THE LATE MEDIEVAL PERIOD

RESOURCE ASSESSMENT

Carolanne King with contributions by Ian Miller, Nigel Neil, Michael Nevell, Norman Redhead

Summary


This chapter presents a summary of the archaeological and historic environment research undertaken in North West England since 2006 for this particular period. The chapter is arranged using the same structure as the original resource assessment subject chapter for the first North West archaeology research framework published in 2006 (Brennand et al. 2006). It is not a replacement of that work, but rather an addition and enhancement. The 2006 resource assessment text remains a key foundation document for regional research studies in North West England. Nor is this chapter merely a list of all work undertaken since 2006. Instead, it highlights key new data, emerging subject areas, and fresh synthesis in the decade or more since the original regional research framework was published. The chapter was compiled by the lead author and uses material provided by a variety of researchers who are also credited. The current consultation is designed to highlight any omissions in recent significant work. The chapter will be used as the framework for the Stage 2 Research Agenda Workshops to be held in the autumn of 2017 and spring of 2018. The revised chapter will be printed as a point-in-time document in 2019 through CBA North West. Any gaps identified in the research resource will be addressed through a new regional research frameworks website being developed by Historic England, of which this chapter will form a part.

In 2018 “The Oxford Handbook of Later Medieval Archaeology in Britain “was published (Gutiérrez and Gerrard eds.) This is an important resource for those studying the archaeology of the period containing summaries and articles on key aspects of late medieval British archaeology along with suggested research directions and a comprehensive bibliography.
Introduction

Over the last ten years, the late medieval period of the region has seen a substantial body of archaeological investigations, analysis and publication. It is finding its place in national themes on medieval archaeology and history, contributing to nationwide synthesis such as that of medieval settlement (Winchester 2011, 125-149). The synthesis and publication of major projects undertaken before 2006 is a major theme of the last decade. For example, the Carlisle Millennium project had its second volume published during the assessment period (Howard-Davis 2009). The extensive excavation programme at Norton Priory (Ch), which ran 1970-1987, was reviewed and published (Brown and Howard-Davis 2008). The fantastic collection of artefacts from Meols on the Wirral is now presented in a single volume catalogue (Griffiths et al 2007). Several of the region’s towns and cities have also had recent syntheses dealing with their history and archaeology. These include Chester (Ward 2015) and Carlisle (Brennand and Stringer 2011).

The previous review identified a bias towards the south of the region in late medieval studies with the debate on the factors regulating distribution of nucleated and dispersed settlements an on-going topic (Newman 2006, 115-117). In the interim years, a significant number of landscape surveys across Cumbria, particularly those commissioned by the National Trust, along with individual research projects (e.g. Newman 2014), have gone some way towards compensating for the southern bias.

New technologies and online presentation of results are rapidly becoming an established part of archaeological investigations for the period. This is along with more holistic approaches to historical landscapes. The regional HLC programme is now complete; Greater Manchester being the last finishing in 2012. (Table 1) (Fig 1). One surprising conclusion from this was that with the exception of the city itself most districts had surviving evidence for medieval field systems (Mitchell et al 2012). The NMP continues with plotting and analysis of features from aerial photographs and Environment Agency LiDAR data. LiDAR is particularly useful in the uplands of a region where pasture is the norm and cropmarks rarely occur. A previously unknown second motte at Shocklach Castle (Ch) was discovered through LiDAR (Hardwick 2017). The development of drones and new photogrammetric software allows complex 3D surveys such as the 3D survey of Gleaston Castle (C) funded by the Morecambe Bay Partnership. (Fig 2) Advances in scientific techniques have aided the study of this period, perhaps none more so than dendrochronology. The Historic England (begun as English Heritage) programme of tree ring dating across the region has had a significant impact on our understanding of the development of many buildings.
Consultation with stakeholders, predominantly local ALGAOs, the National Parks and the National Trust, shows that in the last decade around 83 significant projects across the region added to our knowledge of the period. These major projects were accompanied by numerous smaller investigations where information was fragmentary. However they all provide an important source of data for analysis, this is particularly relevant for the field of ceramic studies where pottery assemblages, small and large, have the potential to inform new regional sequences. Significant new pottery production sites have come to light at Samlesbury (L) (Wood et al 2007) and Petergate (C) (Railton et al 2014).

Although most of these major projects were commercial, there are specifically targeted research excavation projects such as that at Poulton (Ch), which are aiding our understanding of the period. A recent increase in HLF Landscape Partnership Schemes (table 2), have seen more community research and excavation programmes such as those at Cultrum Abbey (C) and Wolsty Castle (C) (Fig 3). Community based archaeological research is becoming more frequent and where developed and run with professional guidance these projects are an important means of addressing specific questions from the 2007 agenda. The programme of works at Buckton Castle (GM) is an example where community excavations contributed to a better understanding of the form and origins of the site (Grimsditch et al 2012).

University based research, though not extensive, tackles aspects of the period in the North West including such themes as the context of Cheshire castles (Swallow 2015). Regional sites are also included in national projects such as the study of moated sites in Medieval England (Coveney 2015). The study of distributions of specific find types across the region is now possible through PAS data and a number of projects examine regional and national aspects of specific find types, including pilgrim ampulla (Anderson 2010) and medieval coins (Keller 2012).

Together, these types of archaeological investigation provide a resource that can be tapped to answer some of the questions posed in 2007. Such is the extent of this resource it is not possible to refer to all the relevant projects or produce a detailed synthesis of the implications of their findings within the context of this review.

**Rural Settlement and Landuse**

*Settlement pattern*

Over the past ten years technological advances in survey equipment and methodologies along with large scale landscape surveys have had the biggest impact on the understanding
of the rural settlement pattern. The availability of this data for analysis through websites like the ADS has opened up this resource to researchers. Although research excavations are comparatively rare, those that have taken place are helping to refine chronologies of site types and features that previously were only tentatively identified as medieval in date.

Advancements in statistical analysis techniques and GIS are bringing new tools to the study of medieval landscapes and settlement to pose new questions. Previous studies relied heavily on Robert and Wrathmell’s *An Atlas of Rural Settlement in England* (2000). In 2010 the original study maps were converted to geospatial data, now available on the ADS. Lowerre applied regression and clustering techniques to this and other relevant data, to look for national and regional patterns. The conclusion reached was that “far more of the variation in the measures of settlement organisation is not explained by the environmental variables than is explained by them” (Lowerre 2014, 102). In a region where the reasons for the settlement patterns are not fully understood, there are implications for current and future studies emphasising the need to consider social and cultural factors not evident from archaeology alone.

Completion of the HLC created an important set of GIS data, identifying possible medieval settlement centres and land divisions. The Greater Manchester HLC highlights that “the HLC has identified a surprising number of past rural landscape features. Some of these point to early farming and settlement of medieval and earlier periods, and would repay more detailed research”. So far, only a handful of studies have used the HLC data to examine medieval landuse and settlement. One of the most significant of these is Newman’s doctoral thesis which took HLC data, along with map regression and other documents, to model the 18th century field and settlement patterns for Cumbria. This was used to develop a map of the settlement and land use across Cumbria in the late medieval period (Newman 2014). Documentary research is an important tool when studying landscapes, Winchester (2011, 125-149) has considered upland seasonal settlement through ‘shieling’ place-names.

As a counter point to the southern bias noted in the original framework (Newman 2006, 115-117), Cumbria has had an intensive programme of landscape surveys, especially on land owned by the National Trust within the LDNP. Landscape Partnership Schemes (see table 2), often HLF funded, have encouraged local communities to engage with their heritage. Though targeted excavation of dispersed settlements is still rare, some initiatives have come directly from the local community such as the Duddon Valley Local History Group (DVLHG). The DVLHG have long been active in the area and have discovered the remains of around 35 longhouses (Matthiessen et al 2013), which led to the Duddon Valley Longhouse Project (C), a component of the larger Ring Cairns to Reservoirs project. This is a three year
scheme looking at the valley and its settlements, examining relationships in the landscape and how they have changed over time. It includes the excavation, survey and sampling of one longhouse at Tongue House High Close with plans to excavate a further three. The results from Tongue House High Close suggest a Medieval/early Post-Medieval (1514-1798 cal AD, (275±30BP: SUERC-69651)) date for final occupation. A possible palaeochannel under the house produced a late 7th-late 9th century date range, suggesting occupation during the early medieval period (Bradley et al 2016 39) (Fig 4).

Survey and investigation of upland medieval settlements is a recurrent theme over the last ten years. An English Heritage survey was undertaken at Scordale (C), in response to increasing environmental damage from water runoff. It identified a series of possible settlements and cattle management systems from the post Roman, through to the post medieval period. Possible late medieval or post medieval miners’ settlements and post medieval shielings were also identified, although the latter could have earlier origins as transhumance is known in the region from at least the 13th century. A handful of sites in the lower valley may indicate more permanent settlements and include a possible medieval longhouse though specific dating is not possible without excavation. No medieval field patterns indicative of arable farming were identified which suggests a pastoral economy (Hunt and Ainsworth 2010).

Apart from an increasing number of community projects, excavation in rural areas is generally limited to Utility-funded commercial projects. These often take in swathes of landscape and usually trace the history and evolution of landuse using documentary evidence. In some cases, they include walkover surveys that identify previously unknown archaeological features. For examples see the West Cumbria Pipeline, (Schofield 2014), the Quarry Hill to Stainburn and Cockermouth (C) pipeline extensions (Peters and Newman 2015).

