

# The Archaeology of the Stonehenge Visitor Centre

*Matt Leivers and Andy Valdez-Tullett*



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*by Matt Leivers and Andy Valdez-Tullett*

*for Tim Darvill*  
1957–2024

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*by Matt Leivers and Andy Valdez-Tullett*

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This work was commissioned by Historic England in 2020 following the successful opening of the new Visitor Centre at Stonehenge in December 2013. It has benefited

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# ABSTRACT

A series of archaeological investigations were undertaken over 18 years to inform options for the location of new visitor facilities for Stonehenge. Geophysical survey, test pitting, auger surveys, evaluation trenching and fieldwalking took place at sites within and east of the World Heritage Site.

The earliest evidence took the form of Mesolithic flint debitage from the Western Approach Route Corridor and at Countess. Neolithic activity was mainly represented by low-density scatters of struck flint, although features were found in three locations: individual pits south of King Barrow Ridge and Durrington Married Quarters, and a small, dispersed pit group at Countess. Beaker and Early Bronze Age evidence was limited to a small number of abraded potsherds and lithics.

Elements of field systems of later Bronze Age date were encountered in survey and excavation in Fargo Plantation, along with pits and postholes. A pit containing Late Bronze Age/Early Iron Age pottery was found at the south end of King Barrow Ridge.

The remains of a Romano-British stone-built building were found at Countess. A minimum of five Anglo-Saxon sunken-featured buildings lay in the same area, along with a pit.

A square enclosure on King Barrow Ridge produced no dating evidence, and cannot be confidently assigned to any period, prehistoric or otherwise. Thirty-one fragments of architectural stonework dating to the medieval period were found in later ditches at Durrington Down Farm. Military remains in the same area relate to former army camps, while features belonging to the Larkhill branch of the Amesbury and Military Camp Light Railway were encountered at Countess and in Fargo Plantation, as were areas of disturbance caused by the building and demolition of the Stonehenge Airfield Night Camp.

Environmental evidence included charred plant remains, charcoal and molluscs dating from the Neolithic and Early Bronze Age, Middle and Late Bronze Age and Anglo-Saxon periods. Geoarchaeological evidence included coombe deposits, colluvium, palaeochannel deposits and solution features.

The investigations reported on here were designed and undertaken in a piecemeal fashion with the intention of informing design options, rather than being planned to address particular targets of archaeological interest. Carried out separately over a prolonged period, the works were nevertheless not conceived or undertaken in a vacuum. All were underlain by the Stonehenge Conservation and Management Project Environmental Statement (Darvill 1991) and its successors, which defined the methodological and intellectual framework within which the works took place. Consequently, their results contribute significantly to the understanding of human activity in the Stonehenge landscape over several millennia.



# CHAPTER 1

## INTRODUCTION

by Matt Leivers

**T**HE OPENING OF THE STONEHENGE VISITOR CENTRE on 18 December 2013 marked the culmination of over three decades of attempts to find solutions to the problem of sympathetic presentation of Stonehenge and its landscape in the face of ever-growing visitor numbers. The archaeological works reported on in this volume were undertaken as part of this effort to provide world-class visitor facilities which took account of the archaeological sensitivities of the landscape they were to be situated in.

The history of these attempts to properly present Stonehenge begins with the establishment of the Historic Buildings and Monuments Commission for England on 1 April 1984. Among its first acts was the discussion of plans for visitor facilities at Stonehenge: the first chairman, Lord Montagu of Beaulieu, noted that

*there has been increasing dissatisfaction with the way in which Stonehenge is presented to visitors... Many plans have been brought forward in the past. The Commission has decided to take a fresh look at the problem and strive for a long-term solution and we intend to direct sustained efforts to finding that solution as quickly as possible* (English Heritage 1985, 1).

The first step was the formation of a Study Group, set up in May 1984. Its report, in January 1985, found the existing visitor facilities 'woefully inadequate' (*ibid.*, 4), and laid out the major issues that were to dominate subsequent debates over the future of Stonehenge:

- Stonehenge and its landscape – the question here is how best to present the archaeologically rich landscape around and including Stonehenge;
- roads – the central question here is whether the A344 should be closed or diverted; other possibilities for this road include its restriction to certain types of traffic. The A303 and the rights of way over certain trackways also raise questions;
- the siting, nature and extent of visitor facilities.

Four criteria influenced the choice of potential sites:

- The centre should be sensitively located, well designed and carefully landscaped to minimise its effect on the open chalk downland;
- the site chosen should cause the minimum disturbance to buried archaeological features and should be subject to archaeological investigation before any development;
- the site should be easily accessible from the main road network; and
- strong arguments for locating the centre in a position which gave a view of Stonehenge and its setting.

Eight sites were considered practicable: underground on the site of the existing car park; in Stonehenge Bottom; South of Fargo Plantation; West of Fargo Plantation; Larkhill East; Larkhill West; Vespasian's Camp; and Durrington Walls.

The Study Group concluded that 'there is no immediately apparent best long-term solution to the problems at Stonehenge' (*ibid.*, 33) and offered the following possibilities:

- The landscape around Stonehenge to be opened up through a network of footpaths, extended interpretation facilities and the implementation of sympathetic methods of visitor control;
- the construction of a bank along the northern side of the A303; the A344 either be left open, have access limited, or be closed. All were considered problematic; and
- new visitor facilities be constructed at one of the eight possible sites identified.

In 1985, Stonehenge was nominated by the UK government for inclusion on ICOMOS' World Heritage List. ICOMOS recommended inclusion in April 1986 and at that year's UNESCO Tenth Session of the World Heritage Committee (24–28 November 1986) Stonehenge, Avebury and Associated Sites became a World Heritage Site (WHS).

Work on the provision of new visitor facilities had been proceeding apace. Following a period of consultation, English Heritage announced its selection of a site at Larkhill in November 1987. There followed a period of drawing-up of new plans for the layout and servicing, with an access road from the south-west, culminating in the presentation of the outline proposals to the public in a series of consultations between January 1990 and May 1991. The Stonehenge Conservation and Management Project aimed to improve both facilities and standards of management and conservation 'to match the status conferred on Stonehenge and its surrounding landscape by the designation as a World Heritage Site' (Stonehenge Conservation and Management Project 1991, 1). Central to the proposals were the construction of new visitor facilities at Larkhill, the closure of the A344, and the installation of appropriate facilities for visitor and landscape management.

An outline planning application was submitted by English Heritage and the National Trust in May 1991. The application included an Environmental Statement, prepared voluntarily, which included desk-based archaeological assessment and field evaluation in line with the then new PPG 16: Archaeology and Planning (introduced in November 1990). The Statement adopted a study area which included the A303 corridor 'so that plans for the visitor centre can be fully integrated with proposals for the improvement of the A303(T)' (*ibid.*, appendix 3, 4).

Six complementary archaeological studies were undertaken to inform the 1991 Environmental Statement, co-ordinated by Timothy Darvill Archaeological Consultants for Debenham Tewson and Chinnocks (Darvill 1991), comprising:

1. Record consolidation;
2. landscape regression analysis;
3. analysis of aerial photographs;
4. fieldwalking;
5. geophysical survey;
6. evaluation excavation.

The results of the fieldwalking and evaluation excavations are reported on in the following chapters of this volume (see Table 2.1 and Figs 2.1–2.3). Fieldwalking was undertaken between February and March 1991 on four sites (Areas A, B, C and E: the proposed visitor centre, west of Fargo Plantation, between Fargo Plantation and Airman's Corner, and between King Barrow Ridge and Stonehenge Bottom) with further fieldwalking in December 1991 and January 1992 in Area F (north of the western approach road). Evaluation excavation (test pitting and trial trenching) followed in March 1992.

By the time this test pitting was carried out the application had been turned down by the Planning Committee of Salisbury District Council and was the subject of an appeal. Although the Larkhill site itself was generally regarded as highly appropriate for the new visitor facilities, the newly proposed western approach route proved to be less acceptable. Consequently, a detailed planning application for landscaping works along the line of the A344 and the construction of a new approach road was submitted in September 1992. A desk-based assessment in March 1993 identified the need for a further phase of evaluation works for the new proposed western approach: these were undertaken by the Trust for Wessex Archaeology for Timothy Darvill Archaeological Consultants and DTZ Debenham Thorpe (Darvill 1994). Test pitting revealed the presence of two main concentrations of archaeological deposits in Fargo Plantation. One, towards the Plantation's northern end, suggested the presence of a major Middle to Late Bronze Age site, reported on in Chapter 4.

Resistance from the Ministry of Defence to a northern approach and doubts over the archaeological sensitivity of the western approach led to planning applications for both elements of the project to be withdrawn so that all available options could be reviewed, and further public consultation undertaken (English Heritage 1993). Both English Heritage and the National Trust remained committed to the improvement of arrangements at Stonehenge, and to the aspirations of the Conservation and Management Project.

As part of the process of finding the best solution to the relocation of existing visitor facilities away from Stonehenge – which remained the central element of the Programme – 12 sites were considered for their suitability. These were:

- i. Countess Farm Barns, west of the A345
- ii. Countess Road East, east of the A345
- iii. Fargo North, west of Fargo Plantation and north of the A344
- iv. Fargo South, south of Fargo Plantation and the A344
- v. Larkhill, south of Durrington Down Farm
- vi. New King Barrows, north of the A303 on King Barrow Ridge
- vii. Old King Barrows, north of the Stonehenge Avenue on King Barrow Ridge
- viii. Strangways, south of Fargo Road at the eastern end of the Stonehenge Cursus
- ix. Stonehenge Bottom
- x. Pedigree Stock Farm north of the A303
- xi. Stonehenge Down
- xii. A303 Roadline site east of King Barrow Ridge.

Desk-based assessments of four (Sites i, ii, iv and viii) were carried out in February 1993 (Darvill 1993) and Sites i–viii included as alternatives A–H in the public consultation leaflet *Stonehenge: the present, the future* of April 1993 (English Heritage 1993, 1). Sites B, D, E, F and G (which included the Larkhill site at Durrington Down Farm) were favoured, the others less so.

A decision was reached in July 1993 which involved the completion of archaeological evaluations at Larkhill; the abandonment of alternatives A, B, C, D, F, G and H; the rejection of three alternative sites put forward during the consultation (in Stonehenge Bottom, on the site of the former Stonehenge Airfield, and at a new site south of Fargo); and the offer of assistance to the Department of Transport in the examination of alternative routes for the A303, including a ‘one package solution’ incorporating an underground visitor centre adjacent to the New King Barrows and an extended road tunnel beneath the WHS.

Evaluation of the new options for locating the visitor facilities began in October 1993, with fieldwalking, auger survey, test pits and trial trenching at Site 12: south of the A303 footbed opposite King Barrow Ridge (Figs 2.1 and 2.3 and Table 1; reported on in Chapter 4).

By this time the siting of any new visitor facilities had become inextricably entangled with schemes to dual the A303 carriageway. The Site 12 proposals – which incorporated the existing road’s footbed – depended entirely on the removal of the A303 to an alternative route. That prospect receded as ‘The Great Debate’ (as a conference in London in July 1994 had it) over the A303 dragged on, and consequently an alternative site for the visitor facilities had to be found.

This was Site ii (or B), at Countess Road East, north of the A303, appealing because of its location outside the WHS, its apparent low archaeological significance, and its general suitability for development and access. Archaeological evaluations began in October 1994, resulting in a proposal that the main visitor facilities should be sited north of the A303 on the east side of Countess Road, linked to a forward ‘gateway’

facility within the footbed of the A303 (or immediately south of it) at King Barrow Ridge by a small-scale passenger transportation system running along the A303 footbed, or parallel to it to the immediate north (Darvill 1995, 55).

The next formulation of these ambitions was the Stonehenge Millennium Park and Visitor Complex (DTZ Debenham Thorpe 1996), announced in September 1996 and launched in May 1997. Designed to 'provide Stonehenge with a setting and environment worthy of its status as a World Heritage Site... restoring the natural dignity of Stonehenge and the other ancient monuments... and their sense of isolation' (*ibid.*, 5), at the heart of these proposals were the closure of parts of the A344 between Airman's Corner and the A303, improvements to the A303 in the vicinity of Stonehenge, the removal of the existing visitor facilities, the provision of a new visitor centre outside the WHS adjacent to Countess Roundabout (the rejected Site B of the 1993 proposals), and a project to restore a traditional chalk downland landscape. As was suggested by the name, it was envisaged that the new visitor complex, the transport link, the closure of the A344 and as much of the restoration work as possible would be completed by 2000.

The proposed new facilities lay 3.5 km east of Stonehenge. Consequently, an environmentally acceptable transport link was required to bring visitors from the centre to a dropping-off and viewing point within walking distance of the stone circle. A route was designed to bring visitors into the whole of the Stonehenge landscape (particularly the otherwise difficult to access parts south of the A303) rather than simply to Stonehenge and back (Burton and Batchelor 1997; Chippindale 1997). A bid for funding was submitted to the Millennium Commission in November 1996.

The plan collapsed almost immediately, as funding was refused in June 1997. The Secretary of State for Culture, Media and Sport, Chris Smith, announced in November that new visitor facilities would be constructed at Larkhill, with access via a new road from The Packway, the Ministry of Defence having been persuaded to withdraw their earlier objections. All of the other objections, however, remained (see, for instance, Salisbury District Council and Wiltshire Council 1997). The Secretary of State then requested a review of options from English Heritage, who undertook a study of nine alternatives (English Heritage 1997).

These included two north and south of the A344, three at Countess, one at Larkhill, and three at Fargo. Taking into account local views, advice from the Secretary of State, and the desire to reach a compromise 'which balances all interests and [provides] a scheme which is achievable', the appraisal found the Fargo North site to be the best option. The decision was not uncontroversial, but nevertheless desk-based assessment of 16.66 ha was undertaken in March (Burton 1998).

The Fargo North Scheme was announced on 1 April 1998 (DCMS 1998), with the focus very much on compromise to reach a workable solution. 'To do nothing is not an option' the objectives stated (*ibid.*, 2), listing as aims better stewardship, the observance of principles of a sustainable environmental plan, the removal of existing facilities, the reunification of Stonehenge with its surrounding landscape, greater freedom of public access, the least possible disruption to local people, the minimum impact on archaeology and the landscape, the maximum reversibility of any new building, the closure of the A344, the on-line dualling of the A303 in a cut-and-cover tunnel, careful restoration of the natural landscape, a new visitor centre, and access to Stonehenge for disabled and elderly people. Any new visitor centre was again inextricably bound into the problem of the A303. Archaeological investigations of the proposed site, comprising geophysical survey, test pits and trial trenches, began in the spring of 1998 (Figs 2.1 and 2.2 and Table 1; reported on in Chapter 4), before concerns over archaeological and traffic impacts led to the plan's rejection.

1998's Master Plan, announced by the Secretary of State in September of that year, presented a revised approach which combined elements of the Millennium Park and

Fargo North Schemes. Key to the vision of the Master Plan was the outcome of a study undertaken by the Department of the Environment, Transport and the Regions and the Department for Culture, Media and Sport of options for dualling the A303, which concluded that a 2 km on-line cut-and-cover tunnel was the only deliverable scheme, and which became part of the Targeted Programme of Improvements for Trunk Roads in July 1998.

Essential features of the Master Plan were a new visitor centre at Countess East, with the proposed Fargo North site reduced to a park-and-ride dropping-off point from which visitors could walk to Stonehenge. Crucially, open and free access to the whole of the WHS landscape, including the stone circles within the henge, was a cornerstone of the proposals.

By 2000 The Master Plan had become The Stonehenge Project, launched in the spring of 1999 shortly before the publication of the WHS Management Plan in April 2000, which included an objective that a new world-class visitor centre should be secured to act as a gateway to Stonehenge, to improve the visitor experience and to encourage the dispersal of visitors around the whole WHS (English Heritage 2000).

In August 2004 English Heritage issued a Design Statement for the visitor facilities and access scheme (English Heritage 2004), which outlined the three major components of The Stonehenge Project:

- The English Heritage Stonehenge Visitor Facilities and Access Scheme – to improve visitor provision;
- The National Trust Stonehenge Estate Land Use Plan – to extend restoration of grassland;
- The Highways Agency A303 Stonehenge Improvement Scheme – to remove roads and traffic from the centre of the WHS.

The English Heritage Stonehenge Visitor Facilities and Access Scheme itself had four principal elements:

- A new visitor centre at Countess East – to provide interpretation of the monuments and landscape, a shop and café, tourist information, amenities, circulation space, car parking and a boarding area for;
- a land train transit system, with drop-off points at Woodhenge, the eastern end of the Cursus, Durrington Farm and near to King Barrow Ridge;
- decommissioning and removal of the existing visitor facilities at the Stonehenge monument, with only a small, discrete operations centre and toilets remaining, hidden from the monument;
- decommissioning and remodelling of the A344 between Airman's corner and the existing car park.

Public consultation on the proposals ran until October, at the same time that the A303 Improvement Scheme was the subject of a public inquiry. The Inspector's Report on the A303 in 2005 recommended in favour of the Scheme but increases in the costs of the proposed tunnel prompted the government to review whether it represented value for money. In 2006, English Heritage's proposals for the new visitor centre and transit system at Countess East were granted planning permission, conditional upon government approval of the A303 published scheme. Public consultation on potential lower-cost options for the A303 took place in January 2006. The announcement in parliament in December 2007 that the costs of the scheme could not be justified and that it would not go ahead meant that the plans for the visitor centre had to be withdrawn.

Following the Department of Transport's decision not to fund the A303 Improvement Scheme, in 2007 Margaret Hodge, the Minister for Culture, Creative Industries and Tourism requested that English Heritage review the location of temporary visitor facilities to be built in time for the Olympics. Assessment of options for a new site for the visitor centre, not dependent on the future of the A303, began in 2008. Desk-based assessment (Leary 2008) considered five sites, which were put forward for public consultation:

1. Area V – the existing visitors' car park and facilities at Stonehenge;
2. Area W – at Durrington Down Farm, south of Larkhill;
3. Area X – at Fargo, west of Stonehenge;
4. Area Y – at Airman's Corner, in the north-west corner of the WHS; and
5. Area Z – at Rollestone Camp.

Against this background, archaeological surveys were undertaken to inform an Environmental Impact Assessment in support of a planning application for a new visitor centre, car and coach parking and associated access works and junction improvements at Airman's Corner. English Heritage undertook a programme of geophysical survey (Linford and Martin 2009), followed by a second carried out by Wessex Archaeology (2009). An earthwork survey followed, again undertaken by English Heritage (Field 2009). Trial trenching began in August 2009 (Figs 2.1 and 2.2 and Table 2.1; reported on in Chapter 4).

Concurrently, a programme of works known collectively as the Stonehenge Environmental Improvements Project included the following elements:

- Construction of the new Stonehenge Visitor Centre, with car and coach parking at Airman's Corner, and a visitor transit system along the former A344;
- construction of a new roundabout junction of the A360, B3086 and former A344 at Airman's Corner, including realignment of the B3086 to its original (pre-1964) route, and the relocation of the Grade II Listed Airman's Cross memorial, and an unlisted milestone;
- decommissioning and removal of the existing visitor facilities and car park at Stonehenge, leaving only a minimal operations facility and emergency toilets; and
- the decommissioning and landscaping of the A344 between Byway 12 and Stonehenge Bottom, and reconfiguration of the A303(T)/A344 junction.

Planning permission and listed building consent was granted in June 2010, along with Scheduled Monument Consent and the formulation of a National Trust Archaeological Agreement. Fieldwork was carried out between July 2012 and December 2014 (Wessex Archaeology 2017a), by which time the new visitor facilities had been in operation for a year.

## **A Note on Radiocarbon Dating**

All unmodelled radiocarbon determinations are given in the following format: The calibrated date range (cal BC/AD) at the  $2\sigma$  (95.4%) confidence level, calculated using the internationally agreed calibration curve for the northern hemisphere (IntCal20; Reimer *et al.* 2020) with the end points rounded out to the nearest 10 years; the laboratory code; and the uncalibrated years before present (BP) result and error. The ranges in plain type have been calculated according to the maximum intercept method (Stuiver and Reimer 1986); modelled dates (posterior density estimates) are given in italics. Previously published radiocarbon dates have been recalibrated with IntCal20 (Reimer *et al.* 2020) in OxCal 4.4 (Bronk Ramsey 2009).

## CHAPTER 2

# THE SITES

by Matt Leivers, incorporating reporting by Angela Batt, Andy Crockett, Tim Darvill, Sue Davies, Frances Healy, Mike Heaton, Andy Manning, Chris Moore, Ruth Panes, Kevin Ritchie, Steve Thompson, Mike Trevarthen and Jamie Wright

### Introduction

**TWELVE EPISODES OF ARCHAEOLOGICAL EVALUATION** were undertaken between 1991 and 2009, as shown in Table 2.1 and Figures 2.1–2.3. The scope, scale and results of these investigations are summarised below, with detailed results of significant archaeological evidence presented in Chapters 3–7. As the proposed locations of successive iterations of the Stonehenge Visitor Centre were chosen to avoid known archaeology, several phases of evaluation produced little in the way of positive results.

Table 2.1 Archaeological fieldwork events

Year	Location	Type	Report
Feb–Jun 91	Larkhill	Fieldwalking, test pits & machine trenches	Darvill 1991
Dec 91–Jan 92	Larkhill	Fieldwalking & test pits	W424B (34232)
Mar 92	Durrington Down Farm	Test pits & trial trenches	W497 (35141)
Aug–Sep 93	Western Approach Route Corridor	Test pits	W623b (36717)
Oct 93	A303 Footbed	Fieldwalking, auger survey, test pits & trial trenches	W639a (36881)
Oct–Dec 94	Countess	Test pits, auger survey	38477
1998	Fargo North	Geophysical survey, test pits & trial trenches	45044
Apr–May 02	Countess	Test pits & trial trenches	51268
	Countess	Test pits	51879
May 03	Countess	Trial trenches	53324
Jul–Aug 03	Transit Link	Trial trenches	53868
	Countess	Test pits, watching brief & boreholes	54024
Jan 04	Countess	Trial trenches	54700
Aug 09	Airman's Corner	Trial trenches	71651

### Darvill 1991: Larkhill

Evaluation comprised test pits and machine trenches (Fig. 2.2). Metre-square test pits were arranged on a grid at 25 m intervals (261 pits in total) and the contents sieved through 10 mm mesh. Artefacts were relatively scarce at the eastern end (from approximately NGR SU 1185 eastwards), although there was a slight concentration of worked flint and a more marked concentration of burnt flint between NGR SU 1187 and SU 1193.

Twelve targeted evaluation trenches were excavated, either linear or square, to examine features suggested by geophysical survey or visible as earthworks. Linear evaluation

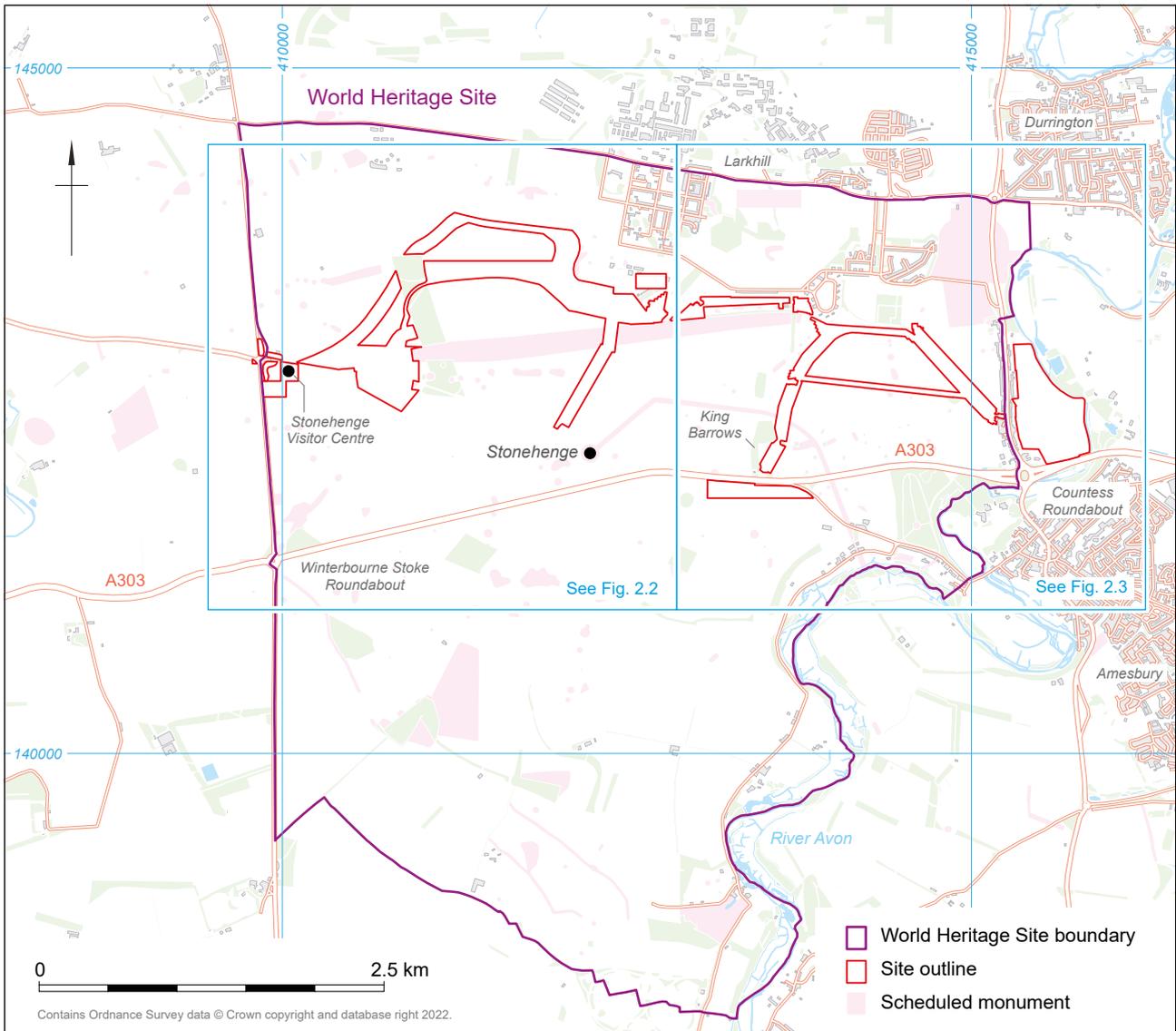


Figure 2.1 Location plan of sites included in the Stonehenge Visitor Centre evaluations

trenches were arranged on a north–south axis at 100 m intervals across the site, apart from along the approach road, where they were aligned at right angles to the road's centre line. Trenching of a possible barrow (SMR 660) found no trace of a mound or ditch. Sectioning of one of the ditches of the Fargo Plantation field system (feature 1111) showed that it survived to a depth of only 0.04 m in the chalk.

In total, 2779 m<sup>2</sup> were examined (261 m<sup>2</sup> in test pits, 393 m<sup>2</sup> in targeted trenching, 2125 m<sup>2</sup> in linear trenching). Eight archaeological features were encountered on the line of the approach road, 27 within the proposed visitor centre site, of which 7 and 15 respectively were modern. A total of 38 natural features were predominantly tree hollows.

### W424 (34232): Larkhill

Fieldwalking in 10 m runs at 10 m intervals (Fig. 2.2) confirmed the existence of dense and varied occupation debris across 350 m east of Fargo Plantation, mostly dating to the Middle and Late Bronze Age but with some Neolithic and Early Bronze Age material. Closer to the proposed Durrington Down Farm site of the visitor centre, artefact density was lower and prehistoric material confined to worked and burnt flint of an industrial rather than domestic character.

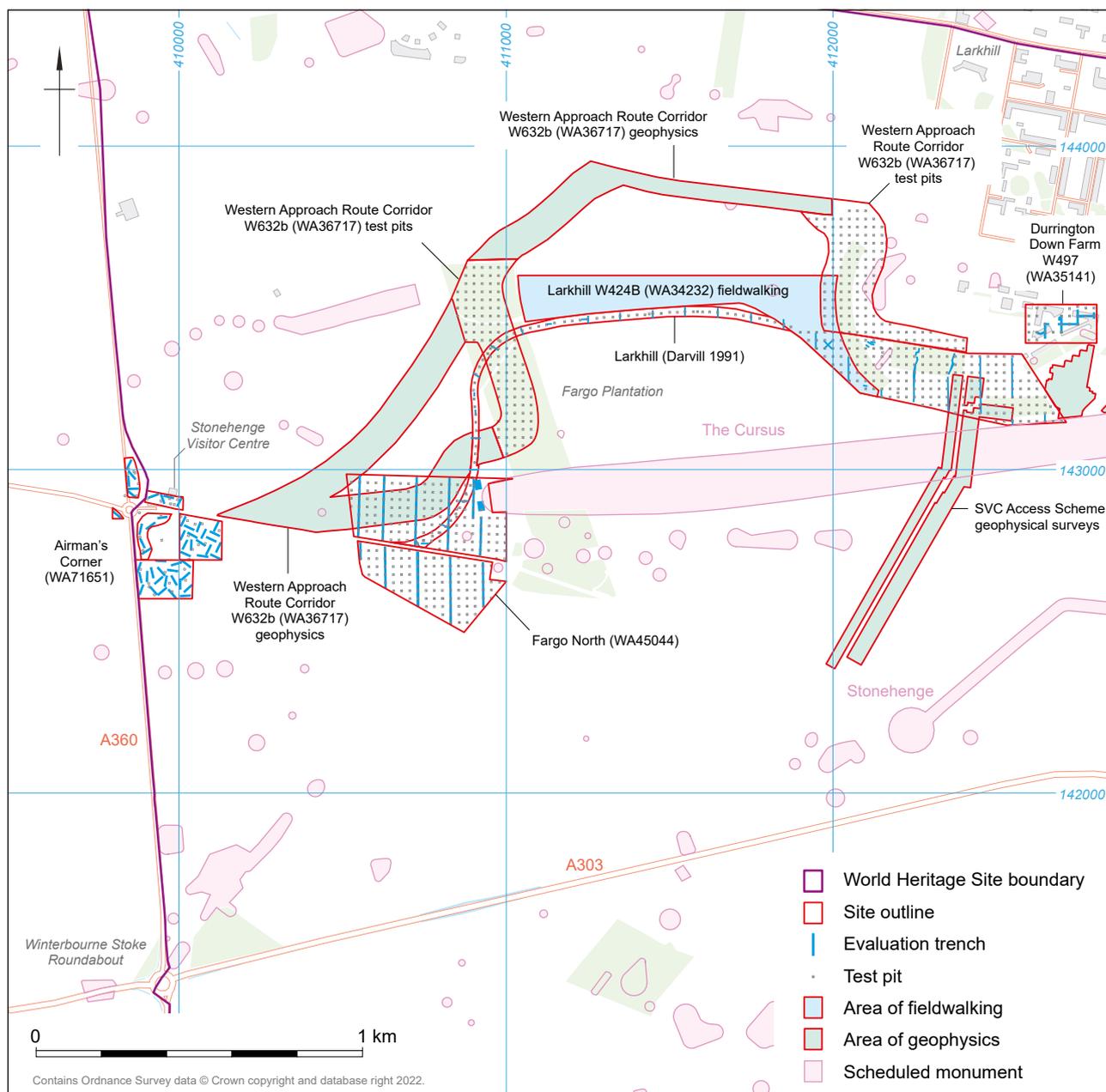


Figure 2.2 Location plan of sites included in the Stonehenge Visitor Centre evaluations (detail, west)

### W497 (35141): Durrington Down Farm

Twenty-five 1 m<sup>2</sup> test pits were hand-excavated on a grid at 25 m intervals to the base of the subsoil to reveal natural geology (Fig. 2.2). Excavated material, removed stratigraphically, was passed through 10 mm mesh sieves and all dry residues were sorted and scanned for artefacts. Fourteen trenches totalling 337 m<sup>2</sup> were excavated. Only modern deposits and features were encountered.

### W623b (36717): Western Approach Route Corridor

Two hundred and forty-nine 1 m<sup>2</sup> test pits were hand-excavated stratigraphically on a grid at 25 m intervals; 119 were located in Fargo Plantation and 130 were on Durrington Down (Fig. 2.2). Soil was sieved through 10 mm mesh and the residues sorted. Bedrock-cut features were sampled and recorded.

Evaluation within Fargo Plantation produced two significant clusters of artefacts, the highest concentration at the north end, with a lesser one at the south-eastern corner. Two prehistoric ditches were also found at the northern end of Fargo Plantation, both producing pottery and one a socketed side-looped spearhead of mid-second millennium cal BC date. Animal bone was also present in significant quantities at the northern end. While prehistoric artefacts were retrieved from most test pits in Fargo Plantation, the level of activity in the central area was much lower than at either end. Little modern material was present.

At Durrington Down Farm (Area 4A), much lower numbers and a narrower range of artefacts were recovered, and there was a notable quantity of modern debris from test pits, including military material. The concentrations of worked and burnt flint reflected both tillage processes and downward movement of material on the west side into a shallow coombe. Concentrations of burnt flint close to the sites of round barrows were also noted.

### **W639a (36881): A303 Footbed**

A303 Footbed consisted of an east–west-aligned strip of land approximately 125 × 750 m in extent with a surface area of some 6.75 ha straddling the extreme south end of King Barrow Ridge, immediately to the south of the present route of the A303 (Fig. 2.3). It was evaluated between 1 and 22 October 1993 by hand-dug test pits, machine-excavated linear and targeted trenches, fieldwalking, and auger survey.

Fieldwalking was arranged on a north–south pattern based on the National Grid, consisting of continuous lines of 25 m-long collection units at 25 m intervals. Total artefact collection was carried out for each collection unit, using a search range of 2 m width; 50 m<sup>2</sup> was covered by each collection unit so 110 collection units provided a total surface area examined of 5500 m<sup>2</sup> (8%).

Test pits were arranged on the same grid and were arranged at 25 m intervals with each pit measuring 1 × 1 m. All test pits were hand-excavated by layer, and the soil sieved through 10 mm mesh. A total of 131 m<sup>2</sup> (0.2%) were covered by test pitting.

Two-metre-wide linear machine trenches were laid out on the same grid in a regular pattern aligned east–west and north–south. Fourteen trenches varying in length between 14 and 100 m were excavated, covering 845 m or 1690 m<sup>2</sup> (2.5%). In addition, a further three 2 m targeted machine trenches were excavated to investigate anomalies detected in geophysical (trenches 2700 and 2800) and aerial photographic survey (trench 3400). Two of these trenches were 20 m long, the third 30 m long. All machine trenches were excavated to the surface of undisturbed natural chalk or to a depth at which archaeological features could be identified. Any bedrock or subsoil-cut features were sampled by hand.

Coombe deposits within a dry valley were investigated through a pair of parallel auger transects.

Fieldwalking and test pitting demonstrated that artefacts were concentrated in the topsoil in three fairly distinct areas: immediately south of the New King Barrows (associated with a concentration of archaeological features) and at the western (in isolation) and eastern (associated with a Late Neolithic pit) ends of the evaluated area.

Twelve archaeological features were located within test pits, all undated. Sixteen features lay within the trenches, of which two were Late Neolithic and one Late Bronze Age–Early Iron Age, while 13 were undated but almost certainly prehistoric.

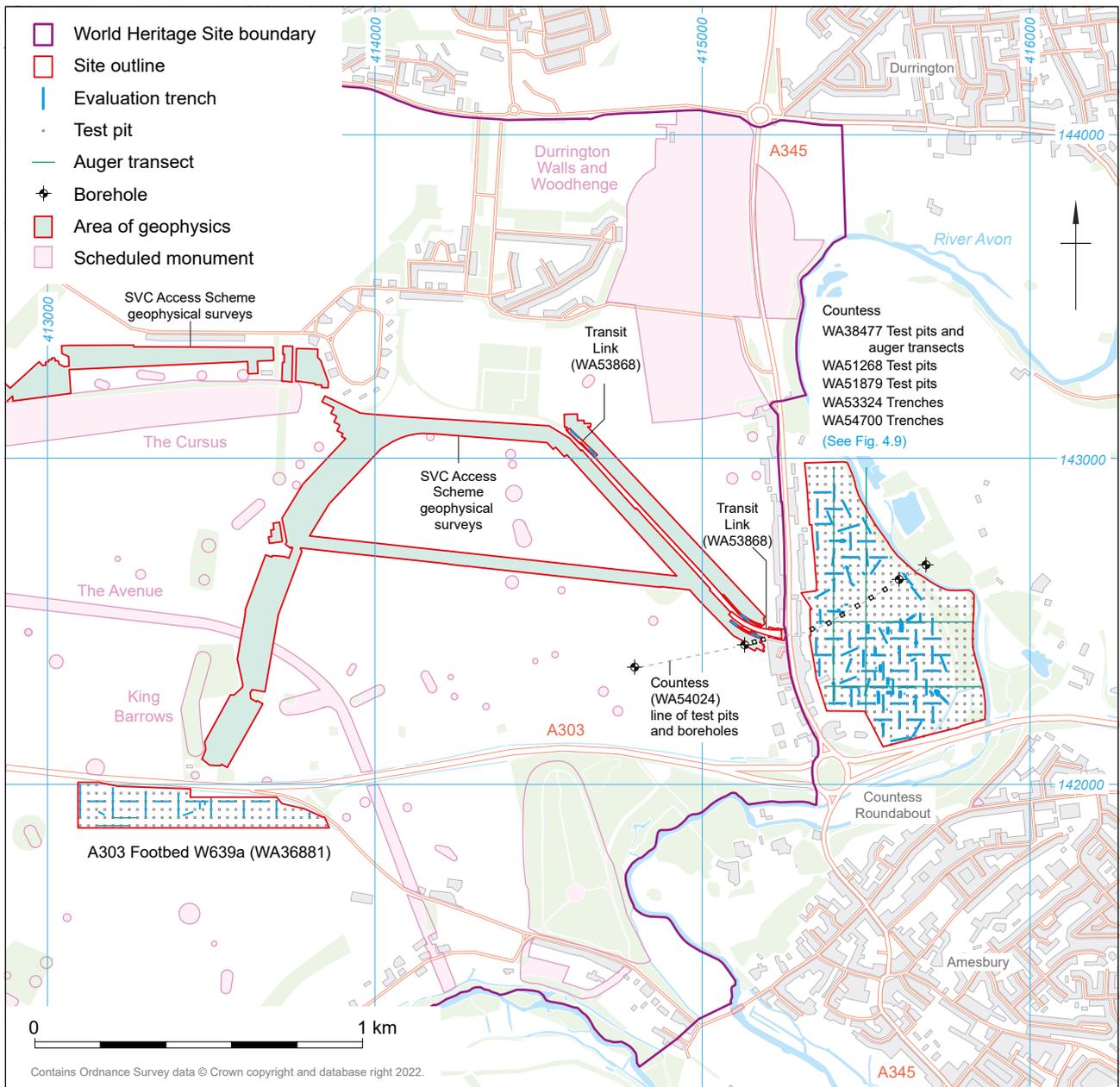


Figure 2.3 Location plan of sites included in the Stonehenge Visitor Centre evaluations (detail, east)

### 38477: Countess

A north–south aligned trapezoidal plot approximately 850 m long, 500 m wide at the south and tapering to 100 m wide at the north, with a surface area of some 30.7 ha, was evaluated between 17 October and 2 December 1994 (Figs 2.3 and 4.9). The evaluation area, subdivided into Plots 1 to 11, was bordered on the east by the River Avon, on the south by the A303, on the west by properties bordering the A345 and on the north by Totterdown Clump.

Evaluation comprised 415 hand-dug test pits and a 25 m interval auger survey including both east–west- and north–south-aligned parallel transects spaced every 100 m. The total surface area examined by test pitting was 425 m<sup>2</sup>, representing a sample slightly under 0.14%.

Other than numerous post-medieval and modern features and layers primarily associated with water meadows and a military railway, 10 test pits contained archaeologically significant remains. These included four ditches and/or pits (one dated as Saxon), and two undated wall foundations within the same test pit. In addition,

a large recently backfilled quarry covering some 2.6 ha was identified, to the north of a former military railway.

### **45044: Fargo North**

A 17 ha plot on either side of the A344 at the western end of the Stonehenge Cursus was evaluated by geophysical survey, 255 hand-dug test pits and 11 machine-excavated trenches (Figs 2.2, 3.2 and 4.5). Two targeted rectangular trenches, each measuring 25 x 15 m, were excavated immediately to the west of the western extent of the scheduled area surrounding the Cursus, to test for potential features such as postholes or pit alignments.

All dateable archaeological features were either Middle Bronze Age or modern. The Middle Bronze Age features, and the majority of all other undated features, were located towards higher ground south of the A344, coincident with the prehistoric material recovered from the test pitting. The features were bounded to the north by a sequence of co-aligned ditches observed in aerial photographs and geophysical survey, forming the northern end of a series of adjacent enclosures. The results suggest a settlement site within a field system, predominantly of Middle Bronze Age date.

North of the A344 the results of the test pitting indicated a sharp decline in the volume of material, coupled with an almost complete absence of archaeological features in the trial trenches.

The only significant archaeological remains west of the Cursus were of 19th-century and later date, including a military railway.

### **51268: Countess**

Archaeological mitigation was undertaken ahead of ground investigation works. The site was bordered by the River Avon to the east, to the south by the A303, to the west by the rear of properties fronting Countess Road, and to the north by Totterdown Clump (Figs 2.3 and 4.9).

Mitigation involved the hand excavation of a single 1 x 1 m test pit, machine excavation of fifteen 3 x 3 m test pits (two recorded as part of a watching brief), and machine excavation of three 2 x 6 m trial trenches.

The results confirmed the presence of a roughly east–west-aligned relict channel identified in earlier archaeological works (Wessex Archaeology 1995). The upper fills of this channel produced worked flint and later prehistoric pottery. Colluvium containing worked flint was also identified.

### **51879: Countess**

Test pitting was carried out within two areas to the north-east of Countess roundabout, Amesbury, centred on NGR 41550 14250 (Plots 5, 6, 8 and 9 (south): Figs 2.3 and 4.9).

A dense concentration of ceramic building material and a small concentration of struck flint of Bronze Age date with a small component of Neolithic material was noted within Plot 6. Although these may relate to specific activity, this area had been subjected to notable dumping of quarry waste and subsequent disturbance by a former military railway immediately to the north.

Overall, the integrated results from the test pitting and other previous phases of fieldwork within the site identified several areas of significant archaeological potential. Little correlation appeared to exist between the worked and/or burnt flint concentrations and any of the linear or other discrete features noted during geophysical survey.

### **53324: Countess**

Approximately 21.4 ha, situated to the north-east of the Countess roundabout on the northern edge of Amesbury, centred on National Grid Reference 41550 14250, were subject to evaluation comprising 81 50 m-long trenches, representing a 4% sample of the area (Figs 2.3 and 4.9). Significant archaeological features were revealed in 20 of the 81 trenches, with 28 features and deposits dating from the Neolithic to the post-medieval periods.

Significant archaeological activity was confined to two distinct areas within the site. In the northern half were three Neolithic–Early Bronze Age pits and a possible linear prehistoric gully. A second, larger area covering at least 6.5 ha was identified in the south-eastern and southern part of the site and contained a pit probably of Neolithic date, a substantial Romano-British masonry building, four Anglo-Saxon sunken-featured buildings (SFBs) with associated features, and several undated postholes and pits.

A post-medieval ditch and a 20th-century road associated with gravel and clay quarrying within the centre of the site were identified in a number of the trenches in the south-west part of the site.

### **53868: Transit Link**

Six evaluation trenches were excavated (Fig. 2.3). Only two archaeological features – a pit of Late Neolithic to Bronze Age date (trench 5) and human remains (trench 6) in an undated pit or ditch terminal – were found. Both were located in the proposed screen planting area north of the intermediate drop-off point, which lay close to a landscape of established archaeological potential, with settlement activity of Neolithic to Bronze Age and Romano-British date extending to the south of the nationally important monuments of Durrington Walls and Woodhenge.

### **54024: Countess**

Archaeological evaluation of the locations of proposed ground investigation trial pits and subsequent watching brief were undertaken along the proposed route of buried electricity services (Fig. 2.3). The area started within the Stonehenge part of the Stonehenge, Avebury and Associated Sites WHS at Countess (NGR 414791 142361) and crossed Countess Road (A345) and the River Avon, terminating on the eastern bank of the River Avon (NGR 415682 142684).

The archaeological evaluation consisted of a total of five 1 x 1 m hand-dug test pits, located within the areas of the proposed ground investigation trial pits. A further proposed three trial pits were sited within a known quarry and were not evaluated.

The archaeological test pitting, watching brief and borehole logs found no evidence of archaeological features. A small number of burnt and struck flint fragments as well as ceramic building material was noted in all the test pits, although this conforms well to the distribution pattern noted in previous archaeological investigations within the same area. The low level of finds is interpreted as a background scatter and is indicative of the long-term and widespread occupation and activity within the immediate area.

### **54700: Countess**

Evaluation comprised the excavation of 13 trial trenches (trenches 83–95; Fig. 4.9). The only features recorded were a short ditch and a substantial assemblage of worked flint in trench 83, and an SFB of Anglo-Saxon date in trench 85.

The flint assemblage from trench 83 comprises some 1500 pieces, the bulk of which are derived from the production of core tools, such as Neolithic axes or knives, or possibly Early Bronze Age flint daggers. The mint condition of the material and its association with a feature suggests that it represents evidence of *in situ* or near *in situ* manufacture; evidence of tool manufacture such as this is unprecedented within the Stonehenge environs and is potentially of at least regional significance.

The SFB is situated close to one of the examples found in the previous trenching for 53324. The absence of archaeological features in the area of trenches 88–95 suggests that the Anglo-Saxon settlement, although extensive, is topographically confined to the low river terrace identified previously between 71 and 74.5m OD. No evidence for post-built structures likely to have served as dwellings, nor any evidence for burials, was found.

### **71651: Airman's Corner**

Fifty-two machine-excavated evaluation trenches measuring 30 x 2.2 m and forty hand-dug test pits measuring 1 x 1 m were excavated across six areas (Areas AW, AE, B, C, D and E) within the proposed development, following two programmes of geophysical survey by English Heritage and Wessex Archaeology, and an earthwork survey by English Heritage (Fig. 2.2). The geophysical surveys confirmed the location of a 19th-century agricultural building recorded by historic mapping and suggested a wider scatter of earlier pit-type anomalies. A large ferrous anomaly may have related to the aviation accident commemorated by the Airman's Cross memorial, and an apparent complex of post-pits forming an approximate circle 25 m in diameter was identified. The earthwork survey confirmed the location of the scheduled round barrow in the north-west quadrant, an Imber pond (a square cut pond, distinctive of the ponds dug by families from the village of the same name for sheep grazing the downland (McOmish *et al.* 2002, 11)) in the south-east quadrant, and a levelled linear ditch, also in the south-east quadrant.

Very few positive archaeological features were identified during the evaluation. The linear ditch identified during the earthwork survey may form part of a planned boundary along the southern edge of the dry valley, separating the southern field system from possible pasture within the coombe to the north. Extensive prehistoric field systems recorded to the west and south-east of the site did not extend into the proposed development area, and trenches across the projected line of the linear did not identify the ditch.

Analysis of the finds recovered from the topsoil confirmed a scattering of later Neolithic–Bronze Age flintwork across the site.

No structural traces of the 19th-century buildings or early 20th-century air crash were identified, and analysis of tree hollows suggests prevailing wind from the west.

# CHAPTER 3

## GEOARCHAEOLOGY

by Mike Allen, Andy Crockett and Matt Leivers

### Introduction

**T**HE SOLID GEOLOGY OF THE AREA consists of Cretaceous Upper Chalk, with Valley Gravels and Alluvium mapped in the floodplains, and a number of superficial deposits (Eocene Clay-with-flints; derived Plateau Drift deposits) on the terraces and valley margins. The condition of the chalk varied across the investigations: in places (the eastern part of A303 Footbed) generally hard and structured (massive), while elsewhere it tended to contain more flint and was extensively weathered (for instance at the western end of A303 Footbed, at Countess and within Fargo Plantation). At four sites (36881, 45044, 51268 and 53324, described below) coombe deposits, colluvium, palaeochannels and features of geological origin were encountered. One site (38477: Countess – Figs 2.3 and 4.9) allowed for the more detailed recording of the solid and drift geology.

### 38477: Countess

For the most part, the evaluation results reflected the mapped geology, with poorly structured chalk exposed on the edge and slopes of a plateau. The surface of the superficial deposits on the southern terrace – comprising gravels supporting brown earths or relict argillic brown earths – reflected a locally complex sequence resulting from periglacial activity. In addition, isolated patches of periglacial weathered chalk were recorded throughout the evaluation area.

The Pleistocene sequence is similar to that described by Limbrey in the Avon Valley at Amesbury to the west of Vespasian's Camp (Limbrey, in Smith 1973). The Valley Gravels, Plateau Gravels and derived Clay-with-flints have been mixed and moved by Devensian periglacial activity. This may include fluvial transportation of flint gravel derived from both the valley/plateau gravels and Clay-with-flints locally, and from further up the Avon Valley, as well as from the chalk which was presumably derived locally. More recent Holocene flood episodes may also have affected the gravels.

Subsoil variations were noted throughout the evaluation area. These included recent colluvial deposits and layers associated with water meadow management. Colluvium was identified at the base of the chalk ridge, both against the field boundary forming the west side of the water meadows and across the southern portion of the evaluation area. The material comprised plough-sorted layers of flint and mid-brown silt loam, to a maximum recorded depth of 0.23 m. In addition, isolated shallow pockets of relict colluvium/loessic deposits were present in small hollows and steps in the surface of the hill slope. Although both worked and burnt flints were often recovered from these layers, fragments of post-medieval brick and tile were also common.

