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HIGHWAYS AGENCY

Archaeology on the A303 Stonehenge Improvement

An Executive Agency of the Department for Transport

Archaeology on the A303 Stonehenge Improvement

By Matt Leivers and Chris Moore

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Preface

English Heritage (EH) and the Highways Agency (HA) warmly welcome this timely report on the extensive archaeological investigations undertaken by the HA in the connection with the previously proposed A303 Stonehenge Improvement scheme[1].

As one of the world's iconic monuments Stonehenge attracts enormous interest. Questions about its environs, function and development continue to fascinate the public and specialists alike. The investigations reported here appreciably enhance our understanding of Stonehenge and its landscape, and have contributed significantly to the research objectives identified for the World Heritage Site.

Future interpretations of the area will be greatly assisted by this publication, capturing work started in 1991 and continued over the next 15 years to the highest professional standards.

The work has influenced the development of cultural heritage assessment methodology world wide and has subsequently informed the revision of HA standards and guidance.

New evidence of the history of Stonehenge and surrounding areas has been obtained by traditional archaeological excavations, field-walking, geophysics, and the re-evaluation of existing material.

Part of the challenge has been to produce a coherent account drawn from the new evidence and incorporating existing material, whilst still presenting the detail necessary to inform future research. The results will help to guide any future assessment of proposals that may affect the World Heritage Site, including any future proposals designed to accommodate as sympathetically as possible the transport needs of the modern world in this historic landscape. This report, prepared and published in an admirably short time, fully meets this brief.

[1]Following a review of the scheme after a public inquiry in 2004 the Government decided to cancel the A303 Stonehenge Improvement because its escalating cost was judged not to represent best use of tax payers' money

The Highways Agency is pleased to be working with English Heritage in publishing this summary report. The Agency has enjoyed a close working relationship with English Heritage throughout the development of the A303 scheme. We are pleased that the investment made in the assessment of the impact of the scheme has led to a clearer understanding of the value of the cultural heritage in this area.

Graham Dalton, Chief Executive, Highways Agency

English Heritage is very pleased to be able to work with the Highways Agency in the production of this report. English Heritage worked closely with the Agency and its consultants and contractors throughout the development of the scheme. We welcome this report which further enhances our understanding of the cultural heritage of the Stonehenge World Heritage Site and its surrounding area.

Simon Thurley, Chief Executive, English Heritage

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Acknowledgements

The development of the A303 Stonehenge Improvement required an unprecedented level of public and stakeholder consultation. The potential importance of the scheme as an opportunity to enhance the iconic status of Stonehenge as one of the most recognisable and most visited monuments in the world demanded an exemplary approach from the outset. The scheme benefited from a considered approach to the archaeological assessment of each option and design iteration over nearly 15 years. That the scheme itself has not been progressed to completion should not detract from the efforts of an extraordinary number of people to ensure that it offered a deliverable solution to the environmental problems that continue to beset Stonehenge. Whilst it is not possible to acknowledge individually here all those who contributed, the key sponsors, design engineers and archaeologists involved deserve specific mention.

The long gestation period has meant that the direction of the project, the design of the scheme and the associated development and implementation of an archaeological strategy involved a range of consultants and contractors. Principal amongst these were the project sponsors at the Highways Agency, Ed Bradley from 1990 and, from 2002, Chris Jones. Without their professional and personal commitment to the scheme and its objectives, and their tireless work with a range of focus groups to ensure the widest possible public involvement throughout, the scheme would not have advanced at all.

The Stage 1 options assessment and identification of the preferred route were undertaken between 1991 and 1999 by Sir William Halcrow and Partners Ltd., with John Samuels Archaeological Consultants (JSAC); the contribution of the late Dr John Samuels deserves particular acknowledgement here. Development of the scheme design following the preferred route announcement was undertaken by Mott MacDonald from 2000, with sub-consultants Nicholas Pearson Associates (environmental design) and Wessex Archaeology. For Mott MacDonald, Stuart Bromley and Gareth Davies brought commitment and energy to the tasks of design development and stakeholder engagement alike. For Wessex Archaeology, Andrew Lawson and Chris Moore acted as archaeological advisors to Mott MacDonald. The contribution of Andrew Lawson deserves special mention here for his longstanding commitment to the scheme, as an effective lobbyist and advocate, as chair of the Archaeological Meetings held throughout Stage 2, and not least as expert witness for the Highways Agency at the 2004 Public Inquiry.

Mike Ranftt and Adrian Hobbs of design and build contractors Balfour Beatty Costain JV and Halcrow Gifford JV took on the torch in 2002, while the Mott MacDonald team became the Employers Agents, overseeing the scheme development on behalf of the HA. The assessment and development of the 2003 Published Scheme and its supporting Environmental Statement was undertaken by Halcrow Gifford; Kate Fox, Gerry Wait, and Jim Keyte provided landscape, archaeological and cultural heritage input.

An Historic Landscape Survey was undertaken by Mott MacDonald (Jeremy Purseglove) with input from Wessex Archaeology (Andrew Lawson) and John Chandler.

The design and implementation of the archaeological survey programme was overseen during Stage 2 through regular Archaeology Meetings attended by the Highways Agency (Chris Jones, Mark Bailey); Wessex Archaeology (Andrew Lawson, Chris Moore); Mott MacDonald (Stuart Bromley, Gareth Davies); Halcrow Gifford (Gerry Wait, Kate Fox); English Heritage (Amanda Chadburn, David Batchelor, Rachel Foster); the National Trust (Keith Rowe, David Thackray, Chris Gingell, Gill Hey of Oxford Archaeology); and Wiltshire County Council (Roy Canham).

Archaeological surveys were undertaken by Wessex Archaeology, and geophysical surveys by GSB Prospection. The various surveys were managed for Wessex Archaeology from 1991 by Andrew Lawson, Carrie Hearne, Michael Heaton, Andrew Fitzpatrick, Mark Roberts, and Chris Moore. Direction in the field was by Christine Butterworth, Sarah F. Wyles, Phil Harding, Rod Brook, David Godden, Angela Batt, Mark Dunkley, Tara Fairclough, Kevin Ritchie, Nicholas Cooke, Vaughan Birbeck, Adrian Chadwick, Mike Trevarthen, and Steve Thompson.

The numerous internal and external finds and environmental specialists who contributed are acknowledged where relevant in the text. Additionally, the personal contributions of Michael J. Allen and Lorraine Mepham to the design and implementation of the archaeological surveys are gratefully acknowledged.

The authors would like to thank all of the specialists for their input, especially Philippa Bradley, David Norcott, Jacqueline McKinley and Chris Stevens. Phil Andrews, Andrew Fitzpatrick, and Andrew Lawson commented on the text at various stages, and made numerous suggestions for improvements. Stuart Needham discussed the Wilsford G1 Beakers.

