

## CHAPTER 3

# Fieldwork

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### Introduction

When the project began in 2003 we knew remarkably little about the character of both the archaeology and the related wetland stratigraphy at Star Carr. Apart from a section drawing from the 1985 excavation (Cloutman and Smith 1988), the published accounts of the previous excavations provided little in the way of stratigraphic data or its relationship to the archaeology. Nor did they give much indication of the sorts of materials that might be encountered in the large parts of the site that remained unexcavated. For this reason, fieldwork methods were reflexive, evolving over time as the results from one season went on to inform the strategy that was adopted in the following year. The reflexive nature of the fieldwork strategy was enhanced further by the close working relationship that was established with the specialists who worked on the project, many of whom had become an integral part of the excavation team by 2013 (some considerably earlier). This allowed the results of the excavations to quickly filter through into the methods that were adopted on site.

Work at the site can be divided into two main parts. The first began with fieldwalking and auger survey and an initial phase of excavation. The aims of this work were to determine the full spatial extent of Mesolithic activity, characterise the archaeology within both the wetland and dryland parts of the site, assess its preservation, and establish a methodology for excavating and recording this material on a larger scale. This was followed by a second phase of fieldwork, which took place between 2013 and 2015, where these methodologies were used to fully investigate and record a large sample of the site through open-area excavation.

### Fieldwalking

Fieldwalking was carried out in the autumn of 2003 and spring 2004 (Figure 3.1). At this stage, a bank of higher ground was visible along the north of the Star Carr field, parallel with the River Hertford and as far west as the area of Clark's excavations, with a ridge extending along the eastern side of the field that sloped gradually towards the south. The fieldwalking focused on the areas of higher ground but extended into the surrounding peat in order to obtain a representative sample of material from the surface deposits. Transects were laid out

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**Figure 3.1:** Fieldwalking in 2004. The view is looking south towards the Yorkshire Wolds (Copyright Star Carr Project, CC BY-NC 4.0).

using a total station, and a group of volunteers walked each line. All finds were assigned a unique number and their locations were recorded three-dimensionally using a total station.

A total of 360 pieces of worked flint were recorded during the fieldwalking, with the density of material reflecting variations in the thickness of the overlying deposits and the effects of plough damage on the buried Mesolithic land surface (Figure 3.2). Flint concentrations were highest on the higher ground towards the north of the ridge and lowest towards the south of the ridge and along its edges where the depth of peat was greater. Flint recovery was also lower along the northern edge of the field where deposits of sand and gravel had been dumped in the 20th century during dredging of the River Hertford.

### Palaeotopography

In 2005 an auger survey was carried out to map the basal topography of both the Early Mesolithic landscape and the deeper parts of the surrounding lake basin. Previous work at Star Carr and other sites around the basin had provided estimates of the Early Mesolithic lake level of between 23.4 m OD and 24.5 m OD, and had shown that archaeological material could be present within wetland deposits to a depth of 23 m OD (Cloutman 1988a; Cloutman and Smith 1988; Mellars and Dark 1998). For this reason, the basal ground surface was mapped at close intervals (points every 10 m), to a depth of c. 23 m OD, and transects were extended into the deeper parts of the basin where human activity was less likely to have occurred.

The results of this auger survey, and previous work in the area (Cloutman 1988b; Lane and Schadla-Hall forthcoming), showed that Star Carr lay on a large peninsula, just over 500 m wide (east-west) and 275 m across (north-south), which was connected to the landscape surrounding the lake basin by a narrow ridge on its north-west corner (Figure 3.2 and see Figure 2.1). The main body of the basin lay to the east, whilst to the south was a large, shallow embayment.



**Figure 3.2:** The Early Mesolithic topography and extent of the lake/wetland areas, and the results of the field-walking survey. The contours are at 0.5 m intervals and the lake level is set at just below 24 m OD (see Chapters 4 and 19). Previous excavations are shown in grey. The modern line of the River Hertford cuts across the Star Carr peninsula (coloured dark blue) (Copyright Star Carr Project, CC BY-NC 4.0).

