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Raunds Area Project: Assessment of the later prehistoric plant assemblages from the excavations at Stanwick (1984-1992)

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Assessment of the later prehistoric plant assemblages from the excavations at Stanwick (1984-1992)

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SUMMARY

This report presents the assessment of plant remains from 227 late prehistoric whole earth samples collected at Stanwick Quarry (Northamptonshire) between 1984 and 1992. It includes comments on the recording, processing, and archiving of samples from Phase 2 to 6 as well as on the condition of the plant remains recovered. The archaeobotanical potential of these samples is discussed by phase with a particular focus on spatial distribution, and offers recommendations for further work.

CONTRIBUTORS
Vicky Crosby manages the Stanwick database which includes details concerning the excavation, archiving and analysis of the Stanwick material, and provided background information on the project. Andrew Lowerre created the GIS files essential for the spatial analysis of the plant remains. Gill Campbell conducted the archaeobotanical assessment of 10% of the Stanwick samples, devised the methodological approach for the current assessment and oversaw its completion.

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BACKGROUND

The Raunds Area Project

By Vicky Crosby

Extensive excavations at Stanwick, Northamptonshire (SP972716) were carried out in advance of gravel extraction between 1984 and 1992. They form the major part of the Iron Age and Romano-British element of the Raunds Area Project (RAP). RAP is a collaborative project between English Heritage (now Historic England) and Northamptonshire County Council Archaeology Unit, examining the evolution of the landscape in an area of 40 square kilometres of the Nene valley in Northamptonshire. It combined rescue excavation in response to gravel extraction, housing development and road-building with field survey, environmental investigations and documentary research, covering sites ranging from the late-glacial to the post-medieval periods. The project as a whole is described by Parry (1994).

The Raunds Area Survey (Parry 2006) and the Raunds Prehistoric Project are already published (Harding and Healy 2007; Harding and Healy 2011). The Prehistoric Project covers the period up to the end of the Bronze Age. The post-Roman components of the Raunds project include the development from early Anglo-Saxon settlement to medieval village at North Raunds (Audouy and Chapman 2008), the Anglo-Saxon church and churchyard at Raunds Furnells (Boddington 1996), and the medieval hamlet and watermill at West Cotton (Chapman 2010).

The excavations at Stanwick (directed by Dr David S Neal) were extensive and productive in their own right, and in the broader context of the Raunds Area Project they offer a unique opportunity to examine the development of Iron Age and Romano-British rural settlement, society and economy in a landscape setting and in the context of earlier and later evidence for settlement and agriculture. The excavation methods and the detailed phasing of the site from the early Iron Age to the fifth century AD are discussed in Crosby and Muldowney (2011).

INTRODUCTION

Iron Age crop husbandry regimes in England are well documented in some regions such as the Thames Valley (Stevens, 1996) and the Hampshire chalk (Campbell and Hamilton, 2000; Jones 1995) but less investigated in others including the parts of the Midlands (Carruthers and Hunter, in press). Yet, several large-scale excavations have taken place along the course of the Nene River since the 1950s (Meadows *et al*. 2008: 3) and initiatives such as the Raunds Area Project have led to the publication of several monographs about the archaeology of the region (e.g. Harding and Healy 2007; Harding and Healy 2011). Focusing on a 40 square kilometres area of the Nene Valley in Northamptonshire (Figure 1), RAP notably ensured the analysis, archiving and conservation of the material resulting from the excavations at Stanwick Quarry between 1984 and 1992. The collection includes some 2000 samples, about 10% of which have been subject to archaeobotanical investigations through the years. These studies (Campbell, 1995; Gibson, 2009; Summers, 2013) revealed the high research potential of Stanwick samples and strongly recommended further archaeobotanical work. This assessment report builds on these studies and constitutes the first attempt to produce a wide overview of the Stanwick archaeobotanical assemblages from the later prehistoric period.

Some 400 whole earth samples dating between the mid-late Bronze Age and 70AD were collected at Stanwick in the 1980s and the 1990s. The contents of 227 of them were assessed for this report including samples from domestic occupation layers, pits, postholes, ditches and gullies as well as an oven and a vertically-sided pit or tank. Given this is a legacy project, particular attention has been given to the history of the collection and its condition. The core of this report however focuses on the description of the samples' contents and their interpretive potential.

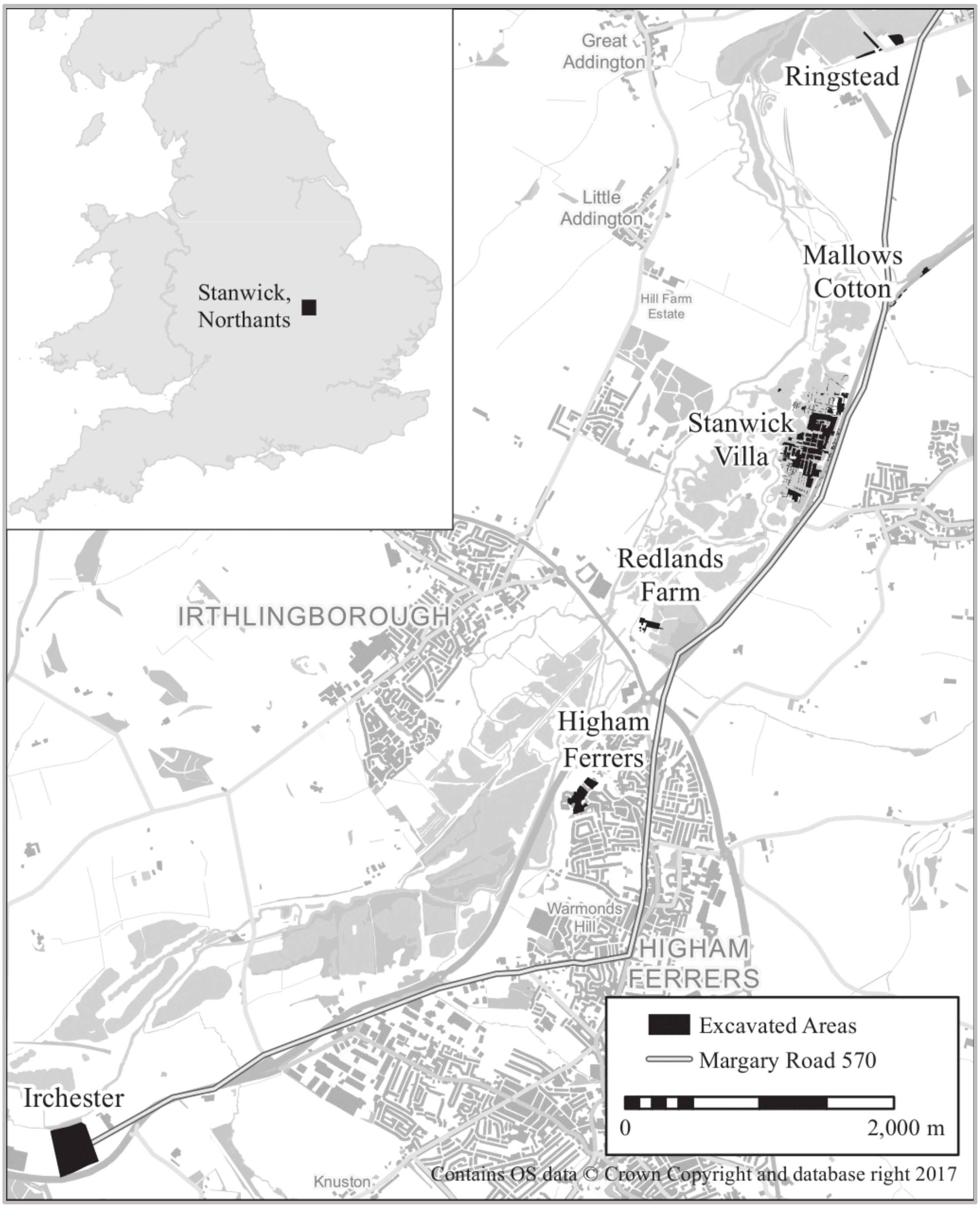


Figure 1: Location map showing Stanwick Quarry and other key sites investigated in the area

EARLIER ARCHAEOBOTANICAL WORK

Joy Ede was the first archaeobotanist to investigate plant remains from Stanwick (Figure 2). Although recorded, her comments on some 20 plant assemblages were never reported.

In 1995, Gill Campbell selected 10% of the samples collected, as part of an overall assessment. In the following report (Campbell 1995) she noted that about half of the assemblages assessed comprised significant amount of plant remains. Most of these rich assemblages were dominated by grain hence her recommendation to study the material further to address regional crop husbandry practices. She also highlighted that the material from Stanwick reflected several millennia of continuous occupation and would enable detailed analysis of the Iron Age spatial organisation of activities. Assessment of the interpretive potential of Stanwick archaeobotanical material was however limited since the site had not been fully phased.

