Palaeolithic and Mesolithic

Research Recommendations

The recommendations below apply specifically to the Late Upper Palaeolithic and Mesolithic periods in South East Scotland.

Many research recommendations from the original National ScARF and other regional research frameworks are also relevant and applicable in South East Scotland. These will soon be all be searchable and available all together through our new digital platform facility.

SESARF Agenda 1: The need for targeted research programmes to be initiated including field excavation and the study of existing lithic material held in collections.

SESARF Agenda 2: The study of this early period has benefited greatly in recent years from sympathetic and consistent curatorial control especially within East Lothian and Edinburgh. Mesolithic sites may well be better identified by the opening (top-soil stripping) of large areas. However, both of the house sites at Echline Fields and East Barns were discovered using typical linear trench evaluations. At Greenan, South Ayrshire, the discovery of large lithic scatters during initial phases of fieldwork led to the topsoil stripping of a much larger area and the subsequent discovery of four Late Mesolithic hut structures within a substantial multi period archaeological landscape (Engl 2015).

Whilst successful at Greenan, the blanket use of such an approach is questionable especially where no lithic scatters or other nearby sites are present. A more useful and easier to implement system would be the incorporation of initial survey programmes (trial pitting, fieldwalking etc) within archaeological planning requirements as dictated by position (coastal, river terrace) and site history (known lithic scatters, previous work, nearby sites).

Where inland sites are obscured by substantial sediment sequences it is unlikely that any form of commonly employed evaluation techniques would discover them.

SESARF Agenda 3: A targeted excavation to be initiated at one of the large Tweed Valley confluence sites such as Springwood or Kalemouth. On the continent these site locations have provided burial evidence including evidence of inter personal violence.

SESARF Agenda 4: A detailed dating programme is recommended. Out-with the developer funded sites of the Forth Littoral the dating is sparse.

SESARF Agenda 5: Further analysis of lithic collections, including identification of Palaeolithic lithics. This would be especially beneficial within the large collections of the Tweed Valley such as at Craigsford Mains which contain a mix of early and late material. A focus on the identification of Late Upper Palaeolithic and Early Mesolithic material would be especially rewarding in terms of the improved understanding of the earliest settlement in the area.

SESARF Agenda 6: More attention is needed to locate inland sites by exploring major river courses out-with the Tweed Valley and investigation of forestry plantation sites.

SESARF Agenda 7: A targeted research excavation on coastal scatters between East Barns and the Esk.

SESARF Agenda 8: Further fieldwork on the Dalmeny Estate and an expansion of the area excavated at Cramond

SESARF Agenda 9: Workshops to be initiated amongst lithic specialists in order to refine our understanding of lithic assemblages through consistent identification and use of terminology. This worked incredibly well during the Howick and East Barns investigations.

SESARF Agenda 10: An increased and up to date database to be created through targeted fieldwalking as well as incidental finds recognised during other archaeological work, would be beneficial to understanding of the area.

SESARF Agenda 11: Evidence for diagnostic raw materials within assemblages should be synthesised to shed light on movements during the Mesolithic.

SESARF Agenda 12: The transition between broad and narrow blade technologies in South East Scotland should be investigated.

SESARF Agenda 13: The intertidal zone and submerged landscapes off the Forth Littoral hold the potential for good preservation, and should be targeted for archaeological research.

SESARF Agenda 14: The incorporation and expansion of existing amateur groups into research programmes. This would include programmes of lithic identification.

SESARF Agenda 15: Geoscience Research relating to deglaciation and environmental change should be summarised and made available to archaeology

More information on this strategy
Are there research recommendations that you think are missing?

Why not add your comment below which will be flagged to ScARF (or get in touch with ScARF directly) and new recommendations will be considered for addition at the next revision.

1.0 Introduction

This chapter provides a regional overview of the period 12,700 BC – 4,100 BC looking at evidence from the Upper Palaeolithic and the onset of the Holocene during the Early and Later Mesolithic.

The overview includes the periods environmental background, the history of archaeological research and an assessment of the current resource including settlement evidence and material culture. The overview will also include sites and material located on the study regions geographical periphery such as the shell middens of the Forth Valley, the Late Hamburgian site at Howburn, South Lanarkshire (Ballin et al 2018) and the later Mesolithic house site at Howick, Northumberland (Waddington 2007).

In recent years excavations along the Forth Littoral at Cramond, Edinburgh (Lawson et al 2023), Echline Fields (Robertson et al) and East Barns, near Dunbar East Lothian (Engl & Gooder 2021) have pushed the Mesolithic in the region into the limelight producing nationally important spectacular structural evidence associated with well stratified narrow blade lithic assemblages which have pushed the adoption of traditionally 'later' microlithic technology into the 9th millenium and giving rise to theories about the re-colonisation of Scotland.