Summary

An extensive series of archaeological surveys was undertaken as part of the A303 Stonehenge Improvement Scheme between 1992 and 2003, providing an archaeological transect across the World Heritage Site and beyond it to Winterbourne Stoke to the west.

After a programme of desk-based studies, walk-over surveys, historic landscape assessments, and analyses of aerial photographs, a series of field surveys was undertaken. These surveys comprised fieldwalking, test pitting, auger surveys, geophysical surveys, and archaeological trial trenching. This report draws together the results of those surveys.

The earliest deposit found was a buried soil of Mesolithic date which contained a Late Mesolithic flint assemblage to the west of Countess Farm. Neolithic activity was mainly represented by low density scatters of flint objects across many survey areas but there are a few more significant knapping scatters. Two Beaker inhumation burials were found adjacent to the Wilsford G1 round barrow to the west of the Normanton Down barrow cemetery. Bronze Age lithics were widely distributed across the surveys, if in no great numbers. East of Longbarrow Crossroads, two Middle Bronze Age rubbish pits and a shallow pit containing Middle Bronze Age pottery and redeposited animal and human bone, all probably relate to the known Bronze Age settlement at Longbarrow Crossroads.

A large enclosed Early Iron Age settlement was identified to the west of the World Heritage Site, at Scotland Lodge. A series of rectilinear enclosures adjacent to it are also of Iron Age date and settlement seems to have continued into the Romano-British period. Other, smaller, assemblages of Romano-British material may indicate other settlement activity in the vicinity.

Saxon and medieval material was poorly represented in the surveys, being limited to small quantities of metalwork, pottery, and ceramic building materials, much of which appears to derive from manuring of fields in the 13th/14th centuries. A number of undated lynchets north of Winterbourne Stoke seem likely, on morphological grounds, to be medieval in date. Post-medieval material was similarly poorly represented, occurring primarily as stray finds.

Alongside these sites and finds, environmental assemblages included charred plant remains and charcoal ranging in date from Neolithic to Iron Age, obtained from buried soils, graves, and settlements; and land snails from Late Bronze Age and Iron Age contexts. The geoarchaeological data – in particular the evidence of soils and colluvial sequences – provide a valuable opportunity to examine the early development of the chalkland landscape. The Mesolithic land surface west of Countess Farm was overlain by colluvium possibly of Early Neolithic date and a Neolithic argillic brown earth was identified south of Stonehenge. These soils demonstrate how post-glacial decalcified brown soils could have been eroded from Neolithic times onwards. Importantly, they demonstrate that sequences exist within the Stonehenge landscape that may be used to reconstruct prehistoric environment, landscape, and land use.

As the surveys were largely designed to inform decisions relating to the development of the road design, they were targeted with the intention of identifying and avoiding significant archaeology, rather than with producing large archaeological data sets. Nevertheless, the Mesolithic flint assemblage west of Countess Farm, the Beaker burials from Wilsford G1, and the Iron Age settlement west of Scotland Lodge each represent significant new discoveries within an area with a very long history of archaeological investigation. When considered alongside the small assemblages of material from the other surveys they provide a useful body of data which alters understandings of the human use of the area immediately around Stonehenge quite markedly.

Chapter 1
Introduction

Matt Leivers and Chris Moore

with Michael J. Allen, David Norcott, and Chris J. Stevens

The future of Stonehenge is a vexed one. Each year nearly one million people visit the site, using visitor facilities which were intended to cater for a much smaller number. Two nearby roads are widely agreed to have a detrimental effect on the setting of Stonehenge and other archaeological features within the surrounding World Heritage Site, and on the ability of visitors to appreciate and understand them.

The A303 trunk road passes within 200 m of Stonehenge, while the A344 is immediately adjacent, separating the Stones from their associated Avenue. Traffic on both roads cause significant noise and visual intrusion, and also air pollution.

Very many plans have been examined in an attempt to improve this situation, involving partnership working across many organisations. Common to all has been the aim of removing traffic from the immediate Stonehenge area and at the same time addressing issues of road capacity and safety.

This volume reports on the archaeological works undertaken between 1992 and 2003 as part of the A303 Stonehenge Improvement Scheme promoted by the Highways Agency. After a Public Inquiry in 2004 this scheme was recommended by the Inquiry Inspector but increased construction costs led, after a review, to its eventual cancellation by the Government in 2007. After this announcement, English Heritage were not able to proceed with their plans for a new Visitor Centre at Stonehenge situated outside the World Heritage Site.

Books on Stonehenge are legion; their aims and readership diverse. The ambitions of this volume are modest. They are to set out the objectives of the extensive programme of archaeological work that was undertaken to inform the planning of the highway scheme; the methods used; the results obtained; and to suggest something of their significance.

It is not the ambition to provide a detailed account of either the archaeology or history of Stonehenge and related monuments, the study of Stonehenge, or the wider contemporary significance of those endeavours. Recent scholarly volumes that address those issues include, amongst others, works by Burl (2006), Darvill (2005; 2006), Lawson (2007), and Richards (2007). At the time of writing, research excavations examining major sites close to and broadly contemporary with Stonehenge are ongoing (eg, Larsson and Parker Pearson 2007) and these include the first excavations at Stonehenge in a generation (Pitts 2008).

At the same time the results of the work reported on here go beyond a narrow focus on the Late Neolithic and Early Bronze Age, providing a 12 km-long transect across the multi-period archaeology of the World Heritage Site and its surroundings. Thus, the most comprehensive results from the scheme relate to neither the 'Age of Stonehenge' nor the principal significance of the World Heritage Site. The important Iron Age settlement at Scotland Lodge lies outside the World Heritage Site and here the redesign of the road alignment following the archaeological surveys so as to ensure only minimal damage to the site illustrates the careful interplay between scheme planning, surveys, and final design that underlay the key objective of the archaeological works: to locate archaeological remains and then to avoid them.

The Highways Setting

The A303 forms part of the national trunk road network of strategic highways, providing one of the principal routes from London to the south-west of England. The road is a dual carriageway from London as far as Amesbury, where it becomes single carriageway as far as Berwick Down, 12 km to the west. This reduction in capacity results in congestion and delays at peak periods, with concomitant effects on journey times, economy, and road safety. The junction of the A303 and the A344 at Stonehenge is a particular accident black spot.

