settlement morphology and would have spurred population growth and hence settlement expansion.^{4,5}

Agenda topics addressed: 8.4.4; 8.5.1–8.5.6.

Archaeology of the East Midlands: 233–234.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Traditional industry, modern industry, mining and associated housing (4B2).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priority UR3 (Survival of early form and fabric in historic towns).

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priorities IND3, IND4 and IND 5 (The impact of industrialisation: industrial landscapes; transport systems, communications and public utilities; understanding industrial buildings and sites).

References:

- ¹ Courtney, P., 2006. The Post-Medieval period, in *The Archaeology of the East Midlands*, 227–228; Beckett, J.V., 1988. *The East Midlands from AD 1000*, 131–164. London: Longman,
- ² Courtney 2006, 227.
- ³ Beckett 1988, 276–280; Stocker, D., 2006. *England's Landscapes: The East Midlands*, 174–176. London: Collins.
- ⁴ Palmer, M., 2000. Housing the Leicestershire framework-knitters: history and archaeology. *Transactions of the Leicestershire Archaeological and Historical Society* 74, 59–70.
- ⁵ Shaw, M., 1996. The excavation of a late fifteenth- to seventeenth-century tanning complex at The Green, Northampton. *Post-Medieval Archaeology* 30, 63–128.



Coal mining has a long ancestry in the East Midlands, as demonstrated by this pattern of probably sixteenth century mine galleries that was exposed in the middle of the Lounge Opencast site near Coleorton, Leicestershire (photograph: Fred Hartley)

Research Objective 8G

Study the post-Dissolution re-use of monastic structures and the continuity of monastic estates

Summary:

The history of use of medieval monastic buildings and their estates following Henry VIII's dissolution of the monasteries between 1536 and 1539¹ remains poorly known and would benefit from further investigation. Some monastic institutions were abandoned after the Dissolution², but many other monastic buildings were converted to dwellings or other uses³. The conversion from ecclesiastical to secular use is illustrated by virtually all of over one hundred monasteries in the diocese of Lincoln⁴, and elsewhere in the region has been demonstrated by documentary research and fieldwork at former abbey sites such as Launde⁵ and Leicester⁶, and by a study of the buildings and gardens of the former monastic grange at Langtoft Hall Farm in Lincolnshire⁷. The Dissolution provided important opportunities for the acquisition of high-status buildings and for the transfer to secular hands of extensive, well-managed and wealthy monastic estates⁸. While there may have been little change in how the land was managed, many estates will have been sub-divided or amalgamated with other holdings. Such amendments should be visible in the components of the historic landscape, as well as in written records⁹, and merit detailed study as important evidence for the development of patterns of land ownership in the post-Reformation rural landscape.

Agenda topics addressed: 8.6.1.

Archaeology of the East Midlands: 232–233.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111:130).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Places of worship (4DI).

References:

¹ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 105-107. London: Longman.

² e.g. Lenton Priory, Nottinghamshire: Barnes, F.A., 1987. Lenton Priory after the Dissolution: its building and fair ground. *Transactions of the Thoroton Society* 91, 79–95.

³ Courtney, P., 2006. The Post-Medieval Period, in *The Archaeology of the East Midlands*, 221.

⁴ Stocker, D.A., 2006. *England's Landscape: The East Midlands*, 147–148. London: Collins.

⁵ Beavitt, P., 1995. Geophysical and buildings survey at Launde Abbey. *Transactions of the Leicestershire Archaeological and Historical Society* 69, 22–31.

⁶ Buckley, R., 1997. *Abbey Park, Leicester: an Archaeological Desk-Based Assessment and Survey*. University of Leicester Archaeological Services report 97/12.

⁷ Field, N. and Clark, M., 1991. *Langtoft Hall Farm Archaeological Evaluation*. Lindsey Archaeological Services (unpublished survey for Lincolnshire County Council).

⁸ Stocker 2006, 147.

⁹ Courtney 2006, 221–22.



Darley Abbey, Derbyshire: some of the Abbey buildings survived after the Dissolution, including this fifteenth century building that may once have been part of the Abbot's house or Guest House. The building has undergone many changes of use, including accommodation for workers in the adjacent textile mill and, from 1980, a public house (photograph: D. Knight)

Research Objective 8H Investigate graveyards and other burial sites

Summary:

Graveyards and other burials, including the mass graves that may survive at battlefield sites¹ and plague burial sites such as Eyam in Derbyshire² offer a wide range of information relating to demography, personal identity, religious observance and attitudes to death and, in the case of graveyards, the production, manufacture and acquisition of memorials³. Graveyards and the stones they contain are also an important ecological resource meriting conservation. Despite their importance, graveyard memorials are at significant risk, not only from erosion but also as a result of misdirected 'tidying-up' and clearance, perceived safety precautions and direct threats posed by the construction of amenities, and hence recording should be regarded as a priority before irreplaceable evidence is lost. Graveyards also offer a wide range of recording and interpretation opportunities which are particularly well-suited to community groups, and there is a need both to encourage such activities and to ensure a common approach so that comparable information can be retrieved from across the region^{4,5}.

Agenda topics addressed: 8.6.3; 8.7.1.

Archaeology of the East Midlands: 234.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111:130); Understanding past populations of Britain: historic demography and human biology (11111.170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Churchyards, cemeteries and burial grounds (4D2).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.3.1 (People and environment).

References:

¹ e.g. Stoke Field (1487): see Objective 7H; Foard, G., 2008. *Conflict in the Pre-Industrial Landscape of England: a Resource Assessment*, 52–53, fig. 14. University of Leeds.

² Wallis, P., 2005. *A Dreadful Heritage: Interpreting Epidemic Disease at Eyam, 1666–2000*. London: London School of Economics, Department of Economic History (<http://eprints.lse.ac.uk/22546/1/0205Wallis.pdf>).

³ Hickman, D., 1999. Reforming remembrance: funerary commemoration and religious change in Nottinghamshire, 1500–1640. *Transactions of the Thoroton Society* 103, 109–124; compare Mytum, H., 2004. Rural burial and remembrance: changing landscapes of commemoration, in D. Barker and D. Cranstone (eds), *The Archaeology of Industrialization*, 223–240. London: Maney.

⁴ Courtney, P., 2006. The Post-Medieval Period, in *Archaeology of the East Midlands*, 230–231.

⁵ Mytum, H., 2000. *Recording and Analysing Graveyards*. York: CBA Practical Handbooks in Archaeology 15.



St Lawrence, Eyam, Derbyshire: the graveyard has close associations with the victims of the Plague that swept through the village in 1666 and preserves the head and most of the shaft of a richly decorated Anglo-Saxon cross. The shaft is embellished with vine scrolls and interlace, while the cross-head preserves carvings of angels and other figures (photograph: D. Knight)

Research Objective 8I Develop further the study of ceramic assemblages

Summary:

The region as a whole is poorly served by synthetic assessments of post-medieval ceramics, and although a number of key pottery groups from Nottingham, Leicester and elsewhere have been published¹ many important assemblages await full analysis and publication². The development of ceramic studies needs to be underpinned by stronger guidance on the methodologies to be employed during excavation, fieldwalking and post-survey analysis, and by the establishment of a regional ceramic type-series that will facilitate comparison and analysis of pottery and other ceramic artefacts and refine our understanding of ceramic chronology. Particular areas of inquiry, which should be addressed in further appraisals of ceramic assemblages, include the distribution of imported and other high-status pottery as an indicator of developing communications routes and patterns of changing status, diet and fashion³. Studies of individual assemblages which offer the chance to contribute to biographies of households and individuals should be encouraged, while the retrieval and study of assemblages from deserted villages and other rural sites should also be promoted. Ceramic analyses may also contribute to studies of agricultural improvements, as demonstrated by the proposed link between the successful marketing of Ticknall Ware and an expansion of dairy farming in the region (Objective 8E)⁴.

Agenda topics addressed: 8.2.5; 8.8.1–8.8.5.

Archaeology of the East Midlands: 234.

SHAPE 2008: Understanding artefacts and material culture (11111:510).

Other research frameworks:

EH National Heritage Science Strategy Report 2, 2009: Section 3.4.1 (Understanding materials).

Medieval Pottery Research Group 2011, 19–23, especially Research Priorities A1, A5, A6, A7 and A8.

References:

¹ e.g. Coppack, G., 1973. Two eighteenth-century pit-groups from Lincoln. *Lincolnshire History and Archaeology* 8, 115–125; Woodland, R., 1981. The pottery, in Mellor, J. and Pearce, T., *The Austin Friars, Leicester*, 81–129. London: CBA Research Report 35 (important Dissolution group).

² e.g. eighteenth-century inn assemblage from Bowling Green, Leicester, and a probable house-clearance deposit from Halifax Place, Nottingham: Courtney, P., 2006. The Post-Medieval Period, in *The Archaeology of the East Midlands*, 231.

³ As has been done for Lincolnshire: Hurst, J.G., 1991. Medieval and post-medieval pottery imported into Lincolnshire, in D. Tyska, K. Miller and G. Bryant (eds), *Land, People and Landscapes: Essays on the History of the Lincolnshire Region Written in Honour of Rex C.*, 49–65. Lincoln: Lincolnshire County Council.