Similarly, evidence in neighbouring areas such as upper Clydesdale around Biggar, and Howburn Farm particularly (Ballin et al. 2010, Ballin 2017), illustrates some of the earliest groups known to have visited the British Isles in the late Pleistocene. This site was most probably occupied by hunters following reindeer herds across Doggerland through the Tweed Valley and therefore has great import for the study of the Upper Palaeolithic within the study region, the colonisation of early post glacial Scotland and the archaeological connections to continental Europe.

The research agenda provides recommendations for further work in the form of research questions.

Chronology

Main Periods	Sub-Periods	Date Range BC	Key Sites	Dating
Mesolithic	Terminal Mesolithic	5,000-4,000	Garvald Burn	4350-4000 cal BC
Mesolithic	Later Mesolithic	8,400-5,000	Daer Reservoir 2 Manor Bridge Scottish Borders Daer Valley, Scottish Borders East Barns, East Lothian Echline, South Queensferry Cramond, Edinburgh	7350-6650 cal BC 8550 - 7950 BC 8095-8026 cal BC 8200–7954 cal BC 8278–8022 cal BC 8600-8200 cal BC
Mesolithic	Early Mesolithic	9,800-8,400	?Crawford Mains, Scottish Borders	
Late Upper Palaeolithic	Ahrensburgian	10,800-9,800		
Late Upper Palaeolithic	Federmesser-gruppen	12,000-10,800	Howburn, South Lanarkshire (Ballin et al 2018)	
Late Upper Palaeolithic	Hamburgian/Creswellian	12,700-12,000	Howburn, South Lanarkshire (Ballin et al 2018)	

engagement with the Edinburgh Field Society in the 1990's led to the excavation of the mid 9th Millenium Cramond site in Edinburgh.

Mesolithic research as it currently stands in south eastern Scotland can perhaps be viewed as a dual system, in which the discovery and research of Mesolithic sites in Lowland areas appears in varying degrees to depend on commercial development and sites in Upland areas such as the Upper Tweed Valley appearing to rely on more independent engagement.

History of Mesolithic Research in South-eastern Scotland

In recent years the discovery and excavation of the spectacular late 9th millennium sites of the Forth Littoral has pushed south eastern Scotland to the forefront of Mesolithic studies in Scotland. However, despite a wealth of Mesolithic settlement evidence within the region in the form of antiquarian and modern surface collections, few systematic research programmes or syntheses of the available data have been undertaken in the region. This occurs in direct contrast to the large-scale research projects which have taken place in the maritime west of the country.

Of the three main Forth Littoral sites (Cramond, Echline Fields & East Barns) the latter two were discovered and recorded as a result of commercial development allied to good curatorial control and practice.

Mesolithic material has also been recovered from palimpsest and later sites such as at the Cramond Roman Fort excavations (Engl 2006, 2017), and those at Musselburgh (Kirby 2020) and Elginhaugh Hanson 2007).

Other more traditional formal research has been sparser. The rich surface scatter sites of the Tweed Valley were studied by Lacaille in the 1950's (Lacaille 1954) but have been largely ignored until the recent work of Warren (2001), Barrowman (2000) and Finlayson & Warren (2000).

South eastern Scotland has a long history of amateur collection giving rise to substantial mixed assemblages of poorly understood material lying within both private and museum collections. Nevertheless, recent collaborations between professional archaeologists and local groups such as the Bigger Archaeology Group (B.A.G) and the Edinburgh Field Society involving field walking, test pit survey and small scale excavation has given rise to several important research developments such the investigation of the Late Hamburgian site at Howden (Ballin et al 2018), the late 9th millennium site at in the Daer Valley (Ward 2012) and the identification and investigation of Later Mesolithic chert quarries in the Upper Tweed Valley at Burnetland Farm, Broughton (Ward 2012) and Wide Hope Shank (Warren 1998). Similarly, the engagement with the Edinburgh Field Society in the 1990's led to the excavation of the mid 9th Millenium Cramond site in Edinburgh.

Mesolithic research as it currently stands in south eastern Scotland can perhaps be viewed as a dual system, in which the discovery and research of Mesolithic sites in Lowland areas appears in varying degrees to depend on commercial development and sites in Upland areas such as the Upper Tweed Valley appearing to rely on more independent engagement.

4.5 Material Culture

4.5.1 Lithics

Lithic material is the primary indicator of early Holocene archaeological activity within South eastern Scotland due to its durability within the record. The dominance of lithic technology in explaining the lifeways of Early Prehistoric societies and lifeways is therefore an understandable if not exactly desirable facet of the study of early prehistory.