## Excavation

### *Phase 1*

The results of the fieldwalking were 'ground truthed' in the autumn of 2004 when five test pits (SC1-5) were excavated over areas of denser finds concentrations and in parts of the site where fewer finds were recorded (Figure 3.3). In 2005, a further set of 2 × 2 m test pits were excavated along the ridge of higher ground and into the deep peat to the south (SC6-20), (it should be noted that there are no odd numbers in this sequence to allow further trenches to be added in between if necessary) (Figures 3.3 and 3.4). Bringing the results of this work together with the auger survey, it became clear that Mesolithic activity extended along much of the narrow ridge, with flint concentrations of up to 666 pieces recorded in the trenches located on what would have been the dry ground (Chapter 8). In many of these there was also evidence for plough damage and bioturbation which had dispersed the flint through the overlying sediments. However, areas of relatively intact Mesolithic activity were present to the north of the field, where thick deposits of sand and gravel, derived from dredging of the River Hertford, had been dumped over the modern land surface protecting the underlying deposits from recent ploughing.

In 2006 two larger trenches (SC21-22) were excavated through the lake edge wetland deposits to the east of VP85A, extending onto what would have been the Mesolithic dry ground (Figure 3.3). The aim of this work was to develop a methodology for excavating the waterlogged deposits and to establish a more detailed stratigraphic record for the sediments at the Mesolithic lake edge. Whilst little archaeological material was present in SC21, the excavation of SC22 recorded a small assemblage of worked flint and several pieces of worked antler amongst a natural accumulation of wood (Figure 3.5). An assessment of the plant macrofossils taken from the surrounding deposits suggested that this had been deposited into wet, reedswamp environments. Unfortunately, the wood and the antler were both very poorly preserved, providing the first indication that organic material at the site had begun to degrade (see Chapter 22) (Milner 2007).

The following year larger trenches were opened up in both the dryland (SC23) and wetland (SC24) parts of the site. SC24 was excavated through the lake edge deposits; 5.5 m from Clark's cutting II and intersecting one of his 1951 trenches. It was found that Clark's 1951 trench was larger than appeared in his monograph but that his excavation had stopped before he reached the basal deposits. Within SC24 a deposit of largely unworked roundwood was present, within which was a layer of deliberately split timbers (Figure 3.5). These were successfully excavated and recorded using a methodology developed during the previous season's fieldwork. The excavations in this trench also showed that small quantities of antler, animal bone and flint were present within the lake edge deposits but that levels of organic preservation were very poor (Milner et al. 2011). The causes for the deteriorating levels of preservation were investigated first in 2007 by Andy Needham and then through a large-scale programme of geochemical assessment by Steve Boreham and colleagues, funded by English Heritage/Historic England (see Chapter 22) (Boreham et al. 2011a; 2011b).

The dryland trench (SC23) was excavated between 2007 and 2008. It was located above the approximate line of the lake shore and provided the first large-scale record of the character of the archaeology within the Mesolithic dryland area (Figure 3.6). Whilst there was some evidence for plough damage, the deposits were relatively intact and extensive and in situ flint scatters were present along with poorly preserved animal bone. Some of this material was associated with a large, irregular hollow surrounded by a series of small stake and postholes. This was the first evidence for the presence of post-built structures at Star Carr and represented the earliest known structure in Britain (see Chapter 5).

**Figure 3.3 (page 27):** A plan of all trenches excavated during Phase 1 of excavation, coloured in red, with Moore/Clark's trenches and VP85A and B trenches coloured in grey. The modern line of the River Hertford cuts across the Star Carr peninsula and an 'L' shaped drainage ditch clips its eastern side (both coloured dark blue) (Copyright Star Carr Project, CC BY-NC 4.0).





**Figure 3.4:** Test pits SC8-SC20 being excavated along the peninsula with the Yorkshire Wolds in the distance to the south (Copyright Star Carr Project, CC BY-NC 4.0).



**Figure 3.5:** (left) Trench SC22 showing the natural accumulation of wood within a deposit of reed peat; (right) trench SC24 showing unworked roundwood and split timbers within reed peat. The unexcavated block of sediment on the left side of the trench was removed and excavated in the lab (see Chapter 15) (Left: Copyright Star Carr Project, CC BY-NC 4.0. Right: Sourced from Hadley et al. 2010, *Internet Archaeology*, licenced under CC-BY 2.0).