Campbell and Robinson (2007; Campbell, 2011) published multi-proxy studies of Stanwick Neolithic and early Bronze Age material. Although the archaeobotanical assemblages from these periods yielded few remains, the combination of multiple lines of environmental evidence enabled them to address the evolution of the landscape of this part of the Nene Valley. The data they gathered led them to conclude that Stanwick developed into a pastoral landscape by the middle Bronze Age. The combined presence of hazelnut and tubers characterised these early prehistoric charred archaeobotanical assemblages.

Since 1995, three studies of selected aspects of the material have been carried out. Joe Gibson's (2009) MSc dissertation addressed the contents of an Iron Age ring ditch roundhouse located centrally within the Stanwick excavation area (Figure 2). Gibson notably comments upon the prevalence of barley in the samples he investigated but also on the presence of low quantities of emmer and spelt in this building. This last observation seems promising as, once further contextualised, it may provide valuable information about the transition between emmer-based and spelt-based cultivation in the region.

John Summers (2013) analysed samples collected from two Iron Age 4 post structures in different areas of the site in order to understand their function and examine possible differences (Figure 2). These features yielded hundreds of remains, most of which belonged to spelt and barley. The density and composition of the assemblages recorded led Summers to suggest both structures were used as granaries. Interestingly, like Gibson, Summers noted a few emmer remains in the samples he examined.

Finally, isotopic analysis on 41 grain samples dating from the Bronze Age to the Roman period by Lodwick *et al*. (submitted) demonstrated that agriculture became more extensive after the Roman conquest but also that there was some variability in agricultural practices at the household level during the Iron Age. To understand more about the nature of these practices, further work needs to be done on Iron Age plant remains from other sites.

Overall, the studies carried out so far have provided valuable insights into the late prehistoric landscape and Iron Age economy while focusing on only a small portion of the material available. The assessment and analysis of further archaeobotanical material from Stanwick should add considerably to these findings.

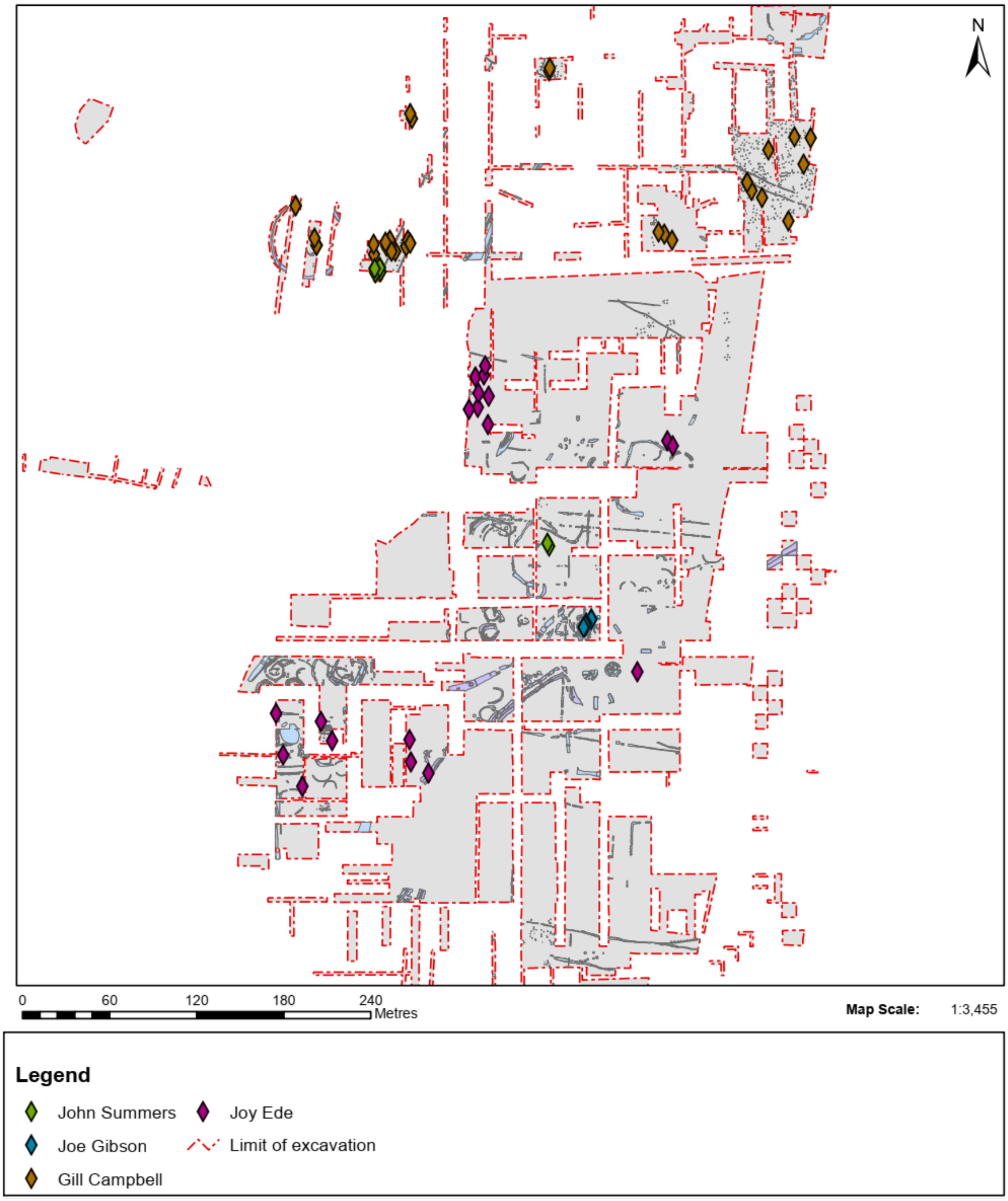


Figure 2: Mid-Late Bronze Age and Iron Age samples investigated prior to 2018

METHODOLOGY

The archaeobotanical assessment of material collected some 25 years ago at Stanwick Quarry is challenging from a methodological standpoint. In the last decades, archaeological and archaeobotanical approaches have evolved while some of the initial excavation records were lost and some samples were lost whilst stored on-site over the winter of 1987 when substantial flooding occurred. In addition, some of the assemblages have been compromised due to deterioration of plastic bags leading to mixing between samples. However, the time gap between the excavation and the assessment has allowed the detailed phasing of the Iron Age and Romano-British activity to be completed (Crosby and Muldowney 2011), and work on the late 2nd/early 1st millennium activity has been published (Tomalin 2006; Harding and Healy 2007).

About 400 samples dating between the mid-late Bronze Age and 70AD were collected during excavations at Stanwick Quarry with the overall aim of representing the broadest range of contexts possible (Campbell and Robinson 2011: 601). The volume of the samples varies tremendously, from 1l to 150l, depending on the purpose for which they were taken, for example small specialist samples for general biological analysis or large samples take principally for the recovery of artefacts and animal bone by wet-sieving. Potential disparities therefore hamper direct comparisons between samples, and might have had a differential impact on the representation of some plant categories, phases and areas within the dataset. Variations in excavation methods during the project also affect the sample coverage. Further, the extent and duration of the Iron Age activity were underestimated during the fieldwork, and fewer features (particularly pits) were excavated than would now be considered desirable (Crosby and Muldowney 2011, 5-6).

Over 99% of samples collected at Stanwick Quarry have been processed (the exception being samples of a few litres taken as specialist samples). The vast majority were floated by means of a manual wash-over technique or a modified Siraf tank (Campbell 1995:1). Heavy residues were occasionally re-floated manually to ensure the recovery of as much charred material as possible and this material was bagged together with the original flots. Although mechanical flotation increases the risk of cross-contamination and can be slightly less gentle on the remains, it generally does not yield significantly different results to hand flotation (Keeley 1978:180-182). In all cases a 0.5mm mesh was used to collect flots, which may adversely affect the collection and representation of very small seeds such as rushes. A small number of samples (less than 1% of the total) were processed by wet sieving using a 2mm mesh for the recovery of animal bones. Wet sieving not only biases against smaller plant taxa but also has a marked detrimental effect on brittle plant remains (Wagner 1988:18-19) - such as cereal chaff for instance - fostering an artificial disparity between the contents of floated and wet sieved samples.

About 16% of Stanwick Iron Age flots have previously been studied by different archaeobotanists. To ensure consistency, they were all reassessed with the exception of the flots scanned by Gill Campbell in 1995 since the current assessment built on her approach (Campbell, 2011, 651). For the sake of efficiency, the contents of processed samples were targeted during the assessment with the intention of using the results to determine which of unprocessed specialist samples to float at a later stage. For the same reason, when the material from more than one sample of the same context was available, only one sample was randomly selected for the assessment.