The lithic assemblages of this early period utilized a wide variety of raw materials including flint, chert, quartz and chalcedonies/agates. Other

supplementary materials such as fossil wood, jet, jasper and baked mudstone are also present within the record. These materials were mostly obtained from local sources.

Though the use of a wide variety of lithic materials is an identifiable trait of early prehistoric activity, and appears to have been an essential part of subsistence activities practiced throughout the Mesolithic.

Flint

This material is a mainstay of early Holocene assemblages within South east Scotland and is present to some degree within almost all excavated assemblages. Although mainland Scotland has an apparent lack of *in situ* flint deposits, flint pebbles have a widespread distribution around the coast. Significant chalk deposits are also known to underlie the North Sea (Gemmell & Kesel 1977, 66). Similarly, glacial till deposits containing flint, such as the Buchan gravels, are also known. The erosion of these sources by marine and glacial action (Piggott & Powell 1949, 160) has led to the creation of many such derived deposits along the length of the East coast, with a concentration known to exist in East Lothian (Wickham-Jones & Collins 1978).

It is likely that the majority of coastal lithic assemblages are composed of material that was previously eroded into the sea from the local glacial till and then redistributed upon the shoreline. The tendency for such till deposits to be mixed with other materials (Wickham-Jones 1986, 2) such as chert, chalcedony and quartz would support this origin. A smaller proportion of the flint may also have been derived from the erosion of submerged chalk deposits and from such tills that are also now covered by the North Sea. Other sources of raw material would include locally available river cuts and exposures. along the coastline at East Barns.

There appears to be a preference for working flint within the Mesolithic which can be determined by its ubiquity within lithic assemblages even where the material is locally scarce (Saville 2004: 185). Flint is present even within the lithic assemblages of the Southern Uplands in areas such as central Dumfries and Galloway (Finlayson 1990a) and the Upper Tweed Valley (Warren 2005), where good quality chert forms the mainstay of many assemblages.

Flint appears to dominate the large lithic assemblage recovered at the coastally located house sites of East Barns, East Lothian and Howick, Northumberland. However, this dominance is not reflected within the assembalges of other sites of the Forth Littoral such as Echline Fields and Cramond where good quality Southern Uplands chert replaces it as the main utilized material.

Given the ubiquity of flint it would appear to head a hierarchy of raw materials utilised within the Mesolithic. This material seems to produce the highest frequencies of microliths and blades within assemblages, followed by chert, which produces a higher frequency of flakes, with finally quartz not producing substantial amounts of conventional blades (Finlayson 2004: 223). Nevertheless, the evidence from the regions lithic assemblages suggests that the primary concern of Mesolithic populations in their choice of raw materials reflect issues of local availability, combined with the relatively good quality and utility of the supplementary materials occurring within South East Scotland.

Flint appears to dominate the large lithic assemblage recovered at the coastally located house sites of East Barns, East Lothian and Howick, Northumberland. However, this dominance is not reflected within the assembalges of other sites of the Forth Littoral such as Echline Fields and Cramond where good quality Southern Uplands chert replaces it as the main utilized material.

Though the majority of flint within the regions early Holocene assemblages appears locally derived, this is not always the case. At the Late Hamburgian site of Howburn South Lanarkshire (Ballin et al), the flint component of the assemblage was composed primarily of imported Doggerland/Yorkshire flint alongside a variety of radiolarian cherts, a small percentage of which appeared exotic. This material was likely brought into the Howburn area from now submerged locations within the North Sea (Ballin et al 18).

Chert

Chert occurs throughout Scotland and is particularly common in the Southern Uplands. This material not only forms a major component of inland Mesolithic assemblages across both the Scottish Borders and south-west Scotland (Mulholland 1970; Affleck 1986; Finlayson 1990b; Saville 1994; Warren 2005) but also appears within Mesolithic coastal assemblages along the Forth (Robertson *et al* 2013; Saville 2008; Engl 2012, Engl 2021).

'Southern Uplands' type chert is often fine grained and 'flint-like' and comes in a wide range of colour variations ranging from the common blue-grey form to grey-green, brown and dark purple (Ballin & Johnson 2005).

Fine grained cherts such as the Southern Uplands type can be found in all Carboniferous limestones (Hind 1998, 1) and is therefore present throughout the region as small nodules within till deposits. A further prominent source of chert is Chapel Point at Dunbar, East Lothian (Wickham-Jones & Collins 1978, 14). There is evidence in southern Scotland that cherts were obtained from both primary and derived sources (Saville 1994, 59), with quarry sites comprised of intercutting scoops being identified at Flint Hill, Kilrubie Hill and Wide Hope Shank within the Upper Tweed Valley (Warren 2001 & 2007, 146). These sites

are poorly understood however they provide evidence of on-site blade production and therefore are likely through technological association to be late Mesolithic or early Neolithic in date.