Deposits associated with water meadow management primarily comprised approximately 0.2 m thick layers of redeposited and compacted chalk overlying the alluvium. These layers represent temporary trackways laid to facilitate access to the various drains and channels for seasonal cleaning.

### 36881: A303 Footbed

Coombe deposits were encountered within a narrow and shallow typically asymmetrical dry valley (amplitude approximately 4–5 m) running south-west–north-east across the west side of the area. The valley (a tributary of Stonehenge Bottom) contained up to 0.75 m of post-glacial deposits comprising a colluvial brown earth sequence indicating erosion of typical or calcareous brown earths.

These deposits were exposed and recorded in detail in trench 3100 and further examined in a pair of parallel auger transects (A5000 between test pits 3 and 37 and A5100 between test pits 36 and 39; Fig. 3.1). A column of eight mollusc samples was taken contiguously through the exposed section of trench 3100, augmented by two spot samples to provide a complete sequence of post-glacial deposits. Although not itself significantly deep, it is a notable instance of a deposit type not frequently recorded in the Stonehenge area:

- i. Ap horizon, 0–0.24 m, 10YR 3/3 (dark brown) dry humic silty loam, almost stone-free with rare very small chalk pieces, occasional fine fleshy roots. Smooth clear boundary.
- ii. B1, 0.24–0.46 m, 10YR 4/3 (dark yellowish brown), firm dry silty clay, coarse weak blocky peds, almost stone-free but with rare medium flints, very small chalk pieces, 0% macropores and no obvious earthworm channels noted. Homogeneous silty, very weakly calcareous stone-free colluvium. Gradual wavy boundary.
- iii. B2, 0.46–0.62 m, 10YR 3/4 (dark yellowish brown), moist, dark silty clay, stone-free, very weakly calcareous apedal and relatively loose. Smooth abrupt boundary. [Colluvium eroded from a typical brown earth].
- iv. 0.62–0.75 m, 10YR 3/4 (dark yellowish brown). Thin intermittent lens of common medium subrounded chalk and rare medium flints within moist silty clay matrix described above. A stony lens. Sharp–abrupt, distinct smooth boundary. Later prehistoric pottery.
- v. ?bBt, 0.75 m+, 10YR 4/4 (dark yellowish brown). Occurs in small pockets and intermittently as a basal lens overlying coombe deposit/periglacial solifluction material or weathered chalk. Stone-free, non-calcareous silty clay with orange hue and 0.2% fine macropores, some possible clay coatings confirmed by x30 microscopy. Sharp, clear, smooth undulating boundary.
- vi. 10YR 4/3 (very pale brown). Periglacial solifluction material/coombe deposits; varies from smooth silty clay matrix of cheese-like consistency with small and very small well-rounded chalk pieces, to small to medium subrounded chalk pieces in coarse chalk matrix.
- vii. 10YR 5/6 (yellowish brown). Stratigraphically below iii) and vi), this layer occurs on the valley side only. Calcareous silty clay with common small and very small chalk pieces in a firm apedal matrix. The calcareous nature of this layer suggests either erosion of thinner soils on the hilltop/slope, or deeper gully erosion (*cf.* Allen 1991) through thicker, possibly typical calcareous, brown earths.

The auger transects confirmed the typically asymmetrical nature of the valley and recorded the basic stratigraphy from the exposed section. The cross profile in two auger holes (5107 and 5108) recorded and mapped a deposit not seen in trench 3100:

- viii. At the base of the colluvial profile on the eastern valley margin a bench of sediment overlay the weathered chalk deposits. This deposit is an organic dark yellowish brown (10YR 4/3) silty clay with chalk inclusions.

The stone-free and non-calcareous nature of this colluvium would normally be taken to indicate the erosion of earlier soils. However, the presence of later prehistoric pottery in the lowest colluvial horizons indicates the stripping of all former soils from the valley at least by this time. All subsequent erosion was probably under typical arable conditions but indicates the erosion of typical or calcareous brown earths.

The presence of these deeper, weakly calcareous soils on the Wessex chalkland is relatively unusual this late in prehistory, but parallels can be seen with the colluvial sequence both within and on the footslopes of Vespasian's Camp (Allen 1993).

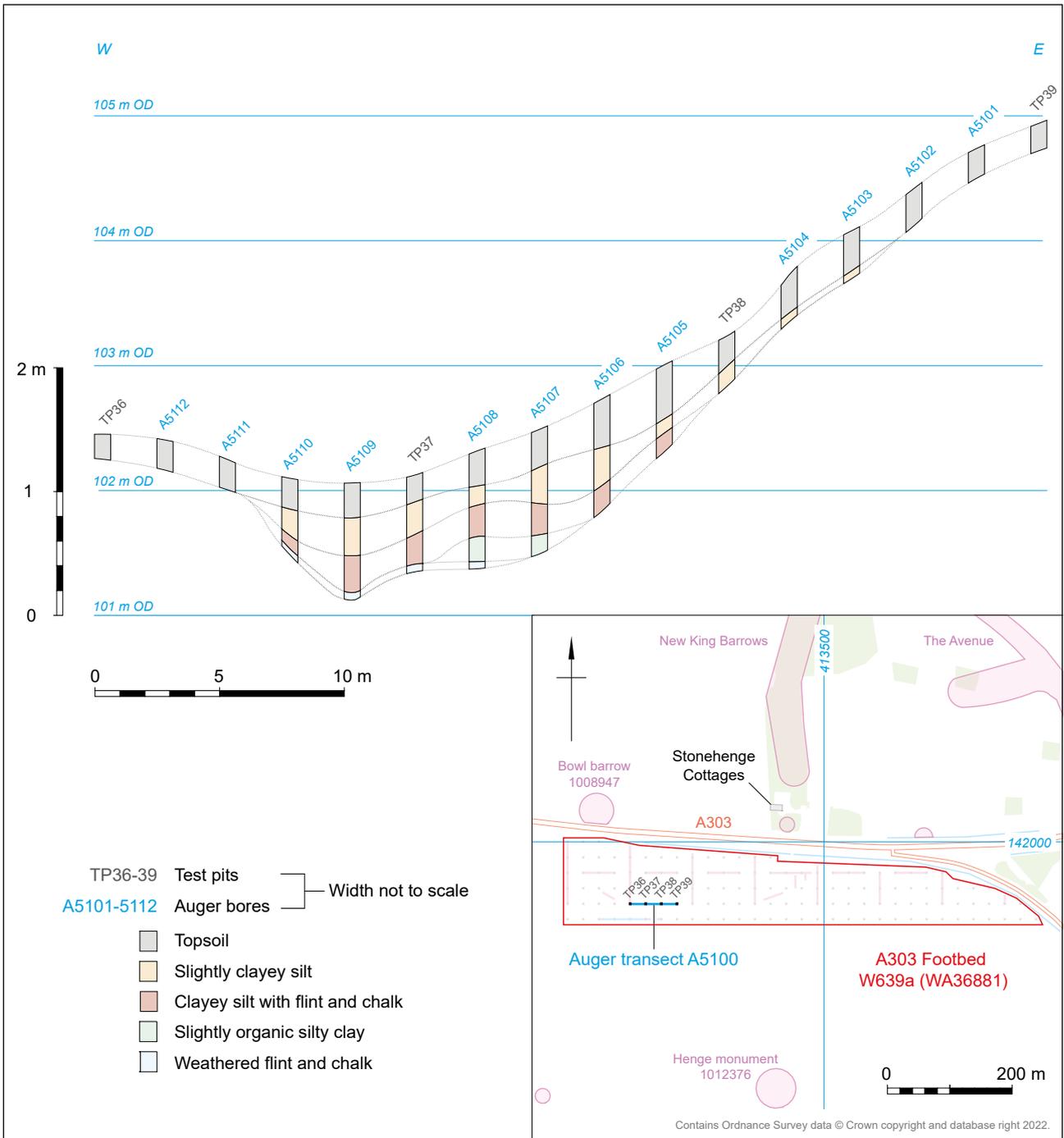


Figure 3.1 Auger transect A5100 section, showing colluviation in shallow coombe

The valley contains up to 0.75 m of colluvium where sectioned, but to the south the valley becomes more incised before entering Stonehenge Bottom. Investigation in the latter valley produced no colluvial deposits (Richards 1990).

The nature and location of deposit viii is highly reminiscent of a relict ancient soil, probably a calcareous brown earth. Whether this is an *in situ* old land surface or an earlier phase of erosion of the deeper prehistoric soils is not certain. It is possible, however, that this represents a Bronze Age or possibly Neolithic horizon. At one point it overlay densely packed flints which were not penetrable by augering. These may represent Pleistocene gravel deposits but are more likely to be a prehistoric gravel fan (cf. Allen 1991; 1992) and such features have been known to seal Neolithic and Bronze Age features elsewhere in Wessex (Allen 1992).

The *in situ* or locally transported soil horizon is significant as it may contain both artefacts and palaeoenvironmental evidence contemporary with the Late Neolithic features and/or barrows on King Barrow Ridge.

### 45044: Fargo North

Colluvial deposits were encountered in nine test pits (TP7, TP29, TP30, TP38, TP75x2, TP76, TP84, TP91 and TP198). These test pits were predominantly located within the north-western corner of Area A (Fig. 3.2).

The deposits comprised brown rendzina/colluvial brown earth at the foot of the slope, with colluvial rendzina and a stony (drift) deposit at the coombe base, forming a stony B horizon. It may be of note that these colluvial deposits were predominantly, but not exclusively, recorded within test pits at the foot of the break in slope rather than wholly within the coombe base.

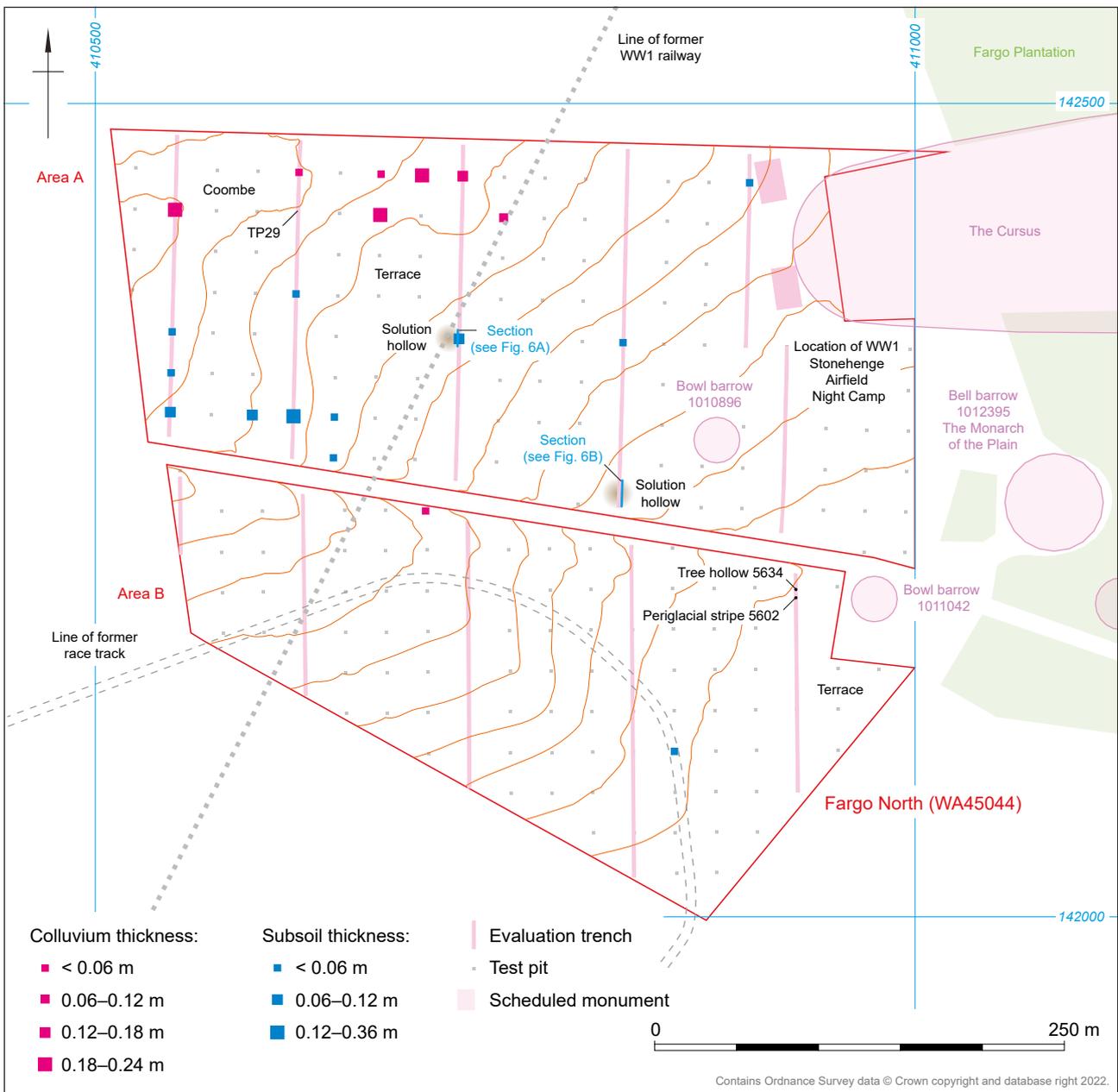


Figure 3.2 Distribution of colluvial deposits and subsoils throughout site 45044

The colluvium ranged in thickness between 0.02 m and 0.24 m, with an average thickness of 0.12 m. The deposits exhibited the shallowness that is a feature of dry valleys throughout the Stonehenge Area (i.e., Allen 1992; Allen 1993; Richards 1990). The relatively shallow (and undated) nature of the colluvium prohibited any meaningful analysis of its formation through time (i.e., mollusca, particle size, etc.).

Several natural features were excavated. These included solution hollows, periglacial stripes, soliflucted features, animal burrows, tree hollows and subsoil-filled natural undulations in the surface of the chalk bedrock. Four are described below: two large solution hollows, one periglacial stripe, and one tree hollow.

### Area A

A very large (15 m+ diameter, 2 m+ depth) solution hollow (5320; Fig. 3.3) was machine excavated and recorded within trench 503, its location anticipated by the presence of a surface depression in this area prior to machining. The stratigraphic sequence from top to bottom comprised:

- i. Topsoil 5314 – a dark yellowish brown (10YR 4/2) silty clay loam with a moderate fine to medium granular to sub-angular blocky structure, few small chalk pieces, rare medium flints, common very fine fleshy roots. A horizon of shallow colluvial rendzina/colluvial brown earth.
- ii. Layer 5315 – a strong brown (10YR 3/4) stone-free loessic silty loam, with a weakly developed medium sub-angular blocky structure, rare fine flesh roots, and with a densely packed well-developed stony horizon at its base. A loessic B horizon of colluvial brown earth, representing colluviation (and deflation) of former loessic deposits/soils.
- iii. Layer 5316 – a lens of small and medium flint pebbles in a matrix of layer 5315. Flint drift deposit of probable pre-Devensian age.
- iv. Layer 5317 – a reddish yellow (7.5YR 6/8) stone-free silty clay, with a massive structure and lenses of coarse silt/fine sand.
- v. Layer 5318 – basal layer of abundant medium and common large brecciated flint gravel, densely packed within a dark brown (7.5YR 3/2) silty clay matrix with common fine Fe and ?Mn nodules and some evidence of iron coatings on inter-ped surfaces. Translocated (Bt) clay.
- vi. Layer 5319 – Chalk.

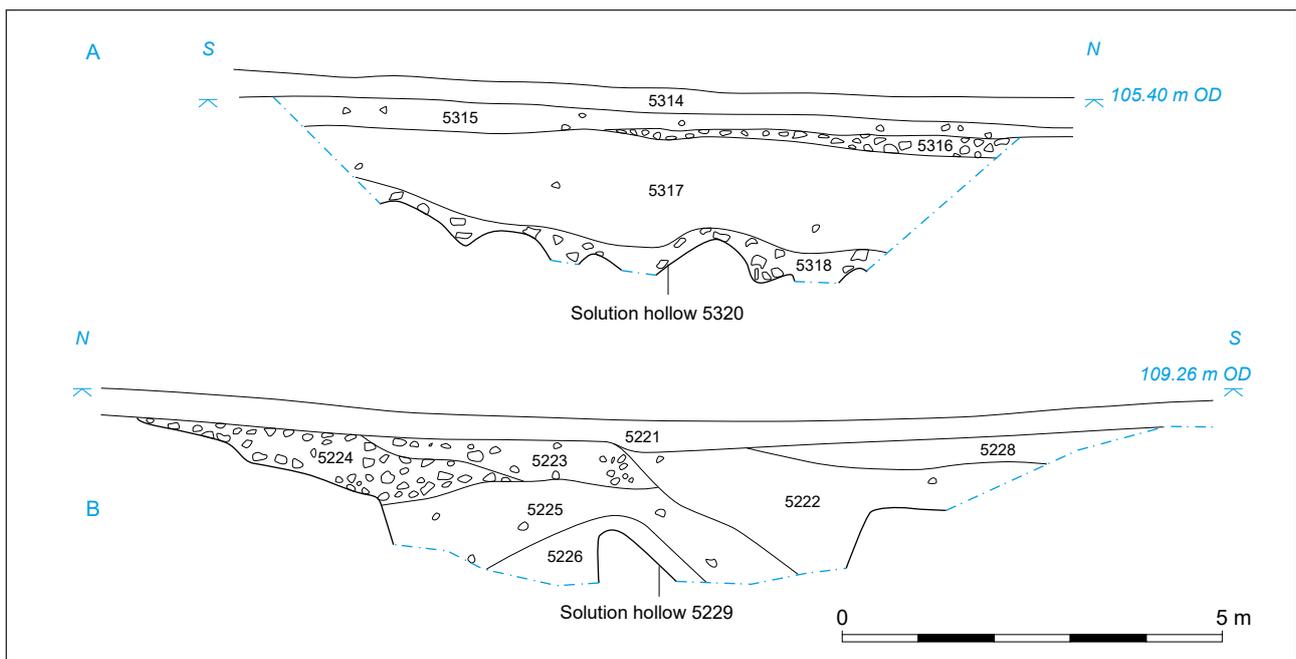


Figure 3.3 Sections through solution hollows

A very large (15 m+ diameter, 2 m+ depth) solution hollow (5229; Fig. 3.3) was machine excavated and recorded within trench 504. The stratigraphic sequence from top to bottom comprised:

- i. Topsoil 5221 – a dark yellowish brown (10YR 4/2) silty clay loam with a moderate fine to medium granular to sub-angular blocky structure, few small chalk pieces, rare medium flints, modern brick, common very fine fleshy roots and an abrupt smooth boundary. A horizon of shallow brown rendzina/brown earth.
- ii. Layer 5228 – a strong brown (10YR 4/6) stone-free loessic silty loam, with a weakly developed medium sub-angular blocky structure, rare fine fleshy roots, and a densely packed well-developed stony horizon at its base. A loessic B horizon of brown earth, representing former loessic deposits/soils.
- iii. Layer 5222 – reddish yellow (7.5YR 6/8) stone-free silty clay, with a massive structure and lenses of coarse silt/fine sand.
- iv. Layer 5223/4 – abundant medium and common large, brecciated flint gravels, densely packed within a darker silty clay matrix.
- v. Layer 5225 – dark brown (7.5YR 3/2) very hard clay with common fine Fe and ?Mn nodules, rare small flints, and some evidence of iron coatings on inter-ped surfaces. Translocated (Bt) clay.
- vi. Layer 5226 – weathered puddled chalk in a pale brown silt matrix.
- vii. Layer 5227 – Chalk

### Area B

Periglacial stripe 5602 (Fig. 3.2) comprised a subrectangular south-east–north-west-aligned feature, 1.9 m long, 0.74 m wide and at least 0.65 m deep, although not fully excavated. The feature had an irregular vertical north-east side, an irregular overhanging south-west side, and was filled with a heterogeneous, stone-free coarse yellowish brown (10YR 6/4) silt with no structure, considered to be pure loess, a very uncommon deposit on the chalk.

Tree hollow 5634 (Fig. 3.2) comprised the east side of an irregular subcircular feature at least 1.34 m east to west, 1.6 m north to south and 0.25 m deep, with shallow to moderate irregular sides, and a relatively flat uneven base. It was filled with two layers of pale brown silty loam containing frequent chalk and flint rubble, which collectively formed the basal and western layers of disturbed chalk bedrock. The stratigraphically latest fill comprised a dark brown silty loam located against the east side of the feature, probably representing the direction of fall for the tree. This upper fill contained Middle Bronze Age pottery.

### 51268: Countess

Exposed sequences were examined on the Avon Valley floodplain floor and on the gentle slopes to the north of the site. Previous investigations had shown the surface geology to be complex and variable (Wessex Archaeology 1995, figs 4–6). Reworked plateau/valley gravel and Clay-with-flints were recorded on the inside of the meander bend, overlying both chalk and weathered or soliflucted chalk. Although the current surface is relatively level and flat, the underlying drift geology contains significant undulation and variation, including possible relict palaeochannels which may be of glacial origin.

The gravel on the valley floor was noted at varying depths. In test pit 17 it lay directly beneath the ploughsoil at approximately 0.3–0.4 m depth. Degraded, reworked or soliflucted chalk deposits were also noted adjacent to gravel. Elsewhere, superficial deposits of up to 1.65 m overlay the gravel in hollows or palaeochannels. Test pits 16 and 18 (Fig. 3.4) contained a relict channel which matches two troughs previously encountered in auger survey:

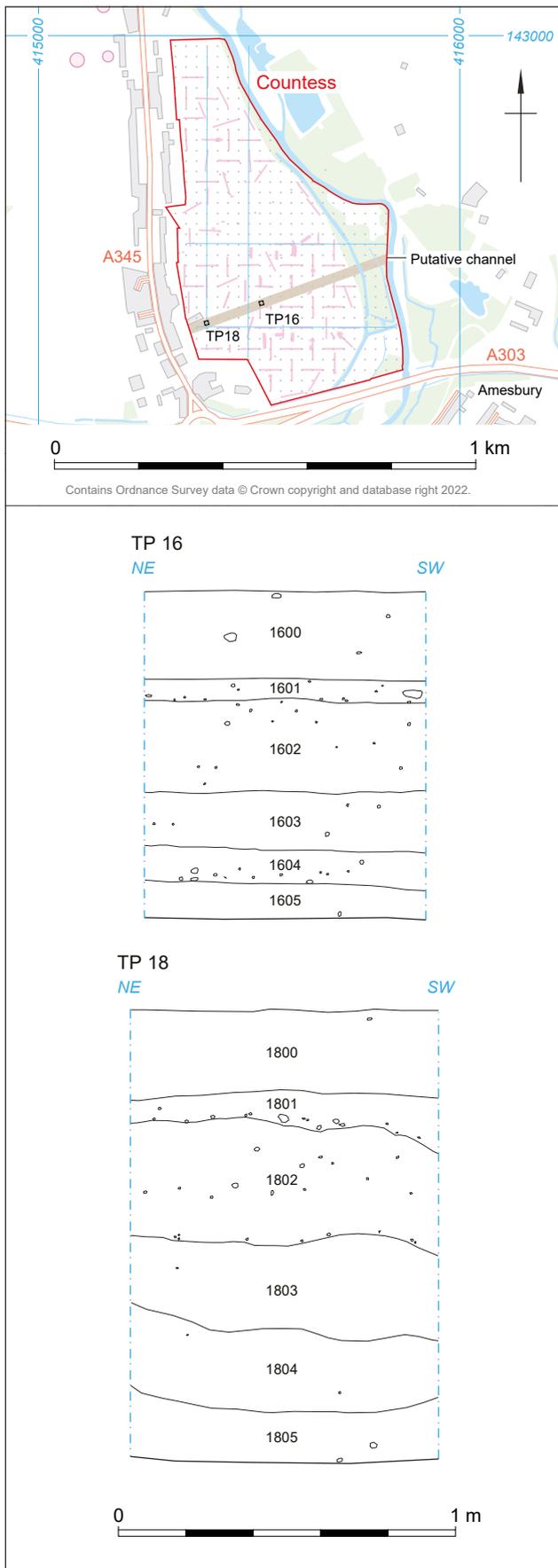


Figure 3.4 Test pits 16 and 18 (51268)

- Ploughsoil (brown earth or pelo-alluvial brown earth). Dark brown stone-free humic loam with weak to moderate medium blocky structure, clear sharp boundary;
- bioturbated upper profile of colluvium/alluvium. The upper 0.15 m was bioturbated parent material with common vertical medium and fine fleshy roots, many medium vertical macropores, and common medium flints;
- fluviually reworked Holocene colluvium/drift deposits, containing a high proportion of ancient loess. Yellowish brown silty clay (?loess), weak large blocky structure, occasional medium and large flints;
- fluviually reworked loess-rich drift deposit with evidence of pedogenesis. Silty loam, massive structure, stone-free, superficial weathering to light greyish brown, but darker below, well-sorted silt, very common (5%) fine macropores, loessic deposits;
- silty clay, massive structure, buff silt probably reworked loess/brickearth, slightly rubified pre-Holocene drift.

These valley floor deposits represent a combination of local hillwash and natural drift geology, comprising lower alluvial fills sealed by a depth of colluvial material derived from the hill slope. The alluvial fills mark a channel flowing perpendicular to the Avon Valley, across the present meander platform. As such, this channel may represent a pre-Holocene glacial channel on the edge of the meander bluff infilled in the Holocene during periods of occasional or seasonal high groundwater, with high runoff events flushing sediment into and along the relict channel.

On the gentle grass slope overlooking the meander platform, test pit 6 revealed localised foot-of-slope colluvium. The silty nature of the Holocene colluvium may provide direct or indirect source material for the fluviually reworked deposits on the floodplain meander platform. Soil types and interpretative descriptions are as follows:

- Topsoil. Brown earth soil, stone-free under pasture;
- colluvium A. Flinty silty clay colluvium containing a zone of slightly darker colour (more clay), with a weak block structure containing worked flint, possibly of Bronze Age date;
- colluvium B. Silty loam with some fine sand/coarse silt (loess derived from local drift deposits);
- gravel.

### 53324: Countess

A probable Late Glacial palaeochannel containing calcareous sediments and immature/eroded soils of likely prehistoric date was identified during trial trenching at Countess East (53324). This sediment sequence has been noted in the Avon Valley to the north of Durrington Walls, underlying deep and stratified peat, the base of which was dated to 8170–7050 cal BC (GU-3239, 8460±200 BP).

A single sequence through the palaeochannel in trench 46 (Fig. 4.9), revealed a calcareous marl (contexts 4615–16) which was cut by Anglo-Saxon activity (contexts 4628

and 4604). The basal deposits provide important information about the pre-Flandrian (Mesolithic) environments. The sediments are described in Appendix 1.

The sediment sequence shows:

- A Late Glacial calcareous marl and Greensand-derived silty sand and sand. These have been noted in the Avon Valley to the north of Durrington Walls where they underlay deep and stratified peat, the base of which was dated to 8170–7050 cal BC (GU3239; 8460±200 BP; French *et al.* 2012, table 2). This Greensand is assumed to have derived from outcrops upstream near Pewsey and is observed upstream of the site at Durrington (Scaife and Allen in prep.), to the south-west at Vespasian's Camp (Allen 1993) and to the south at Downton (Allen pers. obs. 2003) as well as in the Countess East area. This indicates the massive Late Glacial fluvial deposition of thousands of tonnes of sediment in relatively thin sheets, up to 1 m or so, over the fluvial gravel basement;
- the potential for prehistoric activity to occur locally in soils forming over this in localised depressions or former Late Glacial channels and to be buried at a modern depth of in excess of 1.3 m;
- the extensive local fluvial reworking of the calcareous marls and Greensand sandy silts creating deposits locally of at least 1 m thick; and
- the extensive local erosion of these deposits in post-prehistoric times provides hollows/channels into which culturally rich deposits of Anglo-Saxon date have been deposited.

What is clear from the pre-Flandrian drift geology and the Flandrian sediment is that the Avon Valley at this location has a locally highly complex sedimentary history. Nevertheless, successive observations have now been able to distinguish with relative clarity the pre-Flandrian and Glacially derived water-lain deposits from those more local Flandrian (post-Mesolithic) quieter fluvial environments.

# CHAPTER 4

## ARCHAEOLOGY

by Matt Leivers and Andy Valdez-Tullett

### Mesolithic, Neolithic, Early Bronze Age

by Matt Leivers

#### *Late Glacial and Early Post-glacial*

**A** PART FROM THE PALAEOCHANNEL DEPOSITS described in Chapter 3, no archaeological deposits of Mesolithic date were encountered in any of the surveys, although soft hammer struck blades from test pit 714 (one example) on the Western Approach Route Corridor (36717: Fig. 2.2) and subsoil contexts at Countess (38477: Figs 2.3 and 4.9) suggest a Mesolithic component to the lithic assemblage from the sites. Further Mesolithic material among the later lithics at Countess (54700: Figs 2.3 and 4.9) strengthen the suggestion of Mesolithic activity in and around the floodplain of the Avon.

#### *Neolithic*

The Neolithic period is represented by a small number of features, with associated artefacts, found at three locations (Fig. 2.3) – on King Barrow Ridge (36881: A303 Footbed), south of Durrington Married Quarters (53868: Transit Link) and at Countess (53324 and 54700).

#### **A303 Footbed (36881)**

An isolated pit at A303 Footbed on King Barrow Ridge (Fig. 4.1) contained the remains of at least four Grooved Ware vessels accompanied by a small flint assemblage; burnt unworked flint; a small, flat, worked stone fragment with distinct waisting at one end, possibly part of a broken whetstone; and a number of red deer antler fragments. The pit also yielded plant macrofossils, including hazelnut fragments. Situated about 150 m to the south-east of Stonehenge Cottages to the south of the A303, subrectangular pit 2003 in trench 2000 measured 1.50 x 1.10 m in plan, with vertical sides and a flat base 0.25 m below the modern ground surface. A radiocarbon date of 2470–2200 cal BC (UBA-34502; 3883±35 BP) was obtained on a red deer antler pick from this feature.

A broken ground stone axe was recovered during fieldwalking. Six fragments of oblique arrowheads, twenty-nine scrapers (including discoidal examples), a denticulate, a discoidal knife, a pressure-flaked knife and a fabricator, although not from well-stratified deposits, confirm Late Neolithic activity.

#### **Countess (53324 and 54700)**

A second Late Neolithic pit was excavated at Countess (53324), containing pottery from at least two Grooved Ware vessels, a large quantity of worked and burnt (unworked) flint, red deer antler, animal bone, hazelnut shells and sloe fruit. This pit (1204 in trench 12: Fig. 4.2) was located at the top of a hill and measured 1.42 x 1.2 m in plan with a surviving depth of 0.17 m.

Although lacking diagnostic tools, the 79 pieces of worked flint are technologically consistent with both the Grooved Ware and the radiocarbon dates on antler and sloe fruit of 2870–2490 cal BC (UBA-34500; 4086±36 BP) and 2890–2620 cal BC (OxA-35721; 4165±34 BP) respectively. The pieces are uniformly patinated, and one is burnt.

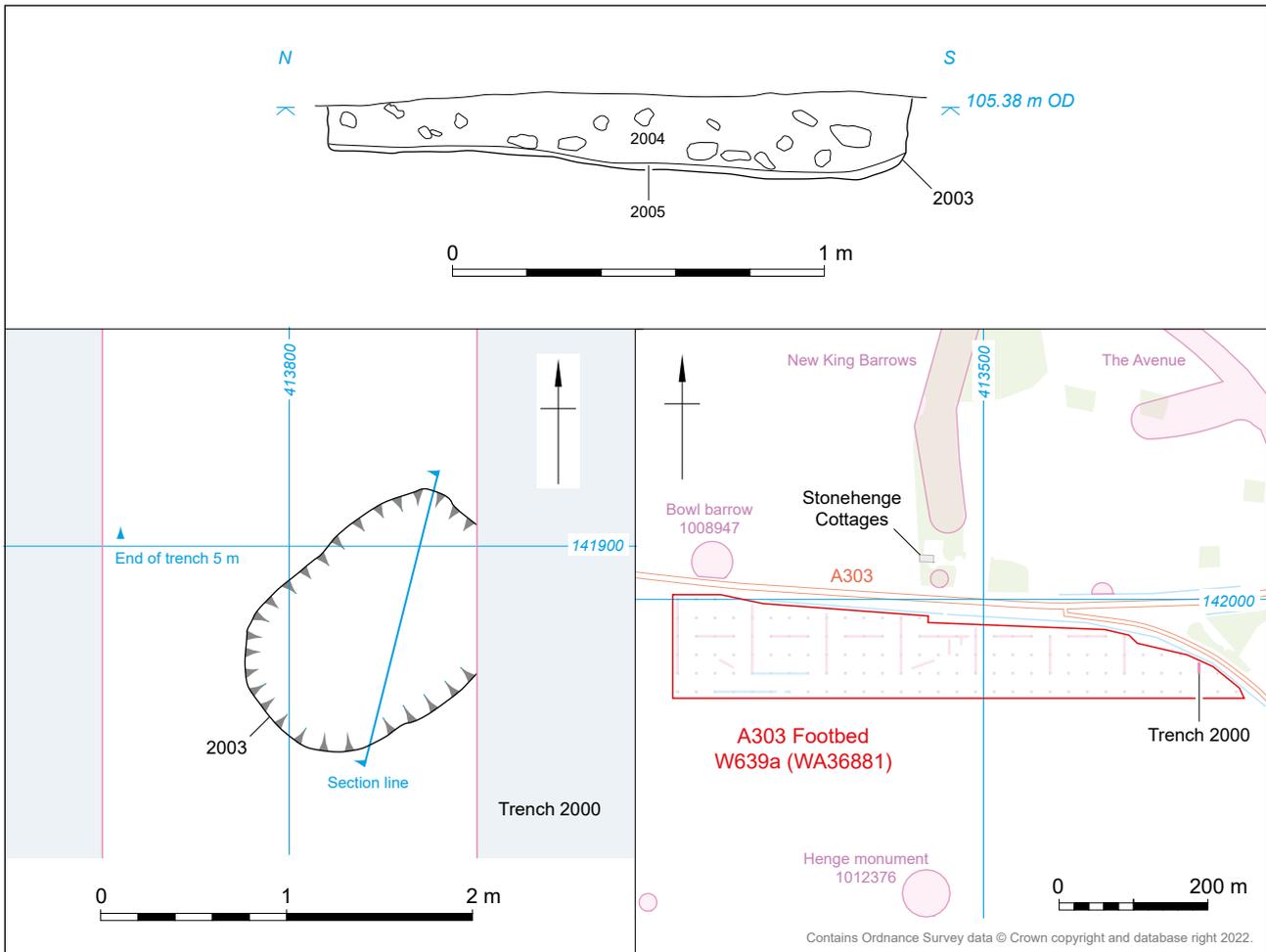


Figure 4.1 A303 Footbed pit 2003 plan and section

A third pit (2103 in trench 21) situated on the same hilltop measured 0.86 m in diameter and survived to a depth of 0.15 m. Although no dateable material was recovered among the large quantities of burnt flint in its fill, its form and situation suggest that it too may result from Late Neolithic activity.

A larger group of flint in relatively fresh condition was recovered from a fourth pit. The group includes three scrapers, blade-like flakes and a backed piece, as well as smaller debitage indicating knapping activity close by. This pit (7309 in trench 73) was 0.9 m in diameter and survived to a depth of 0.19 m, and was located in the southern part of the Countess site.

Also at Countess (54700), excavation of a ditch (8301 in trench 83) within the central area of the site, and subsequent sieving of the adjacent spoil heap, revealed a substantial flint assemblage (just over 1500 pieces) which derived from bifacial (core tool) manufacture of probable Early Neolithic date. The feature (Fig. 4.3) was 0.70 m wide and survived to a depth of 0.20 m, crossing the trench for a distance of 3.80 m. A small quantity of associated pottery is undiagnostic but would be consistent with a Neolithic date.

#### Transit Link (53868)

Adjacent to the former military railway south of Durrington Married Quarters (53868: Fig. 2.3) a subcircular pit was encountered (502 in trench 5). Measuring 0.84 m in diameter, it survived to a depth of 0.50 m, with near-vertical sides and a flat base (Fig. 4.4). Two pieces of very abraded animal bone, fifteen pieces of burnt, unworked flint, and seven pieces of worked flint (a core reused as a hammerstone and six flakes), characteristic of a date range from the Late Neolithic to Bronze Age periods, were recovered from the single fill.

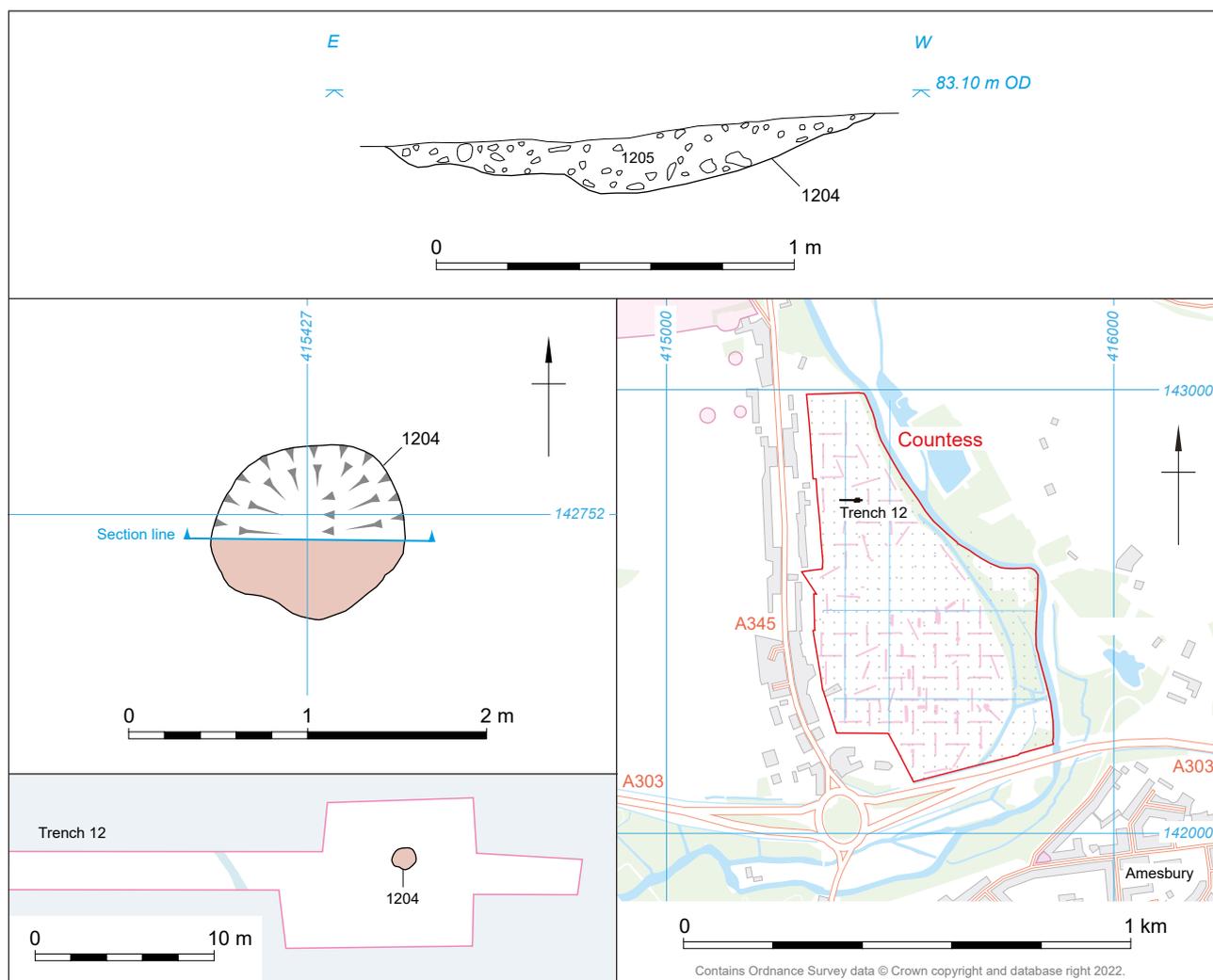


Figure 4.2 Countess pit 1204 plan and section

### Fieldwalking

A minority element of soft hammer struck blades, together with a blade core and a rejuvenation flake from a bladelet core came from the western end of Area F at Larkhill (34242: Fig. 2.2), as did a flake and scraper with faceted butts. Among the retouched forms from Area F were at least five serrated pieces of probable Early Neolithic date, and three chisel arrowheads, one oblique arrowhead, one chisel or oblique arrowhead fragment and a tranchet tool of Middle and Late Neolithic date. Much of this material may relate to site W32 (Fargo Wood I) examined during the Stonehenge Environs Project (Richards 1990, 67–8).

### Test pitting and trial trenching

The lithic assemblage recovered from test pitting was dominated by Bronze Age industries (below). An earlier component was present at various sites. Along the Western Approach Route Corridor (36717: Fig. 2), an earlier Neolithic component was suggested by the presence of a number of blades and a single blade core, while diagnostically Late Neolithic pieces were limited to a single core tool and a spurred piece. At Countess, the Neolithic component included two oblique arrowheads, a possible graver and unretouched blades and narrow flakes (38477 and 51879: Figs 2.3 and 4.9).

At Fargo North (45044: Figs 2.2, 3.2 and 4.5), a high proportion of the diagnostic flintwork was of Early and Late Neolithic date. Diagnostic pieces of Early Neolithic type included a broken leaf-shaped arrowhead, a microdenticulate and seven blade cores. Late Neolithic tools included a possible petit-tranchet derivative, a chisel arrowhead, a long-ended awl, several scrapers with scalar retouch, two rod fragments and an invasively retouched knife.

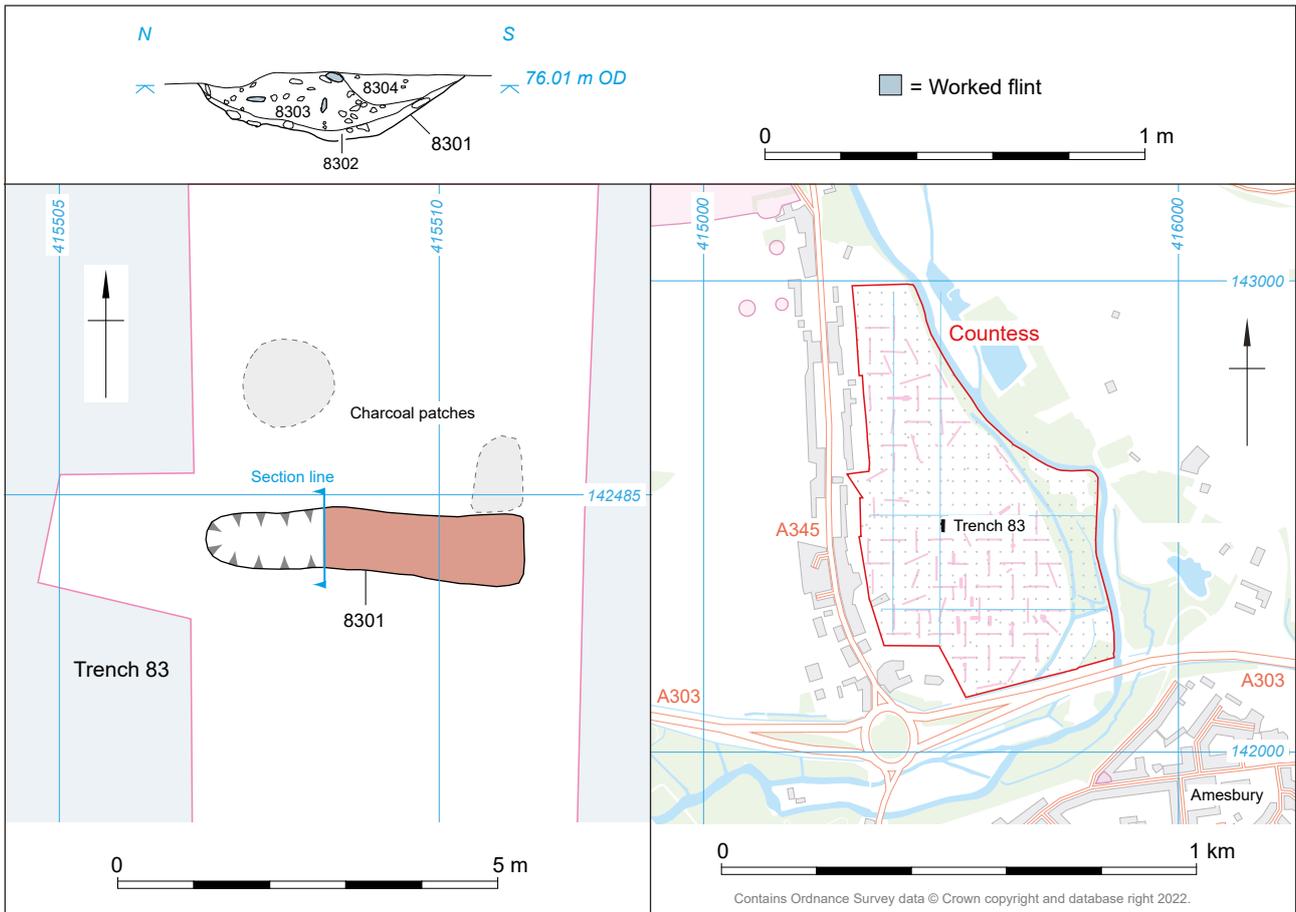


Figure 4.3 Countess ditch 8301 plan and section

Four sherds of Middle Neolithic Peterborough Ware were recovered from a Middle Bronze Age ditch close to the western end of Fargo Plantation on the Western Approach Route Corridor (36717: Fig. 2.2). A concentration of Peterborough Ware was identified in the area around Fargo Plantation in the Stonehenge Environs Project (Clea with Raymond 1990, 235, fig. 154). A Fengate-related rim was recovered from surface collection in field 64 (Horse Hospital), close to W34 (Clea 1990, 30, P272, figs 8 and 21) while another rim came from the ditch of the Fargo henge (Stone 1938).

### Beaker

Three sherds of Beaker pottery and quantities of worked flint were recovered from pit 2305 in trench 2300 at A303 Footbed (36881: Fig. 2.3). Pit 2305 was a subcircular feature 1 m long and 0.8 m wide, with moderate sloping sides and a rounded base, filled to a depth of at least 0.19 m with a single deposit (2306).

Four worn and abraded sherds tentatively identified as Beaker or more probably Collared Urn came from pit 1001 in trench 10 at Countess (53324: Figs 2.3 and 4.9). This pit, which measured 1.0 x 0.7 m in plan and survived to a depth of 0.18 m, was situated close to the base of the slope at the north-eastern edge of the site. Worked flint and over 19.5 kg of burnt flint were also recovered.

### Test pitting and trial trenching

Two barbed and tanged arrowheads and a thumbnail scraper were recovered from test pits on the Western Approach Route Corridor (36717: Fig. 2.2). A third barbed and tanged arrowhead came from test pitting at Fargo North (45044: Figs 2.2, 3.2 and 4.5).

One or possibly two sherds of Beaker pottery were recovered from the western end of Area F at Larkhill (34242: Fig. 2.2). Five worn sherds of Beaker were recovered

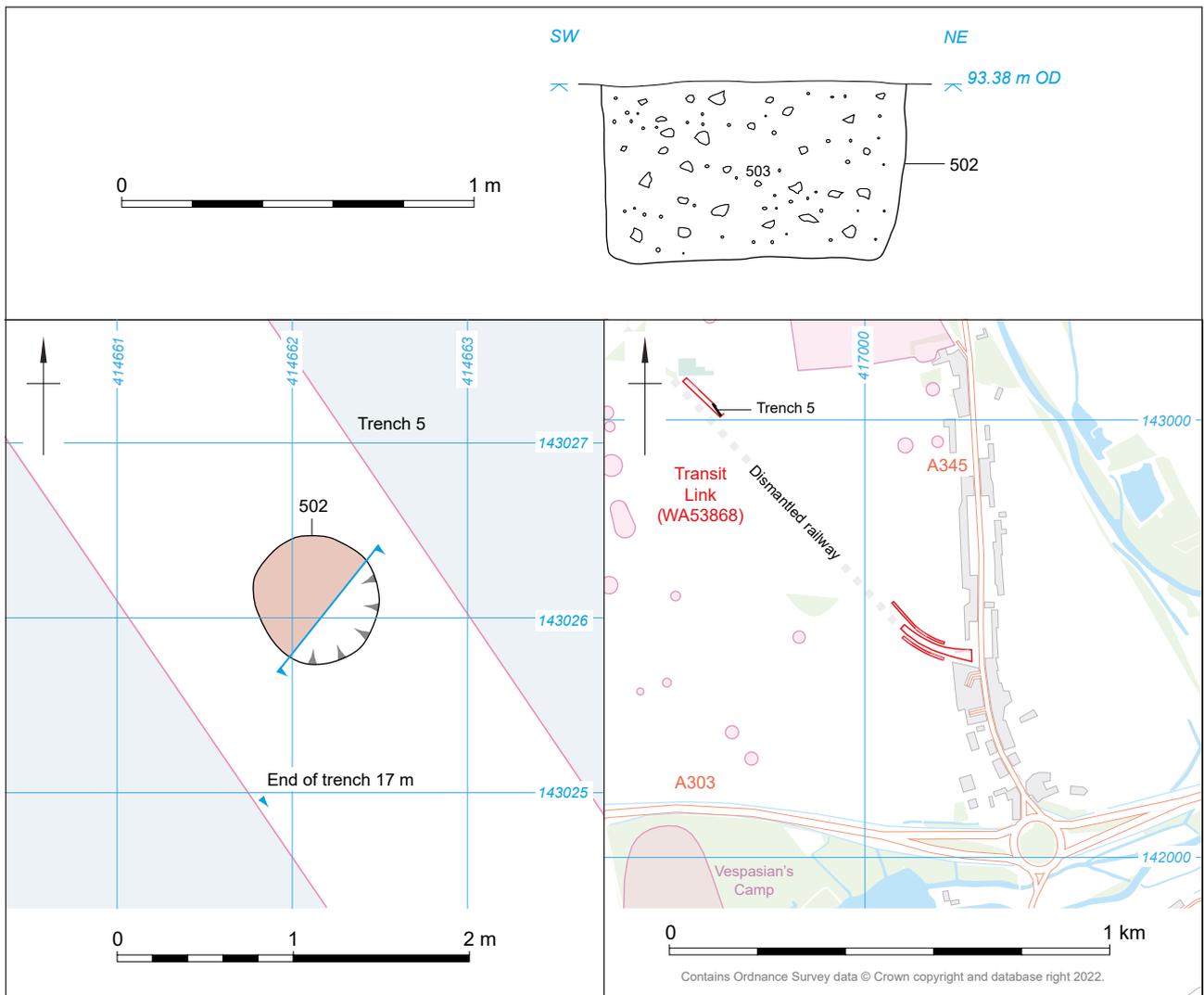


Figure 4.4 Transit Link pit 502 plan and section

from various locations on the Western Approach Route Corridor (36717: Fig. 2.2). Most are in abraded condition and almost certainly represent redeposited material. The occurrence of Beaker sherds around Fargo Plantation is not surprising, since this area was noted as a major concentration of material of Beaker type during the Stonehenge Environs Project (Clea with Raymond 1990, 238).