**Figure 3.6:** Excavation on the dryland (trench SC23) and the recording and sampling of the eastern structure in 2008 (Copyright Star Carr Project, CC BY-NC 4.0).

In 2008, whilst the excavation of SC23 continued, eight smaller test pits (SC25-32) were excavated in the field to the north of the River Hertford in order to determine the extent of Mesolithic activity and establish the character of the wetland stratigraphy further round the peninsula (see Figure 3.3). Scatters of worked flint were recorded on the dry ground (trenches SC25, SC26, SC27 and SC28), mainly in the plough soil, whilst demineralised animal bone was recovered from the wetland deposits (trench SC29). As with the trenches to the south of the River Hertford, there was also evidence for plough disturbance (Figure 3.7). This work, together with the fieldwalking and test-pitting in the southern field, provided an estimate for the total extent of Mesolithic occupation activity at Star Carr of roughly 19,500 m<sup>2</sup> (almost 2 hectares); a far larger area than envisaged by Clark (Conneller et al. 2012).

By the end of 2008 the project had successfully characterised the wetland and dryland archaeology and established methods through which this material could be excavated and recorded. It had also shown that levels of organic preservation had deteriorated since Clark's initial work at the site and that the material culture within the wetlands was now at risk. However, several key issues remained. First, how extensive were the timber platforms/trackways that had first been discovered at the site in 1985 and then again in 2007? Second, how did the stratigraphy in the areas investigated by previous researchers relate to that recorded by the current project? And third, how severe was the deterioration of the organic materials, and how much longer would they survive? It was also clear, given the importance of the site and the fact that waterlogged archaeological material was far more extensive than the area investigated by Clark, that the site required statutory protection.

In order to address these remaining questions and inform the future management plans for the site, a further season of excavation was undertaken in 2010, funded by the Natural Environment Research Council (NERC) and supported by Historic England (then English Heritage). Its aims were to determine the extent of the waterlogged archaeological deposits and the potential evidential value of any surviving organic material



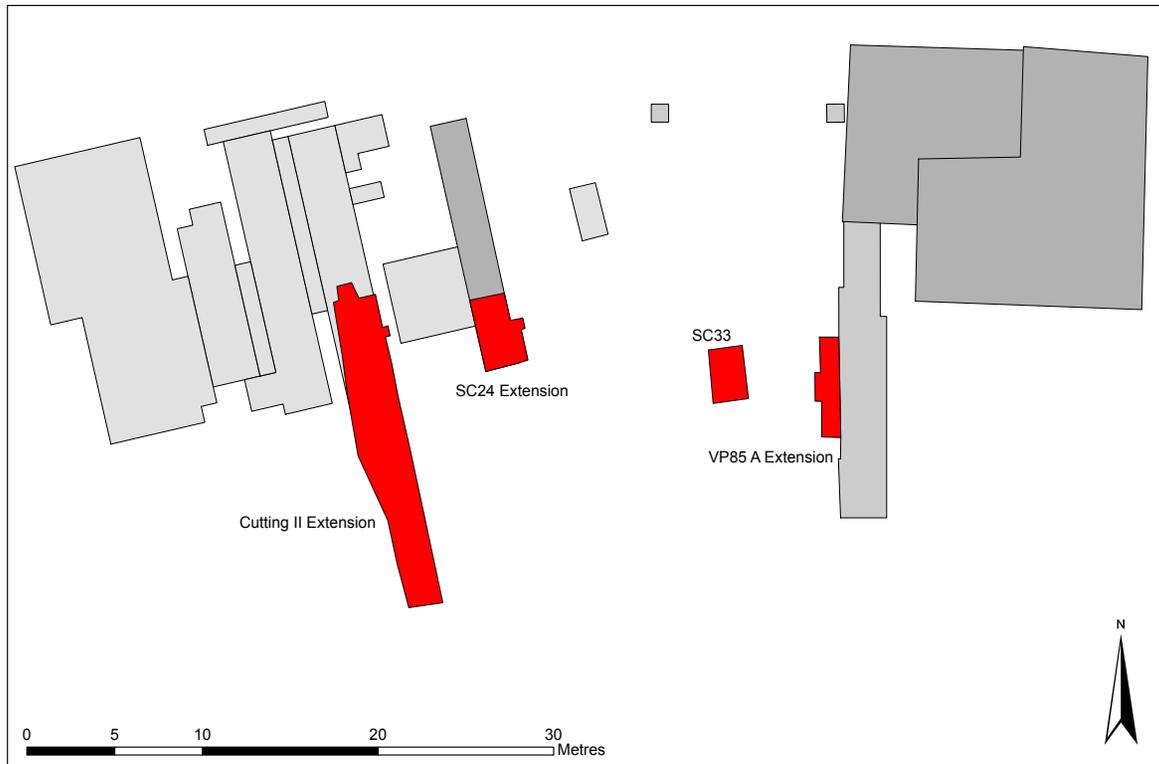
**Figure 3.7:** Plough damage in SC27, which was also seen in most of the other dryland sites in both fields north and south of the Hertford Cut (Copyright Star Carr Project, CC BY-NC 4.0).

