

Developing a Mesolithic Research and Conservation Framework

RESOURCE ASSESSMENT

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Contents

| | | |
|-------|---|----|
| 1 | Introduction | 2 |
| 1.1 | Project overview..... | 2 |
| 1.2 | Scope of Project | 2 |
| 2 | Resource Assessment Consultation | 3 |
| 2.1 | Introduction..... | 3 |
| 2.2 | Consultation | 3 |
| 2.3 | The structure of the document | 4 |
| 3 | The Resource Assessment | 5 |
| 3.1 | Publications and field projects | 5 |
| 3.1.1 | Publications..... | 5 |
| 3.1.2 | Coastal and Maritime Archaeology | 6 |
| 3.1.3 | Land-use and Palaeoenvironment Research | 8 |
| 3.1.4 | Surveys | 9 |
| 3.1.5 | Heritage Protection..... | 10 |
| 3.2 | Material evidence..... | 10 |
| 3.2.1 | Faunal Remains | 10 |
| 3.2.2 | Lithic Technology | 11 |
| 3.2.3 | Dating Schemes..... | 13 |
| 3.3 | Themes | 14 |
| 3.3.1 | Settlement, structures and mobility | 14 |
| 3.3.2 | Death and Burial | 16 |
| 3.3.3 | Ritual | 17 |
| 3.3.4 | Art | 17 |
| 3.3.5 | Mesolithic Neolithic Transition / Legacy..... | 18 |
| 3.4 | Public engagement and outreach review | 18 |
| 3.4.1 | Introduction | 18 |
| 3.4.2 | Talks | 19 |
| 3.4.3 | Literature | 20 |
| 3.4.4 | Media | 20 |
| 3.4.5 | Museums..... | 21 |
| 3.4.6 | Community Projects..... | 22 |
| 3.4.7 | Digital Media | 23 |
| 3.4.8 | Reflections of the Mesolithic | 24 |
| 3.4.9 | Miscellany | 24 |
| 4 | Conclusions | 25 |
| 5 | Bibliography | 26 |

1 Introduction

1.1 Project overview

It is now 14 years since the first Palaeolithic and Mesolithic Framework document (Prehistoric Society 1999) was produced, a year in which Mithen (1999) noted that the period was in need of new research. Due to significant advances in Palaeolithic research, particularly due to changes in funding opportunities, a new research and conservation framework document was published in 2008 for the Palaeolithic alone - it was noted that Mesolithic archaeology had developed a distinct agenda and set of requirements (Pettitt et al 2008, 3-4).

Since 1999, Mesolithic archaeology has indeed changed significantly: many important discoveries have been made including very early structures, first at Howick (Waddington 2007) and more recently at Star Carr (Conneller et al 2013). New types of finds have been unearthed such as a digging stick at Star Carr; and the footprints in the Severn estuary have been used in many different media to engage the public imagination. There has been a significant increase in academic interest including a surge in edited volumes which set new agendas (e.g. Bailey and Spikins 2008; Bevan and Moore 2003; Conneller 2000; Conneller and Warren 2006; Milner and Woodman 2005; Young 2000a), major research projects including the Severn Estuary (Bell 2007), Howick (Waddington 2007), Star Carr (e.g. Conneller et al 2009, 2013), Bouldnor Cliff (Momber et al 2011) and Doggerland (Gaffney et al 2007) and popular TV programmes (e.g. a *Ray Mears* series on wild food and Mesolithic hunter gatherers; *Time Team* specials on Doggerland and the Mesolithic Tsunami; *Meet the Ancestors* on Howick; *Digging for Britain* on Star Carr; and the Mesolithic featuring significantly on *Ancient Britain*). Beyond this a multiplicity of developer-led and smaller academic fieldwork interventions have led to a situation where research priorities need to be reconsidered in light of resurgent interest in the Mesolithic and its relationship with preceding and following periods.

1.2 Scope of Project

The Mesolithic is generally defined as corresponding to the beginning of the Preboreal period (which follows the Younger Dryas – the last cold snap of the Ice Age) at about 9600 BC, and finishes at about 4000 BC in Britain with the introduction of farming. However, the ‘Mesolithic’ is a modern construct and the period it denotes is less clear-cut than the term implies. The long blade sites of the Terminal Palaeolithic are poorly dated and it is not properly understood when these appear, or indeed the degree of continuity with Early Mesolithic techno-complexes; the ‘transition’ from Palaeolithic to Mesolithic is therefore poorly understood. In addition the nature and the date of the Mesolithic – Neolithic transition is much debated (Milner 2010); although the general consensus is about 4000 BC, rod microlith sites (traditionally associated with the Mesolithic) have recently been found to date several centuries into the 4th millennium cal BC (e.g. Spikins 2002; Chatterton 2005). The complexity of both transitions needs to be taken into account within this project and therefore the temporal span of the project will encompass the Terminal Palaeolithic to the start of the Early Neolithic. Spatially, the framework document will consider all areas for which English Heritage has responsibility, including the maritime resource. It will also make reference to the relevant European context, particularly in relation to changing

landscapes/seascapes and recent offshore investigations (e.g. around Doggerland). Efforts have been made to ensure that there is not significant overlap with other research frameworks, such as the Regional Frameworks which give geographically specific detailed information (see www.algao.org.uk/england/research_frameworks), North Sea Prehistory Research and Management Framework (Peeters et al 2009) and the Maritime and Marine Historic Environment Research Framework (Ransley et al 2013), produced by the relevant experts.

2 Resource Assessment Consultation

2.1 Introduction

This resource assessment forms the first stage of a three-part process of developing a research and conservation framework and is defined as ‘a statement of the current state of knowledge and a description of the archaeological resource’ (Olivier 1996, 5). The second stage comprises the research agenda (a list of the gaps in that knowledge, of work which could be done, and of the potential for the resource to answer questions (ibid) and the final stage will comprise a research strategy, a statement setting out priorities and method as defined in *Frameworks For Our Past* (ibid, 5-6). At each stage of the Mesolithic Research Framework Project, a draft document will be prepared and circulated widely for consultation within the heritage community in order that consensus be reached for amending and editing a final version.

2.2 Consultation

The philosophy underpinning historic environment research frameworks is that they should be collectively owned by the sector. Widespread consultation is therefore essential to reach some form of consensus across the community so that all interests are represented and the period promoted. This document has been edited following consultation to reflect the responses, and the whole taken into account when preparing the following document for consultation – the research agenda.

For this resource assessment document, consultees were asked to **respond by contributing further information to themes or areas that they feel are underrepresented at a national level** and to identify or contribute:

- Inaccuracies
- *Notable* absences
- Recent relevant completed doctoral theses
- Any other general comments
- Gaps in knowledge

The resource assessment was also designed to highlight lacunae in research or areas that might benefit from further research and we asked that consultees noted such areas and presented ideas that could be included in the research agenda document which formed the next stage of the consultation process.

Replies were made to mesolithicframework@gmail.com or through the framework website: <https://sites.google.com/site/mesolithicframework/>

2.3 The structure of the document

This resource assessment document places special emphasis on **defining the achievements of work conducted in the period since the 1999 Research Framework** so that recent research trends are represented. Rather than review all the evidence, those projects which stand out in their capacity to augment, develop or critique our knowledge are included. An attempt has been made to avoid reiteration of the comprehensive information found in the regional research frameworks (many of which are available from the Association of Local Government Officers UK (ALGAO) website: http://www.algao.org.uk/england/research_frameworks), nor the recent syntheses of the British or English Mesolithic, most notable of which are Barton and Roberts (2004), Tolan-Smith (2008) and Milner and Mithen (2009) all of which are appropriate starting places for the non-specialist.

The 1999 Research Framework Document identified three strategic themes through which to progress research (Figure 1). The categories are further expanded upon to identify research priorities and research questions.