Grey literature provides a growing body of evidence for settlement and land use. Evidence tends to be limited for settlement and buildings are particularly difficult to identify and date from excavation, often being no more than post holes and possible beam slots as at Irby (M) (Philpott and Adams 2010). However accompanying research on other projects can reveal new insights into the period, for example work at Heaton Park (GM) may have located a lost medieval village through place name evidence and map regression (Arrowsmith 2008).

The collation of grey literature leading to publication is an increasingly common means of disseminating the results of archaeological investigation. An example is the presentation of the archaeology and history of Warburton, Trafford (GM), which originated from WEA classes and the work of STAG conducted over 19 years. It covers all aspect of the small
village, once part of the medieval manor of Warburgetune, including its role as part of a short lived priory of the Premonstratensian order (Nevell et al 2015). Documentary records were consulted alongside archaeological reports and particular emphasis was placed on the recording of a wide range of late medieval/post medieval timber framed buildings (Fig 5). The cumulative work in advance of development at Kingsway, Rochdale (GM) looked at a dispersed group of post medieval farmsteads arranged around what was probably a medieval assart estate. Reports are currently being collated with publication planned for the future (Redhead pers. comm) (Fig 6).

A gazetteer of lost medieval settlements is now online, set up in 2014 by the University of Hull. It lists the sites noted by Beresford in the early 1970s but will also include sites of lost settlements discovered since then (https://www.dmv.hull.ac.uk/). Currently (2017) a total of 14 for the region are listed on the gazetteer although none were identified in Lancashire and Merseyside in the original survey.

Building forms and groups

The geography, resources and social organisation of the region have dictated distinctive localised types of buildings and groupings, some surviving from the medieval period. A number have been subject to local studies as well as regional and national analysis (see Historic Building chapter). Some medieval structures have now seen excavations as well as building surveys, often identifying previously unknown earlier phases. New digital survey techniques and Historic England’s programme of tree-ring dating have had a significant impact on our knowledge of medieval buildings, refining chronologies and in some cases, re-interpreting established phasing.

Over the past ten years publications as part of the Greater Manchester Past Revealed (GMPR) series have explored a number of sites, including late medieval manor houses. At Cheadle Green, Stockport, investigations of late 18th century buildings discovered evidence for a hitherto unknown late medieval site of some prestige indicated by encaustic tiles, ceramic roof tiles and pottery sherds, some of possible 13th century origin. Dwarf walls and earth surfaces within the footprint of a later 18th/19th C buildings may have been the footings for an earlier timber framed structure, possibly the medieval manor house (Redhead and Miller 2014) (Fig 7)

Many of the known sites of medieval buildings, especially where elements are still standing, are nationally designated and investigations tend to be limited dealing primarily with management issues. Though small scale such investigations still have potential, test pitting at Little Moreton Hall (Ch) in 2009 revealed possible evidence for timber buildings within
what is now the orchard and encaustic tiles similar to those found at Norton Priory were identified (Trott and Allen 2009). In 2010, the Hall was subjected to a detailed point cloud survey followed by historical analysis reviewing the results of previous surveys. Reassessment has shown that the hall chapel is a rare survival of a pre-reformation private chapel (Hartwell & Barter 2012, 75). Further work in 2017 saw volunteers from the National Trust record over 250 deliberate burn marks located throughout the building. These are thought to have been created as protective marks, a folk belief practice that probably originated in the late medieval period and continued until at least the 17th century (Jackson and Owen 2017) (see Vernacular religions and secular customs) (Fig 8). Archaeological investigations at Speke Hall (M) and the wider landscape were published in 2015, contextualising the hall and including the results of an evaluation which revealed the remains of Home Farm, thought to be late Medieval in origin (King 2015). The site of Timperley Old Hall, Trafford (GM), was subject to community excavations from the late 1980s onwards culminating in a recent publication (Pierce et al 2013). The site produced late medieval finds including a prick spur, spindle whorls and 13th-14th century green glazed wares, as well as over a thousand pottery sherds. The pottery assemblage ranges from the medieval to the post medieval period and is regionally important (see production) although it still awaits in depth analysis.

Other excavations and surveys on medieval halls, undertaken prior to 2006, have been published and include excavations at Bewsey Hall, Warrington (Ch) carried out 1977-85 (Lewis et al 2011). Probably originating as an aisled hall in the late 12th/early 13th century, the hall went through a series of rebuilds with eventual demolition in the 17th century. The publication traces its history through excavation and uses documentary research as well, to examine the lives of those who lived and worked at the hall. Excavations at the moated sites of Twiss Green and Barrow Old Hall, also in Warrington, are due for publication soon (Collens and Garner forthcoming). The excavation of a possible 12th century aisled Hall at Mellor, Stockport (GM) has been partially published (Hearle 2011), although full publication is still awaited.

At Martholme, Great Harwood (L) evaluation and excavation within the former pantry and kitchen passage of the manor house revealed parts of a timber predecessor building of the 13th or 14th century (Neil 2010, 393). An extensive private excavation by the owners in 2011, comprising most of the site of the great hall (known to have been demolished c. 1620-60), and including a curvilinear dais and an adjacent residential wing to the West, was recorded (Neil 2012, 401-02). An open hearth was evident at the east end of the great hall, underlying the remains of a flagged floor.
A considerable body of work encompassing medieval building types and their groupings is now available for regional analysis. An example of such analysis examines the archaeology and history of Newton Hall, Hyde (GM), a 14th century timber framed cruck building restored in the 1960s. A recent publication places the hall within the context of the cruck frame tradition of the North-west, presenting a gazetteer and a more detailed study of the Greater Manchester area (Nevell 2010).

A programme of tree ring dating initiated by English Heritage is showing that good sequences can be obtained although a regional master curve is now needed against which to match sample sequences (Stallibrass pers. comm.). In some cases, the results are suggesting late medieval/post medieval dates for reused materials in buildings thought to be more modern in origin, e.g. West Barn, Parbold (L), where the timbers in the main body of the barn were shown to be mid-16th century in origin, not 18th century as previously thought (Arnold & Howard 2011). This type of analysis can also identify previously unknown phases of development in buildings such as at Turton Tower (L) (Fig 9). Here, timbers from the cruck wing adjoining the tower house (not precisely dated, but probably 15th century) were identified as having a felling date of 1530-50; a phase of alteration/extension that was not previously known (Arnold & Howard 2008). Turton Tower was also the subject of additional research for a conservation management plan (Arrowsmith et al 2010). Dendrochronology undertaken at Little Moreton Hall (Ch) shows that the earliest parts of the current building originate in the early 16th century not the late 15th as previously thought. Tree-ring dating demonstrates that medieval construction techniques do not always originate in this period (Hartwell and Barter 2012, 5). These assumptions need to be reviewed as dendrochronology suggests not only the continuation of medieval building traditions into the post medieval period, but also that the reuse of old materials is more extensive than previously thought.

The high status late medieval buildings of the region are gradually being surveyed using modern techniques, such as point cloud surveys, and are already revealing new information. This recording is usually in advance of renovation and restoration often funded by the HLF, as at Bramall Hall, Stockport (GM) where major restoration was accompanied by detailed surveys to enable comprehensive interpretation (Hartwell et al 2010; Fletcher 2013). This included specialist surveys carried out since the 1980s. Wall paintings in the ballroom once thought to be 15th century in date, were identified as late 16th century but in the style of earlier tapestries. Also identified were ‘antique work’ paintings of 1610 in the east roof space of the 15th century wing.

A recent fire at Wythenshawe Hall, Trafford (GM), has initiated detailed recording of a building that has at its core a 16th century timber framed hall. The recording also included
analysis of the window glass using portable X-ray fluorescence along with other chemical analysis. The results suggest that some glass is contemporary with the 16th century building and more unusually some earlier panes appear to have been reused in the building (Dungworth 2017, 19) (Fig 10).

Ordsall Hall, Salford (GM) is another recently restored building. Prior to this latest scheme of work, the west wing was subject to a detailed survey and appears to be an early 17th century extension with rebuilding in brick of a smaller timber framed wing that probably originated at the same time as the early 16th century Great Hall (Nevell et al 2009). Research and analysis of the whole building identified that the crown post roof truss over the east chamber is a rare example of a South of England roof form in the NW, dated c.1360 by dendrochronology (Hartwell et al 2005).

Academic research of medieval buildings includes a doctoral thesis which covered NW sites in its re-examination of the national distribution of moated sites. The study created a new dataset of the locations of sites looking at factors that governed their construction and location (Coveney 2014). It noted that new moated sites in the NW were created at a later date than in other parts of the country which has implications for the new research agenda.

**Landuse**

Throughout the region, especially Cumbria, large scale surveys have revealed new sites and expanded our knowledge of landuse. The knowledge of new sites enhances the base data used to initiate research and it is worth noting the contribution surveys are making to the period. However this needs targeted research and excavation programmes to further refine dating and usage patterns.