culture (including the timber platforms) and to determine the potential cost of excavating and recording this material. It also sought to establish both the state of organic preservation and the rate of decay by comparing material recorded during different phases of the project with those from previous excavations (Milner 2010). To achieve these aims, Clark's cutting II, VP85A, and trench SC24 were re-excavated and/or extended, whilst the previously unrecorded area between VP85A and SC24 was investigated through the excavation of a new trench (SC33) (Figure 3.8). Samples were also taken for insect and plant macrofossil analysis from the sections of VP85A, cutting II, SC24 and SC33 in order to establish the environmental context of the surviving archaeology (Chapter 19).

This work showed that levels of organic preservation were deteriorating very quickly, but that the surviving material could still yield useful archaeological and palaeoenvironmental data (Milner 2010). Small quantities of bone and antler (including barbed points) and several wooden artefacts were recovered, whilst further deposits of worked timber were recorded, both in the section of Clark's cutting II and SC33, demonstrating that the wooden platforms were far more extensive than the previous excavations had shown. Somewhat surprisingly, the re-excavation of cutting II also showed that Clark had discarded some material (including worked flint and faunal remains; see Chapters 7 and 8), and that the two trees, found in 1950 and photographed for the Clark monograph (1954) were still in situ (Figure 3.9). Following discussion with English Heritage/Historic England it was agreed that these trees should be left and reburied.

### *Phase 2*

Given the deteriorating levels of organic preservation recorded in 2010 it was recommended that a second phase of work be undertaken at the site (Milner 2011), and this was funded by the European Research Council (ERC) and English Heritage/Historic England. This work took place between 2013 and 2015 and focused on an open-area excavation along a section of the lake shore (Milner 2012; Milner et al. 2013a; Milner et al. 2014). A single trench (SC34), extending from Clark's excavations in the west to SC22 and SC23 in the east, was



**Figure 3.8:** Plan of the 2010 trenches in red with previously excavated trenches marked in grey (Copyright Star Carr Project, CC BY-NC 4.0).