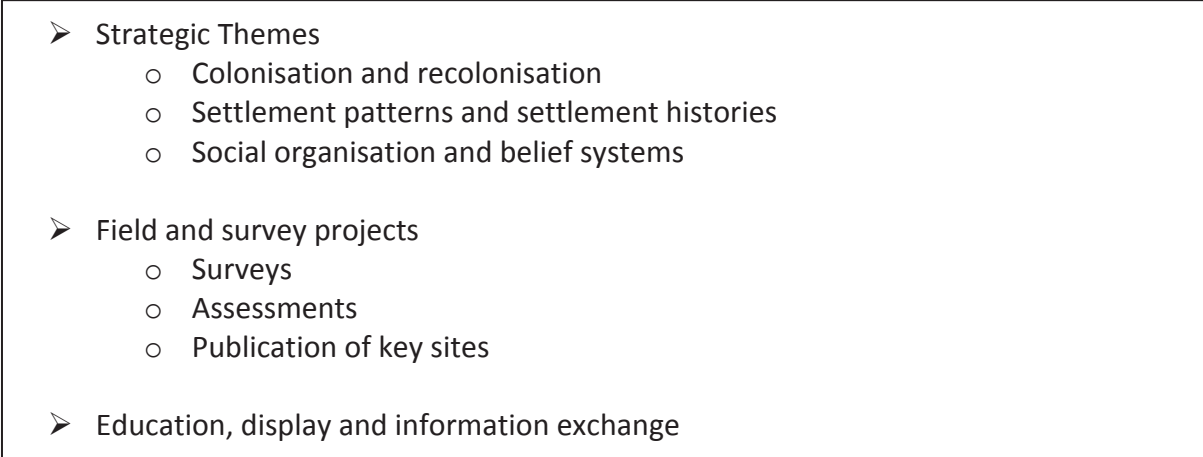
- 
- Strategic Themes
 - Colonisation and recolonisation
 - Settlement patterns and settlement histories
 - Social organisation and belief systems
 - Field and survey projects
 - Surveys
 - Assessments
 - Publication of key sites
 - Education, display and information exchange

Figure 1: Issues identified in the 1999 Framework

In this current resource assessment, we have identified where these issues have been addressed over the past 14 years, but as many field projects have contributed to the development of the strategic themes, we have not structured this resource assessment document directly under these headings in order to avoid repetition. Instead, we begin by taking an overview in terms of publication and field projects, we then review research conducted on a range of material evidence, consider a number of dominant themes, and end with public engagement and outreach.

3 The Resource Assessment

3.1 Publications and field projects

3.1.1 Publications

Over the last 13 years, the Mesolithic has benefited from a suite of new publications dedicated to the period. Young hoped for a 'great leap forwards' (2000b) in *Mesolithic Lifeways*, and though revolutionary zeal never took hold, the resurgent interest in the Mesolithic was heralded by this publication that showcased new scholarly talent. The same year the *Cambridge Archaeological Review* published a Palaeolithic and Mesolithic volume (Conneller 2000) that did much the same. Against a backdrop of the Mesolithic in Europe conference publications (Larsson *et al.* 2003; McCartan *et al.* 2009), it is papers deriving from sessions (or intended sessions) at the Theoretical Archaeology Group (TAG) meetings that have formed dedicated Mesolithic volumes in recent years, with Bevan and Moore (2003), Milner and Woodman (2005) and Cobb *et al.* (2005) all being products of TAG. A publication emerged from a one-off conference in Newcastle (Waddington and Pedersen 2007) and the output of the first *Gathering Our Thoughts* conference was published as a special issue of *Internet Archaeology* (2007), albeit with few papers pertinent to England. The content of the *Going Over* conference (Whittle and Cummings 2007) is differently challenged by the dominance of Neolithic perspectives therein over Mesolithic counterparts, the book looking to provide insight into the transition between the two periods. *Mesolithic Britain and Ireland* edited by Conneller and Warren (2006) stands as the most recent collection of papers focusing on the period in the north-western European archipelago.

The publication of key sites was identified in the 1999 Framework as its own sub-theme. The first recommendation was the consideration of a dedicated academic journal comparable to *Palaeohistoria* or *Quartär* to enable the non-specialist to read current research on the Palaeolithic and Mesolithic periods. This, unfortunately, has not materialised though the journal *Before Farming* (<http://www.waspress.co.uk/journals/beforefarming/>) somewhat fulfils the remit, and although *Mesolithic Miscellany* (<https://sites.google.com/site/mesolithicmiscellany/>) has been revived and its previous issues made available on the Archaeological Data Service (ADS) website (Milner 2006), it is not a peer-reviewed journal.

The second proposal was a 'gold standard' excavation publication series. Many Late Upper Palaeolithic and Mesolithic sites were identified in the previous Framework though none of these have been afforded the recommended treatment and the Vale of Pickering Research Trust volumes on investigations around Lake Flixton are soon to appear under the McDonald Institute's banner (Lane and Schadla-Hall forthcoming).

There have been a number of sizeable research projects in England which have been published within this period: Howick (Waddington 2007), Severn Estuary (Bell 2007), Three Ways Wharf (Lewis and Rackham 2011), Doggerland (Gaffney *et al.* 2007) and Bouldnor Cliff (Momber *et al.* 2011) standing out. In addition, smaller projects and developer-funded projects have steadily seen formal publication or in the latter case, deposition in HERs. Although the well-rehearsed argument that the grey literature (reports self-published by

contracting archaeological units) is still too inaccessible to warrant consultation remains, with over 18% of developer-funded projects having seen some form of publication (Blinkhorn 2012), the infrequency with which these are cited is surprising. Furthermore, access to the archive reports via the ADS' grey literature library (<http://archaeologydataservice.ac.uk/archives/view/greylit/>) is rapidly becoming more available through schemes such as OASIS (n.d - <http://oasis.ac.uk/>) and document repositories hosted by the authoring company. More general information concerning developer-led projects has been garnered by the Archaeological Investigations Project (AIP) hosted by Bournemouth University (<http://csweb.bournemouth.ac.uk/aip/aipintro.htm>).

Not strictly publications, but facilitating access to the Mesolithic resource are a number of databases. Wymer's gazetteer (1977) has been digitised and made GIS-ready, and is available via the ADS (Whyte 2008). The *Colonisation of Britain by Modern Humans* project run by Wessex Archaeology, also known as PaMela, aimed to collate diverse sources of data on sites and findspots of the Upper Palaeolithic and Mesolithic deriving largely from Roger Jacobi's archive. However, it is not yet possible to access to the database and GIS. As of May 2013, the Portable antiquities scheme database (<http://finds.org.uk/database/search/results/broadperiod/MESOLITHIC/>) contains almost 6000 items identified as being of Mesolithic date although many of these seem to be spurious assignments and the great majority of which are awaiting validation.

3.1.2 Coastal and Maritime Archaeology

Unlike the potential in areas such as Denmark (Fischer 1995), the opportunities for prospection and research into the coastal Mesolithic of England are somewhat hampered by isostatic uplift, sea level change, and broadly a lack of robust offshore monitoring, curation and legislation plus a far more liberal planning process than terrestrial. Nevertheless, the coastal resource cannot be ignored and indeed figures in mobility models produced by Simmons (1996) and Young (2000c). Perhaps above all other factors, it is the maritime resource that connects the English evidence to other nations and one that demands both inter-disciplinary and significant expertise. The two most relevant inundation events to impact on England, those of the English Channel and the North Sea basin, have garnered more widespread interest with the publication of Bouldnor Cliff (Momber et al 2011) and the Doggerland volume (Gaffney et al 2007), both of which answer the 1999 Framework's call to understand the coastal and maritime resource.

At the time of the 1999 Framework, Doggerland had only just become a tangible issue made real by Coles (1998) and followed up by Shennan et al (2000). Its inundation has recently been posited as due to the tsunami caused by the Storegga slide (Weninger et al 2008) at around 6000 BC, the effects of which are noted at Howick (Boomer et al 2007). However, the North Sea Palaeolandscape Project by Birmingham University has firmly placed modern technology at the heart of submarine archaeology. 23,000 km² was surveyed and the 3d seismic data used to reconstruct Mesolithic land surfaces. Similar projects were conducted using sonar data for the submerged Arun and Solent rivers (Gupta et al. 2008), and in the Bristol Channel and Liverpool Bay (Fitch and Gaffney 2011). These projects have illustrated the significance of marine geophysical survey in identifying areas of enhanced archaeological potential and extend the range with which we can consider Mesolithic occupation.

At Bouldnor Cliff, also in the Solent, the value of submarine exploration saw impressive returns when the Hampshire and Wight Trust for Marine Archaeology excavated worked wood, twisted plant fibres, hearths, pits, burnt flint, timbers and lithics (Momber et al 2011). Focusing on a peat terrace from the late 7th millennium BC, the project has enabled an area of submerged superior preservation to be tapped and provides a good counterpoint to the geophysical survey based work discussed above.

Building on evidence discovered in the 1990s at Formby, Merseyside (Roberts et al 1996, Huddart et al 1999), a further long-running project in the Severn Estuary (Bell 2007) has revealed what is perhaps the most evocative indication of Mesolithic people in the form of preserved human footprints. Although marginally outside the remit of this document, (because this area is in Wales) the Estuary as a landscape must be considered as a whole and the potential of these formations, and the footprints, should not be overlooked as new ways to interpret seasonality, movement and the activities of children can be gleaned. Recent discoveries at Low Hauxley, Northumberland (Waddington pers. comm.) suggest that further footprints, human and animal, may not be so elusive in the future.

Other coastal sites that have been explored include the submerged forest at Hartlepool (Waughman 2005), sites along the River Thames Tideway (e.g. Bronze Age Way, RPS Clouston 1997); Silvertown (Wilkinson et al 2000); Tank Hill Road (Leivers et al 2007)), upstream at Vauxhall (Milne et al 2011), and the first Framework coincided with the publication of the shell midden site at Culverwell (Palmer 1999). Although the spotlight on the maritime Mesolithic has focused more recently on areas further north and west (Mithen 2000; Warren 2000; Cobb 2007; Wickham-Jones and Hardy 2009; Garrow and Sturt 2011), further work is clearly viable in areas where potential exists.