For example, the NMP covering Brampton to Birdoswald identified a handful of new medieval sites, mainly the remains of old farming practices such as ridge and furrow, holloways and small scale peat cutting (Small 2007). The Skiddaw Massif surveys identified and mapped possible late medieval pillow mounds, the first to be recorded in this part of Cumbria (MacLeod 2010). The Alston Moor North Pennines AONB Miner-Farmer Landscapes mapping focused on mining remains but also revealed remnant medieval field systems (Oakey et al 2012). In 2013 eleven areas of Cumbria, identified as under threat from mineral extraction, were mapped as part of the Cumbria Terrestrial Mineral Resource NMP (Fig 11). Late medieval features were few but a sequence of crofts and tofts were provisionally identified at Coalfell Beck, Brampton Kames (Deegan 2013).
Many surveys are using LiDAR data and GIS to present new data on late medieval landscapes and new research is now possible, especially if these surveys are integrated with the HLC and documentary evidence. The Western Lake District Mapping Project recorded new features such as those close to Lacra Farm and Seaton Hall, the latter of which may be associated with the site of a Benedictine nunnery (Deegan 2016). A similar mapping project in Cheshire revealed complex field systems on the western estuary of the Dee, water management features at Lyme Park and land management features east of Castletown, extending to Shocklach Castle (Hardwick 2017) (Fig. 12). The National Archaeological Identification Survey (NAIS) Upland Pilot, Burton-in-Kendal and Dalton (both C) used aerial photographs and LiDAR to expand survey in an area already known for medieval landscape features. There was evidence for possible medieval stock management and a system of route ways (Hardwick 2014). The project was informed by the work of the Newmans. Their analysis of the Dalton settlement pattern concluded that some enclosures, previously interpreted as Romano-British, may be medieval stock control features and stressed the importance of reviewing previous assumptions made on the nature of upland earthworks in the region (Newman and Newman 2009).

National Trust historic landscape surveys have also recorded many possible medieval features. These surveys have included the Sizergh Estate, Acorn Bank, The Borrowdale Valley, Nether Wasdale, Buttermere and Loweswater and the East Coniston Woodland (all C). These comprehensive surveys include analysis of landscape development from historical documents and site gazetteers. Without excavation, it is difficult to establish the dates of origin for many of these features and excavation is a future research priority to ground truth interpretations. The large amount of data now collected offers opportunities for extensive regional syntheses on landuse patterns.

**Resource Exploitation**

Managed environments, especially marginal lands, have their own histories of form and function with specific types of archaeology. The study of the archaeology of these including parks, woodland, forests and mosses (peat) is a growing national trend (e.g. Liddard 2007; Langton and Jones 2008; Langton 2010) and is reflected in studies across the region. Our knowledge of managed woodland has also increased, mainly through local community projects. Palaeoenvironmental analysis has been employed on a number of sites to reveal evidence for peat exploitation and reconstruct landscape use at a local level, although there is still a lack of data to be addressed which has been noted in national syntheses. There have been a number of projects on deer parks and associated medieval estates in the
region, some of which have resulted in publication after years of research (e.g. Dunham Massey (Ch)).

The final volume of the North-west Wetlands Survey covering South West Lancashire was published in 2014. These surveys collectively provide a guide to wetland location and extent and can enable further research into how these environments were exploited in this period (Middleton et al 2014). Palaeoenvironmental sampling of the peat lands in the region are lacking medieval dates and it is suggested that peat extraction from the early medieval period onwards may be the cause of this (Huntley 2010). At Sizergh Castle (C), analysis identified that the surviving upper layers produced early medieval dates, suggesting truncation by peat extraction (Taylor and Bradley 2014) (Fig. 13). Other evidence for peat extraction during this period is emerging across the region as a result of surveys identifying small scale cuttings across the wetlands and moors e.g. Coniston (C) (Schofield 2010, 20). Palaeoenvironmental analysis of deposits from urban areas indicates that peat was probably a common fuel and analysis of plant fossils in deposits from Carlisle identified species that lived in peat environments (Shaw 2010). Peat may also have been used as a fuel at the pottery production site of Petergate (C) (Wood et al 2007).

Historic England has produced a series of reports focusing on different aspects of the palaeoenvironmental evidence for the North of England including sites in the NW. However for the macroplant fossils, the report produced in 2007 covered samples taken before 2002 and concluded that although the medieval period was generally well served by sampling, there were missed opportunities in the NW (Hall and Huntley 2007). The invertebrates review for the North of England noted with regret that at the date of the study (2009), invertebrate collection for archaeological analysis was not common though it had much to offer, especially in Cheshire which is on the limit of many insect distributions and is important for climate reconstruction (Kenworth 2009, 203). Although collection of environmental evidence has been a major trend over the last ten years there is no up to date synthesis for the NW and the evidence presented for crops, resource use, and climate change remains confined to specialist reports for individual excavations.

Where palaeoenvironmental evidence is taken and analysed, it can enable reconstruction of the local landscape and land usage. A pollen monolith from Wharton Hall (GM) showed that during the 12th-14th centuries, temperatures were warm and cereal cultivation was a significant part of the economy but by the 16th century, cultivation of cereals had ceased and pastoral farming became standard (Gregory 2015, 3). Although this type of sampling and analysis is still infrequent for the late medieval period, it is increasing.
Ancient woodlands (defined as those in place by 1600) have the potential for a range of archaeological features to survive relating to their management and utilization in industry. A sub-project of the Pennine Prospects Water Shed Landscapes Project (see table 2) is investigating the archaeology and history of the woodlands of the South Pennines including features preserved by the woodland and those that were part of the management and utilisation of the wood.

The review of wood and charcoal from excavations in the north of England mentions on-going analysis of pit steads (charcoal burning sites) across the LDNP, some of which are producing dates from the 12th to 14th centuries indicating the presence of local managed woodland (Huntley 2010). An historic landscape survey of woodland east of Coniston Water included documentary research, which revealed a grant of 1339 establishing the date of formation for the woodland belonging to Furness Abbey. This managed woodland provided fuel for iron working, and at the dissolution of the abbey, a report mentions the manufacture of charcoal and the presence of smithies for producing iron for the monastery; this has been confirmed by the survey which recorded 164 charcoal platforms (Fig. 14) (Schofield 2010).

A study of the development and evolution of the landscape in Inglewood Forest (C) charted the transformation of a late medieval common from waste into cultivated land by the 18th century (Hope 2011).

In the 1990’s Desk-top studies of historic designed landscapes (HDLs) in Lancashire Greater Manchester and Cheshire worked towards enhancement of what was then the English Heritage *Register of parks and gardens of special historic interest in England*. These included a number of deer parks and country house gardens with medieval origins. So far only in Lancashire have these studies been taken to a second phase, with field visits to 291 sites and recommendations to local planning authorities for ‘local listing’ (Barker et al 2013).

HLF-aided work by the Lathom Park Trust (Neil 2007; Neil et al 2004; 2005) looked at the changing size, layout, and purpose of one of the North West’s largest deer parks, at Lathom, West Lancashire (L), from the 13th century to the proposals of Humphrey Repton in the 1790s. Later work finally located and investigated a small part of the palatial and heavily defended Lathom House of the 1480s – reputedly the largest private residence in England (Lathom Park Trust 2011, 2012).

In the forest of Bowland AONB, the HLF project A Leap in the Park included studies of the medieval deer parks at Leagram and Radholme (L). Local communities were encouraged to research the history and development of the parks and participate in fieldwork to identify park features (Neil and Thurnhill 2013) (Fig 15), Further research into Leagram Park
(Cooper 2014; Cooper and Shannon 2017) considered the design and location of salters (deer leaps) in the context of a long-running late sixteenth / early seventeenth-century legal case. Some desk-based work has also been done on Hammerton Park (L) (Cooper 2016).

Hapton Tower (L) is subject to ongoing community research and excavation and it is thought to have been constructed in the early 16th century by Sir John Towneley as a hunting lodge for the deer park (Philpott pers. comm.). It is also thought that the medieval village of Birtwhistle was demolished at the time to make way for the park.

At Dunham Massey (Ch) the archaeological work that has taken place across the estate since the 1970’s was recently collated and published. This included excavations and building surveys from across a landscape that had at its heart a late medieval deer park and estate. The publication compiled the work of amateur groups and professionals including commercial companies and the NT in-house archaeological team. The current road network was found to reflect the original medieval field boundaries and part of the early park boundary was identified. Several of the farms were found to have remains of pre-1700s timber framed buildings, obscured by centuries of rebuilding and re-modelling and at least one of these was identified as having late medieval origins (Gregory and Miller 2013).

**Monastic Estates**

There have been a significant number of investigations of both monasteries (see The Monastic Orders) and the exploitation of the lands they owned (see Technology and Production). Our understanding of sites that were part of their estates has also moved forward in the past ten years due to excavations of possible granges and vaccaries. Regional studies of monastic orders, their estates and their use of the landscape may now be possible.

Chorlton Fold, Eccles (GM) may have been part of a monastic grange held by the monks of Whalley and evidence is suggestive of 15th century activity (McPhillips 2008, 9). At Gatesgarth Farm, Buttermere (C) the site of a probable vaccary mentioned in the 14th century was excavated, revealing the remains of at least three buildings with associated yards, trackways and remnant ridge and furrow. The most significant feature was the remains of a longhouse, possibly late medieval in origin, and a further possible timber structure. The pottery assemblage, dated to the 13th/14th century, is significant as ceramics from rural sites in Cumbria are rare (Railton & Wooler 2008).