### Early Bronze Age

The majority of the lithics recovered from test pitting along the Western Approach Route Corridor appeared to be of Bronze Age date, characterised by thick-platformed, hard hammer struck flakes and irregular, unsystematically worked cores.

Seventeen sherds in relatively thick (5–12 mm) grog-tempered fabrics were recovered from locations along the Western Approach Route Corridor (36717: Fig. 2.2). All are worn, and doubtless redeposited. At least two, on which traces of cord impression are visible, are almost certainly from Collared Urns.

Pit 1001 at Countess (53324: Fig. 2.3) contained four worn and abraded sherds of grog-tempered pottery, tentatively identified as Beaker or Collared Urn. The pit also contained worked flint and over 19.5 kg of burnt, unworked flint. There was no evidence of a coherently-placed deposit.

## Later Bronze Age to Romano-British

by Andy Valdez-Tullett

### Later Bronze Age

The western end of the Stonehenge Greater Cursus has for some time been identified as an area with a concentration of later Bronze Age activity (Richards 1990). The schemes of investigation on the Western Approach Route Corridor around the Fargo Plantation (36717: Fig. 2.2) and at Fargo North (45044: Figs 2.2, 3.2 and 4.5) were undertaken within this zone.

### Fargo North (45044)

The archaeological programme at Fargo North investigated an area on the northern boundary of the main block of the Stonehenge Down field system and a blank area to the immediate west of the Stonehenge Cursus and a line of round barrows.

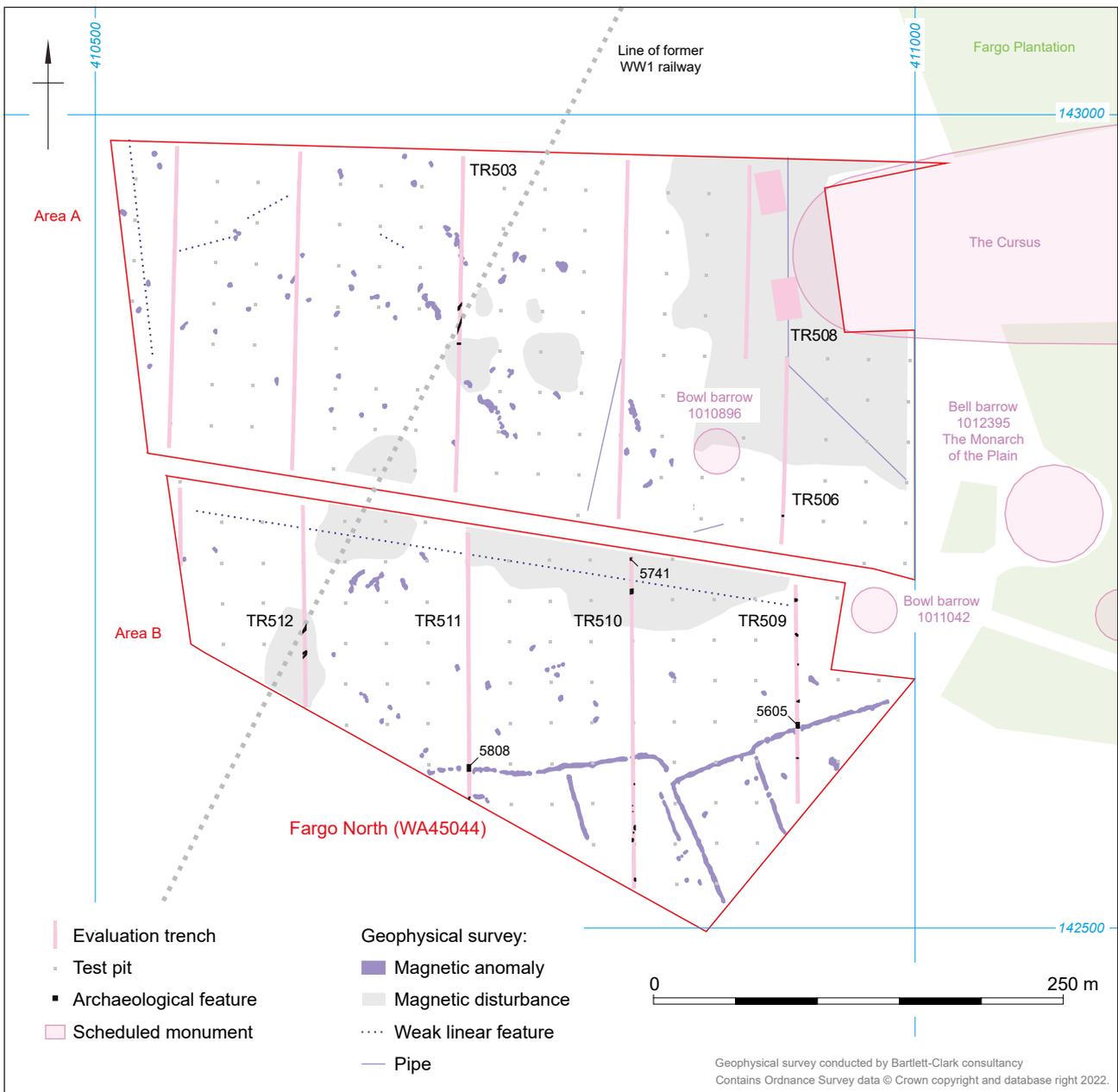


Figure 4.5 Fargo North geophysics plot with excavated features



The eastern arm of the northern field system boundary had a WSW–ENE orientation and was investigated in two places, in test pit 240 (ditch 2405) and trench 509 (ditch 5605). It was not fully excavated in test pit 240 but was at least 0.63 m deep. The excavated section in trench 509 revealed that the ditch was 3.4 m wide and 0.94 m deep, with moderate slightly convex sides and a relatively broad rounded base (Fig. 4.7). Eight sherds of Middle Bronze Age pottery were recovered from ditch 5605 with a small assemblage of animal bone. A fragment of red deer antler retrieved from the main fill of the ditch (5607) produced a radiocarbon date of 1500–1260 cal BC (OxA-8319; 3115±40 BP).

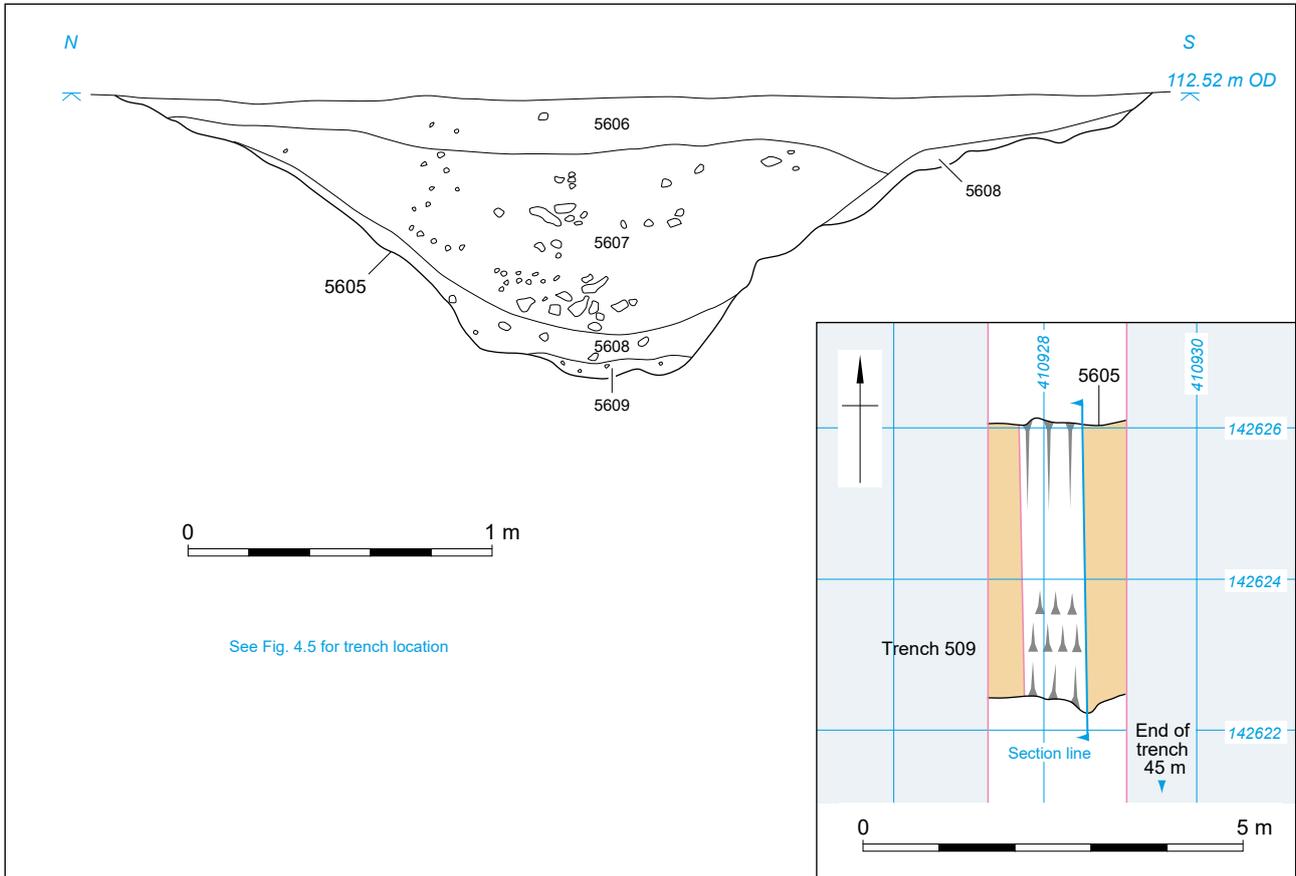


Figure 4.7 Section across Middle Bronze Age field ditch 5605, trench 509 at Fargo North (45044)

Two of the NNW–SSE-oriented elements of the field system were investigated by test pits 243 (ditch 2435) and 248 (ditch 2488). The width of these ditches could not be discerned within the limits of either of the test pits but ditch 2435 was found to be at least 1.05 m deep, while ditch 2488 was at least 1.35 m deep with moderate sloping sides and a narrow vertical-sided flat-bottomed slot at its base. Forty-seven sherds of Middle Bronze Age pottery were recovered from ditch 2488 with a small assemblage of animal bone.

Two possible ditch sections were located to the north of the edge of the field system. In trench 510 the south terminal of a broadly north–south-aligned ditch (5741) was excavated. This feature had been previously investigated during the excavation of test pit 155 (as ditch 1554). The ditch, as revealed in the trench, was at least 1.48 m long (north to south), 0.8 m wide and 0.34 m deep (Fig. 4.8), with moderate concave sides and a rounded base. Although no finds were recovered, and it has a different profile to the ditches of the field system to the south, it seems most likely that this belongs to an undefined part of the prehistoric period since the modern ditches to the north all contained abundant modern material.

A possible south-west–north-east-oriented ditch terminal (5619) in trench 509 comprised the south-west end of an irregular feature measuring at least 1.2 m east to west, 1.4 m north to south and 0.18 m deep, the western end tapering to a very

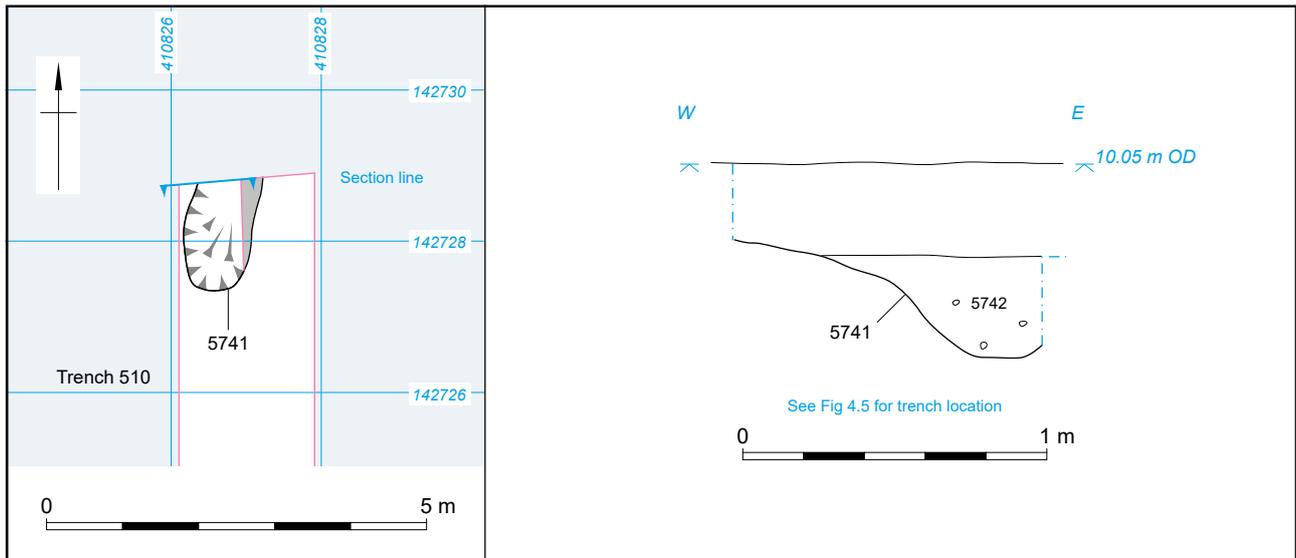


Figure 4.8 Section across undated ditch 5741, trench 510 at Fargo North (45044)

narrow point. A pair of Middle Bronze Age pottery sherds were recovered from this relatively shallow ditch, which was not identified on the geophysical survey.

Five postholes were located in test pits and trenches in the area north of the field system. Posthole 5104 (trench 506) was the only one of these situated to the north of the A344. It exhibited evidence for a postpipe but contained no finds. Postholes 1991 in test pit 199 and 5640, 5622 and 5624 in trench 509 similarly contained no material; 5622 and 5624 were located immediately next to each other, perpendicular to ditch terminal 5619 with which they seem to have been associated, and hence may have a similar date.

The majority of pits and postholes were located within the boundaries formed by the different elements of the field system. In the eastern portion of the field system this consisted of three postholes (5612, 5614 and 5617) observed in trench 509. Posthole 5614 was 0.45 m east to west and 0.4 m north to south and 0.24 m deep with vertical sides. A contemporaneous narrow east–west-aligned gully merged with this posthole from the west; both features were filled with a uniform primary deposit (5616) of pale greyish brown slightly chalk-flecked silty sand, and an upper fill of dark brown loam which produced a sherd of Middle Bronze Age pottery. Posthole 5612 was located 1.2 m to the south of 5614 and the two may have been related and part of a larger structure such as a roundhouse.

In the western portion of the field system most pits and postholes were located in trench 510, with only pit 5810 located within trench 511. This pit was 1.37 m long, 0.62 m wide and 0.27 m deep, with moderate even sides, a flat base, and a slightly narrowed central section when viewed in plan. It had a single fill of brown silty loam, but no finds were recovered, and it is hence undated.

Four pits (5703, 5707, 5710, 5718) and five postholes (5712, 5714, 5720, 5722, 5724) were observed in trench 510. Postholes 5714 and 5712 were located 1.2 m apart, as were postholes 5722 and 5724; both pairs may have been related and together formed parts of larger structures, possibly roundhouses. No artefactual material was recovered from any of these postholes.

Pit 5703 was a relatively small irregular elliptical feature measuring 0.63 m north to south, 0.4 m east to west and 0.22 m deep, with stepped steep sides and a narrow, pointed base. It contained the remains of an *in situ* Middle Bronze Age vessel which had been placed, base down, into the upper portion of the feature. The vessel had been severely truncated by ploughing in antiquity, with a significant proportion of the sherds recovered from the overlying topsoil (5704) in the immediate vicinity during the machined excavation of this trench. Although there were no obvious indicators for

cremated material, the fill of this posthole was sampled but produced no evidence of charcoal or cremated bone.

Although only part of pit 5707 was situated within the trench, it appeared to have a subrectangular plan measuring at least 1.64 m north to south, 0.7 m east to west and 0.3 m deep, with moderate even sides and a broad flat base. It contained three fills that appeared to indicate that it had been left open to fill up naturally. Three sherds of Middle Bronze Age pottery were recovered from its secondary fill (5708).

Pit 5710 appeared to have a subcircular plan measuring at least 1.92 m north to south, 0.65 m east to west and 0.28 m deep, with moderate even sides and a broad flat base. It had a single fill and contained no artefacts.

Pit 5718 appeared to have a subcircular plan measuring at least 2.7 m north to south, 0.72 m east to west and 0.14 m deep. It had a single fill that contained two sherds of Middle Bronze Age pottery.

Prehistoric pottery recovered from trenches and test pits (210 sherds; 2788 g) was mostly of Middle Bronze Age date but with a smaller component of small, less diagnostic sherds that were phased more broadly to the Middle–Late Bronze Age. Animal bone was relatively abundant, with 209 fragments recovered from the site. The remains are indicative of domestic refuse. It seems reasonable to attribute the creation of the field system to the Middle Bronze Age, likewise most if not all of the pits and postholes, which probably form part of a modest but long-lived settlement.

#### **Western Approach Route Corridor (36717)**

Test pitting was conducted in Fargo Plantation to the north of the western end of the Stonehenge Cursus in consideration of the Western Approach Route Corridor proposal (36717: Fig. 2.2).

Two test pits produced evidence of (pre-modern) features. Test pit 779 contained the western edge of ditch 7793, which was aligned approximately north–south. The ditch appeared relatively shallow and was only 0.2 m deep within the test pit, with a single fill (7791) which contained three sherds of Late Bronze Age pottery, with a further seven Late Bronze Age and six Middle/Late Bronze Age sherds being retrieved from the overlying topsoil.

Ditch 7875 was revealed in test pit 787. It too was aligned approximately north–south. Neither edge of the ditch was revealed in the test pit, which went down to a depth of 1.24 m. It had four fills that appeared to show that it had gradually silted up over a long period. A large 55-sherd pottery assemblage was recovered from the feature, which included Middle Neolithic, Late Neolithic and Early Bronze Age sherds but with the bulk (46 sherds) coming from the Middle and Late Bronze Age period (16 Middle, 8 Late and 22 possibly coming from either period). A Middle Bronze Age socketed spearhead was also discovered along with a piece of human skull, part of the left distal parietal vault. The feature could be traced as a visible earthwork for about 25 m to the north and south.

Between the two ditches, 209 fragments of animal bone were recovered. The material suggests the presence of a later Bronze Age settlement in the vicinity, probably emplaced within a contemporary field system. It is possible that undated posthole 8001 in test pit 800 could be related to such a settlement.

#### **Fieldwalking**

Lithic material collected during fieldwalking in 1991 and 1992 (Areas A–C, E, F) and from test pits in 1992 was, where at all diagnostic, predominantly of Bronze Age date. Recurrent characteristics included hard hammer flaking, irregular, unsystematically

worked cores (many of which only produced a few flakes before being abandoned), squat broad-butted flakes rarely showing signs of platform preparation and often ending in hinge fractures, core rejuvenation by rough core tablets and flakes struck along the junction of striking platform and core face, and a limited range of retouched forms including scrapers, borers and coarse denticulates. All five collections were taken to reinforce evidence of extensive occupation and farming in the area in the Middle and Late Bronze Age (Richards 1990, 275–80).

In Area A, two slight concentrations were noted in the east and west halves of the field, with the west more marked as densities rose to as many as 11 pieces per 10 m with more cores and core rejuvenation flakes possibly marking a flint-working area, whereas retouched pieces (although still few in number) were more prevalent to the east, in an area where flint was both worked and used. Burnt flint (much more common in Area A than elsewhere) concentrated on the east and in the centre of the field. The overall composition of the material conforms to Richards' view of the area north of the *Cursus* as one of industrial as well as domestic activity (1990, 24).

In Area B an abraded sherd in a fabric matching local Deverel-Rimbury assemblages came from a run crossing a linear cropmark. Flint was in a uniformly poor condition, heavily patinated, with a sharply defined concentration in the east of the area, where it reached up to 13 pieces per 10 m, with retouched pieces (mainly scrapers and borers) forming 4.9% of the material, suggesting a settlement area. Burnt flint was scarce. The material forms part of a larger flint scatter on the west side of Fargo Plantation which is coterminous with the western limits of a ditched field system (Richards 1990, fig. 10). The coincidence of a Middle Bronze Age sherd with one of the ditches of the system mirrors the previous collection of Middle and Late Bronze Age sherds from this and more northerly ditches (Richards 1990, fig. 160).

In Area C, a concentration of lithics at the east end of the area reached four pieces per 10 m, while at the west end a denser and more extensive concentration reached six pieces per 10 m, possibly representing Bronze Age settlement. Burnt flint was sporadic.

In Area E flint was unevenly distributed, without obvious pattern, sometimes reaching densities of up to five pieces per 10 m.

In Area F, cores and core rejuvenation flakes were proportionately more frequent in the east, while retouched forms were overwhelmingly concentrated in the west (a small number of these probably Neolithic or Early Bronze Age). Burnt flint was not frequent, with no more than 6% of the total in the west, and none at all in the east. Three Middle Bronze Age sherds and five of Late Bronze Age date were recovered. The concentrations in the western area, with up to five pieces of struck flint and 69 g of burnt flint per 10 m, as well as quern fragments and pottery, are strongly indicative of settlement, in accord with the picture of Bronze Age activity built up by the Stonehenge Environs Project and the earlier programmes of fieldwalking in Areas A–C and E.

Struck and burnt flint from test pitting in 1992 is of a similar character: heavily patinated, with frequent thermal fractures. It consists almost entirely of flakes, with virtually no trace of blade technology. Distribution was diffuse and density low, reaching a maximum of 34 pieces per m<sup>3</sup> of excavated soil in test pits 522 and 528, which lay within a slight concentration of material at the centre of the evaluation area. This contrasts with densities of over 100 pieces per m<sup>3</sup> in the more artefact-rich parts of the proposed visitor centre site and approach road. Struck and burnt flint together seem to represent a general, low-level scatter with no hint of settlement or specialised activity. Both show a continuation of the low densities recorded in the north-east of the proposed visitor centre site.

## Late Bronze Age/Early Iron Age

### A303 Footbed (36881)

Thirty sherds of Late Bronze Age/Early Iron Age (Earliest Iron Age) pottery were recovered from pit 3304 in trench 3000. Situated about 150 m to the south-west of Stonehenge Cottages to the south of the A303, the pit measured 0.60 m in diameter, with steep to vertical sides and a flat base 0.30 m deep. Its single fill (3002) also contained worked and burnt flint, while an environmental sample was found to contain both weed seeds and hazel nuts. Also in trench 3000, about 35 m east of pit 3004, was pit 3006, which was slightly larger, with a diameter of 0.90 m but only 0.19 m deep. No finds were recovered from this feature, which is undated. Just to the west (and downslope) of trench 3000, two sherds of pot in a similar fabric to those from pit 3004 were found in a hillwash deposit in test pit 98 (context 983).

### Countess (53324)

Two sherds in a coarse, shelly fabric of possibly Late Bronze Age or Early Iron Age date were retrieved from the single fill of pit 4609 in trench 46 at Countess (Fig. 4.9), although Anglo-Saxon radiocarbon dates from the feature indicate that they are redeposited.

Another two small abraded body sherds of possible Late Bronze Age or Early Iron Age date were recovered from trench 46, one from the upper fill of a palaeochannel and one unstratified.

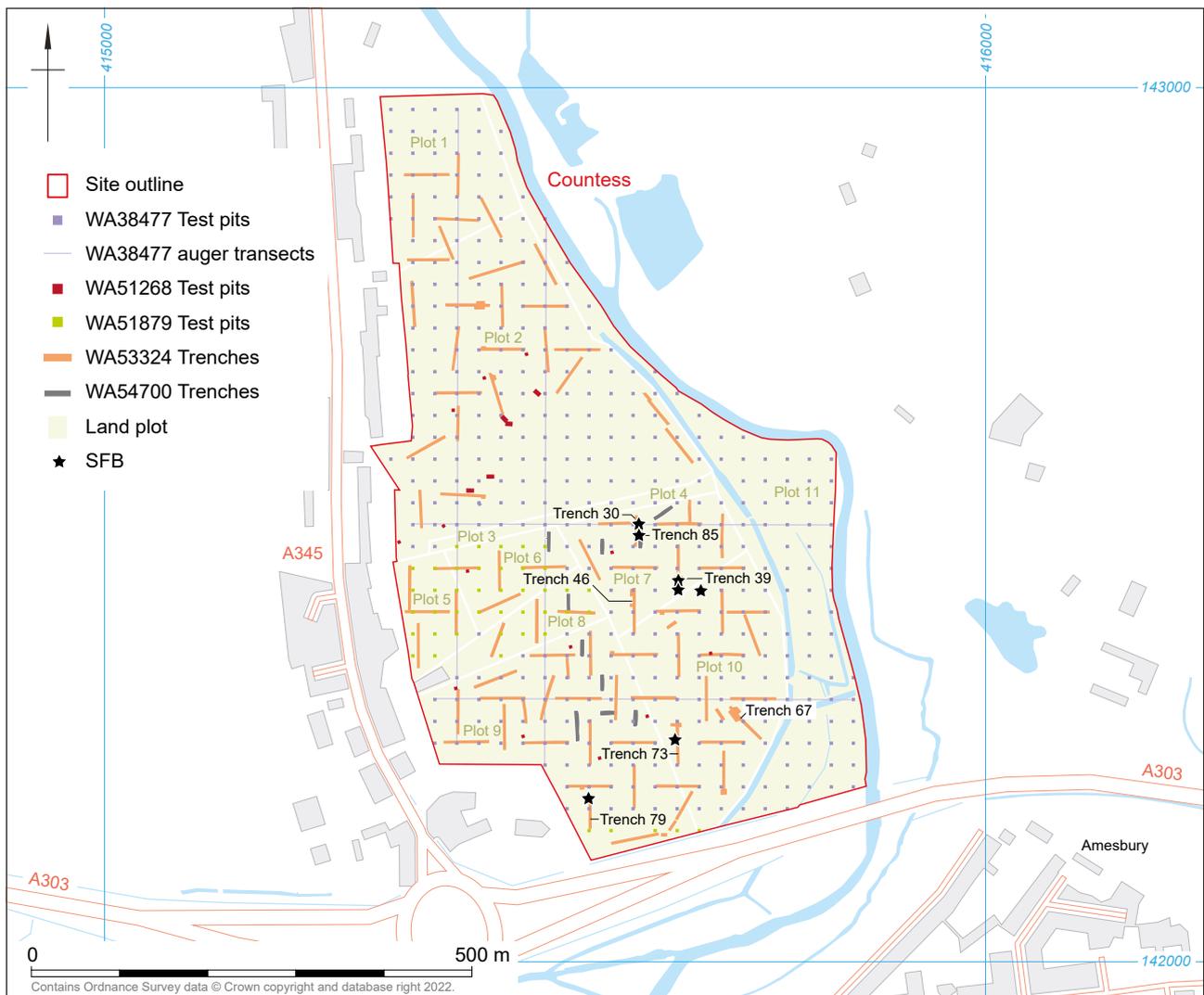


Figure 4.9 Countess – plot of auger transects, test pits and trenches

### Romano-British

The remains of a Romano-British building were investigated at Countess. The structure was initially discovered in test pit 396. This identified two parallel east–west-aligned foundation trenches (3967 and 3968). Trench 3967 was at least 0.35 m wide and filled to a depth of 0.1 m with chalk block foundation material (3964). Foundation trench 3968 cut 3964 and was at least 0.65 m wide. It was filled to a depth of 0.23 m with mortar and flint nodule foundation material (3962) and construction backfill (3965). Animal bone and worked flint were recovered from 3965. A pair of layers (3966 and 3963), 0.15 m thick in total sealed foundation trench 3968 and probably resulted from the dismantling of the building.

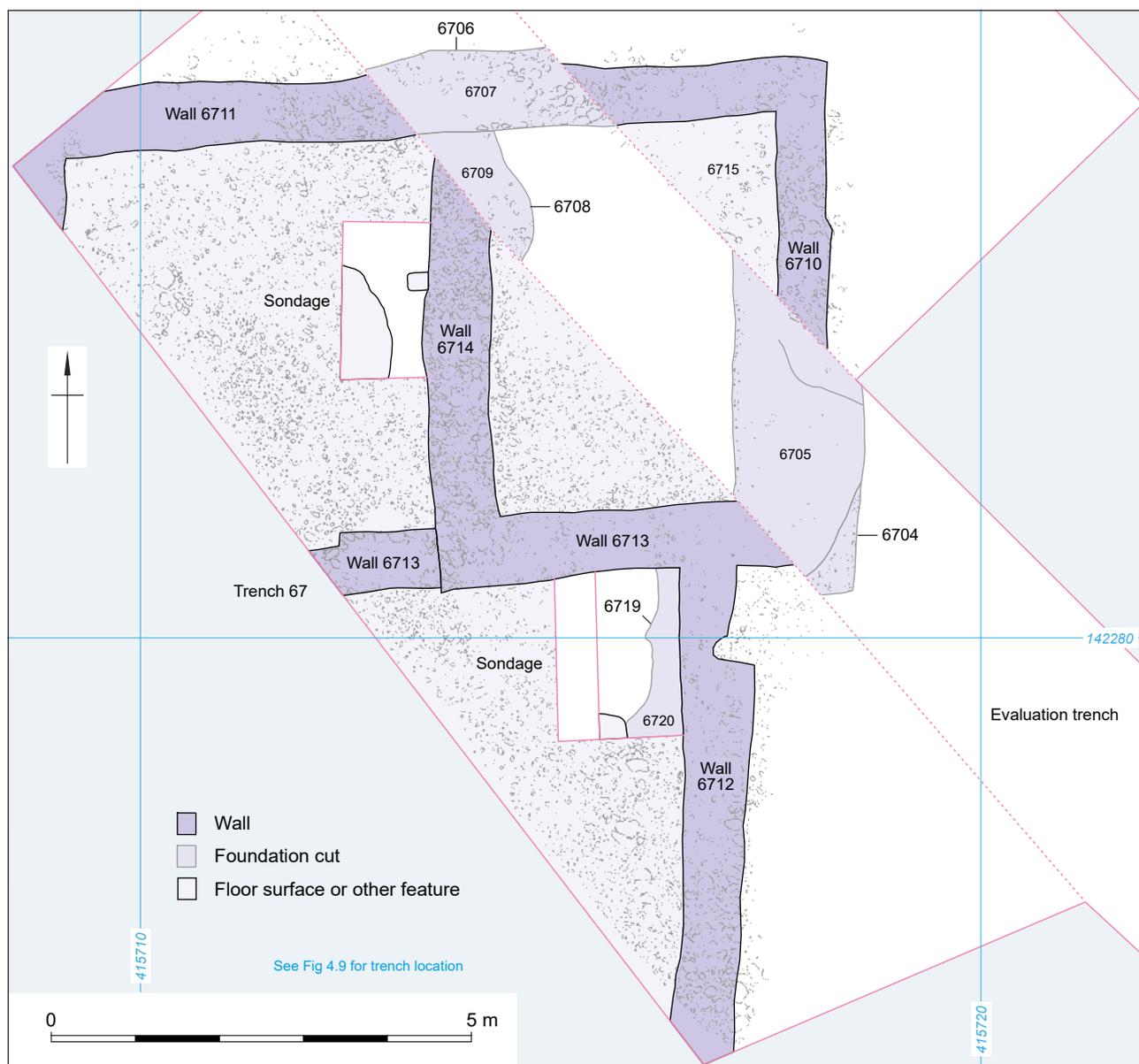


Figure 4.10 TP 396 and trench 67 combined plan showing roman structure

More of the structure was revealed in trench 67 (Fig. 4.10) during a later phase of work (53324: Fig. 4.9). This showed that the building was at least 9.67 m wide and 12 m long, with walls up to 0.8 m thick. The northern end of the building appears to originally have been a single room or block, approximately 10 x 6 m, and was later subdivided by wall 6714. The walls were made of compacted chalk with a flint facing on the external faces (6710–13) except for internal wall 6714, which was solely of chalk. Although the tops of the walls were 0.4 m below the present ground surface, the remains appear to be in a good condition, with demolition material sealing them.

Two sondages were excavated in the interior of the building to retrieve dating evidence and to assess the preservation of vertical stratigraphy. One sondage was in the western room at the northern end, the other in the southern room. Neither yielded clear evidence for surviving floor surfaces, finding instead a mixture of demolition debris overlying the natural, although the northern sondage did reveal traces of a mortar layer that might be associated with flooring.

The building is not well dated. Only two sherds of Romano-British pottery were found, both from the southern sondage. Most of the finds came from the upper surfaces of the demolition debris (6718) and included iron nails, limestone roofing tiles and animal bone. No later material was recovered from the building although an unstratified piece of medieval roof tile was found in the trench. Romano-British pottery was recovered from two later features, Anglo-Saxon SFB 7308 and post-medieval ditch 7005, between 50–200 m further to the west of the masonry building.

Twelve sherds of pottery were recovered from the excavations at Fargo North. These were generally small and relatively abraded. None came from features and are probably indicative of manuring waste, suggesting that for parts of this period at least, this area was under cultivation. In addition, seven sherds came from fieldwalking in Area F, with five dateable examples of first-, or in one case, possible second-century date.

## **Anglo-Saxon**

*by Andy Valdez-Tullett*

A series of features phased to the Anglo-Saxon period were located at Countess during projects 38477, 53324 and 54700 (Fig. 4.9). These features represent the first evidence of occupation from this period in the immediate environs of Stonehenge.

In test pit 275 a south-west–north-east aligned feature (2754) at least 0.5 m wide contained a single fill 0.26 m deep. Finds included brick and tile, two sherds of early–middle Saxon pottery, non-local stone, iron and animal bone. In test pit 276 a pair of layers (2762 and 2763) 0.3 m thick probably represented a feature whose edges lay outside of the limit of the test pit. Finds included a sherd of Romano-British pottery and three sherds of early–middle Saxon pottery, worked flint, iron, brick and tile. Later evaluations revealed evidence for at least five SFBs and it is probable that test pits 275 and 276 also came down onto SFBs, although their limited area prevents their certain interpretation.

Of the definite examples, four SFBs (3001, 3903, 7308 and 7905) were revealed during evaluation (53324: Fig. 4.9), spread out over an area of about 380 m.

SFB 3001 in trench 30 was subrectangular in plan, oriented north-west to south-east, measuring roughly 2 × 2.64 m. It had possibly been truncated and had a single fill (3002) only 0.15 m deep (Fig. 4.11). No finds were recovered from this feature. Although there were postholes at the northern (3003) and the southern (3009) corners of the building along with a third posthole to the north-east (3011), these seem unlikely to be related to the building. Postholes 3003 and 3009 are not sited centrally on the long axis and 3003, the only one excavated, is too shallow at a depth of 0.04 m.

SFB 3903 in trench 39 was better defined, being subrectangular in plan, aligned roughly east–west, 3.9 × 3.1 m wide, and 0.22 m deep (Fig. 4.12). It had a single fill (3904). Posthole 3901 was located on the western margin of the feature. It was 0.5 m in diameter and 0.52 m deep. An internal feature (3905) was also identified. The building contained 5th–8th century pottery, a fragment of a shale object, and animal bone. Posthole 3901 contained worked flint, an iron strip and animal bone.

SFB 7308 in trench 73 was recorded as a single structure but may actually represent two successive buildings. The feature was roughly subrectangular in plan, aligned

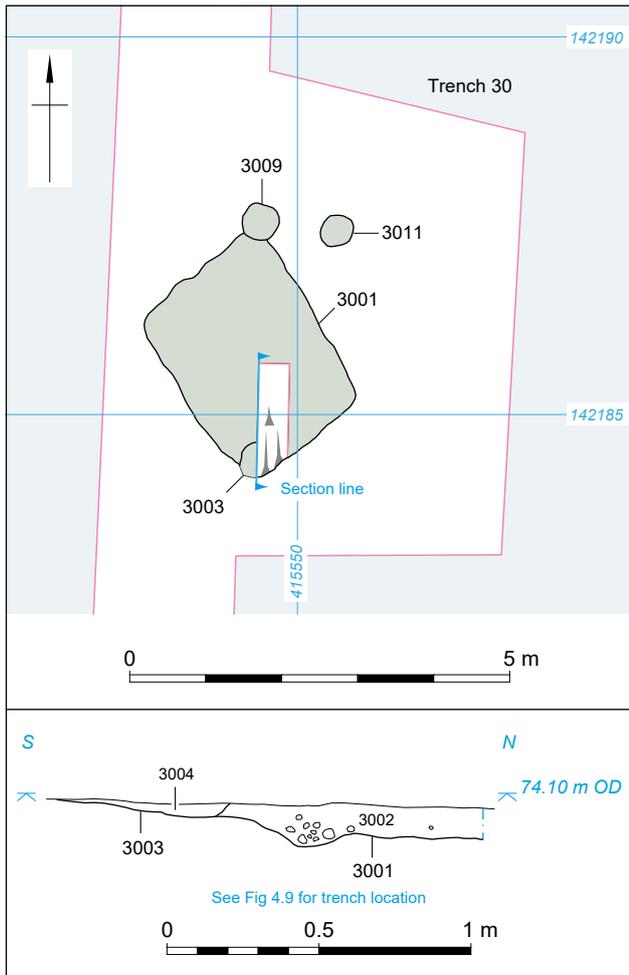


Figure 4.11 Plan and section of sunken-featured building 3001

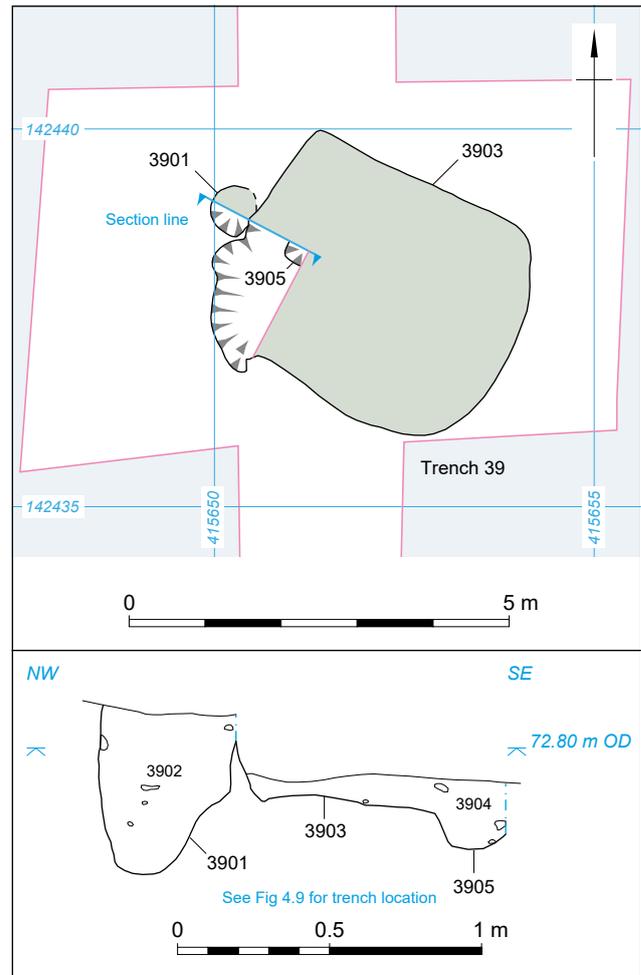


Figure 4.12 Plan and section of sunken-featured building 3903

north-west–south-east and measured 6.5 × 4.75 m (Fig. 4.13). The excavated north-west quadrant revealed a single fill (7306) 0.21 m deep. Finds included nine sherds of early–middle Saxon pottery and 193 fragments of animal bone. A posthole was clearly visible on the northern side but was not excavated. A second circular feature (7302) cut into the fill of the southern half of the building contained a mixed deposit of charcoal and clay and a bone double-ended pin beater or textile-working tool.

SFB 7905 in trench 79 was aligned east–west and measured 4.7 × 3.32 m and was 0.55 m deep (Fig. 4.14). Only one posthole was visible, in the centre of the western end (7903). The building contained two fills, the lower being redeposited natural (7907), and a silt (7906) that had formed slowly after the building had gone out of use. The silting contained ten sherds of early–middle Saxon pottery, a decorated bone pin, worked and burnt flint, and 351 fragments of animal bone. Although the north-eastern quadrant of the building was not excavated, a complete horse skull was recorded and lifted from its surface.

Later evaluation (54700: Fig. 4.9) also revealed a fifth SFB (8505) in trench 85. This subrectangular feature was aligned north-east–south-west, 3.60 × 3.20 m wide and 0.63 m deep (Fig. 4.15), and contained two fills (8502 and 8503). Excavation revealed a possible posthole (8504) cutting 0.13 m below the floor level in the base of the feature. Finds included six sherds of early/middle Saxon pottery, 24 fragments of animal bone, and charred cereal grains.

Pit 4609 at Countess was initially phased tentatively to the Late Bronze Age or Early Iron Age on the basis of two sherds of pottery retrieved from its single fill. The pit also

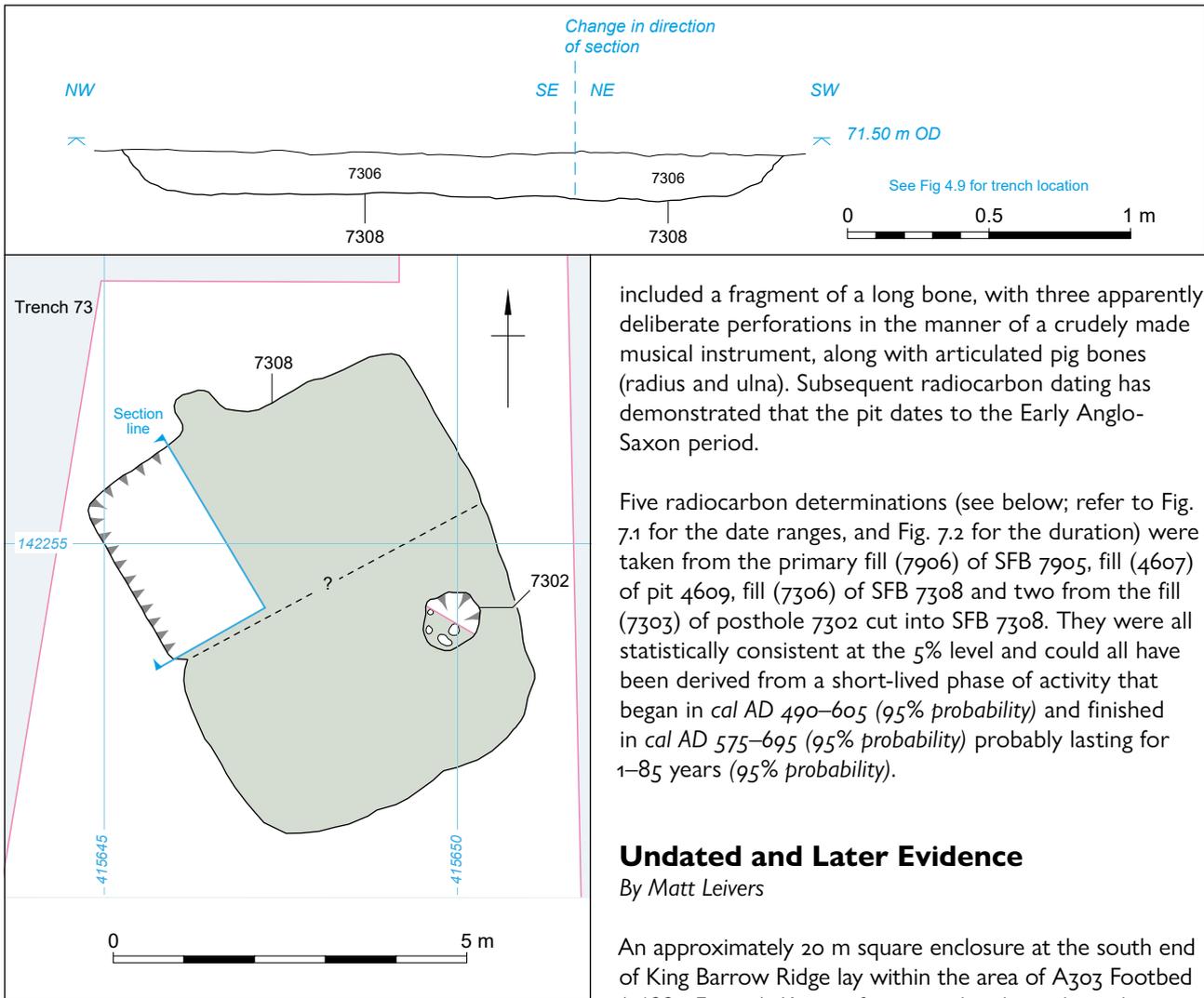


Figure 4.13 Plan and section of sunken-featured building 7308

survey, the enclosure was evaluated in a T-shaped trial trench which intersected with the western (2603), southern (2650) and eastern (2630) ditches (Fig. 4.16).

Ditch 2603 was 1.6 m wide with convex sides and a narrow, flat base, filled to a depth of 0.55 m with layers 2604, 2612, 2613 and 2614. Ditch 2650 was 1.6 m wide, and not excavated. Ditch 2630 was 2 m wide with convex sides and a narrow, flat base, filled to a depth of 0.78 m with layers 2631, 2632, 2633, 2634 (animal disturbance) and 2635. The only find from this enclosure was a single piece of worked flint from the upper fill of ditch 2603.

No interpretation of the enclosure's date or function could be advanced on the basis of the evidence encountered in evaluation. A second episode of excavation was undertaken by Historic England as part of their Southern WHS Survey project, with similarly inconclusive results (Valdez-Tullett and Roberts 2017).

Significant mass disturbance to the natural soil sequence, in the form of tarmac or concrete surfaces and/or deep deposits of modern asbestos, brick and concrete rubble, was encountered in all test pits located along the western and northern boundaries of the Durrington Down Farm assessment area (35141: Fig. 2.2), with the exception of test pit 519. Test pits 500 and 501 on the western boundary, and 534 and 539 on the northern boundary, revealed tarmac surfaces beneath approximately 0.20 m of turf. Natural soil layers survived beneath the tarmac surfaces in test pits 500, 501 and 539 but in test pit 534, the tarmac had been terraced into the underlying chalk and had thus removed the natural soil horizon. Deep deposits of fine rubble, containing asbestos,

included a fragment of a long bone, with three apparently deliberate perforations in the manner of a crudely made musical instrument, along with articulated pig bones (radius and ulna). Subsequent radiocarbon dating has demonstrated that the pit dates to the Early Anglo-Saxon period.

Five radiocarbon determinations (see below; refer to Fig. 7.1 for the date ranges, and Fig. 7.2 for the duration) were taken from the primary fill (7906) of SFB 7905, fill (4607) of pit 4609, fill (7306) of SFB 7308 and two from the fill (7303) of posthole 7302 cut into SFB 7308. They were all statistically consistent at the 5% level and could all have been derived from a short-lived phase of activity that began in *cal AD 490–605* (95% probability) and finished in *cal AD 575–695* (95% probability) probably lasting for 1–85 years (95% probability).