Coastal and maritime considerations were embedded in the 1999 document under a number of themes. Under the 'recolonisation' theme, some headway has been made in understanding the timing of the final inundation of the land-bridge to continental Europe; under 'settlement histories' the extent available to study of the settlement/mobility systems and location of sites on the continental shelf; most notably the assessment of underwater resources has been undertaken from various perspectives. These include the successful application of geophysical survey techniques to Mesolithic contexts, though surveys at Star Carr (Blinkhorn 2010) and doctoral work by Armstrong (2010) may further demonstrate their terrestrial application – an issue highlighted in the 1999 Framework that still remains. In terms of assessing the potential of the submerged archaeological resource, the *Seabed Prehistory* project (Wessex Archaeology 2009) aimed to develop methodologies with which to aid guidance to marine aggregate extraction activities.

3.1.2.1 *Relevant recent PhD projects*

- Cobb, H.L. (2007). Media for Movement and Making the World: Exploring Materiality and Identity in the Mesolithic of the Northern Irish Sea Basin. *Internet Archaeology* 22. Mesolithic Archaeology Theme. http://intarch.ac.uk/journal/issue22/cobb_toc.html
- Fitch, S.E.J. (2011). *The Mesolithic landscape of the southern North Sea*. University of Birmingham, unpublished PhD thesis.

3.1.3 Land-use and Palaeoenvironment Research

Dedicated palaeoenvironmental and geoarchaeological schemes of work, from both academic and developer-funded contexts, have tended to be incorporated into smaller projects though more recently large schemes such as the Channel Tunnel Rail Link (High Speed 1) have had a large palaeoenvironmental and geoarchaeological focus, even where archaeological evidence is lacking. Nevertheless, a southern geographical bias is evident and the lack of explicit provision for palaeoenvironmental work in PPG16 and PPS5 may have thwarted attempts to commission projects. Rather than an absence of suitable landscapes to study, obstacles such as levels of preservation, difficulties in identification, topographic context (i.e. deep burial), the limits of prospection methods, and availability of funding have led to fewer studies than may be necessary, though some examples stand out.

The Middle Thames Northern Tributaries (MTNT) project was funded by the Aggregates Levy Sustainability Fund (ALSF) and run jointly by university and local authority personnel (Essex County Council et al 2011). Responding to pressure on the aggregates resource, especially in the Lea Valley, and the identification of the area as a growth area for development, the project produced a GIS to aid research and management of alluvial deposits with demonstrable archaeological and palaeoenvironmental significance. Through map regression and collation of geoarchaeological data, the project demonstrated the potential of GIS to cope with varying scales of investigation and identify areas of potential. The Suffolk River Valleys Project (SRVP) (Suffolk County Council Archaeological Service 2009) sought to do much the same for its corresponding area. MTNT and SRVP both addressed the theme of predictive modelling for cultural resource management identified in the 1999 framework.

Understanding of firing practices in the Mesolithic has also received some attention. Chisham (2004) argues for repeated phases of fire and small-scale landscape disturbance in the upper Kennet valley, which in turn led to a delay in hazel and dense vegetation growth towards the beginning of the Holocene, starting around 9100 cal BC. It is suggested that the river valley and terraces around Thatcham were deliberately fired (Barnett 2009), and comparisons are drawn with activity at Star Carr (Dark and Mellars 1998), notably in date, and somewhat supported by work at Flixton School (Cummins 2000). Whilst burning in the uplands in the Late Mesolithic has recently been proposed (e.g. Simmons 1996; Simmons and Innes 1996), Chisham's work challenges the timing of the introduction and extent of firing practices, further highlighting a distinctive facet of the English Mesolithic in a European context.

Whilst uplands have been the traditional areas for fieldwork, in places such as the southwest more detailed local information has been sought (Hosfield et al 2008), for example in the Blackdown Hills (Hawkins 2005) and Exe Valley (Fyfe et al 2003). Although not in England, the importance of the work undertaken in the Severn estuary, especially that at Goldcliff, should not be ignored (Bell 2007). The submerged forest has been subject to extended research revealing probable anthropogenic burning and evidence for fishing, while the nuanced seasonality evidence provided by tidal silts in the preserved footprints is matched in refinement by the preservation of human intestinal parasites demarcating zones of human waste. The significance of the Welsh evidence serves as a reminder that, although only separated from southwest England by a stretch of water, there is a need to engage

with the evidence, interpretations and research questions of adjacent countries and landforms.

Upland Late Mesolithic palaeoenvironmental evidence has continued to be of research interest, not least at the well-studied sites on the North York Moors (e.g. Simmons 1996). At North Gill, Mesolithic woodland management, it is argued, needed to provide both hazel and grasses if ungulate browsing was the aim and concentrations of fungal spores from dung (Innes and Blackford 2003) imply increased post-firing animal activity.

3.1.3.1 Relevant recent PhD projects

- Bond, C.J. (2006). *Prehistoric settlement in Somerset. Landscapes, material culture and communities 4300 to 700 cal. bc.* University of Winchester unpublished PhD thesis.
- Chatterton, R. (2005). *Transition and persistence: material culture in the Mesolithic landscape of north Yorkshire.* University of Manchester unpublished PhD thesis.
- Chisham, C. (2004) *Mesolithic Human Activity and Environmental Change: A Case Study of the Kennet Valley.* Unpublished PhD Thesis, Department of Archaeology, University of Reading.
- Ch'ng, E. (2006). *Developing artificial life simulations of vegetation to support the virtual reconstruction of ancient landscapes – Shotton River.* University of Birmingham unpublished PhD thesis.
- Cummins, G.E. (2003). *Impacts of hunter-gatherers on the vegetation history of the eastern Vale of Pickering, Yorkshire.* Unpublished PhD Thesis, University of Durham.
- Cunningham, P. (2008). *Food for thought: exploitation of nuts in prehistoric Europe.* University of Exeter unpublished PhD thesis.
- Farr, L.R. (2009). *Enhancing our understanding of Mesolithic environments and resource exploitation in South England.* Royal Holloway University of London unpublished PhD thesis.
- Fyfe, R.M. (2000). *Palaeochannels of the Exe catchment: their age and an assessment of their archaeological and palaeoenvironmental potential.* University of Exeter unpublished PhD thesis.
- Gardiner, P.J. (2001). *The Mesolithic-Neolithic transition in south west England.* University of Bristol unpublished PhD thesis.

3.1.4 Surveys

Doctoral work undertaken on developer-funded Final and Terminal Palaeolithic and Mesolithic sites (Blinkhorn 2012) has gone some way consolidate the projects deriving from commercial archaeology. The database and GIS layers produced by this will be deposited with the Archaeological Data Service in due course. The *Colonisation of Britain by Modern Humans* project, led by Wessex Archaeology, has consolidated the archive of Roger Jacobi (known as PaMela) in similar format. Both projects in part form an updating of the Wymer gazetteer, identified as a priority in the 1999 framework. However, the unified system implied in the document does not exist – information storage in databases is still to a greater or lesser extent devolved to the HERs with many fewer records held by the English Heritage Archive (formerly the National Monuments Record).

3.1.5 Heritage Protection

Currently, most significant Mesolithic sites found on the Schedule of Monuments are present because of archaeology of another period, though recently Star Carr has been added due to the identification of structural remains. Lack of progress with the proposed parliamentary Heritage Protection Bill for England and Wales has left these countries lagging behind Scotland where Historic Environment Policy now allows the designation of sites without structures. Although not scheduled, work on the Swindon Gateway (Tannahill and Pomeroy-Kellinger 2006; Ellis and Buss 2007) led to the recovery of approximately 6600 Later Mesolithic lithics from the ploughsoil. An independent assessment of the assemblage led to the preservation *in situ* of the scatter, citing four criteria of importance in English Heritage's guidance on lithic scatters (English Heritage 2000). Similarly, at Kintbury Sewage Treatment Works (Berkshire Archaeological Services 2008) the decision was made to preserve the Mesolithic material *in situ* and review the planning application. Changing interpretations of planning policy and heritage protection since 1999 have also led to greater success in getting palaeoenvironmental deposits investigated through the planning process.

3.2 Material evidence

3.2.1 Faunal Remains

Faunal assemblages remain rare for the Mesolithic in England and therefore evidence from Star Carr (Clark 1954; Legge and Rowley-Conwy 1988) and Thatcham (Wymer 1962) continue to be commonly referenced. A PPG16 intervention at Faraday Road, Newbury, West Berkshire (Ellis et al 2003) is notable for the large proportion of *Sus scrofa* (wild boar) remains in the assemblage and the site was classified on the basis of the lithics as an Early Mesolithic hunting camp, probably deriving from autumnal occupation and representing an event of only a few days. A further site adding to those in the Upper Kennet Valley is Chamberhouse Farm, Thatcham (Wessex Archaeology 2005) from where remains of aurochs, red deer, birds, and beaver were recovered.