⁴ Brears, P.C.D., 1971. *The English Country Pottery*, 175. Newton Abbot: David & Charles.



Ticknall Ware: late 15th or 16th century butter pot found *in situ* during excavations of a kiln at Ivy Leigh, Ticknall, Derbyshire. The pot was used as a sagger (a container made of refractory clay used to protect clay products and glazes from flames and gases during firing) and still contains the jug to be fired (photograph © Jonathan Smith; reproduced by permission of the Ticknall Archaeology Research Group and Archaeological Project Services).

Research Objective 8J Investigate Civil War defences, siege works and battlefields

Summary:

The East Midlands was an important arena of conflict during the First (1642–1646) and Second (1648) Civil Wars¹, and this turbulent period saw the fortification of key towns such as Leicester, Nottingham and Northampton and some of its gentry houses². The region preserves several battlefield and siege sites of national importance, including the decisive Battle of Naseby (1645)³ and the remarkable complex of siege works encircling Newark-on-Trent⁴, plus many other skirmish, battle and siege sites. Many of these are vulnerable to development and require the formulation of appropriate conservation and management strategies. There is an urgent need for an assessment of the survival and condition of structural remains at siege sites, together with a separate assessment of the taphonomy of battle archaeology to determine the factors determining the survival and condition of metal artefact scatters. These could provide a foundation for subsequent investigation by a combination of metal detector survey, remote sensing, excavation, documentary and topographic work. Appropriate methodologies have been developed at Naseby⁵ and several other sites in the region, including Leicester⁶ and Grafton Regis⁷ in Northamptonshire, and should be extended to other sites in the region. Newark, with its exceptional system of preserved offensive and defensive monuments, stands out as an ideal focus for further study, which could build upon the excellent survey conducted by the Royal Commission⁴ and more recent work associated with the Monuments Protection Programme⁸. Building particularly upon the experience of work carried out at Bosworth (Objective 7H), there is also significant scope for community involvement.

Agenda topics addressed: 8.7.1–8.7.3.

Archaeology of the East Midlands: 234.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111:130) and assessing regional historic environment components (11111:170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Battlefields (4EI).

Other research frameworks:

Foard, G., 2008. *Conflict in the Pre-Industrial Landscape of England: a Resource Assessment*, 265–269. Leeds: University of Leeds.

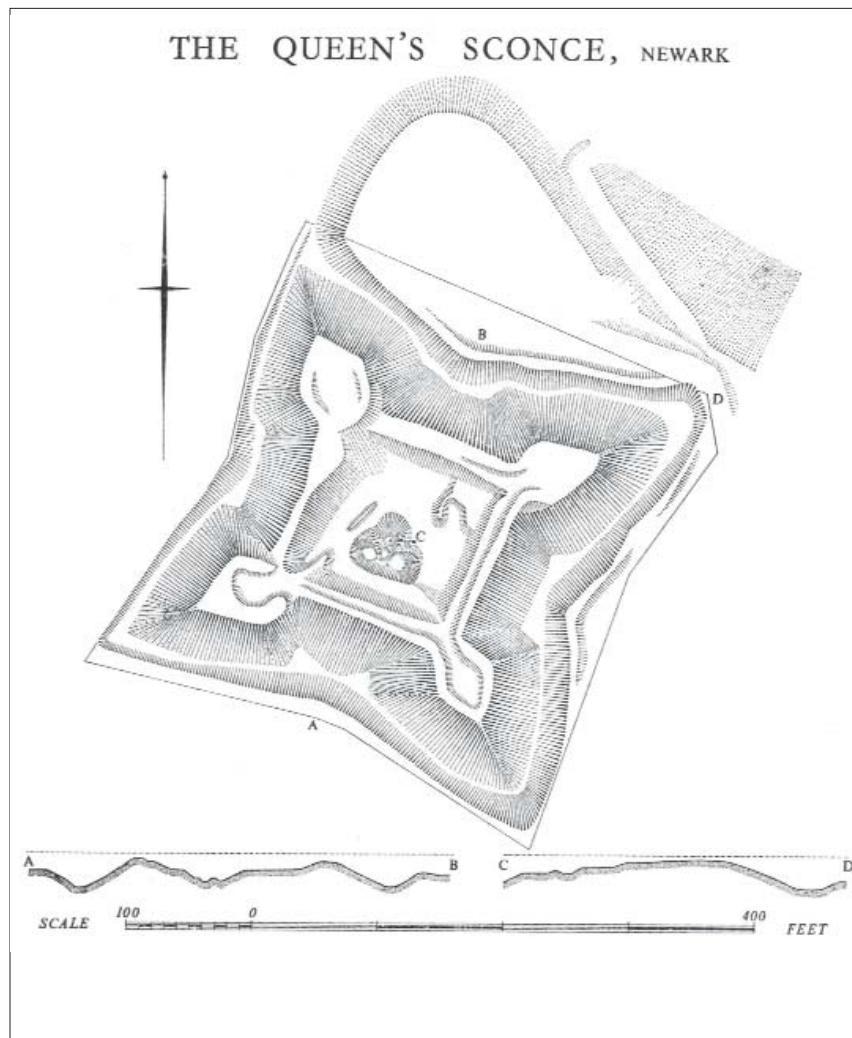
References:

- ¹ Sherwood, R.E., 1974. *Civil Strife in the Midlands 1642–1651*. London: Phillimore.
- ² Courtney, P., 2006. The Post-Medieval Period, in *The Archaeology of the East Midlands*, 234.
- ³ Foard, G., 1995. *Naseby The Decisive Campaign*. Whitstable: Pryor Publications.
- ⁴ Royal Commission on Historical Monuments of England, 1964. *The Civil War Siegeworks of Newark on Trent*. London: HMSO.
- ⁵ Foard 1995; see also general discussion of methodology in Foard 2008, 24–59.
- ⁶ Courtney, P. and Courtney, Y.C.S., 1992. A siege examined: the Civil War archaeology of Leicester. *Post-Medieval Archaeology* 26, 47–90.
- ⁷ Foard 2008, 169–170.
- ⁸ Holyoak, V., 1997. Civil War monument project, Newark-on-Trent, Nottinghamshire: rediscovery of Civil War redoubt Z. *Transactions of the Thorton Society* 101, 109–118.

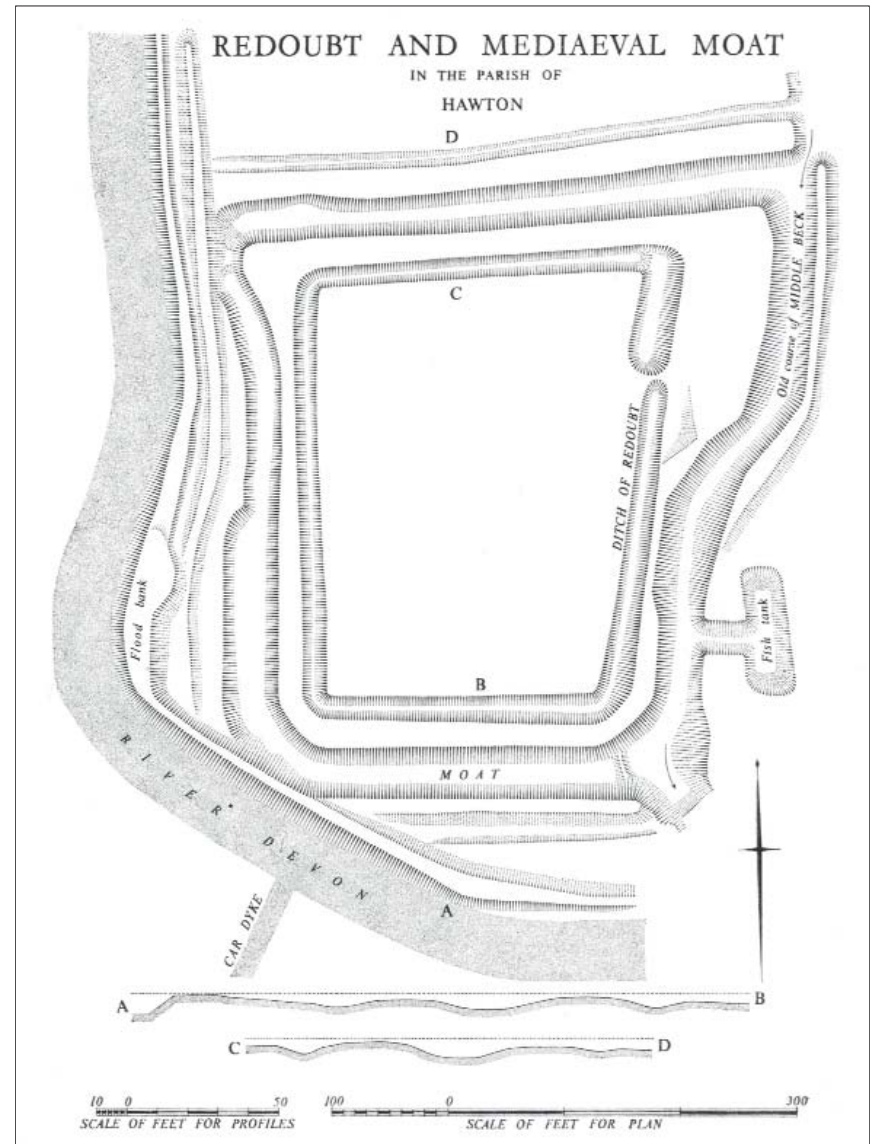


Civil War ditch under excavation at Mill Lane, Leicester (Courtney 2006, 230; photograph reproduced by permission of University of Leicester Archaeological Services)