Work along the M6 Heysham link discovered what may be the remains of Beaumont Grange (L), an estate possibly associated with Furness Abbey (Fig. 16) Evidence for timber buildings
probably from the 12th century were discovered as well as a series of kilns that were used for drying grain and producing lime. In the 14th C the focus of settlement shifted as the remains of stone buildings were found along with a possible mill leat. A copper alloy candlestick recovered is of a rare type and indicative of a high status site (Fig. 17) (OAN forthcoming). This site has the potential to expand our knowledge of relationships between monasteries and their granges.

These investigations of possible granges and vaccaries present an opportunity for studying the operation of monastic estates in the region, especially when enhanced by detailed documentary research.

Coastal

The 2006 review noted the lack of coastal studies however in recent years this area of study has started to take off most notably through large-scale mapping of the coastal zone. Hadrian’s Wall NMP covered the coastal fringes of Maryport to the Solway (Oakey 2009). The rest of the coast south of Maryport has been covered by the North-west Rapid Coastal Zone Assessment Survey (RCZA). Evidence of medieval use of the coastal zone was highlighted through the identification of fish traps along the Lancashire and Cumbrian coast lines, possibly associated with the monastic houses. The survey also confirmed the presence of possible Monastic salt workings between St. Bees and Solway, previously only known through documentary evidence.

The Sand and Sea project (table 2) explored the archaeological possibilities for lost medieval settlements beneath the mobile dunes of the Sefton coast line at Argarmeols, Ainsdale and Ravensmeols. Episodes of overwhelming from blown sand appear to be a regular occurrence from at least the 13th century whilst the low lying nature of the dune coasts might encourage preservation of these sites by waterlogging (Lewis and Stanistreet 2008, 57-58). As yet, the possible locations have not seen focused excavation but the monitoring and recording of sites exposed by erosion along the shore line coupled with retrieval of objects is expected under CITiZAN.

Urban Settlements

The 2006 review recognised that the study of the medieval urban environment was heavily focused on Chester this is still the case with its regional importance now acknowledged through its own research framework (Beckley & Campbell 2013). However there has since been significant work carried out within other urban historic cores across the cities and towns in the region, particularly in Cumbria. Regeneration projects, especially in Manchester and
Salford, have led to the investigation of historical urban cores on a scale not seen previously. The EUS, initiated by English Heritage in the early 1990s, were completed for Cheshire and Cumbria before 2006 but have only recently been made available through the ADS. The Lancashire Surveys were completed in 2006 but are not yet available online; Greater Manchester’s and Merseyside’s were incorporated into HLC. These various studies could act as starting points for more in depth studies of medieval towns as recommended in the previous NWRRF.

Chester continues to see archaeological mitigation on most work undertaken within the city bounds. There are on-going repairs and consolidation to the city walls with the most recent around East Gate and North Gate (Earthworks Archaeological Services forthcoming). The walls were originally part of the Roman fort but also contain a considerable amount of surviving medieval fabric (Fig 18). Medieval deposits from the rear of domestic properties were uncovered at Weaver Street including a pottery assemblage with locally made pottery and Ewloe ware from North Wales dating to the late 14th/15th centuries (Garner 2015). Current excavations (2017) by the University of Chester in Grosvenor Park are revealing significant late medieval material including worked stone from the Norman period and a late medieval jetton. A recent study brought together researchers across different disciplines, including archaeology, to investigate medieval Chester. Important elements of the study were analysis of its position on the fluctuating borders with Wales and the production of a digital map of the 15th century city (Clarke 2011).

The extensive development in the 19th and 20th centuries of the major conurbations of Manchester and Liverpool obliterated much of their medieval cores and little survives above ground. In Manchester some evidence for the medieval town remains in patches around the cathedral (originally the parish church). This includes Chethams which was built as a college of priests in 1420 on the site of a manor house which in turn was erected on a probable 12th century castle site. Recent work includes a DBA (Arrowsmith 2011) of the Manchester medieval quarter, the excavation of a possible ditch belonging to the castle complex (Matrix Archaeology 2014) and survey of Chethams’ wall, revealed after demolition of Victorian buildings (Redhead 2016). (Fig. 19)

One of the major publications of medieval urban sites is that of the excavations in what was the medieval centre of Salford, compiling investigations undertaken since the late 1980s. Although the medieval buildings were demolished by the early 20th century excavations have revealed burgage plots and boundaries, cess pits and finds dating from the 13th century onwards. 13th and 14th century pottery was retrieved and one rubbish pit contained a rare archer’s wrist guard made from reused shoe leather (Gregory and Miller 2015, 12) (Figs. 20;
Unusually stone foundations and cellars survived in places fronting Chapel Street and one cellar may have been part of a bakery (Haslam et al 2017). These excavations are charting a picture of the evolution of a medieval urban centre into a key industrial centre.

Outside the major urban conurbations of the southern part of the region limited work has taken place in Lancaster and Carlisle. In Carlisle, English Heritage commissioned OAN to review the archaeological and palaeoenvironmental evidence from the historic core and the suburb of Stanwix. The aim of this was to establish the location of zones where waterlogged deposits may be preserved. The study established that land within the walled city offered the best opportunity for preserved deposits, particularly between the castle and cathedral (Zant et al 2013 52). Other archaeological work in the city informed a history of Carlisle (Brennand and Stringer 2011) and Volume 2 of the Carlisle Millennium Project, dealing with the finds and ecofacts, is now published (Howard-Davis 2010). The waterlogged deposits enabled the survival of leather and other organic material that gave insights into everyday life in the outer ward of the castle.

It is usually only in the larger urban areas undergoing major regeneration where opportunities for large-scale excavation arise. In towns, archaeological mitigation is focused on smaller areas although these can be used to give a wider picture of the medieval development of a town or city. For example, several archaeological excavations of the historic core of Penrith (C) have been synthesised and published (Zant 2015). Other small urban settlements have been investigated, including Cockermouth (C) where three burgage plots were excavated on Main Street. These were shown to have been occupied continuously since the 12th century (Leech and Gregory 2013). The excavations of burgage plots at Stricklandgate, Kendal (C) demonstrated occupation since the late 12th/early 13th centuries. The pottery assemblage was studied to examine the medieval to post medieval transition of ceramic traditions (Whitehead et al 2013). The pottery assemblage recovered from Shaw’s Weind, Appleby (C) has evidence for trade links beyond the region (see Trade, Exchange and Interaction), as well as a local pottery tradition (Brooks et al 2013). Wigan (GM) also revealed evidence for burgage plots to the rear of Millgate, including a ceramic assemblage dating from the 12th-15th centuries (Bagwell et al 2006). Other sites have been contextualised in a CBA NW publication on excavated burgage plots from the region. Here the issues of investigating the archaeology of the smaller regional towns, especially Cheshire were discussed identifying that the lack of opportunities for extensive excavation, and that the often shallow stratigraphy on excavations in small towns, is a factor limiting our understanding of urban settlements of the late medieval period (Towle & Hayes 2009). Little has been done to establish the potential for survival of medieval elements in the standing...
buildings, known to have had medieval antecedents. Occasional evidence is found during surveys in advance of redevelopment but these are still few in number.

Ritual Religion and Ceremony

The Monastic Orders

Where above and below ground monastic sites are known they are usually scheduled so there are few opportunities for major research excavation. Any excavation is usually in response to management issues, improvement of services or as development mitigation. Within towns and cities occasional evidence for monastic buildings is revealed during mitigation but in general these sites are not specifically targeted. However across the region a handful of monastic sites have been investigated in some detail benefiting from a range of up-to-date survey techniques and tree ring dating. Some of these sites have been included in community landscape projects which have combined survey techniques with documentary research and excavation. Recent publication of the numerous excavations undertaken over the past thirty years at Norton Priory (Ch) is a major step forward in understanding monastic sites.

The region does have one longstanding major monastic research excavation at Poulton (Ch) where the remains of a medieval chapel and cemetery (see burial) were revealed. The investigations aimed to find the site of a Cistercian Abbey that went out of use in the 13th century. Although these are yet to be discovered, the site has revealed evidence dating from the Mesolithic onwards and is very significant for other eras such as the Iron Age and Roman period.

There was a major research programme on the Monastic site of Cultram Abbey (C) through the Solway Wetlands Partnership Scheme (see Table 2). This aimed to extend knowledge of the impact of Cistercian monks on the landscape of the Solway Plain by investigating the abbey and its surrounding environment. Excavations took place at the Abbey with two trenches excavated south of the Church. The project built on the work of WCAS, which started in 2006 as unfunded research. The group are gradually building up a picture of the abbey over its turbulent history from the foundation in 1150 by King David I of Scotland until the dissolution in 1537. The aims and objectives of the project reference the initiatives of the NWRRF and included geophysics and palaeoenvironmental analysis. One result is a pottery sequence for the site with some 650 fragments found. There is an interim excavation report with final reports forth coming.
The project was supervised by Grampus Heritage, working with local volunteers from WCAS. The site of the east range of the cloister was identified along with a possible chapterhouse (Fig. 23). One trench investigated a building identified in 2014 revealing two rooms, one with a latrine and fireplace and another with a central cooking hearth. The building was found to be located above an earlier extraction pit perhaps for material used during one of the earlier construction phases of the monastery. Artefacts included decorative floor tile, tokens and a pilgrim badge. Evidence for disturbed burials and two undisturbed medieval grave slabs were also found. (Graham et al 2015).

