

2. THE MESOLITHIC PERIOD (c.9700BP - 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 may 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 assemblages 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 study 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

2. THE MESOLITHIC PERIOD (c.9,700BP - c.4000 cal BC): RESEARCH OBJECTIVES

Updated Research Agenda Research Objectives-	2.1 Periods of transition			2.2 Spatial distribution of activity				2.3 Site morphology and size					2.4 Lithic artefact chronologies				2.5 Production, distribution & use of lithic artefacts			2.6 Environmental change & 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 Develop understanding of the environmental background to Mesolithic activity	•	•	•					•												•	•	•
2B Characterise the regional and local evidence for Mesolithic activity	•	•	•	•	•		•	•	•	•	•	•						•	•			
2C Investigate further the early 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 Mesolithic activity foci	•	•	•	•	•		•	•		•												
2H Exploring Doggerland: target submarine landscapes and the modern coastline				•	•					•										•	•	•
2I Investigate the transition from Mesolithic to Neolithic			•										•	•						•	•	•

Research Objective 2A

Develop a better 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 8650 BP^{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 fraction 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

Agenda topics addressed: 2.1.1-2.1.3; 2.3.1; 2.6.1-2.6.3

East Midlands Resource Assessment and Research Agenda: 67, 263-264

SHAPE 2008 sub-programmes: understanding ancient environments and ecologies (11111.420); new frontiers: mapping our marine heritage (11112.110)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Themes PR1 (Landscape perspectives) and PR6 (Understanding human interactions with the environment).

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 17-2009, 55: Priority 3.2 (marine sediments).

References

¹ Myers, A.M. 2006. The Mesolithic, in N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 61-62.

² Howard, A.J and Knight, D. 2004. Mesolithic hunter-gatherers, in D.Knight and A.J.Howard, *Trent Valley Landscapes*, Kings Lynn: Heritage Marketing and Publications Ltd, 33-35.

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, 743-51.

⁴ Hicks, S.P. 1972. The impact of man on the East moor of Derbyshire from Mesolithic times, *Archaeol Journal* 129, 1-21.

⁵ Simmons, I.G. 2006. *The Moorlands of England and Wales: An Environmental History 8000 BC to AD 2000*, Edinburgh University press, 33-34.

⁶ Myers 2006, 56.

⁷Peeters, H., Murphy, P. and Flemming, N. 2009 *North Sea Prehistory Research and Management Framework* 2009, 28: Theme B (palaeogeography and environment), 19-21, 28.

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 in Derbyshire and Nottinghamshire yielded Mesolithic stone artefacts², while later work has yielded surface and sometimes deeply stratified collections of lithic artefacts across a wide variety of landscapes³. These extend from the upland Pennine spine to the eroding coastal peats of Lincolnshire, and include such diverse environments as the coal measures, the sands and gravels of the Trent⁴ and Nene Valleys, the rich wetland resources of the Witham Valley⁵ and the Humberhead Levels⁶, and the claylands of Nottinghamshire and Leicestershire⁷. Further investigation by excavation⁸ 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 features⁹ in order to characterise these¹⁰, and field methodologies should be adapted appropriately. Curatorial fieldwork 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 application of geophysical techniques. The nature and chronology of the Mesolithic lithic material from the region merits separate consideration (Objectives 2C and 2D), 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.

East Midlands Resource Assessment and Research Agenda: 67

SHAPE 2008 sub-programme: understanding artefacts and material culture (11111.510)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Themes PR1 (Landscape perspectives) and PR2 (Innovative studies of sites and monuments)

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

References:

¹ Myers, A.M. 2006. The Mesolithic, in N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 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 Howard, A.J and Knight, D. 2004. Mesolithic hunter-gatherers, in D.Knight and A.J.Howard, *Trent Valley Landscapes*, Kings Lynn: Heritage Marketing and Publications Ltd, 35-39.

⁵ e.g. Lincoln Eastern Bypass (Area B): Rylatt, J. forthcoming. Archaeological Investigations Along the Proposed Route of the Lincoln Eastern Bypass. Heckington: Witham Valley Archaeological Research Committee; Brayford Pool, Lincoln: Rylatt, J. and Field, N. forthcoming. Lincoln University: Excavation of the Delph Pond 2006. Heckington: Witham Valley Archaeological Research Committee

⁶ Van de Noort, R. and Ellis, S. (eds) *Wetland Heritage of the Humberhead Levels*. University of Hull: Humber Wetlands Project, 455-456.

⁷ e.g. Clay, P. 2002. *The Prehistory of the East Midlands Claylands*, University of Leicester, Leicester Archaeology Monograph 9, 26-28.