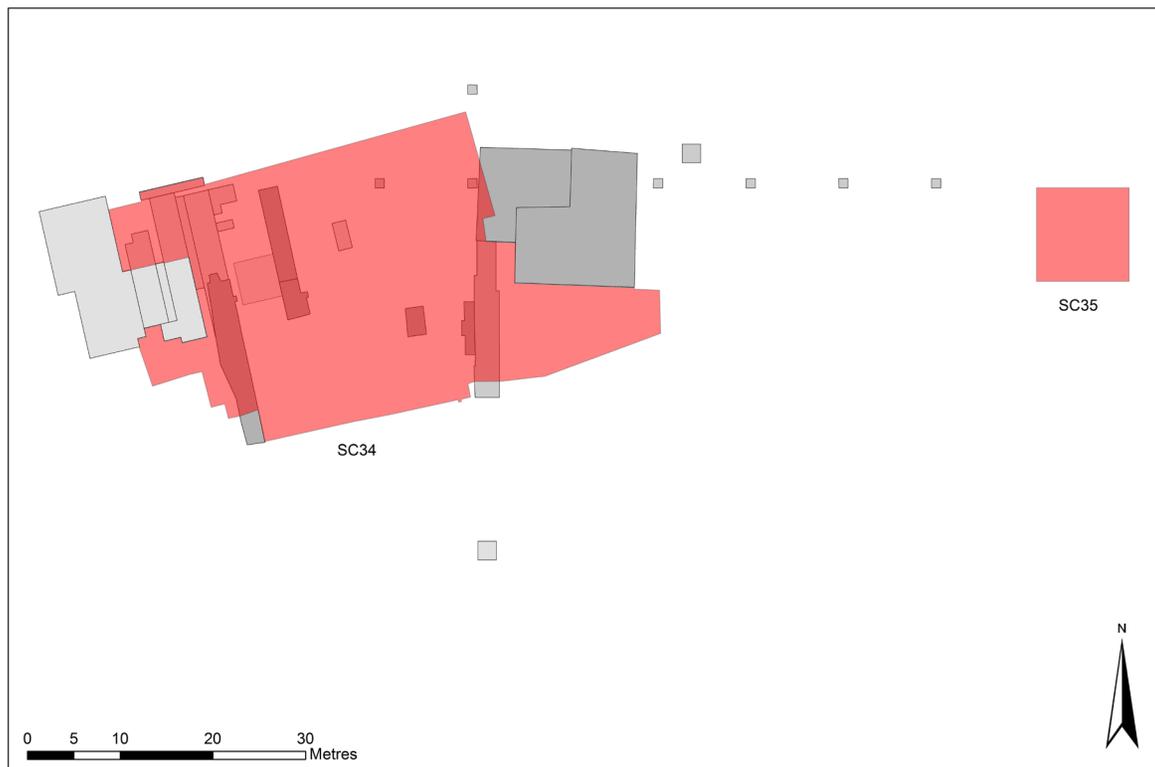
**Figure 3.9:** The two trees first discovered by Clark in 1950 within cutting II (compare with Figure 2.5) (Copyright Star Carr Project, CC BY-NC 4.0).

excavated over the course of three 8-week seasons. In 2013 and 2014 excavations were carried out in the central area between the previous excavations by Clark and SC23 but were extended into the area immediately around Clark's trenches (including a small section of unexcavated baulk between cuttings I and II), and to the east of VP85A in 2015 (Figures 3.10 and 3.11). Unfortunately, trench 34 could not be extended any further south due to the presence of an active field drain which was situated parallel to the trench edge.

A second trench (SC35) was also opened 60 m to the east on what would have been the Mesolithic dry ground in order to ground truth geophysical anomalies that had been identified in 2010 (Milner 2010) (Chapter 16). However, on removal of the plough soil it became clear that the anomalies were the result of plough damage and variations in the depth of the peat. Due to time constraints this trench was closed down in order to focus resources on SC34.

The excavations in SC34 were complemented by a range of analytical techniques. Geochemical analysis was carried out on samples taken from the dryland area in order to identify particular zones of activity (Chapter 21), whilst microwear and residue analyses were performed on a sample of the lithic, osseous and wooden material culture (see various chapters in Volumes 1 and 2). Additional plant macrofossil and insect samples were also taken in order to establish a comprehensive record of the changing character of the local environments and the specific depositional contexts of material recorded from the wetland (Chapter 19). Finally, a comprehensive programme of radiocarbon dating and Bayesian modelling was undertaken to provide a precise chronology for the human occupation of the site (Chapters 9 and 17).