Plans of two of the many Civil War monuments that are preserved in and around Newark, Nottinghamshire (RCHME 1964, figs 3 and 9; © English Heritage)



The Queen's Sconce. This remarkably well preserved example of a sconce (detached fort with bastions) was constructed by the Royalist defenders of Newark on an elevated gravel spur overlooking the crossing of the River Devon by the Fosse Way



Parliamentarian redoubt (small detached stronghold without provision for flank defences) at Hawton. This fortification was built to the south-west of Newark beside the River Devon, inside the moated enclosure of a destroyed 15th-century mansion

6.9 MODERN (1750 TO PRESENT): UPDATED RESEARCH AGENDA

9.1 *Urban and rural settlements*

1. How have industrialisation and population growth impacted upon settlement patterns and the agricultural economy?
2. How have established and nascent settlements developed in terms of their morphology, internal organisation and functions, and how far may land ownership and legislative controls have influenced development?
3. How have settlements expanded beyond their historic cores (e.g. suburban growth, peripheral housing estates and industrial parks)?
4. What impact have co-operative movements and paternalism had on the social, economic and physical development of settlements?
5. How have the expanding public utilities impacted upon development (particularly those relating to waste management)?
6. How far may urbanisation and industrialisation have enhanced living conditions and diet (e.g. from assessment of environmental data)?

9.2 *Buildings in town and countryside*

1. Can we establish a typology of modern buildings, particularly of the twentieth century, and how does this vary regionally?
2. How have building types changed (e.g. adaption of industrial buildings to new uses) and what has been the impact of building regulations?
3. How have mass housing developments and civic or public buildings such as prisons, schools and workhouses influenced settlement growth?
4. To what extent are issues of power, control and status reflected in regional building types?

9.3 *Cultural diversity and religion*

1. What has been the impact of cultural diversity upon the buildings record, settlement development and industrial and commercial growth?
2. What is the range and nature of religious buildings, how do these vary between religious faiths, and how have buildings been adapted for use by different religious groups?
3. How can we establish a typology of church and chapel styles, including internal furnishings, decoration and monuments?
4. What may be deduced from cemetery studies about changing attitudes to burial and remembrance and evolving funerary architecture?

9.4 *The transport infrastructure*

1. What linear transport features, river/canal craft and associated structural remains have survived, and how does this vary regionally?
2. What roles have different transport systems played in the development of industry, commerce, agriculture and settlement?
3. How has the relationship between linear transport systems developed over time (e.g. shift from canal to rail transport)?
4. Can associated construction sites be identified (e.g. navy camps)?
5. What impact has airport development had upon the landscape and transport infrastructure?

9.5 *Estates, parks, gardens and woodland*

1. What was the social role and influence of country houses and estates?
2. What survives of country estates, parks and gardens, how are they distributed, and how should they be classified?
3. Can we establish a typology of buildings and other structures associated with country estates, parks and gardens (e.g. estate villages)?
4. How may élite landscapes have influenced municipal park designs?
5. How was woodland managed and exploited for industrial use, and what is the range of surviving evidence?
6. How have recreational activities, including gentry pursuits such as fox-hunting and game shooting, impacted upon landscapes and buildings?

9.6 *Agriculture*

1. What was the impetus for the development of estate farming and rural agricultural industries, and what has been the landscape impact?
2. How did Parliamentary enclosure and other agricultural improvements (e.g. water management) impact upon the rural landscape?
3. What was the role and distribution of planned model farms?
4. How can archaeology contribute to studies of the changing aspirations of the rural working classes (e.g. provision of allotments and schools)?
5. What changes and improvements have occurred in animal husbandry and use (e.g. new breeds, traction and traded animal products)?
6. What crops and garden plants have been recorded in the countryside and urban market gardens, and what innovations may be identified?

9.7 *The growth of industry*

1. What craft industries existed prior to 1850 and can we identify the remains of associated buildings and other structures?
2. How have agricultural processing industries such as brewing, malting and milling developed, and what structural remains have survived?
3. How can we enhance our records of mines and surface features associated with extractive industry and their relationship to markets, settlements and transport?
4. How can we develop further our understanding of brick-making and the manufacture of pottery, tiles and clay pipes?
5. How did the wool, cotton, hosiery and lace mills and their water management systems develop and interrelate, and how did the relationship between home and factory production vary?
6. Can we elucidate further the development and organisation of the Northamptonshire and Leicestershire boot and shoe industry?

9.8 *Military sites*

1. Can we establish a typology of surviving post-1750 military remains?
2. How are military sites distributed across the region?
3. What impacts have military developments had upon settlement development, landscapes, industry and transport?

MODERN (1750 TO PRESENT): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives	9.1. Urban and rural settlements						9.2 Buildings in town and countryside				9.3 Cultural diversity and religion				9.4 The transport infrastructure					9.5 Estates, parks, gardens and woodland						9.6 Agriculture						9.7 The growth of industry						9.8 Military sites		
	1	2	3	4	5	6	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3
9A Assess urban building types of the early 20th century	●	●	●				●	●																																
9B Examine the early development of utilities	●	●			●	●																																		
9C Investigate the development of social & religious buildings											●	●	●	●																										
9D Investigate use of rivers for transport & power															●	●	●	●																	●					
9E Assess role & landscape impact of woodland industries																																●								
9F Explore landscape legacy of rural leisure pursuits																				●			●		●															
9G Assess landscape impact of industrialisation of agriculture							●	●		●													●			●				●										
9H Identify & record rural historic environment features							●	●				●											●		●		●					●	●	●				●	●	●
9I Explore evidence for non-factory trades and industries	●	●					●	●																								●				●	●			
9J War in the towns: research the urban infrastructure of war		●	●				●	●																														●	●	●
9K Investigate the industrialisation of the Derwent Valley	●	●		●		●	●	●	●	●					●	●	●															●	●			●				

Research Objective 9A

Assess urban building types of the early twentieth century

Summary:

Conservation Area designations¹ go some way to protecting townscapes where there are coherent groups of buildings, but are less often applied to areas where the identity of buildings is not clear and where attrition has brought gaps and 'unwelcome' intrusions into the townscape². As a result, some types of building – especially small-scale industrial buildings – are poorly protected, little understood or appreciated, and subject to continued threat by demolition. Typically, these occur in areas that were developed in the inter-war years and are now sandwiched between the nineteenth-century suburbs and the twentieth-century business park. These locales can also contain early industrial structures made from materials which, although mass-produced, nevertheless retain local distinctiveness. Examples include concrete walling, asbestos and tinsplate roofing, together with steel roof trusses. These areas rarely form part of Conservation Areas and are generally subject to piecemeal redevelopment. There is a need to review the industrial building types of these areas in order to establish effective continuing management regimes and to inform the Historic Area Appraisals which are now being advocated by English Heritage. The Research Objective could be extended to other types of twentieth century-building, such as public houses, banks, garages and schools, with the aim of identifying structures of intrinsic interest that might be vulnerable to demolition and ensuring appropriate recording and analysis of such buildings.

Agenda topics addressed: 9.1.1–9.1.3; 9.2.1; 9.2.2.

Archaeology of the East Midlands: 242, 257.

SHAPE 2008: Understanding place: analysis of specific historic assets and locales (11111:130) and assessing historic environment components (11111:170).

NHPP 2011: Historic towns and suburbs (4A1); Public, civil and communal buildings (4A4); Traditional industry, modern industry, mining and associated housing (4B2).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priorities UR4 (The twentieth century) and UR9 (Threatened or vulnerable building types).

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priority IND5 (Impact of industrialisation: understanding industrial buildings and sites).

References:

¹ <http://www.english-heritage.org.uk/caring/listing/local/conservation-areas/>

² For the conservation context of modern buildings see Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 238–239; for recommendations regarding buildings generally, see Campion 2006, 242–243.



The former Douglas Garage, built in 1937 in Sheep Street, Northampton, was demolished in 2004 after a desk-based assessment, building recording and analysis (Webster, M. and Parry, S., 2010. The 1930s Douglas Garage at 46–50 Sheep Street, Northampton. *Northamptonshire Archaeology* 36, 165–167). This stylish, purpose-built garage was designed in Art Deco style by the Long Buckby architect Frank Cole and comprised a maintenance area, sale room and living accommodation above (photograph after 1953, from Douglas family collection; reproduced by permission of the Douglas family and Northamptonshire Archaeology)

Research Objective 9B Before the grid: examine the early development of utilities

Summary:

The industrialisation of town and country¹ and advances in public health and quality of life² were accelerated by the provision from the nineteenth century of piped water, gas, electricity and sewerage facilities. Several valuable reviews of this subject are available^{3,4}, including syntheses produced as part of the Monuments Protection Programme^{5,6}. However, the massive scale of later provision has obliterated much early evidence, which it is suggested should be located and recorded to elucidate the earliest phases of development. Water was provided in the eighteenth century from wells, pumps, streams and ponds, sometimes via semi-culverted courses that may have served both people and animals, and piped water supplies and associated structures⁷ only developed from the mid-nineteenth century, together with sewerage facilities. Local gasworks, which provided power principally for domestic and street lighting, emerged in towns from the 1820s, often close to the railway that brought the coal supplies. The major rivers of the East Midlands enabled large-scale production of electricity from the 1890s, augmented by electricity from gasworks; this provided power to urban areas, but many rural areas did not have electricity until the National Grid was established in 1947⁸. It is recommended that surviving physical evidence for the earlier phases of utility provision be identified and recorded in order to clarify the early history of utilities and to permit assessment of variations between town and country and across the region.