Each flot selected was put through a stack of sieves going from 2mm down to 0.25mm. All the material present in the 2mm and 1mm sieves was then scanned using a stereomicroscope between 2x and 40x magnification with the aim of recording the representation of different plant categories (grains, chaff, other seeds, tubers) on an abundance scale (Table 1). At the same time, the occurrence of taxa that could be identified quickly was noted, creating a bias towards taxa the author was more familiar with. The presence of charcoal, bones, molluscs and finds was also noted. Unless the volume of material present in the 0.5mm and 0.25mm sieves was small, only a fraction of their contents were scanned; plants producing small seeds generally produce a lot more of them (Leishman *et al*. 2000:34).

Table 1: Abundance Scale Used

Abundance scale		Number of items
x	Rare	1-5
xx	Frequent	6-25
xxx	Common	26-100
xxxx	Abundant	101-500
xxxxx	Super abundant	500+

The plant remains retrieved from sorted heavy residues – the portion of the samples which did not float – were assessed in the same manner as the flots. Not all of the heavy residues have been sorted and only 25% to 50% of the sorted heavy residues were scanned. Flots and residues were thus recorded separately.

The results of the assessment are presented by phase and by context type in Appendix A and are discussed below. Details for each phase are given in Table 2 which is reproduced from Crosby and Muldowney (2011,17, table 1). The taxa discussed in the text are designated by their English name first and by their Latin name in brackets. Nomenclature follows Stace (1997) for wild plants and Zohary and Hopf (2000, tables 3 and 5 - traditional classification) for cereals.

Table 2: Stanwick Later Prehistoric Occupation Phases

Phase	Dating	Occupation
2	Mid to Late Bronze Age	Rectilinear field systems and post-built roundhouses
3	Late Bronze Age to Early/Mid Iron Age, c. 900 to 400 BC	Scattered occupation evidence including pits, posthole structures, ditches and roundhouses defined by gullies
4	Mid to late Iron Age c. 400 to 100 BC	Establishment of a major landscape boundary and several distinct settlement foci with ring ditch roundhouses to its north
5	Late Iron Age c. 100 to 1 BC	The unenclosed settlement continued to develop, a circular enclosure was constructed to its north-west area. A ditched trackway was set out.
6	Early to mid-1st century c. 1 to 70 AD	Appearance of ditched enclosures between the trackways, but fewer buildings visible, probably due to change in building techniques. First enclosures south of the major land division.

RESULTS

The collection

Project records indicate that 398 samples dating between the mid-late Bronze Age and 70AD were collected during the Stanwick Quarry excavation. Each sample is assigned to a single phase, except for seven samples from deposits forming during both phases 5 and 6. Together they unevenly represent five phases of occupation (Figure 3) stretching over more than a millennium. They are likewise unequally distributed over an area of about 234 000 m^2 with more samples taken in the central and south-western area. This broadly reflects the density of Iron Age features identified and excavated but also the variation in the duration of each phase.

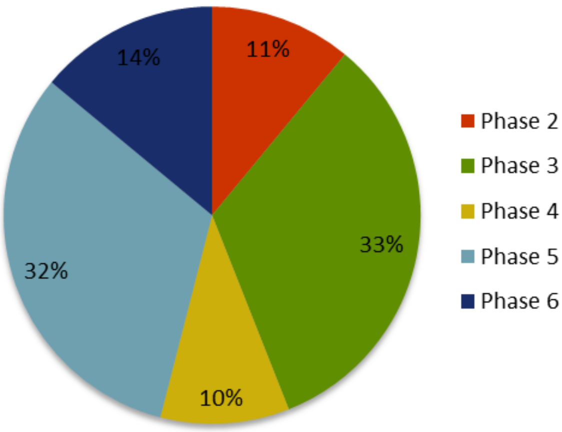


Figure 3: Collected samples distribution by phase

The current collection

Of the 398 samples dating from phase 2 to 6 taken, only 2/3 could be located (Figure 4). Most of the missing material is associated with phase 3 which was initially overrepresented in the samples collected. Unfortunately, only a quarter of the missing samples were collected from contexts where more than one sample was taken and available for the assessment.

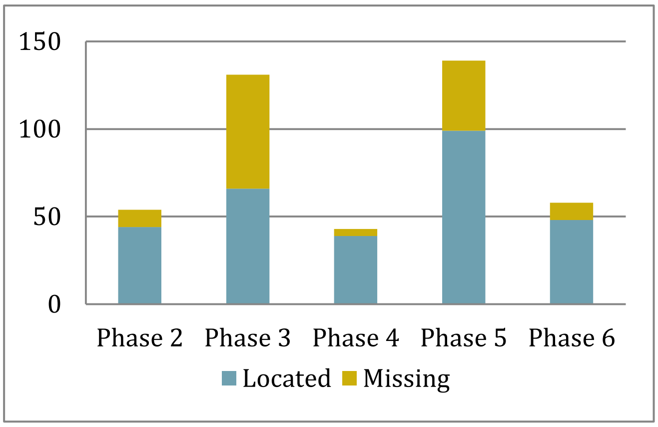


Figure 4: Available Samples by Phase

About 10% of the samples located are unprocessed specialist samples, mostly from phases 3 and 5. Of the remaining samples, a number have flots but no corresponding residues, while 13% are represented by a residue only and no flot (Figure 5). Furthermore, a degradation of some sample bags has resulted in material loss.

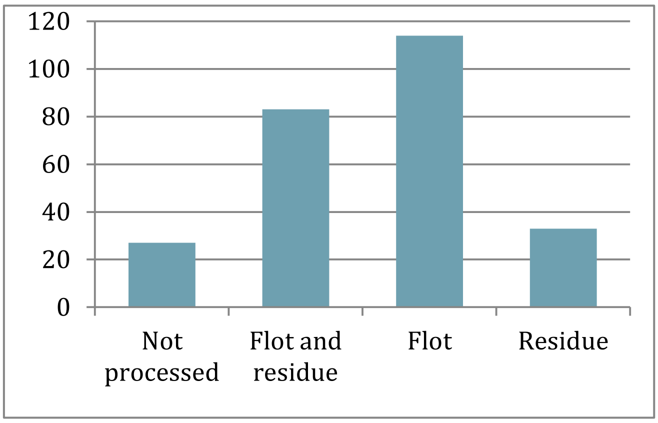


Figure 5: Current state of all available samples

The material assessed

A total of 277 samples were assessed as part of this investigation adding to the 37 samples assessed by Campbell (1995). About a third of these samples are associated with phase 5 (Figure 6). The samples are unevenly distributed across the site being sparsely scattered in the north and clustering in three areas in the south (Figure 7). They come from 207 different contexts including ditches and gullies, pits and cesspits, postholes and stakeholes, hearths and layers. Ditches are over-represented as they comprise about the half of the contexts assessed. About 77% of the contexts assessed are further associated with a landscape element, such as a building, structure, enclosure or boundary.