Quartz & Chalcedonies

Quartz is found as a common supplement to flint on a wide range of prehistoric sites throughout Scotland, with an understandable preference for finer quality material. Wickham-Jones (1986, 30) states that quartz was generally used only where other more easily worked materials were not available. This hierarchy of materials appears not to have been as prevalent within the sites of the Forth Littoral where high quality 'greasy' nodular quartz and chalcedonies were readily available.

Chalcedony appears in a variety of colours and forms. The majority appear homogenous and fine grained. They are largely pale grey in colour with a distinct waxy lustre. Other types include pink and banded agates and jasper. Though chalcedonies appear as a supplementary material on many sites it is easily misidentified as flint. Chalcedony appears to be an important component of the sites of the western Forth Littoral such as Cramond (Lawson et al), Echline Fields (??) and the Dalmeny Estate (Engl forthcoming).

4.5.1.2 Lithic Assemblages of the Upper Palaeolithic & Early Mesolithic

Artefacts and assemblages of Upper Palaeolithic date are beginning to emerge within the archaeological record of Scotland such as the possible Ahrensburgian site at Rubha Port ant Seilich, Islay (Mithen et al. 2015) and the likely Hamburgian assemblage at Milltimber , Aberdeenshire (Ballin forthcoming) . The Howburn site near Biggar, South Lanarkshire occupying the very edge of the south eastern study area has produced material from the later Hamburgian and

Federmesser-Gruppen periods in the form of blade industries where broad blades were struck from opposed cores (Ballin et al 2018, 107).

No early contextualized and dated Mesolithic assemblages are currently known within the Scottish archaeological record. Traditionally the period is defined on the English model equating the Early Mesolithic with the presence of broad blade technology and the later Mesolithic with narrow blade. Lithic scatters containing broad blade type material are present within the Tweed Valley at sites such as at Airhouse Farm and Craigsford Mains, Lauderdale. The latter site in particular has provided typological material such large oblique truncations and formal end of blade scrapers typical of material found within Early Mesolithic assemblages in England (Warren 2001, 56. Unfortunately, the majority of these scatters are heavily mixed with later material and the exact nature of this material remains uncertain.

4.5.1.3 Lithic Material and the Later Mesolithic

The traditional association of the later Mesolithic with narrow blade or geometric microlithic technology has been challenged in recent years by the excavation of several sites along the Forth Littoral such as Cramond, Echline Fields, East Barns and Howick in Northumberland that have all produced large, well stratified and contextualized assemblages of narrow blade material dating to the mid to late 9th millennium BC.

The assemblages of the Forth Littoral sites appear scalene microlith dominated with the exception of Echline Fields where this form was replaced with crescent types. This was also the case across the Forth at Fife Ness, Fife (Wickham-Jones & Dalland 1998) suggesting some possible form of site specialisation. Other tool forms represented included a wide range of other microlith types such as backed bladelets/rods and crescents, numerous small scraper forms, retouched flakes and blades, piercers and in the case of the

assemblages at East Barns and Cramond quantities of micro burins and notched pieces. These artefacts were relatively scarce at Howick and Echline Fields an absence possibly due a lack of surviving in situ working areas at these sites (Engl 2021, 57). The presence of microburins has been closely associated with the production of scalene triangles (Wickham-Jones & McCartan 1990: 100).

All stages of the *chaîne opératoire* were present within these assemblages with blade and blade/flake forms being the predominant core type. This suggests that blade manufacture was an important focus of activity within the sites of the Forth Littoral. A variety of other core types were present including bipolar examples. At East Barns this was associated not only with the reduction of intractable material but also the curation of exhausted flint platform cores. A wide range of regular blades, flakes and other debitage was present within the assemblages.

The scatter sites of the Tweed valley though lacking contextual information appear to provide a similar signature with a variety of microlithic forms, scrapers and rare micro burins. However, the scatter sites are mixed with substantial amounts of later material and in the case of Craigsford Mains possibly earlier material. The assemblages of the Tweed Valley though quantitively significant require a substantial reappraisal if they are to be an important addition

The appearance of narrow-blade lithic industries within south eastern Scotland has been proposed as a specific cultural response to the inundation of the North Sea Plain at the turn of the 8th millennium bc (Waddington et al 2007a; 2015; Waddington & Bonsall 2016; Waddington & Passmore 2012). This builds on Saville's tentative view that this technological change to narrow-blade assemblages within the British Mesolithic was happening first within northern Britain.