Significant discoveries at the Sanderson site (Halsey 2006) and Preferred Area 4 (Ellis et al 2005; Clelland and Manning 2008), both in Denham, Buckinghamshire, complement the nearby site of Three Ways Wharf. Material from the Sanderson site including 1263, fragments of animal bone, was Terminal Palaeolithic and Early Mesolithic, dated by lithics typology and a radiocarbon date on hazelnut shell associated with the lithics and faunal assemblages of 8600-8300 cal BC (9230±50 BP). Area 4 produced a series of Early Mesolithic radiocarbon dates and a boar tusk was dated to 8470-8260 cal BC (9131±45 BP), and all the faunal remains were considered Mesolithic.

Away from known areas of (variable) preservation, faunal assemblages have been recovered from Langley's Lane, Somerset (Davies and Lewis 2005), and Vespasian's Camp, Wiltshire (Cook 2011), including remains of aurochs radiocarbon dated to around 6250 BC (*ibid*).

New, and not uncontested (e.g. Mellars 2009), theoretical directions have sought to approach faunal remains from a previously unexplored angle, though Star Carr remains the focus of these. The antler frontlets from the site were considered either a hunting aid or dance headgear by Clark, leading Bevan (2003) to explore the latter option. Chatterton

(2003) places more emphasis on the lakeside placement of the artefacts, rather than their biography before deposition. Conneller (2004) highlights the potential animal 'effects' that might be embodied in using animal remains in the Mesolithic, blurring the distinctions between animal and human identities. Such responses to the archaeology to some degree answer the 1999 Framework's call to assess animal bones as symbolic resources.

Dog bones recovered from Star Carr and Seamer Carr have been investigated as a proxy for human movement using stable isotope analysis. Day (1996) contests the assertion that the carbon signature of the dog from Seamer K represents seasonal movement to the coast (Clutton-Brock and Noe-Nygaard 1990) as a signature derived from limestone dissolved in Lake Flixton might produce similar results. Schulting and Richards (2009) in reply to Dark (2003) agreed with the initial assessment for the Seamer dog but claim a strong terrestrial signature for the Star Carr specimens. Due to the paucity of the English faunal record, little more isotopic work has been undertaken on animal bones.

Other indicators of seasonality have been drawn in to add potential extra depth to Mesolithic sites. Oxygen isotope analysis on samples from Culverwell (Marcello et al 2003) suggested primarily autumn and winter exploitation of *Monodonta lineata* (Lined Top Shell). Dark (2004) has argued that (especially charred) plant remains, beyond the ubiquitous charred hazelnut shells, where they can be demonstrated to be linked to human activity with no indication of storage, might provide a useful resource of seasonality indicators. Seasonality studies have previously been a focus for Mesolithic scholars, where preservation allows (e.g. the many interpretations of the seasonality of Star Carr), though the more simplistic approaches have been critiqued (Milner 1999; 2005a; 2005b). Nevertheless, work at Goldcliff may demonstrate newer, more refined, methods by which to determine the season of deposition.

3.2.1.1 *Relevant recent PhD projects*

- Carter, R.J. (2001) *Human subsistence and seasonality in Mesolithic northwest Europe based on studies of mandibular bone and dentition in red deer (Cervus elaphus) and roe deer (Capreolus capreolus)*. University of London unpublished PhD thesis.
- Viner, S.M. (2010) *A diachronic study of Sus and Bos exploitation in Britain from the Early Mesolithic to the Late Neolithic. Vol.1*. University of Sheffield unpublished PhD thesis.

3.2.2 **Lithic Technology**

As the most widespread evidence for the Palaeolithic and Mesolithic, lithics evidence has continued to be extensively recovered though has been afforded disproportionately lesser attention in the literature beyond site reports. The recognition of Mesolithic artefacts, especially within ploughzone or mixed assemblages relies heavily on the presence of diagnostic material. Most often a Mesolithic date is argued by the presence of microliths/microburins and, to a lesser extent, tranchet axe/adzes, though soft-hammer percussion and patination are also invoked with some frequency, though fortunately rarely as a sole criterion.

3.2.2.1 *Terminal Palaeolithic*

With the exception of Launde in Leicestershire (Cooper 2006) and Preferred Area 4 Denham, Buckinghamshire (Allen et al 2003; Ellis et al 2005; Clelland and Manning 2008) significant

sites have not for the most part been forthcoming. The publication of the findings at Three Ways Wharf (Lewis and Rackham 2011), beyond its inherent value, provides important comparative evidence for the Colne Valley sites at Denham, including the Sanderson Site (Halsey 2006). Equally, Froom's (2005) publication on Avington VI and other Long Blade sites provides a significant contribution to knowledge on the long blade sites of the Kennet valley. Froom's work in the south of England echoes other high quality 'amateur' work such as that by Tom Lord and Pat Stonehouse in the north – contributions which must not be overlooked.

3.2.2.2 Early Mesolithic

The impact of Reynier's doctoral work (2005) is recognisable in the literature in the period since 1999 by the addition of a chronological element to the Star Carr (Mellars 1976), Deepcar (Mellars 1976), Horsham (Clark 1934) (refined by Jacobi 1978a) and Honey Hill (Saville 1981a; 1981b) facies. Reynier (ibid) argues for a degree of temporal distinction between the technologies though this scheme has yet to meet universal acceptance. The reasons for this vary though the lack of well dated assemblages (see Ritchie 2010), lack of interest in typo-technological analyses and distrust of culture-historical approaches, and monolithic constructs of the Early Mesolithic were all reported during the consultation for this Resource Assessment.

Amongst the larger assemblages to be excavated in recent years are: Sandway Road on the Channel Tunnel Rail Link (Trevorthen 2006), A34 Newbury Bypass (Birbeck 2000), Woodbridge Road, Guildford (Bishop 2008), Tubney Wood, Oxfordshire (Bradley and Hey 1993; Norton 2008) and Rock Common, West Sussex (Harding 2000). The assemblage from Leeming Bar (LUAU 1995) could be considered a northern outlier of the lesser known developer-funded sites.

3.2.2.3 A Middle Mesolithic?

Until recently, no 'Middle Mesolithic' had been identified though Jacobi hinted at its existence (1978b, 21) and Reynier (2005), following Saville (1981), suggests a typological linkage between Horsham and Honey Hill type assemblages. Recent work at Asfordby has located a 7400 piece-strong lithics assemblage (Jarvis 2012; Jarvis and Cooper 2012) which can be classified as Honey Hill-type. Also identified were potentially structural features, and preliminary radiocarbon dates point to a late 9th millennium to mid 8th millennium cal BC for the assemblage (Cooper pers. comm.), supporting a 'Middle Mesolithic' assignation. As yet, however, too few assemblages with radiocarbon dates exist to support the term and contenders have usually been included in the Early Mesolithic.

3.2.2.4 Later Mesolithic

Despite the greater amount of time occupied by the Later Mesolithic, less attention has been directed towards refinement of the national chronology of lithics technologies. Nevertheless, the recalibration of a large number of Mesolithic radiocarbon dates against the most up-to-date calibration curves, the Bayesian modelling of Howick and other sites with stratified dates, together with groups of sites with different types of 'early' and 'late' microliths, have shown promise for the future. Waddington suggests that the change to geometric forms is introduced to the northeast of the country at first before spreading elsewhere, based on the early appearance of these forms at the well-dated site of Howick

(Waddington 2007, 223). Following this, Ritchie (2010) also argues for an east coast origin for narrow blade technology in his assessment of the northern British evidence (incorporating sites from Cumbria and Northumberland), based on radiocarbon and typological refinement. The more southerly Horsham/Honey Hill type assemblages are, however, metrically intermediate and show use of geometric microliths (Cooper pers. comm.), suggesting more refinement is necessary.

Some of the larger assemblages deriving from developer-funded work include recent work at Tank Hill Road, Essex (Leivers et al 2007); the Scarborough Integrated Transport Scheme, North Yorkshire, where a scatter with the full reduction sequence represented had been incorporated into the fabric of a barrow (Tabor 2007); and the site at Tingrith on the Steppingley to Aylesbury pipeline (Network Archaeology 2007). Most importantly, post-excavation analysis is currently underway on the material from the Stainton West site on the Carlisle Northern Development Route in Cumbria (Fraser Brown pers. comm.). Over 300,000 *in situ* lithics, including around 5000 microliths, have been recovered from beside a palaeochannel that yielded Early Neolithic evidence, in an area containing cut features.

Rod microlith sites in the Pennines (e.g. Chatterton 2005; Chatterton 2007; Spikins 2002; Stonehouse 2001) have been identified as particularly late vestiges of Mesolithic behaviour, extending into the 4th millennium cal BC.