In 2008 the earthwork remains of the Premonstratensian Abbey at St Mary-in-the Marsh, Cockersand (L) were surveyed by English Heritage as a response to coastal erosion. The survey utilised existing LiDAR data provided by the Environment Agency and has established the Abbey precinct boundaries and identified the locations of what may be other abbey structures (Fig. 24). It also identified medieval ridge and furrow, which suggested the monks had a home farm as well as inland granges. The survey has also located a possible medieval slip way which is rare in a monastic context and relates directly to the coastal context of the Abbey, suggesting the main approach to it was from the sea (Burn et al 2009).

In 2010 English Heritage also undertook a rapid assessment of the site of Stanlow Abbey (Ch), a Cistercian abbey and grange rapidly succumbing to vegetation. The assessment included documentary research and established the site had a long history of occupation, becoming a country house after the Dissolution (Ainsworth et al 2010). An extensive watching brief in the Conference House Whalley abbey (L) in 2005 (Neil 2006; 2007), and smaller investigations before and since that date, confirmed that a substantial part of the Abbot’s House was reused as the core of the post-Dissolution manor house.

Scientific analysis and dating techniques, recommended in the NWRRF, are also being applied to monastic sites. The English Heritage dendrochronology programme has investigated the great hall and north range of Whalley Abbey (L). A single site sequence was produced spanning AD 1362-1559. For the Great Hall, the timbers appear to be contemporary, with an estimated felling date of 1493-1518 (Arnold and Howard 2015), broadly confirming the felling-date range for timbers in the floor below the great hall - 1478-1508 (Bridge 2007). A bell-casting pit was revealed and partly excavated as part of the 2005 works (Neil 2006; 2007), but detailed assessment of the finds assemblages, and radiocarbon dating has not yet followed. In 2016, re-building of a late17th C garden wall revealed that it was constructed from reclaimed stone – including over 300 architectural fragments – identifiable as being derived from the abbot’s house, nave, and cloisters (Neil forthcoming). The stable, thought to be late 16th C appears to be earlier than expected with the timber
fell around 1520 (Arnold and Howard 2015 4 & 8). Survey of the stable in advance of a new use allowed enhancement of the former Lancaster University Archaeological Unit’s unreported work from the 1990s. (Neil 2014).

Tree ring dating was also used to date oak timbers from excavations at Brunel Court, Preston a site thought to be associated with the Franciscan friary founded in c.1260. (L) (Fig. 25). Though bone preservation was minimal timbers derive from coffins were retrieved. There was not enough sapwood surviving to indicate the date of felling but a series of \textit{terminus post quem} dates were consistent with the known date of the Friary, although one tree would have been over 250 years old when felled (Tyers 2011, 4). Some wood was identified as being locally sourced from old slow growing straight grained oaks, suggestive of woodland management and further study may enable insights in to the local timber market.

Norton Priory (Ch) (see burial), founded in 1134, remains one of the most extensively excavated and studied monastic sites in Britain and has seen the publication of its many excavations in one volume. This makes available parts of the archives of the original 1970-87 excavations in a form more easily accessible to researchers and also reinterprets many of the findings in light of more recent archaeological concerns (Brown and Howard-Davis 2008). Excavations within the undercroft in 2015 produced evidence for a timber structure underlying the later stone building. Tree-ring dating of one of the posts gave a felling date of spring 1161 and is likely to be part of the original timber phase of the first monastic complex (Dodd \textit{et al} 2016) (Fig. 26).

Few studies have been done on animal bone from the region with the exception of Norton Priory, which has one of the largest assemblages of animal bone from a monastic site in Britain. The assemblage is currently subject to analysis as part of the “People and Animals at Norton Priory” project.

A watching brief at St Mary’s, Lancaster, adjacent to the former Benedictine alien priory - the only one in Lancashire - revealed for the first time traces of (probably claustral) buildings to the North-West of the church (Neil 2011).

Historical research runs in parallel with, and is informed by archaeological investigations and this is the case for monastic estates and buildings. Various local societies and groups continue to provide a valuable outlet for publications such as “Rose Castle and the Bishops of Carlisle 1133-2012” (Weston 2013) published by CWAAS. A short overview of the medieval monasteries of Lancashire has also been produced (Marshall 2006).

**Burial**
Due to soil conditions survival of human remains is rare in the region but there have been some nationally significant burials discovered. Thanks to detailed analysis, these are revealing evidence for medical conditions suffered and interpersonal violence. Where human remains survive, they present research potential through analysis of the bone, giving a picture of past lifestyles and population health. Further isotope analysis can indicate diet and place of origin.

A current PhD project is examining skeletons from Norton Priory and Portmahomack, Scotland (Curtis-Summers 2015). Some of the results have been published including a paper on the study of a 13\textsuperscript{th} century adult male, who displayed evidence for sharp force trauma. It seems likely the individual was Sir Geoffery de Dutton (d. 1248), a wealthy knight and benefactor of the priory, he was found to have been cut by a blade, between the right shoulder and the spine (Curtis -Summers 2016 et al, 113). The injury was probably caused by a sword \textit{peri-mortem} and was almost certainly the cause of death. The individual also showed evidence of Paget's disease which may have slowed down their movement (Curtis-Summers et al 2016, 116) (Fig. 27).

At Poulton (Ch) over 2000 burials are suspected and some are likely to predate the chapel some have been the subject of scientific analysis. Arm bones from the skeletal assemblage have recently been compared with a group from Gloucestershire to assess the suitability of a method for determining the gender of individuals from the thickness of the clavicle (Martin et al 2016). The Poulton burials are also providing material for researchers at Liverpool John Moore University, who are undertaking a range of projects focused on palaeodemography.

A recent discovery of an undisturbed burial during rescue work at Furness Abbey (C) revealed the first crozier to be excavated in England in the last 50 years. The burial was of an overweight man aged 40-50 with arthritis and possibly type two diabetes. He was buried within the presbytery with a silver gilt crozier and a ring, which suggests a late medieval burial, although the crozier appears to have elements from the 12\textsuperscript{th} century (Fig 28). The presbytery is not a usual site for the burial of a clergyman and was often reserved for wealthy patrons. One suggestion is that the body may be that of a Bishop of Mann or a member of a donor family (Rowland 2012, 6-7).

Excavations at Tower Wharf, Chester discovered three unusual internments, two of possible Roman date and one which was dated to cal AD1460-1640 (95.4\% probability) (Towle 2013). It lay in an area of non-consecrated ground and was decapitated with the skull placed under the crouched body, suggesting it was that of a criminal although there are some reservations with this (Towle 2013, 39).
Another set of unusual late medieval burials were that of a male and female discovered in the outer ward of Halton Castle (Ch) during community excavations. Radiocarbon dating shows the individuals died at least 50 -100 years apart; despite being located no more than 1m apart. The male skeleton dated to cal AD 1425-1475 with the female dated to cal AD 1525-1665, although the latter is likely to be within the earlier part of the date range. Burial within the precinct of a castle is rare and the best explanation may be that they were within a chapel that is known from documentary sources (Fig 29).

**Places of Worship**

Investigations within active places of worship are still comparatively rare and often limited in scale. However some have benefitted from tree ring dating and small-scale excavations which are helping to refine chronologies of buildings, as well as studies of folk belief through graffiti surveys. Many churches have never been surveyed with modern techniques though the second editions of Pevsner are now complete and offer brief architectural summaries (Hartwell 2009). These are not a substitute for detailed survey when interpreting the archaeology and history of a building.

The region’s late medieval churches are poorly recorded although many original elements of furniture and fabric may survive within them. The previous framework noted that, unlike other parts of the country, few medieval churches went out of use until very recently (Newman and Newman 2007, 106). Instead many were subject to several phases of rebuilding, depending on the needs and resources of their communities intensifying in the 16th and 19th centuries. However without detailed contextualised surveys it is difficult to know how much of the original structure, fixtures and fittings survive.

The in-depth study of individual churches appears to be mostly dependent on local interest groups and such studies rarely find their way to the local HER. The National Association of Decorative and Fine Arts Societies (NADFAS) support surveys of fixtures and fittings of artistic merit. Graveyard and ledger stones surveys are common and a national survey of memorial stones set in floors was launched in 2015. This is being run in partnership with the Churches Conservation Trust and The Church Monuments Society. The NADFAS has online lists of records produced and details of where copies are held. An online resource covering the Romanesque sculpture of Britain and Ireland is currently under construction although some parts of the region are yet to be completed (http://www.crsbi.ac.uk/).

Exceptions to the general picture are major surveys of the stained glass in the churches of the region, now complete for Cheshire (Hebgin-Barnes 2010) and Lancashire (Hebgin-Barnes 2009) (Fig. 30) with Cumbria currently being compiled.
The photographic archive of the glass studied and recorded during conservation of the early sixteenth century east stained glass window at St Martin’s, Bowness–on-Windermere (Cu), with grant aid from the British Academy and CWAAS has now been uploaded onto the Corpus Vitrearum Medii Aevi (CVMA) website. The glass is attributed to John Petty (d. 1508) of York Minster with many earlier fragments re-used in the window (Neil 2002 a and b). This is still awaiting an analytical report (N. Neil, D. O’Connor, pers. comm).