## Undated and Later Evidence

By Matt Leivers

An approximately 20 m square enclosure at the south end of King Barrow Ridge lay within the area of A303 Footbed (36881: Fig. 2.3). Known from aerial and geophysical

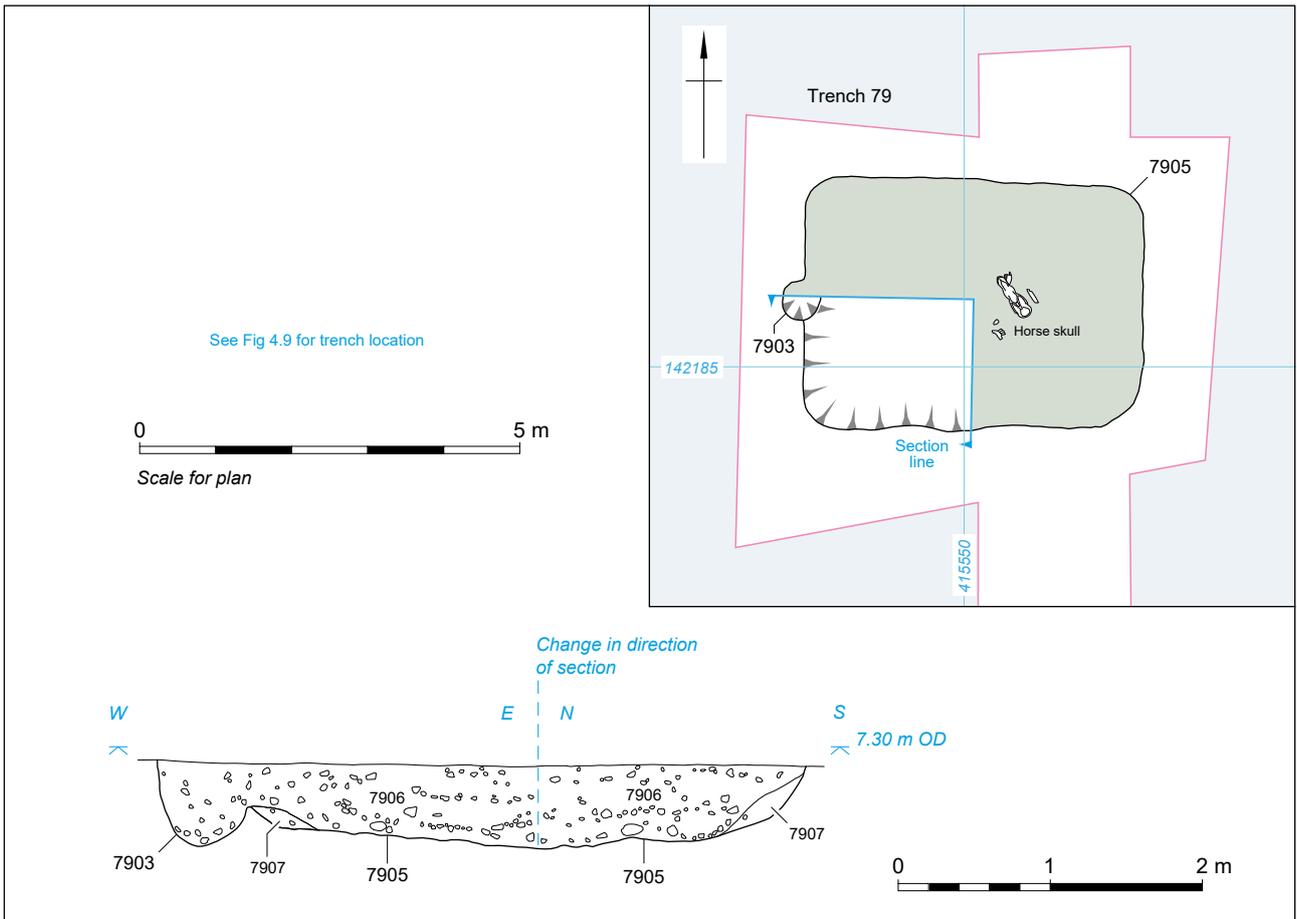


Figure 4.14 Plan and section of sunken-featured building 7905

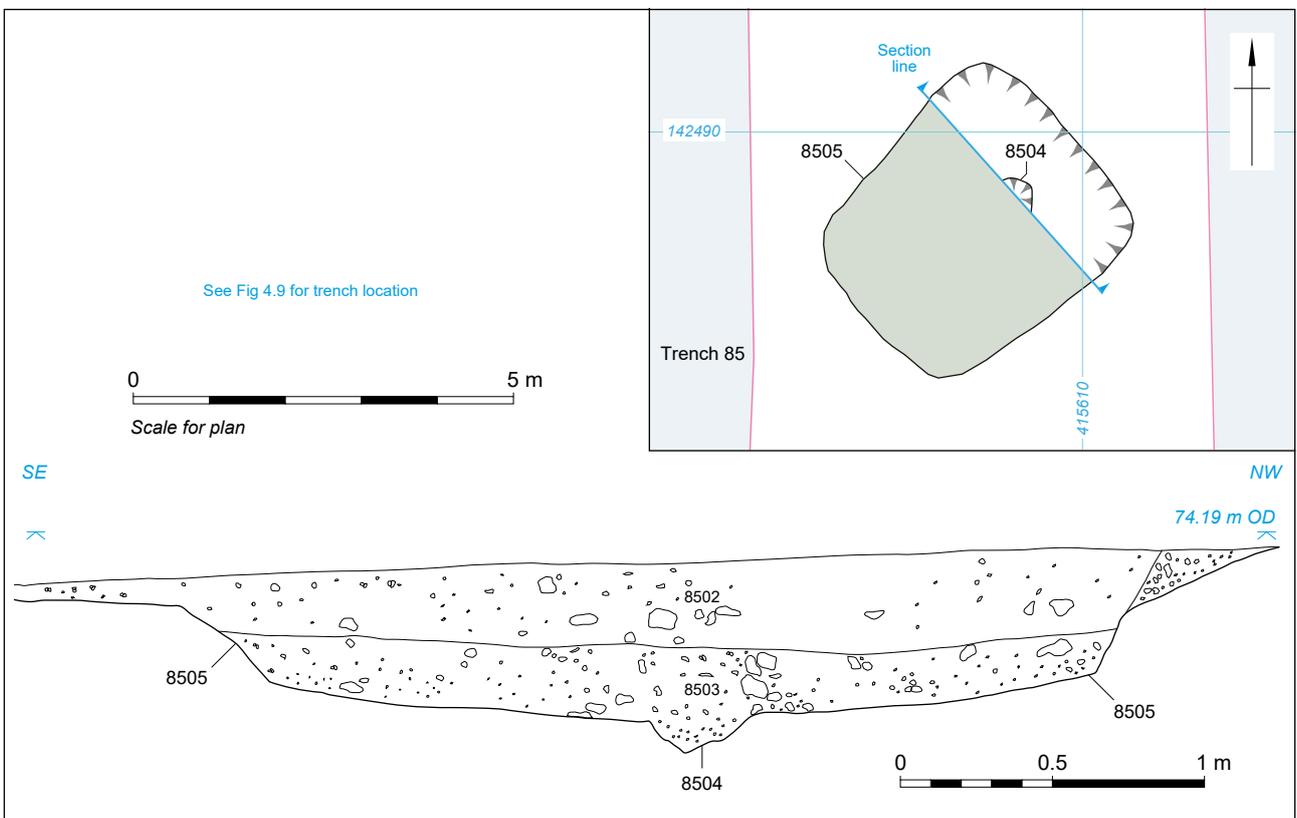


Figure 4.15 Plan and section of sunken-featured building 8505

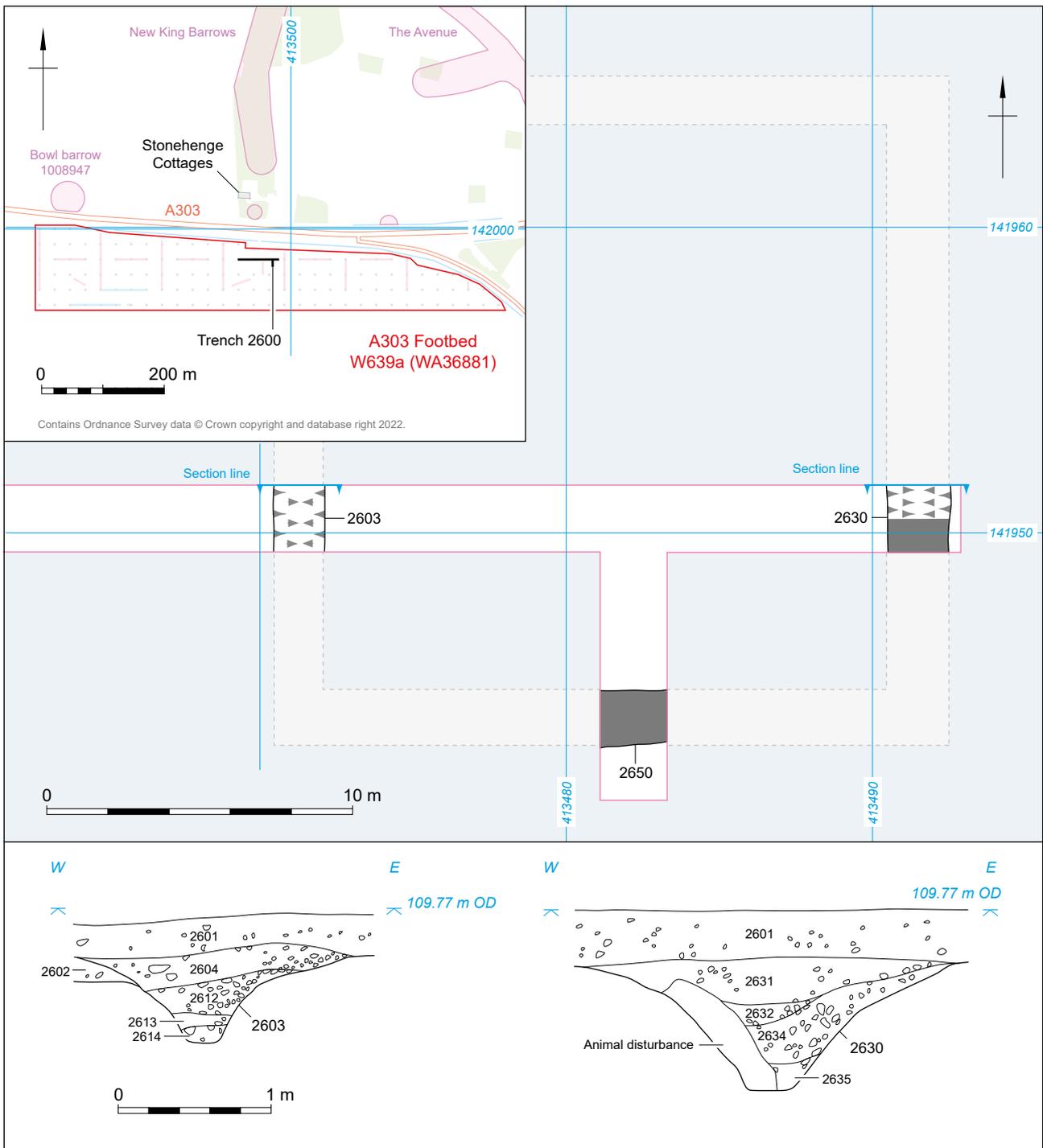


Figure 4.16 Plan and section of square enclosure 2606

concrete and brick, as well as other modern building materials, were encountered in test pits 502 and 503. The full depth of these deposits was not established; excavation was halted beneath the level of surviving natural soils in adjacent test pits. A single concrete stanchion base was revealed in test pit 532 resting on the surface of the underlying natural chalk. Soil enhancement, in the form of interleaving layers of chalk rubble and loam, over the natural soil sequence, was encountered in test pits 508, 509, 516 and 529.

Trenching at Durrington Down Farm revealed the natural soil sequence extending across the interior of the assessment area, interrupted by a variety of features and deposits of modern origin. Features cut into the natural soil sequence, all of modern date, were revealed in trenches 601–603, 605, 607–608, 611 and 614; other modern deposits, sealing or truncating that sequence, were revealed in trenches 610 and 611.

Most of the cut features were of a similar form and content: regular, flat-bottomed, vertical-sided ditches containing a void-filled rubble mix. Their form is typified by feature 6430 examined in trench 605: 0.70 m deep, 0.78 m wide, filled with rubble containing large quantities of carved architectural stone and brick. This segment was co-aligned with a similar feature, 6467, recorded in trenches 608 and 614. These three apparently formed parts of a feature at least 50 m long, oriented NNW–SSE. Segments of similar co-aligned features were recorded in other trenches, together forming a criss-cross pattern of intersecting ditches covering the central part of the assessment area. They were not present in trenches at the eastern or western peripheries of the assessment area.

Thirty-one fragments of finely dressed architectural stonework were recovered from the rubble fill of ditch segments examined in trenches 605 and 608 and were recorded in detail on site. The rest of the material, comprising ashlar and other undressed pieces, was not examined individually. The stonework, representing a tiny sample of an undoubtedly larger body of material, was labelled and backfilled with the rest of the ditch fills.

The assemblage was of one stone type: a fine-grained limestone from the Tisbury (Wiltshire) area, probably Chilmark. Mortar was neither visible on any of the pieces, nor observed loose within the fill of the ditches, although one piece (no. 4202) did display a cemented repair to one of its flat surfaces. The stone was in good condition, none of the surfaces or edges being particularly heavily weathered.

Column and pillar bases and capitals in both square and rounded forms, narrow pillars, edge-rolled ashlar, cable mouldings, clustered-column sections, cavetto and astragal mouldings, and a variety of smaller fragments too incomplete to identify with certainty, were present. This small sample suggests that more than one building is represented. A date range of AD 1100–1550 seems likely, though the combination of earlier forms such as cable mouldings with Gothic edge-rolls and cavettos suggests a later medieval or early post-medieval date. The quarries at Chilmark were at this time, and indeed still are, being worked for the construction and repair of Salisbury Cathedral.

Other features comprised a water pipe installation in trenches 602 and 603. Modern deposits in the form of yard and path surfaces were revealed in trenches 610 and 611. The northern third of trench 610 was occupied by a spread of compacted chalk and brick rubble, layer 6506, which lay in thicknesses of approximately 0.10 m, beneath the modern turf. The northern, eastern and western extents of this deposit lay outside the trench, and its southern edge, though clear, was unsupported by kerbing of any sort. A cinder path, layer 6507, which comprised a band of mixed clinker and mortar measuring 0.70 m in width, retained by single rows of longitudinally split bricks and set into a 1.10 m-wide bedding of loose ash and cinders, ran across the east end of trench 611 in a south-west–north-east direction. It lay directly beneath the modern topsoil and had been set into a shallow scoop cut into the surface of the natural chalk, the whole amounting to 0.15 m thick. This feature did not continue westwards into trench 609.

At Countess (38477, 51268 and 51879: Fig. 4.9) various features associated with an early 20th century military railway were encountered. The Larkhill branch of the Amesbury and Military Camp Light Railway was constructed shortly after the outbreak of the First World War and was dismantled during the early 1930s, leaving only the track bed, which runs east–west across the centre of the site.

Plots 3 and 4 were formerly parts of the track bed, subsequently used as trackways, with Plot 4 predominantly comprising a shallow cutting at its western end, rising to a substantial embankment to the east. In Plots 2 and 3, layers of brick rubble, cinders, etc., 0.11–0.48 m thick and 0.07–0.25 m below the present ground surface, were associated with the railway's former route and a small gravel pit. Test pit 3 in 51268 revealed layers of cinders and charcoal with slag and other industrial inclusions attributed to the

railway. A dense concentration of CBM adjacent to the railway's line in Plots 5 and 6 may represent the dumping and subsequent disturbance of discarded roofing material.

Apart from the railway and a backfilled gravel pit dating to the mid-20th century, modern deposits comprised layers and features associated with water meadow management. These comprised vertically or concave-sided drainage ditches in Plots 2 and 10 and alluvial layers in Plot 11.

The line of the military railway was traced in geophysical survey across both Areas A and B at Fargo North (45044: Fig. 4.5). In trench 503 in Area A, the north-west and south-east flanking ditches of the track bed lay approximately 5.75 m apart. Numerous examples of modern material (slag, clinker, glass, iron, etc.) were recovered. Equivalent ditches were encountered in trench 512 in Area B, although here they were approximately 9 m apart. Short parallel linear stains, perpendicular to the alignment of the ditches, were observed in the surface of the intervening chalk in both trenches. These were presumed to indicate the former locations of the railway's sleeper beams which had been impacted into the ground. In Area A one was excavated and shown to be 0.04 m deep with vertical sides and a flat base. No archaeological evidence was recovered to indicate the route of the siding from the main line towards the Handley Page hangars formerly located within the north-east corner of Area B.

Strong magnetic disturbances indicated the extent of debris from the 20th-century Stonehenge Airfield Night Camp and subsequent pig farm, concentrated in the north-eastern corner of Area A. This was revealed by test pitting to comprise a sequence of made ground deposits in which redeposited chalk sealed a layer of building rubble. At the north end of trench 506, an area of modern building disturbance comprised the robbed footprint of the south-west corner of an east-west-aligned rectangular building, with the footings of a probable co-aligned wall to the south. Both were surrounded by a compacted layer of redeposited chalk forming a floor or yard surface. A layer of rubble, possibly associated with the demolition of these structures, lay immediately to the south. In trench 508, a compacted yard surface of chalk rubble and two subrectangular areas of disturbance probably representing robbed-out building footings lay above two large modern linear features.

In Area B, areas of enhanced magnetic susceptibility could relate to either military activity or a former racecourse. Three undated parallel WSW-ENE-aligned, evenly spaced narrow shallow slots located between the railway ditches in trench 512 may also be related to the racecourse.

# CHAPTER 5

## ARTEFACTS

### Introduction

**T**HE COMBINED ARTEFACT ASSEMBLAGE recovered from the investigations was small but included significant feature group assemblages of Neolithic ceramics and lithics, multi-period mixed material ploughzone assemblages, and artefactual and ecofactual evidence predominantly associated with Bronze Age and Anglo-Saxon settlement. Assemblages with the potential to address the project's objectives have been analysed for this publication. Otherwise, the original assessments have been incorporated into the text.

With the exception of the flint, artefacts are presented by period, then by site. The nature of the flint assemblage did not lend itself to this form of presentation; consequently the flint report is arranged by site only.

### Flint

Lithics were recovered from fieldwalking and from topsoil and subsoil contexts in all of the evaluation and excavation phases. This material is tabulated and presented in Table 5.1 and summarised below. The material from pit 2003 at A303 Footbed (36881), pits 1204 and 7309 at Countess (53324), and the assemblage from Countess (54700) has been analysed for this publication.

#### *Larkhill (34232)*

*by Frances Healy*

Most of the material is heavily patinated and plough-damaged. Occasional areas of lighter patination, producing a blue-grey rather than a white surface colour, probably reflect the presence of underlying patches of Clay-with-flints. There is a single flake of Greensand chert.

Technologically, the mass of the material is characterised by hard hammer flaking, producing squat, often thick-butted flakes from unsystematically worked cores, many of which produced only a few flakes before being abandoned. Hinge fractures are frequent. Core rejuvenation is represented by rough core tablets and flakes struck along the junction of striking platform and core face. The material conforms to the characteristics of Bronze Age industries from the immediate area and beyond. A minority element of soft hammer struck blades, together with a blade core and a rejuvenation flake from a bladelet core, is best represented towards the western end of the area, between eastings SU 1108 and 1130. A flake and a scraper with faceted butts were also recovered from this area.

It is noteworthy that, although worked flint is concentrated in the west of the area, cores and core rejuvenation flakes are proportionately more frequent in the east, especially between eastings SU 1160 and 1200, while retouched forms are overwhelmingly concentrated in the west. Burnt worked flint, although never frequent, is slightly more common here, rising to 6% of the total from hectare SU 111/435, in contrast to none at all from many of the hectares farther east.

Table 5.1 Composition of the flint assemblage

Site	1991	34232	35141	36717	36881	38477	45044	51268	51879	53324	53868	54024	54700	71651
<b>Type</b>														
<i>Debitage</i>														
Cores	96	262	2	158	104	76	80	-	-	1	1	2	14	3
Rejuvenation	16	68	3	-	3	3	-	-	-	-	-	-	-	-
Irreg. waste	10	82	7	562	295	54	115	-	-	-	-	-	7	8
Flakes	788	2321	126	3966	1567	3292	1842	86	966	379	6	21	1396	167
Blades	12	4	1	69	30	174	45	-	-	6	-	1	74	2
<i>Tools</i>														
Scrapers	18	72	-	34	29	27	48	-	9	7	-	-	-	-
Piercers	4	2	-	6	-	3	-	-	1	-	-	-	-	-
Denticulates	4	4	-	2	1	2	2	-	-	-	-	-	-	-
Arrowheads	-	5	-	2	6	2	4	-	-	-	-	-	1	-
Serrates	-	5	-	1	-	-	-	-	-	-	-	-	-	-
Knives	-	2	-	1	-	-	-	-	-	-	-	-	-	-
Fabricators	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Tranchet	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Biface	-	1	-	1	-	-	-	-	-	-	-	-	-	-
Hammers	-	3	-	3	-	-	-	-	-	-	-	-	-	-
Spurred	-	-	-	2	-	-	-	-	-	-	-	-	-	-
Y-shaped	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Burins	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Misc. retouch	7	12	1	4	29	13	50	-	6	-	-	-	105	-
<b>Totals</b>	<b>955</b>	<b>2847</b>	<b>140</b>	<b>4812</b>	<b>2064</b>	<b>3646</b>	<b>2186</b>	<b>86</b>	<b>982</b>	<b>393</b>	<b>7</b>	<b>24</b>	<b>1598</b>	<b>180</b>
<b>TOTAL</b>	<b>19920</b>													

Retouched forms comprise three chisel arrowheads, one oblique arrowhead, one chisel or oblique arrowhead fragment, seventy-two scrapers, two piercers, at least five serrated pieces, four denticulates, two scale-flaked knives, three fabricators, one tranchet tool, and eleven miscellaneous pieces. A large flat biface may be a flint dagger. There are also two flint hammerstones, as well as a core that has been used as a third hammerstone.

Most would be compatible with the apparently Bronze Age date of the bulk of the collection. Some are more likely to be earlier, notably the arrowheads and tranchet tool, forms normally found in later Neolithic contexts. An Early or Middle Neolithic attribution is possible for the serrated pieces. Thirteen of the scrapers are elongated forms of Riley's type 2 (Richards 1990, fig. 15); most are undifferentiated squatter forms. The impression of a multi-period collection is heightened by the lightly patinated retouch of a scale-flaked knife made on a heavily patinated blade.

### ***Durrington Down Farm (35141)***

*by Frances Healy*

The small collection comprised 140 pieces of struck flint. Distribution was diffuse and density low, reaching a maximum of 34 pieces per m<sup>3</sup> of excavated soil in test pits 522 and 528, which lay within a slight concentration of material at the centre of the evaluation area. This contrasts with densities of over 100 pieces per m<sup>3</sup> in the more artefact-rich parts of the proposed visitor centre site and approach road (Darvill 1991, 478, fig. K9 (A)).

The material itself is heavily patinated, with frequent thermal fractures. It consists almost entirely of flakes, with virtually no trace of blade technology. Cores are confined to two irregular multiplatform examples from test pits 511 and 532. Rejuvenation flakes consist of two rough core tablets from test pits 516 and 529 and a flake struck along the angle of platform and core face from test pit 532. The only retouched form is a scraper from test pit 505.

Insofar as the collection can be characterised, it conforms to the technology of local Bronze Age industries.

### ***Western Approach Route Corridor (36717)***

*by William Boismier and Phil Harding*

A total of 4835 pieces of worked flint and 78 kg of burnt flint were recovered from Sections 1A (Fargo Plantation) and 4A (Durrington Down) of the Western Approach Route Corridor. Some 2703 pieces and 61 kg came from Section 1A, with 2132 pieces and 17 kg from Section 4A. Of the total, 70.38% came from the topsoil; 29.62% came from subsoil and feature contexts.

The 2703 pieces of worked flint from Fargo Plantation consist of 2405 unretouched flakes and blades (complete, broken and burnt), 89 cores and core fragments, quantities of core working debris (core rejuvenation flakes and core shatter) and 57 tools. Technologically, the assemblage is largely a mixture of Late Neolithic and Bronze Age industries, with a dominant proportion of the material conforming to the general characteristics of the Bronze Age from southern England. Temporally diagnostic artefacts include two barbed and tanged arrowhead fragments, a Y-shaped tool, a unifacial triangular knife, a thumbnail scraper and a spurred piece. An earlier Neolithic component is also suggested by a number of blades and a single blade core. In addition, a single soft hammer struck blade of probable Mesolithic date was recovered from test pit 714.

The majority of the assemblage was heavily patinated, varying from whitish grey to a mottled bluish grey. Only a few pieces recovered from subsoil and feature contexts were lightly patinated.

The 2132 pieces of worked flint recovered from Durrington Down consist of 1918 unretouched flakes and blades (complete, broken and burnt), 69 cores and core fragments, a quantity of core working debris (core rejuvenation flakes and core shatter) and 16 tools. Technologically, the assemblage appears to be predominantly Bronze Age in date and is characterised by thick-platformed, hard hammer struck flakes and irregular, unsystematically worked cores. Only two potentially temporally diagnostic tools were recovered from this area: a single core tool of probable Neolithic date and a spurred piece of Late Neolithic/Bronze Age date.

The majority of the assemblage was heavily patinated and varied in colour on individual pieces from a whitish grey to a mottled bluish grey. A number of unpatinated and lightly patinated pieces were recovered from a disturbed area containing modern debris.

Volumetric analysis indicated that the most substantial evidence for prehistoric activity lay within the northern end of Fargo Plantation, where very high densities of worked and burnt flint formed three concentrations indicating relatively discrete activity areas within a larger settlement lying within the known Bronze Age field system. A secondary concentration at the south end of Fargo Plantation is likely to be a part of the Fargo Wood II site identified by the Stonehenge Environs Project (Richards 1990, 194–8).

### **A303 Footbed (36881)**

*by Phil Harding and Erica Gittins*

Worked flint was the most numerous artefact type recovered from the evaluation (2064 pieces; 2119 including 55 unidentified pieces extracted from environmental samples).

Of the total, 87.9% (1375 pieces) was recovered from topsoil/Ap horizons with the remaining 12.1% (189 pieces) derived from subsoil or feature contexts. These data indicate that a substantial proportion of the evidence regarding prehistoric settlement and land use activities within the evaluation area occurs in the top 0.20–0.30 m of the soil profile.

This test pit data is further supported by a complementary dataset for fieldwalking, which included 390 pieces of worked flint, and excavated features within machine trenches which included 98 pieces of worked flint.

Excluding the pieces from environmental samples, the remaining worked flint assemblage included 1892 unretouched flakes and blades (complete, broken and burnt), 104 cores and core fragments, three pieces of core working debris (core rejuvenation flakes and core shatter) and 65 tools.

Most of the assemblage is patinated white/grey to mottled blue grey. In some cases the patination is well developed, allowing the surface of the flint to be eroded by ploughing. Plough damage is prevalent, appearing as unpatinated edge notching, and some pieces are totally fractured. The condition of the surface material contrasts strongly with artefacts from pit 2003, trench 2000, most of which is in mint condition (see below).

In addition to these pieces, throughout the remainder of the evaluation six fragments of oblique arrowheads were recovered, together with twenty-nine scrapers and one denticulate.

The flint collected from the evaluation is mostly undiagnostic. The low density of blades confirms that a flake technology predominates across the site. This was probably carried out by direct percussion using stone hammers. Platform preparation is generally rare although faceting and platform abrasion are present. The tool list from the survey, which includes transverse/chisel arrowheads, a discoidal knife, a pressure-flaked knife, a fabricator and discoidal scrapers (as well as a broken ground stone axe recovered during fieldwalking) generally suggests Late Neolithic activity.

### **Pit 2003**

*by Erica Gittins*

The single fill (2004) of pit 2003 contained a small assemblage of 65 pieces. The material is heavily patinated and many of the pieces have calcium carbonate concretions adhering to one or more surfaces. Most of the material is in mint condition; some pieces show signs of weathering, including possible frost fracturing and abrasion to the edges, which may indicate that at least some of the material was not fresh when it entered the pit. Where visible, the flint is light to dark grey in colour with a thin tan cortex. The raw material derives from nodules rather than pebbles and has a great many flaws in the form of cherty inclusions.

Technological traits include plain butts (there is only one possible instance of a faceted butt) and evidence of hard hammer technique. The reduction strategy was at least in part probably because of the limited capacity of the chosen raw material, where the knapper had to contend with the numerous flaws. A very heavily struck core trimming flake removed a step fracture, while a second large core trimming flake has removal scars on the dorsal surface which demonstrate that it was struck from a discoidal core. There are two core fragments present in the assemblage, along with a core on a flake with some attempted flake removals that are very expedient in nature.

Other than these pieces, the assemblage consists entirely of flakes, which were produced in a very heavy-handed fashion, with evidence of hard blows to the core in the form of hinge fractures. Very little care has been taken to produce blanks suitable for retouch and the creation of formal tools, with the emphasis on expedient use of irregular flakes (there is some indication of edge damage to large cortical flakes), although it is possible that usable blanks were created and transported elsewhere.

There are only two possible indications of a blade element to the technology, in the form a blade scar on the dorsal surface of a flake, and also a possible broken blade with edge damage; this piece has been burnt.

Although there are no formal tools, one large thick cortical flake has abrupt retouch along an edge formed by a flexion break.

### ***Countess (38477)***

*by William Boismier*

A total of 3634 pieces of worked flint were recovered. Over 96% (3490 pieces) were recovered from topsoil contexts, the remainder (144 pieces) being derived from subsoils, including feature fills. These figures indicate that the upper 0.20–0.30 m of the soil profile contain a considerable amount of evidence for prehistoric land use in the area.

The condition of the assemblage from topsoil and subsoil contexts is variable, with most pieces exhibiting edge damage and snaps characteristic of ploughing. The majority of the assemblage is heavily patinated, varying in colour from whitish grey to a mottled bluish grey. The patination variation between test pits did not show any spatial characteristics.

The worked flint assemblage from the topsoil consists of 3327 unretouched flakes and blades, 71 cores and 35 retouched tools. Technologically, the assemblage represents a mixture of Neolithic and Bronze Age industries characteristic of the Stonehenge area (Richards 1990, 228). The Neolithic component of the assemblage includes two oblique arrowheads, a possible graver, and unretouched blades/narrow flakes. The Bronze Age elements are distinguished by thick-platformed, hard hammer struck flakes and irregular, often multi-platformed, flake cores. There were no obvious concentrations of diagnostic material.

The worked flint artefacts from subsoil contexts consist of 139 unretouched flakes and blades and five cores. A large blade with marginal retouch/utilisation scars is the only tool recovered from the subsurface contexts. Technologically, the majority of this assemblage is of a similar Neolithic/Bronze Age date to the topsoil assemblage. However, the occurrence of a number of soft hammer/indirect percussion blades suggests that a proportion of them are of probable Mesolithic date.

The only apparent concentrations of worked flint occur in Plots 2 and 7, representing 67% (2450 pieces) of the total assemblage recovered. Although the majority of these were recovered from Plot 2, approximately 33% of this plot has been disturbed by mineral extraction, suggesting that many of the artefacts recovered were redeposited during topsoil restoration.

**Fargo North (45044)***by Matt Leivers*

A total of 2983 pieces of worked flint was recovered from the site. The very small unpatinated element (less than 5% of the material) was a light to dark grey. Over 95% was patinated. Among this material two main types could be distinguished: pieces with a thick white patina (variously glossy or matt) accounted for 85%; the remaining 10% had a speckled blue and white patina. There was no apparent relationship between patina type and age. The surviving cortex was thick, chalky and rough, indicative of a secondary source for the material. There was no evidence of mined flint. Condition was generally poor, with over 50% having recent damage indicative of having spent some considerable time in the ploughzone.

Ninety-four per cent of the material consisted of unretouched flake debitage, examination of which has not revealed any significant chronological groupings. Consequently, the dating and nature of the assemblage depends on the 6% of cores and retouched tools. Among these were thirty-seven scrapers, five piercers, four arrowheads, four core tools, three backed knives and one microdenticulate. Seventy-one cores were present, along with fifty-four variously notched, retouched and/or utilised flakes (including two rod fragments).

Chronological indicators among this element of the assemblage demonstrate activity during the Early Neolithic (one broken leaf-shaped arrowhead, one microdenticulate, seven single platform cores with blade removals), the earlier part of the Late Neolithic (one possible petit-tranchet arrowhead, one chisel arrowhead), and the Early Bronze Age (one barbed and tanged arrowhead). Most of the retouched pieces (for instance a spurred piercer, scrapers with extensive scalar retouch, two rod fragments, the backed knives and core tools) indicate a general Late Neolithic/Early Bronze Age date, as do the randomly worked cores, which accounted for 21% of the total number of cores.

No spatial separation was apparent between the earlier and later material, both of which were concentrated in the southern part of the site.

**Countess (51268)***by Lorraine Mephram*

The small assemblage of 86 pieces consisted entirely of flake and core material, with no tools or other utilised pieces present. In the absence of diagnostic pieces, precise dating is impossible, but flake morphology and technology – broad, squat flakes produced using hard hammer technique – would suggest a broad Neolithic/Bronze Age date range. Condition varies: a few pieces are lightly patinated, and most have suffered at least some degree of edge damage. This would be consistent with the general characteristics of a ploughzone assemblage.

**Countess (51879)***by Lorraine Mephram*

Worked flint was recovered in some quantity (982 pieces), overwhelmingly from subsoil/ploughsoil layers (98%). As with the previously excavated test pits, this demonstrates a significant survival of evidence for prehistoric land use in the area.

The condition of the assemblage is variable. Most pieces exhibit edge damage to some degree, consistent with the characteristics of a ploughzone assemblage. The majority of pieces are unpatinated; one or two have been slightly burnt.

The assemblage consists largely of unretouched flake, blade and core material (966 pieces). A maximum of sixteen tools or other utilised pieces were identified, comprising one borer, one backed blade, nine scrapers and five miscellaneous retouched pieces. Much of the material is chronologically non-distinctive, although the broad, squat, hard hammer struck flakes which predominate here, together with the small number of irregular, multiplatform cores, are typical of Bronze Age industries. However, the presence of blades/bladelets suggests the presence of a small Neolithic component within the assemblage. There is no obvious spatial distinction between the two components.

A slight concentration of worked flint was observed across the eastern part of Plot 5/6 (the area previously covered by Plot 6), and Plots 8–17 of the test pits excavated in this area produced more than 25 flints.

### ***Countess (53324)***

*by Lorraine Mepham and Erica Gittins*

The small lithic assemblage of 393 pieces utilises locally available chalk flint. It is in variable condition, with most pieces displaying edge damage. Approximately half the assemblage is lightly to heavily patinated, and a small number of pieces are burnt.

Much of this assemblage comprises flakes (some broken) and cores/core fragments. In the absence of diagnostic material, this material can only be broadly dated as Neolithic/Bronze Age, and many contexts appear to be chronologically mixed.

### **Pits 1204 and 7309**

*by Erica Gittins*

Seventy-nine pieces of worked flint were recovered from pit 1204 (Fig. 4.2). The condition of this material is good, but the assemblage as a whole is heavily patinated. A few pieces show surface glossing resulting from exposure, and some of the pieces show likely frost fracturing. The raw material appears to be river gravel nodules or pebbles, with very thin, dirty grey to light brown cortex. Where visible, the flint is light to dark grey in colour, with frequent inclusions and structural flaws. Six pieces (five flakes and one chip) show signs of burning.

Technological indications are limited. There is one clear core platform rejuvenation tablet, thin and carefully struck, which also shows scars from previous platform preparation. Further evidence for platform preparation is visible on one broken flake, which has a series of tiny removals at regular intervals on its distal dorsal surface. A core face rejuvenation flake shows attempts to fix a platform with too much overhang. This flake has a faceted butt, and a removal that has created a step fracture, likely an attempt to repair the core face. The assemblage has been created entirely with skilled hard hammer technique. Many of the flakes are well struck and controlled despite the flaws in the raw material. There are only a few instances of hinge terminations on flakes. One large flake has served as a core, where small removals have been attempted.

There are no diagnostic tools and only limited indications of edge damage where unretouched flakes may have been utilised.

A larger assemblage of 169 pieces was recovered from the single fill (7310) of pit 7309. The material is in good condition, with post-depositional damage only evident on a few pieces. The raw material is mostly dark grey flint, with a few lighter-coloured pieces. The cortex is thin and pale in some instances, and thicker and dirty grey in others. It is likely derived from nodules and large pebbles, probably from river terrace gravels. There are a number of cherty inclusions. Heat damage is evident on five pieces

(four flakes and one possible blade). These pieces may have been in or near a fire after knapping.

Although hard hammer technique is present, pressure-flaking may also have been used as there are a number of very fine flakes and chips. The assemblage as a whole is well struck. There are two very clear faceted butts on flakes. One of these is on a flake where platform maintenance is also evident in the form of crushing on the platform edge. Another flake shows platform maintenance as careful, tiny, angled flaking.

The assemblage contains only a few primary flakes, a larger number of core shaping flakes, three broken blades, and a few formal tool forms. Otherwise, the material predominantly consists of secondary flakes.

Retouched tools consist of three scrapers, an awl and a knife. The knife is made on a curved flake which has deliberate blunted backing, with a well-worn edge opposite that shows use wear, possible glossing and a broken tip.

Similarly, the scrapers also have considerable use wear. One is an end scraper made on a thick core face trimming flake designed to remove a hinge fracture and a surface protrusion. It has very steep retouch at the distal end and a cortical dorsal surface. The butt end shows platform preparation and trimming which attempts to change the flaking angle. A second end scraper on a flake shows possible resharpening, which is partly obliterated by heavy use. The third example is a broken scraper end, resulting from a flexion snap. This was a D-shaped scraper which shows very careful retouch and heavy use.

The awl was also made on a thick, partly cortical core surface trimming flake designed to remove a step fracture. There is platform preparation in the form of crushing. A point (approximately 25 mm long) has steep retouch on the left dorsal edge, while the opposite ventral edge has crushing and heavy edge damage which obliterates any original shaping.

There are indications of expedient use of flakes in the form of clear edge damage and glossing, and two instances of miscellaneous retouch at the distal end, with use in one instance looking very similar to a scraper. Edge damage is also very evident on the tool forms. Smaller debitage was also recovered from this feature, mainly from the sieved soil sample, indicating knapping activity in the immediate vicinity. Taken as a whole, it is clear that this assemblage was created to produce tools for immediate use, with both the knapping and domestic activity being carried out in the immediate area, and the flints being disposed of in the pit while they were still fresh.

### ***Transit Link (53868)***

*by Lorraine Mephram*

Worked flint was recovered from one context only, the fill of pit 502. This comprised one core, reused as a hammerstone, and six flakes. A broad date range of Late Neolithic to Bronze Age is suggested.

### ***Countess (54024)***

*by Lorraine Mephram*

The 24 pieces of worked flint comprise flake and core material. There are no tools or other utilised flakes and this small group can only be broadly dated to the Neolithic/

Bronze Age period. Most pieces exhibit edge damage consistent with the condition of a ploughzone assemblage.

## **Countess (54700)**

*by Phil Harding*

### **Introduction**

The excavation of 13 machine-dug evaluation trenches on land at Countess produced worked flint representing more than one period, principal among which was a significant assemblage of flaking debris from trench 83.

The assemblage from the entire trench (Table 5.2) comprises 1475 pieces, of which 469 (32%) are chips (<10 mm long) from two contexts (8301 and 8303). The material from these two contexts, which was discovered during machine excavation of undifferentiated gravelly colluvium, can be divided broadly into two types. Context 8301 includes 1121 pieces, of which 413 (37%) are chips that were primarily produced during the manufacture of bifacial core tools. These 1121 pieces account for 82% of the assemblage from the trench, including the chips. This material contrasts with debris derived from the production of blades and bladelets, using flint of a darker colour. Both components are in a similar mint condition, with additional rejected flake cores, which suggests that the debris spread may not have been confined exclusively to core tool manufacture or to one period. The assemblage also contained a number of undiagnostic core trimming flakes that could be distinguished by a glossy surface texture and extensive post-depositional edge damage. This material was probably derived from the colluvium and was made from dark grey flint.

The assemblage was initially identified from objects in the spoil, which was subsequently sieved to maximise artefact recovery. In consequence, the full extent of the scatter could not be determined, nor whether it represented a point of manufacture or a collection of dumped material. This reduced the value of attempting a prolonged campaign of artefact refitting beyond reconstructing flaking sequences. The recovered objects were amalgamated with 121 additional pieces which were collected from a shallow linear feature (ditch 8301), although it is by no means certain that all the material was derived exclusively from the feature. The evaluation report indicated that parts of the scatter extended beyond the limits of the feature, suggesting that the full extent may lie beyond the trench edges and that the recovered material may represent only a fraction of the total available.

The context also produced an unfinished bifacial knife, which is patinated and therefore not in the same condition as the thinning flakes, a small flake from a polished axe or knife, a crude end scraper, a possible unfinished oblique arrowhead and an unspecified flake tool, possibly a tranchet implement, similar to Richards' (1990) Y-shaped tool.

The collection from 8303, which comprised the area around the rim of the feature, and which included two burnt patches, was of markedly different composition. It contained only six core tool manufacturing by-products, one of which was burnt, but was dominated by flake, blade and bladelet debris, with one scraper.

### **Bifacial tool waste**

This part of the assemblage is made from distinctive light grey mottled flint which was probably derived from only a limited number of large, good quality nodules. The source is unclear, but flint is likely to have been available locally from surface deposits. The cortical remnants show no sign of an origin from the local river gravel. The lack

Table 5.2 Trench 83 –  
flint assemblage

Context					
	8301			8303	
Bifacial tool waste	Total	% excluding chips	Unbroken	Total	Unbroken
Roughing out	43	6	17	-	-
Thinning and shaping	142	20	68	3	2
Finishing	78	11	34	3	1
Miscellaneous	445	63	97	-	-
Chips	413	-	-	-	-
<b>Total</b>	<b>1121</b>	<b>-</b>	<b>216</b>	<b>6</b>	<b>3</b>
Other material					
Core	13	-	10	-	-
Blades	42	-	27	8	2
Bladelets	12	-	8	12	5
Flakes	144	-	74	49	14
Chips	18	-	-	38	-
Miscellaneous debitage	7	-	-	-	-
Retouched	4	-	-	1	-
<i>Other total</i>	<i>240</i>	<i>-</i>	<i>119</i>	<i>108</i>	<i>21</i>
<b>Grand total</b>	<b>1361</b>			<b>114</b>	

of failed roughouts suggests that production was successful, and that the products were removed. More speculatively, the absence of cores, flake blanks or failed tools of comparable flint may hint that raw material for core tool manufacture was obtained from a selected source.

A subjective assessment of the core tool flaking debris was made adopting the criteria identified for flakes produced in the bifacial manufacture of Palaeolithic handaxes (Newcomer 1971). These implements provide a direct comparison with the technological process at Countess. Newcomer (*ibid.*) identified three distinct phases of production:

- Stage 1 – Roughing out, which produced thick flakes with varying cortical cover on the dorsal surface. Butts were plain, with pronounced bulbs of percussion, if a hard hammer had been used. The angle between the butt and ventral surface was often obtuse.
- Stage 2 – Thinning and shaping, which resulted in the creation of thin, broad flakes with feathered edges and curved profiles, mirroring the convex cross-section of the core tool blank. Subtle, flat negative scars characterised the dorsal surface, often displaying traces of removals from the opposite edge. Punctiform, linear or shattered butts predominated. Soft hammer (antler) mode was indicated by the presence of 'lipped' butts.
- Stage 3 – Finishing, which created small, thin flakes often indistinguishable from flakes from Stage 2. They were removed to refine the shape and profile of the implement and invariably travelled no further than the mid-line, although multi-directional flake scars were sometimes preserved.

The assessment of material from 8301 demonstrated that elements of the entire core tool production sequence were represented. Minimum figures of 43 roughing-out flakes, 142 thinning and shaping flakes, 78 finishing flakes and 445 miscellaneous broken fragments were listed, showing that debris was especially prevalent from the later stages of production and making it possible that core tools were roughed out elsewhere. Striking platforms were well prepared, strengthened by platform abrasion and with the blow struck near to the edge of the implement blank. Butts (Table 5.3) were characteristically

Table 5.3 Bifacial tool waste –  
butt type

Stage	Plain (no.)	Dihedral (no.)	Linear (no.)	Crushed/broken (no.)	Faceted (no.)
Roughing out	11	-	9	18	5
Thinning/shaping	28	7	17	11	32
Finishing	11	3	10	30	24

'lipped', narrow or faceted, confirming the likely use of a soft antler hammer. Flakes with such thin, fragile characteristics, of the type produced in the second and final stages of production, do not survive prolonged ploughing and are seldom found in ploughsoil contexts. Survival was undoubtedly improved by the presence of the overlying colluvium.

Only six comparable flakes were found in 8303, suggesting that artefacts may have derived from 8301.

### Other material

The remaining material from 8301 and 8303 comprises by-products of flake, blade and bladelet production. This part of the collection is predominantly also in mint condition but is made from raw material that contrasts markedly with the debris from core tool manufacture. The cores are predominantly flake cores, including failed examples and those worked by a rotating reduction strategy. Also included are a probable blade core and a bladelet core, made on a fragment; the latter may relate to documented Mesolithic activity in the area. The blades and bladelets, which appear to be unaffected by post-depositional edge damage and are unpatinated, are well represented, accounting for 28% of the combined total of flakes, blades and bladelets. They include well-made examples which, more importantly, show that they were removed using techniques associated with intentional blade production, confirming that they were not accidental by-products of bifacial manufacture. However, it is unclear to what extent the blades and bladelets may have been contemporary with the core tool technology; more probably, they reflected Mesolithic activity in the area, which was preserved in the buried soil. Leivers and Moore (2008) noted Mesolithic debris found near the Countess roundabout which was similarly well preserved and unpatinated.

This part of the assemblage also contained unpatinated, undiagnostic core trimming flakes with post-depositional edge damage and a glossy surface covering. The condition is synonymous with material from ploughsoil or, more probably, from colluvium derived from episodes of prehistoric or later cultivation covering the earlier material. This scenario also mirrors that described by Leivers and Moore (*ibid.*) at the Countess roundabout.

### Material from other trenches

Small groups of primarily unstratified material were also collected from trenches 85, 88, 92 and 93; however, more significant collections were recovered from trenches 84 and 90 (9003). Twelve pieces of worked flint in mint condition were recovered from trench 84 (8405), including an obliquely blunted point and a burin, made on a truncation, which are demonstrably of Mesolithic date. An associated blade or bladelet core may be contemporary but may equally relate to the remaining pieces, which are less diagnostic. This material was recovered from grey-brown silty loam with frequent gravel concentrated at the base of the trench, suggesting that this represented a worm-sorted buried soil. Eleven pieces of worked flint in a similar condition, also including blades, were collected from a comparable deposit in trench 90 (9003), suggesting that the preserved landscape identified in trench 83 is extensive.

### Airman's Corner (71651)

by Matt Leivers

A small assemblage of 180 pieces of worked flint was recovered, consisting entirely of debitage (flakes, a single core and core fragment, and irregular pieces). The majority of

the flint is edge damaged and heavily patinated while a small proportion of pieces have iron-staining.

Apart from the core and fragment, the assemblage consists of hard hammer struck flakes. Platforms were mostly thick and unprepared, and hinge terminations and other accidents of knapping quite common, suggesting a later Neolithic/Bronze Age date for the bulk of the assemblage. The only indications of earlier activity were two blades, although such pieces do form minor components of later assemblages.

## **Prehistoric Pottery**

by *Elina Brook*

### *Introduction*

A total of 717 sherds (4821 g) of prehistoric pottery were recovered from six sites (Table 5.4). This includes material dating from the Early Neolithic to the Late Bronze Age–Early Iron Age, with a concentration in the Late Neolithic and Middle to Late Bronze Age periods. The condition of this material is poor (mean sherd weight of 6.7 g) with many pieces displaying badly abraded surfaces and edge damage.

### *Methodology*

The assemblage has been analysed according to current Wessex Archaeology guidelines (Morris 1994). Detailed fabric and form analysis has been undertaken on all sherds; sherds were examined under x20 magnification and assigned to fabric groups on their dominant inclusions. Quantification of sherds by period is presented in Table 5.5; detailed fabric descriptions are given in Appendix 2; illustrated sherds are listed in Appendix 3. Where possible, featured sherds have been allocated a form type and variables including surface treatment, decoration and evidence of use were also recorded.

### *Early Neolithic*

The earliest ceramics comprise 20 sherds in a sparsely flint-tempered fabric (QF<sub>1</sub>) of possible Early Neolithic date from Countess (trench 83). Nine of these sherds came from fill 8303 of ditch 8301 and a further 11 sherds retrieved from the spoil heap are also believed to derive from the ditch. Four sherds join and form part of a carination (Fig. 5.1, 1). While these sherds would fit within the known range of Late Bronze Age post-Deverel-Rimbury ceramics in the region, they equally would not be out of place within a Neolithic assemblage, a more likely date given that the sherds were associated with a large lithic assemblage relating to tool manufacture of probable Early Neolithic date. Given the small size of this assemblage it is not possible to determine where within the Early Neolithic ceramic sequence it belongs, particularly in relation to other Early Neolithic assemblages from the area such as that from the Coneybury Anomaly (Cleal 1990, 51–56), King Barrow Ridge (*ibid.*, 65–66) or slightly further afield from Bulford (Wessex Archaeology 2019a) or Larkhill (Wessex Archaeology 2020a).