Stonehenge, Avebury and Associated Sites were inscribed onto the World Heritage List in 1986 in recognition of the archaeological richness and sensitivity of the sites and surrounding landscapes and a Management Plan duly agreed to provide a strategy to conserve and manage the site. The A303 crosses the Stonehenge part of the World Heritage Site (WHS) from east to west, crossing Stonehenge Bottom on an embankment and passing within 200 m of Stonehenge itself (Pl. 1). The A344 branches from the A303 200 m east of Stonehenge, carrying traffic towards Devizes and providing access to the visitors' car park situated to the north-west of the Stones. The sight and sound of the A303 and A344 roads present a significant intrusion into the rural setting of Stonehenge and a major detraction from the experience of one of Britain's most iconic sites. The need to remedy this situation for the benefit of both highway users and visitors to the Stonehenge WHS has long been recognised, and options for improvement of the A303 were set out in a strategy called the Stonehenge Master Plan. These have been

Plate 1 Stonehenge, cut from its landscape by the A303 (left) and A334 (right). Photo: Highways Agency

central to development of the Stonehenge Project (developed from the Master Plan), the means by which many of the objectives of the Stonehenge WHS Management Plan could be delivered.

As part of the process of identifying the best option for improvement of the A303 at Stonehenge, a series of archaeological surveys was undertaken by Wessex Archaeology on behalf of the Highways Agency between 1992 and 2003 (Figs 2–4). These represent a major programme of non-intrusive and intrusive fieldwork within the WHS and beyond, encompassing a range of topographical zones.

Project Background

Consideration of options for improvements to the existing single-carriageway section of the A303 between Amesbury and Berwick Down began in 1991 (Stage 1), with the identification of a series of alternative routes that would provide a bypass for the village of Winterbourne Stoke, west of the WHS, and the upgrading to dual carriageway standard of the A303 past Stonehenge (Fig. 1). Alternatives included the on-line widening of the A303 past Stonehenge, and routes to the south and north of the existing road. The potential options including suggestions for a tunnel were debated at a planning conference in 1995 attended by a variety of interested parties; no consensus on a preferred option was reached and the scheme was not progressed further until 1998.

In July 1998, it was announced that improvements to the A303 at Stonehenge would be included in the Government's national Targeted Programme of Improvements as an 'exceptional environmental scheme'. This was in recognition of the environmental problems caused by the A303 and A344 at Stonehenge and the Government's intention to address these by placing the A303 in a 2 km long tunnel past the site. A Preferred Route for the A303 Improvement was announced in June 1999. In 2003, following extensive surveys to inform a wide-ranging environmental impact assessment of the Preferred Route (Stage 2), the Highways Agency published draft Orders for a 12.4 km long dual carriageway between Amesbury and Berwick Down (known as the Published Scheme), incorporating a northern bypass of Winterbourne Stoke and junctions to the west of Winterbourne Stoke, at the intersection with the A360 at Longbarrow Crossroads and at the junction with the A345 at Countess Roundabout, north of Amesbury (Fig. 1). Through the WHS, the route would follow the line of the existing A303, incorporating a 2.1 km long twin-bored tunnel past Stonehenge and the closure of the A344 from its junction with the A303 north-westwards as far as the existing Stonehenge visitors' car park entrance, in order to meet the objective of removing roads and traffic from the heart of the WHS.

A public inquiry into the proposals was held in 2004, which recommended in favour of the Published Scheme, subject to minor modifications. However, because of a significant increase in the cost of the proposed tunnel, a review was undertaken to consider whether the proposals represented value for money and the best option for delivering improvements to the setting of Stonehenge. In 2007, the Government decided not to proceed with the Published Scheme for the A303 Stonehenge Improvement, as the increased cost would not represent the best use of taxpayer money.

Archaeological Background

Proposals for the A303 Stonehenge Improvement have been the subject of extensive study and consultation since 1991. In addition to surveys undertaken for the Department of Transport and the Highways Agency, reports on similar work in the immediate vicinity have been compiled on behalf of English Heritage, the National Trust and others. The Archaeology Division of English Heritage (formerly the Central Archaeological Service) with Wiltshire County Council has assessed information on some 1490 archaeological sites within a study area of some 135 sq. km centred on Stonehenge and compiled this into the Stonehenge GIS, which serves as a management tool to assist decision making within the context of the WHS Management Plan.

The archaeological richness and sensitivity of the area around Stonehenge is such that it was inscribed onto the World Heritage List, as a part of the Stonehenge, Avebury and Associated Monuments World Heritage Site. The Stonehenge element of this WHS comprises 2665 ha of land, bounded on the north by:

> 'The Packway, between Rollestone Camp and the A345 roundabout; to the east largely along the west bank of the River Avon; and to the south along field boundaries past Rox Hill to the A360 road. The western boundary is formed by the A360 and B3086' (English Heritage 2000, part 2, 2; and see Fig.1).

The 2000 Stonehenge World Heritage Site Management Plan (English Heritage 2000) expressed the importance of the area succinctly:

> 'The Stonehenge part of the WHS comprises over 2,000 hectares of mainly chalk downland. Within this area there are 196 scheduled monuments, mainly burial mounds, and a uniquely dense concentration of buried archaeological sites, including ancient field systems, enclosures, trackways and settlements.
>
> In this way, the Stonehenge WHS comprises an archaeological landscape rather than a series of individual monuments. It is not so much a site as a 'cultural landscape'…' (English Heritage 2000, part 2, 3–4).

While the Published Scheme cuts across the WHS, and consequently impacts directly upon this very sensitive landscape, the Stonehenge GIS shows that these impacts continue beyond the boundaries of the WHS.

For the A303 Improvement as a whole (both the options phases and Published Scheme) the Stonehenge GIS suggests that it would cross a landscape that was only very sparsely inhabited prior to the beginning of the Neolithic period. A Palaeolithic presence is indicated only by a very few scattered artefacts, and the material record for an earlier Mesolithic utilisation of the area is little better. Remarkably, however, radiocarbon-dated pine charcoal from features in the visitor's car park at Stonehenge demonstrates some sort of built structures in this period. No *in situ* finds of later Mesolithic date were known prior to the A303 Stonehenge Improvement surveys, the period being represented only by redeposited lithic artefacts.

In contrast, evidence of the Neolithic and Early Bronze Age is very much more frequent, but tends to consist primarily of two very distinct classes of material. On the one hand, the earthen structures of the Early Neolithic (the long and oval barrows, the cursuses and the causewayed enclosures) are the very visible element of the archaeological record, and tend to dominate understandings of the period, despite the actual paucity of controlled excavation and publication associated with them. On the other hand, scatters of pits and the materials within them, along with the background scatter of lithic, ceramic, and other artefacts, are perhaps more representative of the smaller-scale activities of shorter duration which occurred alongside the construction and use of the ceremonial earthworks. Patterning of artefact scatters (especially beneath later structures) indicates that – although fairly widespread – Early Neolithic activity in the area was by no means ubiquitous.

While Stonehenge itself looms large over the later Neolithic (post-3000 cal. BC), it is only one element of a developing and changing landscape. New forms of ceremonial earthwork emerged, of which the henge is the main example (although neither Stonehenge nor the nearby Durrington Walls are at all typical of the type). Recent programmes of work such as the Stonehenge Riverside Project have begun to redress the balance of understanding of the later Neolithic (http:/www.shef.ac.uk/archaeology/research/stonehenge/intro.html; Parker Pearson 2007; Thomas 2007; Pollard and Robinson 2007), particularly in terms of the ceremonial landscape.