There are other projects photographically recording monuments and elements of church fabric such as misericords. However there is no consistent effort to record all elements of each church as an integrated whole with archaeological or historic building surveys at appropriate levels.

The Carlisle Cathedral Romanesque Project is training volunteers to measure the fabric of the building to identify the extent of changes made throughout its history. The ultimate aim is to construct a 3D model of the building during three key phases for visitors to view; the Norman period, the later Middle Ages and its current configuration. Also at Carlisle excavations were undertaken in 2016 by OAN within the cathedral precinct around the Fratry (dining) building. This was in advance of an HLF bid to restore and bring the building back into use as a learning hub for the cathedral. (OAN forthcoming?)

In general few archaeological excavations occur at churches and are limited to watching briefs. Where they are undertaken, such works often provide new insights into the construction and development of the building. St Bartholomew’s church, Wilmslow (Ch) is thought to originate in the 13th century, with the current building dating to the early 16th century. Recent work revealed significant post medieval features along with charnel material which may be late medieval in origin. It also exposed the bases of the 16th century columns flanking the central aisle (Raynor and Miller 2013).

A watching brief at St Peter’s churchyard, Prestbury (Ch) revealed the remains of a medieval cross slab of the 13th/14th century, amongst the foundations of the vestry (Adams et al 2015) (Fig.31). Another significant find was a medieval piscine the church of St Nicholas, Whitehaven (C), recently published (Bowd 2016). A watching brief by Aeon Archaeology at St Alban’s Church, Tattenhall (Ch) identified medieval foundations and a wall that may be part of an earlier building (Cooke 2016).

Some churches were included in the major tree-ring sampling exercise that took place across the region. The roof timbers from St Mary’s, Stockport (Ch) dated to one felling of AD1308-33 (Arnold and Howard 2011). Further sampling of the vestry roof timbers showed that these were from a single felling in AD 1623 (Arnold and Howard 2014). Archaeological
recording accompanying this work showed that the stone fabric was contemporary with the medieval chancel. It contained a number of hidden features, including evidence for a first floor (Matrix Archaeology 2015).

Occasional finds logged with the PAS give indications of religious practice and belief and include pilgrim badges and ampules. A rare late medieval silver pilgrim badge found near Preston (L) in 2011 is perhaps the most significant of these especially as it may be an import (PAS record ID: LANCUM-61F133) (Fig. 32)

**Vernacular religions and secular customs**

Nationally, the material evidence for folk beliefs and rituals running parallel with those of the established church are being identified within excavation (Gilchrist 2008) and standing buildings, particularly churches (Champion 2015). There is increasing recognition and recording of evidence for folk religion in late medieval archaeological contexts but as yet, studies are few in the region. An aspect of folk belief practice being explored on a national level is the possible ritual deposition of ampullae (see table 3), where deliberately broken pilgrim ampullae in rural contexts may be evidence of ritual practice to do with blessing fields (Anderson 2010). It is acknowledged that distribution may be a reflection of retrieval strategies and reporting, rather than deposition. In the NW, Cumbria has little ploughed land and therefore fewer optimum areas available for metal detecting and field walking this may reflect in distribution patterns.

A recently initiated regional project that is beginning to investigate aspects of this theme is The Greater Manchester Graffiti Survey the pilot project for the North-West Historic Graffiti Survey. This volunteer-led survey takes its inspiration from the Norfolk Medieval Graffiti Survey and aims to survey marks found in buildings with significant elements constructed before 1700. The project is already recording many elements found in both religious and secular contexts indicating a crossover of practice in the use of protective marks (Fig. 33).

In light of current interest in the material culture of folk belief, archaeologists are starting to recognise evidence for possible ritual activity in excavations. At St Mary’s Church, Penwortham (L), excavation revealed human remains that may be indicative of ritual not normally associated with Christian inhumation. These included three skeletons that appeared to have been deliberately buried under walls and column bases. A possible infilled well contained human remains and three skulls were found within one of the medieval walls, these lacked the mandibles suggesting that they were deliberately re-deposited. They were interpreted as ritual deposition associated with “vernacular religious practices or aspects of popular belief” (Vannan 2011, 3).
Technology and Production

The region had extensive land holdings under the management of various monastic orders, particularly the Cistercians. The previous NWRRF noted that technology and production in the area would have been greatly influenced by this, with the monastic orders experimenting with and bringing in new technologies (Newman and Newman 2007, 110). Many early industrial sites have been shown to be connected to monastic control through documentary evidence and understanding of the various industrial processes under the control of the monasteries is growing (See Monastic Estates).

Our knowledge of salt working has increased thanks to recent publications and large-scale coastal surveys. The understanding of the development of iron working is growing, especially in the Greater Manchester area where a number of sites were recently investigated. The NW had a variety of late medieval extraction industries particular to the local geology. Evidence for these industries is reasonably well documented though chronologies need to be refined. Evidence for medieval textile and corn mills is still rare although there has been some limited excavation. There is still difficulty establishing exact dates for small scale industries, especially with sites identified through rural surveys. The most significant step forward has been with regards to pottery, with new production sites recently discovered and a growing number of assemblages that now need further analysis and synthesis.

Salt

The Hidden Heritage project, part of the SWLP is probably the only recent project to directly address the influence of monastic control on the surrounding hinterland (see monastic orders). The project is looking at aspects of life and industry at Cultram Abbey including salt workings. Archaeological surveys of salt workings are planned although it is not known how many have medieval origins. Large-scale coastal surveys (Cranstone 2006) have identified potential salt workings along the Solway estuary although few have been investigated.

Brine springs occur in Cheshire and several towns (e.g. Middlewich, Nantwich) are known for salt extraction from the Roman period onwards. Excavations at Second Wood Street, Nantwich uncovered the waterlogged remains of a medieval salt–making complex, which has been recently published (Dodd et al 2014). This included the discovery of a log-boat or salt ship, along with six wooden barrels utilised in the production process. The wood for the
boat is thought to have been felled around AD 1191 and may have continued in use until the 16th century, when salt production at Nantwich ceased (Dodd et al 2014).

Iron

Iron production occurred throughout the region because of widely available ore supplies and managed woodlands that provided fuel. Across Cumbria, extensive landscape surveys are mapping a wide range of production and extraction sites which may be late medieval in date. The Lake District was especially known for its iron workings and the Coniston Woodland Survey has identified bloomeries though these are undated (Schofield 2010) (Fig. 34)

Significant progress has been made within Greater Manchester in understanding extractive industries, including iron working, as a number of sites have been discovered recently. At Chorlton Fold (GM) the remains of a smithy, along with tap slag indicates the presence of iron working. These were found in association with late 14th-century pottery although no furnaces were discovered. The site lay within the lands of Whalley Abbey and the iron working may have been controlled by the monastery (McPhillips 2008).

Iron smelting has been recognised at Castleshaw, Delph (GM) since the late 19th century. In the late 20th century excavations of furnaces at Spa Clough and Cudworth pasture established that the iron working here dated to the 12th/early 13th centuries when Cistercians controlled the land granted to them in 1199. Further surveys and test pitting investigated earthworks near the upper reservoir, which confirmed the presence of a medieval iron working spoil mound. Tap slag similar to that from Spa Clough indicates furnaces in the vicinity, (Redhead 2012).

An iron bloomery site at Cinder Hill, Bolton was in use during the 12th-14th centuries, indicated by the ceramics assemblage. Remains included bloomery furnaces, tapping pits, a charcoal clamp and a pit possibly used for roasting the ore (Gregory 2015 3) (Fig. 35).

Extraction Industries

Small scale extraction was in place by this period but dating evidence is still rare being restricted to ceramic sequences rather than absolute dating. Although excavations are still few in number, a number of sites have been investigated across a range of extractive industries. Excavations at Gibfield Park, Wigan (GM) uncovered evidence for ironstone and coal mining dating to 15th-16th centuries, including extraction pits and a regionally important pottery assemblage. During this period, ironstone was probably a more significant resource than coal as charcoal was still the main fuel source and the mine workings were located close to Atherton, a known centre of nail production (Connelly 2006).
Various types of stone were quarried for building materials along with limestone which was used for lime production. These numerous small quarries are difficult to date and may have been in production on and off over many decades. In landscape studies, they tend to be ascribed to the post medieval period, though many are likely earlier, as yet few studies have been undertaken to identify origins and patterns of use.

In the post medieval period, lead mining was one of the major industries of the upland areas of Cumbria and the Pennines this later activity obscures the possible earlier origins of many of the mines. The Farmers to Miners Landscape Partnership in Alton AONB examined the transition from a farming economy to the mining one of the post medieval period. Mapping the remains of the mines has revealed evidence for medieval activity although dating is difficult. (Oaky et al 2012) Survey and documentary research of the Ashnott lead mines (L) suggests that the mines were in use by the 16th century hinting at earlier origins (Went 2014).