4.5.1.3 Coarse Stone Artefacts

A variety of other larger stone cobble tools were utilised during the Mesolithic and form an overlooked yet important part of the period's material culture. These were fashioned on locally derived materials and have a predominantly coastal distribution. The term course or cobble stone tools cover a variety of implements including elongated pebble tools, hammer-stones, anvils, rubbing and grinding stones and bevel ended forms which have in bone.

The 9th millennium house sites of East Barns, East Lothian and Howick, Northumberland have both produced well contexted assemblages of these artefacts though there is an absence further up the coast at Cramond and Echline Fields perhaps reflecting a differentiation of on-site activities between the sites of the upper Forth and those more exposed to the open sea such as East Barns and Howick.

The house site at East Barns, produced 21 coarse stone tools including 14 bevel ended pebbles made on elongated, waterworn pebbles of sandstone and fine-grained sedimentary rock.

The use of these artefacts has been well debated with proposed uses as limpet hammers (Grieve 1885: 57) or limpet scoops (Bishop 1914: 95), knapping tools (Breuil 1922: 267–71; Saville 2004: 191) and hide or plant working instruments (Foxon 1991, Finlayson 1995; 1998 and Griffiths & Bonsall 2001). Jacobi (1980: 189) has associated bevel-edged tools in general with the dressing of seal skins, an attractive theory given the general locations in which these artefacts are found (Engl 2021, 67).

Other coarse stone artefacts found at East Barns included a small Quartz knapping stone, cobble hammer-stones, a burnisher (SF 35), an anvil (SF 25), and an anvil/knocking stone. The majority of these can perhaps be associated with the on-site reduction of lithic material but their use in a variety of other activities, such as food processing, cannot be discounted.

Away from the coast the scatter sites of the central Tweed Valley have produced recurring surface finds of perforated hammerstones or 'maceheads' and waisted pebbles. These are both controversial artefact classes with uncertain associations to the Mesolithic.

The perforated hammerstones are thought to be early in date on the basis of typological parallels (Lacaille 1954) but as with many such artefacts have a variety of possible uses.

Waisted pebbles are made on flat, water rolled pebbles with notches located at the top or bottom of the pebble (Warren 2001, 154) giving rise to their possible use as line weights or net sinkers. These artefacts whatever their use are found in close association with large Mesolithic sites such as Dryburgh, Rink Farm and Springwood albeit with later material (Warren 2001 159).

4.5.1.3 Bone & Antler

Tools made of bone and antler would have been common items within the toolkits of Mesolithic South eastern Scotland. Unfortunately, evidence for their use and manufacture is scarce within the archaeological record and appears restricted to coastal contexts on the fringes of the region.

The carse clays of the Forth have produced a number of antler 'mattock' tools a smoothed whale rib, and a possible stick or handle from Cornton Brickworks (Sloan 1993, 43). Many of these artefacts appear in association with whale skeletons (Smith 1989).

The most spectacular evidence for organic tools to date has been the intact barbed harpoon recovered from the Forth at Blackness (Saville 1996).

4.6 Religion and Ritual

Archaeological evidence for religion or ritual within the early Holocene of Scotland is not readily apparent or easily interpreted, especially given the apparent lack of identifiable burial rites. Nevertheless, recent works by Chatterton (2006), Conneller (2011), The Scottish Archaeological Framework (ScARF 2012) and Blinkhorn & Little (2018) have sought to define a spectrum of activities, objects and archaeological features that might constitute 'ritual' away from mortuary evidence.

This spectrum of Mesolithic ritual includes 'the importance of distinctive 'monumental' landscape features, structures, seasonal events, attitudes towards discard and depositional practices, ' (ScARF 2012) all taking place within an enculturated Mesolithic landscape.

Shell middens such as those recorded along the southern shore of the Forth Estuary (Sloan 1993) have been accepted as monuments by certain researchers (Pollard 1996, Warren 2007) displaying a distinctive and highly visible construction within the landscape. Middens were probably constructed by repeated seasonal visitations forming possible territorial markers through a seemingly strict pattern of discard.

The notion of 'persistent places' (Barton *et al* 1995, 81-82; Jaques & Phillips 2014, 7) such as middens within the Mesolithic landscape is also possibly illustrated by the substantial pit dwellings of the late 9th and early 8th Millennium recorded at East Barns and Echline Fields. These structures were occupied for significant periods of time and possibly acted as initial territorial markers, ceremonial centres or both (Mithen 2019 105).

At East Barns, the area of the hollow in which the house was placed appears to have been subject to repeated activity throughout the Mesolithic and into the Neolithic and Bronze Age. At the northern end of the hollow two late Mesolithic dates represent activity occurring some 3000 years after the abandonment of the house itself (Engl & Gooder 2021, 99).