Agenda topics addressed: 9.1.1; 9.1.2; 9.1.5; 9.1.6.

Archaeology of the East Midlands: 244, 257.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170) and researching regional diversity (11111.310).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Historic water management assets (4B1); Traditional industry, modern industry, mining and associated housing (4B2).

Other research frameworks:

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priority IND4 (The impact of industrialisation: transport systems, communications and public utilities).

References:

- ¹ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 274–298. London: Longman.
- ² Beckett 1988, 244–246.
- ³ Palmer, M. and Neaverson, P., 1992. *Industrial Landscapes of the East Midlands*. Chichester: Phillimore.
- ⁴ Cossons, N., 1993 (3rd edn). *The BP Book of Industrial Archaeology*, 215–234. Newton Abbott: David & Charles,
- ⁵ Schofield, J., 2000. *MPP 2000: A Review of the Monuments Protection Programme, 1986–2000*. London: English Heritage.
- ⁶ e.g. Trueman, M., 1995. *MPP: Electric Power Generation. Step 3 Report*. London: English Heritage; Trueman, M., 2000. *MPP: Water and Sewage Industries. Step 3 Report*. London: English Heritage; Trueman, M., 2002. *MPP: Gas Industry. Step 3 Report*. London: English Heritage.
- ⁷ e.g. pumping stations; notably at Bestwood and Papplewick, Nottinghamshire: Palmer and Neaverson 1992, 111.
- ⁸ Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 244.



Bunny, Nottinghamshire: the only surviving example of a row of three 18th century brick-built structures erected along the line of a water pipe linking Bunny Hall to an extant conduit house above a spring. The interior would have held water over the entire floor to a depth of c.0.6m, possibly as a means of monitoring water flow along the pipe (photograph: Richard Sheppard)

Research Objective 9C

Investigate the development of social and religious building types

Summary:

Early Ordnance Survey maps of the East Midlands show large numbers and a high turnover of chapel buildings during the nineteenth and early twentieth centuries, particularly in the developing industrial settlements of areas such as the Nottinghamshire and Derbyshire coalfields¹. Detailed survey and analysis of the many Methodist and other non-conformist chapels and meeting places that developed in towns and villages from the eighteenth century² would add usefully to our understanding not only of changing architectural styles but also the relationship of these buildings to the communities that they served and the impact of religious denominations upon settlement growth³. Survey could usefully be extended to associated cemeteries and to the wide variety of community and other social buildings that characterise these communities, including schools, miners' baths, public houses, social clubs and cinemas⁴. Taking a broader perspective, this Research Objective could also be developed to consider the impact of ethnic groups upon the religious architecture of multicultural centres such as Nottingham, Leicester, Loughborough and Northampton⁵.

Agenda topics addressed: 9.3.1–9.3.4.

Archaeology of the East Midlands: 243, 257.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170).

NHPP 2011: Later twentieth-century heritage (4A2); Public, civic and communal buildings (4A4); Places of worship (4D1); Churches, cemeteries and burial grounds (4D2).

Other research frameworks:

EH Thematic Research Strategy for the Urban Historic Environment 2010: Priorities UR4 (The twentieth century), UR5 (Parks, open spaces and cemeteries) and UR9 (Threatened and vulnerable building types).

References:

¹ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 256–259. London: Longman.

² Developing from recent surveys of non-conformist chapels and meeting places: Stell, C., 1986. *Nonconformist Chapels and Meeting Houses in Central England*. London: RCHME (including chapels in the historic counties of Derbyshire, Leicestershire, Northamptonshire, Nottinghamshire and Rutland); Stell, C., 2001. *Nonconformist Chapels and Meeting Houses in Eastern England*. London: English Heritage (including chapels in the historic county of Lincolnshire).

³ Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 243.

⁴ Beckett 1988, 249–256; e.g. the pioneering school buildings of George Widdows, appointed architect to Derbyshire County Council in 1910: www.c20society.org.uk/botm/archive/2009/ilkeston-school-derbyshire.html

⁵ Campion 2006, 242.



Impressive Ionic portico and pediment of the Centenary Wesleyan Chapel on Union Street, Market Rasen, Lincolnshire, built in 1863 to a design by William Botterill. Most of the original fittings survive, including glazed box pews, oval gallery and pulpit (photograph: David Stocker)

Research Objective 9D

Investigate the use of rivers for transport and power and their relationship to other communications networks

Summary:

Industrial development during the eighteenth century led to the increased use of East Midlands rivers such as the Nene and the Trent for the transport of goods and for the generation of power¹, embracing thereby two functions which were not always compatible². Early use of the minor rivers, such as the Derbyshire Wye, was succeeded from early in the eighteenth century by improvement works carried out on the Nene³ and Trent⁴. In addition to documentary sources, archaeological evidence for navigation improvements and water management takes a surprising variety of forms, ranging from canal cuts and channels, flood-banks and spoil from river dredging, weirs, locks, wharves, sunken boats and boatyards to warehouses and bridges⁵. The rivers were important for moving and distributing not only the products of the extractive industries, especially coal and lead, but also the products of agriculture, such as grain and timber, and those of rural and urban industry, such as pottery, brick and tile. They were pivotal, therefore, to the industrialisation of the region. There is also considerable scope for investigating the relationship of river transport to other linear transport networks, including canals not forming parts of improved waterways, turnpike roads, horse-drawn tramways and, from the nineteenth century, the developing railways⁶⁻⁸.

Agenda topics addressed: 9.4.1–9.4.4; 9.7.5.

Archaeology of the East Midlands: 234, 257.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170).

NHPP 2011: Historic water management assets (4B1); Transport and communications (4B3).

Other research frameworks:

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priority IND4 (The impact of industrialisation: transport systems, communications and public utilities).

References:

¹ e.g. Derwent and Wye Valleys: see Objective 9K.

² Courtney, P., 2006. The Post-Medieval period, in *The Archaeology of the East Midlands*, 229.

³ Alsop, J.D., 1986. The development of inland navigation on the River Nene in the early eighteenth century. *Northamptonshire Past and Present* 7, 161–163.

⁴ Wood, A.C., 1950. The history of trade and transport on the River Trent. *Transactions of the Thoroton Society* 54, 1–44.

⁵ Hudson, K., 1966. *Industrial Archaeology: An Introduction*, 126–132. London: John Baker.

⁶ Beckett, J.V., 1988. *The East Midlands from AD 1000*, 260–274, 327–330. London: Longman.

⁷ Palmer, M. and Neaverson, P., 1992. *Industrial Landscapes of the East Midlands*. Chichester: Phillimore.

⁸ Leleux, R., 1984. *A Regional History of the Railways of Great Britain: IX: The East Midlands* (2nd edn). Newton Abbott: David & Charles.



Foxton, Leicestershire: construction of this dramatic flight of two consecutive staircases of locks, each comprising five narrow chambers and separated by a passing pound, was completed in 1812, enabling the Grand Union Canal to ascend some 23m from the Market Harborough level (Palmer and Neaverson 1992, 76–78; photograph: Richard Sheppard)

Research Objective 9E

Assess the role and landscape impact of woodland industries

Summary:

A broad range of woodland industries, persisting as important components of the rural economy into the early twentieth century¹, may be deduced from documentary, ecological and archaeological sources. The field evidence includes woodland boundaries, engineered woodland tracks, pollarded and coppiced trees at production sites, sawmills at timber processing sites and the often small-scale industrial sites where the timber products were used^{2,3}. Demand shifted during the course of the period away from the substantial oak timbers that were needed up to around 1850 for building and shipbuilding towards light wood and timber products. Particularly close links may be demonstrated from the 1780s with the developing leather industry, which relied upon oak bark for tanning, obtained principally from sources in Rockingham and Sherwood Forests⁴. Strong local traditions may be demonstrated, as exemplified by a focus upon willow basket and container manufacture in the Trent Valley⁵. There is significant scope for elucidating further these traditions, and for clarifying by further field survey woodland management practices and the distribution of saw mills, wood yards and other physical traces of woodland industries such as charcoal and white-coal (kiln-dried wood) production⁶. Important features may survive in woodland not yet surveyed in detail and in other landscapes comparatively unscathed by later developments (especially the parklands attached to large country houses such as Chatsworth and Castle Ashby⁷).

Agenda topics addressed: 9.5.5; 9.7.1.

Archaeology of the East Midlands: 246, 257.

SHAPE 2008: Understanding place: assessing historic areas (11111.150), assessing regional historic environment components (11111:170) and researching regional diversity (11111.310).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Traditional industry, modern industry, mining and associated housing (4B2).

Other research frameworks:

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priorities IND 3 and 5 (Impact of industrialisation: industrial landscapes; understanding industrial buildings and sites).