**Textiles**

The textile industry is known during this period as small scale localised textile processing mainly in small water driven fulling mills, often found on lands under monastic control. The Windermere Reflections project worked with volunteers to locate and survey five possible fulling mills, confirming the presence of all five which survived in varying conditions. Sourmilk Gill and Stickle Ghyll (C) were both identified as exceptional survivals although excavation is needed to confirm dating (Schofield and Vannan 2012) (Fig. 36). Possible evidence for another medieval fulling mill was found at Garston (M) surviving as a small square structure, powered by overshot wheel and built on the dam of a water course (Adams 2007).

**Corn**

Corn mills are often referenced in documentary evidence but excavations of these sites are very rare. A possible corn mill at Ashton on Mersey (GM) was investigated in 2010; the site was known from documentary evidence and exposed by water action. Timbers eroding from the river bank were subject to tree ring analysis, revealing a *terminus post quem* date of AD 1498 (Nayling 2010). Despite high water levels, the site was surveyed and revealed worked stone including a large fragment of mill stone. Although the site was not excavated, there is potential for further investigation.

A recent survey of windmills on the Wirral noting the locations of around seventy mills dating from the Domesday survey to the modern era is now published (Patel 2016).

**Pottery**
New pottery production sites are emerging and the number of assemblages has increased. Many small late medieval pottery assemblages are now known and some have been subjected to further analysis. This is gradually building up a pottery sequence for the region although there is still a lack of material pre-dating the 12th century and a regional synthesis is needed.

Recently discovered pottery production centres include Petergate (C) and Samlesbury (L). Petergate, produced evidence for late 12th century pottery production although no evidence for the kilns themselves. This is significant as pottery production sites, especially in Cumbria, are rare and the distribution and networks across the region are not clear. A corn drying kiln was also discovered, showing that crop processing also took place with the kiln used to dry corn for milling during its final phase (Railton et al 2014).

Perhaps the most significant recent discovery is that of a series of previously unknown pottery kilns revealed by the Samlesbury to Helmshore gas pipe line. These occurred in three concentrations along a half kilometre stretch and may indicate widespread production in the area. The sites were in production in the 13th-15th centuries and have produced over 10,000 sherds, along with the remains of possible clamp kilns. Similarities were recognised between the pottery found here and at sites in Wigan and Lancaster as well as other examples from North Wales. The pottery assemblage is regarded as being of national significance and is subject to a detailed report (Wood et al 30) (Fig 37).

Excavations at Gorse Stacks bus interchange, Chester recovered large quantities of ceramic waste and tile that may be indicators of a 15th century pottery production site (Dodd and Garner 2015). A local production site may also exist near Wigan, evidenced by wasters found during the Millgate excavations (see urban settlement) (Bagwell et al 2006).

Excavations at Timperley Old Hall (GM) produced a large assemblage ranging from the 13th-16th centuries. The green glazed ware of the 13th and 14th centuries may have been produced locally as the fabrics compare with those from Rainford (M) and Samlesbury (L) (Pierce et al 2013). Green glaze ridge tiles, dated to 14th-15th centuries, consisted of coarse gritty fabric with finials in the rough form of snakes and are thought to have been made by local craftsmen. A chaffing cup resembles one found at Rainford, although currently the earliest date for the Rainford site is late 16th century (see post medieval review for Rainford).

Pottery assemblages are often written up as part of the excavation report but there has been no new regional synthesis on local types and distribution. This is a resource yet to realise its potential.
Trade Exchange and Interaction

This subject area has seen research advances predominantly through PAS data, which is frequently used for Masters and Doctoral research studying national and regional trends of specific find types (see Table 3). Although this work does not often find its way back to PAS or HERs it can be found occasionally through the British Library e-theses on line service “EThOS”. Evidence for trade comes from a variety of investigations which often did not set out to specifically to examine this theme. Analysis of recently discovered pottery assemblages is revealing the origins of some pottery types and offering insights into potential trading networks across the region and beyond. Palaeoenvironmental evidence, although limited, is suggesting trade links beyond the British Isles and a recent discovery of a medieval slipway along the Cumbrian coast suggests there may be more archaeological evidence for travel by sea around the region.

PAS is carrying out a pilot project known as “Medieval Markets in their Landscape Context”, which has taken finds data associated with medieval market sites and routes and looked at differences between rural locations and sites with commercial activity. Results show that there is a correlation between the distribution of finds and commercial sites with 19.3 % of medieval objects being found within approximately 1 km of a known market. The research hopes to continue when further funding and partners are found as stated by the PAS “The use of PAS data offers major new avenues of research in understanding urbanisation, commercial growth and the emergence of trade and communications networks both on national and local levels”.

Several studies using PAS data are examining the national distribution of specific late medieval find types, such as coins, to understand the distribution and exchange mechanisms (e.g. Keller 2012; Savage 2016). Keller’s doctoral research found a distinct lack of coinage in the North-West when compared with other areas of the country. This may be a result of regional bias dictated by constraints on suitable sites for the use of metal detectors or a reluctance to engage with the PAS.

Savage has studied the medieval coinage of northern England and some county summaries can be found through the PAS website, although not all counties are included. For Cheshire, a total of 461 coins were recorded (by June 2016) with the most common being Edward I (112 coins). It was also noted that no single coin find from the Chester mint (active under Kings Henry II and Edward I) has been recorded even though they were in circulation. Instead, the London mint is most represented within the dataset, followed by the Canterbury mint. Coins from Irish, Scottish and Venetian mints have also been found indicating far reaching trade networks (Savage 2016). A hoard of coins found in the parish of Beeston in
2016 consists of 26 coins of Edward II, Edward IV, Henry VII and Charles the Bold, Duke of Burgundy (Fig 38). Savage notes that a more detailed study of the Cheshire's coins is needed to answer questions on regional use and loss.

The finds assemblages from Meols on the Wirral is now published it catalogues the location of artefacts recovered from the 19th century onwards, including medieval finds. The dispersed nature of the collection means there are interpretation issues but the range of finds indicate that the site was possibly a landing site or unregulated market which originated prior to the late medieval period and operated throughout (Griffiths et al 2007).

The origins and development of the medieval market of Stockport (GM) have been studied in detail. This study ran in parallel with survey and consolidation work on a late medieval merchant’s house on the edge of the original medieval market place known as Staircase House (now a museum). The work on the restoration and presentation of the house, along with the study of the history of the medieval market was published (Arrowsmith 2010).

Analysis of recently discovered pottery assemblages is suggesting that in the northern part of the region, there were trading relationships with the NE across the Pennines. In the southern part of the region, trading relationships appear to have been with Shropshire and Ewloe in north Wales. Ewloe ware was found at Weaver Street, Chester and is thought to be from late 14th/15th century. Sandy wares from the same site are thought to be local, from a production site in or close to Chester and are probably late 13th or 14th century in date. The assemblage also included floor and roof tile fragments, again of Ewloe fabric and within the date range of the late 14th to 16th century (Garner 2015). Volume 2 of the Carlisle Millennium report puts the pottery from the excavations into context discussing the trade connections and noting trade links with south west Scotland and across the Irish Sea areas. Sites at Kendal and Dacre have a small collection of pieces of Humberware from the east coast, suggesting probable Trans-Pennine trade (Howard-Davies 2009, 677). The excavations of two burgage plots at Shaw’s Weird, Appleby (C) produced significant assemblages of medieval and post medieval pottery, analysis of which has shown trade links on either side of the Pennines but also close links to the NW of the region especially Carlisle, Dacre and Penrith. As a result of this and other work, a picture is emerging of an Eden Valley ceramic tradition (Brooks et al 2013).

A study of micro fossils from palaeoenvironmental samples from Carlisle identified fig seeds and accompanying documentary research identified a reference to cumin being used during this period (Shaw 2015). These are indications of trade networks beyond the confines of the British Isles.
Restrictions on inland travel by the uplands and mosses would suggest that the coast, existing Roman Roads and rivers were the main methods of communication and trade. Discovery of the possible slip way at Cockersands implies that at least for Cockersands Abbey, access to sea travel was important.

National Trust led and other landscape surveys in the Lake District are identifying and recording routeways, including possible pack horse routes and tracks between farms, settlements and fields. Route ways through valleys probably provided communications from abbeys across their widely dispersed lands. In many cases the dates of these routes are not known though many were certainly in use by the late medieval period.

**Defence, Warfare and Military Activity**

A number of projects have examined castles and fortified houses in the region, although these are still comparatively few in number. Some sites have benefitted from recent technological developments in 3D survey techniques and the availability of LiDAR data. The few excavations that have taken place have thrown up unexpected results in places and are also helping to refine chronologies and, alongside University-based research, offer new interpretations for the longevity and use of some of these structures.

There are around 83 castles known in the region and those with surviving structures and below ground remains are usually Scheduled Monuments and/or Listed Buildings. This means that they are not often subject to excavation unless undertaken to help with preservation, restoration, conservation and management. Occasionally, these works are targeted to address specific research questions. In urban areas, where adjacent plots may come up for development, mitigation can be designed to answer questions about the relationships with the surrounding communities and settlements. The “Beyond the Castle” project in Lancaster is one such investigation, incorporating community involvement, although the excavations have not yet encountered medieval archaeology (2017).

Lancaster Castle’s long use as a prison has come to an end and it has been subject to a series of surveys to determine a management plan. This included tree-ring sampling of timbers in the keep and gatehouse the results showed that structural oak timbers in the undercroft of the former were felled around AD 1380s, with two cell doors felled after AD 1371. Those in the first floor great hall were slightly later (late 14th/early 15th centuries) and timbers from the gatehouse were felled around 1404 (Arnold et al 2016) (Fig. 39).