3.2.2.5 Relevant recent PhD projects

- Bayer, O.J. (2011) *Lithic scatters and landscape: the Mesolithic, Neolithic and Early Bronze Age inhabitation of the lower Exe valley, Devon*. University of Central Lancashire unpublished PhD thesis.
- Conneller, C. (2000) *Space, Time and Technology. The early Mesolithic of the Vale of Pickering, North Yorkshire*. University of Cambridge unpublished PhD thesis.
- Evans, A. (2009) *Microwear analysis and the role of the microlith in Mesolithic Britain*. University of Bradford unpublished PhD thesis.
- Hind, D. (2000) *Landscape and technology in the Peak District of Derbyshire: the fifth and fourth millennia B.C*. University of Sheffield unpublished PhD thesis.
- Preston, P.R. (2012). *Lithics to Landscapes: Hunter-Gatherer tool use, resource exploitation, and mobility during the Mesolithic of the Central Pennines*. University of Oxford unpublished D.Phil. Thesis.
- Reynier, M.J. (1998). *Aspects of the Early Mesolithic period in Britain with particular reference to south-east England*. University of Nottingham unpublished PhD thesis.
- Ritchie, G.A. (2010). *Chronological and regional variability in Late Mesolithic narrow-blade lithic assemblages from northern Britain*. University of Edinburgh unpublished PhD thesis.

3.2.3 Dating Schemes

Dating schemes were highlighted in the 1999 Framework as needing to focus on a 'quality audit'. This may have been embedded in individual projects reassessing material though no overarching project has assessed the scientific dating record for England and an audit is still required. Other developments, however, have taken place.

The development of Bayesian modelling of radiocarbon dates has been most recently prominently deployed in work on the spread of Early Neolithic monumental architecture (Whittle et al 2011). Not only does this analysis have ramifications for the terminal Mesolithic but also supports the application of Bayesian dating in the Mesolithic itself. First applied at Howick (see above) (Bayliss et al 2007), this has been furthered by doctoral work associated with the *Gathering Time* project (Griffiths 2011) which has suggested that late Mesolithic microliths were in use at the end of the 5th millennium cal BC and in some areas continued to be produced in the first two or three centuries of the following millennium.

Dating work in the Vale of Pickering has helped refine understanding of chronology at Star Carr and associated sites around Lake Flixton. Following the detailed work of Petra Dark (Mellars and Dark 1998) on palaeoenvironmental samples at Star Carr, further corroborative evidence for the temporal extent of occupation at the site was produced through AMS dating of antler barbed points that had evaded the conservation techniques of Clark (see Clark 1954 and Dark et al 2006). Dates demonstrated that contrary to previous determinations, the artefacts were all of a similar age. Work by Housley (forthcoming) on nearby sites in the Vale of Pickering is soon to be published (Lane and Schadla-Hall forthcoming).

Beyond the projects dating human remains, and other dates gathered in the course of academic field projects, Blinkhorn (2012) notes that 193 radiocarbon determinations were made on samples from developer-led projects, alongside 14 thermoluminescence dates and approximately 11 optically stimulated luminescence dates. Despite the broad margins of error, the lesser used dating techniques have helped to clarify chronologies on sites where radiocarbon dating was unsuitable. Undertaken to help understand demographic shifts in the Mesolithic, the radiocarbon database compiled by Weninger et al (2009) incorporated 787 determinations for the Mesolithic and Early Neolithic in England and Wales, with a marked peak in the Early facies of the period, largely biased by research interests of academics. Future work suggested by this project included a dedicated programme of research from the Humber to Kent that would shed light on demographic shifts due to the inundation of the North Sea Plain.

3.2.3.1 *Relevant recent PhD projects*

- Griffiths, S. (2011). *Chronological modelling of the mesolithic–neolithic transition in the midlands and north of England*. PhD Thesis, Cardiff University.

3.3 Themes

3.3.1 Settlement, structures and mobility

Most prominent amongst the new discoveries are the substantial structures that have been found. Howick was first amongst a suite of new Mesolithic structures to be identified and appeared prominently in the media as the ‘oldest house in Britain’ (Richards 2011). The Howick structure featured a sunken floor with rings of post-holes, and most importantly an internal sequence of hearths which allowed the most comprehensive dating programme on a Mesolithic site. Excavated over the summers of 2000 and 2002, the discovery of Howick was quickly followed by the discovery of a structure at East Barns, East Lothian (Goodey 2007) and more recently at Star Carr (Taylor et al 2010). Further analogues can be found at

Broomhill, Hampshire (O'Malley and Jacobi 1978), Lesmurdie Road, Elgin, Scotland (Suddaby 2007), Mount Sandel, Ireland (Woodman 1985), and Cass Ny Hawain (Woodman 1987) and Ronaldsway (Pitts 2009) on the Isle of Man.

Work by the Thames Discovery Project has identified potential structural remains, including preserved timbers, at Vauxhall in London though as yet no further information is available (Milne et al 2011). Similar hints of structural remains were identified at Bouldnor Cliff (Momber et al 2011). Slighter remains have been recovered from Exmoor National Park at Hawkcombe Head (Gardiner 2008; Waddington et al 2011) and Blinkhorn (2012) has identified 13 sites from the grey literature that have evidence of structures of varying configurations, though no single example quite matches the integrity of the northern English examples noted above. Wickham-Jones (2004) expressed surprise at the number (23) and variety of Mesolithic structures found in Scotland. It is most likely that more will be discovered in England to join those noted above, and perhaps of a less conventional sort. At Star Carr, the wooden platform identified by the Vale of Pickering Research Trust (Mellars and Dark 1998) is now thought to extend over 30 m (Taylor et al 2010) and provides a Preboreal counterpart to a later example found in Ireland (Fredengren 2009).

Although excavated in the 1960s, with an addition in the 1990s, large post holes at the Stonehenge car park have recently received attention (Cleal et al 1995; Allen and Gardiner 2002). More recently, at Crathes in Aberdeenshire, Scotland (Hilary et al 2009) a multi-phase post row has been dated to the late ninth to early seventh millennia cal BC and suggestions of similar features have been found at Bryn Celli Ddu on Anglesey (Pitts 2006). Work conducted in advance of quarrying at Nosterfield Quarry, Thornborough in North Yorkshire (Dickson and Hopkinson 2011) identified a double post row and a single date of 5640 – 5480 cal BC (6625±60 BP, aa-51419; GU-10384) from an upper fill of one of the pits. However, due to the form of the monument a Neolithic date is considered more likely (ibid). Nevertheless the identification of substantial Mesolithic features away from the coast gives hope that further features of different kinds will be found in the future.

Outside developer-led work, few projects have actively sought Mesolithic archaeology. Notable exceptions to this are the landscape scale study of the Mesolithic in the Till-Tweed river catchment in Northumberland (Passmore and Waddington 2009; 2012) and Gardiner's work on Exmoor at Hawkcombe Head (Gardiner 2008), the Cambridgeshire Mesolithic Project (Medlycott 2011), and Bond's PhD (2006) incorporated analysis of previously unstudied collections. The *Yorkshire Dales Hunter-Gatherer Mobility Project* sought to evaluate long-distance seasonal mobility between eastern Yorkshire and the Pennines (Donahue and Lovis 2003, 2006) through fieldwork on the Malham plateau. The presence of east coast flint, amongst other things, was implicated in upland lowland mobility strategies. The widespread use of chert in the Pennines has led to two different approaches to the material in terms of mobility. Hind (1998) emphasised the social connotations and explored the range of reasons for the distribution of the stone whereas a study by Evans et al (2007) demonstrates that geochemical analysis may have potential for elucidating its circulation over space. This was further substantiated by work on the material from Lismore Fields in Derbyshire (Evans et al 2010). Preston (2009) and Conneller and Schadla-Hall (2003) have identified caching activity in the Pennines and Vale of Pickering respectively, comprising both groups of unworked nodules and microliths, illustrating the extrapolation of *chaînes*

opératoires across the landscape and embedding movement and locales into Mesolithic life. Both, in different ways, use *chaînes opératoires* in a social dimension as called for in the 1999 Framework.

3.3.2 Death and Burial

Human skeletal evidence remains slight in England – eight locations are recorded by Conneller as being demonstrably Mesolithic by radiocarbon dating (Conneller 2006). However the recovery of a probable adult female human femur from a palaeochannel at Staythorpe, Nottinghamshire (Davies et al 2001) has provided what is likely to be the first such find from a Mesolithic open-air context excavated in the past 50 years. A radiocarbon date of 5730-5630 cal BC (6790 +/- 40 BP - Beta-144016) places the bone in the Late Mesolithic, and carbon and nitrogen stable isotope analysis suggests that for the last 10 years prior to her death, the individual's diet comprised a high proportion of terrestrial animal protein.