References:

- ¹ Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 246.
- ² Watkins, C., 1990. *Woodland Management and Conservation*, 39–55. Newton Abbot: David & Charles.
- ³ Rackham, O., 1987. *The History of the English Countryside*, 62–118. London: Dent.
- ⁴ Campion 2006, 246.
- ⁵ Cousins, R., 2007. *A Basketful: Willow Growing and Basketmaking in Nottinghamshire and Lincolnshire*. Nottingham: Nottinghamshire County Council and Heritage Lincolnshire.
- ⁶ Crossley, D., 1990. *Post-Medieval Archaeology in Britain*, 22–24, 189–191. Leicester: Leicester University Press.
- ⁷ Barnett, J. and Williamson, T., 2005. *Chatsworth: A Landscape History*. Macclesfield: Windgather Press; Barnatt, J. and Bannister, N., 2009. *The Archaeology of a Great Estate: Chatsworth and Beyond*. Macclesfield: Windgather Press; Campion 2006, 246.



Late 19th century engine house, now used for storage, associated with a 19th century saw mill complex preserved in the woodlands of Kedleston Park, Derbyshire (photograph: D. Knight)

Research Objective 9F

Explore the landscape legacy of fox-hunting and other rural leisure pursuits

Summary:

The increasingly efficient and productive agricultural landscape of the nineteenth century also provided the locale for fox-hunting and other leisure pursuits, although the history of investigation has tended to focus on the contemporary agricultural use of the countryside¹. Finch has drawn attention to the ways in which fox-hunting influenced the construction of the nineteenth-century landscape, leading to the establishment of coverts of low scrub cover, modifications to hedges and the development of kennels for hounds². Today, the over-grown fox coverts constitute an important historic woodland resource that is largely neglected by Historic Environment Records³. Further research is needed into the history of establishment of the coverts, the uses to which they were put, and the ecological and landscape resource that they now offer. Ancillary research into the landscape and social history of fox-hunting and other contemporary sports such as duck and game shooting would allow the identification of associated small and large-scale landscape features such as fowling decoys and shooting butts⁴. The latter are particularly characteristic of upland Derbyshire, where alignments of earthen and stone-built grouse-shooting butts and cabins providing shelter and storage for shooting parties are scattered widely over the gritstone moorlands⁵.

Agenda topics addressed: 9.5.1; 9.5.3; 9.5.6.

Archaeology of the East Midlands: 246, 257.

SHAPE 2008: Understanding place: assessing historic areas (11111.150) and assessing regional historic environment components (11111.170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Sport and entertainment buildings and landscapes (4C1).

References:

¹ Champion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 246.

² Finch, J., 2004. 'Grass, grass, grass': fox-hunting and the creation of the modern landscape. *Landscapes* 5, 41–52.

³ Finch, J., 2007. 'Wider famed countries': historic landscape characterisation in the Midland shires. *Landscapes* 8, 50–63.

⁴ Jones, E.L., 2009. The environmental effects of blood sports in lowland England since 1750. *Rural History, Culture and Society* 20, 51–66.

Bevan, B., 2004. *The Upper Derwent. 10,000 Years in a Peak District Valley*, 126–129. Stroud: Tempus.



Grouse-shooting butts on Big Moor, Derbyshire. Most are characterised by a distinctive penannular earthwork (top: entrance marked by ranging rod, on the side opposite the direction of fire) but some are constructed of stone (below: built into a Bronze Age burial cairn; photographs: D. Knight)

Research Objective 9G

Assess the landscape impact of the early industrialisation of agriculture

Summary:

There has been little research into the physical impact of the early industrialisation of agriculture, which took place at a much slower rate than in industry^{1,2}. During the nineteenth century, horse gins in distinctive housings powered mills to produce food for horses and livestock, while from the second half of the nineteenth century arable agriculture was revolutionised by steam ploughing. The latter entailed the use of wide, straight headlands for traversing by engine, and created a distinctive pattern of straight ridge-and-furrow contrasting with the wider, sinuous features that characterise relics of the medieval open-field system³. Because of the cost and complexity of the process, steam ploughing was often undertaken by contractors. However, the advent of paraffin and diesel-engined tractors after World War I brought mechanisation on a large scale, and with it engine sheds and fuel tanks in place of stables and fodder stores. The internal combustion engine also allowed dairying to be industrialised, and from early in the twentieth century new milking parlours were built and fitted with oil-engined milking machines. All these features of a nascent period of agricultural development are increasingly disappearing with no record, while those that have survived the modernisation of the later twentieth century are being removed during the conversion of farms into house complexes. Such trends emphasise the importance of instigating a systematic regional survey of this dwindling evidence for the landscape impact of the early industrialisation of the farming economy.

Agenda topics addressed: 9.2.1; 9.2.2; 9.2.4; 9.5.3; 9.6.1; 9.7.2.

Archaeology of the East Midlands: 247, 257.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170); Understanding ancient environments and ecologies (11111:420).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Rural historic buildings and their settings (4F1).

References:

¹ Campion, G., 2006. The Modern Period, in *The Archaeology of the East Midlands*, 246–247.

² Beckett, J.V., 1988. *The East Midlands from AD 1000*, 200-208. London: Longman.

³ Haining, J. and Tyler, C., 1970. *Ploughing By Steam*, 96–117. Bath: Ashgrove Press; Bowen, H.C., 1961. *Ancient Fields*, 46–50. London: Cobbett; Anderton, M. and Went, D., 2002. Turning the plough: loss of a landscape legacy. *English Heritage Conservation Bulletin* 42, 52–55.



Fowler ploughing engine and a 7-furrow balance plough at work in a ploughing demonstration at Roxton Park, Bedfordshire in 1986 (photograph: John F. Clay)

Research Objective 9H Characterising the rural environment: identify and record historic buildings and landscape features

Summary:

Although agri-environment schemes have for many years paid attention to archaeological features, they have been much less concerned with agricultural impacts on land-holdings in general and with minor buildings and historic landscape features¹. Many of the latter, such as roadside horse troughs, milk churn stands and the vitally important dew ponds of upland Derbyshire, may elude Historic Environment Records, and may be lost without record as a consequence of agricultural improvements or other developments. There is a pressing need, therefore, to develop a strategy to identify and safeguard the range of features that might be anticipated in rural contexts and to quantify the anticipated variability between geological and topographic zones². This could usefully accompany an extension of vernacular buildings surveys, carried out to the level recommended by the Society for the Protection of Ancient Buildings (SPAB) and including farmhouses, estate buildings, barns and other specialist agricultural buildings³. Coverage of the vernacular building resource is sporadic across the region and the level of detail is variable. Some areas have a high level of baseline coverage but few detailed recordings – for example in Nottinghamshire, where SPAB-compliant surveys have been carried out for around only 15% of historic farmsteads⁴. This limits assessment of architectural details and local distinctiveness (for example in barn ventilation slot arrangements, types of roof structure and the internal configurations of farm buildings) and hence studies of historic landscape character.

Agenda topics addressed: 9.2.1; 9.2.2; 9.3.2; 9.5.3; 9.5.6; 9.6.3; 9.6.4; 9.7.2–9.7.4; 9.8.1–9.8.3.

Archaeology of the East Midlands: 247.

SHAPE 2008: Understanding place: assessing historic areas (11111.150) and assessing regional historic environment components (11111:170).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Rural historic buildings and their settings (4FI).

References:

¹ Knight, B., 2007. Rural Development Agencies and rural heritage. *English Heritage Conservation Bulletin* 54, 29–31.

² Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 246–247.

³ Campion 2006, 247; Oxley, R., 2010. *Survey and Repair of Traditional Buildings*. Shaftesbury: Donhead.

⁴ Nottinghamshire County Council Historic Environment Records; source: J. Mordan.



Gratton Grange, near Middleton by Youlgreave, Derbyshire: open-fronted cart shed of coursed granite, constructed in 1853. The shed was provided with four bays separated by rusticated columns that supported stone lintels (photograph: D. Knight)

Research Objective 9I

Explore the evidence for continuing non-factory trades and industries

Summary:

The pace of industrialisation in the East Midlands varied considerably from one industry to another, with the early application of water-power to textile spinning contrasting with the long-lasting small scale of industries such as hosiery and boot and shoe manufacture^{1,2}. Framework knitting outworking in houses and workshops continued into the later nineteenth century in areas of Derbyshire, Leicestershire and Nottinghamshire³. Boot and shoe manufacture continued under a similar outworking system over much the same period, and was especially important in Leicestershire and Northamptonshire^{4,5}. There is a need for further scrutiny through a variety of techniques of the methods of the small-scale industries. Archaeology can illuminate the scale and use of buildings and associated rubbish deposits, economic and demographic factors, and the topographical context, but input is also required from economic historians and geographers when examining many aspects of more recent archaeology. Building analysis can also provide insights into the arrangement of industrial and domestic functions and hence contribute to a more detailed understanding of social heritage.

Agenda topics addressed: 9.1.1–9.1.3; 9.2.1; 9.2.2; 9.7.1; 9.7.5; 9.7.6.

Archaeology of the East Midlands: 251–253, 257.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170) and researching regional diversity (11111.310).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Traditional industry, modern industry, mining and associated housing (4B2).