### *Middle Neolithic*

Four sherds of Middle Neolithic Peterborough Ware were recovered from the Western Approach Route Corridor in Fargo Plantation (test pit 787). They are from a single flint-tempered vessel, possibly of the Fengate substyle. One rim fragment has possible fingernail-impressed decoration on its outer surface although the sherd is too small to determine the broader decorative motif. The sherds came from a Middle Bronze Age ditch and are

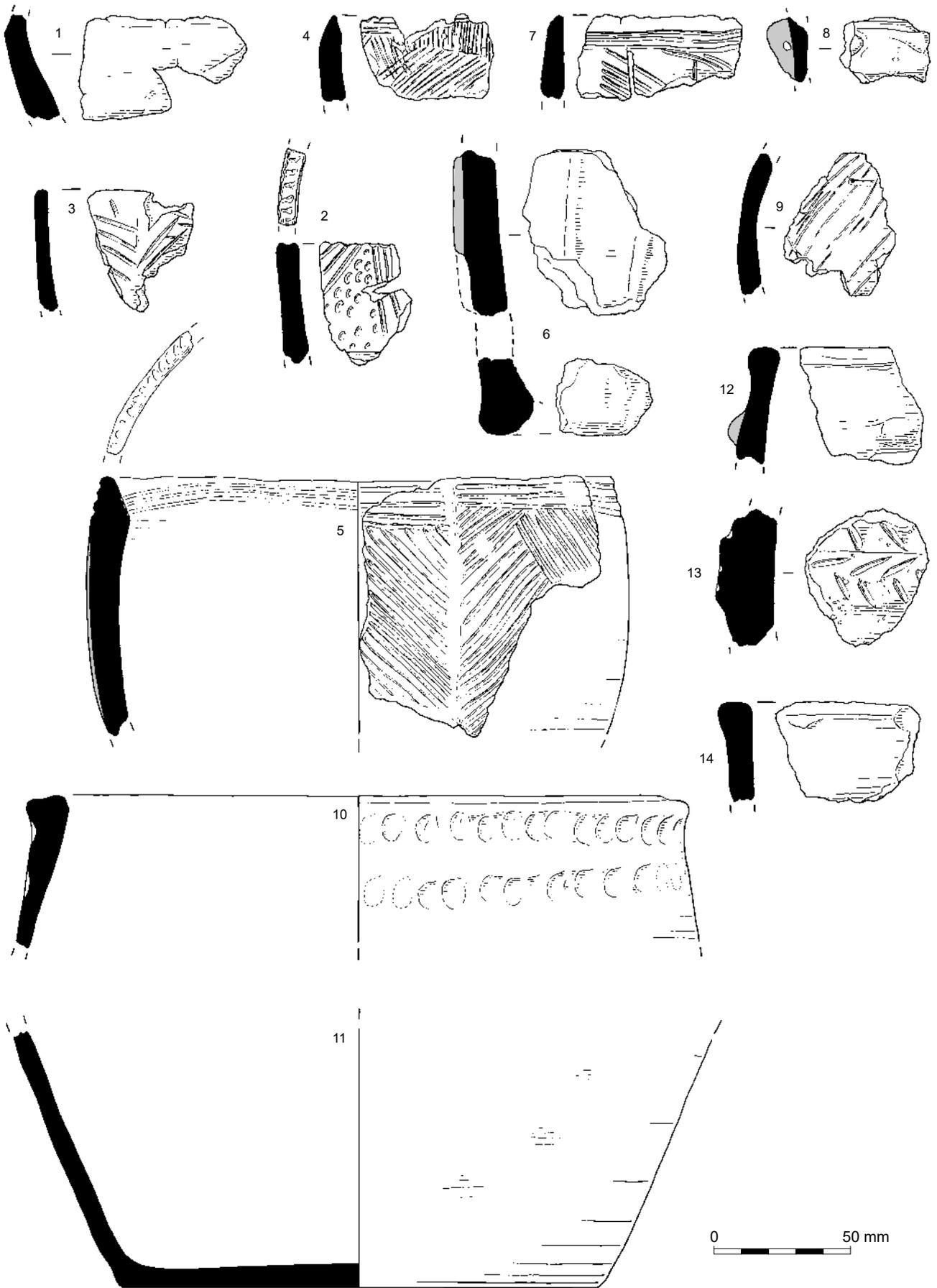


Figure 5.1 Prehistoric pottery

therefore presumed to be redeposited. They are not badly weathered but have a very leached appearance and it would seem likely, in view of their unweathered condition, that they originally derived from a feature cut through by the Middle Bronze Age ditch.

The use of ferruginous clays with added flint temper but low sand component is consistent with Peterborough Ware fabrics identified within the Stonehenge Environs (Cleal 1990, 235), where it was suggested that different clay sources may have been utilised for Peterborough Ware ceramics during the Middle Neolithic compared to the sandier clays utilised for ceramic production during the Early Neolithic. The fabrics recorded here further support this observation. Excavations at West Amesbury (Roberts *et al.* 2020) recovered notable quantities of Peterborough Ware from a number of features, including Fengate-style vessels with fingernail-impressed decoration. However, such concentrations of Peterborough Ware are not commonly found in the area, with the distribution more typically characterised by small but quite widely spread quantities (Cleal 1990, 236–6). The small size of the Fargo Plantation assemblage therefore fits comfortably within this broader picture of ceramics for the immediate area.

### **Late Neolithic**

A total of 145 sherds (724 g) of Late Neolithic Grooved Ware were found (Table 5.4). These occurred in two groups, one from Countess (28 sherds) and the other from A303 Footbed (117 sherds). These sherds are present in a range of predominantly grog-tempered fabrics, some of which contain additional shell or other (possibly limestone-derived) calcareous inclusions and are consistent with the range of fabrics known to occur among other Grooved Ware assemblages in the area (Cleal 1995, 190; Cleal with Raymond 1990, 236; Longworth 1971, 55).

#### **Countess (53324)**

Pit 1204 (trench 12) contained 28 fragments (80 g) from at least two grog- and shell-tempered Grooved Ware vessels. Four conjoining sherds from an upright, flattened rim are decorated with transverse, crescent-like impressions possibly made with a bone implement (Fig. 5.1, 2). The exterior of the vessel is decorated with groups of tooled lines infilled with multiple impressions, possibly made by the same implement as that used to decorate the top of the rim. A further ten (non-conjoining) decorated body sherds with multiple parallel tooled lines and other bone tool impressions are also likely to belong to this vessel. The second vessel (Fig. 5.1, 3) is thinner-walled with a rounded rim and is decorated on the exterior with opposing groups of finely incised diagonal lines. Small patches of soot/burnt residue adhere to the exterior surfaces and may indicate its use in the cooking and/or preparation of foodstuffs. The decorative schemes on both vessels would fit within the Durrington Walls style of Grooved Ware, although the use of infilled triangles as seen on vessel PRN 30 can also be seen on vessels in the Clacton substyle (Wainwright and Longworth 1971b, 237 and fig. 89). Two radiocarbon dates of 2870–2490 cal BC (UBA-34500; 4086±36 BP) and 2890–2620 cal BC (OxA-35721; 4165±34 BP) were obtained on antler and carbonised sloe fruit respectively from this deposit, indicating that pit 1204 pre-dates Grooved Ware pit 2003 from King Barrow Ridge (see below).

#### **A303 Footbed (36881)**

A total of 115 sherds of Grooved Ware came from pit 2003, including fragments from at least four vessels – three represented by rims (Fig. 5.1, 4, 5 and 7) and one by body/base sherds (Fig. 5.1, 6). At least three of these vessels belong to the Durrington Walls substyle of Grooved Ware. The first example (Fig. 5.1, 4) is decorated with fine incised lines on the outer edge of the rim and groups of finely incised lines below, possibly forming part of an infilled triangle motif. This decoration is similar to that seen on vessels P219 and P220 from Durrington Walls (Longworth 1971, 110, fig. 48). The second Durrington Walls-style vessel (Fig. 5.1, 5) is a tub-shaped jar with a decorated, rounded, internally

bevelled rim and panelled external decoration. The motif is similar to that on vessel P218 from Durrington Walls (*ibid.*, 108, fig. 47). A third Durrington Walls-style vessel is represented by thick-walled body and base fragments (Fig. 5.1, 6) from a probable jar in coarse grog-tempered fabric G2. The exterior is decorated with multiple plain vertical cordons. A further group of conjoining rim sherds (Fig. 5.1, 7) are from a small, probably tub-shaped vessel with a rounded rim. The exterior is decorated with horizontal tooled and diagonal lines and a reserved/undecorated zone. Not enough of this vessel is present to confidently determine which substyle of Grooved Ware it belongs to, although the decorative elements would all fit within the Durrington Walls style. Additional featured sherds within the pit include a horizontally perforated lug (Fig. 5.1, 8) with horizontal tooled lines on the wall above and a body sherd of very similar fabric and appearance, decorated with a possible herringbone motif. Both are in coarse grog-tempered fabric G2 and may represent parts of a fifth vessel. Perforated lugs are present within the large assemblage from Durrington Walls where they can be seen on the upper parts of vessels, although they are not particularly common (*ibid.*, 59). A further 20 sherds in fine grog-tempered fabric G3 are from a vessel decorated with fine incised/tooled lines (Fig. 5.1, 9) and a slightly concave base angle; however, it is uncertain whether these pieces indicate a sixth vessel or whether they derive from one of the vessels described above (Fig. 5.1, 4).

At least two of these vessels display evidence of use in the form of burnt residues/soot on their surfaces: on the rim of PRN 18 (Fig. 5.1, 4) and on the interior of the base of PRN 23/24 (Fig. 5.1, 6). These suggest that the vessels had been utilised in the preparation and/or cooking of food or other materials. A radiocarbon date of 2470–2200 cal BC (UBA-34502;  $3883 \pm 35$  BP) has been obtained on a red deer antler pick from the same deposit containing this pottery, placing this feature slightly later in the 3rd millennium BC than pit 1204 at Countess East (53324) above. This is consistent with other dates obtained for Durrington Walls-style Grooved Ware in the area (Wessex Archaeology 2019a, 47).

A grog-tempered body sherd with an applied cordon and fingernail-impressed decoration (test pit 17) and a single grog-tempered plain body sherd from posthole 3503/3508 (test pit 3500) are also of possible Late Neolithic date.

### **Late Neolithic to Early Bronze Age**

Ten Beaker sherds were identified, seven (19 g) from the Western Approach Route Corridor in Fargo Plantation and three (5 g) from A303 Footbed; all are very worn and abraded, which is reflected in a mean sherd weight of just 2.4 g. Three fabric types are represented, all of which contain varying quantities of fine grog. One is distinctly micaceous (fabric G4) and two contain fine flint inclusions (G5 and GF1). Among the seven sherds from Fargo Plantation, four are decorated with lines of toothed-comb impressions (test pits 808, 810 and 818 and ditch 7875), two have incised line decoration (test pits 754 and 808) and one undecorated fragment (test pit 743) has been tentatively identified as Beaker on the basis of its fine grog- and flint-tempered fabric. The Beaker sherds from A303 Footbed were recovered from pit 2306 (trench 2000). They are in fine micaceous fabric G4 and belong to two vessels, one a rusticated vessel with plastic fingernail decoration arranged in horizontal ridges, and the other a vessel with impressed twisted-cord decoration. Because of the very small size and poor condition of these sherds it is not possible to place them within any of the styles or classificatory schemes identified by Clarke (1970) or Case (1977).

A further 21 grog-tempered sherds (74 g) have been tentatively identified as Early Bronze Age, possibly Beaker or Collared Urn. The majority of these (17 sherds, 72 g) were recovered from the Western Approach Route Corridor in Fargo Plantation and include an abraded body sherd with twisted-cord impressions in a possible chevron motif from Middle–Late Bronze Age ditch 7875 (test pit 787) and a body sherd with possible cord-impressed decoration from test pit 772. Both are likely to derive from

Collared Urns. The remaining four sherds, also with worn impressed decoration, came from pit 1001 (trench 10) at Countess.

### ***Middle and Late Bronze Age***

The majority of the prehistoric ceramic assemblage (66% by sherd count, 79% by weight) dates to the Middle and Late Bronze Age. This material was concentrated in just two of the areas investigated – the Western Approach Route Corridor in Fargo Plantation, and Fargo North (Table 5.4). Of this collection, 241 sherds (2853 g) could be dated to the Middle Bronze Age, 107 sherds (401 g) to the Late Bronze Age while the remaining fragments (562 g) could date to either the Middle or Late Bronze Age.

#### **Fabric**

A total of 13 fabrics belonging to five key fabric groups are represented (Table 5.5) – calcite-gritted wares (C<sub>1</sub>), flint-tempered wares (F<sub>2</sub>–F<sub>5</sub> and FG<sub>1</sub>), grog-tempered wares (GF<sub>2</sub>), sandy wares (QF<sub>2</sub>, QF<sub>3</sub> and QS<sub>1</sub>) and shelly wares (S<sub>1</sub>–S<sub>2</sub> and SF<sub>1</sub>). The emphasis on flint tempering (77% by count) and the range of additional fabrics present are entirely consistent for the area (Clea 1995, 191; Clea with Raymond 1990, 240–1; Highways England 2018, 47–48; Leivers and Moore 2008, 34–35). Although the predominance of flint tempering continues from the Middle Bronze Age through into the Late Bronze Age, the later period sees an increase in the preference for sandier fabrics in combination with flint or shell. With the exception of a single sherd containing blocky inclusions of calcite, these fabrics indicate a use of locally available resources for pottery manufacture. Overall, calcite-tempered pottery is not common in the region. A calcite-tempered shouldered jar of Late Bronze Age date was found during excavations at Longbarrow Junction (Highways England 2018, 48; also referred to as Longbarrow Crossroads in Leivers and Moore 2008) and calcite-tempered fabrics were recorded among the Late Bronze Age–Early Iron Age material from Potterne (approximately 20 km to the north-west), where the source was thought to have been the calcite strata in the Kimmeridge clay (Morris 2000, 145) approximately 30 km to the north-west of Fargo North.

#### **Form**

Due to an insufficient number of reconstructable vessel profiles, identification focused on rim form; five forms were defined. Rims too small to be allocated a form were assigned to miscellaneous rim code R<sub>5</sub>. Instances of recorded rims by fabric are quantified in Table 5.6. Flat expanded rims (form R<sub>8</sub>) are characteristic of the Deverel-Rimbury Middle Bronze Age ceramic tradition, while hooked (form R<sub>6</sub>) and inturned (form R<sub>9</sub>) rims are datable to the Late Bronze Age. Rounded rims (form R<sub>1</sub>) and flat, upright rims (form R<sub>7</sub>) derive from vessels that could date to either the Middle or Late Bronze Age. Base fragments from three vessels were recorded; all have simple plain external angles.

#### **Surface treatment and decoration**

Surface treatments include smoothing on the exterior of the convex-sided Middle Bronze Age jar from posthole 5703 (Fargo North) and coarse wiping on the exterior of nine body sherds of probable Late Bronze Age date found within the topsoil of test pits 779, 782 and 812 (Western Approach Route Corridor at Fargo Plantation). Decorative techniques consist of fingernail and/or fingertip impressions (e.g., Fig. 5.1, 10) as well as tooled and incised lines. One sherd has a decorated applied cordon (Fig. 5.1, 13) while a further two pieces are decorated with small, applied lugs (e.g., Fig. 5.1, 12).

#### **Distribution and affinities**

The largest group of sherds (87 fragments, 1250 g) came from posthole 5703 within trench 510 (Fargo North). The majority of these (69 fragments, 1126 g) derive from a convex-sided jar with a flattened, expanded rim (Fig. 5.1, 10). The exterior is decorated with two horizontal rows of fingernail/tip impressions placed immediately below the

rim. Although little of the profile was reconstructable, approximately 70% of the base (Fig. 5.1, 11) is present and a further 37 plain body sherds from the topsoil of the trench are also likely to belong to the same vessel. The decorative elements are similar to those seen on vessels from the Middle Bronze Age activity on Boscombe Down East (Stone 1936, 475–6, plate 3, no. 8) and Thorny Down (Stone 1941, 123, fig. 5, 1 and 2). The posthole also contained thicker-walled body sherds from a second vessel. The nature of deposition within this feature is similar to that of a large bucket-shaped Deverel-Rimbury vessel previously found in a pit to the west of Longbarrow Crossroads (Leivers and Moore 2008, 34).

A further 47 sherds (421 g) of Middle Bronze Age pottery were found in ditch 2488 (test pit 248) also within Fargo North. These include fragments from the bases of two vessels, one in coarse flint-tempered fabric F5 and the other in shell-tempered fabric S1. The ditch also contained the single calcite-gritted sherd; it is moderately thick-walled and decorated with tooled lines.

Other Middle Bronze Age sherds of note from Fargo North include an externally expanded, flattened rim from a convex-sided vessel with a sub-oval applied lug (ditch 5808, trench 511; Fig. 5.1, 12), a thick-walled body sherd decorated with fingertip impressions (ditch 5605, trench 509) and a thick-walled, cordoned body sherd decorated with a tooled chevron motif (test pit 233 topsoil, Fig. 5.1, 13). The tooled chevron motif placed on a fairly wide, shallow cordon is similar to decoration seen on Barrel Urns from Bishops Cannings Down on the Marlborough Downs (Tomalin 1992, 86, fig. 66). Diagnostic material from Western Approach Route Corridor at Fargo Plantation consists of a flattened rim (form R5) in flint- and grog-tempered fabric FG1 (test pit 720, topsoil), one flat, externally thickened rim from a probable bucket-shaped vessel from test pit 805 (Fig. 5.1, 14) and four decorated body sherds. Of these, one is decorated with a row of fingernail impressions (test pit 855, subsoil), one with a partial subcircular lug (test pit 773, subsoil) and two with fingertip impressions, one of which (test pit 719, topsoil) is similar to a body sherd recovered from surface collection during the Stonehenge Environs Project (Cleal 1990, 35, fig. 21, P300).

All 107 sherds assigned a Late Bronze Age date came from Western Approach Route Corridor at Fargo Plantation, with 96 deriving from topsoil and subsoil deposits, three from ditch 7793 and six from ditch 7875. Diagnostic pieces are limited to just six rim fragments, including three hooked rims (test pit 722, topsoil; test pit 787, ditch 7875), one flat, upright rim (test pit 775, topsoil), one inturned rim (test pit 8101, subsoil) and one rim fragment decorated on top with tooled diagonal lines (test pit 801, topsoil). The majority of the Late Bronze Age material from ditch 7875 came from the upper fills of the ditch, with lower deposits containing sherds of Middle and Middle/Late Bronze Age date. Burnt residue adhering to the interior of joining body sherds in deposit 7872 was sampled for radiocarbon dating and provided a date of 1260–1050 cal BC (ETH-112814; 2949±22 BP).

Overall, the range of fabrics and forms present within this collection are typical for the area, and the distribution with its focus on Western Approach Route Corridor at Fargo Plantation and Fargo North conforms to the known patterns of activity previously identified within the study area for this period (Cleal with Raymond 1990, 240–2; Leivers and Moore 2008). Within the immediate area, small quantities of material of Middle Bronze Age date have been found from Winterbourne Stoke barrow G47 (Gingell 1988) and from two areas either side of Longbarrow Crossroads (Leivers and Moore 2008, fig. 18, 50412 and 50538). Similarly, small groups of Late Bronze Age pottery have been recorded from barrows G32, G38, G46 and G50 in the Winterbourne Stoke group (Gingell 1988) and at the Scotland Lodge enclosure (Leivers and Moore 2008, fig. 18, 50157), while small assemblages of both Middle and Late Bronze Age material have been found at Longbarrow Junction (Highways England 2018) and several sites within the Stonehenge Environs (Cleal with Raymond 1990, 240–242). Elsewhere beyond the immediate area, groups of Middle Bronze Age pottery including

Table 5.4 Quantification of prehistoric pottery by chronological period and site

	W. Approach 36717		A303 Footbed 36881		Countess 38477		Fargo North 45044		Countess 53324		Countess 54700		Total	
	No.	Wt (g)	No.	Wt (g)	No.	Wt (g)	No.	Wt (g)	No.	Wt (g)	No.	Wt (g)	No.	Wt (g)
Early Neolithic	-	-	-	-	-	-	-	-	-	-	20	68	20	68
Middle to Late Neolithic	5	36	-	-	-	-	-	-	-	-	-	-	5	36
Late Neolithic	-	-	117	644	-	-	-	-	28	80	-	-	145	724
Late Neolithic to Early Bronze Age	24	91	3	5	-	-	-	-	4	2	-	-	31	98
Middle and Late Bronze Age	258	1180	-	-	-	-	214	2636	-	-	-	-	472	3816
Late Bronze Age to Early Iron Age	-	-	31	54	-	-	-	-	-	-	-	-	31	54
Later prehistoric unspecified	-	-	-	-	6	9	-	-	4	10	3	6	13	25
<b>Total</b>	<b>287</b>	<b>1307</b>	<b>151</b>	<b>703</b>	<b>6</b>	<b>9</b>	<b>214</b>	<b>2636</b>	<b>36</b>	<b>92</b>	<b>23</b>	<b>74</b>	<b>717</b>	<b>4821</b>

Deverel-Rimbury vessels from both funerary and settlement-related features have been found at Larkhill (Wessex Archaeology 2020a) and small quantities of both Middle and Late Bronze Age material from Boscombe Down, Amesbury (Powell and Barclay forthcoming; Powell and Higbee forthcoming) and Earl's Farm Down/New Barn Down, Amesbury (Raymond 2012, 23).

As highlighted by the assemblages recovered from both surface collections and excavations during the Stonehenge Environs Project, the overlap in the distribution of the Middle and Late Bronze Age pottery indicates that there was 'continuing use of the same settlement areas over a period spanning the Middle Bronze Age... and the earlier part of the Late Bronze Age' (Cleal with Raymond 1990, 242). The Stonehenge Visitor Centre Middle–Late Bronze Age ceramic assemblage further emphasises this point.

### Late Bronze Age – Early Iron Age

A small group of 31 undiagnostic, featureless body sherds (54 g) from A303 Footbed have been tentatively dated to the Late Bronze Age/Early Iron Age. Eight fragments are in a moderately coarse sandy/flint-tempered fabric (QF3); the remaining 23 pieces could only be assigned to a miscellaneous sandy ware category (Q99) because of their small size. One abraded sherd was found in ditch 2606 (trench 2600) and 30 pieces (52 g) came from pit 3004 within trench 3000.

### Unspecified Later Prehistoric Pottery

Thirteen sherds could only be more broadly dated as later prehistoric (Table 5.4). They are present in a range of fabrics that are similar to those already discussed within the chronological periods above (Table 5.5). All pieces are abraded, plain body fragments. Their distribution is concentrated in the Countess area, with sherds recovered from trenches 46, 83, 84, 174, 187, 310 and 409.

### Saxon Pottery

by Lorraine Mephram

#### Introduction

A small assemblage of Saxon pottery was recovered from an area north-east of the Countess roundabout, some of which was associated with a series of SFBs. Within this area, pottery was recovered from a combination of test pits and trial trenches, and amounts to 125 sherds, weighing 1047 g. Apart from one sherd from Fargo Plantation (not discussed here), this was the only occurrence of Saxon pottery from the surveys.

Table 5.5 Prehistoric pottery by chronological period and fabric type (no. and weight)

Period	Fabric code	No. of sherds	Weight (g)	MSW (g)
Early Neolithic	QF1	20	68	3.4
Middle Neolithic	F1	5	36	7.2
Late Neolithic	G1	11	258	
	G2	11	155	
	G3	54	141	
	GCalc1	36	85	
	GS1	28	80	
	G99	5	5	
<i>LN sub-total</i>		145	724	5.0
Late Neolithic to Early Bronze Age	G4	3	5	
	G5	12	36	
	GF1	10	48	
	GS1	2	7	
	G99	4	2	
<i>LN to EBA sub-total</i>		31	98	3.2
Middle and Late Bronze Age	C1	1	8	
	F2	176	2255	
	F3	90	423	
	F4	39	116	
	F5	53	518	
	FG1	4	48	
	GF2	9	29	
	QF2	2	11	
	QF3	27	129	
	QS1	2	11	
	S1	60	239	
	S2	4	15	
	SF1	5	14	
<i>MBA and LBA sub-total</i>		472	3816	8.0
Late Bronze Age or Early Iron Age	QF3	8	35	
	Q99	23	19	
<i>LBA to EIA sub-total</i>		31	54	1.7
Later prehistoric unsp.	QF3	5	8	
	S2	2	8	
	F99	6	9	
<i>Later prehist. sub-total</i>		13	25	1.9
<b>Total</b>		<b>717</b>	<b>4821</b>	<b>6.7</b>

Table 5.6 Bronze Age rims (no. records) by fabric

Rim form	F2	F3	F4	FG1	QF3	S1	Total
R1: Rounded rim, uncertain angle	1	1	1	-	-	1	4
R5: Rim fragment	-	1	-	1	-	-	2
R6: Hooked rim	-	-	1	-	1	-	2
R7: Flat, upright rim	-	1	1	-	-	-	2
R8: Flat, expanded rim	1	1	-	1	-	-	3
R9: Inturned rim	-	-	-	-	1	-	1
<b>Total</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>14</b>



Figure 5.2 Saxon pottery

The condition of the assemblage ranges from fair to poor. The level of fragmentation is high, and only three pairs of conjoining sherds were noted. Sherds from topsoil and subsoil contexts are, as might be expected, more heavily abraded. Mean sherd weight overall is 8.4 g; for ploughsoil and subsoil it drops to 3.6 g and 4.9 g respectively.

### Methodology

Analysis has followed the standard Wessex Archaeology recording system for pottery (Morris 1994). Fabrics have been defined on the basis of dominant inclusion type and have been described macroscopically. The definition of vessel forms, although limited by the scarcity of diagnostic sherds, follows nationally recommended nomenclature for post-Roman ceramics (MPRG 1998). Quantification throughout has been by sherd count and weight; Estimated Vessel Equivalents have not been used here as there are no measurable rims.

### The Assemblage

Five fabric types were defined, although it is recognised that some of these may represent variation along a spectrum rather than discrete types, for example fabrics V400 (organic-tempered), V401 (sandy/organic-tempered) and Q400 (sandy). Fabric totals are given in Table 5.7.

- Q400 Hard-fired, fine sandy matrix (common, well sorted, subrounded/sub-angular quartz grains <0.125 mm); rare organic strands and other carbonaceous material;
- Q401 Hard-fired, moderately fine sandy fabric (moderate, fairly well sorted, subrounded/sub-angular quartz grains <0.5 mm); rare detrital flint <2 mm;
- Q402 Hard-fired, fine sandy matrix (common, well sorted, subrounded/sub-angular quartz grains <0.125 mm); slightly powdery feel;
- V400 Hard-fired silty matrix containing common strands of organic material;
- V401 Fine sandy matrix as Q400, containing sparse, fairly well sorted strands of organic material.

All fabrics would be consistent with local manufacture of pottery and could merely represent the use of different clay sources and slightly varying clay 'recipes'. No reconstructable profiles are present, and the range of vessel forms can be only partially determined from the few diagnostic sherds present. Of the five rim sherds, one is externally thickened and flattened; the body profile is uncertain but appears to belong to a jar with concave neck (Fig. 5.2). Other rims are too small for meaningful comment, but most seem to be simple forms with rounded profiles and an upright or slightly everted orientation; they could belong either to jar or bowl forms. Three vessels have rounded basal angles with a flattened base, while a fourth is flat-based with a protruding foot. There is a complete absence of decoration, and only five sherds are burnished (internally and/or externally).

Table 5.7 Saxon fabric totals

Fabric type	No. sherds	Weight (g)
Q400	62	326
Q401	1	16
Q402	3	44
V400	27	338
V401	32	323
Total	125	1047

## Distribution

Table 5.8 gives the breakdown of the assemblage by feature or context type. The majority of sherds were recovered from topsoil and subsoil contexts within test pits and trial trenches. Ten sherds were redeposited within a series of fluvial deposits in trench 46. Only 47 sherds were found in stratified feature fills, mostly SFBs, where they represent abandonment deposits. The distribution is concentrated in the south-eastern quarter of the survey area. Quantities overall are sparse – sherds per SFB ranged from five to ten sherds, and from other test pits and trenches the highest total was six sherds. Such a sparse distribution suggests a relatively restricted timespan for occupation of this small settlement and, based on the slim evidence available, that the SFBs were probably all in use at the same time.

Table 5.8 Saxon pottery  
by context

Context	No. sherds	Weight (g)
<b>Features</b>		
Ditch 8301	1	3
Posthole 7302 (SFB 7308)	1	4
Posthole 7505	7	54
Pit 4609	1	1
SFB 3001	5	161
SFB 3905	7	73
SFB 7308	9	172
SFB 7905	10	73
SFB 8505	6	60
<b>Other contexts</b>		
Ploughsoil	42	153
Subsoil	21	102
Miscellaneous layers	11	124
Unstratified	4	67
<b>Total</b>	<b>125</b>	<b>1047</b>

## Discussion

In broad terms, organic-tempered and sandy fabrics are characteristic of early to middle Saxon ceramics in the region, although pottery of this date is not commonly found in Wiltshire, particularly from domestic contexts. Only two published assemblages from the county are of any significant size, from Collingbourne Ducis (1410 sherds; Timby 2001) and Market Lavington (1215 sherds; Mephram 2006), while other smaller groups are known from Ogbourne St George, Westbury, Ramsbury and Tidworth (Fowler 1966; Godden *et al.* 2002; Haslam 1980). Market Lavington and Collingbourne Ducis offer parallels for the fabrics (although not for the single rim form) and may enable some refinement of the dating. Radiocarbon dates were obtained for both sites. At Market Lavington, a series of dates from a peat-filled palaeochannel suggest that settlement began there in the early 7th century AD (Wiltshire and Bayliss 2006, 121). Dating from Collingbourne Ducis places the settlement in the range of early 8th–10th century AD, with one earlier building dating to the 5th–late 7th century (Pine 2001). In both cases the proportion of organic-tempered to sandy fabrics was high: around 8:1 at Market Lavington and 11:1 at Collingbourne Ducis. At the latter site, it was suggested that the incidence of decorated and sandy wares might be an early trait, with organic-tempered wares predominating during the middle Saxon period (7th–9th/10th centuries) (Timby 2001). Chalk-tempered wares, seen at Collingbourne Ducis and

Tidworth, are considered to be confined to the middle Saxon period (Godden *et al.* 2002). The proportions from Countess show a marked contrast, with an almost equal proportion of organic-tempered and sandy fabrics, suggesting that this assemblage falls earlier in the sequence than Market Lavington and Collingbourne Ducis, although at the other extreme there is an absence of particularly early traits such as pedestal bases and sharply carinated forms, which are characteristic of the early 5th century. Conclusions based on such a small sample may be less than reliable, but the evidence does seem to suggest that this assemblage therefore dates to earlier in the period, perhaps somewhere between the late 5th and 7th centuries. The absence of stamps, typical of the 6th century, as seen in the cemetery assemblages from sites closer to Countess East, at Blacknall Field, Pewsey, and Barrow Clump, Figheldean (Annable and Eagles 2010, 56–9; Mephram *in prep.*) is not necessarily significant as stamps tend to be more commonly used in funerary assemblages and are scarce in domestic contexts. Modelling of radiocarbon dates (below) suggests the currency of Anglo-Saxon occupation at Countess probably dates to between the late 6th and early 7th centuries AD (Fig. 7.1), in accord with the ceramic evidence.

## Human Bone

by L. Higbee

A piece of human skull, part of the left distal parietal vault, came from Middle Bronze Age ditch 7875 at Western Approach Route Corridor in Fargo Plantation. The open sutures suggest the fragment came from a subadult/adult individual aged between 15 to 35 years (J. McKinley *pers. comm.*)

## Animal Bone

by L. Higbee

### Introduction

A total of 2395 fragments (22.561 kg) of animal bone came from the investigation areas. The focus of this report are the 1592 fragments from securely dated contexts, which represent approximately 67% of the total. The provenance and quantity of animal bones by period is shown in Table 5.9.

### Methodology

The following information was recorded where applicable: species, element, anatomical zone (after Cohen and Serjeantson 1996, 110–12; Serjeantson 1996, 195–200), anatomical position, fusion state (after O'Connor 1989; Silver 1969), tooth eruption/wear (after Grant 1982; Halstead 1985; Hambleton 1999; Payne 1973), butchery marks (after Lauwerier 1988; Sykes 2007), metrical data (after Payne and Bull 1988; von den Driesch 1976), gnawing, burning, surface condition, pathology (after Vann and Thomas 2006) and non-metric traits. This information was directly recorded into a relational database (in MS Access) and cross-referenced with relevant contextual information.

The entire assemblage has been quantified in terms of the number of identified specimens present (or NISP). The minimum number of elements (or MNE) and minimum number of individuals (or MNI) have also been calculated for some periods.

The morphological criteria of Boessneck (1969), Payne (1985) and Halstead *et al.* (2002) were used to try and differentiate between sheep and goat, but no positive identifications were made, so both terms are used throughout this report.

Measurements taken on the antler pick from Late Neolithic pit 2003 follow Clutton-Brock (1984). These measurements were used by Serjeantson (1995, 414) on the red deer antler implements from Stonehenge and provide a local dataset for comparison.

Table 5.9 Provenance and quantity of animal bones from the investigation area. Note the total (N) takes account of refits so is lower than the raw fragment count (N = 1592)

### Results

Animal bones came from a range of features, including two Late Neolithic Grooved Ware pits, Middle to Late Bronze Age ditches, demolition deposits associated with a Romano-British stone-built structure, and several early to middle Saxon features and layers, including five SFBs.

Period	Project	Location	Context	N	NISP
Late Neolithic	36881	A303 Footbed	Grooved Ware pit 2003	109	10
	53324	Countess	Grooved Ware pit 1204	154	15
Middle/Late Bronze Age	36717	W. Approach	ditches 7793, 7875	327	103
Middle Bronze Age	45044	Fargo North	ditches 2174, 2247, 2405, 2435, 2488, 4605, 5619, 5707, 5808	209	92
Romano-British	53324	Countess	demolition layers 6716, 6717, 6718 associated with structure 6718	18	4
Early/middle Saxon	38477	Countess	ditch 2754	12	4
	53324	Countess	SFBs 3001, 3903, 7308, 7905; pit 4609; posthole 3901; layers 4604, 4616, 4624, 4628	305	104
	54700	Countess	SFB 8505, layer 8510	26	8
<b>Total</b>				<b>1160</b>	<b>340</b>

Table 5.10 Number of identified specimens present (or NISP) by period

Species	Late Neolithic	Middle to Late Bronze Age	Romano-British	Early/middle Saxon	Total
cattle	11	80	-	62	153
sheep/goat	7	77	4	27	115
pig	4	7	-	16	27
horse	-	6	-	4	10
dog	-	1	-	-	1
red deer	2	2	-	1	5
roe deer	-	1	-	-	1
aurochs	1	-	-	-	1
rabbit	-	21	-	-	21
domestic fowl	-	-	-	4	4
goose	-	-	-	2	2
<i>Total identified</i>	25	195	4	116	340
large mammal	40	79	1	83	203
medium mammal	7	78	1	44	130
small mammal	-	1	-	-	1
mammal	191	184	12	97	484
bird indet.	-	-	-	2	2
<i>Total unidentifiable</i>	238	342	14	226	820
<b>Overall total</b>	<b>263</b>	<b>537</b>	<b>18</b>	<b>342</b>	<b>1160</b>



Plate 5.1 Antler pick

### Late Neolithic

A total of 263 fragments of animal bone came from two Grooved Ware pits, one at A303 Footbed (2003) and the other at Countess (1204). The 109 bone fragments from the single fill of pit 2003 are poorly preserved but include several identifiable elements, mostly cattle bones, but also a few pig bones, a possible piece of aurochs bone and a red deer antler pick. A radiocarbon date of 2470–2200 cal BC (UBA-34502;  $3883 \pm 35$  BP) was obtained on a sample of the antler. The cattle bones from the pit include the basal part of a horn core, the costal end of a rib, a near complete right pelvis and the ischium part of a left pelvis, probably from a single animal, a fragment of distal femur and a navicular. The thickness of a piece of bovine radius shaft indicates that it is likely to be from an aurochs rather than domestic cattle. A pig incisor and scapula blade were also found.

The pick (Plate 5.1) is made from the proximal end of a shed antler and shows signs of use wear on the tip of the brow tine. Scorching around the broken end of the beam indicates the application of heat to weaken the antler and aid breakage (Serjeantson 1995, 420–1). Measurements taken on the implement are shown in Table 5.11, where they are compared to published data on the antler picks from Stonehenge (*ibid.*, 419, table 46). The length of the A303 Footbed pick is 383.4 mm, slightly smaller than the Stonehenge mean. The other measurements also fall close to the mean values for the Stonehenge dataset, or towards the top end of the range.

Table 5.11 Summary of measurements on antler pick from Late Neolithic pit 1204 compared to published data for antler picks from Stonehenge (Serjeantson 1995, 419, table 46). L = length (mm), C = circumference and D = diameter

The 154 bone fragments from the single fill of pit 1204 are better preserved and include more identifiable elements. Seven of the identified bones are from sheep/goat; they

Site/feature		Pick	Brow tine	Brow/beam	Burr		Brow tine		Beam	
		L	L	Angle	C	D	C	D	C	D
A303 Footbed pit 2003	-	383.4	256.0	100.0	204.0	69.0	114.0	39.7	136.0	45.9
	N	59	29	15	33	39	31	31	65	65
	Max	710.0	260.0	100.0	299.0	95.9	139.0	34.6	202.0	72.1
Stonehenge	Min	175.0	35.0	43.0	155.0	27.7	65.0	19.2	95.0	31.6
	Mean	418.6	156.2	69.5	222.2	66.9	101.5	27.7	138.7	47.4

include two loose upper teeth, two mandibles, a scapula, ulna and metatarsal. The mandibles are from animals aged between 2–3 years and 3–4 years (mandible wear stage (MWS) E and F). Five cattle bones were also identified; they include fragments of horn core, mandible, tibia, astragalus and first phalanx. Both the mandible and astragalus are burnt, and the articular process of the former is calcined from prolonged, direct contact with intense heat. Transverse cut marks on the dorsal aspect of the distal tibia shaft probably result from skinning or filleting meat off the bone. The proximal end of the tibia also shows signs of canid gnawing.

Two pig bones (a scapula and second phalanx) and a piece of red deer antler were also found in the pit. The antler is part of the beam between the bez and trez tines; there is no evidence for the use of heat to break the antler, but the tip of the trez tine is rounded, indicating that the antler was used as an implement. A Late Neolithic radiocarbon date of 2870–2490 BC (UBA-34500;  $4086 \pm 36$  BP) was obtained on a sample of the antler.

### **Middle to Late Bronze Age**

A total of 537 fragments of animal bone came from Middle and Late Bronze Age ditches at Western Approach Route Corridor in Fargo Plantation and at Fargo North, with a single unidentifiable fragment from Late Bronze Age ditch 8301 at Countess.

The Middle Bronze Age assemblage includes 463 fragments, of which 168 are identifiable to species. The assemblage includes near equal numbers of cattle and sheep/goat bones (approximately 40% NISP each), and both species are represented by a wide range of skeletal elements from all parts of the carcass, although cattle bones are more fragmented than sheep/goat bones, but this is largely because of differences in butchery. The most common elements after loose teeth are tibiae, with cattle scapulae and sheep/goat mandibles also present in reasonable numbers. MNE indicates that sheep/goat were more important to the livestock economy and kept in greater numbers than cattle, and this is confirmed by MNI, which indicates that at least six sheep/goat and three cattle are represented.

The five sheep/goat mandibles retaining two or more teeth with recordable wear are all from animals aged 2–3 years (MWS E). These animals were culled at the optimum age for prime meat, but probably came from a flock managed for a range of commodities including wool. Further insight is provided by several loose teeth with slight or moderate wear from younger animals and the limited information from epiphyseal fusion, which indicates that many of the post-cranial bones are from skeletally mature animals, although one neonatal lamb bone and two juvenile bones were also identified on the bases of their size and texture.

Age information for cattle is limited: a single mandible is from an animal aged 30–36 months and a few loose teeth with moderate or extreme wear are from older adult animals. In addition, a fragment of mandible retaining a deciduous second premolar with very slight wear is from a calf. Epiphyseal fusion confirms the presence of adult and juvenile cattle.

Butchery marks are evidenced on 13 sheep/goat bones and 17 cattle bones. Most are chop marks associated with the division of carcasses and portioning of meat joints; some such as those noted on the distal shaft of the tibia indicate the point at which the feet were routinely detached from the upper hindquarters. A few cattle bones had been split lengthways to extract the marrow, but in general there was little evidence for extensive secondary processing. A cattle horn core had been sawn through the base, providing some indication that horns were retained as raw material. Skinning cut marks were noted on a fragment of sheep/goat skull and there was also evidence for the use of heat to break bones, as noted on a sheep/goat tibia shaft from ditch 2488.

Metric data is provided in the site archive. Greatest length measurements on two complete cattle radii provide withers height estimates (based on the conversion factors of Matolcsi (1970) for Middle Bronze Age cattle of 1–1.10 m.

Pigs are a minor component of the Middle Bronze Age assemblage; only seven bones have been identified and these include fragments of mandible, scapula, tibia and metatarsal. The assemblage also includes four horse bones, a radius and first phalanx from ditch 7875, a mandible from 5605 and canine tooth from 5808. A dog axis vertebra came from 2488 and two pieces of red deer bone, an antler tine from 7875 and scapula from 5605, were also found; the latter provided a radiocarbon date in the Middle Bronze Age of 1500–1260 BC (OxA-8319;  $3115 \pm 40$  BP). In addition, several intrusive rabbit bones came from ditches 7875 and 2247.

A further 73 fragments of animal bone came from two Late Bronze Age ditches; the 27 identified bones are all from ditch 7793 at Western Approach Route Corridor Fargo Plantation. Cattle bones are common, particularly mandibles, although only one retains two or more teeth with recordable wear, and this is from an animal aged 8–18 months (MWS C). The other bones include a few from sheep, mostly bones from the hindquarter, as well as fragments of horse femur and metapodial, and part of a roe deer antler tine, the surface of which is smooth, suggesting that it came from a worked piece.

### **Romano-British**

Eighteen bone fragments came from demolition layers associated with stone-built structure 6718 at Countess. The bones are in reasonable condition but fragmented, and the four identified elements are all from sheep/goat, including a tibia, metacarpal, metatarsal and first phalanx.

### **Early to Middle Saxon**

The assemblage includes 342 fragments of animal bone, 116 of which are identifiable to species. Most (67%) of the bones came from SFBs at Countess (Table 5.9), particularly 7308, which produced 135 fragments, approximately 42% of the total.

Cattle bones dominate the assemblage, accounting for 53% NISP, followed by sheep/goat at 23% and then pig at 14% (Table 5.10). Cattle and sheep/goat are represented by a wide range of elements covering most parts of the carcass although, apart from a single first phalanx, small bones from the foot and ankle are absent. This is probably because of a combination of factors such as partial sampling of contexts through excavation and recovery methods. Few pig bones were recovered but the broad range is consistent with whole carcasses having been present. The bones are from at least three cattle and sheep/goat, and two pigs. MNE calculations do not differ significantly from NISP counts, indicating the Saxon bones are less fragmented than those from Bronze Age deposits. Indeed many of the bones are semi-complete examples, indicating that meat was distributed as large joints. Three articulated groups of animal bones were also recorded and radiocarbon dated (see Chapter 7). These comprise a pig radius and ulna from pit 4609, a section of vertebral column and ribs from ditch 4704 and a cattle radius and ulna from SFB 7308.

Information from four cattle mandibles indicates a range of ages from 8–18 months to senile (MWS C and G to I). This is supported by the limited information from epiphyseal fusion of post-cranial elements, which indicates that apart from a single femur from a neonate, most bones are from skeletally mature animals. Overall, the evidence suggests a husbandry strategy focused on dairying and perhaps traction, with meat production a secondary consideration. Age information for sheep/goat and pigs is scarce; single mandibles from a lamb aged 6–12 months and an immature pig aged 7–14 months (both MWS C) were recorded. Epiphyseal fusion data confirms the presence of immature and juvenile animals.

Butchery marks are evident on 27 cattle bones, 12 sheep/goat bones and three pig bones. Chop marks are common, and these principally result from disarticulation and portioning. A few bones had been processed for marrow, and skinning and filleting marks were also noted.

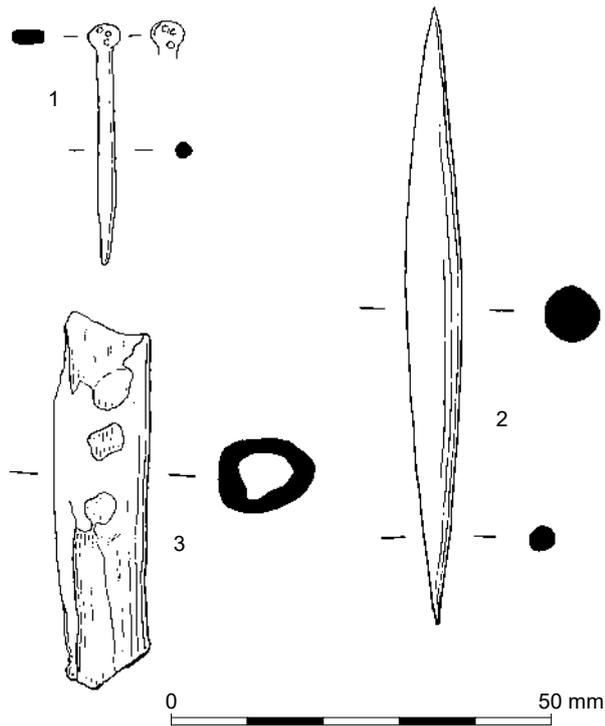


Figure 5.3 Worked bone – 1) small pin, 2) pin beater, 3) musical instrument?

Four horse bone were recovered; they include an astragalus from ditch 2754, a fragment of pelvis from SFB 7308, and a complete skull and lower premolar from the top fill of the north-east quadrant of SFB 7905, estimated to date to AD 575–645 (95% probability; ETH-112817). The remaining bones include part of a red deer antler (ON 6028) from ditch 2754, four domestic fowl bones from SFBs 7905 and 8505, and two domestic goose bones from SFBs 7308 and 7905. A cut mark on the distal articulation of the goose radius from 7905 marks the point at which the distal part of the wing was detached to prepare the carcass for cooking.

## Worked Bone

by Katie Marsden

Three Anglo-Saxon worked bone objects were recovered from Countess (53324; Fig. 2.3). These were a small pin with a decorated head (Fig. 5.3, 1) from SFB 7905, a pin beater (a textile-working tool; Fig. 5.3, 2) from SFB 7308, and a fragment of a long bone, with three apparently deliberate perforations in the manner of a crudely made musical instrument (Fig. 5.3, 3), from pit 4609.

The pin beater is double-ended and polished through use. These objects, also known as thread pickers, were probably used on warp-weighted looms, to push the weft together with weaving combs. Numerous examples are known from Hamwic (e.g. Addyman and Hill 1969, fig. 29), Southampton.

The pin is slender, with a tapering shank and a disc-shaped head. The head is irregularly perforated three times and the total length is just 32 mm. Exact parallels are not forthcoming, but it is perhaps closest to 'Kingston disc-headed types' which have a length range of 35–60 mm and which are dateable to the 7th century AD (Ross 1991, 224–9). These pins are subdivided by collar and shaft decoration, this example being a Type Li.a.1 (*ibid.*, 227): no collar with tapering shaft and no lines. A copper alloy example of this type was recovered from a grave at Collingbourne Ducis (Stoodley 2016, 118), 15 km to the north-west of the site.

The third object, from undated pit 4609, is a long bone with three apparently deliberate perforations. The positioning of the holes is suggestive of a crudely made instrument. A secure date cannot be provided based on the fragment alone. Examples in the area include a crane bone flute (DZSWS:STHEAD.121) from Wilsford Barrow G23 on Normanton Down, approximately 4 km to the south-west, dated to the Bronze Age, and examples on swan bone and sheep tibia from Old Sarum, Salisbury (MacGregor 2001, fig. 3, nos. 7 and 8), 9 km to the south.

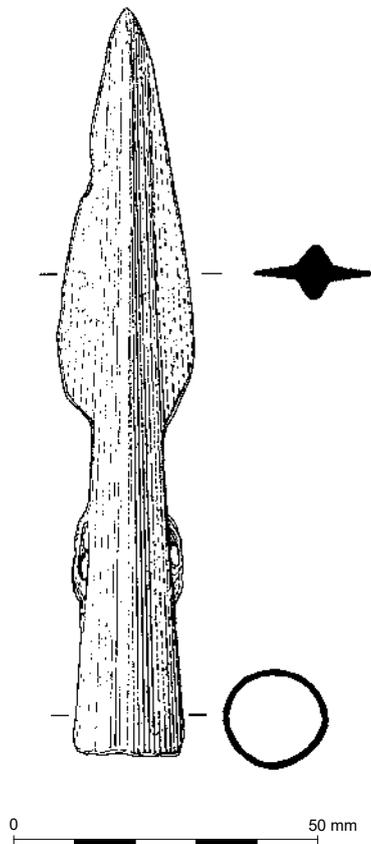


Figure 5.4 Copper alloy socketed and side-looped spearhead

## **Metalwork**

*by Katie Marsden*

Four unidentifiable fragments of copper alloy were recovered from test pits on the Western Approach Route Corridor (36717: Fig. 2.2), along with a spearhead, recovered from the secondary fill of ditch 7875 at Fargo Plantation.