Two human skulls recovered in 1928 from Greylake Sand Quarry, Somerset were recently radiocarbon-dated to 8460-8275 and 8445-8260 cal BC as part of the Lost Islands of Somerset project (Anon 2011). The skulls, thought to be part of a group representing at least five individuals, suggest evidence of the UK's first open-air cemetery and substantial amounts of Mesolithic lithics have also been recovered from the disused quarry. At Totty Pot, Somerset however, a dating scheme managed to determine that only one of the specimens was Mesolithic, the rest proving to be later (Schulting et al 2010). The surviving human bone assemblage from nearby Aveline's Hole was reanalysed (Schulting 2006) using a range of techniques, including radiocarbon dating, stable and strontium isotope analysis, osteometrics and dental microwear. Contradictory evidence for diet was found with higher importance of plant use suggested by dental microwear but a more dominant animal protein suggested by nitrogen isotope analysis. Strontium isotope analysis was suggestive of a local population being interred and AMS dating restricted the use of the cemetery to between 8460 and 8140 cal BC.

The lack of evidence has not precluded work on the subject however. Databases produced by Chamberlain and Williams (2001) and King (2004) have collated the human skeletal evidence for England. The contents therein and their associated radiocarbon dates have recently been reappraised (Meiklejohn et al 2011). A recent doctoral study (Gray Jones 2009, 2011) has incorporated the English evidence into a Europe-wide discussion of the processes involved in mortuary practices to explore the role of the manipulation of the body in the Mesolithic. Conneller (2009) has emphasised the role of disarticulation in Upper Palaeolithic and Mesolithic mortuary practice, and Hellewell and Milner (2011) assess the evidence from the perspective of the Mesolithic-Neolithic transition.

The extent to which scholars have been able to address issues identified in the 1999 document is of course hampered by the available resource. Nevertheless the upsurge in interest in the Mesolithic has not left the skeletal evidence behind. The systematic collation of evidence and dates in databases and papers above responds to a call in the 1999 document to compile and date burial evidence, amongst other things, and in tandem existing conventional and AMS radiocarbon dates have been 'audited'. The discovery and refinement of both cave and open-air site data contributes to the theme of discussing a

differentiated settlement system. Stable isotope analysis had seen little practical application at the time of the 1999 Framework (Schulting and Richards 2000, 63) and whilst discussion continues over its interpretation, its use has contributed substantially to debate over mobility and diet and it has been used on appropriate samples.

3.3.2.1 *Relevant recent PhD projects*

- Gray Jones, A. (2011) *Dealing with the dead: manipulation of the body in the mortuary practices of Mesolithic north-west Europe*. Manchester: Unpublished PhD thesis.
- King, M.P. (2003) *Unparalleled behaviour: Britain and Ireland during the 'Mesolithic' and 'Neolithic'*. British Archaeological Reports, British series 355. Oxford: Archaeopress.

3.3.3 **Ritual**

Lack of evidence for explicitly ritual behaviour has traditionally hampered discussion of the topic though recently new theoretical developments have dealt more explicitly with the potential impact that palaeoenvironmental and archaeological remains had on Mesolithic people, or the relationship between them. Conneller and Schadla-Hall (2003), for instance, suggest a ritual structuring to artefact deposition at Star Carr, and Pollard (2000) and Chatterton (2006) both use ethnography to argue for the importance of the site in the disposal of barbed points, as the removal of pollutants and symbolic death. Chatterton, in his chapter on 'ritual', notes that at the time there had been no systematic analysis of the topic, and subdivides the paper into 'water', 'middens', 'caves' and 'pits'. Whilst no new data can be added to the middens and caves categories, there are a few sites to which a ritual element might be ascribed in watery and pit contexts.

Although recovered from a palaeochannel, the femur from Staythorpe is in a derived context so cannot be said to be in any sense 'placed'. In work at Bath Hot Spring (Davenport 2007), Brooks (2007) argues that the almost 500-strong heat-treated lithics assemblage recovered from the spring pipe did not fit a model of base, field, kill or collecting sites and thus concluded that Early Mesolithic ritual behaviour through deposition was in evidence. Recent work by Davies and Lewis (2005) at Langley's Lane near Midsomer Norton, Somerset has identified a series of pits at the edge of a tufa deposit and associated with Late Mesolithic lithics and faunal remains. Finds in the pits of lithics, fossils and a seemingly formed tufa ball lead the authors to suggest, albeit hesitantly, that there is a votive aspect to the site. The extent of placed deposits in pits is dealt with by Blinkhorn (in prep), though exceptional evidence such as the eight Horsham points deposited in a pit at Saltwood Tunnel on the Channel Tunnel Rail Link (Riddler and Trevarthen 2006) deserves a mention here.

3.3.4 **Art**

In contrast to evidence from continental Europe, very little has been identified in the way of Mesolithic art in England, or in the British Isles in general. Chevron designs on a *Bos* bone from the Thames (Lacaille 1961) and on red deer antler from Romsey have been attributed a Mesolithic date though cannot confidently be said to be such (Milner and Mithen 2009, 62). More recently, Waddington (1999) has posited that the carved figures at Goatscrag, Northumberland, could be Mesolithic. In the southwest, rock art discoveries at Aveline's Hole by members of the University of Bristol Spelaeological Society (UBBS), comprising three incised rows of three crosses sealed by a stalagmite (Mullan and Wilson 2004), are joined by

other motifs from nearby Long Hole (Mullan and Wilson 2005; Mullan and Wilson 2006). To date, none of the rock art has been scientifically dated.

3.3.5 Mesolithic Neolithic Transition / Legacy

Coveted 'transition' sites remain few and far between. Though academic landscape approaches and the many larger scale developer-led projects can be very materially productive, it is often the persistence or divergent use of space across the transition that is emphasised rather than its mechanism or meaning. Further problems are found within palimpsests and picking apart the Mesolithic events from the Neolithic counterparts. This is in part due to the lack of knowledge of the latest Mesolithic and a generalised preference to discuss the transition from the perspective of the latter period (see chapters in Whittle and Cummings 2007).

The timing and extent of the process may have started to be better understood, treating the transition as an entity rather than the beginning of the latter period, though little seems to be available, or at least confidently dated, to aid discussion. Thomas (2004) argues from a point of previous interaction between Mesolithic and Neolithic populations of the British archipelago and continental Europe to emphasise human agency and the different characteristics of the archaeology amongst the islands. Rowley-Conwy (2004), reacting against the post-processual 'consensus', contests that the Mesolithic did not see intensification of production, nor was the Neolithic dependent on wild foods and nomadism, that the transition was a traumatic event, and that ideological interpretations are insufficient considering the northern European data. Similar critique and debate can be found in the use of stable isotope analysis (e.g. Milner et al 2004; Richards and Schulting 2008). Perhaps unsurprisingly, the evidence or studies that could develop our understanding have relied on large geographical span and from England they have, at least from a Mesolithic perspective, been slow to appear.

3.4 Public engagement and outreach review

3.4.1 Introduction

In this section, the variety of engagement activities that has taken place for the Mesolithic is explored. As no previous publicly available document has considered this in any depth, for early prehistory at least, it is examined in some detail. Promoting the Mesolithic period beyond the familiar channels was identified in the 1999 Framework as one of the three major strategic themes, in the guise of 'education, display and information exchange'. A significant divergence in the language for broadly coterminous categories is here used to place emphasis on making the archaeology accessible to communities outside the heritage profession. Nevertheless, the need to promote Mesolithic studies within the profession beyond imposed chronological boundaries still requires attention.

Several of the types of engagement below may of course be applicable to those working across the heritage sectors, though efficient means of communicating to all working in them need to be found. The 1999 document put forward attendance at courses though there are few to be found and often beyond the means of many working in the field. It is highlighted here as a lacuna in professional development. It may be a difficult issue to resolve, considering the tension between the relative frequency with which Mesolithic material is

encountered, the relative infrequency with which substantial Mesolithic archaeology is discovered and the costs and time expenditure involved (Blinkhorn 2012).

Recognising best-practice in public engagement and outreach activities relies on the identification of the desired outcome and target audience of the event or product. Presented below are examples of the range of activities that have been identified as promoting the Mesolithic to a range of audiences.

3.4.2 Talks

3.4.2.1 Academic

Presentations by excavators, academics or curators constitute a major means by which information is communicated amongst professionals, students and to other interested parties. Since 1999, three major ‘Mesolithic in Europe’ conferences have passed (Stockholm, Belfast and Santander) with steadily rising numbers of delegates reflected in the necessity of two volumes for the Belfast publication (McCartan et al 2009) and no doubt a sizeable publication from the most recent event in 2010. The Palaeolithic-Mesolithic conferences at the British Museum, however, are not published and have little formal presence beyond a mailing list.

Other conferences focusing on the Mesolithic tend to have been single events, such as the Prehistoric Society’s Europa Prize in 2009 (York) and Where the Wild Things Are in 2012 (Durham). Two ‘Gathering Our Thoughts’ postgraduate forums have been held in York (2006 and 2009) and a series of Northern Hunter Gatherer Discussion Forums were held intermittently from 2005-9 at various universities in northern England and Dublin.