Other research frameworks:

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priorities IND 3 and 5 (Impact of industrialisation: industrial landscapes; understanding industrial buildings and sites).

References:

¹ Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 251–253.

² Beckett, J.V., 1988. *The East Midlands from AD 1000*. London: Longman.

³ Chapman, S.D., 2002. Hosiery and knitwear: four centuries of small-scale industry in Britain c.1589–2000. *Pasold Studies in Textile History* 12.

⁴ Stocker, D.A., 2006. *England's Landscape: The East Midlands*, 164–165. London: Collins.

⁵ Campion, G., 2001. People, process, power and place: an archaeology of control in East Midlands outworking 1820–1900, in M. Palmer and P. Neaveon (eds), *From Industrial Revolution to Consumer Revolution: International Perspectives on the Archaeology of Industrialisation*, 75–84. Papers of the International Committee for the Conservation of the Industrial Heritage 2000 Congress.



Framework knitters' cottages in Lower Bond Street, Hinckley, Leicestershire, associated with hosiery production from the early eighteenth to late nineteenth century (photograph: D. Knight)

Research Objective 9J

War in the towns: research the urban infrastructure of war

Summary:

The East Midlands preserves an extensive range of remains dating from World Wars I and II and the Cold War, including airfields, pill boxes, communal bunkers, anti-aircraft batteries and searchlight emplacements¹. These have attracted significant survey and recording in recent years²⁻⁴, but the urban infrastructure of war is much less well-researched and significantly less well-known. Unglamorous buildings and developments such as barracks and drill halls, factory extensions and storage depots, often on the urban fringe, are all in need of recording, the more so because construction plans and other information are often not available. All are vulnerable to redevelopment, and recording would contribute valuable data to the Historic Environment Records that underpin the planning system and assist future academic enquiry.

Agenda topics addressed: 9.1.2; 9.1.3; 9.2.1; 9.2.2; 9.8.1–9.8.3.

Archaeology of the East Midlands: 256–257.

SHAPE 2008: Understanding place: assessing regional historic environment components (11111:170); New frontiers: the recent past (11112.410).

NHPP 2011: Historic towns and suburbs (4A1); Twentieth-century military heritage (4E2).

Other research frameworks:

Schofield, J., 2004. *Modern Military Matters. Studying and managing the twentieth century defence heritage in Britain: a discussion document*. York: Council for British Archaeology (Research Theme A4: Civil infrastructure).
EH Thematic Research Strategy for the Urban Historic Environment 2010: Priority UR4 (The twentieth century).

References:

¹ Campion, G., 2006. The Modern period, in *The Archaeology of the East Midlands*, 254–257.

² See papers in English Heritage's *Conservation Bulletin* 44, 2003: The Archaeology of Conflict.

³ Brown, I., Burridge, D., Clark, D. et al., 1995. *Twentieth Century Defences in Britain: An Introductory Guide*. York: CBA Practical Handbooks in Archaeology 12.

⁴ Schofield, J., 2004. *Modern Military Matters. Studying and managing the twentieth century defence heritage in Britain: a discussion document*. York: Council for British Archaeology.



Second World War air raid shelter exposed during construction work in Worksop Market Place, Nottinghamshire (left; photograph: Richard Sheppard) and the foundations of a probable water tower, placed near the fence demarcating a prisoner-of-war camp constructed in Wollaton Park, Nottingham, during the Second World War (photograph: Lee Elliott)



Research Objective 9K Investigate further the industrialisation of the Derwent Valley

Summary:

A string of cotton mills was established in the eighteenth century along 24km of the Derwent Valley between Matlock and Derby, each of which was larger in scale, output and labour force than any earlier industrial undertaking¹. The change from water to steam power in the nineteenth century caused the foci of industry to shift elsewhere, with the result that many mill buildings, associated workers' houses, canals, dismantled tramway lines and other landscape features, such as quarries for the manufacture of millstones and grindstones, have survived. This area is of critical importance to the development of the industrial revolution, as recognised by its designation in 2001 as a World Heritage Site, and preserves a complex of mills and associated remains of international importance. Valuable surveys have been completed of individual mills and ancillary structures², while Conservation Area status has contributed to the protection of individual structures, but the area would benefit from continued investment in public information and interpretation facilities and further research into the origins and development of the textile industry. In addition to the need to make more information generally available, historic landscape features relating to the infrastructure of industry and the supporting agricultural landscape should be assessed for their potential to illuminate the context of the industrialisation of the textile industry³.

Agenda topics addressed: 9.1.1; 9.1.2; 9.1.4; 9.1.6; 9.2.1–9.2.4; 9.4.1–9.4.3; 9.7.1; 9.7.2; 9.7.5.

Archaeology of the East Midlands: 251, 257.

SHAPE 2008: Understanding place: assessing historic areas (11111.150).

NHPP 2011: Identification of terrestrial assets via non-intrusive survey (3A4); Historic water management assets (4B1); Traditional industry, modern industry, mining and associated housing (4B2); Transport and communications (4B3).

Other research frameworks:

EH Thematic Research Strategy for the Historic Industrial Environment 2010: Priorities IND 3, 4 and 5 (Impact of industrialisation: industrial landscapes; Transport systems, communications and public utilities; Understanding industrial buildings and sites).

References

- ¹ Cooper, B., 1983. *Transformation of a Valley. The Derbyshire Derwent*. London: Heinemann; Derwent Valley Mills Partnership, 2011. *The Derwent Valley Mills and Their Communities*. Matlock: Derwent Valley Mills Partnership; Menuge, A., 1993. The cotton mills of the Derbyshire Derwent and its tributaries. *Industrial Archaeology Review* 16, 38–61.
- ² e.g. Menuge, A., 2006. *Boars Head Mills, Darley Abbey, Derby: A Survey and Investigation of the Cotton Mills and Ancillary Buildings*. English Heritage Research Department Report Series 35/2006.
- ³ Compare Alfrey, J. and Clark, C., 1993. *The Landscape of Industry: Patterns of Change in the Ironbridge Gorge*. London: Routledge.



Belper, Derbyshire: the brick-built East Mill with square corner towers, built in 1912, abuts the T-shaped five-storey North Mill, built by William Strutt in 1804 (right). The latter is a very early example of a fire-proofed mill, with cast iron framing and arched brick ceilings (photograph: D. Knight)



Boars Head Mills, Darley Abbey, Derby, founded by Walter Evans in 1783, viewed from the area of purpose-built workers' housing constructed in the early 19th century on the west bank of the Derwent. The five-storey brick

building with segment-headed windows that can be seen in the background represents the earliest surviving cotton mill, constructed between 1789 and 1792 (photograph: D. Knight)

7 OVERARCHING RESEARCH THEMES

The published Research Assessment and Agenda defined a series of four overarching research themes and, within each of these, a number of sub-themes¹. This useful scheme has been amplified here to take account of subsequent work and stakeholder comments, with further subdivision of certain themes and the addition of an environmental research theme.

For ease of reference, these overarching research themes are presented here in a tabular format with indications of period correlations.

¹ Cooper, N.J., 2006. Cross-period research and the foundation of a research strategy, in *The Archaeology of the East Midlands*, 287-291.

Overarching themes \ Period	Palaeolithic	Mesolithic	Neolithic to MBA	LBA and Iron Age	Romano-British	Early Medieval	High Medieval	Post-Medieval	Modern
Environment									
Pleistocene and Holocene climatic change (as evidenced, for example, by palaeochannel deposits)	●	●	●	●	●	●	●	●	●
Potential impact of future climate change upon the environment and the historic environment resource	●	●	●	●	●	●	●	●	●
Changes in sea level, configuration of sea and land, drainage networks and spatial extent of wetlands	●	●	●	●	●	●	●	●	●
Submergence of Doggerland	●	●							
The impact of human activity upon woodland clearance and other changes in the regional vegetation		●	●	●	●	●	●	●	●
The impact of human activity upon soil development and geomorphic processes (e.g. alluviation)			●	●	●	●	●	●	●
Exploitation and settlement of diverse ecological zones	●	●	●	●	●	●	●	●	●
Settlement									
Distribution, density and character of hunter-gatherer cave and open sites	●	●	●						
Development of agriculturally-based settlement patterns			●	●	●	●	●	●	●