The spearhead (Fig. 5.4) is a socketed weapon conventionally known as a side-looped spearhead and is a characteristic type of the south English Middle Bronze Age. The type originates in the Acton Park phase of metalworking and continues into the Taunton phase and hence is securely dated to the mid-second millennium BC. A number are known from central Wiltshire (Moore and Rowlands 1972), the majority being isolated finds. One example, however, was found at the Middle Bronze Age settlement site at Thorny Down (*ibid.*, no. 58) and further afield, another example was recovered from the upper fills and stratified above Deverel-Rimbury pottery at South Lodge, Dorset (Pitt-Rivers 1898).

# CHAPTER 6

## ENVIRONMENTAL EVIDENCE

### Introduction

by Inés López-Dóriga

**SIX OF THE ARCHAEOLOGICAL INVESTIGATIONS** (36881, 38477, 45044, 53324, 54700 and 71651) involved sampling for the retrieval of environmental evidence.

A total of 56 bulk sediment samples were processed by flotation for the retrieval and assessment of environmental evidence (wood charcoal, charred plant remains, mineralised plant remains, molluscs) from these investigations (Table 6.1). The environmental assessments vary in their level of detail and have previously been reported upon in the individual reports included in the site archives. A simplified summary of the assessment results for all sites can be seen in Table A4.1. Some of this material was dispersed before deposition in the recipient museum. The retained material has been re-sorted and reassessed following current Historic England guidelines (English Heritage 2011), with taxonomic identification of key elements and abundance of remains recorded semi-quantitatively (Table A4.2). This report summarises the results from the assessment and reassessment of the environmental evidence, together with full analysis of selected samples which had potential to provide further information (Table A4.3).

The new information produced as a result of this work takes its place within the wider context of Stonehenge and Avebury WHS, as well as the wider region. With largely arbitrary boundaries, it is widely recognised that research into the WHS cannot be undertaken in isolation from its wider area, particularly given the density of monuments in adjacent areas such as Salisbury Plain and the Marlborough Downs (Simmons in Leivers and Powell 2016, 7). While the Avebury WHS resource assessment contains a relatively up-to-date review of archaeobotanical evidence (Stevens and Wyles 2016), the equivalent for the Stonehenge WHS only provides a brief review of the evidence (Darvill 2005; 2016), and in the time which has since elapsed additional data has become available (Canti *et al.* 2013). For this reason, a comprehensive and detailed assessment of previous archaeobotanical evidence from Neolithic and Bronze Age deposits has been compiled (Table A4.4) that is essential for understanding the new data presented here. Medieval data is contextualised with a slightly wider perspective (Table A4.5) as little information exists for the immediate WHS and Salisbury Plain area.

### Charred and Mineralised Plant Remains

by Inés López-Dóriga

#### Summary of Assessment Results

Charred plant remains and charcoal were recovered from six investigations, from contexts ranging in date from the Neolithic to Anglo-Saxon period and from features including ditches, pits, postholes and SFBs. Appendix 4 contains a tabulated summary of the original assessments (Table A4.1) and the reassessment (Table A4.2).

#### Neolithic/Early Bronze Age

Samples from four pits (1001, 1204, 2103 and 7309) from Countess (53324), are of presumed or definite Late Neolithic to Early Bronze Age date. Pottery recovered

Table 6.1 Summary of environmental sample provenance

WA code	Project name	Samples taken	Assessed samples	Samples retained	Reassessed samples	Charred and mineralised plant remain analysis	Wood charcoal analysis	Mollusc analysis
34232	Larkhill	No	-	-	-	-	-	-
36717	Western Approach Route Corridor	No	-	-	-	-	-	-
36881	A303 Footbed	Yes	18	No (only extracted molluscs)	-	-	-	-
38477	Countess	Yes	2	2	2	-	1	-
45044	Fargo North	Yes	11	Yes	11	-	-	-
51268	Countess	No	-	-	-	-	-	-
51879	Countess	No	-	-	-	-	-	-
53324	Countess	Yes	12	Yes	12	4	1	3
53868	Transit Link	No	-	-	-	-	-	-
54024	Countess	No	-	-	-	-	-	-
54700	Countess	Yes	2	Yes	2	-	-	-
71651	Airman's Corner	Yes	11	No	-	-	-	-
<b>Total</b>			<b>56</b>		<b>27</b>	<b>4</b>	<b>2</b>	<b>3</b>

from pit 1001 was tentatively identified as from an Early Bronze Age Collared Urn or Beaker, while animal bone and charred plant remains from pit 1204 were directly radiocarbon dated to 2870–2490 cal BC, (UBA-34500; 4086±36 BP) and 2890–2620 cal BC (OxA-35721; 4165±34 BP) (Chapter 7, below); pit 2103 is undated but assumed Neolithic/Bronze Age and pit 7309 contained Neolithic flint. The samples contained charred plant remains, including fragments of hazel (*Corylus avellana*) nutshell, sloe (*Prunus spinosa*) fruits, tubers of onion-couch grass (*Arrhenatherum elatius* ssp. *bulbosum*), and cereal grains, among which a single barley (*Hordeum vulgare*) grain and a single naked or free-threshing wheat (*Triticum aestivum/turgidum*) grain (presumed intrusive on account of its preservation) were identified. The sample from pit 1204 was analysed in detail (see below).

Ditch 8301 from Countess (54700), containing residual Mesolithic flints and a few fragments Neolithic or Bronze Age pottery, also contained a few cereal grains, some of which were identifiable as barley.

At A303 Footbed (36881), two samples from pit 2003 with Grooved Ware pottery and radiocarbon dated 2470–2200 cal BC (UBA-34502; 3883±35 BP), contained charred cereal grain, wild plant seeds and hazelnut shell fragments. These samples were not retained.

#### Middle Bronze Age

Samples from Middle Bronze Age ditches 5605 and 5808, and posthole 5703 at Fargo North (45044), contained a few charred plant remains, comprising cereal grains including barley, and hulled wheat (*Triticum* sp.) chaff (glume bases), alongside seeds of grasses (Poaceae) and bedstraws (*Galium* sp.), and a fragment of onion-couch tuber.

#### Late Bronze Age/Early Iron Age

The sample from pit 3004 at A303 Footbed (36881), containing a small group of Late Bronze Age/Early Iron Age pottery sherds, produced wild plant seeds and hazelnuts. The samples were not retained.

#### Prehistoric

A layer (4363) of probable prehistoric date from Countess (38477) reportedly contained charred cereal grains, although these were not found on reassessment of the sample.

#### Anglo-Saxon

A minimum of five SFBs were revealed during the evaluation at Countess (53324). Samples were taken from three of these structures (3903, 7308, 7905) and a pit (7302).

Charred plant remains from pit 7302 were very abundant and are analysed in more detail (see below). Two cereal grains, one barley and one naked or

free-threshing wheat, were directly radiocarbon dated and estimated to date to cal. AD 570–640 (95% probability; ETH-112816) and cal. AD 565–640 (95% probability; GrM-25786) (Chapter 7, below).

The samples from the SFBs (3903, 7308 and 7905) were less rich, with only a small number of charred cereal grains (including naked wheat and barley), but contained remains from other cultivated species, such as flax (*Linum usitatissimum*) and garden pea (*Pisum sativum*), and wild plant seeds, some of which were preserved by mineralisation. The wild plant taxa, both charred and mineralised, included the goosefoot family (Chenopodiaceae), docks (*Rumex* sp.), vetch tribe (Viciae), oats (*Avena* sp. cultivated or wild oats – possibly the cultivated species as large seeded – however, no positive ID in the absence of lemma bases is possible) and seeds from indeterminate taxa. Other mineralised remains were also present in the samples (insect pupae, nodules, fish scales, etc.).

### Undated

A pit (2754) at Countess (38477) contained cereal grains (including wheat and hulled barley), wild plant seeds (including docks and oat or oat/grass) and hazelnut shell fragments.

A number of undated features were sampled from A303 Footbed (36881); plant remains were poorly represented overall, with the exception of three ditch samples which produced significant quantities of charred grain, along with wild plant seeds (not taxonomically identified). The material has since been discarded.

An undated posthole from Countess (53324) only contained a seed of buttercup (*Ranunculus* sp.).

A number of tree hollows in Fargo North (45044) and at Airman's Corner (71651) also produced very few charred plant remains, comprising exclusively wild plants, including oats/bromes (*Avena/Bromus*), vetches/wild peas (*Vicia/Lathyrus*) and onion-couch tubers. Seeds of goosefoot (*Chenopodium* sp.) were also found in a number of samples but were interpreted as probably modern. The material has since been discarded because of its low significance.

## Materials and Methods of Analysis

The samples from a Late Neolithic pit 1204 and Anglo-Saxon pit 7302 at Countess (53324) were taken to full analysis.

For the analysis, all identifiable charred plant remains were extracted using a stereomicroscope at up to x40 magnification. Except when otherwise stated (fragments), quantifications are given as MNI (minimum number of individuals) and are based on anatomy – generally whole items or the highest type of anatomical fragments: e.g., cereals, based on Antolín and Buxó (2011); glume bases and legume cotyledons divided by two; hazelnut shell fragments based on Antolín and Jacomet (2015).

The identifications have been undertaken in consultation with Wessex Archaeology's modern seed reference collection and specialised literature where appropriate (e.g., Jacomet 2006). Plant nomenclature follows Stace (1997) for wild plants, and traditional nomenclature, as provided by Zohary *et al.* (2012), for cereals. The data for the full analysis has been recorded using the software Arbodat (Kreuz and Schäfer 2002) for the purpose of data sharing.

## Results

More than 600 charred plant remains (NR) were quantified, belonging to more than 100 MNI (Table A4.3): the sample from Late Neolithic pit 1204 produced 380 charred

plant remains (29 MNI) and that from Early Anglo-Saxon pit 7302 produced 231 charred plant remains (80 MNI). The density of the plant remains in the sediment was variable but generally low and the fragmentation rate was high (particularly in the Late Neolithic sample, with hazelnut shell).

The charred plant remains from pit 1204 were dominated by the remains of wild resources, mainly hazelnut shell fragments ( $\approx 355$ ) belonging to at least 25 nuts, and fragments of sloe stone with mesocarp and pericarp (flesh and skin), roughly equivalent to two whole fruits. A coatless seed of the pink family (Caryophyllaceae) was also present, together with a grain of naked wheat. One of the fragments of sloe was directly dated (2890–2620 cal BC; OxA-35721;  $4165 \pm 34$  BP), and an additional animal bone date was obtained for the deposit (2870–2490 cal BC; UBA-34500;  $4086 \pm 36$  BP).

Pit 7302 provided abundant charred plant remains dominated by cereals, comprising indeterminate cereal (Triticeae) grain fragments including a detached embryo, hulled barley (*H. vulgare*) grains and chaff (rachis segments), and wheat grains, including one naked wheat grain. Other less abundant remains were seeds of wild plants, such as the goosefoot family (Chenopodiaceae, including oraches – *Atriplex* sp.), the knotgrass family (Polygonaceae), the sedge family (Cyperaceae) and the grasses (Poaceae).

### Discussion

The Stonehenge WHS and the wider Salisbury Plain area have been the scene of human–environment interactions for millennia. Although these have been the focus of intense archaeological research, the most recent review of environmental evidence in the area (Canti *et al.* 2013) suggests that limited information still survives for understanding how plant exploitation practices fit within the wider range of human activities in the area and how the landscape was used over time.

The samples recovered during assessments ahead of the new Stonehenge Visitor Centre provide some information which, albeit restricted, contributes to the larger picture of plant resource exploitation in the area of the WHS and Salisbury Plain between the Early Neolithic to Bronze Age and the Early Anglo-Saxon period. It has been highlighted that substantial prehistoric assemblages of plant remains in this area are rare and this could be perhaps associated with the predominantly ceremonial nature of the activities in the area (Campbell and Pelling 2013). Similarly, a bias towards cereal-based evidence may overshadow the relevance of the more abundant evidence for the exploitation of wild plants from prehistoric periods. Furthermore, an important bias towards research on Neolithic and Bronze Age monuments (as opposed to other sites) within the WHS is responsible for this apparent rarity of evidence. However, development-led archaeological investigations just outside the WHS (e.g., Amesbury, Old Sarum, Larkhill and Bulford) have recovered important assemblages which broaden our understanding of non-ceremonial activities in the Neolithic and Bronze Age, as well as providing evidence from later sites (Roberts *et al.* 2020).

The evidence from Neolithic and Bronze Age charred plant remains suggests the consumption of domestic plants, mostly cereals such as hulled wheat and barley, as well as the exploitation of a wide range of wild plant resources, among which hazelnuts may have played a prominent role. The mineralised and charred plant remains from Early Anglo-Saxon deposits evidence the domestic use of a fairly limited set of crops (barley, naked wheat, garden pea and flax) with some indication of diversification in the later Anglo-Saxon period (Stevens 2009a).

## Wood Charcoal

by Mariangela Vitolo

### Summary of Assessment Results

The level of abundance of wood charcoal at the sites has proved variable, with generally low volumes throughout. Only two well-dated features with appreciable quantities of wood charcoal were singled out for analysis: Anglo-Saxon pits 7302 and 2754, both at Countess (53324 and 38477 respectively). In addition, an undated posthole (7104) from Countess (53324) contained oak wood charcoal thought to represent a post burnt *in situ*.

### Materials and Methods of Analysis

The wood charcoal from two Anglo-Saxon pits 7302 and 2754 at Countess (53324 and 38477 respectively) were analysed.

The fragments were fractured along three planes to obtain transverse, tangential longitudinal and radial longitudinal sections following standardised procedures (Hather 2000; Leney and Casteel 1975). Subsequently, they were viewed under a stereozoom microscope for initial sorting and a metallurgical incident light microscope at up to x400 magnification for identification of the woody taxa present. Observations were made concerning the presence of round wood and state of preservation. Specimens were identified through comparison with reference texts (Hather 2000; Schoch *et al.* 2004; Schweingruber 1990). Habitat information and nomenclature used follows Stace (1997).

### Results

The majority of wood charcoal identifications were obtained from pit 7302, whereas only 32 fragments were identified from pit 2754 (Table 6.2). Anatomical characters observed are consistent with those of the following taxa: *Quercus* sp. (oak); *Corylus avellana* (hazel); Maloideae subfamily, including *Crataegus* sp. (hawthorns); *Malus* sp. (apples); *Pyrus* sp. (pears); *Sorbus* sp. (whitebeams); *Acer campestre* (field maple) and *Fraxinus excelsior* (ash).

The majority of the assemblage consisted of mature oak wood, with limited amounts of roundwood fragments, which derive from twigs or small branches. Vitrification and general distortions of the wood anatomy were recorded frequently, but only one fragment from pit 2754 was unidentifiable because of poor preservation. Vitrification occurs when the wood anatomy fuses, becoming glassy, and it is generally linked to the use of high temperatures and prolonged burning. Experimental work has shown, however, that these factors are not enough to cause charcoal to become vitrified (McParland *et al.* 2010). It is therefore likely that for vitrification to happen, other unknown co-factors are at play.

A large number of oak fragments from pit 7302 presented radial cracks. These are due to the presence of moisture in the wood and depending on the number and size of the cracks, they might indicate the burning of fresh as opposed to seasoned wood (Théry-Parisot and Henry 2012). Much of the oak from pit 2754 displayed frequent tyloses, which are a sign of 'stress' for the plant, perhaps because of injury or decay, although vessels containing a high proportion of tyloses can also be identified in mature trees.

## Discussion

Both features are likely to contain an amalgam of waste of domestic origin, since the charcoal occurs alongside cereals and hazelnut shells. Mature oak wood was dominant in both pits, indicating that this tree was available in the local landscape in the Anglo-Saxon period. It also suggests a preference for dried oak fuelwood because of its excellent burning properties. All the represented taxa grow as part of a mixed deciduous woodland or woodland margin, although some taxa of the Maloideae group can also grow in scrub, hedgerows or as part of gardens or orchards. The wood of oak, ash and hazel makes an excellent fuel, whereas maple is less suited and indeed this taxon did not represent a main choice, but rather seemed an accidental inclusion in the assemblage.

The assemblage as a whole indicates access to mature oak and mixed woodland, likely managed, with patches of open woodland. Direct evidence for woodland management is not discernible in the assemblage, but the chosen range of taxa makes practices such as coppicing likely. The range of woody taxa and vegetation environments exploited for fuel are broadly typical of Anglo-Saxon charcoal assemblages in southern England (Smith 2002). Early to mid-Saxon SFBs excavated at Abbots Barton, Winchester (Powell 2015) yielded a similar array of taxa, albeit with a smaller proportion of oak as fuelwood and the occasional inclusion of wetland species, perhaps more abundant locally.

Table 6.2 Charcoal identifications

	Sample number	53324_1	38477_2759
	Context	7303	2753
	Parent context	7302	2754
	Period	Saxon	Saxon
	Context/deposit type	pit	pit
	Comments	vitrification and distortions common. Oak has frequent radial cracks	distortions and vitrification common. Tyloses in oak
Taxonomic identifications	English name		
	<i>Quercus</i> sp.	oak	148 – rw 1
	<i>Fraxinus excelsior</i>	ash	6
	<i>Acer campestre</i>	maple	4
	cf. Maloideae group	hawthorn, whitebeam, rowan, apple, pear	2
	cf. <i>Corylus avellana</i>	hazel	6 – rw 4
	Indet. knot		2
	Indet. vitrified		-
	<b>Total fragments</b>	<b>168</b>	<b>32</b>

rw – round wood. Numbers in brackets indicate tentative identifications

## Molluscs

by Matt Law

### Summary of Assessment Results

Formal mollusc samples were taken from two sites: A303 Footbed and Fargo North (36881 and 45044). At two other sites at Countess (38477 and 53324) snails were collected and assessed from the bulk sediment samples. There is some inherent bias in this origin as many shells will not float and will only be present in the unextracted residues, and also since the shells recorded in the flot are those less likely to break (i.e., larger robust species and very small species).

The column of eight mollusc samples from A303 Footbed (36881) was taken from a post-glacial but otherwise undated colluvial sequence. Although relatively low numbers of shells were recovered, assessment demonstrated that all samples were dominated by species characteristic of open country conditions. The material has since been discarded.

Table 6.3 Mollusc quantification from Middle Bronze Age ditches at Fargo North (45044)

Sample	Ditch 5606 (column 5643)						Ditch 2177 (column 5825)							
	5627	5628	5629	5630	5631	5632	5817	5815	5819	5820	5821	5822	5823	5824
Context	5609	5608	5607	5607	5607	5607	2172	2172	2172	2177	2177	2176	2176	2171
Depth (m)	0.75– 0.87	0.66– 0.75	0.56– 0.66	0.46– 0.56	0.36– 0.46	0.23– 0.36	1.1–1.2	1.0–1.1	0.9–1.0	0.8–0.9	0.7–0.8	0.6–0.7	0.5–0.6	0.4–0.5
Weight (g)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Open country species</b>														
<i>Pupilla muscorum</i>	A	A	A	A	A	A	B	A	A	A	A	A	A	A
<i>Vertigo</i> spp.	-	-	C	C	B	C	-	-	-	-	C	C	C	C
<i>Helicella itala</i>	B	A	A	A	A	A	B	A	A	C	B	A	A	A
<i>Vallonia</i> spp.	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Catholic species</b>														
<i>Trochulus hispidus</i>	B	A	A	A	A	A	B	A	A	C	B	B	B	C
<i>Pomatias elegans</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
<i>Cochlicopa</i> spp.	-	-	C	B	C	C	C	B	B	C	C	A	B	B
Limacidae	-	C	-	-	-	-	-	-	-	-	-	-	-	-
<b>Shade-loving species</b>														
<i>Carychium</i>	C	-	-	-	-	-	C	B	-	-	-	-	-	-
<i>Discus rotundatus</i>	-	-	+	-	-	-	C	-	C	-	-	-	-	-
<i>Punctum pygmaeum</i>	-	-	-	C	C	-	-	-	-	-	-	C	-	-
<i>Oxychilus</i>	-	-	-	-	-	-	C	C	-	-	-	-	-	-
<i>Aegopinella</i>	-	-	-	B	C	-	-	C	C	-	-	C	-	-
<i>Vitrea</i>	-	-	-	-	-	-	C	C	C	-	-	-	-	-
Clausiliidae	-	-	C	-	-	-	-	-	-	-	C	-	-	-
<i>Ena</i>	-	-	-	-	-	-	C	-	C	-	-	-	-	-
<b>Approx. totals</b>	<b>50</b>	<b>100 +</b>	<b>100 +</b>	<b>100 +</b>	<b>100 +</b>	<b>100</b>	<b>40</b>	<b>100</b>	<b>100</b>	<b>35</b>	<b>50</b>	<b>100</b>	<b>100</b>	<b>60</b>

Contiguous columns of samples for snails were taken through two ditch profiles: a series of six samples from ditch 5606 and eight from ditch 2177 at Fargo North (45044). Shell preservation was generally good (over 100 shells), so the numbers of shells and the presence of taxonomic groups were semiquantified (Table 6.3).

Key: A =  $\geq 10$  items, B = 9–5 items, C =  $< 5$  items, (+) = present

Ditch 5605 is dominated by open country species, indicating that the wider environmental setting was open grassland. There is a hint of some stabilisation in the secondary fill (context 5607) with the presence of a few shade-loving species. Similarly, ditch 2177 was dominated by open country species, although higher numbers of shade-loving species occurred in the lower deposits. These may represent a deeper ditch providing a local shady microhabitat, but may also reflect the presence of a locally shady environment.

The molluscs retrieved from bulk soil samples were from Late Neolithic, Early Bronze Age and Anglo-Saxon contexts from Countess (38477 and 53324). Rudimentary inspection showed a mix of species, dominated by those favouring open country. The single undated sequence sampled for land snails (38477) was assessed and the material discarded. Molluscs recovered from the bulk samples from Countess (53324) were only rudimentarily assessed; some of these have now been fully analysed (see below).

## Materials and Methods of Analysis

Flots from three bulk sediment samples from Late Neolithic pit 1001, Early Bronze Age pit 1204 and Anglo-Saxon SFB posthole 3901 at Countess (53324) were analysed.

Mollusca were extracted under low-power microscopy and identified using the author's reference collection. Minimum numbers of individuals (MNI) per taxon were calculated by counting all non-repeating shell elements (usually the apex and body whorl with mouth) and recording the highest number for each taxon. All material has been retained.

Molluscan nomenclature follows Anderson and Rowson (2020). Ecological information about mollusc species is derived from Evans (1972), Kerney and Cameron (1979), Kerney (1999) and Davies (2008). As an aid to interpretation, Mollusca were organised into groups according to their broad ecological tolerances, based on the groupings in Evans (1972). These groups are:

- Group 1a: Glass snails. Snails in the families Oxycypridae and Pristiommatidae, that favour shaded environments;
- Group 1b: *Carychium tridentatum*. A small snail commonly found among leaf litter;
- Group 1c: *Discus rotundatus*. A common snail of broadly shaded conditions;
- Group 1d: Other shade-demanding species;
- Group 2: *Pomatias elegans*. A burrowing snail of shaded, disturbed ground;
- Group 3: Intermediate/catholic species. Terrestrial taxa that are tolerant of a broad range of ecological conditions;
- Group 4a: Common open country. Terrestrial taxa associated with open environments;
- Group 8: Burrowing. Subterranean species.

Note that while useful for summarising the broad ecology implied by an assemblage, the use of ecological groups may mask fine details or occasions where a species is adapted to a situation unlike its ecological group. Therefore, consideration has also been made of individual species ecologies.

As a guide to the frequency of intrusion of more recent shells into the samples, preservation conditions of *Helicella itala* were recorded following the three-point scale of Law (2020). Under this scheme, shells that are glossy and preserve their proteinaceous periostracum are classed as *Helicella itala* a, those that preserve some colouring *Helicella itala* b, and those that are completely white and opaque are *Helicella itala* c. Shells in the category *Helicella itala* a are likely to have been buried for less than a year.

The snail *Carychium tridentatum* cannot be reliably differentiated from the closely related *Carychium minimum* without dissection of the shell to reveal the columella. This has not been attempted here; however, all shells were most similar to *C. tridentatum* in external morphology, and so are referred to as *Carychium* cf. *tridentatum*.

## Results

MNI values for molluscan taxa present in the samples are presented in Table 6.4.

Modern root material is prominent in the flots, and several of the shells have a recent appearance. Shells in the categories *Helicella itala* a + b make up 11% of the total *Helicella* in sample 4, 67% of *Helicella* in sample 10, and 53% of *Helicella* in sample 11. The snail *Cecilioides acicula* is a subterranean species and is assumed to be intrusive in all contexts.

Sample 4 from context (3902), a Saxon posthole fill, yielded a moderately sized assemblage of Groups 3 and 4 taxa, suggesting an open, grassland environment. The predominance of *Vallonia* cf. *excentrica* in this sample is common in such environments.

Sample 10 from context (1205), a Late Neolithic pit fill, contained very few shells, merely 23 individuals. These also reflect an open environment, and are similarly dominated by *Vallonia* cf. *excentrica*. The low number of shells may be the result of relatively rapid infilling of the pit.

Sample 11 from context (1002), an Early Bronze Age pit fill, contains a more diverse and populous assemblage. A significant proportion of the shells in this sample (19%) came from Group 1 taxa, and none of the shells in this group had the appearance of recent shells. Shells from pit fills can be difficult to interpret, as they may derive from the sediment that was excavated to dig the pit, material that has been deliberately placed in the pit, snails that lived within the pit while it was open, or ploughwash that has subsequently sealed the pit. In this case, the Group 1 fauna plus Group 2 taxon *Pomatias elegans* may have been living in a rubbly, shaded and damp microhabitat within the pit, with chalk rubble providing interstices into which *Pomatias* can burrow. The Groups 3 and 4 taxa that dominate the sample most likely reflect the wider grassland environment. The relatively high proportion of *Pupilla muscorum* in this context may also reflect broken, rubbly ground.

Table 6.4: MNI values for molluscs in the samples

Context	3902	1205	1002
Sample	4	10	11
Context description	posthole	pit	pit
Provisional date	Saxon	Late Neolithic	Early Bronze Age
Estimated ratio 'fresh' : 'worn' shells	1:10	1:7	1:50
Mollusca	Ecological group		
<i>Oxychilus cellarius</i> (O. F. Müller, 1774)	1a	-	4
<i>Vitrea contracta</i> (Westerlund, 1871)	1a	-	1
<i>Carychium</i> cf. <i>Tridentatum</i> (Risso, 1826)	1b	-	9
<i>Discus rotundatus</i> <i>rotundatus</i> (O. F. Müller, 1774)	1c	-	32
<i>Clausilia bidentata</i> <i>bidentata</i> (Ström, 1765)	1d	-	6
<i>Pomatias elegans</i> (O.F. Müller, 1774)	2	-	8
<i>Cepaea hortensis</i> (O.F. Müller, 1774)	3	-	3
<i>Cochlicopa</i> cf. <i>lubrica</i> (O. F. Müller, 1774)	3	5	1
<i>Trochulus hispidus</i> (Linnaeus, 1758)	3	16	56
<i>Helicella itala itala</i> (Linnaeus, 1758)	4a	27	30
<i>Pupilla muscorum</i> (Linnaeus, 1758)	4a	19	47
<i>Vallonia costata</i> (O. F. Müller, 1774)	4a	6	4
<i>Vallonia</i> cf. <i>excentrica</i> (Sterki, 1893)	4a	86	13
<i>Vertigo pygmaea</i> (Draparnaud, 1801)	4a	10	9
<i>Cecilioides acicula</i> (O. F. Müller, 1774)	8	+++	++
<b><i>Helicella itala a</i></b>	<b>2</b>	<b>3</b>	<b>2</b>
<b><i>Helicella itala b</i></b>	<b>1</b>	<b>1</b>	<b>14</b>
<b><i>Helicella itala c</i></b>	<b>24</b>	<b>2</b>	<b>14</b>

Scale of estimated abundance for *Cecilioides acicula*: + = 1–10 shells, ++ = 11–50 shells, +++ = >50 shells

### *Discussion*

The assessment suggested that the conclusions drawn from the molluscan evidence do not greatly modify the overall interpretation already existing for the landscape (Allen 1997); more detail to confirm this is given by the new analysis of additional samples. The Late Neolithic pit fill 1205 contains few shells, reflecting an open, grassland environment, although many of these may be recent intrusions. It has previously been suggested from land snail analyses that Late Neolithic Stonehenge was in established, open, grazed grassland (Hazell and Allen 2013), which this sample broadly supports. Early Bronze Age pit fill 1002 contains a more diverse fauna, although once again there are various more recent shells. There is a significant component here that suggests a rubbly, shaded microhabitat was present in the pit while it was open, however. Similar faunas have been reported from open features throughout the Stonehenge landscape (Evans *et al.* 1984). Finally, Saxon posthole fill 3902 contained a relatively populous assemblage reflecting an open, grassland environment.

# CHAPTER 7

## RADIOCARBON DATING AND CHRONOLOGICAL MODELLING

by Peter Marshall, Irka Hajdas and Sanne Palstra

### Introduction

**A TOTAL OF 11 RADIOCARBON MEASUREMENTS** are available from trenches excavated as part of evaluations in advance of the Stonehenge Visitor Centre (Table 7.1). All are conventional radiocarbon ages (Stuiver and Polach 1977) corrected for fractionation using  $\delta^{13}\text{C}$  values measured by Accelerator Mass Spectrometry (AMS).

The samples were obtained from interventions that took place in 1993 (A303 Footbed: 36881), 1998 (Fargo North: 45044) and 2003 (Countess: 53324) and dated at the Oxford Radiocarbon Accelerator Unit (ORAU) in 1999 and 2017; <sup>14</sup>CHRONO Centre, Queen's University, Belfast in 2017; Centre for Isotope Research, University of Groningen, the Netherlands in 2021; and at ETH Zürich, Switzerland in 2021.

Two samples were dated at ORAU. The animal bone dated in 1999 was pretreated and gelatinised using the continuous flow system as described by Hedges *et al.* (1989) and Law and Hedges (1989). Following its conversion to carbon dioxide (Hedges *et al.* 1992), it was then graphitised (Dee and Bronk Ramsey 2000) and dated by AMS using a hybrid ion source (Bronk Ramsey and Hedges 1997). The carbonised plant remains dated in 2017 were pretreated and combusted as described in Brock *et al.* (2010), graphitised (Dee and Bronk Ramsey 2000) and dated by AMS (Bronk Ramsey *et al.* 2004).

The two antler samples dated at the <sup>14</sup>CHRONO Centre in 2017 were pretreated and measured by AMS following the methods described in Reimer *et al.* (2015).

Three samples were dated at the Centre for Isotope Research in 2021. The single charred plant macrofossil was pretreated using acid only (4% HCl) and the two bone samples were pretreated using an acid-base-acid protocol (4% HCl, 1% NaOH, <1% HCl), gelatinised, and filtered (50  $\mu\text{m}$ ) (Dee *et al.* 2019). All the samples were combusted in an elemental analyser (IsotopeCube NCS), coupled to an Isotope Ratio Mass Spectrometer (Isoprime 100). The resultant  $\text{CO}_2$  was graphitised by hydrogen reduction in the presence of an iron catalyst. The graphite was then pressed into aluminium cathodes and dated by AMS (Salehpour *et al.* 2016; Synal *et al.* 2007).

Four samples were dated at ETH Zürich in 2021. The charred plant macrofossil and carbonised residue were pretreated using the acid-base-acid protocol described by Hajdas (2008), and bone samples underwent ultrasonic cleaning in distilled water before gelatinisation and ultrafiltration as described by Hajdas *et al.* (2007; 2009). Samples were then combusted and graphitised as outlined in Wacker *et al.* (2010a) and dated by AMS (Synal *et al.* 2007; Wacker *et al.* 2010b). Carbon and nitrogen ratios were obtained on subsamples of the ultrafiltered gelatine at the Department of Geology, ETH Zürich, using an elemental analyser (ThermoFisher Flash-EA 1112) coupled through a ConFlo IV interface to an Isotope Ratio Mass Spectrometer (ThermoFisher Delta V).

Data reduction was undertaken at the Centre for Isotope Research and ETH Zürich as described by Wacker *et al.* (2010c), with details of quality assurance data and error calculation at Groningen provided by Aerts-Bijma *et al.* (2020), and similar details for ETH found in Synal and Wacker (2010). All four facilities maintain continual programmes of quality assurance procedures, in addition to participation in international intercomparison exercises (Scott 2003; Scott *et al.* 2010; 2017).

## Bayesian Modelling

The chronological modelling presented here has been undertaken using OxCal 4.4 (Bronk Ramsey 2009), and the internationally agreed calibration curve for the northern hemisphere (IntCal20; Reimer *et al.* 2020). The models are defined by the OxCal CQL2 keywords and by the brackets on the left-hand side of Figure 7.1. In the figures, calibrated radiocarbon dates are shown in outline, and the posterior density estimates produced by the chronological modelling are shown in solid black. The highest posterior density intervals, which describe the posterior distributions, are given in italics.

The results for the samples from Western Approach Route Corridor (Fargo Plantation) and A303 Footbed, together with those from Countess that are not associated with the main floruit of Saxon activity, have been calibrated using IntCal20. Quoted ranges are derived from the maximum intercept method (Stuiver and Reimer 1986), and distributions on Figure 7.3 by the probability method (Stuiver and Reimer 1993). These date ranges are given in normal type.

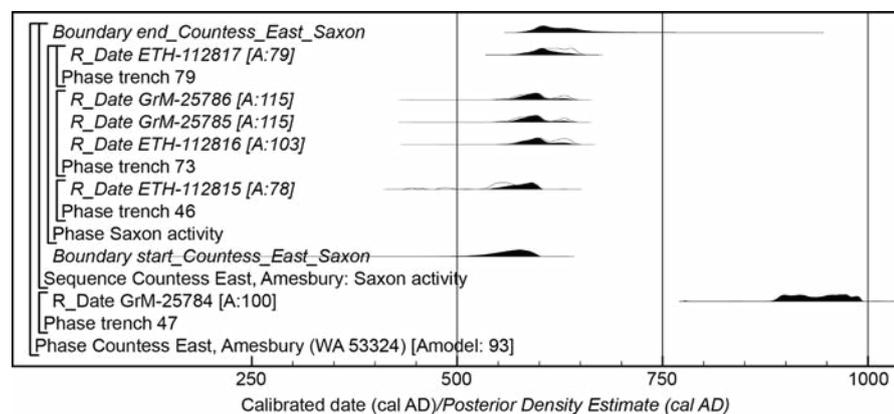


Figure 7.1 Probability distributions of dates from Countess (Saxon activity). Each distribution represents the relative probability that an event occurs at a particular time. For each of the dates two distributions have been plotted: one in outline, which is the result of simple radiocarbon calibration, and a solid one, based on the chronological model used. Other distributions correspond to aspects of the model. For example, the distribution 'start\_Countess\_East\_Saxon' is the estimated date when Anglo-Saxon activity at Countess started. The large square brackets down the left-hand side of the diagram, along with the OxCal keywords, define the overall model exactly (<http://c14.arch.ox.ac.uk/>)

### Countess

The five radiocarbon determinations (ETH-112815–122817 and GrM-25785–25786) associated with early Anglo-Saxon activity at Countess are statistically consistent at the 5% level ( $T'=9.5$ ;  $T'(5\%)=3.8$ ;  $\nu=4$ ; Ward and Wilson 1978) and could therefore be of the same actual age, suggesting they derive from a short-lived phase of activity. These determinations include a sample (ETH-112815) from pit 4609 that contained two sherds of potentially Late Bronze Age/Early Iron Age pot; these are clearly residual.

The Early Anglo-Saxon occupation at Countess began in *cal AD* 490–605 (95% probability; *start\_Countess\_East\_Saxon*; Fig. 7.1), probably in *cal AD* 550–595 (68% probability) and finished in *cal AD* 575–695 (95% probability; *end\_Countess\_East\_Saxon*; Fig. 7.1), probably in *cal AD* 595–645 (68% probability). The dated activity lasted for 1–85 years (95% probability; Fig. 7.2) probably 1–50 years (68% probability).

Ditch 4704 is clearly not related to the Early Anglo-Saxon occupation at Countess but to activity at the end of the first millennium *cal AD*, as it was dug before *cal AD* 885–995 (2 $\sigma$ ; GrM-25784; Fig. 7.1).

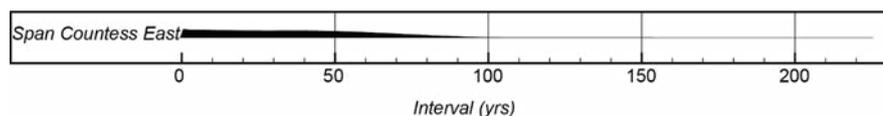


Figure 7.2 Probability distribution for the number of years during which settlement activity occurred at Countess East, derived from the model defined in Figure 7.1

### Western Approach Route Corridor (Fargo Plantation)

The carbonised residue adhering to the interior of sherd PRN105, from the secondary fill (7872) of ditch 7875, dates to 1260–1050 cal BC (ETH-112814;  $2\sigma$ , Fig. 7.3) and given the fragile residue is unlikely to have survived if the sherd was exposed for a long period of time prior to deposition. It provides a *terminus ante quem* for the digging of the ditch.

### Fargo North

The sample from Fargo North (45044) dated in 1999 provides a *terminus post quem* of 1500–1260 cal BC (OxA-8319;  $2\sigma$ , Fig. 7.3) for the tertiary infilling of ditch 5605 as the red deer scapula could potentially be residual.

### A303 Footbed and Countess

The samples dated in 2017 from A303 Footbed (UBA-34502) and Countess (UBA-34500 and OxA-35721) were submitted as part of a Historic England project to better understand the chronology of Neolithic pit digging in Wiltshire (Roberts and Marshall 2019; 2020). The two radiocarbon determinations obtained on a red deer antler (UBA-34500) and sloe fruit (OxA-35721) from the fill (1205) of pit 1204 (Countess) are statistically consistent ( $T'=2.5$ ;  $T'5\%=3.8$ ;  $v=1$ ) and could therefore be of the same actual age. The Durrington Walls substyle Grooved Ware and flint debitage the pit contained were deposited in 2870–2490 cal BC (UBA-34500;  $2\sigma$ , Fig. 7.3). The substantial assemblage of Grooved Ware from pit 2003 at A303 Footbed (on King Barrow Ridge) dates to 2470–2200 cal BC (UBA-34502;  $2\sigma$ , Fig. 7.3).

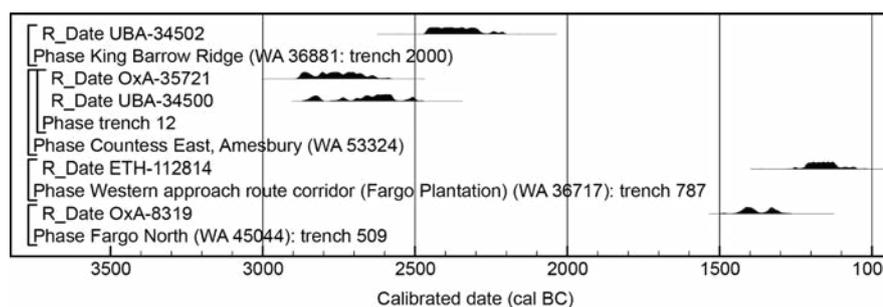


Figure 7.3 Probability distributions of dates from Fargo North (45044), Western Approach Route Corridor (Fargo Plantation), Countess (53324) and A303 Footbed (36881) (referred to in the table as King Barrow Ridge). The distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993)

Table 7.1 Radiocarbon and stable isotope measurements

Laboratory number*	Sample ID, material & context	$\delta^{13}\text{CRMS}$ (‰)	$\delta^{13}\text{CAMS}$ (‰)	$\delta^{15}\text{NIRMS}$ (‰)	C/N	Radiocarbon age (BP)	Calibrated date (2 $\sigma$ )	Highest posterior density interval (95% probability) cal AD
<b>Fargo North (45044)</b>								
OxA-8319	Animal bone, red deer scapula from the tertiary fill (5607) of ditch 5605 in trench 509	-20.5	-	-	-	3115±40	1500–1260 cal BC	-
<b>Western Approach Route Corridor (Fargo Plantation) (36717)</b>								
ETH-112814	PRN105 Carbonised residue adhering to the interior of PRN105, from the secondary fill (7872) of ditch 7875 in trench 787	-	-27.6	-	-	2949±22	1260–1050 cal BC	-
<b>Countess (53324)</b>								
GM-25784	4706.1 Animal bone, <i>Bos taurus</i> , adult, left rib part of articulating group of 11 vertebrae and 8 ribs (L. Higbee, Wessex Archaeology), from secondary fill (4706) of ditch 4704; trench 47	-21.7±0.15	-	4.4±0.3	3.2	1114±22	cal AD 885–995	-
ETH-112817	7906.1 Animal bone, <i>Equus caballus</i> , adult female, skull (L. Higbee, Wessex Archaeology), from primary fill (7906) of SFB 7905; trench 79	-22.6±0.1	-	6.9±0.1	3.2	1439±22	-	575–645
ETH-112815	4607.1 Animal bone, <i>Sus domesticus</i> , juvenile, articulating left radius and ulna (L. Higbee, Wessex Archaeology), from fill (4607) of pit 4609; trench 46	-21.3±0.1	-	7.2±0.1	3.8	1530±22	-	545–605
GM-25785	7306.1 Animal bone, <i>Bos taurus</i> , adult, articulating right ulna, distal humerus, and proximal radius (L. Higbee, Wessex Archaeology), from fill (7306) of SFB 7308; trench 73	-21.7±0.15	-	5.0±0.3	3.2	1480±21	-	560–640
ETH-112816	7303.1 Carbonised plant macrofossil, <i>Hordeum vulgare</i> (Inés López-Dóriga, Wessex Archaeology), from fill (7303) of posthole 7302; trench 73. Part of a concentrated assemblage of grain (barley, wheat and chaff).	-	-23.5	-	-	1466±22	-	570–640
GM-25786	7303.2 Carbonised plant macrofossil, <i>Triticum aestivum/turgidum</i> (Inés López-Dóriga, Wessex Archaeology), from fill (7303) of posthole 7302; trench 73. Part of a concentrated assemblage of grain (barley, wheat and chaff).	-23.4±0.15	-	-	-	1478±21	-	565–640
UBA-34500	Antler, red deer beam between bez and trez tines (no evidence of heating but the tip of trez is rounded possibly as a result of use wear) from the fill (1205) of pit 1204. Contained 32 sherds of Grooved Ware, a large quantity of flint debitage, burnt flint, and antler.	-22.2±0.22	-	7.1±0.15	3.2	4086±36	2870–2490 cal BC	-
OxA-35721	Carbonised plant remains, sloe fruit from the same context as UBA-34500	-26.2±0.2	-	-	-	4165±34	2890–2620 cal BC	-
<b>A303 Footbed (36881)</b>								
UBA-34502	Antler, red deer antler pick, from the single fill (2004) of pit 2003. Contained substantial quantities of Grooved Ware ceramics from at least four vessels	-22.5±0.22	-	6.4±0.15	3.2	3883±35	2470–2200 cal BC	-

# CHAPTER 8

## DISCUSSION

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### Introduction

**A**LTHOUGH CARRIED OUT SEPARATELY over a long period of time, the archaeological works reported on here were not conceived of or undertaken in a vacuum. All were underlain by the Stonehenge Conservation and Management Project Environmental Statement (Darvill 1991) and its successors, which defined the methodological and intellectual framework within which the works took place. All but the last of the fieldwork phases pre-dated the publication of the first Archaeological Research Framework for the Stonehenge part of the WHS (Darvill 2005), since augmented by the first combined Research Framework for the WHS as a whole (Leivers and Powell 2016).

The results of the various investigations in advance of the Stonehenge Visitor Centre allow a number of the broad research themes and more focused period-based questions detailed in the 2016 Research Framework to be addressed. These are:

- **Landscape history and memory:** to gain a better understanding of the changing, long-term histories of the WHS, and particular locations within it – how places came to be seen as significant; how their meanings changed over time, and how they came to be viewed and treated after their periods of primary use had ended;
- **Daily life:** to gain a better understanding of the changing, day-to-day lives of those living within, or passing through, the WHS, both as they related to the construction and use of its prehistoric monuments and separate from any involvement with them.

### Mesolithic

The 2016 Research Framework noted the very fragmented nature of the Late Glacial and Mesolithic dataset in the WHS. It was concluded that a better understanding of the nature of Late Upper Palaeolithic and Mesolithic activity, along with further refinement of the chronology of sites, lithic industries and change were among the priorities for research.

Mesolithic evidence from the investigations was uncommon, but nonetheless important in adding to the emerging picture of activity. Two foci seem to be appearing: one on the west side of the Avon around Countess; the second on the downland between Longbarrow and Larkhill.

In this respect the lithic assemblage from Countess forms an isolated but intriguing and valuable addition to the corpus of worked flint from the Stonehenge locality. Although dominated by Early Neolithic material (Harding, Chapter 5), the material is a multi-period collection among which Mesolithic material is a minor but definite component.

Confirmed Mesolithic activity is demonstrated most clearly by the presence of a microlith and a burin. The argument for a significant Mesolithic component is strengthened, and the density of activity amplified, by the inclusion of blades and bladelets, which were also recovered from the evaluation. These diagnostic artefacts are, in isolation, largely uninformative but do nevertheless provide further hints of Mesolithic activity away from the principal concentration on the low-lying ground on the edge of the Avon at Blick Mead (Jacques and Phillips 2014; Jacques *et al.* 2018), a fact that has been demonstrated by increased fieldwork on the floodplain (Highways

England 2019a; Leivers and Moore 2008; Parker Pearson 2012; Richards pers. comm.). It seems very probable that artefacts at Countess were preserved in a buried soil similar to that identified near the Countess roundabout (Leivers and Moore 2008). It is unclear whether this activity can be linked to the areas of burning, possibly small hearths, that were identified in trench 83 or whether these features relate to subsequent activity.

Away from the Avon, Mesolithic material was restricted to soft hammer struck blades from the Western Approach Route Corridor. Although slight, this evidence adds to the growing body of material indicating inhabitation of the downland.

## Neolithic

The 2016 Research Framework identified similar questions addressing settlement and landscape as among the priorities for research in the Neolithic. A number of these can be addressed by the Stonehenge Visitor Centre evidence:

- While flint scatters offer our best evidence for where people were living and engaging in various productive activities during the period, their value has not been fully realised. Using scatter and, where present, cut-feature settlement signatures (e.g., pits and rare structural traces), can we develop a better understanding of the scale, tempo, duration and composition of Neolithic settlement areas in the WHS? Can we identify changes in the location and character of settlement areas over the course of the Neolithic?
- What was the relationship between settlement and monuments? Did the location of earlier settlement and other quotidian activity influence the siting and form of later monuments? Could settlement traces become meaningful in the same way as monuments, as markers of place and memory?
- Can better evidence for subsistence practices be obtained for the earliest (pre-3650 cal BC), Middle (3400–2900 cal BC) and earlier part of the Late (2900–2600 cal BC) Neolithic? Was mixed farming (use of domesticates and cereal cultivation) a feature of the Middle and Late Neolithic, or did the importance of cereal cultivation diminish, as postulated nationally?

### *The Lithic Scatter at Countess*

At Countess, the evidence of Mesolithic activity is overshadowed by the discovery of a well-preserved flint scatter which includes waste from the production of bifacial core tools. Concentrations of worked flints have been adopted as indicators of prehistoric occupation (Schofield 1991) which have frequently been identified following intensive fieldwork involving surface collection, leading to detailed excavation.

Richards (1990) undertook fieldwork of this type within the Stonehenge Environs at Wilsford Down and King Barrow Ridge. These excavations demonstrated that assemblages were predominantly contained within the thin ploughsoil overlying the chalk, although isolated pockets of undisturbed material, some containing refitting artefacts, were preserved in tree and periglacial hollows where they had survived below the ploughzone. Isolated examples of similar preservation have been identified elsewhere on the chalk uplands: at Bulford (Wessex Archaeology 2019a), for instance, refitting flakes were found preserved in surface pockets in the chalk.

Attempts by Richards (1990) to extend the study into coombes on the chalk uplands, where surfaces might be better preserved below colluvium, were largely unsuccessful; nevertheless, the potential for improved preservation of buried soils has been demonstrated in the valley bottoms. Leivers and Moore (2008) included details of a buried soil on the flood plain of the Avon where flint artefacts of Late Mesolithic date were documented near the Countess roundabout. This buried soil, which was covered by stony colluvium, was located at the edge of a terrace of the Avon at approximately

70 m OD and lay only 600 m SW from the site at Countess where the surface height was approximately 70–75 m OD.

Additional potential of the river valley locations and their tributaries has been demonstrated at Bulford (Wessex Archaeology 2019a) where a buried soil was similarly overlain by stony colluvium, containing Romano-British pottery, in a tributary coombe of the Nine Mile River. This buried soil was poorly defined and was largely removed by machine before it was fully recognised. The deposit, which included an undisturbed flaking workshop of probable Late Neolithic date, extended along the coombe valley. Artefacts, including refitting examples, were recovered from patches of buried soil that remained in pockets of dissolved coombe rock below the level of machine stripping. This catalogue of discoveries and the inherent difficulty in recognising buried soils in excavation provides an appropriate mechanism to account for the preservation of the flint scatter at Countess and the failure to recognise it before it was disturbed by the machine. Furthermore, the exposed surface of the coombe rock at Bulford showed that differential rates of solution within it had created a series of meandering channels, which may offer an alternative interpretation to the ditch observed within the confined limits of the evaluation trench.