Evidence of Mesolithic ritual may also be seen in the pit digging phenomenon recognised as ubiquitous in the Neolithic of Britain and Ireland (Anderson-Whymark and Thomas 2012). Pit alignments such as at Warrenfield, Crathes (Murray et al 2009) have appeared within the archaeological record of the Mesolithic.

4.8 Settlement

Evidence for early Holocene settlement in South-eastern Scotland comes primarily from surface scatters of lithic material such as the sites of the Tweed Valley. However, recent excavations along the southern shore of the Forth have produced middens at Musselburgh Kirby 2020) and possible shell midden evidence at Dalmeny (Jones 1998). More spectacularly, substantial house sites dating to the late 9th millenium have been excavated at Echline Fields (Robertson et al 2013) South Queensferry and at East Barns near Dunbar, East Lothian (Engl & Gooder 2021). These sites are suggestive of occupation over a considerable period of time possibly on a seasonal basis.

Several smaller scale sites composed of pit features have been excavated at Cramond, Edinburgh (Lawson et al 2023), Daer Valley (Ward 2012) and the terminal Mesolithic site of Garvald Burn, Scottish Borders (Ballin & Barrowman 2015). Both Cramond and Daer Valley are associated with substantial quantities of hazel nut shell and are perhaps evidence of short lived yet intensively used specialist processing sites. The Garvald Burn site in turn is perhaps more reflective of the majority of sites initially recognised through lithic material and may have been a transit camp or task site associated with a mobile economic strategy.

Rich lithic scatter sites such as those of the Tweed Valley represent the location of disturbed sites (Wickham-Jones 2020b), and out-with the work of Warren (??) and Finlayson & Warren (??) few have been comprehensively investigated. These sites are often composed of a

mixture of chronological material indicating not only the use of the locations over several millennia but also possibly the reflecting biases that come with collection.

4.8.1 Howden – Evidence for Upper Palaeolithic Occupation

In 2006 and 2009 excavations at Howburn Farm, near Biggar South Lanarkshire (Ballin et al 2018) identified diagnostic lithic material within a mixed assemblage relating to Upper Palaeolithic Late Hamburgian and Federmesser-Gruppen 'pioneer' settlement during the late glacial period.

It is thought that these early settlers most probably found their way into the Southern Uplands following reindeer herds across Doggerland through the Tweed Valley.

Other Upper Palaeolithic material has come to light in recent years such as the assemblage from the Milltimber site in Aberdeenshire, elements of which are typologically Late Hamburgian or Ahrensburgian in date (Ballin forthcoming) Howburn is presently Scotland's (and Britain's) only Hamburgian settlement site.

4.8.1 The Sites of the Forth Littoral and the recolonisation of South-eastern Scotland

In recent years excavations undertaken at Echline Fields and East Barns together with the Northumbrian site at Howick have revealed spectacular and substantial house structures dating to the late 9th millennium bc. In addition to consistent dates, all three structures have produced a remarkably consistent set of structural features. The houses were built within a sub-circular sunken house pit between 4m and 6m in diameter. The pits were edged with inwardly angled post holes and contained a complex arrangement of centrally positioned

hearths and other internal furniture. Both the Echline Fields and East Barns houses had west facing entrances.

At East Barns sealed lenticular spreads of cultural debris including large quantities of lithics and probable food waste were recorded representing material that had gathered beneath the flooring of the house. Dwelling pits with such lenticular deposits are seen as one of the most persistent indicators of house sites throughout the South Scandinavian Mesolithic (Grøn 2003: 692) and occur in both Maglemosian and later Ertebølle cultural horizons.

the robust construction evident at Echline Fields and East Barns implies an exhibition of permanence. The ethnographic literature suggests that Mesolithic populations are likely to have operated on a number of spatial scales, with settlement activities ranging from base camp aggregation to more structurally ephemeral seasonal and resource-specific temporary camps such as Cramond and Garvald Burn. This spatial scale may have been reduced at certain sites along the Forth Littoral, where the presence of varied, numerous and predictable resources may have fostered a cultural adaptation involving longer periods of extended occupation or regular reoccupation.