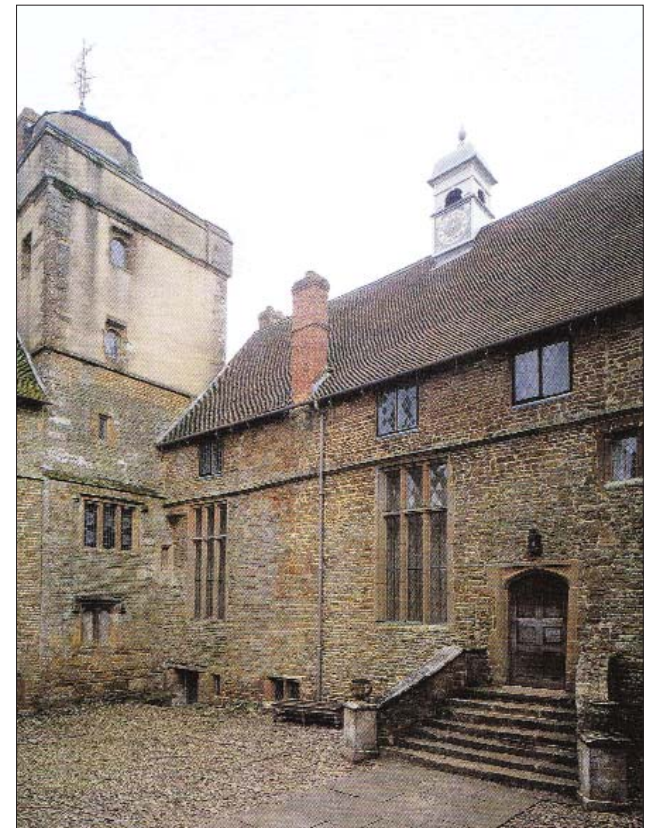
Overarching themes \ Period	Palaeolithic	Mesolithic	Neolithic to MBA	LBA and Iron Age	Romano-British	Early Medieval	High Medieval	Post-Medieval	Modern
Settlement									
Growth of urban centres and settlement hierarchies				•	•	•	•	•	•
Relationships between town and country					•	•	•	•	•
Vernacular building traditions							•	•	•
Food procurement strategies									
Hunter-gatherer subsistence strategies and mobility patterns	•	•	•						
Transition from hunter-gatherer to agricultural subsistence strategies		•	•						
Developments in crop and animal husbandry and changes in diet and health			•	•	•	•	•	•	•
The Agricultural Revolution and the industrialisation of agriculture								•	•
The rural landscape									
The development of fields and field systems				•	•	•	•	•	•
The development of parks, gardens and estates								•	•
Systems of woodland management		•	•	•	•	•	•	•	•
Development of monastic estates and post-Dissolution developments					•	•	•	•	

Overarching themes \ Period	Palaeolithic	Mesolithic	Neolithic to MBA	LBA and Iron Age	Romano-British	Early Medieval	High Medieval	Post-Medieval	Modern
Industry, craft and trade									
Systems of artefact production and exchange (lithics, pottery, metals, etc)	●	●	●	●	●	●	●	●	●
The origins and development of the Industrial Revolution								●	●
Environmental impacts of industrialisation								●	●
Industrial building traditions								●	●
Communications									
The role of rivers as movement corridors, sources of power and socio-political boundaries	●	●	●	●	●	●	●	●	●
The role of coastwise routeways		●	●	●	●	●	●	●	●
Constructed routeways: wooden or brushwood trackways, roads, canals, tramways and railways			●	●	●	●	●	●	●
Riverine and maritime waterborne transport			●	●	●	●	●	●	●
Social, religious and political structures									
Development of prehistoric monument complexes			●	●					
Development of funerary monuments and changing burial and memorial practices			●	●	●	●	●	●	●
Development and use of shrines, temples, churches, monasteries and other religious buildings				●	●	●	●	●	●
Development and use of defended sites (hillforts, castles, etc)				●	●	●	●	●	●

Period	Palaeolithic	Mesolithic	Neolithic to MBA	LBA and Iron Age	Romano-British	Early Medieval	High Medieval	Post-Medieval	Modern
Overarching themes									
Battlefield and skirmish sites					•	•	•	•	
Development of territorial and administrative (e.g.parish) boundaries				•	•	•	•	•	•
Social and religious building traditions							•	•	•



Canons Ashby, Northamptonshire: Elizabethan manor house, Augustinian priory church, medieval village earthworks and parkland features form just some of the elements of a landscape palimpsest preserving plentiful opportunities for the investigation of cross-period themes (© National Trust)



Canons Ashby house: Pebble Court, with staircase tower on the left and the hall range on the right (© National Trust)

8 SELECT BIBLIOGRAPHY

Details are provided below of useful general works on the historic environment of the East Midlands, including syntheses of particular periods and key intra-regional studies. Key general publications covering North and North-East Lincolnshire, which form parts of the Yorkshire and Humberside region, are also included, together with studies of the submerged landscapes of Doggerland.

Bahn, P. and Pettitt, P., 2009. *Britain's Oldest Art: The Ice Age Art of Creswell Crags*. London: English Heritage.

Barnatt, J. and Smith, K., 2004. *The Peak District: Landscapes through Time*. Macclesfield: Windgather Press.

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Bevan, B., 2004. *The Upper Derwent. 10,000 Years in a Derwent Valley*. Stroud: Tempus.

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Edmonds, M. and Seaborne, T., 2001. *Prehistory in the Peak*. Stroud: Tempus.

Ellis, S. and Crowther, D. (eds), 1990. *Humber Perspectives: A Region through the Ages*. Hull: Hull University Press.

Ellis, S., Fenwick, H., Lillie, M. et al. (eds), 2001. *Wetland Heritage of the Lincolnshire Marsh. An Archaeological Survey*. Hull: University of Hull, Humber Wetlands Project.

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Society for Lincolnshire History and Archaeology *The History of Lincolnshire* (12 volumes from prehistoric to modern periods): for details see <http://www.slha.org.uk/>.

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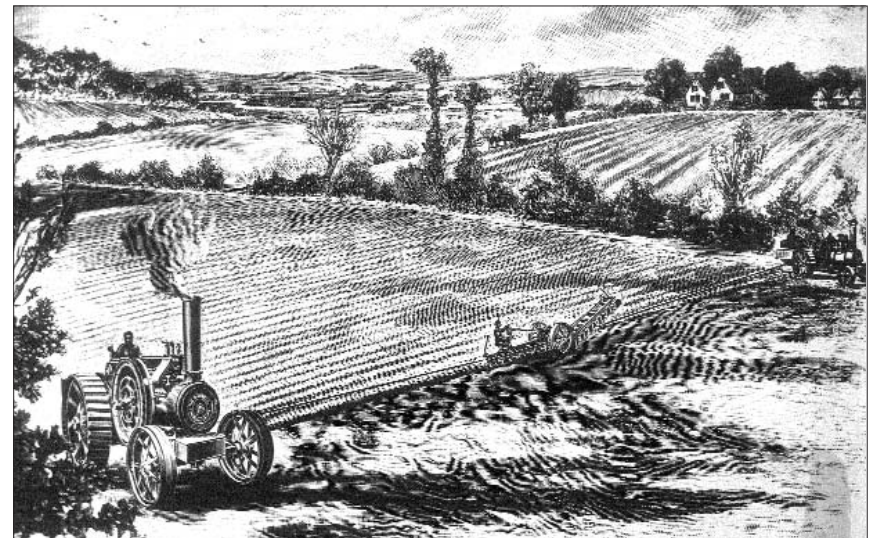
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Vince, A. (ed.), 1993. *Pre-Viking Lindsey*. Lincoln: City of Lincoln Archaeology Unit.

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Reconstruction drawing by Colin Tyler of a pair of Everitt Burrell side-drum ploughing engines at work in a rural landscape that would have been typical of many lowland areas of the East Midlands at the end of the nineteenth century (drawing courtesy of Neil Tyler; see Haining, J., and Tyler, C., 1985. *Ploughing by Steam*. Bath: Ashgrove Press)

9. USEFUL WEBSITES

National organisations

Archaeology Data Service: www.archaeologydataservice.ac.uk
Association for Environmental Archaeology: www.envarch.net
Association for Industrial Archaeology: www.industrial-archaeology.org.uk
Association of Local Government Archaeological Officers (ALGAO): www.algao.org.uk
Association for Studies in the Conservation of Buildings: www.aschb.org.uk
Battlefields Trust: www.battlefieldstrust.com
British Agricultural History Society: www.baahs.org.uk
British Archaeological Association: www.britarch.ac.uk/baa
British Geological Survey: www.bgs.ac.uk
British Waterways: www.britishwaterways.co.uk
Council for British Archaeology: www.britarch.ac.uk
English Heritage: www.english-heritage.org.uk
Environment Agency: www.environment-agency.gov.uk
Garden History Society: www.gardenhistorysociety.org
Georgian Group: www.georgiangroup.org.uk
Heritage Alliance: www.theheritagealliance.org.uk
Heritage Lottery Fund: www.hlf.org.uk
Historic Chapels Trust: www.hct.org.uk
Historic Gardens Foundation: www.historicgardens.org
Historic Houses Association: www.hha.org.uk
Institute for Archaeologists: www.archaeologists.net
Institute of Historic Building Conservation: www.ihbc.org.uk
Lithic Studies Society: www.lithics.org/
Medieval Pottery Research Group: www.medievalpottery.org.uk
Mineral Products Association: www.mineralproducts.org.uk
National Churches Trust: www.nationalchurchestrust.org
National Trust: www.nationaltrust.org.uk
Natural England: www.naturalengland.org.uk
Portable Antiquities Scheme: www.finds.org.uk
Prehistoric Ceramics Research Group: www.pcrgrg.org.uk
Prehistoric Society: www.prehistoricsociety.org/
Quaternary Research Association: www.qra.org.uk
Roman Finds Group: www.romanfinds.org.uk

Belton House, Lincolnshire (www.nationaltrust.org.uk/main/w-beltonhouse): landscaping on the grand scale is evident in this view across the Vale of Belvoir from the Belmont Tower of 1749-51. The tower was located atop the Lincoln Edge at the end of the Eastern Avenue (photograph: D. Knight)