⁸ 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/research/projects/eastmidsw/pdfs/07dermeso.pdf>.

⁹ e.g. Unstone: note 8; Lincoln Eastern Bypass (Area B): Rylatt forthcoming and pers.comm. (includes pits yielding Later Mesolithic flintwork)

¹⁰ Myers 2006, 67-68.

Research Objective 2C

Investigate further the early 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 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, Early 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 south 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 lowlands⁵.

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.

East Midlands Resource Assessment and Research Agenda: 67

SHAPE 2008 sub-programme: understanding artefacts and material culture (11111.510)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Themes PR1 (Landscape perspectives) PR2 (Innovative studies of sites and monuments) and PR3 (Understanding prehistoric society)

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

References:

¹ Myers, A.M. 2006. The Mesolithic, in N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 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*, Cambridge University press, 15-17.

⁴ Jacobi, R.M. 1978. Northern England in the eighth millennium bc: an essay, in Mellars, P. (ed) *The Early Post-Glacial Settlement of Northern Europe*, Duckworth, London, 319-23.

⁵ The Mesolithic period in England: current perspectives and 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*, Society of Antiquaries of Scotland, Edinburgh, 349-50.

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 early and a late 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.

East Midlands Resource Assessment and Research Agenda: 67

SHAPE 2008 sub-programme: understanding artefacts and material culture (11111.510)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Theme PR4 (Critical approaches to key transitions in prehistory)

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

References:

¹ Clark, J.G.D. 1932. *The Mesolithic Age in Britain*, Cambridge University Press; Myers 2006, 53.

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

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, A.M. 2006. The Mesolithic, in N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 54.

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

⁶ Summarised by Myers 2006, 53.

⁷ As noted by W Jarvis and L Cooper in *Transactions of Leicestershire Archaeological and Historical Society* (forthcoming).

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 lithic provenance analyses for studies of changing patterns of mobility⁴. Determination of potential 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 fluvioglacial 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 mottled, grey-cream flint brought from a source no closer than the Trent Valley and then knapped on site, presumably to enhance the hunting kit⁵. This may imply regular annual movements within large territories that would have spanned the upland and lowland zones⁶. The evidence for movement of other raw material types such as grey chert is more ambiguous⁷, and further research is recommended to investigate the variety of potential lithic raw material sources in this region. Particular emphasis should be placed upon refining our knowledge of earlier Mesolithic mobility patterns and further testing of the hypothesis that there was a shift in the later Mesolithic towards an emphasis upon more locally-based resources.

Agenda topics addressed: 2.5.1.

East Midlands Resource Assessment and Research Agenda: 67

SHAPE 2008 sub-programme: understanding artefacts and material culture (11111.510)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Theme PR3 (Understanding prehistoric society)

Lithic Studies Society 2004. *Research frameworks for Holocene Lithics in Britain*, 4-6.

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 L. Elliott and D. Knight. 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 N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 54-55, 67.

⁵ Howard, A.J. and Knight, D. 2004. Mesolithic Hunter-gatherers, in Knight, D. and Howard, A.J. *Trent Valley Landscapes*, Heritage Marketing and Publications, King's Lynn, 40.

⁶ Howard and Knight 2004, 40; Myers, A.M. 1989. Lithics, risk and change in the Mesolithic, in Brooks, I. and Phillips, P. eds, *Breaking the Stony Silence: Papers from the Sheffield Lithics Conference 1988*, Oxford: BAR British Series 213, 131-60.

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

⁸ Myers 2006, 54-55.

Research Objective 2F

Develop a regional lithic raw material reference collection

Summary

Variation in lithic raw material use has been central to many discussions of Mesolithic assemblage chronology and provenance in the East Midlands¹ and remains a key theme in the current Strategy. The region's lithic resource base needs to be explicitly researched. 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 the study of other periods of prehistory, and is flagged up elsewhere in this volume as a key methodological issue.

Agenda topics addressed: 2.5.1.

East Midlands Resource Assessment and Research Agenda: 67

SHAPE 2008 sub-programme: understanding artefacts and material culture (11111.510)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Theme PR8 (Integrating research and building partnerships)

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

References:

¹ Myers, A.M. 2006. The Mesolithic, in N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 54-55.