The sites of the Forth Littoral including Cramond are united by the presence of large, well stratified assemblages of narrow blade lithic material. This combination of robust structures and narrow-blade material has been proposed as a specific 'colonising' cultural response to the inundation of the North Sea Plain at the turn of the 8th millennium bc (Waddington et al 2007a; 2015; Waddington & Bonsall 2016; Waddington & Passmore 2012). The sites are relatively uniform in nature and are clustered both temporally (8400–7800 cal bc) and geographically (north-east England and south-east Scotland), giving credence to what Waddington sees as a population move westwards from Doggerland along the then shoreline towards the north-east

coast of Britain (Waddington & Bonsall 2016).These populations then quickly spread throughout the northern part of the British Isles. While archaeological evidence for other types of substantial hut structures is present within the later Mesolithic such as at ?? in Dumfries and Galloway, none appear to be directly comparable to the earlier pit house sites dating to the turn of the 8th millennium bc. This theory has been argued against by Conneller (2022: 178) who states that rather than tracking an east–west population movement, the radiometric dates produced by the sites of the Forth Littoral may in fact be a reflection of the rise of hazel within the early post-glacial environment of northeastern Britain during the 9th millennium.

In addition to the substantial house sites the Forth Littoral has produced further evidence of Mesolithic settlement within the wider environs of East Barns where disturbed lithic material of Mesolithic date was recorded at both Dryburn Bridge (Dunwell 2007) and Torness (Mercer 1976). Similarly, narrow-blade material was identified approximately 600m to the east of the East Barns site during field-walking associated with the project (Gooder 2001). Mesolithic material has also been identified on the Gullane Sands further to the west.

Excavations at the Cramond site, Edinburgh (Lawson et al 2023) have produced a number of stake-hole and pit features with associated assemblages of lithics and hazel nut shell. With occupation dating between 8630–8210 cal BC Cramond appears to be the first of the securely dated narrow-blade microlithic sites appearing along the southern shore of the Forth, and as such it remains the earliest narrow-blade type assemblage yet discovered in Britain.

Within the immediate environs of the Cramond site itself, various excavations at Cramond Roman Fort have produced several further small assemblages of narrow-blade lithic material (Engl 2006, 2017)

These assemblages most probably represent the re-deposition of material within secondary contexts.

Slightly to the west of Cramond a programme of fieldwalking undertaken in 1998 identified a scatter of narrowblade lithic material and possible shell midden evidence in fields belonging to Dalmeny Estate (Jones 1998). Combined with the evidence obtained from Cramond and Echline Fields this suggests a concentrated focus of Mesolithic settlement along this part of the Forth.

4.8.1 The Sites of the Tweed Valley

Numerous lithic scatter sites have been identified within the Tweed valley many of which such as Craigsford Mains, Lauderdale consist of mixed material including typologically early Mesolithic broad blade artefacts. These sites though lacking in focused excavation appear to have been located in a rich, diverse riparian landscape. River junctions seem to have been important locations and two sites Manor Bridge and Rink display large scatters (Warren 2001 63).

Conflict

No evidence for conflict currently appears within the archaeological record of Upper Palaeolithic and Mesolithic Scotland. However, violence appears to have been a relatively common feature of Early Holocene societies across Europe.

Embedded projectile points and fracture wounds within buried individuals from cemetery sites such as Skateholm (Sweden), Tybrind Vig (Denmark) and Teviec (France) (Guillane & Zammit 2005) is seen as evidence of armed violence and regarded as a sign of inter-group conflict (Neeley & Clark 1990, 129). These burial sites are present within areas of rich natural resources such as alongside rivers, lakes and coastal areas suggesting that such violence may have been the result of increased competition for control of these economically productive environments.

Social factors within and between groups may also have played an important role especially in the Later Mesolithic as individual and group competition may have arisen or intensified in response to demographic expansion. The relatively sudden and geographically widespread occurrence of these archaeologically recognisable weapon injuries suggest an emerging social pattern of social behaviour. Indeed, the Mesolithic is often regarded as the formative period of organised warfare (Vencl 1999, 59)

In short, despite the absence of archaeological evidence for conflict in the early Holocene of South eastern Scotland there is no reason to suggest that it was not an important and re-occurring part of social life within this area.

Research Questions

The questions below apply specifically to the Late Upper Palaeolithic and Mesolithic periods in south eastern Scotland.

Below is an outline of some of the region's strengths and weaknesses regarding current research.

Strengths

- Well preserved and chronologically correlated sites e.g., East Barns, Cramond and Echline Fields related to Mesolithic occupation along the southern shore of the Forth Littoral during the 9th and early 8th Millenniums BC.
- The three previously mentioned sites are all fully published and present rich and stratigraphically detailed lithic assemblages.
- East Barns and Echline Fields provide the earliest substantial Mesolithic house structures in Scotland.
- The sites of the Forth Littoral alongside the 'sister' site at Howick, Northumberland have presented strong evidence (technological change & population movement)
- The rural nature of much of South East Scotland means Mesolithic site survival is likely to be high.