Many aspects of the later Neolithic inhabitation of the area are still only understood in broad outline, despite the recent identification of important structures of that period inside and around the Durrington Walls henge. Gaps in knowledge exist in relation to both major structures (the palisade ditch north-west of Stonehenge and the North Kite enclosure particularly) and more ephemeral, less easily observed features such as the continued tradition of pit deposits, and the discrete lithic scatters between King Barrow Ridge and Durrington Walls, on Wilsford Down, and around the North Kite.

The introduction, erection, and repositioning of the various phases of stone at Stonehenge date to this period, resulting in the creation of the unique stone circles surviving today. Stonehenge aside, the Beaker and Early Bronze Age archaeology of the region is typified by mortuary earthworks, predominantly the various forms of round barrow. Although the very earliest of these elsewhere pre-date the introduction of Beaker ceramics, their great florescence in the Stonehenge landscape is associated with the Beaker and especially 'Wessex' funerary practices. Although a great many barrows around Stonehenge have been investigated at one time or another over the past two centuries, understanding of the foundation, development, and internal relationships of individual groups remains imprecise, due largely to the vastly differing aims of archaeological enquiry since their investigation began, and the lack of securely-dated examples within and between cemeteries.

Putative settlements of the builders of these barrows are only hinted at by concentrations of ceramics and lithics (Brück 1999). One of these, around Longbarrow Crossroads, seems to mark the beginnings of that location as a preferred one for settlement. Excavations in the 1960s during the construction of the roundabout at the junction of the A303 and A360 revealed parts of a settlement, possibly enclosed, one of a number of similar sites which have been encountered in the region (a second – the Egg, near Woodhenge – and a third at Shrewton have also been excavated). As across much of lowland Britain, the Middle Bronze Age seems to have been the period of the first permanent settlements and the establishment of field systems on a large scale (Yates 2007). Much of the area seems to have been cleared and farmed, given over to arable production and grazed downland pasture: field systems are known from Parsonage Down on the west to Earl's Farm Down on the east, some or all of which are likely to be multi-phased and to have continued in use into the Late

Bronze Age. Some of these field systems are cut by the larger linear boundary ditches which typify much of Salisbury Plain in this period (Bradley *et al.* 1994).

The succeeding Iron Age is represented around the peripheries of the region by hillforts, enclosures and open settlements. Within the WHS itself, only the hillfort at Vespasian's Camp, the inhumation burial in the top of the palisade ditch north-west of Stonehenge, and the settlement evidence around Durrington Walls and on Wilsford Down attest to any significant Iron Age presence. Although the evidence is slight and mostly circumstantial, some of the field systems that were established in the Middle and Late Bronze Age may have been maintained and altered into the Iron Age.

The Romano-British period saw some fundamental alterations to the pre-existing Iron Age landscape, the alteration of pre-existing field systems and in many cases the establishment of new ones. As with the prehistoric field systems, such remains are far better preserved to the north on Salisbury Plain where plough damage has been limited (McOmish *et al.* 2002).

Substantial settlements of Romano-British date are known in the region, primarily of nucleated 'village' type. The dominance of these and the apparent near-total absence of villas has led to the suggestion that Salisbury Plain was part of a Roman imperial estate (Collingwood and Myres 1937; Frere 1987, 66). However, the situation remains ambiguous and if these differences are real they may be related to social differences and organisation across Britain (Hingley 1989; Millett 1990). Alternatively, it may be the case that villas are located in valleys (Rawlings 2001) not on higher ground.

Land divisions and settlement locations seem to have persisted and proliferated, in some instances into the post-Roman period. Amesbury seems to have been a fairly substantial settlement by the Early Saxon period at the latest (Darvill 2005, 79), developing within an important royal estate and beside an Abbey. Winterbourne Stoke is one of a series of villages of probable Saxon origin within the Till valley. With the exception of lynchets north of Winterbourne Stoke and of occasional stray finds, the post-Roman periods are not represented in the A303 Improvement surveys.

The Geology and Topography of the Route

The proposed A303 Improvement lies on the southern edge of Salisbury Plain, an undulating plateau composed largely of Upper Chalk with caps of clay-with-flints on some areas of higher ground (British Geological Survey, Sheet 282).

Within the area crossed by the Published Scheme, the chalk plateau rises to a maximum of approximately 167 m above Ordnance Datum (aOD) near Yarnbury Castle on Berwick Down at the western end of the route, falling gently to 125 m aOD on the Parsonage Down spur before dropping to approximately 60 m aOD in the valley of the river Till at Winterbourne Stoke. East of Winterbourne Stoke, the route climbs to run along the northern flank of Oatlands Hill between 100 m and 110 m aOD before falling gently across Normanton and Stonehenge Downs to approximately 80 m aOD in Stonehenge Bottom. Climbing back to 110 m aOD north of Coneybury Hill, the route then drops into the valley of the Avon, reaching 70 m aOD at the Countess Roundabout.

Both the Avon to the east and the Till to the west run generally north–south, the latter bisecting the line of the Published Scheme. Both valleys are known to contain fluvial valley gravels and alluvial deposits. While the Avon is active year-round, the modern river Till is only a seasonally-flowing winterbourne stream. However, deposits in the valley suggest that a watercourse of some size must have flowed in the past (McOmish *et al.* 2002).

The other major geomorphological features of the route are the coombes and dry valleys characteristic of the chalk landscape. Originally most likely to have been formed by ground-water sapping – a process in which springs exiting the chalk at the coombe head destabilise and erode the ground, eventually resulting in the elongated profiles seen today (Sparks and Lewis 1958) – these features were further shaped by cryoturbation during the Pleistocene period, which formed dry valleys with a characteristic asymmetrical profile with steeper north-facing slopes and gentler south-facing slopes.