A number of more general conferences have hosted Mesolithic sessions including the Theoretical Archaeology Group (Table 1) and the meetings of the European Archaeological Association.

| Year | Venue | Session Title | Organisers | Publication |
|------|-------------|--|-----------------------|----------------------------|
| 1997 | Bournemouth | Prehistoric Technologies and Hunter-gatherer landscapes | Hind & Warren | Not Published |
| 1999 | Cardiff | Peopling the Mesolithic in a Northern Environment | Bevan & Moore | Bevan & Moore 2003 |
| 2001 | Dublin | Looking into the Canon’s Mouth: deconstructing the Mesolithic | Milner & Woodman | Milner & Woodman 2005 |
| 2002 | Manchester | Palaeolithic & Mesolithic of the North Sea Basin | Pedersen & Waddington | Waddington & Pedersen 2007 |
| 2004 | Glasgow | Hunting for Meaning: Interpretive Approaches to the Mesolithic | Cobb & Price | Cobb et al 2005 |

Table 1 – Intended Mesolithic sessions at TAG, adapted from Conneller and Warren 2006, 9.

3.4.2.2 Public

Innumerable presentations derive from outreach components of excavations, perhaps best exemplified with the 43 by the Star Carr directorship (both academic and outreach) over the course of the renewed fieldwork there from 2006 to 2011, with more to follow, and 25

given about the Howick project in a variety of academic and public forums. Traditionally, presentations have been made to local archaeological, architectural and historical societies though more recently, initiatives such as the *Café Scientifique* have accommodated Mesolithic components, like those by the Hampshire and Wight Trust for Maritime Archaeology on Bouldnor Cliff (available online at <http://cafescientifique.onthewight.com>).

3.4.3 Literature

Beyond publications of sites noted above, the primary and most accessible organ of the Mesolithic community is *Mesolithic Miscellany*, previously a postal newsletter funded by a small subscription fee and now resurrected as a free digital publication hosted on its own website. It enables swift and scholarly dissemination of the latest research from across Europe.

Although written output is the most practised output of traditional archaeology, there is a surprising dearth of material geared towards the public. Mesolithic chapters like those by Milner and Mithen (2009) in broad scope introductory texts and Wymer's (1991) small (and affordable) book are perhaps the most accessible publications for those already with an interest in the past. Published accompaniments to television series like *Time Team*, however, are more likely to reach a broader audience. Magazines such as *British Archaeology* and *Current Archaeology* are the two major popular publications that could be better used to disseminate research to a wider community though of course there remains competition with later, more ostentatious evidence.

Mithen's *'After the Ice'* (2003) is perhaps the most learned of the popular science genre explicitly dealing with the Mesolithic, and on a grand scale. Appearances of the period also occur in Oppenheimer's *'The Origins of the British'* (2006) and no doubt figure in other items in the genre. Hillman's credit on *'Wild Food'* (Mears and Hillman 2007) certainly raises its standing by reputation, though explicit reference to evidence is overshadowed by speculation.

3.4.4 Media

3.4.4.1 Television

The consistent popularity of *Time Team* since the 1999 Framework has served to maintain archaeology in the public conscience. Nevertheless, the incorporation of the Mesolithic into its schedule has been scant. One programme focused on the remains at Goldcliff (*Time Team* 2004) and a *Time Team Special* investigated the submerged archaeology of the North Sea (*Time Team* 2007). A further memorable sequence in an episode on the Sussex Downs saw a Mesolithic transept axe pitted against a Neolithic counterpart (*Time Team* 2006). In 2003 the BBC's *Meet the Ancestors* focused one of its documentaries on the Howick excavations and this was followed by the Howick site and its reconstruction forming a main feature in the first series of BBC's *Coast*.

In 2007, the five part *Wild Food* series with Ray Mears and Gordon Hillman explored Mesolithic Britain from a dietary perspective with further contributions from academics working on the Mesolithic. The *History of Ancient Britain* series included items on Goldcliff, Star Carr and Bouldnor Cliff alongside more extensive discussion of the Mesolithic from a Scottish perspective and the first episode of *Britain BC* had an item on Star Carr with special

reference to the canine faunal remains. More recently, *Digging for Britain* also investigated Star Carr, highlighting both the antler technology found there and the recent research into the site's deterioration. Local news and magazine programmes frequently feature archaeology, including Mesolithic sites, such as BBC's *Inside Out North West* (BBC 2012) covering the new discoveries in Lunt Meadows, Merseyside and comparing them with sites in the Severn Estuary.

Amongst children's television, *Horrible Histories* stands out as both informed and entertaining though the extinction of Neanderthals at the end of the Mesolithic by an ice age in the 'Stone Age Song' as sung by caveman Randy Newman might be considered a lyrical liberty too far.

3.4.4.2 Film

The appearance of the Mesolithic in the movie theatre has been almost non-existent – *10,000 BC* stands out as being considerably removed from anything recognisably Mesolithic and possibly even detrimental to its understanding by the public. Werner Herzog's *Cave of Forgotten Dreams* however, whilst not Mesolithic in focus, demonstrated the potential that film has to innovatively present the remote past to different audiences and itself demonstrated an (in)tangible application of 3d film beyond novelty.

3.4.4.3 Radio

Unfortunately, the BBC's epic series *'A History of the World in 100 Objects'* based on collections at the British Museum overlooked the British Mesolithic, instead focusing on Late Glacial and Holocene artefacts from France, Japan, the USA, the Levant and Papua New Guinea. The accompanying website (<http://www.bbc.co.uk/ahistoryoftheworld/>), which provides links to associated events and a user-contributed artefact display section, did however pick up some Mesolithic material.

BBC Radio 4 has hosted programming that has touched on the Mesolithic, for instance *Making History* (10/5/2011) on Bouldnor Cliff ('Stone Age Atlantis'), *Open Country* 'Skye Scavengers' (25/4/2009), and, more broadly, *Tribes of Science* (7/8/2011) investigated early prehistoric archaeologists themselves, working in Jersey. Radio news and current affairs generally has been an accessible means to communicate excavation output to the public.

3.4.4.4 Press Releases

Communicating discoveries to the press has been applied to great effect in disseminating knowledge both during excavation and after a phase of analysis. The discovery of the structure at Star Carr, for example, generated much interest, the story being picked up seven national and six local newspapers, by 25 domestic TV and radio stations, and over 100 international media outlets.

3.4.5 Museums

The 1999 Framework highlighted the poor display of the Mesolithic to the public. The situation today remains somewhat similar with the period occupying a very low profile in museums of all sizes. The British Museum presents a bare minimum of Mesolithic artefacts and with no dedicated English national museum comparable to those in Edinburgh or Cardiff, there remains no central resource to learn about the Mesolithic in the country.

Coverage therefore rests on the regional and local museums though these tend to rely on less catholic collections with which to represent the Mesolithic, such as the display at the Museum of London. At Creswell Crags and Cheddar Gorge, Final Palaeolithic and Mesolithic evidence is incorporated, though the sites mostly trade on earlier archaeology. Opportunities have been taken to blend display of archaeological material with artistic responses derived from it, as at the 'HOME Dartmoor' exhibition at the Royal Albert Memorial Museum, Exeter in 2012 which blended Mesolithic lithics from collections with contemporary art (<http://www.rammuseum.org.uk/exhibitions/past/home-dartmoor>).

Open-air or site-specific representations of the Mesolithic are similarly limited. Reconstructions of the Howick structure are found both close to the excavation site, and at the Maelmin Heritage Trail near Wooler, Northumberland. A reconstruction has stood at Culverwell, Dorset while similar examples have been created by East Sussex Archaeology and Museums. Beyond structural evidence, however, little has been or can be reconstructed. The Abinger Pit Dwelling Museum perhaps stands alone as an excavation-specific museum that focuses on Mesolithic evidence.

The value of the resource held by museums was recognised in the 1999 Framework and a national finds register was mooted, and though the structure that has come closest to realising this has been the Portable Antiquities Scheme, no unified management system for artefacts has been devised. The *Gazetteer of Mesolithic Sites in England and Wales* (Wymer 1977) remains the most significant source material for HERs and though individual databases are continually updated with recent finds, no replacement gazetteer has emerged, nor has its contents been substantively questioned.

The access to Mesolithic material provided by museums was also identified as a focal point for change. Emergent, widespread access to the internet and digital media was posited as aiding information exchange. Indeed many museums do provide online resources, such as the descriptive pages found on the websites of the Museum of Liverpool (<http://www.liverpoolmuseums.org.uk/mol/archaeology/field/projects/prehistoric/index.aspx>), the Ashmolean Museum (<http://britisharchaeology.ashmus.ox.ac.uk/collections/mesolithic.html>) and others. The combined resources provided by the Museum of London and the London Archaeological Archive and Research Centre (LAARC) (<http://www.museumoflondon.org.uk/Collections-Research/LAARC/>) demonstrate how far into a museum's archive a visitor on the web can go without visiting in person.