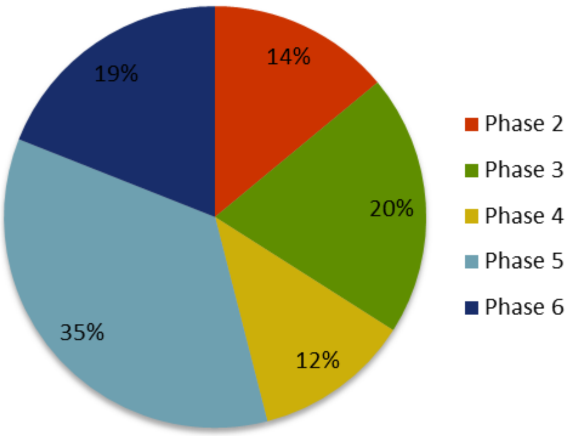


Figure 6: Assessed samples percentage by phase

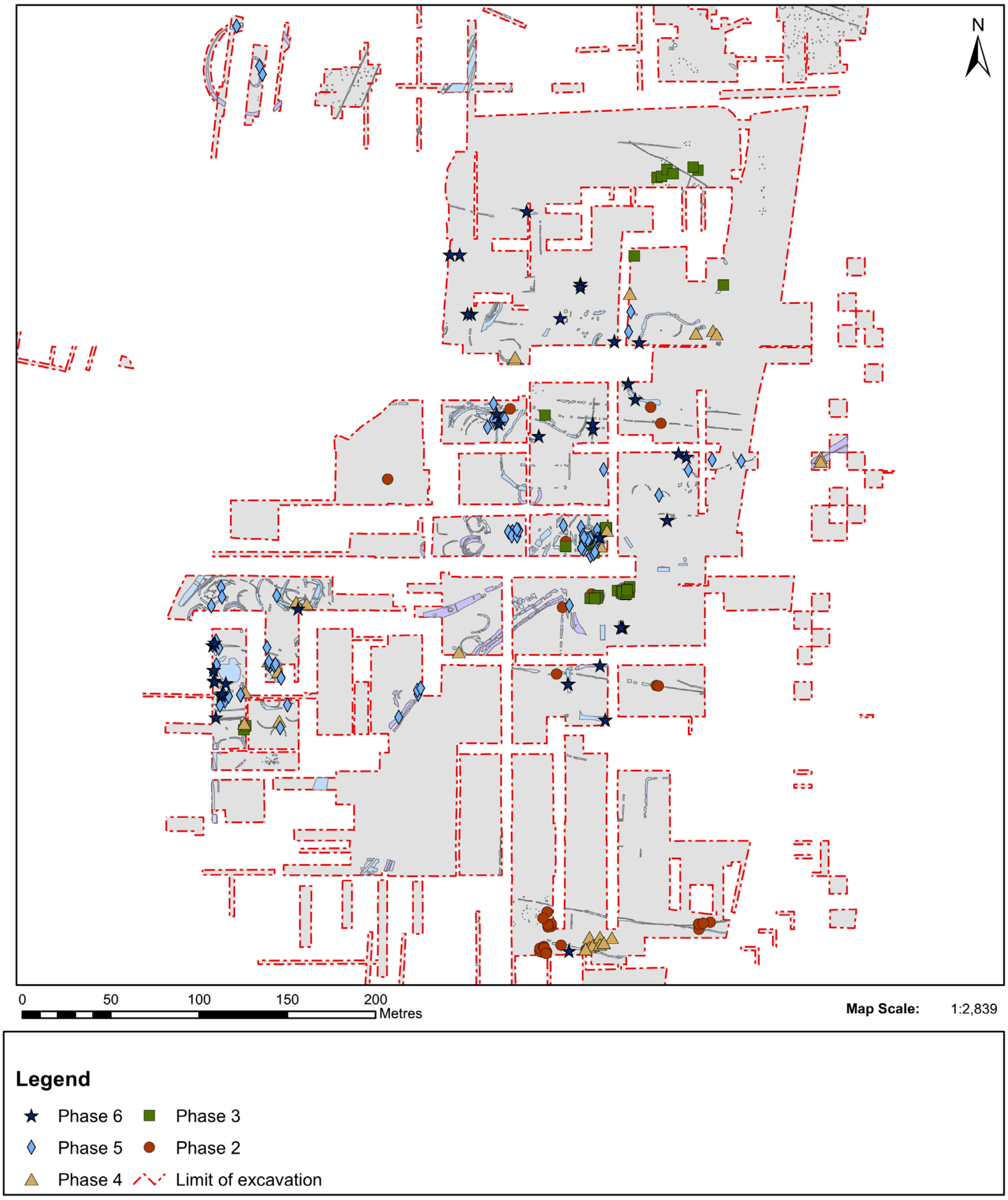


Figure 7: Location of the samples assessed, by phase

The volume of the flots assessed range from 1 to 620ml with most of them falling between 10 and 20ml. About 26% of them contained a significant concentration of roots. Roots were much more frequent in phase 2 regardless of location or context.

Most of the samples assessed (74%) consist almost entirely of charcoal fragments. Generally dirty and/or eroded, it was challenging to provisionally identify these fragments without breaking them. In the few instances where this was possible, the assemblages seem dominated by oak. A total of 51 flots distributed across phases and areas contained more than the 100 charcoal fragments required for charcoal analysis (Veal, 2019).

About 68% of the flots assessed contained some mollusc remains. The vast majority of which were *Cecilioides* sp., a burrowing snail subterranean in habit (Kerney and Cameron, 1987: 149). Fragments of larger molluscs similar to oyster were present in the flots of samples 11190 and 11235. Both contexts are associated with phase 6 and located in the same area of the site. The introduction of oysters to the site and diet of its inhabitants will be considered in the marine shell report, but oyster shell is rare before Phase 7 (Winder 2019, tables 1 and 3).

Vertebrate remains were recorded in about a third of the flots assessed. In at least 46% of these instances the bones observed are identifiable and belong either to small mammals, amphibians or birds. Larger mammal remains, more specifically phalanges of medium mammals, were identified in the flots from samples 80590 and 80800 (J. Waterworth, personal communication), both associated with phase 3. Sample 80590 came from a roundhouse structure where a lot of animal bone was recovered (landscape element 192036).

Sample contents

All plant remains noted in the assessment were charred. The state of preservation varied according to plant parts and categories present. Seeds and tubers were rarely distorted or fragmented and could generally be identified to genus level. Although brittle, chaff, when present, also tended to be well preserved except in a few instances where glumes were fragmented and could only be identified as *Triticum* sp. (i.e. samples 10755, 10837 or 80618). In contrast cereal grains were much more commonly heavily damaged (most of the outer surface missing) and fragmented. The occurrence of poorly preserved grains tended to decline through time (Figure 8). The number of flots where no charred plant remains other than charcoal were recorded also decreased through time (Figure 9).

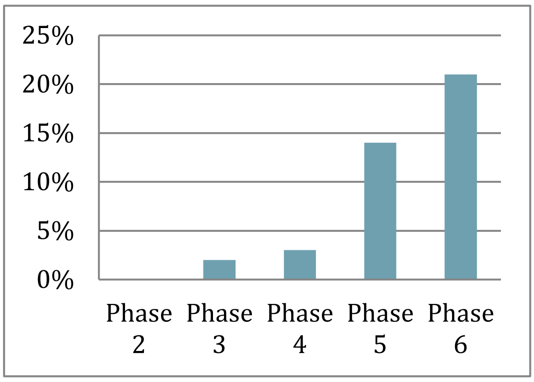


Figure 8: Proportion of the samples including well preserved grains for each phase

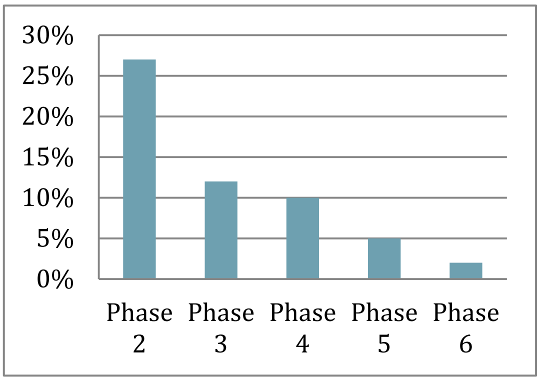


Figure 9: Proportion of the samples charred plant remains other than charcoal observed for each phase