Archaeological Surveys

Against this background, a series of surveys was undertaken during the consideration of options phase between 1992 and 1999 (Stage 1 of the scheme development process), and during the Preferred Route design phase between 2000 and 2003 to inform development of the 2003 Published Scheme (Stage 2). These various surveys were designed and implemented to locate, characterise and evaluate potential archaeological sites of all periods, in order to ensure that wherever possible the scheme design avoided significant archaeological remains, particularly of the types of structures that have been the focus of most earlier work. In pursuing this aim all forms of evidence were considered, using a range of cost-effective techniques. The surveys comprised a number of principal elements:

- Preliminary desk-based studies.
- Walk-over survey, conducted to appreciate the visibility and settings of visible monuments.
- Two programmes of air photographic transcription were conducted by the Royal Commission on the Historical Monuments of England (RCHM(E), now part of English Heritage), providing accurate 1:10,000 scale photogrammetric plans and supporting documentation of all plough-levelled archaeological features visible on air photographs within a 10 km^2 assessment area between Longbarrow Crossroads and Berwick Down

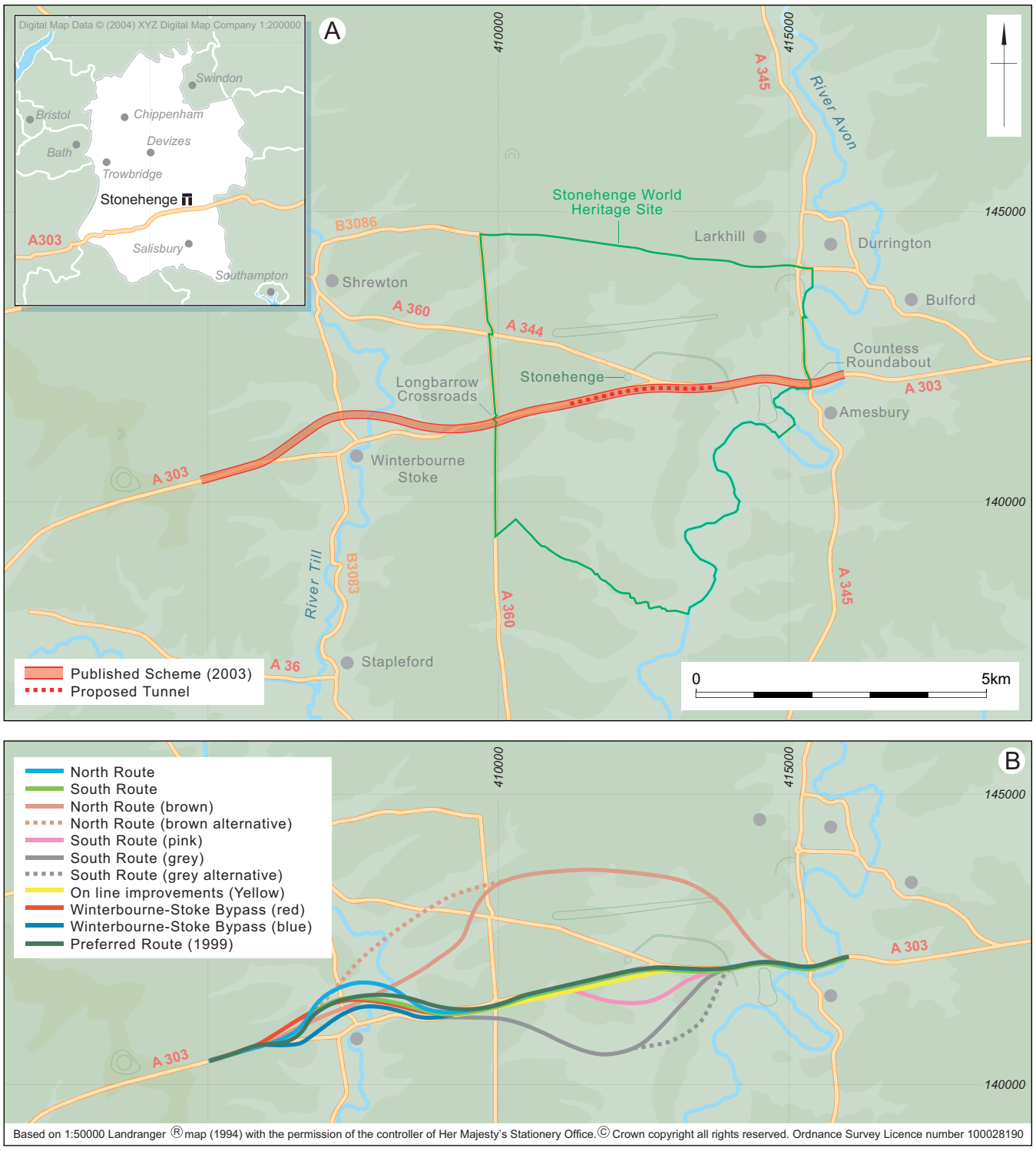

Figure 1 Route location and alternatives

(RCHME 1992a), and within a contiguous 4 km^2 to the east between Wilsford Down and Amesbury (RCHME 1992b). Subsequently, an aerial photographic survey was conducted as part of English Heritage's National Mapping Programme to identify all potential archaeological sites and monuments in the area (Crutchley 2002). A series of vertical aerial photographs taken specifically to inform design of the scheme were also scrutinised.

- Historic landscape survey comprising documentary and cartographic research was undertaken to identify historic components of the landscape, to understand its historic character, and to appreciate the unique, strong cultural perceptions of the Stonehenge landscape.
- A series of eight geophysical surveys providing targeted coverage of the Stage 1 options and complete coverage of the Stage 2 Preferred