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

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 in the East Midlands have been recorded in a wide variety of locations. Prominent or elevated sites seem often to have been favoured for open-air sites¹, including hilltop locations which today offer 'a good view' and, in regions of subdued topography such as the Lincolnshire Fens, subtle ridges and sand islands². Proximity to rivers and wetland resources may also to have been especially important, to judge by major wetland sites such as Misterton Carr³ and the surface lithic scatters spread across the terraces of the major river valleys⁴, and many more low-lying sites may lie buried beneath alluvium, colluvium, blown sand or peat - for example, in the Lincolnshire Fens⁵ and the Witham Valley^{6,7}. Large-scale fieldwalking and test-pitting surveys have also retrieved material from a wide range of other topographic zones across the region⁸, and there is much to be learnt of 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 that attracted Neolithic settlement or funerary activity. There may be differences between the two: Lismore Fields, for example, occupies a low plateau between tributaries of the Wye that was later a focus of Neolithic settlement⁹, while the chambered cairn at Whitwell occupied a location that in common with other cairn locations¹⁰ 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.

East Midlands Resource Assessment and Research Agenda: 67

SHAPE 2008 sub-programme: understanding ancient environments and ecologies (11111.420)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Theme PR1 (Landscape perspectives)

References:

- ¹ Myers, A.M. 2006. The Mesolithic, in N.J. Cooper (ed) *The Archaeology of the East Midlands*, Leicester Archaeology Monograph 13, 63.
- ² Hall, D and Coles, J. 1994. *Fenland Survey. An Essay in Landscape and Persistence*. English Heritage London, 27-37.
- ³ Buckland, P.C. and Dolby, M.J. 1973. Mesolithic and later material from Misterton Carr, Nottinghamshire, *Transactions of the Thoroton 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 Thoroton Society*. 26-27, fig.5.
- ⁵ e.g. Hall and Coles 1994, 27-37.
- ⁶ 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 Archaeological Research Committee
- ⁷ e.g. Lincoln Eastern Bypass (Area B): Rylatt, J. forthcoming. Archaeological Investigations Along the Proposed Route of the Lincoln Eastern Bypass. Heckington: Witham Valley Archaeological Research Committee; Brayford Pool, Lincoln: Rylatt, J. and Field, N. forthcoming. Lincoln University: Excavation of the Delph Pond 2006. Heckington: Witham Valley Archaeological Research Committee
- ⁸ Myers 2006, 62-64.
- ⁹ Garton, D. 1991. Neolithic settlement in the Peak District: perspective and prospects, in R. Hodges and K. Smith (eds) *Recent Developments in the Archaeology of the Peak District*, 11-14
- ¹⁰ Vyner, B.E. and Wall, I. forthcoming, A Neolithic cairn at Whitwell, *Derbyshire Archaeological Journal*.

Research Objective 2H

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 Continent. Some 23,000km² of this submerged Mesolithic landscape, known as Doggerland, has been mapped as part of the North Sea Palaeolandscapes Project, and has revealed through 3D seismic data a striking image of a broad plain with meandering rivers and lakes¹. Seismic interpretation techniques have permitted the identification of buried river channels with the potential for significant preservation of cultural and environmental remains, which may shed important new light upon landscape developments and changing lifestyles - both 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 through dredging². The potential of submerged landscapes along the North Sea coast is well illustrated by on-going investigations in the Humber Estuary³ and by the results of recently published work to the north of our area in Hartlepool Bay⁴. Investigations there 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 sub-programmes: understanding the impact of past climate change (11111.410); understanding ancient environments and ecologies (11111.420); new frontiers: mapping our marine heritage (11112.110)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Themes PR1 (Landscape perspectives) and PR6 (Understanding human interactions with the environment)

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

Canti, M. 2009. *A Review of Geoarchaeology in the Midlands of England*. London: English Heritage Research Department Report Series 17-2009, 55: Priority 3.2 (marine sediments).

References:

¹ Gaffney, V., Fitch, S. and Smith, D. 2009. *Europe's Lost World: The Rediscovery of Doggerland*, CBA Research Report 160, York.

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

³ Humber Regional Environmental Characterisation project: <http://www.alsf-mepf.org.uk/projects/rec-projects.aspx>.

⁴ Waughman, M. 2005. *Archaeology and Environment of Submerged Landscapes in Hartlepool Bay, England*, Tees Archaeology Monograph 2, Hartlepool, 129-31.

Research Objective 2I

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 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 contexts spanning the transition period. Close examination of the occasional features found associated with Mesolithic lithic scatters⁷ should also be regarded as 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.

East Midlands Resource Assessment and Research Agenda: 67, 86, 265-266.

SHAPE 2008 sub-programmes: understanding ancient environments and ecologies (11111.421); understanding artefacts and material culture (11111.510); new frontiers: clarifying poorly understood chronologies (11112.510)

Other specialist period/subject research strategies:

EH Research Strategy for Prehistory 2010: Theme PR4 (Critical approaches to key transitions in prehistory)
Lithic Studies Society 2004. *Research frameworks for Holocene Lithics in Britain*, 6.

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