The flint scatter at Countess is most notable for the predominance of manufacturing debris synonymous with core tool production. It is probable that this assemblage was superimposed on traces of previous Mesolithic activity which had migrated into the underlying buried soil. This exposed location rendered it more vulnerable to removal by the mechanical excavator except where it had slumped into a shallow depression. Evidence of core tool production of this type, emphasising specialist activity on a semi-industrial scale, is not unknown on Salisbury Plain but is extremely rare. Harding (1990) described the refitting sequence of a failed core tool from Wilsford Down, where a flaking area of probable Middle Neolithic date was excavated. Harding (*ibid.*) also noted the presence of large flakes which probably resulted from thinning and shaping within the assemblage from the Coneybury Anomaly. These flakes were manufactured from distinctive light grey flint, possibly similar to that noted at Countess, which may have been derived from a source of high-quality flint which was exploited for industrial output.

It is uncertain whether the assemblage from Countess was derived from more than one flaking episode but is likely to have been produced over a relatively short period of time. Newcomer (1971) produced a series of handaxes, each with approximately 50 removals, with each phase of production comprising approximately 20 removals. This approach indicates that flakes associated with phase 1 (roughing out) are under-represented at Countess, suggesting that this part of the *chaîne opératoire* was undertaken at a separate raw material source or at a different part of the scatter. The increased numbers of flakes from phases 2 (thinning and shaping) and 3 (finishing) may result from the size of the original nodule and the degree to which the blank required thinning for the intended finished product.

Irrespective of the output, the scatter from Countess is notable for the recovery of flakes showing characteristics of soft hammer mode. Previous studies of flaking mode in worked flint assemblages from the area (Harding 1990) have concluded that flaking was predominantly undertaken using flint hammers. The unequivocal use of soft percussors, probably antler, is exceptional, possibly reflecting the work of a specialist knapper.

The use of antler for hammering is well established in prehistory. Clutton-Brock (1984) described traces of impact around the burr of red deer antlers, which she attributed to use in the quarrying process while also conceding that antlers served as very convenient hammers for a range of other functions. The use of antler as a flaking hammer has been demonstrated most emphatically on Lower and Middle Palaeolithic sites in the production of handaxes. Observations on the characteristics of hammer mode produced by antler (Ohnuma and Bergman 1982) together with analysis of waste flakes (Newcomer 1971) has made it possible to identify this production process with some

certainty. Application of these studies to production of Neolithic or Early Bronze Age bifacial core tools on such an extensive scale is unusual on Salisbury Plain.

Evidence that antler hammers were used has been identified by recovery of the hammers themselves. The most convincing example was recovered from a Late Neolithic pit at Boscombe (Harding forthcoming), where the heavily battered surface of a red deer antler was embedded with minute flint chips, indicating its use for flaking. A red deer antler, with similar traces of impact, but with no visible microdebitage, was recovered from a pit at Barrow Clump dated to 3770–3630 cal BC (SUERC-67499; 4914±32 BP) (Harding 2019). However, bifacial flaking and soft hammer mode are not chronologically diagnostic: production did include axes but also includes bifacial or discoidal knives, laurel leaves and Early Bronze Age daggers.

The scatter at Countess contained no directly datable artefacts: thinning and shaping flakes together with finishing flakes represent a technology which can trace its origins to the Lower Palaeolithic as used in the manufacture of handaxes. Consequently, dating of this high-quality Neolithic core tool production, for which there are few parallels in the Stonehenge region, relies on associated factors. The scatter lies on a buried soil containing Mesolithic artefacts. More importantly it was associated with a small flake from a polished flint axe or knife and refitting sherds of Early Neolithic pottery. This date is not contradicted by evidence for the use of antler hammers, which have been documented in the area during the Neolithic period. A Neolithic date therefore provides the most satisfactory solution to the archaeological evidence although a further possibility, that it represents debris from the production of Early Bronze flint daggers, cannot be discounted entirely. These direct copies of the first bronze daggers, which mark the final flowering of the flint knapper's art in Britain, have been found from barrows around Stonehenge and employ the same technology, although manufacturing sites have never been located. A production site of these extremely high-status implements would therefore be extremely significant and carry implications beyond the local area.

### **Late Neolithic Pits**

Late Neolithic pits – some containing substantial quantities of Grooved Ware – are a common feature in the wider Stonehenge landscape (Roberts and Marshall 2019; 2020) and a scattered group from the eastern end of the investigation area provides limited additional information. The identified faunal remains are dominated by bones from livestock, but also include red deer antler and a possible piece of aurochs bone. The pit assemblages differ slightly in their composition, both in terms of species and skeletal elements, but these differences are unlikely to be significant given the limited scale of the evidence. The relative abundance of livestock varies at different Late Neolithic sites within the wider landscape, particularly in the ratio of cattle and pigs (Maltby 1990, 248), but pit assemblages generally include more pig bones than cattle (Serjeantson 2011, 17, fig. 2.4) and few sheep/goat bones (*ibid.*, 29). In this context, the animal bones from pits 2003 and 1204, are atypical of most Late Neolithic pit assemblages in the Stonehenge area.

Digging implements made from red deer antler are reasonably common finds from Neolithic sites (Worley and Serjeantson 2014) and are often made from antler collected after being shed. A complete antler can be divided, using the direct application of heat to aid breakage, into two separate implements: a pick from the proximal end and a rake from the crown. The antler pick from pit 2003 shows many of the key characteristics recorded on similar tools from the local area (Serjeantson 1995), including the selection of antler from a fully mature stag, the techniques used to divide and modify it into a tool and the evidence for use wear on the brow tine.

The dated pits are not contemporary. While the two radiocarbon determinations obtained on a red deer antler (UBA-34500) and sloe fruit (OxA-35721) from pit 1204

(Countess) are statistically consistent and could therefore be of the same actual age (2870–2490 cal BC; UBA-34500;  $2\sigma$ , Fig. 7.3), pit 2003 at A303 Footbed dates to 2470–2200 cal BC (UBA-34502;  $2\sigma$ , Fig. 7.3), several centuries later. Interestingly, although the ceramics from both have been identified as belonging to the Durrington Walls substyle, Brook (Chapter 5) notes elements of the assemblage from Countess which could belong to Clacton vessels. Although not common in the Stonehenge region, the chronological precedence of the Clacton style is demonstrated elsewhere locally at, for instance, the Chalk Plaque Pit on King Barrow Ridge (Davis *et al.* 2021; Harding 1988; Vatcher 1969) where associated animal bone returned dates of 3080–2580 cal BC (OxA-3316;  $4250 \pm 80$  BP) and 2910–2460 cal BC (OxA-3317;  $4130 \pm 80$  BP).

There is a very marked difference between the lithic assemblages in pit 2003 (containing Durrington Walls-style Grooved Ware) on the one hand and pits 1204 and 7309 (containing either Grooved Ware with traits of the Clacton style, or no pottery) on the other. In the former, the assemblage is dominated by large, thick, mainly irregular flake debitage. Harding described similar assemblages from Dean Bottom pit 23 as ‘a failed, rejected component... consist[ing] largely of unusable waste from an industry producing non-specialised flakes’ (Harding 1992, 132). The material from pits 1204 and 7309 is very different, with smaller, finer flakes dominating.

A similar correlation between ceramic type and flint assemblage contents has been observed elsewhere with some frequency at, for instance, Amesbury Down (Harding and Leivers in prep) and on Salisbury Plain (Leivers 2018). The associated radiocarbon dates from the Stonehenge Visitor Centre sites demonstrates that this distinction is chronological, and that otherwise-undated pit 7309 is likely to belong to the first half of the third millennium.

### ***Environmental Evidence***

The archaeobotanical evidence from the Late Neolithic and Early Bronze Age samples suggests the exploitation of wild plant resources in association with cultivated crops (mostly cereals). This set of plant resources and their low abundance, particularly that of cereal remains, is in keeping with the evidence from other sites in the immediate surrounding landscape, although it is evident that relatively rich and diverse archaeobotanical assemblages have been retrieved when the focus is widened to the surrounding area of the WHS (Table A4.4). The sparsity of remains in this particular assemblage limits the potential for interpretation of the nature of these activities; in addition, preservation by charring favours the survival of a limited set of types of resources, estimated to be around 20% of the total range of exploited plant resources (e.g., van der Veen 2007), while others are almost invisible. For example, plants that would have been consumed raw, such as leafy greens, or plants with usable parts that are watery and less dense (e.g., tubers and stems) are less likely to become charred and preserved.

In addition, to complicate this further, cereal intrusion is an important issue in the WHS and surrounding area, particularly affecting cereal grains in sparse deposits such as those of Neolithic and Bronze Age sites (e.g., Campbell and Pelling 2013, Pelling *et al.* 2015). This is so because grains are particularly well suited from the anatomical point of view to burrow their way into the sediment (in their wild ancestors, this would ensure germination and dispersal success) but, in addition, the high abundance of burrowing snails (*Cecilioides acicula*) coupled with the intense earthworm activity typical of chalk landscapes may be responsible for the vertical and horizontal transport of small items (Canti 2003). A number of Early Neolithic deposits with cereal remains are known in the area (e.g., Coneybury Anomaly, Old Dairy, Porton Down, Windmill Hill, among others) but, with one exception, none are directly dated. At West Chisenbury Farm, three indeterminate cereal grains were directly dated to 3770–3640 cal BC (SUERC-41705; Table A4.4, Wyles and Stevens 2018a). This latter example reinforces

the importance of sustaining the efforts to obtain direct radiocarbon dates on cereal grains to ascertain the earliest introduction(s) of each of the crops.

Wheat grains and chaff (undetermined to species level but assumed to be hulled wheat, most likely emmer – *T. dicoccum*) have been found in other WHS sites, with the oldest securely dated example originating from the Late Neolithic (2350–2060 cal BC; UBA-39015; Table A4.4: A303 Amesbury to Berwick Down) and later directly dated Bronze Age examples are also relatively widespread (e.g., Boscombe Down, King's Gate, Durrington Walls). However, the naked wheat grain from Late Neolithic pit 1204 in Countess is assumed to be intrusive on account of its good preservation (no fragmentation, epidermis preserved). Naked wheat grains have been found in Neolithic deposits in the Stonehenge WHS, although all dated specimens have proven to be intrusive when directly dated (see Table A4.4). Although different species in the naked wheats were cultivated in the Neolithic in continental Europe, the first finds of naked wheat currently derive from Early Neolithic sites in Kent, where a tetraploid species was recorded (Carruthers 2019; 2021). Most naked wheat grains, however, probably reflect intrusive bread wheat, which occasionally appears in the later Iron Age to Romano-British period (often in association with the Roman army, although it did not become a widespread crop until the Anglo-Saxon period).

Conversely, although none of the barley grains from any of the deposits from the Stonehenge Visitor Centre sites are directly dated and could therefore be intrusive, their poor preservation is consistent with their expected age. There are other local examples of directly dated barley remains of a similar chronology that show this cereal was known in the area since at least the Middle Neolithic (e.g., Bulford) and relatively widespread in the Late Neolithic (Boscombe Down, King's Gate) and Bronze Age (e.g., Coneybury Anomaly, A303 Amesbury to Berwick Down).

In addition to naked wheat, two other cereals, cultivated oats (*Avena sativa*) and rye (*Secale cereale*), have a highly dubious presence in any prehistoric deposit from the area. Oat (*Avena* sp.) grains appear in a diverse range of sites in the WHS and surrounding area, although none of the finds have been positively identified as belonging to the domestic species, which is undistinguishable from the wild species in the absence of chaff. In addition, oats do not seem to become a widespread crop in Britain until post-Roman periods (Campbell 2016; Moffett 2006). Rye, on the other hand, is a relatively late arrival in western continental Europe (from where all domesticated plants arrive in Britain) and although it occasionally occurs as a likely weed in some Romano-British assemblages, it does not become an established crop until the medieval period (Campbell 2016; Moffett 2006).

Other domesticated plants such as flax and legumes (e.g., broad bean, garden pea) could have played a role in early farming societies (Fairbairn 2000a), but the evidence from the WHS and surrounding area is not entirely conclusive until the Bronze Age, and none of it is directly dated. These other crop resources are often under-represented in comparison to cereals because of preservation and functional biases. For example, cereal grains are dense and have a high probability of preserving when charred, (e.g., Boardman and Jones 1990), while hulled cereal varieties in particular (e.g., einkorn, emmer, spelt or hulled barley) require de-husking prior to consumption, usually undertaken in domestic environments on a piecemeal basis, and this process is helped by parching/roasting, therefore increasing the chances of preservation (Hillman 1981). On the contrary, flax seeds are oily and not dense and tend to explode or combust when exposed to fire (Märkle and Rösch 2008), but also need crushing to extract their oil, reducing the chances of identifying their fragmentary remains. Seeds of legumes may be eaten raw, sundried or boiled, although they were not necessarily parched or roasted (Valamoti *et al.* 2011) which may explain their limited presence in the archaeobotanical record (e.g., Treasure and Church 2016).

Currently the only evidence for flax is in the form of Early Neolithic pottery impressions from Winterbourne Stoke and Windmill Hill, although the pottery

itself may have been manufactured elsewhere and brought to the site (Table A4.4). Direct evidence for flax seeds does not appear until the Beaker period at Boscombe Down, the Middle Bronze Age at Wilsford Shaft and in Late Bronze Age deposits at Potterne (Table A4.4). Evidence for the use of legumes is even more dubious as very few examples of legume seeds exist for the area: the oldest assemblage with pea is a Late Neolithic deposit in West Kennet Farm, although this has been re-interpreted as Anglo-Saxon (Campbell and Pelling 2013). Similarly, two direct dates have been obtained on a possible pea or pea/bean from prehistoric deposits in King's Gate and West Amesbury Farm, yet both have proved to be medieval intrusions, leaving the possibly oldest and only find that of a pea/lentil from Late Bronze Age/Early Iron Age deposits at East Chisenbury (Table A4.4). The absence of legume seeds in Middle Bronze Age sites in the region is likely to reflect a preservation bias, as opposed to their actual absence.

The rarity of high-quality archaeobotanical assemblages of domesticated plants between the Middle/Late Neolithic and Early Bronze Age in southern and central England has been noted in the wider literature. This has led to proposals that agriculture was abandoned after the initial start in the Early Neolithic, with this lasting until about the Middle Bronze Age (e.g., Stevens and Fuller 2012; 2015). In addition, it has been suggested that there is 'little hard stratigraphic evidence for cultivation [...] before the Late Bronze Age' (Canti *et al.* 2013, 12). The sparse evidence for cereal grains and their frequent association with abundant hazelnut shells, typically found in pit fills (e.g., Campbell and Pelling 2013; Fairbairn 2000b; Moffett *et al.* 1989) and often in association with Grooved Ware pottery, provide arguments to fuel the debate between the distinction of 'routine practice' and 'structured deposition' (e.g., Thomas 2012). Chaff is rarely preserved in these pit deposits, which may be because of a preservation bias: chaff is less likely to survive charring than grains, and delicate charred plant material is sensitive to erosion in alkaline environments (Braadbaart *et al.* 2009). However, the absence of chaff, and associated arable weeds, may instead suggest these deposits do not originate from crop-processing by-products (e.g., van der Veen 2007). This could indicate that fully cleaned cereal products were occasionally obtained, perhaps via exchange with other communities, in the absence of any or sustained local cultivation practices.

Regardless of the degree of adoption of cereal cultivation as a widespread practice in the area, wild plant resources must have played an important role in early farming societies, and certainly in hunter-gatherer societies on the fringe of early farming societies. Although strong evidence for the consumption of wild resources at the site was obtained only for hazelnuts and sloes, a diverse range of other wild plant resources have been found in the area, such as crab apples, elderberries, blackberries, acorns, yew, dogwood and hawthorn berries (Table A4.4). All these fruits have fairly predictable availability with edibility and storage properties often improved by cooking (e.g., Wiltshire 1995). The recovery of many of these nuts and fruits as complete or semi-complete specimens (with flesh and kernels, as opposed to merely discarded by-products, such as stones, pips and nutshell fragments) in a number of sites, including Countess East, is strongly suggestive of accidents occurring during roasting activities, either for direct or delayed consumption.

Among the wild plant resources, special mention must be made to onion-couch tubers (or swollen basal culm internodes), found in Countess and a long list of other sites (see Table A4.4). This plant grows in a variety of habitats including grassland and banks and is an early coloniser of open land, which has led some to propose it was simply part of the natural vegetation accidentally charred (Clapham and Stevens 1999). However, it has been found in large numbers of archaeological sites in western Europe (e.g., Roehrs *et al.* 2013), and has often been remarked as being associated with prehistoric cremation deposits, leading to proposals of its use as votive food (e.g., Godwin 1975) or pyre fuel (e.g., Robinson 1988). Nevertheless, its presence is not restricted to this type of deposit and therefore simple univocal explanations may not be applicable. Recent experiments on edibility have produced contradictory results (Effenberger *et al.* 2021; López-Dóriga 2021a vs. Mears and Hillman 2007) which suggest further work is needed to understand the use of this past resource.

This complementary role of wild and domestic resources is generally observed across different societies (Mason *et al.* 2002) and there is plenty of archaeobotanical evidence for the continuity in wild plant resource exploitation between the Mesolithic and the later Neolithic and Bronze Age societies in western Europe (e.g., Colledge and Conolly 2014). The important role of hazelnuts is often difficult to quantify because of extreme fragmentation and preservation differences, leading some authors to suggest they are overrepresented in the archaeobotanical record (e.g., Legge 1989). While it is clear that hazelnut shell fragments cannot be directly compared to, for example, cereal grain numbers (e.g., Robinson 2000), many attempts have been made to establish a reliable measure for quantifying hazelnut shell fragments accurately (e.g., Antolín and Jacomet 2015; Holst 2010; McComb and Simpson 1999) and recent experimental evidence has questioned the overrepresentation supposition (Holguin *et al.* 2022). All this has demonstrated that hazelnut numbers can actually be substantial, and their ubiquity cannot be casual: hazelnuts would have been valuable predictable resources that can be relatively easily stored for long periods (Cunningham 2011), possibly even constituting the basis of 'a hazelnut economy' (Holst 2010).

The hazelnut remains are still abundant after applying a reliable fragmentation correction (Antolín and Jacomet 2015), yet their high degree of fragmentation suggests possible trampling and reworking of the deposit and prevented the taphonomic analysis of the fragments that would have enabled further analysis of formation processes (Bishop 2019; López-Dóriga 2015). The presence of hazelnut kernels in Countess and other sites, a phenomenon that only occurs in a very narrow range of charring temperatures and conditions (Bishop 2019), could point to mass preparation of hazelnuts (e.g., Mithen *et al.* 2001), but whether this is for improving taste or long-term storage (e.g., Cunningham 2005) is difficult to infer.

## Middle and Late Bronze Age

As noted in the 2016 Research Framework, 'the Middle and Late Bronze Age saw a major change in the focus of activity in the WHS (and beyond), with the end of major ceremonial and mortuary monument construction, and widespread establishment of permanent settlements within a clearly agricultural landscape' (Leivers and Powell 2016, 19).

Identified research questions focused on these two elements (ceremonial and agricultural landscapes) and the relationship (or lack of relationship) between them; on the chronology of field system development; on the relationship of settlements to field systems; and on the nature of the natural landscape. A number of these can be addressed by the evidence from the Stonehenge Visitor Centre sites.

The geophysical survey at Fargo North (Bartlett 1998) shows that the field system has an entrance leading into a double-ditched trackway that heads south beyond the limit of the survey. The majority of features were located in trenches 509 and 510 (Fig. 4.5), which appear to be separated by the trackway and a field, although it is unclear whether this 'empty' field is a genuine feature or as a result of the vagaries of trench placement. It is possible that two areas of settlement exist, possible roundhouses being identified in both, each located proximate to the Stonehenge cursus. While this suggests that this structure was not considered taboo, neither was it encroached upon by the settlements, perhaps reflecting acknowledgement of and respect for the monument.

A feature of Middle Bronze Age settlement in this part of southern Britain that is increasingly coming to light as a result of large area development is that for some settlements, each new generation of roundhouse was constructed away from the existing buildings, on new footprints. The effect of this is that, rather than being anchored in one location, settlements slowly shift position over the course of their life: they appear to wander. Large numbers of probable Middle and Late Bronze Age roundhouses are increasingly being identified at sites such as Larkhill (Wessex Archaeology 2020a),

Dunch Hill (Andrews 2006) or Old Sarum Spur (Powell *et al.* 2005). This pattern is reflected at Fargo North, where evidence of settlement is distributed across a number of fields. The settlement itself is ostensibly open but enclosed by the structure of the fields, ditched and possibly hedged but located next to the trackway providing access both out of the field system and deeper into it.

It seems unlikely that all of the evidence belongs to a single large but possibly short-lived phase of settlement and although phasing is usually impossible because of a paucity of datable material, it is probable that each of the settlement structures were constructed on new footprints. This could indicate that older structures were still standing when the next phase was constructed and it has been suggested that this could reflect each new generation of household stating an independence from the generation before (Brück 1999, 159), although as new roundhouses seem to be constructed within tens of metres of each other it may be more to do with the expedients of the household lifecycle. An alternative interpretation is that such a system may have been employed to maintain soil fertility within the field system as a whole, with the detritus of daily life fertilising the fields as the settlement shifted around them (B. Cunliffe pers. comm.).

To the north of the field system there is a dramatic reduction in the number of features. If this area was covered with fields during the later Bronze Age, then they were delineated in a different means to those further south. Lynchetted field systems in other parts of the region have turned out to have few traces of ditched boundaries underlying them (e.g., Druid's Lodge, Wessex Archaeology 2017b) and so this would not necessarily be unusual however it is in stark contrast to the area to the south. Ditches 5741 and 5619 may hint at some form of division but what they represent, and their date, is far from clear. If such a system existed here it probably had a different date or function to those further south.

An alternative theory is that this was a genuinely blank area outside of formally laid-out fields. If so, this probably formed open pasture with the settlement located near to the boundary between the formal structured fields and the open unstructured pasture, linked by the trackway to exploit a range of resources.

Earlier surface collection and then excavations (as part of the Stonehenge Environs Project: Richards 1990) to the north of the cursus and immediately east of Fargo Plantation (approximately 700 m to the north-east of Fargo North) identified another concentration of settlement dated to the Middle–Late Bronze Age. Over 4000 sherds of Middle–Late Bronze Age pottery were recovered, perhaps (as at Fargo Plantation) with a greater emphasis on the later part of this period. Excavations identified several possible concentrations of activity. In one (Area B) a thin buried midden deposit was identified, but apart from this the only features excavated were a single pit and a posthole (Richards 1990, 196). The site lies within an area of prehistoric fields and elevated quantities of later Bronze Age pottery continued to be noted during surface collection some distance from the site and was considered to be indicative of a manuring regime.

It seems likely that as at Fargo North, there was an extended area of wandering later Bronze Age settlement situated in the fields to the north of the western end of the Stonehenge Cursus.

While only small elements of the two areas of later Bronze Age settlement at the western end of the Stonehenge Cursus were investigated, that around Fargo North appeared to have a pottery assemblage that trended more to the Middle Bronze Age and that at Fargo Plantation one that trended to the Late Bronze Age, although there appeared significant chronological crossover between the two. This implies that these were two distinct contemporary (for at least part of their history) settlements. Both were emplaced within their own field systems although probably towards the edges of these rather than at the core. This possibly allowed them access not only to

their enclosed fields but to open, probably shared, pasture, implying a degree of co-operation and belonging within the local community.

The animal bones from Middle and Late Bronze Age ditches indicate a livestock economy based on sheep/goat- and cattle-farming, but perhaps with a greater emphasis on the former for wool. This pattern is consistent with broad trends which indicate a largely sheep-based economy in Wiltshire during this period (Hambleton 2008, 41). The Middle Bronze Age animal bone assemblage from the nearby site at Larkhill (Wessex Archaeology 2020a) has similar species proportions. In general, there is little evidence that Bronze Age sheep-farming in southern Britain was intensively managed or focused on any one commodity (Hambleton 2008, 56, 76–7). Cattle were secondary in importance after sheep/goat, but their greater size means that they provided the main source of meat, although there is little evidence that cattle herds were intensively managed for beef production, but rather as part of mixed strategy, perhaps with a slight emphasis on dairying (*ibid.*, 65, 77).

Pigs are a minor component of the Middle to Late Bronze livestock economy, perhaps reflecting the lack of woodland and suitable environments for pannage in the local area (Hambleton 2008, 68). The low frequency of horse, dog and deer bones is consistent with the occurrence of these species in other Middle to Late Bronze Age assemblages from sites in southern Britain (*ibid.*, 36, 71 and 75). Deer antler was valued as a raw material and these animals were occasionally hunted to supplement the diet with venison.

## **Late Bronze Age/Early Iron Age**

Features dating to the Late Bronze/Early Iron Age are quite rare within Wiltshire except for a concentration of monumental-scale midden sites in and around the Vale of Pewsey. Where located away from this area, the remains tend to consist of random, almost isolated features such as a hearth or a shallow pit; they are not associated with structures and are often located near to permanent or seasonal water sources, leading to the belief that a transhumant regime was widely practiced at this time (Valdez-Tullett 2017). The closest contemporary features are a series of pits located to the south of Amesbury on the King's Gate site (Powell and Higbee forthcoming).

### ***Environmental Evidence***

Between the Early Bronze Age and Anglo-Saxon periods there is a large gap in the evidence from the sites. Although some samples are phased to the Late Bronze Age/Early Iron Age, this is too limited and poorly phased to provide further information. Within the wider region, however, there is more abundant information for this period from other sites with better preserved assemblages – for instance, Boscombe/King's gate (Wyles *et al.* forthcoming; López-Dóriga forthcoming) and Chisenbury (López-Dóriga 2021b). No later Iron Age or Romano-British activity was found at any of the sites, although again, there is activity dating to these periods in the wider area (Darvill and Wainwright 2009).

## **Romano-British**

Research questions posed by the 2016 Research Framework generally concern the nature of Roman activity within and around earlier ceremonial monuments. Given the limited quantity of Romano-British evidence recovered during the visitor centre investigations, only one of the research questions can be addressed, namely, 'is there any relationship between the earlier monuments and the locations of Romano-British settlement patterns and land use...' (Leivers and Powell 2016, 21).

## *The Roman Building at Countess*

Ground penetrating radar (GPR) survey undertaken in 2018 for the A303 Amesbury to Berwick Down Scheme provided considerable additional layout detail of the Roman building at Countess, revealing a north–south-aligned building 30 m long and 11.5 m wide, widening to 15.5 m at the northern end. The wider northern end consisted of three roughly 4 m-square rooms separated by 1 m-wide walls. The narrower, southern end also had three rooms, the largest central example roughly 3 m square with a smaller 2.5 × 3 m rectangular room to either side. Between the sets of three rooms to the north and south was a large 17 × 9 m room or courtyard containing two rows of four probable pillars. Several anomalies surrounding the building to the east and south may be evidence of further archaeological activity, such as pit features, although a geological origin is considered more likely (Highways England 2019b).

## **Anglo-Saxon**

Anglo-Saxon research questions identified in the 2016 Research Framework which the visitor centre works have the potential to address are largely concerned with the siting of settlement, and the influence of earlier use of the landscape on those choices.

Modelling of the associated radiocarbon dates indicates that the early Anglo-Saxon occupation at Countess began in *cal AD 490–605 (95% probability; start\_Countess\_East\_Saxon; Fig. 7.1)*, probably in *cal AD 550–595 (68% probability)* and finished in *cal AD 575–695 (95% probability; end\_Countess\_East\_Saxon; Fig. 7.1)*, probably in *cal AD 595–645 (68% probability)*. The dated activity lasted for *1–85 years (95% probability; Fig. 7.2)* probably *1–50 years (68% probability)*.

Dating settlement activity at Countess to the late 6th–early 7th centuries *cal AD* is important given the paucity of known settlements that are contemporary with the more extensive evidence for burials in cemeteries in the immediate vicinity. Among the settlements, Cadley Road, Collingbourne Ducis (Pine 2001) and Petersfinger (Moore and Algar 1968) are perhaps the best known but there are also finds of uncertain date from Winterbourne Gunner, some of which may be Anglo-Saxon (Anon 1966). More recently an SFB was excavated at Area 4013 at Tidworth Camp (Wessex Archaeology 2019b), with a further potential example encountered north of Winterbourne Stoke during the A303 Amesbury to Berwick Down evaluations (Highways England 2019a).

In contrast, 5th–7th-century Anglo-Saxon cemeteries or individual barrow burials are better attested locally, including Petersfinger (Leeds and Shortt 1953), Winterbourne Gunner (Musty and Stratton 1964), Harnham (Akerman 1855a; 1855b; Shortt 1948), possibly Amesbury itself (Bonney 1982), Charlton (Davies 1984), and Blacknall Field, Pewsey (Annable and Eagles 2010). Locally, the decapitated inhumation within Stonehenge (Pitts *et al.* 2002; Pitts *et al.* 2007) dates to *cal AD 660–890 (OxA-13193; 1258±34 BP)*, potentially contemporary with at least some of the SFBs.

Ascertaining continuity of rural settlement between the Roman and Anglo-Saxon periods is hindered by problems identifying sites of the later Roman period and the early Anglo-Saxon period (Webster 2008, 171). The co-location of Romano-British and early Anglo-Saxon structures at Countess raises the interesting possibility of continuity at this site, but without firm dating of the Romano-British activity it remains conjectural.

Most of the Saxon animal bones came from SFBs backfilled with refuse material that probably came from temporary surface middens, although some direct dumping may also have taken place, and elements such as the horse skull from SFB 7308 are likely to have been deliberately placed (Hamerow 2002; Morris and Jervis 2011).

The assemblage is dominated by bones from cattle and this fits with the broad emphasis on cattle-farming within the wider region (Holmes 2017, 23–24) and at some sites in the local area (Bourdillon 2006; Grimm 2012), although at other local sites the emphasis was clearly on sheep-farming, particularly for wool (Godden *et al.* 2002; Hamilton-Dyer 2001). Cattle were managed as part of a mixed husbandry strategy at Countess, perhaps with a slight emphasis on dairying and meat production, the latter mainly focused on older animals. This type of husbandry strategy is common for many rural sites of this period in southern Britain and probably reflects the self-sufficient nature of the economy during this period (Holmes 2017, 47–8 and 52; Holmes 2014, 67). Meat, particularly beef, was distributed in the form of large joints, indicating the ready availability of this commodity (Crabtree 2014, 3), with limited evidence for more extensive utilisation such as processing for marrow (Rizzetto *et al.* 2017, 543–4; Sykes 2006, 70).

The low numbers of bird bones reflect the ability of Saxon farmers to meet their protein requirements through livestock husbandry (Holmes 2017, 31), although the availability of eggs from domestic fowl and geese is likely to have been a welcome advantage and the main reason for keeping small flocks of these birds.

### ***Environmental Evidence***

The charred and mineralised plant remain evidence from Anglo-Saxon settlement deposits at Countess (53324) is of high interest for two reasons. Firstly, there are few Anglo-Saxon plant remain assemblages in the WHS and wider area, perhaps again reflecting a focus on research into early prehistoric archaeology in the area. Within the wider region, charred plant remains have been recovered from Anglo-Saxon features at Market Lavington (Straker 2006), Salisbury (Wessex Archaeology 2006), Amesbury (Stevens 2009a), Wilton (Hinton 2000a; Pelling 2012) and Tidworth (Wessex Archaeology 2019b), as a result of development. Secondly, sites with mineralised preservation of plant remains, particularly outside the urban areas where they are most commonly encountered (e.g., Carruthers and López-Dóriga 2019), are uncommon in the WHS and wider region, and are restricted to less than a dozen, with only four examples of Anglo-Saxon date (Table A4.5). Other than in urban contexts, mineralised deposits are indicative of middens (Carruthers 2000; McCobb *et al.* 2003) and have potential to preserve a wider range of remains than charred deposits, providing complementary data on plant resource exploitation.

At Countess, the Anglo-Saxon samples contain abundant remains in comparison to other assemblages from other periods in the area and represent crop exploitation practices focused on the processing of barley, with the occasional presence of naked wheat, garden pea and flax. A high number of cereal grains could not be determined to genus/species level due to their fragmentary and poor condition. The presence of both chaff and grains of barley, as well as cereal embryos, suggests the deposit may originate in the latter stages of processing, such as dehulling and milling activities. The seeds of wild plants, indicative of waste ground, may have been arable weeds which have been removed from the barley crop. The low crop diversity in the deposit (the absence of other cereal or legume crops) and rarity of wild plant resources may be because of functional differences (e.g., other resources processed in other areas or processed in a different way not requiring close contact with fire). However, the available information seems to suggest a diversification of agricultural practices in later periods, and cereals such as rye and pulses such as broad bean and lentil are found in Anglo-Saxon Amesbury (Stevens 2009a).

### **Modern**

Modern evidence was predominantly related to the military occupation of the area.

The results of the Durrington Down Farm evaluation, and in particular the test pits around the western and northern peripheries of the assessment area, revealed the various roads and concrete standings about the site to be considerably wider features than presently visible on the surface. That these, and large deposits of building rubble, are now sealed by established soil horizons, implies considerable mass movement of soil across at least the periphery of the area.

The site is criss-crossed by a network of deep, rubble-filled soakaway drains, of modern if not 20th-century origin, and other utility installations, elements of which were recorded in a number of trenches. The considerable quantities of architectural stonework that fill these drains, although obviously not *in situ*, constitute a curious deposit of some architectural interest. Other features comprise a cinder-and-brick path and a chalk rubble surface, both plausibly modern in origin, probably military.

Much of the modern evidence at Durrington Down Farm is likely to have originated during and after the First World War, when hutted camps were built (as seen on the Ordnance Survey (OS) 25-inch maps 1924 series: Wessex Archaeology 1998, 20).

Remains of the Larkhill branch of the Amesbury and Military Camp Light Railway were encountered at both the eastern (Countess) and western (Fargo) ends of the areas studied. This branch of the existing line from Amesbury, through Ratfyn to Bulford, was constructed in the autumn of 1914 to facilitate the rapid movement of both men and materials. Portions of the line south of Fargo were closed, and the track lifted by 1923: the railway was completely out of use by 1928 and most of the track lifted by 1932 (James 1987, 199–206).

## Undated

### *The Square Enclosure on King Barrow Ridge*

Square enclosure 2606 on King Barrow Ridge remains an enigma. Neither the visitor centre investigations nor Historic England's later excavation revealed any evidence of its age, use or purpose. The implications of this lack of evidence are difficult to assess, but it is probable that the absence of any associated material indicates a date either very early in the sequence (in, perhaps, the Early Neolithic) or very late (in the post-medieval or modern periods).

Arguing against an early date are the form – such a square structure would be unusual (although not entirely unknown) – and the cleanness of the fills. Given the activity in the vicinity from at least the Late Neolithic onwards, it could reasonably be expected that at least some material would have been incorporated in the fills of the ditches. There was, however, none.

Possibilities for a historic period feature include a (very small) sheepfold (perhaps a pound for stray animals), and although its situation next to a road may be a positive asset in this respect, the lack of any identified internal features seems to imply that this is an unlikely possibility. Alternatively, it may have been related to the emparkment of the Amesbury Abbey estate, perhaps originally a planting feature.

## Natural Features

The two solution hollows at Fargo North are of considerable interest. Although no evidence was recovered from either to indicate when or over what period they might have become infilled, the existence of feature 5320 as a depression in the modern ground surface suggests that they could have had surface expression in the prehistoric period.

Similarly sized features positively identified as natural (Geddes pers. comm.) have been encountered elsewhere in the area, recently misinterpreted as anthropogenic features of Late Neolithic or Chalcolithic date (Gaffney *et al.* 2020), some containing Neolithic material, and several subsequently incorporated into Neolithic and Beaker-period ceremonial architecture (Leivers 2021; Thompson and Powell 2018). While there is no evidence to confirm a relationship, the location of these very large features at the western end of the Stonehenge Cursus may not be coincidental, and they may have had some influence on both the Cursus's location and point of termination. That elements of the ceremonial landscape were set out in relation to natural features is becoming increasingly apparent (Allen *et al.* 2016; Leivers 2021), and the suggestion of very large features within the Cursus (Gaffney *et al.* 2012) may in fact indicate that other solution hollows remain to be identified within the area enclosed by the earthwork.

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# APPENDIX 1

## 53324 MONOLITH TABLES AND SEQUENCES

Table A1.1 Monoliths 7 and 8

Depth (mm)	Context	Description	Interpretative comment
0–290	4602	Mid-brown silty clay, almost stone-free but rare medium flints, with weak large blocky to prismatic structure, rare large (10–13 mm) charcoal pieces, clear smooth boundary.	Colluvial B horizon over former channel
290–500	4604	Greyish brown to dark greyish brown silty clay loam with weakly blocky structure, many small flint and chalk pieces, common fine charcoal pieces, rare medium animal bone fragments, abrupt smooth textural boundary.	Cultural deposit
500–650	4628	Dark brownish grey fine sandy silt loam, with rare stones, common fine charcoal and fine pottery crumbs, in a moderate small block structure with rare fine macropores, clear smooth boundary	?Derived topsoil + cultural layer
650–1010	4610	Very light olive grey to very light yellowish grey structureless, massive compact stone-free silt with clear post-depositional cracks (to 8 mm) and vertical root/earthworm penetration (max. 6 mm diameter, containing material from context 4628 (above).	Fluvially reworked calcareous marl
1010–1050	4616	Light brownish grey calcareous silty clay, almost stone-free with clear root/worm penetration (diameter 6.5 mm) (containing dark yellowish brown silty clay – ?former topsoil from above context 4610), gradual indurated boundary.	Immature soil/eroded soil material – bioturbated and mixed with underlying deposits at base
1050–1035	4626	Fine very light greyish yellow (cream) silt with weak laminations or bands and zone of very light olive green (?glaucconitic) fine sand/coarse silt.	Late Glacial (pre-8400 BC) fluvial wash

Table A1.2 Monolith 9

Depth (mm)	Context	Description	Interpretative comment
0–80	4615	Light yellowish brown silty clay with many very fine chalk pieces, weak small to medium blocky structure, distinct patches of reddish brown clay (derived), and distinct subspherical inclusions up to 12 x 18 mm of calcareous marl derived from deposits below. Boundary sharp, but indurated by possible worm and rooting activity.	?Immature soil/eroded soil material
80–490	4626	80–360 mm Fine very light greyish yellow (cream) silt with weak laminations or bands vaguely defended by light faint reddish brown (Fe) bands to 1.5 mm. 360–420 mm band of very light olive green fine sand/coarse silt (?glaucconitic) 420–490 mm Compact silty (clay) calcareous marl with rare very small and small chalk pieces.	Late Glacial (pre-8400 BC) fluvial wash



## APPENDIX 2

# PREHISTORIC POTTERY FABRIC DESCRIPTIONS

### Calcite-gritted

C1. Soft fabric; common (25%), poorly sorted, angular calcite (generally 1–4 mm, rarely up to 8 mm) and sparse (5%) sub-angular rock pieces (<2–4 mm); M–LBA

### Flint-tempered

F1. Soft fabric; sparse (5%), poorly sorted, angular flint (1–4 mm, rarely up to 7 mm), sparse (5%), subrounded iron oxides/pellets (<1 mm) and rare (1%) quart sand (<0.5 mm); Middle Neolithic (Peterborough Ware)

F2. Moderately soft fabric; very common (30%), well-sorted, angular flint (<2 mm, rarely up to 4 mm) and rare (1%) iron oxides (2–3 mm); slightly sandy matrix; M–LBA

F3. Moderately soft fabric; moderate (10%), moderately sorted, angular flint (1–4 mm) and sparse (3%) iron oxides (<1 mm); slightly sandy matrix; M–LBA

F4. Moderately soft fabric; moderate (15%), moderately sorted, angular flint (1–3 mm) and sparse (5%) iron oxides (<1 mm); sandy matrix; LBA

F5. Moderately soft fabric; common (20%), poorly sorted, angular flint (1–7 mm) and rare (2%) iron oxides (<1 mm); slightly sandy matrix; MBA

F99. Miscellaneous flint-tempered ware

FG1. Soft fabric; moderate (10%), moderately sorted angular flint (generally <2 mm, rarely up to 4 mm) and sparse (5%), sub-angular grog (<3 mm); slightly sandy matrix; MBA

### Grog-tempered

G1. Soft fabric; moderate (10%), poorly sorted, sub-angular grog (mostly <2 mm, occ up to 3 mm), sparse (3%), sub-angular to subrounded iron oxides/pellets (<1 mm) and rare (1%) ?detrital shell (<0.5 mm) in a slightly sandy matrix; Late Neolithic

G2. Soft fabric; moderate (15%), poorly sorted, sub-angular grog (1–4 mm), sparse (3%), sub-angular iron oxides (1–3 mm), rare (1%) ?detrital flint and shell (<1 mm); slightly sandy matrix; Late Neolithic

G3. Soft fabric; sparse (7%), well-sorted, sub-angular grog (<1 mm), rare (2%) subrounded iron oxides (<2 mm) and rare (1%) ?detrital flint and shell (<1 mm); slightly sandy matrix; Late Neolithic

G4. Soft fabric; moderate (10%), well-sorted, sub-angular grog (<1 mm) and rare (1%) iron oxides (<1 mm); fine micaceous sandy matrix; Beaker

G5. Soft fabric; common (20%), moderately sorted, sub-angular

grog (<1 mm), rare (1%), ?detrital angular flint (<1 mm) and rare (1%) iron oxides/pellets (<1 mm); sandy matrix; Beaker/EBA

G99. Miscellaneous grog-tempered

GCalc1. Soft fabric; moderate (15%), poorly sorted, sub-angular to subrounded grog (<3 mm), sparse (5%) sub-angular calcareous inclusions (<2 mm, ?limestone-derived) and rare (1%) ?detrital flint and iron oxides (<1 mm); slightly sandy matrix; Late Neolithic

GF1. Soft fabric; moderate (10–15%), moderately sorted, sub-angular grog (<2 mm), sparse (5%) angular flint (<1 mm) and rare (2%) iron oxides; slightly sandy matrix; Beaker/EBA

GF2. Soft fabric; sparse (5%), poorly sorted, sub-angular grog (2–5 mm) and rare (2%) angular flint (<3 mm); very slightly micaceous sandy matrix; LBA

GS1. Soft fabric; moderate (15%), poorly sorted, sub-angular grog (<3 mm), sparse (3%) shell (<3 mm) and rare (2%) flint (<2 mm); slightly sandy matrix; ?Late Neolithic

### Sandy wares

Q99. Miscellaneous sandy ware

QF1. Soft fabric; common (25%), moderately sorted, subrounded quartz sand (<1 mm), sparse (7%), angular flint (1–3 mm) and rare (1%) iron oxides/pellets (<1 mm); slightly sandy matrix; ?Early Neolithic

QF2. Soft fabric; common (25%), well-sorted, subrounded to rounded black/brown grains (?glauconite) and quartz sand (<0.5 mm) and sparse (5%) angular flint (<2 mm); LBA

QF3. Soft fabric; common (20%), well-sorted, subrounded quartz sand (<0.5 mm) and sparse (3%) angular flint (1–3 mm); M–LBA

QS1. Soft fabric; common (25%), well-sorted, subrounded quartz sand (<0.5 mm), sparse (3%) ?detrital shell (<1 mm) and rare (1%) sub-angular grog (<2 mm); LBA

### Shell-tempered

S1. Soft fabric; moderate (10%), moderately sorted shell (<2 mm) and sparse (7%) subrounded iron oxides (<1 mm); sandy matrix; LBA

S2. Soft fabric; common (25%), poorly sorted shell (1–5 mm, rarely up to 9 mm) and sparse (7%) subrounded iron oxides (<1 mm); slightly sandy matrix; M–LBA

SF1. Soft fabric; moderate (15%), moderately sorted shell (<3 mm), sparse (7%) angular flint (<2 mm) and rare (2%) iron oxides (<1 mm); M–LBA



# APPENDIX 3

## LIST OF ILLUSTRATED PREHISTORIC SHERDS

### *Illustrated Early Neolithic pottery*

#### *Fig. 5.1*

1. Angular shoulder fragment, fabric QF1. Pottery Record Number (PRN) 1 and 2, context 8303, ditch 8301

### *Illustrated Grooved Ware*

#### *Fig. 5.1*

2. Grooved Ware, ?Durrington Walls style. Upright flattened rim (form R3). Decoration: top of rim decorated with ?bone tool impressions, exterior with tooled diagonal and ?vertical lines with infill of fine crescent-shaped impressions and suggestion of shallow horizontal cordon below, fabric GS1. PRN 30, context 1205, pit 1204
3. Grooved Ware, ?Durrington Walls style. Rounded rim (form R1). Exterior decoration: opposing groups of diagonal lines/vertical chevrons, fabric GS1. PRN 31, context 1205, pit 1204
4. Grooved Ware, Durrington Walls style. Rounded rim with internal bevel (form R2). Decoration comprises fine incised lines on rim exterior, below rim two horizontal lines and opposing groups of lines to left and below possibly in an infilled triangle motif, fabric G3. PRN 18, context 2004, pit 2003
5. Grooved Ware, Durrington Walls style. Tub-shaped jar with internally bevelled rounded rim (R2). Decoration: three horizontal tooled lines on internal rim bevel and multiple, oblique shallow indentations on rim top, exterior decorated with vertical raised ribs/shallow cordons creating panels infilled with opposed groups of

lines/filled triangles, fabric G1. PRN 13, context 2004, pit 2003

6. Grooved Ware, Durrington Walls style. Base and wall sherds, exterior decorated with plain vertical cordons, fabric G2. PRNs 23/24, context 2004, pit 2003
7. Grooved Ware, ?Durrington Walls style. Tub-shaped vessel with rounded, slightly inturned rim (form R4). Decoration on exterior: two horizontal tooled lines with multiple diagonal lines below and possible reserved/undecorated zones, fabric GCalc1. PRN 12, context 2004, pit 2003
8. Grooved Ware. Lug fragment with sub-oval shaped perforation, decorated on upper surface with multiple horizontal tooled lines, fabric G2. PRN 22, context 2004, pit 2003
9. Grooved Ware. Decorated body sherd, decoration of multiple, parallel, fine incised lines, fabric G3. PRN 16, context 2004, pit 2003

### *Illustrated Middle Bronze Age pottery*

#### *Fig. 5.1*

- 10.&11. Convex-sided jar with flat expanded rim (form R8), two horizontal rows of finger/tip impressions on exterior, fabric F2. PRN 211, context 5704, posthole 5703
12. Flat, externally expanded rim (form R8) with sub-oval applied lug, fabric FG1. PRN 219, context 5804, ditch 5808
13. Thick-walled body sherd with wide, shallow applied cordon decorated with tooled chevron motif, fabric F5. PRN 206, context 2330, topsoil test pit 233
14. Flat, externally expanded rim (form R8), fabric F3. PRN 132, context 8051, subsoil test pit 805



# APPENDIX 4

## ENVIRONMENTAL ASSESSMENT DATA

Table A4.1 Original assessment of the environmental evidence in bulk samples and appraisal of the potential of the archived material

Project code	Context	Sample	Grain	Chaff	Other charred plant remains	Wood charcoal	Molluscs	Requires resorting and ID	Retained
36881	2004	2090	C*	-	C	-	-	Yes	No, only analysed molluscs
36881	2004	2091	-	-	C+	C	-	Yes	No, only analysed molluscs
36881	3002	3003	-	-	B+	C	-	Yes	No, only analysed molluscs
36881	2607	2670	-	-	C	-	-	Yes	No, only analysed molluscs
36881	2632	2672	C	-	C	-	-	Yes	No, only analysed molluscs
36881	2633	2673	C	-	C	C	-	Yes	No, only analysed molluscs
36881	2635	2675	C	-	-	-	-	Yes	No, only analysed molluscs
36881	2604	2680	A	-	C	-	-	Yes	No, only analysed molluscs
36881	2806	2807	A*	-	B	-	-	Yes	No, only analysed molluscs
36881	3208	3209	C	-	-	C	-	Yes	No, only analysed molluscs
36881	3204	3213	C	-	C	C	-	Yes	No, only analysed molluscs
36881	3304	3390	A	-	C	-	-	Yes	No, only analysed molluscs
36881	3305	3391	-	-	-	-	-	Yes	No, only analysed molluscs
36881	3404	3450	C	-	C	-	-	Yes	No, only analysed molluscs
36881	3405	3451	-	-	C	-	-	Yes	No, only analysed molluscs
36881	3504	3590	-	-	C	C	-	Yes	No, only analysed molluscs
36881	3504	3591	-	-	C	C	-	Yes	No, only analysed molluscs
36881	3505	3592	-	-	C	C	-	Yes	No, only analysed molluscs
38477	4363	4365	C	-	-	A	-	Yes	Yes
38477	2753	2759	C	-	C	A	-	Yes	Yes
53324	1002	11	C	-	-	C	A**	Yes	Yes
53324	1205	10	-	-	A	C	B	Yes	Yes
53324	2104	15	-	-	C	-	-	Yes	Yes
53324	7310	3	-	-	B	C	-	Yes	Yes
53324	7303	1	A*	C	B	A	A	Yes	Yes
53324	3902	4	C	-	-	-	A*	Yes	Yes
53324	3904	5	-	-	C	-	A	Yes	Yes
53324	7906	6	-	-	C	C	A	Yes	Yes
53324	4607	12	-	-	-	-	B	Yes	Yes
53324	4616	14	C	-	-	C	A	Yes	Yes
53324	4628	13	-	-	C	C	A	Yes	Yes
53324	7105	2	-	-	C	C	-	Yes	Yes