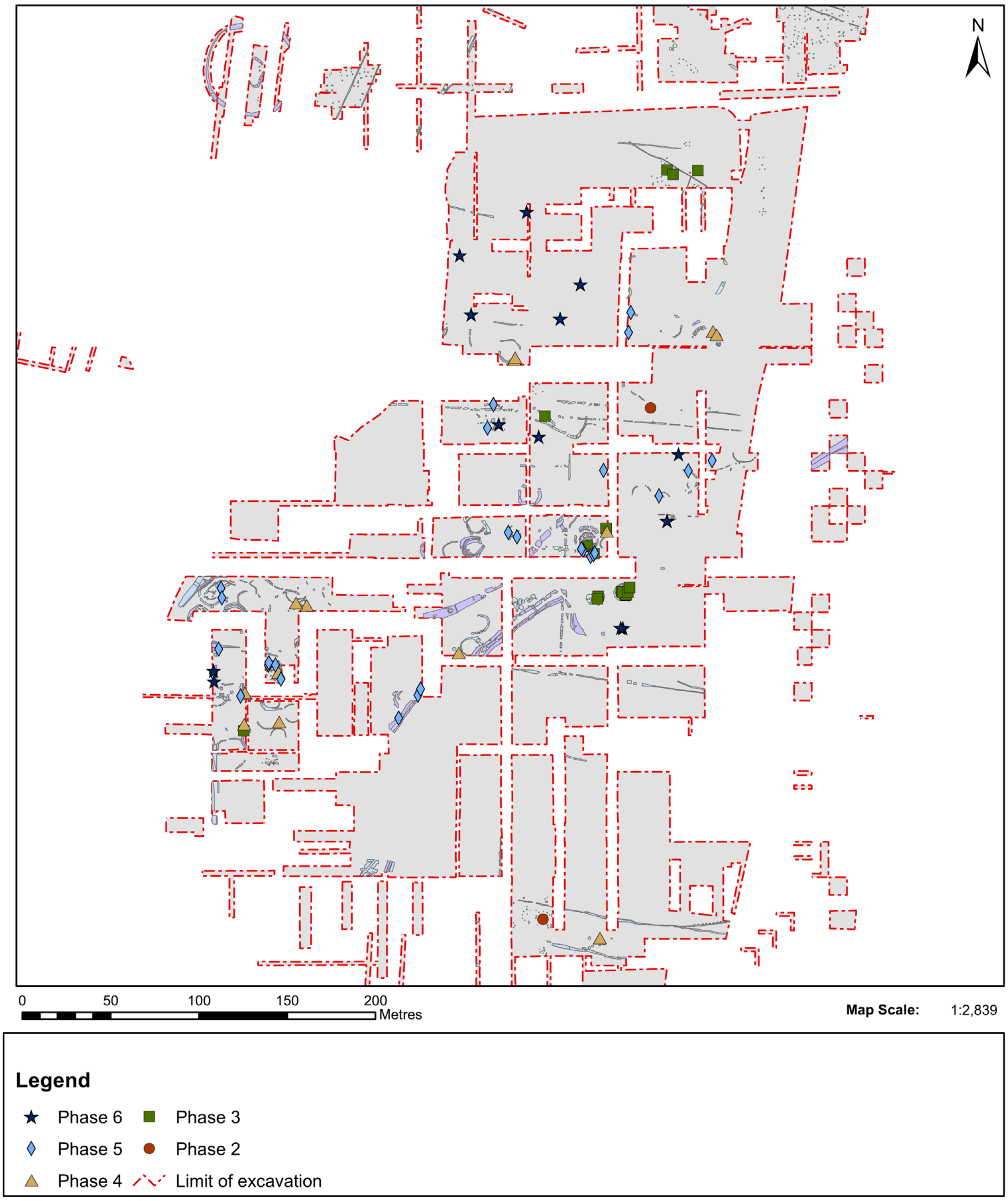


Figure 10: Location of the samples with high densities of remains by phase

The density of plant remains varied tremendously. In general, samples collected in the northern and south-eastern portions of the site tended to have a low density and diversity of remains. In contrast, richer samples comprising over 26 items belonging to any plant category (grains, other seeds, chaff and tubers) tend to come from the central and south-western portion of the site (Figure 10). These richer samples represented about a third of the samples assessed but a comparatively low proportion of them date to phase 2. They do not seem to be associated with in any particular context type. However, they only occur in the south-western portion of the site during phase 4 and 5. Some of these assemblages, associated with phase 5, produced the highest densities of remains recorded on site (500 items within at least one plant category).

In terms of assemblage composition, cereal grains are the most commonly identified plant remains (Figure 11). Preliminary observations suggest that they generally belong to glume wheats (*Triticum spelta* L. and *Triticum dicoccum* Schubl.) or hulled barley (*Hordeum vulgare* L.) although in a few instances, oat (*Avena* sp.) was also recorded (i.e. samples 80776, 80117 and 99024). Overall, about a third of the assemblages where cereals were present yielded more than 25 grains. These grain-rich assemblages were proportionally more frequent in phases 3 and 5. It was however not possible to correlate their presence with the occurrence of other plant categories or with any type of context.

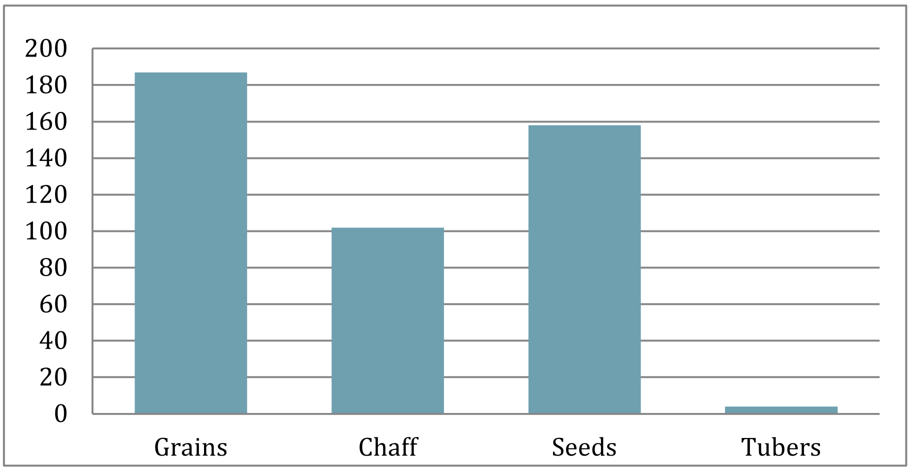


Figure 11: Ubiquity of different plant categories in assessed samples

Less frequently observed than grains, chaff remains were recorded in 45% of the samples assessed. The overwhelming majority of the chaff remains identified are spelt wheat (*Triticum spelta*) glumes or spikelet forks. A few emmer (*Triticum dicoccum*) glumes were recorded in two assemblages from phase 2 (samples 80004 and 99214) and some barley rachis fragments were present in four flots from phase 5 (samples 10846, 80222, 80368, 80373, and 80378). Phase 5 also yielded the majority of the samples where more than 25 chaff elements were observed, most of which came from the south-western portion of the site. Most chaff-rich assemblages are derived from ditches or pits, the most common feature type sampled.

Represented in about 70% of the samples assessed, the seeds category was used for all plant taxa other than cereals. It included a wide range of plants, the most common of which are small grasses (Poaceae family), docks (*Rumex* spp.), bromes (*Bromus* sp.) and bedstraws (*Galium* sp.). Higher concentrations of seeds were recorded in ditches and pits from phases 3, 4, and 5. In terms of spatial distribution, seed-rich assemblages dating to phase 3 were more common in the central portion of the site whereas those dating to phase 5 were more frequent in the south western part of it. Although no detailed identification was attempted as part of this assessment, it was possible to note changes in the composition of seed flora between phases 2 and 3, and to a lesser extent between phases 5 and 6 on the basis of general morphology.

Tubers are by far the most poorly represented plant category, observed only in five flots, three of which are associated with phase 6. Their presence was only recorded in samples collected in the central portion of the site. With one exception (sample 11238), all the tubers identified belonged to onion couch (*Arrhenathemum elatius* ssp. *bulbosum*(Willd) Hyl.). This is in contrast to the Neolithic and Early Bronze Age samples where onion couch was regularly recorded along with other types of charred parenchyma (Campbell 2011: 664).

DISCUSSION AND RECOMMENDATIONS

The Stanwick archaeobotanical assemblage from phases 2 to 6 currently comprises about 400 phased samples from well stratified deposits. It has extremely high interpretive potential despite the pitfalls related to the study of legacy collections. Although no detailed identifications have been attempted as part of this assessment, preliminary results already tend to confirm the patterns observed at a regional scale (Carruthers and Hunter, forthcoming). Indeed, like other Midlands Iron Age sites, the Stanwick assemblage is characterised by a dominance of spelt and the presence of small numbers of hulled barley, emmer and free threshing wheat remains. However, this trend can be explored further as several remains-rich flots were identified in a wide range of contexts covering the whole Iron Age occupation.

The qualitative and semi-quantitative appraisal of Stanwick samples contents during the assessment provides a baseline against which prior and future research can be contextualised. It also draws attention to different patterns worth investigating further. These are discussed below under three overlapping themes: Stanwick Bronze Age and Iron Age occupation, daily life at Iron Age Stanwick, and changing crop husbandry practices in the British Isles.

1. Stanwick Bronze Age and Iron Age occupation

The results of the assessment highlight important contrasts in the preservation state, density and diversity of remains recorded from different areas of the site. In general, assemblages from the northern and south eastern segments of the site tended to yield poorer assemblages than those from the central and south western portions. Several mechanisms can potentially explain this phenomenon.

Firstly, it may result from a discrepancy in preservation conditions (see Hillman, 1981; Miksicek, 1987). For example, changing water table levels might have had an impact on the survival of the charred plant remains. This could also account for the generally lower density of remains in samples from phase 2. Yet, the preliminary data collected during the assessment tends to suggest that the impact of differential preservation might have been limited since no further direct correlations were recorded between the condition of the remains, their date or their origin. To rule out this possibility and get a better understanding of preservation conditions through time and space, the state of fragmentation and distortion of the remains across the site will need to be recorded systematically as part of analysis.

Secondly, the spatial variability observed might be a consequence of sampling bias or of the nature of the archaeology encountered. Indeed, the occurrence of richer assemblages comprising more than 25 remains of grains, chaff or seeds is significantly higher in areas where more samples have been collected and assessed. A closer look at the distribution of the flots from phase 3 and 5 however tends to disprove this hypothesis: only a weak negative correlation exists between the number of samples collected from a given area and the proportion of rich plant assemblages they yielded.

Thirdly, spatial and temporal patterning in assemblage quality might reflect the intensity of past occupation. If this hypothesis is correct, the data gathered during the assessment would indicate an overall intensification of agricultural activities in the central portion of the site during phase 3, an expansion towards the southwest initiated in phase 4 but more marked in phase 5 and retraction back to the centre in phase 6. To support this hypothesis, the possibility that the patterns observed are related to differential preservation must be ruled out, and more contextual evidence must be taken into consideration to ensure the assemblages studied reflect a similar range of social practices.

Fourthly, it is possible that the spatial and temporal differences observed are related to changes in the use of the site and activities through time and carried out in different areas. Distinguishing between different spatial function using archaeobotanical assemblages not only requires a closer look at contextual evidence but also the numerical analysis of the archaeobotanical data to identify the different crop processing activities occurring (see Hillman 1984; Jones 1984).

By investigating the contents of some samples in detail, it should be possible to disentangle the origins of the spatial and temporal patterning observed during the assessment. Not all samples are however suited for the type of quantitative analysis required, since samples with few items are more likely to obscure general trends. As such, it is suggested that only flots which contained more than 25 items within any one plant category should be analysed in detail. This limits further analysis to 74 flots, among which samples from phase 2 are underrepresented (Table 3).