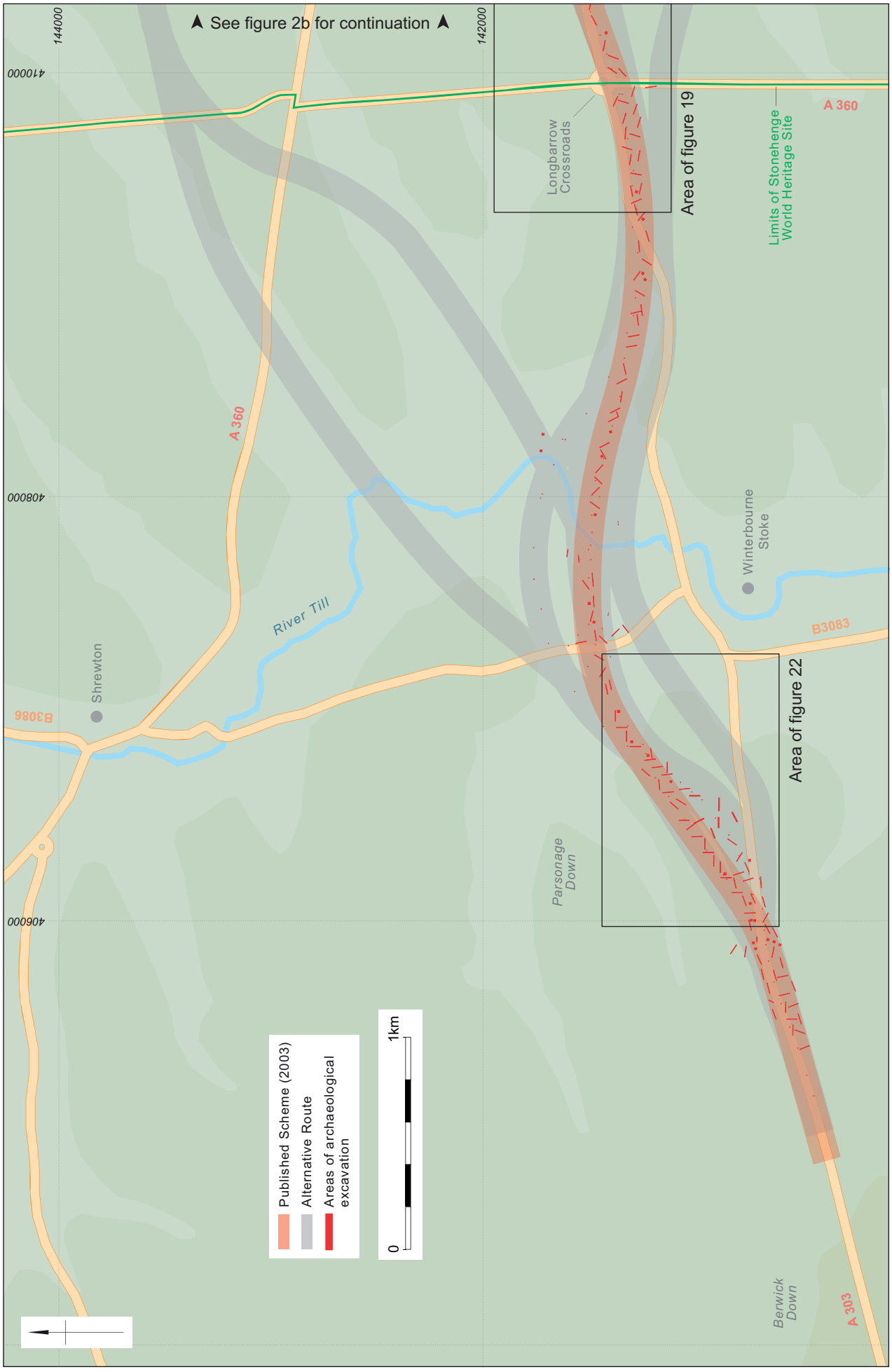

Figure 2a Location of all test pits and trial trenches (west)

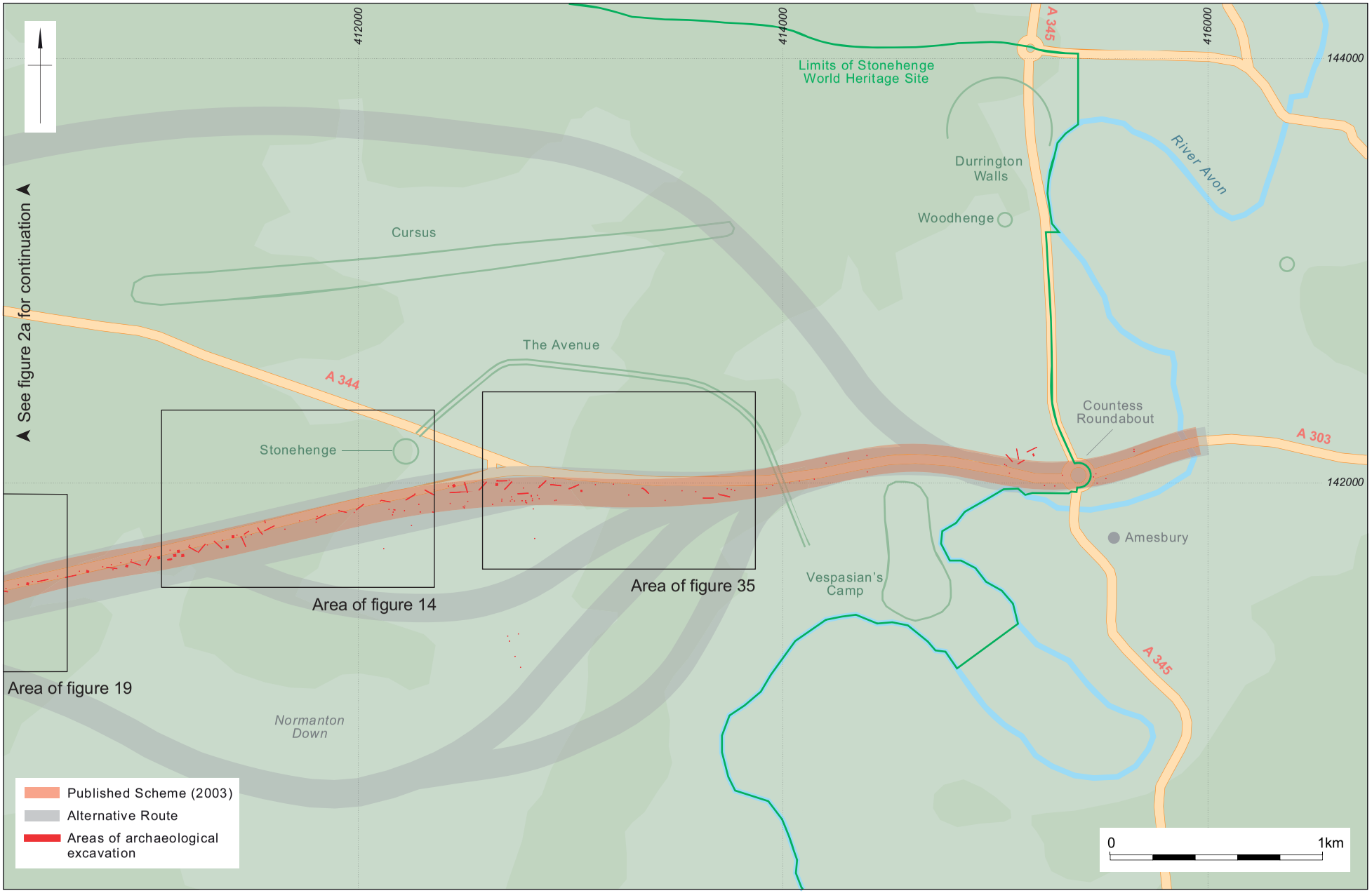

Figure 2b Location of all test pits and trial trenches (east)