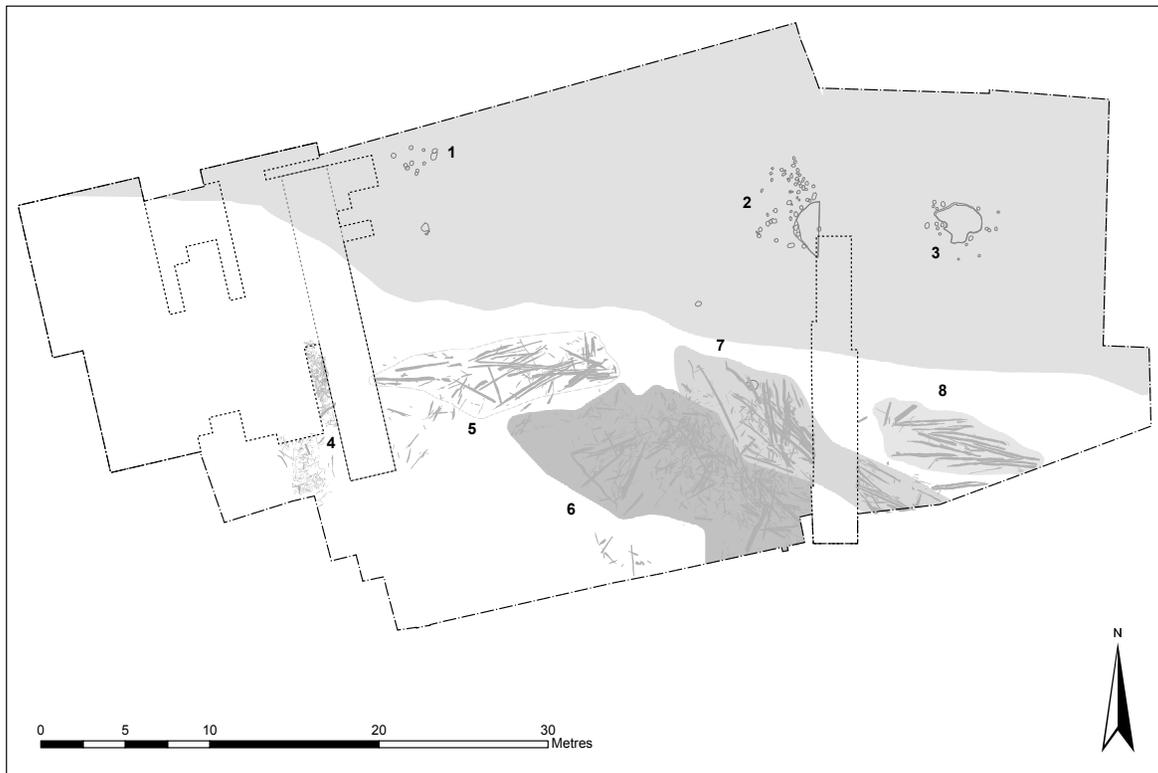
This phase of work provided a far clearer picture of the archaeology of the site (Figure 3.12), its spatial and chronological patterning, and its relationship to the changing character of the local environment. Within the wetland parts of the site, archaeological material was stratified within a sequence of Early Holocene sediments. At the base of the sequence was a coarse sandy gravel (319), covered by an organic rich sand (320). Above this was a sequence of organic deposits: fine detrital mud (317), coarse reed peat (312) and wood peat (310),



**Figure 3.10:** Plan showing the full extent of SC34 and SC35 (in red), in relation to previous trenches (shown in grey) (Copyright Star Carr Project, CC BY-NC 4.0).



**Figure 3.11:** Aerial view of SC34 looking north. Clark's excavations lie at the western end of the trench (the baulk between cuttings I and II is beneath the white tent). Some of the central part of the trench had been backfilled by the time the photo was taken (Copyright Sue Storey, CC BY-NC 4.0).



**Figure 3.12:** The key discoveries and analytical areas that will be referred to in other parts of this volume. 1: western dryland structure; 2: central dryland structure; 3: eastern dryland structure; 4: Clark's baulk (this and the area to the south of this are referred to as Clark's area); 5: western platform (and the brushwood was also found in this area); 6: detrital wood scatter; 7: central platform; 8: eastern platform (Copyright Star Carr Project, CC BY-NC 4.0).



**Figure 3.13:** Central platform under excavation in 2013 (Copyright Star Carr Project, CC BY-NC 4.0).

reflecting the changing character of the lake edge environment from shallow water reedswamp to a more terrestrialised fen and carr (Chapters 4, 19 and 20).

In the reed peat were the remains of three large timber platforms (Chapter 6). The first, the central platform, which had been first encountered during the 1985 fieldwork, ran at an angle from the shore into the lake (Figure 3.13). The other two, the eastern and western platforms, (the latter had been partially recorded in SC24), lay closer to the line of the lake edge (Figure 3.14).