Table 3: Samples Selected for Analysis by Phase

Phase	Samples selected
2	10863, 80522
3	10563, 80117, 80245, 80256, 80321, 80325, 80505, 80554, 80557, 80558, 80567, 80590, 80597, 80617, 80618
4	10560, 10618, 10849, 11048, 80720, 80776, 80779, 80865, 99164
5	10582, 10618, 10619, 10633, 10634, 10638, 10643, 10758, 10763, 10765, 10837, 10838, 10839, 10842, 10843, 10844, 10846, 10847, 10887, 11120, 11121, 80002, 80013, 80077, 80081, 80128, 80222, 80241, 80246, 80247, 80249, 80366, 80368, 80732, 80733, 80747, 80748
6	10549, 10755, 11022, 11030, 11220, 11235, 11720, 80011, 80083, 80478, 80483

2. Daily life at Iron Age Stanwick

The Stanwick archaeobotanical assemblage comprises material from Iron Age contexts spread across thirty hectares. The samples dated to phases 4 and 6 only offer a patchy overview across this space. In contrast, those from phases 3 and 5 are more evenly distributed and more often derived from discrete features. Analysing a greater number of samples from phases 3 and 5 is thus likely to provide valuable insights into the management of domestic and communal space during the Iron Age if they are selected to represent different parts of a given feature or in the same part of similar features. This will involve the analysis of 48 samples from phase 3 and 35 samples from phase 5 (Table 4). The smaller quantities of plant remains recorded in these samples will make their analysis quicker but this will be counterbalanced by the need to process 16 samples from phase 3 and 10 samples from phase 5.

Table 4: Samples Selected for Analysis by Phase

Phase	Processed samples selected	Unprocessed samples selected
3	80397, 80600, 80623, 80624, 80641, 80651, 33394, 33395, 33396, 33397, 33399, 33400, 33401, 33402, 33404, 33405, 33407, 33408, 33409, 33410, 33411, 33412, 33413, 33422, 33423, 33424, 33430, 33431, 33432, 33433, 33435, 33447	80234, 80317, 80318, 80563, 80564, 80565, 80566, 80591, 80601, 80621, 80622, 80502, 80503, 80504, 80506, 80507
5	10558, 10636, 10751, 10753, 10836, 10892, 80008, 80009, 80010, 80021, 80224, 80240, 80299, 80356, 80357, 80364, 80367, 80373, 80394, 80421, 80484, 80489, 80734, 80786, 80859	80243, 80250, 80251, 80252, 80253, 80254, 80255, 80257, 80294, 80295,

3. Changing Crop Husbandry Practices in the British Isles

During the last 30 years, the agricultural transitions between the Bronze Age, the Iron Age and Roman period and their social significance have been the subject of considerable research in Britain (Jones 1981; van der Veen and O'Connor 1998; Stevens and Fuller 2012). Early work suggested that spelt had progressively replaced emmer as the main crop during the Iron Age (Greig 1991:305-306). This general picture no longer holds true as a growing body of literature has demonstrated these shifts were not unilateral and that there was variability in prehistoric agricultural practices at a regional scale (Campbell and Straker 2003:18). Tackling the nature and origins of this diversity and characterising regional farming transitions can be problematic due to the patchiness of the archaeological record. It is with this perspective that it is important to investigate further the assemblages from Stanwick since they represent over a millennium of occupation in a specific setting. As such, it is worth having a closer look at the samples from phase 2 even though they do not contain high densities of remains. Indeed, not only did they yield emmer and possibly spelt but preliminary observations suggest they did not include the same range of crop weeds than are present in the later assemblages. This involves the analysis of the material from 21 additional samples.

Table 5: Samples Selected for Analysis by Phase

Phase	Processed samples selected	Unprocessed samples selected
2	10865, 11773, 80004, 80067, 80383, 80398, 80454, 80516, 80517, 80518, 80520, 99154, 99155, 99172, 99210, 99211, 99212, 99214, 99216, 99226	3382

BIBLIOGRAPHY

Audouy, M and Chapman, A 2008 *Raunds: the Origin and Growth of a Midland Village, AD 450-1500. Excavations in North Raunds, Northamptonshire 1977-87*. Oxford: Oxbow Books

Boddington, A 1996 '*Raunds Furnells: The Anglo-Saxon Church and Churchyard*'. English Heritage Archaeological Report 7. Swindon: English Heritage

Brown, A G and Allen, P 2008 *Synthetic Survey of the Environmental, Archaeological and Hydrological record for the River Nene from its source to Peterborough Part 2: The Environmental Record*. PNUM 3453. London: English Heritage

Campbell, G 1995 'Charred plant remains, including charcoal. Raunds Area Project: The Assessments' *in* Perrin, R (ed) *Raunds Area Project: Iron Age and Romano-British Project, The Assessments*. London: English Heritage, 1-14

Campbell, G 2011 'Charred plant remains and charcoal' *in* Harding, J and Healy, F (eds) *The Raunds Area Project A Neolithic and Bronze Age Landscape in Northamptonshire Volume 2: Supplementary Studies*. London: English Heritage, 651-666

Campbell, G and Hamilton, J 2000 'Danebury environs: agricultural change in the Iron Age' *in* Bailey, G, Charles, R and Winder, N. (eds) *Human Ecodynamics: Proceedings of the Association for Environmental Archaeology Conference 1998 held at the University of Newcastle upon Tyne*. Oxford: Oxbow, 114-122

Campbell, G and Robinson, M 2011 'Environmental Evidence: introduction' *in* Harding, J and Healy, F (eds) *The Raunds Area Project A Neolithic and Bronze Age Landscape in Northamptonshire Volume 2: Supplementary Studies*. London: English Heritage, 601-603

Campbell, G and Straker, V 2003 'Prehistoric crop husbandry and plant use in southern England: development and regionality' *in* Robson Brown, K A (ed) *Archaeological Sciences 1999*. Oxford: Archaeopress, 14-30

Carruthers, W and Hunter, K in press *A Review of Macroscopic Plant Remains from the Midland Counties*. Research Report Series 47-2019. Portsmouth: Historic England

Chapman, A 2010 *West Cotton, Raunds: A Study of Medieval Settlement Dynamics AD 450-1450. Excavation of a deserted medieval hamlet in Northamptonshire, 1985-89*. Oxford: Oxbow Books

Crosby, V and Muldowney, L 2011*Stanwick Quarry, Northamptonshire. Raunds Area Project: Phasing the Iron Age and Romano-British Settlement at Stanwick, Northamptonshire (Excavations 1984-1982)*. Research Report Series 54-2011. London: English Heritage

Gibson, J 2009 ‘A Comparison of Carbonised Plant Macrofossils from Roundhouse Structures at Kestor, Boden Vean and Stanwick’. Unpublished MSc dissertation, Department of Archaeology, Bristol University

Greig, J 1991 ‘The British Isles’ *in* Behre, KE, Wasylikowa, K and van Zeist, W (eds) *Progress in Old World Palaeoethnobotany*. Rotterdam: A.A. Balkema, 299-334

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

Harding, J and Healy, F 2011 *The Raunds Area Project A Neolithic and Bronze Age Landscape in Northamptonshire Volume 2: Supplementary Studies*. London: English Heritage

Hillman, G 1981 ‘Reconstructing Crop Husbandry Practices from Charred Remains of Crops’ *in* Mercer, R (ed.) *Farming Practice in British Prehistory*. Edinburgh: University Press, 123-161

Hillman, G 1984 ‘Interpretation of archaeological plant remains: The application of ethnographic models from Turkey’ *in* Van Ziest, W and Casparie, WA (eds) *Plants and Ancient Man - Studies in Paleoethnobotany*. Rotterdam: A.A. Balkema, 1-41

Jones, G 1984 ‘ Interpretation of archaeological plant remains: Ethnographic models from Greece’ *in* Van Ziest, W and Casparie, WA (eds) *Plants and Ancient Man - Studies in Paleoethnobotany*. Rotterdam: A.A. Balkema, 42-61

Jones, M 1981 ‘The development of crop husbandry’ *in* Jones, M and Dimbleby (eds) *The Environment of Man: the Iron Age to the Anglo-Saxon Period*. BAR Archaeological Series 87: 95-127

Jones, M K 1995 ‘Patterns in agricultural practice: the archaeobotany of Danebury in its wider context’ *in* Cunliffe, BW (ed.) *Danebury: an Iron Age hillfort in Hampshire*. CBA Research Report 52b, 43-50

Keeley, T 1978 ‘The cost-effectiveness of certain methods of recovering macroscopic organic remains from archaeological deposits’. *Journal Archaeological Science* 5: 179-183

Kerney, M P and Cameron R A D 1987 *A Field Guide to the Land Snails of Britian and Northern Europe*. London: Collins

Leishman, MR, Wright, I, Moles, AT and Westoby, M 2000 ‘The Ecology of Regeneration in Plant Communities’ *in* Fenner, M (ed) *Seeds: the ecology of regeneration in plant communities*. Oxon & New York: CABI Publishing, 31-58

Lodwick, L, Campbell, G, Crosby V and Müldner, G submitted 'Shifts in cereal production in Iron Age and Roman Britain: isotopic evidence from Stanwick, Northants, UK'. *Environmental Archaeology*

Meadows, I, Boismier, WA and Chapman, A 2008 *Synthetic Survey of the Environmental, Archaeological and Hydrological record for the River Nene from its source to Peterborough Part 1: The Archaeological and Hydrological Record*. PNUM 3453. London: English Heritage.