3.4.6 Community Projects

Possibly the most obvious, and indeed engaging, activities that facilitate outreach are the community projects that afford opportunities to the public to undertake, and run, serious research in the field. These projects have become more widespread with the institution of the Heritage Lottery Fund and a trend towards outreach more generally in archaeology and academia. It should not be surprising that the Mesolithic has been a component of a number of these projects and the dedicated interest in the Mesolithic shown by some projects only serves to demonstrate the marketability of the period to those outside of universities.

Community based aspects to a number of successful projects has shown the contribution the public can make to Mesolithic archaeology in both fieldwork and reconstruction, notable examples being at Howick, and more recently in the Vale of Pickering (at Flixton Island) and at Fin Cop (run by Archaeological Research Services). The North East Yorkshire Mesolithic Project (Waughman 2012), run by Tees Archaeology with the North York Moors National Park Authority (and with roots in the Great Ayton Community Archaeology Project) has used volunteers to monitor erosion scars in order to identify areas of potential, and the project at Kingsdale Head (Howard 2007) identified a Mesolithic pit. Similarly, Tameside Archaeological Society's field survey and excavation work dedicated to investigating Mesolithic sites on Iron Tongue in the Pennines has retrieved data from deposits at risk (http://user39617.vs.easily.co.uk/?page_id=230) in lieu of action from the professional system. The Thames Discovery Project engages volunteers in an urban landscape context that has already revealed important Mesolithic evidence (see above, Milne et al 2011), and more recently at Vespasian's Camp (Cook 2011) students from the Open University working alongside local volunteers have recovered rare early lithics and faunal assemblages in the Stonehenge-Avebury landscape in Wiltshire. In Warwickshire, over 4000 lithics from Blacklow Hill, Leek Wooton recovered during road widening in the early 1970s have been analysed by Archaeology Warwickshire, using substantial community support, and found to be a Deepcar-type assemblage.

Two projects deserve mention for different reasons. At Bestwall Quarry in Dorset, archaeological planning conditions at an aggregates extraction site were discharged by the Wareham and District Archaeology and Local History Society as the 'Bestwall Quarry Excavation Project' (Ladle and Woodward 2009). At North Park Farm, Surrey, the Mesolithic archaeology excavated by the Surrey County Archaeological Unit, Archaeoscape and volunteers, supported by the Aggregates Levy Sustainability Fund (Guinness 2012), inspired Surrey County Council's 'Stone Age Summer' (2006) with components of the period incorporated into later years' summer activity schemes. It seems apparent that interaction between communities can pay dividends for all parties.

3.4.7 Digital Media

Much is made of social media sites like Facebook and Twitter in marketing and publicity terms, and no doubt there is a role to play in outreach. Both however require a certain degree of knowledge, engagement with and dedication to the sites on the parts of both poster/tweeter and target audience before the desired connection is made. Naturally, there is great variability in the interaction between these sites and their users, meaning they should not be used in solitude.

Many resources on the internet are a supporting facet of another entity. The BBC's *Hands on History* (<http://www.bbc.co.uk/history/handsonhistory/ancient-britain.shtml>) is a manifestation of the corporation's educational responsibilities, as is the Trust for Thanet Archaeology's 'Virtual Museum' (http://www.thanetarch.co.uk/Virtual%20Museum/1_Virtual%20Museum%20Main%20Pages/Virtual_Museum_Home.html). Others, however, represent single projects, such as the transnational *Lifescape Your Landscape* (<http://www.lifescapeyourlandscape.org/>) which examined different aspects of land including archaeology, in this instance presenting the story of a Wealden hunter-gatherer. The Danish 'E-museum' site 'Livet ved Bølling Søb' (Life at Bølling Søb) is an example of the

potential that websites have in education, in this case for children. The game produced for the site (<http://www.nilen.dk/projekter/boellingsoe/jaeger/jagt/start.htm>) is notable for its innovative use of sound, in that the correct animal sound must be heard before it can be 'hunted', further immersing the player in the landscape of the Mesolithic.

3.4.8 Reflections of the Mesolithic

The impact of interpretations of the Mesolithic in the arts is more than might be expected. Novels responding to, and based in, the Mesolithic to some extent serve to represent the period and promote it to the public. Paver's *'Chronicles of Ancient Darkness'* series, Elphinstone's *'The Gathering Night'* (2009) and Baxter's *'Stone Spring'* (2010) all draw on evidence from Mesolithic Britain and Europe. To these can be added *'Mezolith'* (Haggarty and Brockbank 2010), a graphic novel that despite a few artistic liberties in the evidence represented, demonstrates the value of the combination of words and pictures in communicating information.

In the visual arts, Carmen Mills (<http://carmenmills54.wordpress.com/>) has used Star Carr as a starting point for a number of works, as has Brian Graham in his works 'Star Carr' and 'Ritual Site', amongst drawing from other early prehistoric landscapes. The Artists in the Archive exhibition at York Art Gallery – 'Mesolithic Interventions' – used installation art to convey aspects of the Mesolithic and archaeological procedure, and, further afield, Gill Russell's 'Uamh/Cave' installed at the Royal Scottish Academy drew on work at High Pasture Cave on Skye to create a sparser response to Mesolithic and Cave archaeology in Scotland. On a different tack, work by Northumbria University architecture students has used the landscape context of the Howick excavations to suggest how a museum might be envisaged for the site, with impressive and award winning results. Lastly, three artists working under the soubriquet 'The New Primitives' invoked the period for their exhibition 'Mesolithic Pop', though whilst little directly links the art to prehistory, associations can be found with stoneworking, technology and tribal society. Visual artists have a strong tradition in engaging with landscapes and archaeology, including William Turnbull, David Nash and Richard Long – Andy Goldsworthy's work is even embedded within the prehistoric galleries at the National Museum of Scotland. Evidently, there is potential to collaborate with artists to raise awareness of the Mesolithic, and beyond merely as tools of outreach.

3.4.9 Miscellany

A collection of other outreach and engagement activities and areas of potential can be identified, both formal and less so. Spelaeological societies have a long association with early prehistory, the most notable of which being that at Bristol University which publishes annual reports, and the newly established Cave Archaeology Group, a special interest group of the British Cave Research Association (<http://cag.bcra.org.uk/>). Although the association of caves and prehistory is perhaps a little obvious, potential exists to engage with other groups not directly archaeological in scope – especially those with which investment in a parcel or type of landscape is involved.

Of archaeologically oriented groups, school-age schemes such as the Young Archaeologists Club deliver educational activities within a catchment area, though the individual group struggle to incorporate the Mesolithic (Hellewell pers. comm.). Independent groups, such as projects run by the Blackden Trust and Archaeology in Action should also be considered when taking into account the scope of outreach possibilities. Events such as science fairs

also provide a platform to promote the period, as happened at the Royal Society Summer Science Exhibition 2012 'Drowned Landscapes' (see <http://sse.royalsociety.org/2012/exhibits/drowned-landscapes/> ; <http://drowned-landscapes.tumblr.com/>) where the geophysical survey work in the North Sea is used as the basis for an exhibit.

Beyond excavation, flintknapping is most prominent amongst practical engagement activities with peripatetic experts such as John and Will Lord teaching and demonstrating their skill across the country. The impact of experimental lithics research impacted on the Boston Spa and District Community Archaeology Group to the extent that it conducted thermal experiments in partnership with Don Henson of the Council for British Archaeology (Barnes 2007).

Challenges are presented from diverse quarters in Mesolithic outreach. The Caveman/Stone Age Diet (Voegtlin 1975) that has seen fluctuating popularity in recent years is a potential anchor point with which to communicate knowledge about the period. The 1999 Framework identified rising sympathies with creationism as cause for concern, a concern that remains today. More recently, the far-right British National Party has used the post-glacial repopulation of Britain in arguments, most notably on Question Time (2009) over what is understood as the United Kingdom's 'indigenous' and 'aboriginal' inhabitants. While this misappropriation of the past is a concern of all periods, the focus on the late Pleistocene and early Holocene leaves scholars of earlier prehistory with a responsibility to ensure current knowledge is disseminated widely enough to enable counter-arguments by non-specialists.

4 Conclusions

The purpose of this document is to stimulate debate and reflection over the achievements and discoveries of the past 14 years. Research that has been carried out over this period has addressed many of the areas of priority identified in the 1999 Framework, some of which are still valid. Most notably, though, impact and engagement have come to the fore as a substantial element of archaeological work. It remains important, however, to identify the successes and weaknesses of understanding derived from all sectors of the profession.

Potential exists in the under-studied grey literature though the scale of the data and its understanding remains daunting. Similar potential exists in museum and private collections where a research question directs their consultation. Nevertheless, a most striking facet in the compilation of this document is the relative lack of academics undertaking fieldwork on major Mesolithic sites and landscapes. Furthermore, the integration of palaeoenvironmental and archaeological evidence is frustratingly lacking, perhaps due to difficulties in justifying palaeoenvironmental work under previous planning policy or simply lack of opportunities. New scientific techniques and field methodologies have been developed in the past 14 years, though the extent of the application of these on Mesolithic sites and collections remains unclear.

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