Project code	Context	Sample	Grain	Chaff	Other charred plant remains	Wood charcoal	Molluscs	Requires resorting and ID	Retained
54700	8303	2	B	-	C	C	-	Yes	Yes
54700	8503	1	C	-	-	-	-	Yes	Yes
71651	7603	1	-	-	C	3 ml	A	No	No
71651	2511	2	C	-	-	-	A	No	No
71651	2510	3	-	-	-	1 ml	A	No	No
71651	3005	4	-	-	-	-	B	No	No
71651	3006	5	-	-	-	-	A	No	No
71651	3007	6	-	-	-	5 ml	-	No	No
71651	4105	7	-	-	C	-	C	No	No
71651	4104	8	-	-	C	<1 ml	C	No	No
71651	3707	9	-	-	-	1 ml	-	No	No
71651	3705	10	-	-	-	-	C	No	No
71651	3704	11	-	-	-	-	A	No	No
45044	5608	5626	C	-	-	-	A	Yes	Yes
45044	5801	5828	C	-	-	-	A	Yes	Yes
45044	5802	5829	C	C	-	C	A	Yes	Yes
45044	5803	5830	C	-	-	-	A	Yes	Yes
45044	5804	5831	C	-	C	-	A	Yes	Yes
45044	5805	5832	C	-	-	-	A	Yes	Yes
45044	5806	5833	C	-	-	-	A	Yes	Yes
45044	5807	5834	-	-	-	-	C	Yes	Yes
45044	5702	5705	C	-	-	-	A	Yes	Yes
45044	5635	5638	-	-	-	C	A	Yes	Yes
45044	5637	5639	C	-	-	-	A	Yes	Yes

Scale of abundance key: A\*\* = exceptional, A\* = 30+ items, A = 30-10 items, B = 9-5 items, C = <5 items

Table A4.2 Reassessment of the environmental evidence in retained samples

Feature type	Feature number	Provenance	Vol.			Bioturbation			Charred plant remains			Charcoal		Other	Preservation
			Sample	Sample	Flat vol	Proxies	Grain	Chaff	Cereal taxa	Charred other	Charred other taxa	Vol. >2 mm (ml)	Type		
<b>Neolithic/Bronze Age</b>															
Ditch	8301	8303	54700_2	17	60	70%, A, E, I, F	C	-	<i>H. vulgare</i> , Triticaceae	-	-	5	Mature	-	Poor
Pit	1001	1002	53324_11	18	35	15%, Cecilioides acicula (A**), A, I	C	-	<i>H. vulgare</i> , Triticaceae	C	<i>Arrhenatherum elatius</i> ssp. <i>bulbosum</i> tubers	2	Mature	Moll-t (A*)	Poor
Pit	1204	1205	53324_10	8	60	60%, Cecilioides acicula (A*), A*, E, I	C	-	Triticum aestivum/ turgidum	A*	<i>Corylus avellana</i> (shells and kernel frags), <i>Prunus spinosa</i> (fruit and endocarp), Caryophyllaceae	7	Mature	Moll-t (A*)	Fair: Grain probably intrusive
Pit	2103	2104	53324_15	5	15	15%, C, I	-	-	-	C	<i>C. avellana</i>	3	Mature	Burnt flint	Poor, small frags
Pit	7309	7310	53324_3	7	40	5%, A, E, I	-	-	-	C	<i>C. avellana</i>	8	Mature	-	Fair, small frags
<b>Middle Bronze Age</b>															
Ditch	5605	5608	45044_5626	15	60	15%, C, I	C	-	Triticaceae	C	Poaceae	0.1	Mature	Moll-t (A**), Sab (C)	Poor, small frags
Ditch	5808	5801	45044_5828	15	60	40%, C, E, I	C	-	<i>H. vulgare</i> , Triticaceae	C	<i>Galium</i> sp.	0.5	Mature	Moll-t (A****)	Poor, small frags
Ditch	5808	5802	45044_5829	15	40	50%, A, E, I	C	C	Triticaceae, <i>Triticum</i> sp. glume bases	C	cf. <i>Arrhenatherum elatius</i> ssp. <i>bulbosum</i> tuber frag	1	Mature	Moll-t (A**), Sab (A)	Poor
Ditch	5808	5803	45044_5830	15	15	70%, C, I	C	-	Triticaceae	-	-	0.1	Mature	Moll-t (A**)	Poor, small frag
Ditch	5808	5804	45044_5831	15	20	70%, C	C	-	Triticaceae	-	-	Trace in <1 mm	Mature	Moll-t (A*)	Poor, small frag
Ditch	5808	5805	45044_5832	15	10	60%, C, I	-	-	-	C	Poaceae	Trace in <1 mm	Mature	Moll-t (A*)	Poor, small frag
Ditch	5808	5806	45044_5833	15	25	30%, I	C	-	Triticaceae	C	Poaceae	Trace in <1 mm	Mature	Moll-t (A**)	Poor, small frags
Ditch	5808	5807	45044_5834	15	10	20%	-	-	-	-	-	-	-	Moll-t (B)	-
Posthole	5703	5702	45044_5705	10	35	80%, C, E, I	C	-	Triticaceae	-	-	Trace in <1 mm	Mature	Moll-t (A**)	Poor
Layer	TP436	4363	38477_4365	-	5	<1%	-	-	-	-	-	3	Mature	-	-

Feature type	Feature number	Provenience		Vol.		Bioturbation		Charred plant remains			Charcoal		Other	Preservation	
		Context	Sample	Sample	Flot vol	proxies	Grain	Chaff	Cereal taxa	Charred other	Charred other, taxa	Vol. >2 mm (ml)			Type
<b>Anglo-Saxon</b>															
Layer	4609	4607	53324_12	2	5	5%, <i>Cecilioides acicula</i> (A**), C, I	-	-	-	-	-	2	Mature	Moll-t (C)	-
Pit	2754	2753	38477_2759	-	25	5%, <i>Cecilioides acicula</i> (A**), A, E	A	-	<i>H. vulgare</i> (inc. hulled), <i>Triticum</i> sp., Triticaceae	C	<i>Rumex</i> sp., <i>C. avellana</i> , <i>Avena</i> sp. (large seeded)	6	Mature	Moll-t (A), Sab (C)	Poor
Pit	7302	7303	53324_1	9	230	1%, <i>Cecilioides acicula</i> (A**), A, I	A**	A	<i>H. vulgare</i> (hulled and six-rowed grains and rachis), detached embryos	Charred – A, Mineralised – A* Charred – Chenopodiaceae, <i>Atriplex</i> sp., Cyperaceae, Poaceae, Polygonaceae. <b>Mineralised</b> – Poaceae, Asteraceae, mineralised concretions with vegetative impressions, indet. seeds	45	Mature	Moll-t (A*), Sab (A**), animal bone (A*), fish scale (C), fish bone (C, some burnt), indet. mineralised nodules (A*), mineralised insect puparia (C)	Generally good, some mineralisation	
Posthole in SFB	3901	3902	53324_4	27	60	15%, <i>Cecilioides acicula</i> (A**), A, E, I	B	-	<i>H. vulgare</i> , Triticaceae	C	<i>Solanaceae</i> , <i>Rumex</i> sp.	1	Mature	Moll-t (A*), Sab (B), indet. mineralised nodules (C)	Poor, some mineralisation
SFB	3903	3904	53324_5	27	100	25%, <i>Cecilioides acicula</i> (A**), A, E, I	C	-	<i>Triticum aestivum/turgidum</i> , cf. <i>H. vulgare</i> , Triticaceae	C	<i>Rumex</i> sp., <i>Linum usitatissimum</i> , indet. seed	5	Mature	Moll-t (A*), animal bone (A), Sab (C), fish bone (C), coal, indet. mineralised nodules (A*)	Poor, some mineralisation
SFB	7905	7906	53324_6	30	80	5%, <i>Cecilioides acicula</i> (A**), A*, E, I	-	C	Indet. glume base	Charred – C, Mineralised – A* Charred – <i>Pisum sativum</i> . <b>Mineralised</b> – <i>Chenopodiaceae</i> , <i>Rumex</i> sp., indet. seeds	4	Mature	Animal bone (A**), fish scale (C), Moll-t (A), fish bone (C), Sab (A), coal, indet. mineralised nodules (A*)	Fair, some mineralisation	
SFB	8505	8503	54700_1	18	30	3%, A, I, F	B	-	<i>H. vulgare</i> , cf. <i>Triticum aestivum/turgidum</i> , Triticaceae	C	<i>Viciae</i> , <i>Avena</i> sp. (large seeded)	3	Mature	Animal bone (C), Sab (C), fish bone (C), fish scale (C), indet. mineralised nodule (C)	Poor, some mineralisation

Feature type	Feature number	Provenance		Vol.			Bioturbation proxies			Charred plant remains			Charcoal			Preservation
		Context	Sample	Sample	Flot vol	Sample	Grain	Chaff	Cereal taxa	Charred other	Charred other taxa	Vol. >2 mm (ml)	Type	Other		
Layer		4616	53324_14	5	12	<1%, Cecilioides acicula (A**), C, I	C	-	H. vulgare	-	-	5	Mature	Moll-t (A*), Moll-f (C), fish bone (C)	Poor	
Layer		4628	53324_13	2	20	5%, Cecilioides acicula (A**), B, I	C	-	Triticeae	C	indet. burnt material	7	Mature	Moll-t (A*), Moll-f (C), Sab (C)	Poor	
Posthole	7104	7105	53324_2	3	125	1%, C, E, I	-	-	-	C	Ranunculus sp.	60	Mature	Sab (C)	Poor	
Tree hollow	5634	5635	45044_5638	15	40	70%, C, E, I	C	-	H. vulgare (hulled)	-	-	0.2	Mature	Moll-t (A**)	Poor	
Tree hollow	5634	5637	45044_5639	60	45	40%, A, E, I	C	-	Triticeae	-	-	0.1	Mature	Moll-t (A*)	Poor	

Scale of abundance key: A\*\*\* = exceptional, A\*\* = 100+, A\* = 30-99, A = 30-10 items, B = 9-5 items, C = <5 items. Sab = small animal bone, Moll-t = terrestrial molluscs, Moll-f = freshwater molluscs

Table A4.3 Analysis of charred plant remains from Countess (53324)

Phase			Neolithic	Anglo-Saxon
Feature type			Pit	Pit
Feature			1204	7302
Context			1205	7303
Sample			53324_10	53324_1
Sample volume (l)			8	9
Flot volume (ml)			60	230
Bioturbation (roots %, uncharred seeds, scale of abundance; E = earthworm eggs, I = insects, F = mycorrhizal fungi sclerotia)			60%, <i>Cecilioides acicula</i> (A*), A*, E, I	1%, <i>Cecilioides acicula</i> (A**) A, I
Fragmentation index (MNI/NR)			0.08	0.34
Density (MNI/l)			3.6	8.9
Scientific name	Common name	Plant part	<sup>14</sup> C dated: <i>Prunus spinosa</i>	<sup>14</sup> C dated: <i>Triticum aestivum/turgidum</i> , <i>Hordeum vulgare</i> . Mineralised remains (A*): Poaceae, Asteraceae, mineralised concretions with vegetative impressions, indet. seeds
<b>Woodland resources</b>				
<i>Corylus avellana</i>	Hazelnut	shell fragment	376	-
<i>Corylus avellana</i>	Hazelnut	nut (MNI)	25	-
<i>Prunus spinosa</i>	Sloe	fruit	2	-
<b>Ruderal plants</b>				
<i>Atriplex</i> sp.	Oraches	seed	-	2
Chenopodiaceae	Goosefoot family	seed	-	14
Caryophyllaceae	Pink family	coatless seed	1	-
Polygonaceae	Knotgrass family	seed	-	2
Cyperaceae	Sedge family	seed	-	1
Poaceae	Grasses	grain	-	1
<b>Cereals</b>				
<i>Hordeum vulgare</i>	Barley	rachis segment	-	10
<i>Hordeum vulgare</i>	Hulled barley	grain	-	49
<i>Triticum aestivum/turgidum</i>	Naked wheat	grain	1	1
<i>Triticum</i> sp.	Wheats	grain	-	1
Triticeae	Indeterminate cereal	grain fragment	-	149
Triticeae	Indeterminate cereal	detached embryo	-	1
<b>NR</b>			<b>380</b>	<b>231</b>
<b>MNI</b>			<b>29</b>	<b>80</b>

Scale of abundance key: A\*\* = >100, A\* = 30–99, A = 30–10 items. NR: Number of remains, MNI: Minimum Number of Individuals

Table A4.4 Neolithic and Early Bronze Age environmental evidence for the Stonehenge WHS and surrounding area

Site name	WHS	Period Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
A303 Amesbury to Berwick Down	Yes	1.3/2.1 Triticum sp. grains and chaff (inc. aestivum/turgidum), Hordeum vulgare grains	Prunus spinosa stone, Corylus No avellana nsf	Yes	Charred	Wessex Archaeology 2017b	Yes (material in Early Neolithic ditch was dated Middle Bronze Age; all naked wheat assumed intrusive = medieval)	UBA-33151	<i>P. spinosa</i> stone -	-	3262±35	1620–1440 cal BC	
								UBA-33152	<i>H. vulgare</i> grain -	-	3370±34	1750–1530 cal BC	
								UBA-33150	<i>C. avellana</i> nsf -	-	3490±35	1930–1690 cal BC	
								UBA-33154	Triticaceae grain -	-	3570±29	2030–1770 cal BC	
								UBA-33153	<i>C. avellana</i> nsf -	-	3591±35	2140–1820 cal BC	
								UBA-33148	<i>C. avellana</i> nsf -	-	3650±37	2140–1890 cal BC	
								UBA-39014	<i>T. aestivum/ turgidum</i> grain	-	201±27	1640–1950 cal BC	
								UBA-39010	<i>C. avellana</i> nsf -	-	3655±40	2200–1890 cal BC	
								UBA-39016	<i>C. avellana</i> nsf -	-	3663±32	2150–1940 cal BC	
								UBA-39012	<i>C. avellana</i> nsf -	-	3686±32	2200–1950 cal BC	
A303 Stonehenge Improvement	Yes	2.2/2.3 Triticum sp. (inc. aestivum/ turgidum), Triticaceae grains	<i>C. avellana</i> nsfs and kernel	-	Charred	Highways England 2019a	Yes (all naked wheat assumed intrusive)	UBA-39015	<i>T. sp.</i> grain -	-	3790±35	2350–2060 cal BC	
								UBA-39011	<i>T. sp.</i> grain -	-	Modern	-	
								UBA-39013	<i>T. sp.</i> grain -	-	Modern	-	
								-	-	-	-	-	-
								-	-	-	-	-	-
								-	-	-	-	-	-
								-	-	-	-	-	-
								-	-	-	-	-	-
								-	-	-	-	-	-
								-	-	-	-	-	-
A303 Stonehenge Environmental Improvements Project	Yes	-	-	Yes	Charred	Wessex Archaeology 2015a	Yes	SUERC-43905	3x Avena/ <i>Bromus sp.</i> seeds	-23.8 (IRMS)	185±25	cal AD 1650–1950	
								-	<i>A. elatius</i> ssp. <i>bulbosum</i>	-	-	-	

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
Alpha Crossing (Salisbury Plain EIP DTE)	No	1.2	Triticeae	<i>C. avellana</i> nsfs, <i>P. spinosa</i> stone fragments	-	Charred	Wyles and Stevens 2018a	Yes		SUERC-41715 SUERC-41720 SUERC-41723	<i>C. avellana</i> nsf (1x) <i>C. avellana</i> nsfs (4x) <i>C. avellana</i> nsf (1x)	-25.6 (IRMS) -24.9 (IRMS) -27.6 (IRMS)	4244±29 4022±29 5066±29	2910–2770 cal BC 2630–2460 cal BC 3960–3770 cal BC
Aubrey Hole 5	Yes	1.3/2.1 -	-	-	<i>A. elatius</i> ssp. <i>bulbosum</i>	Charred	Clapham 1995	-		-	-	-	-	-
Avebury Henge	Yes	1	<i>H. vulgare</i>	-	-	Charred	Gillings et al. 2008	Yes		OxA-12937 OxA-12936 OxA-12898 OxA-12935 OxA-12897	<i>H. vulgare</i> grain <i>H. vulgare</i> grain <i>H. vulgare</i> grain <i>H. vulgare</i> grain <i>H. vulgare</i> grain	-23.7 (IRMS) -22.8 (IRMS) -22.4 (IRMS) -27.2 (IRMS) -24.8 (IRMS)	339±27 330±27 312±27 306±27 296±27	cal AD 1450–1650 cal AD 1470–1650 cal AD 1480–1650 cal AD 1490–1660 cal AD 1500–1660
Avebury School site	Yes	1	<i>T. aestivum/turgidum</i> and <i>H. vulgare</i> var. <i>hexastichum</i>	-	-	Yes Charred	Jordan et al. 1994	Maybe		HAR-1696	Cereal grain and pit filling but lab comment: no grain apparent	-23.8 (IRMS)	1200±80	cal AD 650–1020
Bishopdown	No	1.2 2.1 2.2/2.3	- <i>H. vulgare, T. dicoccum/spelta</i> <i>H. vulgare, T. dicoccum/spelta</i>	<i>C. avellana</i> nsfs - <i>C. avellana</i> nsfs	- - -	- Yes Charred Yes	- Wessex Archaeology 2014	No		-	-	-	-	-



Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
		2.1	<i>T. dicoccum/spelta</i> , <i>H. vulgare</i>	<i>C. avellana</i> nsfs	-	Yes				NZA-33794 NZA-33781	<i>H. vulgare</i> grain <i>T. dicoccum/spelta</i> grain	-23.7 -24.5 (IRMS) (IRMS)	3359±30 3482±30	1750–1530 cal BC 1900–1690 cal BC
			<i>Triticum</i> sp. (inc. <i>dicoccum/spelta</i> , <i>aestivum/turgidum</i> ), <i>H. vulgare</i>							SUERC-34529	<i>C. avellana</i> nsf	-26.4 (IRMS)	3495±30	1920–1690 cal BC
		2.3	<i>Triticum</i> sp. (inc. <i>dicoccum/spelta</i> , <i>aestivum/turgidum</i> ), <i>H. vulgare</i>	<i>C. avellana</i> nsfs	<i>A. elatius</i> ssp. <i>bulbosum</i>	Yes				SUERC-34536	<i>H. vulgare</i> grains 3x	-24.3 (IRMS)	85±30	cal AD 1680–1930
		1.2, 1.3/2.1	<i>Triticum</i> sp. (inc. <i>dicoccum</i> ), <i>H. vulgare</i>	<i>C. avellana</i> nsfs, <i>Prunus spinosa</i> stone	<i>A. elatius</i> ssp. <i>bulbosum</i>					UBA-41591 UBA-41592 UBA-41593 UBA-41594	<i>H. vulgare</i> grain - <i>C. avellana</i> nsf - <i>H. vulgare</i> grain - <i>C. avellana</i> nsf -	- - - -	3825±31 3764±29 63±24 3544±35	2460–2140 cal BC 2290–2040 cal BC cal AD 1690–1910 2020–1750 cal BC
		2.1/2.2	<i>Triticum</i> sp., <i>Hordeum vulgare</i>	<i>C. avellana</i> nsfs	-					UBA-41595 UBA-41596 UBA-41597 UBA-41598 UB41599-1	cf. <i>Pisum sativum</i> seed from pit <i>H. vulgare</i> grain - <i>C. avellana</i> nsf - <i>T. sp.</i> grain - <i>H. vulgare</i> grain -	- - - - -	591±33 3540±32 3466±32 761±27 Failed	cal AD 1290–1420 1960–1750 cal BC 1890–1680 cal BC cal AD 1220–1290 -
Boscombe: King's Gate	No					Yes	Charred	López-Dóriga forthcoming	Yes					
		2.3	<i>Triticum</i> sp. (inc. <i>dicoccum</i> and <i>aestivum/turgidum</i> ), <i>H. vulgare</i>	<i>C. avellana</i> nsfs, <i>Prunus spinosa</i> stone						UBA-41599	<i>H. vulgare</i> grain -	-	2858±25	1120–920 cal BC
		3.1	<i>Triticum</i> sp. (inc. <i>dicoccum</i> and <i>aestivum/turgidum</i> ), <i>H. vulgare</i>	<i>C. avellana</i> nsfs	-					UBA-41600 UBA-41590	<i>T. sp.</i> grain - <i>H. vulgare</i> grain-	- -	2863±36 2486±26	1200–920 cal BC 780–480 cal BC

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)	
Bulford (ABP) No	1.2	Triticum sp. spikelet fork, <i>T. aestivum</i> /turgidum grain	<i>C. avellana</i> nsfs, indet. endocarp	-	Yes				Yes	UBA-36926	<i>C. avellana</i> nsf	-	4208±46	2910–2630 cal BC	
										UBA-36924	<i>C. avellana</i> nsf	-	4347±37	3090–2890 cal BC	
	1.3	Poorly preserved grains ( <i>H. vulgare</i> = not ubiquitous + intrusive, <i>T. aestivum</i> /turgidum = intrusive), some chaff	<i>C. avellana</i> nut nsfs	-	Yes	Charred			Leivers 2021; Roberts and Marshall 2020; Wessex Archaeology 2020b	No	SUERC-73266	<i>C. avellana</i> nsf	-	4346±26	3030–2890 cal BC
											OxA-35718	<i>C. avellana</i> nsf	-	4383±32	3100–2900 cal BC
											UBA-34499	<i>H. vulgare</i> grain	-	4505±41	3370–3020 cal BC
											UBA-36382	<i>T. sp.</i> grain	-	260±25	cal AD 1520–1800
											UBA-36386	Triticeae grain	-	336±31	cal AD 1450–1650
											UBA-36385	<i>H. vulgare</i> grain	-	348±29	cal AD 1450–1640
											UBA-36387	<i>H. vulgare</i> grain	-	983±44	cal AD 990–1170
											UBA-36393	<i>C. avellana</i> nsf	-	4590±32	3500–3190 cal BC
Burdurup Down	1.3/2.1	<i>H. vulgare</i> grains	<i>C. avellana</i> nsfs	-	-			No	No	-	-	-	-	-	
										-	-	-	-	-	
	2.1/2.3	<i>H. vulgare</i> , <i>T. dicoccum</i> /spefa, Triticeae grains	-	-	-	Charred		Carruthers 1992	No	-	-	-	-	-	
										-	-	-	-	-	
	C (Charlie) Crossing (Salisbury Plain TA)	1.2	Triticeae	<i>C. avellana</i> nsfs	-	-	Charred	Roberts and Marshall 2020; Wessex Archaeology 2001	Yes	Yes	SUERC-74013	<i>C. avellana</i> nsf	-25.2±0.2 (IRMS)	4260±30	2920–2780 cal BC
											-	-	-	-	-

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)	
Camp Hill, The Portway, Old Sarum Spur (Old Sarum Pipeline)										UBA-34946	<i>C. avellana</i> nsf	-23.5±0.22 (IRMS)	4702±48	3630–3360 cal BC	
										-	cf. <i>Triticaceae</i> grain	-	Failed	-	
										NZA-18340	<i>C. avellana</i> nsf	-24.7 (IRMS)	4473±40	3360–3010 cal BC	
				<i>C. avellana</i> nutshells and kernels, <i>P.</i> <i>spinosa</i> stones							UBA-34506	<i>T. sp.</i> grain	-23.4±0.22 (IRMS)	595±27	cal AD 1300–1410
		No		<i>Triticum sp. (dicoccum,</i> <i>aestivum/turgidum), H.</i> <i>vulgare</i>			Charred	Powell et al. 2005; Roberts and Marshall 2020; Stevens 2017 (2009)			SUERC-73424	<i>T. sp.</i> grain	-22.6±0.2 (IRMS)	145±32	cal AD 1660–1950
		1.2		<i>Sambucus</i> <i>nigra, Malus cf.</i> <i>sylvestris</i>		Yes					NZA-18338	<i>C. avellana</i> nsf	-24 (IRMS)	4473±40	3360–3010 cal BC
											OxA-35716	<i>T. sp.</i> grain	-22.9±0.2 (IRMS)	957±27	cal AD 1020–1160
											NZA-18339	<i>C. avellana</i> nsf	-25.3 (IRMS)	4477±40	3350–3020 cal BC
	Cherrell Hill Farm (B25 Film, Salisbury Plain TA)	No	1.1	<i>Triticaceae (inc. Triticum</i> <i>sp. and H. vulgare)</i>	-	-	Charred	Wessex Archaeology 2020c			-	-	-	-	-

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
		1.3/2.1 -		<i>C. avellana</i> nsf -	-	-			No			-	-	-
		1.1	<i>T. dicoccum/spelta</i> , Triticeae	-	-	-			No			-	-	-
Coneybury Anomaly	Yes	2.1	<i>H. vulgare</i> , var. <i>nudum</i> , var. <i>vulgare</i>	cf. <i>Crataegus monogyna</i> stone	cf. <i>A. elatius</i> ssp. <i>bulbosum</i> 5	Charred	Campbell and Pelling 2013; Carruthers 1990	Yes		UBA- 22184 SUERC- 44490 OxA- 27614 UBA- 22184 SUERC- 44489 OxA- 27707	<i>H. vulgare</i> var <i>nudum</i> (naked barley) <i>H. vulgare</i> var <i>nudum</i> (naked barley) <i>H. vulgare</i> var <i>nudum</i> (naked barley) <i>H. vulgare</i> (hulled barley) <i>H. vulgare</i> (hulled barley) <i>H. vulgare</i> (hulled barley)	-24.4 (IRMS) -24.7 (IRMS) -24.4 (IRMS) -26.3 (IRMS) -24.3 (IRMS) -24.5 (IRMS)	3594±37 3611±27 3695±30 3640±33 3620±27 3639±29	2110–1820 cal BC 2110–1880 cal BC 2200–1970 cal BC 2140–1890 cal BC 2120–1890 cal BC 2140–1900 cal BC
		1.3/2.1 -		-	-	2			No			-	-	-
Cuckoo Stone	Yes	1.3	<i>H. vulgare</i> , <i>Triticum</i> sp. (inc. hulled and naked)	-	-	Some	Simmons 2020a	Yes		ETH-89715 GrM-14843 ETH-89714 GrM-14841	<i>Hordeum</i> sp. grain from pit 135 cf. <i>T. sp.</i> grain from pit 135 <i>Hordeum</i> sp. grain from pit 181 cf. <i>T. sp.</i> grain from pit 135	-23 (IRMS) - -21.5 (IRMS)	1681±23 670±20 1732±22 810±20	cal AD 260–420 cal AD 1280–1390 cal AD 240–410 cal AD 1210–1280
D (Delta) track/crossing (Salisbury Plain TA)	No	1.3	Triticeae, cf. <i>Triticum aestivum/turgidum</i> , <i>Hordeum vulgare</i> rachis segment	<i>C. avellana</i>	-	-	Wessex Archaeology 2019c	No				-	-	-
		2.2	<i>Triticum</i> sp. (inc. <i>aestivum/turgidum</i> , <i>dicoccum/spelta</i> ), <i>H.</i> <i>vulgare</i>	<i>C. monogyna</i> , <i>C. avellana</i>	<i>A. elatius</i> ssp. <i>bulbosum</i> Yes	Charred	Wessex Archaeology 2011a	No				-	-	-
Dean Bottom	No	1.3/2.1	<i>T. dicoccum/spelta</i> , <i>H.</i> <i>vulgare</i>	<i>C. avellana</i> nsf	<i>A. elatius</i> ssp. <i>bulbosum</i>	Charred	Carruthers 1992	No				-	-	-

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
		1.2	<i>T. dicoccum</i>	<i>C. avellana</i> nsf -	-	Yes		Hinton 2006;	Yes	OxA-35804	<i>C. avellana</i> nsf	-25.7±0.2 (IRMS)	3692±27	2140–2020 cal BC
Dunch Hill	No	2.2	<i>H. vulgare</i>	-	<i>A. elatius</i> ssp. <i>bulbosum</i>	Yes	Charred	Roberts and Marshall 2020	No	-	-	-	-	-
		2.3	<i>T. dicoccum</i> , <i>H. vulgare</i>	-	<i>A. elatius</i> ssp. <i>bulbosum</i>	Yes			No	-	-	-	-	-
Durrington MOD	No	1.3	<i>Triticum</i> sp. (inc. <i>aestivum/turgidum</i> ), <i>H. vulgare</i> , <i>Triticeae</i>	<i>C. avellana</i> nsfs, <i>P. spinosa</i> / <i>C. monogyna</i> thorn	-	Yes	Charred	Wyles and Stevens 2018b	No	-	-	-	-	-
Durrington Walls	Yes	1.3/2.1	cf. <i>T. dicoccum</i> , <i>H. vulgare</i> ( <sup>14</sup> C suggests grain is all/mostly intrusive: Middle Bronze Age and later)	<i>C. avellana</i> nsfs, <i>Malus sylvestris</i> , <i>P. ficaria</i> , indet. fruit	<i>A. elatius</i> ssp. <i>bulbosum</i> , <i>Ranunculus</i>	-	Charred	Campbell and Pelling 2013; Craig et al. 2015	Yes	OxA-27940 SUERC-45872 OxA-27941 SUERC-45873 UBA-22719 UBA-22720 OxA-27942 SUERC-45874 UBA-22721	<i>T. aestivum/turgidum</i> grain <i>T. aestivum/turgidum</i> grain <i>H. vulgare</i> (hulled) grain <i>H. vulgare</i> (hulled) grain <i>H. vulgare</i> (hulled) grain <i>T. dicoccum</i> grain <i>H. vulgare</i> (hulled) grain <i>H. vulgare</i> (hulled) grain <i>T. sp.</i> (free-threshing) grain	-21.7 (IRMS) -22.1 (IRMS) -23.9 (IRMS) -26.1 (IRMS) - - -22.6 (IRMS) -23.4 (IRMS) -	466±23 169±34 1558±24 1045±34 3197±36 3126±33 1560±24 2949±34 78±33	cal AD 1420–1460 cal AD 1650–1950 cal AD 420–580 cal AD 890–1040 1540–1410 cal BC 1500–1290 cal BC cal AD 420–580 1270–1010 cal BC cal AD 1680–1930
East Chisenbury	No	2.3/3.1	<i>Triticum</i> sp. (inc. <i>dicoccum</i> and <i>spelta</i> ) and cf. <i>aestivum/turgidum</i> grains and chaff, <i>H. vulgare</i> , <i>Pisum/Lens.</i> large Fabaceae	<i>C. avellana</i> nsfs, <i>C. monogyna</i> stone, <i>Malus/Pyrus</i> embryo	-	Yes	Charred mineralised	Carruthers 2010; López-Dóriga 2021b	No	-	-	-	-	-

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
Easton Down	No	1, 2	<i>Triticum</i> sp., <i>H. vulgare</i>	<i>C. avellana</i> nsfs	-	Yes	Charred	Fairbairn 1993	No	-	-	-	-	-
Falkner's Circle	-	-	-	-	Yes	Charred	Gillings et al. 2008	Yes	Yes	Wk-17356	Carbonised weed seeds	-	2283±35	410–200 cal BC
Fargo Wood	Yes	2.1	-	<i>Rubus idaeus</i>	Yes	Uncharred?	Stone 1938	No	No	-	-	-	-	-
Greater/Stonehenge Cursus	Yes	1.2	<i>T. dicoccum/spelta</i> , <i>Triticaceae</i>	<i>C. avellana</i> nsf	-	Charred	Carruthers 1990	No	No	-	-	-	-	-
Greater/Stonehenge Cursus and Amesbury 42 long barrow (Stonehenge Riverside Project)	Yes	-	<i>H. vulgare</i> , <i>Triticum</i> sp.	<i>C. avellana</i> nsfs	-	Charred	Simmons 2020b	No, considered likely intrusive	-	-	-	-	-	-
Greentrees	No	1.2	-	<i>C. avellana</i> nsfs	Yes	Charred	Roberts and Marshall 2020; Wessex Archaeology 2015b	Yes	Yes	OxA-35744	<i>C. avellana</i> nsf	-21.1±0.2 (IRMS)	4463±31	3350–3010 cal BC
		1.3/2.1	<i>Triticum dicoccum/spelta</i> , <i>Hordeum vulgare</i>	<i>C. avellana</i> nsfs, <i>Malus</i> sp., <i>Quercus</i> sp.	Yes	Charred	Roberts and Marshall 2020; Wessex Archaeology 2015b	No	-	UBA-34501	<i>C. avellana</i> nsf	-24.3±0.22 (IRMS)	4548±42	3490–3090 cal BC
Hemp Knoll	No	1.1	-	<i>C. avellana</i> nsfs-	Yes	Charred	Keeley 1979, 1980	No	No	-	-	-	-	-
Hudson's Field	No	1/2	<i>T. dicoccum/spelta</i>	<i>C. avellana</i> nsfs	-	Charred	Wessex Archaeology 2010	No	-	-	-	-	-	-
King Barrow Ridge	Yes	1.2	<i>T. dicoccum/spelta</i>	<i>C. avellana</i> nsfs, <i>P. spinosa</i> - stone	Yes	Charred	Carruthers 1990	No	No	-	-	-	-	-

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
			<i>Triticum</i> sp. (inc. <i>dicoccum/spelta</i> and <i>1.3/2.1 aestivum/turgidum</i> ), <i>H. vulgare</i>	<i>C. avellana</i> nsfs. and kernels	Yes				No	-	-	-	-	-
Larkhill	No	2.1/2.2	<i>Triticum</i> sp. (inc. <i>dicoccum/spelta</i> and <i>aestivum/turgidum</i> ), <i>H. vulgare</i>	<i>C. avellana</i> nsfs and kernels <i>A. elatius</i> ssp. <i>bulbosum</i>	Yes	Charred	Leivers 2021; Wessex Archaeology 2020a			UBA-37664 UBA-37662 UBA-37663 UBA-37661	<i>C. avellana</i> nsf <i>T. sp.</i> grain <i>A. elatius</i> ssp. <i>bulbosum</i> tuber <i>H. vulgare</i> grain	- - - -	3290±52 927±24 191±22 1893±40	1740–1440 cal BC cal AD 1030–1210 cal AD 1650–1950 cal AD 20–240
Lesser Cursus	Yes	1.2	-	-	Indet. x5	Charred	Carruthers 1990		No	-	-	-	-	-
Longstones	Yes	1	<i>H. vulgare</i>	<i>C. avellana</i> nsfs	Yes	Charred	Young 2008		No (considered likely intrusive)	-	-	-	-	-
Marlborough Mound	No	1.3	-	-	Yes	Anoxic and charred	Leary et al. 2013		No	-	-	-	-	-
			<i>Triticum</i> sp. (inc. <i>aestivum/turgidum</i> ), <i>H. vulgare</i> , Triticeae	<i>C. avellana</i> nsfs	-	Charred	Wessex Archaeology 2020d		No (intrusive?)	-	-	-	-	-
Netheravon, RAM	No	1/2	<i>Triticum</i> sp. (inc. <i>aestivum/turgidum</i> ), Triticeae	<i>C. avellana</i> nsfs	<i>A. elatius</i> ssp. <i>bulbosum</i>	Charred	Wessex Archaeology 2020e		No	-	-	-	-	-
NN Crossing to EE – Crossbelt (Salisbury Plain EIP DTE)	No	1.1	<i>T. aestivum/turgidum</i> , <i>H. vulgare</i>	<i>C. avellana</i> nsfs, <i>P. spinosa</i> stone fragments, <i>Malus sylvestris</i>	-	Charred	Wyles and Stevens 2018a		Yes	SUERC-41725	<i>C. avellana</i> nsf	-27.8 (IRMS)	4905±29	3760–3630 cal BC
Oatlands Farm	No	2.1	<i>T. aestivum/turgidum</i> , <i>Hordeum vulgare</i>	<i>C. avellana</i> nsfs	Yes	Charred	Wessex Archaeology 2004		No	SUERC-41729	<i>C. avellana</i> nsf	-26.9 (IRMS)	4924±29	3780–3640 cal BC

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)
Old Dairy, Amesbury	No	1.1	<i>T. dicoccum/spelta</i> , <i>T. aestivum/turgidum</i> , <i>H. vulgare</i>	<i>C. avellana</i> nsfs	-	Yes	Charred	Wyles 2017; Roberts and Marshall 2020	Yes	SUERC-54202	<i>C. avellana</i> nsfs (3x)	-22.5 (IRMS)	4495±30	3360–3030 cal BC
										SUERC-54203	<i>C. avellana</i> nsfs (3x)	-26.5 (IRMS)	4950±30	3800–3640 cal BC
										UBA-34504	<i>T. sp.</i> grain	-24.3±0.22 (IRMS)	557±25	cal AD 1320–1430
Old Sarum Airfield	No	1.2	<i>T. dicoccum/spelta</i>	<i>C. avellana</i> nsfs	1.2	Middle Neolithic	Charred	Wessex Archaeology 2015c	No	-	-	-	-	-
Porton Down No		1.1	<i>Triticum dicoccum/spelta</i> nsfs	<i>C. avellana</i> nsfs	-	-	-	-	Yes	SUERC_62632	-	-25.9 (IRMS)	5000±34	3950–3650 cal BC
										SUERC_62633	-	-22.1 (IRMS)	5008±34	3950–3650 cal BC
		2.1	-	<i>Malus sylvestris</i> ssp. <i>bulbosum</i>	<i>A. elatius</i> ssp. <i>bulbosum</i>	-	-	-	No	-	-	-	-	-
Potterne		2.3	<i>H. vulgare</i>	-	-	Yes	Charred	Wyles 2016a	No	-	-	-	-	-
										-	-	-	-	-
		2.3/3.1	(inc. <i>dicoccum</i> , <i>T. spelta</i> , <i>T. aestivum</i> / <i>dicoccum/spelta</i> , <i>T. cf. aestivum</i> ), <i>H. vulgare</i> , <i>L. usitatissimum</i> , cf. <i>Secale cereale</i>	<i>Crataegus</i> sp., <i>C. avellana</i> , <i>P. spinosa/avium</i> , <i>P. spinosa</i> , <i>S. nigra</i> , <i>Malus sylvestris</i> , <i>Rubus</i> sp. (inc. <i>fruticosus</i> ), <i>Malus sylvestris</i> / <i>Pyrus communis</i>	-	-	Yes	Charred and mineralised	Carruthers 1986; Carruthers and 2000; McCobb et al. 2003; Straker 2000	No	-	-	-	-
Robin Hood's Ball	No	1.1	Indet. x1	<i>C. avellana</i> nsfs	Indet. x 2	-	Charred	Carruthers 1990	No	-	-	-	-	
Rockley Down	No	2.3	<i>H. vulgare</i>	-	-	-	Charred	Allison and Godwin 1949	No	-	-	-	-	-





Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	$\delta^{13}C$ (‰)	Radiocarbon age (BP)	Calibrated date (2 $\sigma$ )
	-	-	-	<i>P. spinosa</i> stone	-	-	-	-	No	-	-	-	-	-
Stonehenge	Yes	-	Triticeae (post-Roman)	-	-	-	Darvill and Wainwright 2009	-	Yes, 2 (post-Roman)	-	-	-	-	-
Tilshead Primary School	No	1.2	-	<i>C. avellana</i> nsfs	-	-	Charred Amadio 2010; Roberts and Marshall 2020	Yes	Yes	OxA-35987	<i>C. avellana</i> nsf	-26.9±0.2 (IRMS)	4495±30	3360–3030 cal BC
The Avenue	Yes	1.3/2.1	Triticeae	-	11	Charred	Allen 1995	No	No	-	-	-	-	-
Tor Stone	Yes	-	<i>Triticum</i> sp. (inc. <i>aestivum/turgidum</i> ), <i>H. vulgare</i>	-	Yes	Charred	Simmons 2020c	No, considered likely intrusive	No, considered likely intrusive	-	-	-	-	-
West Amesbury	Yes	1.3/2.1	Triticeae inc. <i>Secale cereale</i>	-	-	Charred	Simmons 2020d	No, considered likely intrusive	No, considered likely intrusive	-	-	-	-	-
										SUERC-66778	<i>C. avellana</i> nsf	-24.0±0.2 (IRMS)	4499±30	3360–3030 cal BC
										UBA-31616	<i>H. vulgare</i> grain	-25.0±0.22 (IRMS)	825±39	cal AD 1160–1280
										UBA-31614	<i>C. avellana</i> nsf	-22.7±0.22 (IRMS)	4462±27	3340–3020 cal BC
										SUERC-66323	<i>T. sp. free-threshing</i> wheat grain	-24.2±0.2 (IRMS)	268±29	cal AD 1520–1800
										UBA-31359	<i>Pisum/Vicia</i> sp. seed	-23.8±0.22 (IRMS)	503±27	cal AD 1400–1450
West Amesbury Farm	Yes	1.2	<i>H. vulgare</i> , <i>Secale cereale</i> , <i>T. aestivum/turgidum</i> , Fabaceae (cultivated)	<i>C. avellana</i> nsfs	-	Yes	Charred Roberts et al. 2020; Worley et al. 2019	Yes	Yes	UBA-31617	<i>H. vulgare</i> grain	-24.9±0.22 (IRMS)	184±60	cal AD 1520–1950
										SUERC-66779	<i>C. avellana</i> nsf	-26.8±0.2 (IRMS)	4502±30	3360–3030 cal BC
										SUERC-66324	<i>T. aestivum/turgidum</i> grain	-23.6±0.2 (IRMS)	195±26	cal AD 1650–1950
										UBA-31360	<i>T. aestivum/turgidum</i> grain	-24.2±0.22 (IRMS)	190±32	cal AD 1640–1950
										UBA-31358	<i>T. sp. free-threshing</i> wheat grain	-22.9±0.22 (IRMS)	242±24	cal AD 1630–1800

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰) (IRMS)	Radiocarbon age (BP)	Calibrated date (2σ)
West Chisenbury Farm (Salisbury Plain EIP DTE)	1.1		<i>Triticum dicoccum/spelta</i> , <i>Triticum cf. dicoccum</i>						Yes	SUERC-41705	Triticeae grains (3x)	-23.6 (IRMS)	4928±29	3780–3640 cal BC
				<i>C. avellana</i> nsfs, <i>P. spinosa</i> stone fragments						SUERC-41709	<i>C. avellana</i> nsf (IRMS)	-27.2 (IRMS)	4079±29	2860–2490 cal BC
	1.3	No	<i>H. vulgare</i>		Yes	Charred	Wyles and Stevens 2018a	Yes		SUERC-41712	<i>C. avellana</i> nsf (IRMS)	-23.2 (IRMS)	3814±29	2400–2140 cal BC
	1.3/2.1 -								No	SUERC-41713	Triticeae grains (2x) (IRMS)	-23.2 (IRMS)	3798±29	2340–2130 cal BC
West Kennet (Stone) Avenue	Yes	1.2	-	<i>C. avellana</i> nsfs	-	1 cleavers	Charred	Stevens 2009b	No	-	-	-	-	-
West Kennet Farm	Yes	1.3	<i>T. aestivum/turgidum</i> , <i>H. vulgare</i> , <i>Secale cereale</i>	<i>C. avellana</i> nsfs	-	Yes (includes <i>Anthemis catula</i> )	Charred	Wessex Archaeology 1989	No (assumed medieval)	-	-	-	-	-
West Kennet Palisaded Enclosures	Yes	1.3/2.1	<i>T. dicoccum, aestivum/turgidum</i> , <i>H. vulgare</i> , <i>Pisum sativum</i> , <i>Avena</i> sp.	-	-	-	Charred	Fairbairn 1997	No (suggested possibly Saxon in Campbell and Pelling 2013)	-	-	-	-	-
Wilford Down	Yes	1.1	-	<i>C. avellana</i> nsfs	-	-	Charred	Carruthers 1990	No	-	-	-	-	-
Wilford Shaft	Yes	2.2	<i>T. dicoccum</i> , <i>H. vulgare</i> , <i>Papaver somniferum</i> , <i>Brassica/Sinapis</i> , <i>L. usitatissimum</i>	<i>C. avellana</i> , <i>Cornus sanguinea</i> , <i>C. cf. monogyna</i> , <i>S. nigra</i> , <i>P. spinosa</i>	-	Yes	Charred and waterlogged	Robinson 1989	No	-	-	-	-	-
Willis's Field Barn (Battlesbury, Salisbury Plain TA, SRR)	No	1.3/2.1	<i>H. vulgare</i> , <i>Triticum dicoccum/spelta</i> , <i>Triticeae</i>	<i>C. avellana</i> , <i>Malus/Pyrus</i> , <i>S. nigra</i> , <i>C. monogyna</i>	Ranunculus ficaria	Yes	Charred and mineralised	Carruthers 2008; Clapham and Stevens 2008	No	-	-	-	-	-
		2.2							No	-	-	-	-	-

Site name	WHS	Period	Crops	Wild	Tubers	Other	Preservation	Citation key	Direct <sup>14</sup> C?	Lab. No.	Material	δ13C (‰)	Radiocarbon age (BP)	Calibrated date (2σ)																			
Windmill Hill	Yes	1.1	<i>T. dicoccum</i> , <i>L. usitatissimum</i>	<i>Malus sylvestris</i> -	-	-	Impressions in pottery	Helbaek 1953	No	-	-	-	-	-																			
															1.1	Triticeae	-	Rare	Charred	Fairbairn 1993, 1997, 1999, 2000b	No	-	-	-	-								
																										1.1	Triticeae	Charred	Charred	-	-	-	-
1.1	Triticeae	-	-	-	-	-	-	-	-	-	-	-																					
													1.1	Triticeae	-	-	-	-	-	-	-	-	-	-									
																									1.1	Triticeae	-	-	-	-	-	-	-
1.3/2.1	Triticeae	-	-	-	-	-	-	-	-	-	-	-	-																				
														1.3/2.1	Triticeae	-	-	-	-	-	-	-	-	-	-								
																										1.3/2.1	Triticeae	-	-	-	-	-	-
Winterbourne Stoke	Yes	2.2	<i>L. usitatissimum</i>	-	-	-	Impressions in pottery	Helbaek 1953	No	-	-	-	-	-																			
															2.2	Triticeae	-	-	-	-	-	-	-	-	-								
																										2.2	Triticeae	-	-	-	-	-	-
Winterbourne Stoke long barrow 71	Yes	2.2	<i>T. aestivum</i> / <i>turgidum</i> , <i>T. spelta</i> / <i>dicoccum</i> and <i>H. vulgare</i> )	<i>C. avellana</i> nsfs	-	-	Charred	Wessex Archaeology 2017a	Yes	UBA-33155	Triticeae (cf. <i>H. vulgare</i> ) grain	-	3084±44	1450–1220 cal BC																			
															2.2	Triticeae	-	-	-	-	-	-	-										
																								2.2	Triticeae	-	-	-	-	-	-		
Winterbourne Stoke long barrow 86	Yes	2.2	<i>C. avellana</i> nsfs	-	-	-	Charred	Wessex Archaeology 2017a	No	-	-	-	-	-																			
															2.2	Triticeae	-	-	-	-	-	-	-										
																								2.2	Triticeae	-	-	-	-	-	-		
Woodhenge	Yes	-	-	-	-	-	Charcoal only	Simmons 2020e	No	-	-	-	-	-																			
															-	-	-	-	-	-	-	-											
																							-	-	-	-	-	-	-				

Key: 1 = Neolithic, 2 = BA, 3 = IA; 0.1 = Early, 0.2 = Mid, 0.3 = Late; nsf = nutshell fragments

All calibrated dates are quoted at 2σ and with the end points rounded to the nearest 10 years. The calibrated age ranges were calculated with OxCal 4.4 (Bronk Ramsey 2009) using the IntCalzo curve (Reimer et al. 2020).

Table A4.5 Archaeological sites with mineralised plant remains in the WHS and wider area

Site	Type	Period	Reference
Amesbury, Salisbury Street	Settlement	AS	Stevens2009b
Battlesbury	Midden	BA, IA–RB	Carruthers 2008
Brickley Lane	Settlement	IA, RB, Med	Pelling 2002
East Chisenbury	Midden	Late BA–Early IA	Carruthers 2010; López-Dóriga 2021b
High Post	Midden	IA–RB	Pelling 2011
Potterne	Midden	BA	Carruthers 2000; McCobb <i>et al.</i> 2003
Market Lavington	Midden	AS	Straker 2006
Salisbury, Brown Street	Urban	Med, Pmed	Wessex Archaeology 2014
Salisbury, Damascus and Emmaus House	Urban	Med, Pmed	Wessex Archaeology 2011b
Salisbury, Ivy Street	Urban	Med, Pmed	Hinton 2000b
Salisbury, Trinity Chequer (Anchor Brewery, Gigant St.)	Urban	Med, Pmed	Hinton 2005
Salisbury, Vanner's and Griffin Chequers (Bedwin Street)	Urban	Med, Pmed	Wyles 2016b
Trowbridge	Urban	Late AS	Carruthers 1993
Wayside Farm		RB, Med	Carruthers 2002
Wilton	Urban	AS	Pelling 2012

Key: AS = Anglo-Saxon; BA = Bronze Age; IA = Iron Age; RB = Romano-British; Med = medieval; Pmed = post-medieval



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**A** SERIES OF ARCHAEOLOGICAL INVESTIGATIONS were undertaken over 18 years to inform options for the location of new visitor facilities for Stonehenge. Geophysical survey, test pitting, auger surveys, evaluation trenching and fieldwalking took place at sites within and east of the World Heritage Site.

This volume brings together the results of these investigations, designed and undertaken in a piecemeal fashion with the intention of informing design options, rather than being planned to address particular targets of archaeological interest. Carried out separately over a prolonged period, the works were nevertheless not conceived or undertaken in a vacuum. All were underlain by the Stonehenge Conservation and Management Project Environmental Statement and its successors, which defined the methodological and intellectual framework within which the works took place. Consequently, their results contribute significantly to the understanding of human activity in the Stonehenge landscape over several millennia.

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