- The South-east Scotland area has important Upper Palaeolithic sites (Howburn) on its immediate borders.
- The region has a strong history of Community group engagement (Biggar Archaeology Group, Edinburgh Archaeological Field Society).
- Evidence of Mesolithic chert extraction
- Large known scatter sites within the Tweed Valley
- The numerous pre-existing collections of lithics held in local museum collections provide an excellent opportunity for the re-examination of primary material. This is especially true of the Tweed Valley.

Weaknesses

- Lack of sustained and intensive research programmes such as seen along Scotlands western seaboard such as the Southern Hebrides Mesolithic Project) and Scotland's First Settlers Project (Hardy and Wickham-Jones 2009)
- Lack of correlation between the substantial late 9th/early 8th Millenium BC sites of the Forth Littoral and the more ephemeral and largely undated lithic scatter sites. This likely presents an unbalanced and incomplete picture of Mesolithic occupation within South East Scotland.
- Lack of well published and environmental sites
- A general lack of integration and refinement is present especially when discussing lithic typologies
- Lack of radio-carbon dates out-with the sites of the Forth Littoral.

Opportunities

- As with many regions of Scotland out-with the Central Belt south-east Scotland large rural areas without development permit sustained fieldwalking and other projects.
- To develop research programmes based on the wealth of existing information. These can combine known lithic scatters, targeted excavation of known sites, environmental studies
- Knowing that substantial Mesolithic sites are present within the study area especially along the Forth Littoral and central Tweed Valley a targeted approach to mitigation can be developed. This would be especially beneficial along coastal and riverine areas where known sites are located.

Many research questions from the original National ScARF and other regional research frameworks are also relevant and applicable to South East Scotland. These will soon be all be searchable and available all together through our new digital platform facility.

The Upper Palaeolithic

SESARF Qu.1: Given the Late Hamburgian character of the Howburn lithic assemblage is there a an earlier classic Hamburgian or Cresswellian stage present within the study area ? Especially within the mixed material within the Tweed Valley scatter sites.

SESARF Qu.2: How does the raw material preferences, type and technological approach compare with other Late Upper Palaeolithic industries represented within Scotland and northern England.

SESARF Qu.3: Do the Tweed Valley scatter sites have an Upper Palaeolithic component?

SESARF Qu.4: Are there regional differences such as raw material availability and adaptation present within Scottish Upper Palaeolithic assemblages.

SESARF Qu.5: Is there a visible Upper Palaeolithic/Mesolithic transition with regards to material culture within SE Scotland and what role did the changing environment play in this.

The Mesolithic

SESARF Qu.1: Where is the evidence for settlement around the end of the Loch Lomond Stadial (10,500-10,000 cal BC).

SESARF Qu.2: To what extent is Early Mesolithic Broad blade material present within the scatter sites of the Tweed Valley

SESARF Qu.3: What is the nature of the large scatters found at the confluence sites on the Tweed such as ? and ? Do these represent base camps or aggregate sites?

SESARF Qu.4: To what extent does the use of differing raw materials within SE Scotland offer insights into population movement and contact?

SESARF Qu.5: Can regional complexity be understood in terms of microlith variability.

SESARF Qu.6: How do the narrow blade assemblages of the Forth Littoral sites relate to early English material and what role if any do the sites of the Tweed Valley play?

SESARF Qu.7: To what extent do the house sites of the Forth Littoral relate to the sites of the interior and Uplands? Can a seasonal round be recognised intra site? Is there evidence of 'base camps' and hunting camps'?

SESARF Qu.8: To what extent do the house sites of the Forth Littoral provide evidence of sedentism? Are the coastal sites stable aggregations of population or are they part of a wider inhabited landscape?

SESARF Qu.9: To what extent does collection bias affect the understanding of lithic scatters in the region?

SESARF Qu.10: Are the chert quarries of the Southern Uplands definitively Mesolithic in date? How were these features embedded within the Mesolithic taskscape and is there evidence of their role in exchange systems.

SESARF Qu.11: Do the sites of the Forth Littoral represent a recolonisation related to the inundation of Doggerland or is it a general cultural response to the rapid warming of the climate and the proliferation of hazel

SESARF Qu.12: To what extent do shell middens occur along the southern shore of the Forth

SESARF Qu.13: Do sites such as Cramond and Daer Valley represent early specialized sites.

SESARF Qu.14: Can site function be adequately explained by material culture?

SESARF Qu.15: Why do the substantial pit houses of the Forth Littoral appear restricted to the late 9th millennium?

More information on this question

Are there research questions that you think are missing?

Why not add your comment below which will be flagged to ScARF (or get in touch with ScARF directly) and new questions will be considered for addition at the next revision.