Miksicek, C 1987 '*Formation Processes of the Archaeobotanical Record*' *Advances in Archaeological Method and Theory* 10: 211-247

Parks, K 2012 'Iron Age and Roman Arable Practice in the East of England' Unpublished PhD thesis, Department of Archaeology, University of Leicester

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

Parry, S 1994 'Raunds Area Survey', in Parker Pearson, M and Schadla-Hall, R T (eds) *Looking at the land: archaeological landscapes in Eastern England*. Leicester Museums, Arts and Records Service.

Stace, C 1997 *New Flora of the British Isles*. 2nd edition. Cambridge: Cambridge University Press

Stevens, C 1996 'Iron Age and Roman Agriculture in the Upper Thames Valley: Archaeobotanical and Social Perspectives'. Unpublished PhD thesis, Department of Archaeology, Cambridge University

Stevens, C and Fuller, D 2012 '*Did Neolithic farming fail? The case for a Bronze Age agricultural revolution in the British Isles*'. *Antiquity* 86 (333): 707-722

Summers, J 2013 *Stanwick Quarry, Northamptonshire. Raunds Area Project: Charred Plant Remains From Two Four Post Structures from Stanwick, Northamptonshire: Preliminary Results and Recommendations for Further Study*. English Heritage Research Report 38/2013 . London: English Heritage

Tomalin, D 2006 'A postulated later Bronze Age roundhouse and its associated ceramics' *in* Parry, S (ed) *Raunds Area Survey. An Archaeological Study of the Landscape of Raunds, Northamptonshire, 1985–94*. Oxford: Oxbow Books, 156-160

van der Veen, M and O'Connor, T 1998 'The expansion of agricultural production in late Iron Age and Roman Britain' *in* Bayley, J (ed) *Science in Archaeology: an agenda for the future*. London: English Heritage, 127-144

Veal, R J 2019 'Charcoal and Wood Analysis' *in* López Varela, S L (ed.) *The Encyclopaedia of Archaeological Sciences*. London: Wiley.

Wagner, G 1988 'Comparability among Recovery Techniques' *in* Hastorf, C and Popper, V (eds) *Current Paleoethnobotany: Analytical Methods and Cultural Interpretations of Archaeological Plant Remains*. Chicago & London: The University of Chicago Press, 17-35

Winder, J M 2019 'Assessment of oyster shells from Stanwick Quarry, Northamptonshire'. Unpublished report for Policy and Evidence Group, Historic England

Zohary, D, and Hopf, M 2000 *Domestication of plants in the Old World*, 3rd edition, Oxford: Oxford University Press

APPENDIX A

* F, RF and R in the fraction column respectively stand for flot, flot residue and flot/sieving residue.

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
Phase 2										
Ditch										
10863		F	xxx				xx		xxx	
11773	40	F	x				xx		x	
80004	21	F	xx	x	xx		xx		xx	
80171	15	F					x		xxxxx	
80171		F					x		xxxxx	
80172	17	F								
80383	30	F	x		x		xx		xxxx	
80383		RF								
80398	17	F	xx		x		x		xx	
80398		RF	x							
80551	24	R								
80639		R	x							
99154		F	xx		xx		xxx	x	xxxxx	
99154		RF	x				xx			
99155		F	x		xx		xxx		xxxxx	
99172		F			x		xxx		xxx	
99172		RF	x		x		xx			
99173		F					x		xxx	
99198		F					x			
99199		F					x		xx	
99200		F							xxxxx	
99200		RF					xx			
99226		F	x		x		xx		xxx	
Pit										
99216		F	x		x		xx		xx	
Posthole										
80067		R	xx		x					
80515	30	F	x				xxx		xxx	
80516	30	F	x	x	x		xx		xx	
80516		RF	x							
80517	10	F	x				x		x	
80518	10	F	x				xx		x	
80519	17	F					xxxxx		xxxx	
80520	5	F			x		xxxxx		x	
80520		RF	x							
80522	10	R	xxx							
99207		F							xx	
99208		F								
99210		F	x		x		xx		xx	
99211		F					xx	x	x	
99211		RF	x	x	x		x	x	x	x

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
99212		F	x		x		x		xx	
99213		F					xx		xx	
99214		F	xx	x	x		xxxxx		xx	
99214		RF					xxx			
99215		F					x		xx	
					Phase 3					
Corndryer										
80800	21	F	xx				xx	x	xxx	
Ditch										
10567	20	F	xx	x	xx		x			
10567		RF								
11305	20	F					x		x	
80117	19	F	xxxx	xx	xxx		xxxx		xx	
80117		RF	xx				x			
80245		F	xxx	xxx	xx		xxxx	x	xx	
80256	20	F	xxxx	xxx	xxx		xxxx	xx	xxxxx	
80397	20	F	xx				xx	x		
80590	18	F	xxx	xx	xxx		xxxxx	xx	xxxx	
80590		RF								
Gully										
11123	20	F	xx		x		xxxx		xx	
80618	25	F	xxxx	xx	xxxx		xxxxx	x	xxxx	
80618		RF	x				x			
Hearth										
10569	20	F					xxxxx			
10569		RF	x	x	x		xxx			
80567	5	F	x		xxx		xxx		x	
80601		F	x	x	x		xxx	x	xxx	
80623	30	F	x	x	x		xxx	x	xxxx	
80623		RF	x							
Layer										
80554	20	F	xx	xx	xxx	xx	xxx	xxx	xxxxx	
80557	14	F	xxx	x	xx		xxxx	xxx	xxxxx	
80596		R								
80597	26	F	xxx	x	xxx		xxxx	xxx	xxxx	
80597		RF			x		xxx	x		
80598		R								
80600	16	F	x	x	x		xx		xxxxx	
80600		RF	x							
80614		R								
80617	16	F	xx	xx	xxx		xxxx	xx	xxx	
80624	20	F	x	x	xx		xxxx	x	xxxx	
80625		R	x		x					
80640		R	x							
80641	24	F	x		xx		xxxx		xxx	
80641		RF	x							

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
80644		R								
80651	20	R	x							
80652		R								
80615	14	F	x	xx	x		xxxx	xx	xxx	
Pit										
10563	20	F	xxxx		xxxx		xxxx			
80234		F	x	xx	x		xx			
80234		RF	x							
80265		R	xxx				xx			
80321	30	F	xxxx	x	xx		xxxx	x	xx	
80322		R	x							
80323	19	F	xx		x		xx	xx		
80325	16	F	xxxx	x	x		xxx			
Posthole										
80502	30	F	xx				xx			
80503	18	F	x		x		xx	xx	xxx	
80504	20	F	xxxx	x			xxxxx			
80505	30	F	xxxx	x			xxxxx	x	xxx	
80506	10	F	xxxx	xx	xx		xxx		x	
80506		RF	xx							
80507	15	F	x				x		xx	
80558	5	F	xxx	x	xxx		xxxx	xx	xxx	
Phase 4										
Ditch										
10581	20	F	xx		xx		xx			
10581		RF	xxx				xxx			
10834	20	F	x	x	x		xx			
10834		RF	xx		x		xxx			
11122	15	F?	x		x		xxx			
11381	20	F	xx		x		xx		xx	
11386		F?	xx	x	xx		x	xx	xxxxx	
11624	20	F	xxx	x	xx		xx		xxx	
11625		F	xxx	xx	xx		xxx	x	xxx	
11626	20	F	x		xx		xx	x	xxx	
80397	20	R	x							
80402	20	F	xx	xx	xx		xxxx	x	xxx	
80402		RF								
80720	17	F	xxx	x	xxx		xxx		xx	
80720		RF	xx		x					
80722	15	F	xxx		xx		xx			
80722		RF	xx		x					
80776	18	F	xxxx		xx		xx	x	x	
80776		RF	x		x					
80777		R								
80778		R								
80779	18	F	xx	x	xxx		xxx		xxx	