Royal Archaeological Institute: www.royalarchinst.org
Society of Antiquaries of London: www.sal.org.uk
Society for Church Archaeology: www.britarch.ac.uk/socchurcharchaeol
Society for Post-Medieval Archaeology: www.spma.org.uk
Society for Protection of Ancient Buildings: www.spab.org.uk
Study Group for Roman Pottery: www.sgrp.org.uk
Twentieth Century Society: www.c20society.org.uk
UK Mills: www.ukmills.com
Vernacular Architecture Group: www.vag.org.uk
Victoria County History: www.victoriacountyhistory.ac.uk
Victorian Society: www.victoriansociety.org.uk
Woodland Trust: www.woodlandtrust.org.uk

Other useful sources of information

Ancient Human Occupation of Britain (AHOB): www.nhm.ac.uk/hosted_sites/ahob
Heritage Gateway: www.heritagegateway.org.uk
Historic Environment Local Management: www.helm.org.uk
Multi-Agency Geographic Information for the Countryside (MAGIC):



www.magic.gov.uk

National Monuments Record: www.english-heritage.org.uk/professional/archives-and-collections/nmr/
Online Access to the **Index of Archaeological Sites (OASIS)**:
www.oasis.ac.uk

Local Government: heritage, conservation and planning

Derbyshire County Council:

www.derbyshire.gov.uk/environment/conservation

Derby City Council: www.derby.gov.uk/environment-and-planning

Leicestershire County Council:

www.leics.gov.uk/index/environment.htm

Leicester City Council: www.leicester.gov.uk/environment-planning.aspx

Lincolnshire County Council:

www.lincolnshire.gov.uk/residents/environment-and-planning/conservation

Lincoln City Council: www.heritageconnectlincoln.com;

www.lincoln.gov.uk/menu_map_level_2.asp?sec_id=3587;

Northamptonshire County Council:

www.northamptonshire.gov.uk/en/councilservices/envIRON/historic/pages/default.aspx

Nottinghamshire County Council:

ww.nottinghamshire.gov.uk/home/environment/heritage.htm

Nottingham City Council:

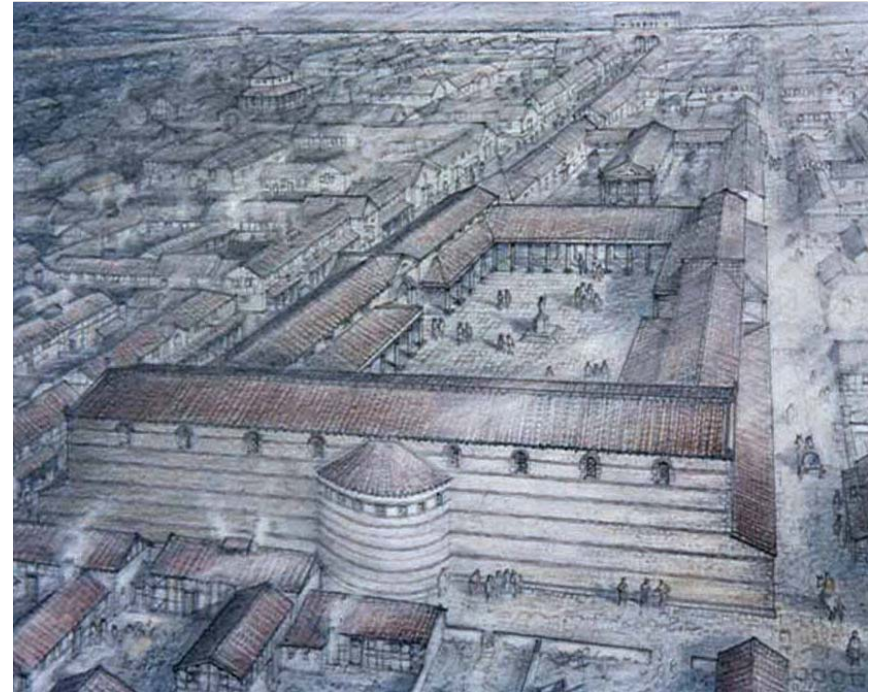
www.nottinghamcity.gov.uk

Peak District National Park: www.peakdistrict.gov.uk

Rutland County Council: www.rutland.gov.uk



One of many vertical air photographs held by the National Monuments Record, this 1947 photograph of Oakham in Rutland shows the castle earthworks and the surviving 12th century hall (© English Heritage. NMR. Aerofilms Collection: AFL03/Aerofilms/A7495/3-6-1947)



Lincoln: reconstruction by David Vale of the late 2nd and early 3rd century forum, showing the basilica in the foreground with its projecting apse (reproduced by permission of the Society for Lincolnshire History and Archaeology). Details of this and other periods of Lincoln's past may be obtained from the innovative Heritage Connect website (www.heritageconnectlincoln.com)

County archaeological and historical societies

Derbyshire Archaeological Society: www.derbyshireas.org.uk
Hunter Archaeological Society: www.shef.ac.uk/archaeology/hunter
Leicestershire Archaeology & History Society: www.le.ac.uk/lahs
Northamptonshire Archaeology Society: www.jwaller.co.uk/nas
Society for Lincolnshire History & Archaeology www.slha.org.uk
Thoroton Society of Nottinghamshire: www.thorotonsociety.org.uk

Creswell Crags, on the border between Nottinghamshire and Derbyshire: 3D visualisations of the limestone gorge c. 120,000 years ago (below) and 12,000 years ago (opposite; www.creswell-crags.org.uk; © Creswell Heritage Trust)

Regionally-based archaeological contractors

Archaeological Project Services: www.apsarchaeology.co.uk
Archaeological Research Services Ltd:
www.archaeologicalresearchservices.com
Heritage Lincolnshire: www.lincsheritage.org
Northamptonshire Archaeology: www.northantsarchaeology.co.uk
Pre-Construct Archaeological Services Ltd (Lincoln):
<http://www.pre-construct.co.uk>
Trent & Peak Archaeology: www.tparchaeology.co.uk
University of Leicester Archaeological Services: www.le.ac.uk/ulas



Other regional organisations

OnTrent (action for wildlife, landscape and communities):

www.ontrent.org.uk

Trent Valley GeoArchaeology: www.tvg.bham.ac.uk

East Midlands Museums

A complete list of east Midlands museums with details of their collections, opening hours, *etc.* may be obtained from the website of the East Midlands Museums Service: www.emms.org.uk

Key East Midlands sites

Bosworth Field: www.bosworthbattlefield.com

Creswell Crags: www.creswell-crags.org.uk

Derwent Valley Mills World Heritage Site: www.derwentvalleymills.org

East Midlands Universities

University of Derby: www.derby.ac.uk

University of Leicester: www.le.ac.uk

De Montfort University, Leicester: www.dmu.ac.uk





Derby Porcelain dessert plate, manufactured c.1790 at the Nottingham Road factory, Derby. The painted design by Zachariah Boreman shows Sir Richard Arkwright's cotton mill in the Derwent Valley at Cromford, Derbyshire (photograph: Rachel Atherton; © Derby Museums and Art Gallery 2012)

PDFs of both documents may also be downloaded from the English Heritage website, along with other regional research frameworks: www.english-heritage.org.uk/professional/research/strategies/external-research-frameworks/regional/

- University of Lincoln: www.lincoln.ac.uk
- Bishop Grosseteste University College, Lincoln: www.bishopg.ac.uk
- University of Loughborough: www.lboro.ac.uk
- University of Northampton: www.northampton.ac.uk
- University of Nottingham: www.nottingham.ac.uk
- Nottingham Trent University: www.ntu.ac.uk

East Midlands Research Framework

Archaeology of the East Midlands (2006). *An Archaeological Resource Assessment and Research Agenda*

Project website: www.le.ac.uk/ulas/publications/eastmidsfw.html

East Midlands Heritage (2012). *An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands*

Project website: <http://www.tparchaeology.co.uk/east-midlands-research-strategy/>



Excavation of crouched human burial in the bottom of a pit below the cobbled road surface of the entrance into the Iron Age hillfort at Burrough Hill, Leicestershire (photograph: D. Knight). Details of this on-going excavation may be obtained from the University of Leicester website (www2.le.ac.uk/departments/archaeology/research/projects/burrough-hill-iron-age-hillfort)

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Breedon-on-the-Hill, Leicestershire: Iron Age hillfort and medieval church, perched dramatically on the edge of an aggregate quarry originating in the 19th century (© English Heritage)



Thorpe Latimer, Lincolnshire: earthworks of shrunken medieval village and associated fields (lidar data courtesy of Environment Agency; processed imagery by Archaeological Project Services)

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The Triangular Lodge, Rushton. This iconic Northamptonshire building was erected by Sir Thomas Tresham in the 1590s as a two-storey warren lodge. It is imbued with references to the number three, symbolic of the Holy Trinity, and was built in defiance of the prevailing Protestant orthodoxy as a testament to Tresham's strong Catholic faith (photograph: Emily Knight)



Textile factory in Lower Bond Street, Hinckley, Leicestershire, built mainly between 1877 and 1910 by the hosiery firm of the Atkins. This imposing four-storey building overlooks a row of early framework-knitters' cottages (Objective 9I) and provides a powerful image of the changing scale of the industry (photograph: D. Knight)

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