Recording and interpretation of the castle fabric – both the surviving medieval buildings, and those added during expansion of the prison between c. 1783 and c. 1877 – has been funded
by The Duchy of Lancaster during ‘envelope repairs’ (Neil 2016; 2017; forthcoming), while
The Castle Studies Group have looked at national and international parallels for the Keep
and Gatehouse (Guy 2014; 2016). Though some writers (e.g. Wood 2017) continue to
surmise about a motte and bailey castle from the ownership of Roger of Poitou c. 1100
underlying the stone Keep, there is neither documentary nor fieldwork evidence for
structures before c. 1150, the Keep possibly being built during tenure of the region by King
David I of Scotland, as was Carlisle (Summerson 2014, 17). The Keep was heightened in c.
1400-30, and the battlements rebuilt in 1585. The so-called John of Gaunt Gatehouse was
actually built by his son when King Henry IV, but incorporating the entrance passage and a
staircase tower from the time of King John, c. 1200-12, and also fabric from the time of the
Barons’ War of the 1240s-60s. An intra-mural passage, recorded in part of the curtain wall at
second floor level, possibly lead from Adrian’s Tower and may be part of post-Civil War
repairs (Neil 2017).

Buckton Castle (GM) was subject to a community excavation initiated in response to
damage from metal detecting and treasure hunting. The excavations were able to answer
questions about the form and construction of the building and offer suggestions as to its
original function and use. It seems most likely that its construction was a response by the
Earl of Chester to threats from the north during the Anarchy of the mid-12th century however
once the threat was over, despite the structure being incomplete, the castle was dismantled.
The results of this excavation and others undertaken since 1996, were compiled and
published along with a gazetteer of NW castles (Grimsditch et al 2012) (Fig.40).

At Halton Castle (Ch), a volunteer excavation set out to answer similar questions and made
unexpected discoveries of burials from the 15th and 16th centuries which suggested the
presence and location of a hitherto unknown chapel (see burial). These excavations took
place in 2015 and will be followed up with further excavation in 2017.

Other castle-based studies include a compilation of survey results of gatehouse structures in
the NW. The study set out to establish the form, function and development of gatehouse
types in the region. It concluded that the castle gatehouse is partly an expression of the
social status and power of the lord who constructed it (Nevell 2012). New interpretations of
castles are taking a more holistic approach, looking at them from aspects other than
defence. They may be more about aristocratic displays of wealth, power and influence with
their landscape settings with aesthetics a part of this (Liddard 2005).

Some sites have benefitted from reanalysis of previous excavation work and assemblages
e.g. Aldingham Motte (C) (Ellsworth and Mace 2015). Probably constructed as a ring work in
the early 12th century, it was modified with the construction of a motte in the late 12th/early
13th century and abandoned in the late 13th century. Analysis of the animal skeletal assemblage showed a significant amount of red deer, including antler fragments and bone from cattle, sheep, horse and pig. (OAN 2013)

Rachael Swallow of Chester University has a research specialism in the castles of Cheshire and has produced several publications on the subject. This includes examining the relationships of the castles along the Dee Valley. Swallow argues that the Anglo-French defences put up in the early years after the conquest reuse known defensive sites. Therefore there is continuity in the control of routes in the southern part of the region (Swallow 2015; in prep) (Fig. 41).

Some research is part of wider holistic landscape partnership schemes (e.g. SWLP). Geophysical survey, documentary research and excavation at Wolsty Castle (C) revealed that it was used by the Abbots of Cultrum as a secure stronghold against raids by the Scots. By the time of the dissolution, it was in a state of bad repair and its final destruction was ordered in 1652. Excavations revealed the curtain wall and established the limits of the castle interior, as well as the possible locations of the gatehouse and hall. An outer ditch on a different alignment to the currently visible earthworks was also revealed as well as the remains of a wooden bridge in the rampart and moat, which was sampled for dendrochronology (results forthcoming). Pottery spanning the 13th-17th centuries was also retrieved (Stamper et al 2013) (Fig. 42).

Recent developments with photogrammetry and the use of remote camera drones are enabling surveys of structures that were not previously possible. Gleaston Castle (C) has recently been surveyed as part of the Morecambe Bay Landscape Partnership (MBLP) project. One product of this is a 3D navigable model of the standing structures and earthworks. Elements of this have been up loaded by Aerial Cam to Sketchfab where they can be publically viewed. (see https://sketchfab.com).

The fortified houses of the region have had little new research although there are exceptions such as Radcliffe Tower, Bury (GM). Here there was a series of community based documentary research and excavations aiming to establish the extent of the associated manorial complex. The results have been recently published synthesising the findings of excavations undertaken here since the 1970s with the tower discussed in its wider context where it is considered to be a Pele tower, constructed as a deliberately defensive feature. The excavations have produced an assemblage of over 100 pottery sherds, significant for the area (Nevell et al 2016) (Fig. 43).
Clifton Hall Tower, Penrith (C) was subject to tree-ring analysis. A main beam associated with the second floor frame was sampled to give an estimated felling range of AD 1539-64. This, along with other sampling results, indicates at least two phases of 16th century felling (Arnold et al. 2015). This supports structural evidence for several phases of adaptation and reuse well into the post medieval period.

Hapton Tower (L) is sometimes referred to as a Pele tower, although it is more likely to be a hunting lodge. It is currently under investigation as part of the Hapton Big Dig HLF project (Philpott pers. comm.) (see landuse).

An online resource has been recently created for medieval castles, fortifications and palaces in England, Wales the Channel Islands and the Isle of Man (the Gatehouse). This is an ongoing project and aims to cover the period 1000 to 1600 and includes a list of licences to crenelate (http://www.gatehouse-gazetteer.info/home.html).

Legacy

Since 2006, an extensive and significant body of work has been produced but although the NWRRF is acknowledged in many project designs, it is not the priority. Most of this work derives from development control projects on varying scales, followed by community based projects, often part of larger holistic landscape partnership schemes. The questions set by the original framework remain and but without syntheses, the results present a disjointed approach when considering patterns and trends across the region.

This is partially offset by the wide range of regional publication outlets but though there is extensive publication it is often single articles on aspects of a particular site or investigation and in general lacks regional integration. Those that attempt in-depth period based regional analysis have the most impact and should be encouraged. An important trend is the publication of major excavation results backlogs with further analysis implemented using new methodologies and scientific techniques where appropriate (see Norton Priory, Aldingham Motte etc.). Projects of particular significance often find their way to publication but the majority of the grey literature remains unpublished.

There are distinctive patterns across the region as to where work is being carried out and published. Since 2006, Cumbria in particular has benefited from extensive landscape surveys and settlement research although publications on the regional aspects of these themes have yet to reach fruition. A detailed review of late medieval landuse and settlement patterns in Cumbria is now possible.
Greater Manchester is an area where basic synthesis and publication through the Manchester’s Past Revealed series keep pace with the new information being generated by urban expansion and regeneration. However these publications are aimed at the general reader therefore lack depth and analysis and focus on specific locations, rather than county based themes.

Merseyside, Lancashire and Cheshire (outside of Chester) appear to be behind Cumbria and Greater Manchester in the amount of new information being generated and published for the period. The exceptions are sites arising from major infrastructure or utility projects such the M6 Heysham link or the Helmshore pipe line. For some projects the Lancashire Imprints provided the medium for synthesis and publication. Cheshire and Merseyside appears to be more dependent on local archaeology societies, the local Museums and ALGAO Services, although publications are generated regularly.

Perhaps the most significant development for the period is the discovery of major pottery production sites along with the growing number of other assemblages. This means that a new synthesis of types and analysis of regional development can be attempted. There are now enough site studies through survey and excavation to attempt new regional analysis, for example on moated sites. The accumulated evidence for landscape utilisation by the monastic orders has a great deal of potential for regional analysis, accompanied by in-depth documentary research to look at production, distribution and technology across monastic land holdings.

A range of castle sites have seen excavation and analysis along with new research and a growing pool of reports is offering new insights into the regions defences, which again would benefit from regional/county analysis.

Tree-ring dating has established that assumptions about the dates of origins for standing buildings need to be challenged. Medieval techniques and styles appear to carry on into later periods and conversely some buildings, especially agricultural structures, can be earlier in origin than they first appear. The extent of survival of medieval buildings in urban areas is not known but the HLC projects hint at possible wider survival than previously thought. Tree ring dating has become, and will continue to be, an important means of dating sites for a period where artefacts are comparatively rare.

The amount of new information that has been generated in the last 10 years is phenomenal and deserves a level of regional and thematic analysis not possible through a general review. During the research for this project, the sheer volume of information available became overwhelming and within the constraints of the current review it was not possible to
include all the relevant information that was accessible. Developments in digital storage and retrieval mean digital copies of reports and articles are becoming more readily available with digital formats increasingly a medium for publication. The Archaeology Data Service, Historic England and the British Library are sources or portals to digital archives. This precludes production of a definitive bibliography and it would not be appropriate to duplicate the lists that such organisations hold. There is now perhaps a need to review what is needed from a Regional Research Agenda in a rapidly evolving digital environment.