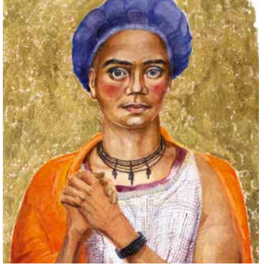
	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
80779		R	x		x					
80865	20	F	xxx	xx	xx		xx		xxx	
80865		RF	xx							
99111		F	xxx		xx		x		xx	
99159		F					x			
99159		RF	x				xx			
99161		F			x		x		xxx	
99162		F			xx		xxx		xxx	
99166		F			xx		xxxx		xx	
99188		R					xx			
Layer										
80557	14	R			x					
Pit										
10560	20	F	xxx	xx			xx		x	
10560		RF	x		x					
80235	20	F	xx		xxxx		xx		x	
80235		RF	xx		x		xx			
80326		R	x							
99110	19	R	xx							
99163		F	xx		xx		xxx	x	xxx	
99163		RF	x				xxxx			
99164		F	xx		xxx		xxxxx		xxxx	
99164		RF	xx				xxxx			
99165		F	xx		x		xxxx		xxxx	
99165		RF					xxxx			
99171		F	xx	x	xx		xxxx		xxx	
99171		RF			x		xxxx			
99174		F	xx		xx		xxxx	xx	xxx	
99174		RF			x		xxxx			
Posthole										
10618		F	xxxx	xxxxx	xxxxx		xx	x	xxxx	
10618		RF	x							
10636		R	xx				xx			
10848	20	F	xxx				xxx			
10848		RF	x		x		xxx			
10849	20	F	xx	xxx	xxx		xx	xx	x	x
10849		RF	xx		x		xxx			
Phase 5										
Ditch										
10558	15	F	x	xx	xx		x			
10619	20	F	xxxx	xxxxx	xxxxx		xxx	x	xxxxx	
10619		RF	xx							
10633	15	F	xxxx	xxxxx	xxxxx		xxx	x	xxx	
10633		RF	x				xx			
10636		R	xx							
10756	19	F	x	x	xx		x			

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
10756		RF	x							
10758	18	F	xx	x	xxx		x			
10758		RF	x							
10760	20	F	xx		xx		xx			
10760		F	xx		xx		xx			
10761	17	RF								
10761		F	x	x	xx		xx			
10765	20	F	xxx	xx	x		xxx			
10783	20	F	xx	x	x					
10783		RF	x							
10827	34	F	x	x	x		xx			
10827		RF			x		xx	x		
10835	16	F	x	xx	x				x	x
10835		RF	xx	xx	xx		xxx			
10837		F	xx	xxx	xxx		xxx	x		
10837		RF	x	x			xxx			
10842	20	F	xx	xx	x		xxx	x		
10842		RF	x				xxx			
10846	32	F	xxx	xxxx	xxx		xxxx		xxx	
10846		RF	x		x		xxx			
10892	22	F	xx		xx		x		xxxx	
33074	20	F					x			
33074		RF	x				xxx			
33075	20	F			x					
33075		RF	x				xx			
33076	8	F	x				x			
33076		RF	x				xxx			
33078	16	F								
33078		RF	x							
33079	18	F					xx			
80002	18	F	xxx		xx		xx		x	
80010	21	F	xx		x		xx		xx	
80013	20	F	xxx		xx		x		x	
80077	20	F	xxxx	xx	xx		xxx		xx	
80081	20	F	xxx	xx	x		xx	x	xxxx	
80237	19	R	x				xx			
80238	19	R	x				xx			
80239	17	R			x		xxx			
80240	19	F	xx	x	xx		xxxx		xx	
80240		RF	x				xxx			
80242	17	R	x				xx			
80247	18	F	xx		xxx		xx	x	xx	
80247		RF					xxx			
80249	23	F	xxx		xx		xx	x	xx	
80249		RF	xx							
80366	19	F	xxx	x	xx		xx	xx	x	

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
80366		RF	x							
80367	16	F	xx	x	x		xx		xx	
80367		RF	x							
80368	20	F	xxx	x	x		xx	x	xxx	
80368		RF	x							
80410	14	F	x				x			
80421	20	F	xx		x		xx	x	xx	
80421		RF	x							
80636	18	F	x	x	xx		xxx		xx	
80733	30	F	xxx	x	xxx		x			
80733		RF	x							
80734	19	F	xx	x	x		xx			
80734		RF	x		x		xx			
80748	15	RF	xx	x	x					
80748		F	xx		xxx		xx			
80786	18	F	xx		xx		x	x	xxx	
80786		RF	x		x					
80859	19	F	x		x		x		xxx	
Gully										
10554	16	F	x		x		x	x		
10554		RF	x				xxx			
10582	16	F	xxx	x	xx		xx			
10582		RF	xx		x					
10584	20	F	xx	x	xx		xxx			
10764	20	F	xx		x		xx		x	
10839	20	F	xx	xx	xxx		xx			
10839		RF	x							
11120	29	F	xxx	xx	x		xxx	x	xxx	
11121	16	F	xxx		x		xx		xx	
Layer										
80357	15	F	xx	x	xx		xxx		xxx	
80357		RF	x							
80485	10	R								
Pit										
10638	16	F	xxx	xxx	xxx		xxx		xxxx	
10638		RF	xx	x	xx		xxxx			
10643	20	F	xx	xxxx	xxxx		xx	x	xx	
10643		RF	x				xx			
10751	14	F	x	x	x		xx			
10751		RF	x				x			
10844	15	F	xxx	xxxxx	xxxx		xxxx	xx		
10844		RF	xx	x	x		xxxx			
10887	20	F	xxx	xxx	xxx		xxxx	xx	xxx	
80009	20	F	xx		x		xxxx	x	xx	
80222	28	F	xxx	xx	xxx		xxxx	xx	xxx	
80222		RF	x				xxx			

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
80224	21	F	x		xx		x		x	
80224		RF	xx				xx			x
80241	18	F	xx	x	xxx		xx		xxx	
80241		RF			x		xxx			
80246	19	F	xxx	xxxx	xx		xx		xxx	
80246		RF	x		x		xxx			
80248	40	R	x				xx			
80299	17	F	xx	x	xx		xxxx	x	xxx	
80299		RF								
80356	30	F	x	x			x			
80364	17	F	xx		x		xx		xxx	
80364		RF	x							
80373	19	F			x		x		xx	
80373		RF			x					
80378	10	F		x	x		x		xx	
80487	18	R					x			
80489	20	F	x	x	x		xxxx	x	xx	
Posthole										
10753	14	F	x		x		x			
10753		RF	x							
80008	20	F	xx		x		xx		xxx	
80128	19	F	xxxxx	xxx	xxx		xxxx		x	
Phase 6										
Ditch										
10549	14	F	x	xx	xxx					
10550	15	F	x				x			
10550		RF	x	x			xx			
10564	18	F	x		x		xx			
10755	20	F	x	xx	xxx			x		
10755		RF	xx							
10761	17	R								
10762	20	F	x		x		x			
10866		F	xx				x		xx	
10869		F	xx				xx	x	x	
10883	19	F	xxx	xx	xxx		xxx	x	x	
10885	20	F	xx		xx		x	x	xx	
10885		RF	x		x		xxx			
10900		R					xxx			
11022	20	F	xxx	xx	x		xx	x	xx	
11030	20	F	xxx	xx	xxx		xxxx	x	xxx	
11032	20	F	xx	x	x		xx			
11052	20	F	x		xx				xx	
11136	20	F	xx				xx			
11188	20	F	xx	x	xx			x	x	
11189		F	xx	xx	xx		xxxxx	x	xx	
11190		F	xx	x	x		xxxx	x	x	

	Vol.(L)	Fract.	Grain	Chaff	Wild	Tuber	Charcoal	Bone	Mollusc	Finds
11230	20	F	xx	x	x		xx		xxx	
11231		F	xx	x	x		xx		xx	
11235	20	F	xxx	x	x		xxxxx	x	xx	
11238	15	F	xx	x	xx	x			xx	
11720	20	F	xxx	xxxx	xxx		xxxx	x	xx	
80005	16	F	xx	x	x		x		xx	
80195	10	F	x				xx		xxx	
80196	19	F		x	x				xxx	
80202	19	F		x	x		xx		xxxx	
80227	26	F			x				xxxx	
80228	20	F	x				x		xxxxx	
80228		RF	x							
80392	14	F	xx	xx	x		xxxx	x	xxx	
80392		RF	x							
80479	16	F	x	x	x		x	x		
80483	14	F	xxx	x	xx		xxxxx	x	xxx	
80483		RF	x		x					
80729	14	F	x		x					
99220		F	x				xxxx		xxx	
99220		RF					xx			
Gully										
10547	18	F	xx	xx	xx		xxx			
10547		RF	x		x					
10562	20	R			x					
11120	29	F	xxx	xx	x		xx		xxx	
80011	20	F	xxx	x	xxx	x	x		xx	
Layer										
80478	10	F	xxxx	xx	xx		xxxx	x	xx	
80478		RF	x	x						
Pit										
10565	20	F	x	x	x		x	x		
10565		RF								
80072	20	F	xx		x		xxx		xx	
80083	20	F	xxx	xx	xx		x		xx	
80463	20	F	xx	xx	xxx	x	xxx		xx	
80463		RF			x					
80464	20	F	x	x	xxx		x			
80464		RF	x							



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