Lower in the wetland sequence (in the detrital mud and the base of the reed peat), a different sort of wooden structure was uncovered in 2013 and 2014, termed the detrital wood scatter (Figure 3.15). This was made up of a more diffuse arrangement of timber and was recorded from the basal sediments running almost parallel with the central platform. This was associated with a relatively large assemblage of animal bone, worked flint, antler and a number of organic artefacts (including two antler frontlets and several barbed points). Worked bone, antler and wood were also recorded from other parts of the lake edge wetlands, along with animal bone (much of which exhibited signs of butchery) and worked flint.

On the dry land, several more post-built structures were found (Figure 3.12; Chapter 5), and dense scatters of worked flint and smaller assemblages of animal bone were found across the dryland; their spatial distributions are examined in Chapters 7 and 8.

A very different assemblage was recorded from the area immediately adjacent to Clark's excavations and in particular from the unexcavated baulk between Clark's cuttings I and II. Here was a dense concentration of animal bone, worked antler, flint and wood and relatively large quantities of bone and antler artefacts, including red deer antler frontlets, barbed points and a bodkin (Figure 3.16). Based on the composition of the assemblage and its position in relation to the peat stratigraphy this was clearly a continuation of the material first recorded by Clark 66 years earlier.



**Figure 3.14:** The western platform on completion of excavation in 2014 (Copyright Star Carr Project, CC BY-NC 4.0).

## Conclusions

Over the twelve years that the current excavations ran, both the character and scale of the archaeological work at the site gradually developed. The rationale for each stage of fieldwork and the methodologies adopted both on and off site were informed by the results of the previous seasons, the input of the different specialists and the advice of English Heritage/Historic England and colleagues from the wider archaeological community. This reflexive approach allowed us to adapt to changing circumstances ‘on the ground’ and provided the flexibility to trial new methods for excavating and recording the increasingly complex archaeological material we encountered. There are many other different approaches which could have been taken but the results which have come from this work, we feel, have justified our strategy.

Perhaps the most crucial development in the methodology we adopted came when we began to undertake large-scale, open-area excavations. Whilst the numerous smaller trenches excavated in both the wetland and dryland areas provided some indication of the nature of the archaeology, they were also misleading at times and led to a very disparate, fragmentary view of the site. Even when parts of the timber platforms had been recorded in several of the trenches it was impossible to really understand them: did they represent one platform or several? How big was it/they? It was only when a large area was exposed that their character and phasing could be understood. The open-area excavation was also effective for identifying other archaeological features, some of which had clearly been missed by earlier phases of work; for instance, the central dryland structure was bisected by trench SC23 and VP85A (without it being identified) and it is likely that more postholes were also present in the north of the trench. Nor is it likely that the detrital wood scatter would have been identified as a feature within the wetlands if it had been encountered in smaller trenches. This demonstrates the potential for open-area excavation within Mesolithic archaeology more generally.



**Figure 3.15:** Photograph of part of the detrital wood scatter during excavation (Copyright Star Carr Project, CC BY-NC 4.0).

The use of modern surveying techniques to record the positions of finds and GIS to manage this data, practices well established in Mesolithic archaeology, also proved invaluable in understanding the spatial patterning of the archaeological material. This, combined with the results of the analyses of the material and faunal assemblages, a comprehensive programme of refitting of the lithic material, the application of microwear analysis, geochemical studies of the sediments, and an integrated programme of radiocarbon dating has allowed us to examine in detail the forms of activity taking place across the site and how they changed over time.

However, it should be noted that the test-pitting and fieldwalking carried out in the early stages of the project have shown that activity at Star Carr covers approximately 19,500 m<sup>2</sup>, but that less than 10% of this area has been sampled by excavation (including those areas investigated by Clark and the Vale of Pickering Research Trust). As such, we should be open to the possibility that other forms of activity, not encountered in the excavated areas, may have taken place at different parts of the site. That said, the results of our excavations have greatly increased our understanding of Star Carr, not only in terms of its chronology, extent and environmental sequences, but in revealing the complex and sophisticated nature of the lives of people who lived there.



**Figure 3.16:** The deposit of animal bones, antler, flint and wood from the baulk between Clark's cutting I and II, looking south (Copyright Star Carr Project, CC BY-NC 4.0).