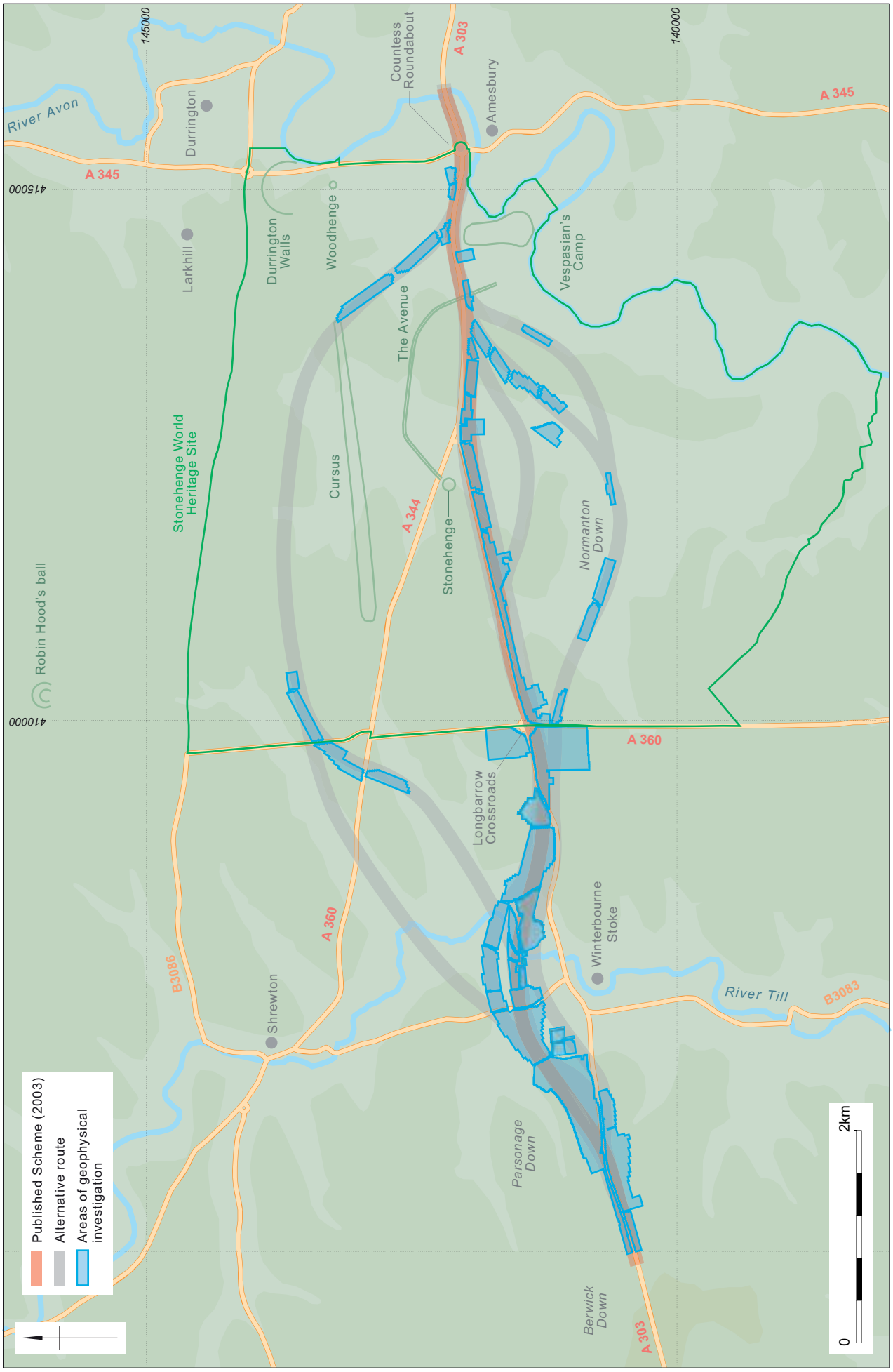

Figure 3 Location of all geophysical surveys

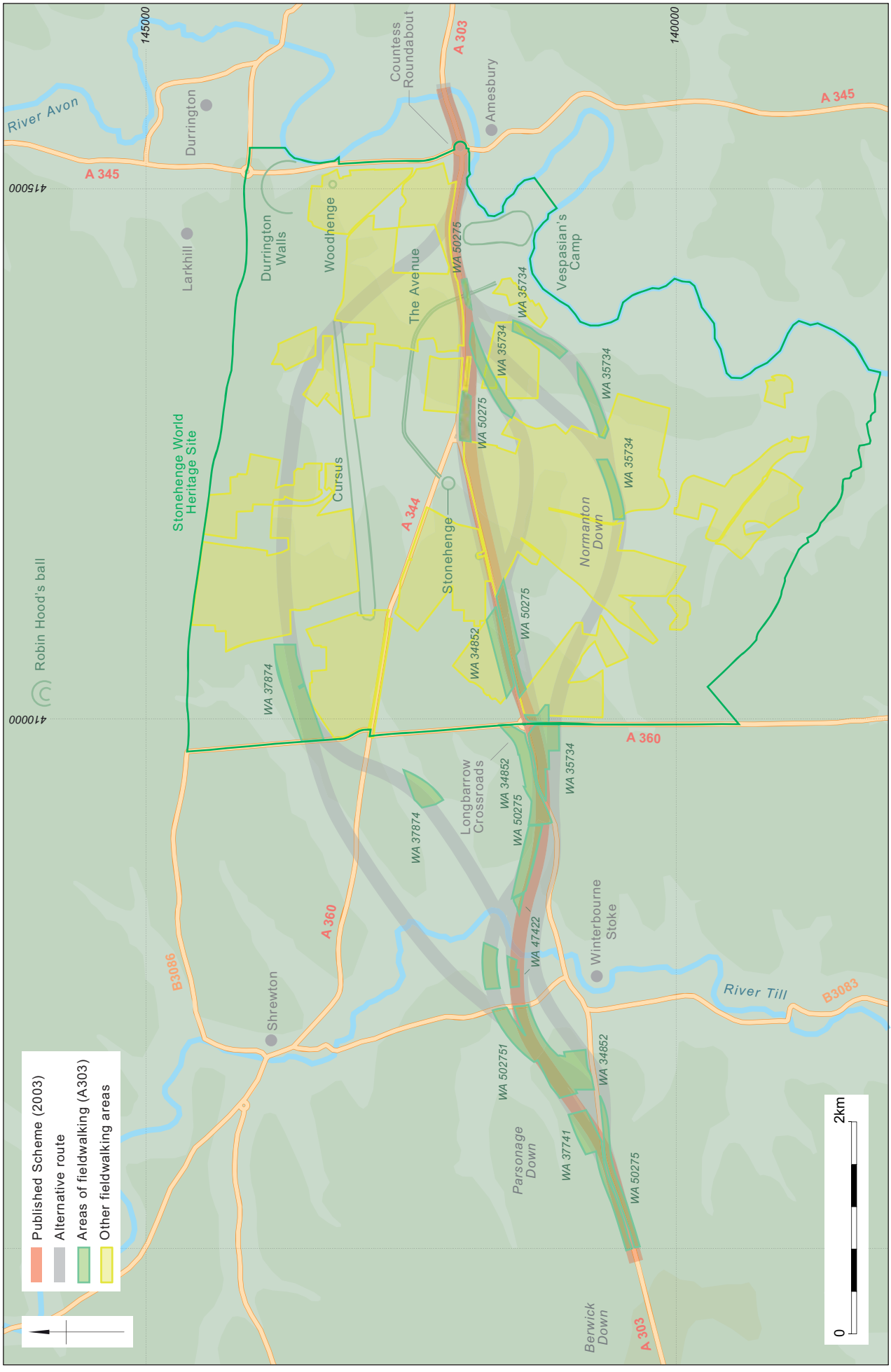

Figure 4 Location of all areas of fieldwalking

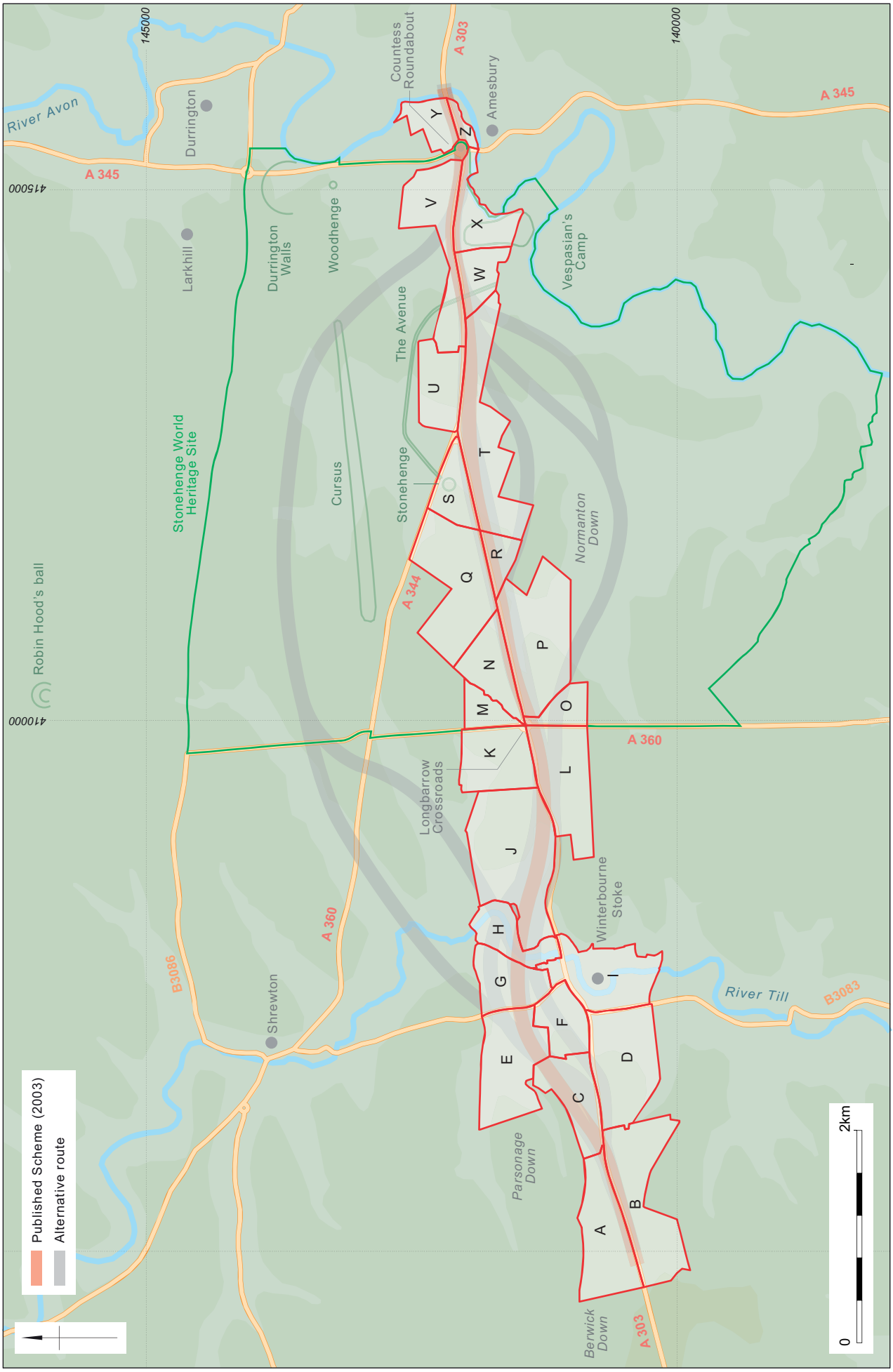

Figure 5 The assessment areas

Route, the Published Scheme and its proposed compounds, haul roads and other associated areas (GSB 1992a *et seq*.; and see Fig. 3).
- Fieldwalking of available land in 1992–4 and 1999–2002, where not undertaken previously as part of the Stonehenge Environs Project or other projects (Fig. 4);
- Hand excavation of test pits in advance of, and a watching brief during excavation of, geotechnical test pits in 2000 and 2002 (Fig. 2);
- Auger survey and hand excavation of test pits at three possible crossing locations in the Till Valley in 2002 (Fig. 2); and
- Archaeological trial trenching of the various Stage 1 route options, the 1999 Preferred Route and, where different, the 2003 Published Scheme (Fig. 2).

Stage 1 surveys were undertaken to investigate potential options for the Winterbourne Stoke Bypass (Red and Blue Routes), on-line improvements past Stonehenge (Yellow Route), and alternative alignments north and south of Stonehenge (Pink, Grey, Grey Alternative, Brown and Brown Alternative Routes) (Fig. 1). These surveys included initial assessments of the archaeology and built heritage of each option, in accordance with the Highways Agency's standard approach (*Design Manual for Roads and Bridges* Vol. 11 Sect. 3 Pt 2 CH. 8: Stage 2). Both desk-based work and, in some instances, field evaluation were undertaken.

In addition to the individual reports of surveys undertaken for the Highways Agency during these Stage 1 studies, reports on similar work in the immediate vicinity were compiled on behalf of English Heritage, the National Trust and others. The results of these previous studies were collated in Stage 2 to inform development of a strategy for archaeological investigation of the Preferred Route (Mott Macdonald/ Wessex Archaeology 2001).

Following the publication of the Preferred Route in June 1999, the scope, specification and standards for these surveys, and their results, were discussed and agreed with a number of interested parties (including the Highways Agency, its consultants and contractors; English Heritage; National Trust and its consultants; and Wiltshire County Council) through regular Archaeology Meetings. One outcome of these consultations was the production of the *Stonehenge World Heritage Site and Master Plan: Statement of Principles Governing Archaeological Work* in July 2001, subsequently amended and adopted by the Stonehenge WHS Management Plan Implementation Group.

For the purposes of Stage 2 archaeological assessment and evaluation, the Preferred Route and Published Scheme were surveyed on the basis of two different forms of impact. Comprehensive survey took place within the area of permanent landtake needed for the Published Scheme, including road works, temporary haul routes, construction compounds, drainage treatment areas and landscaping areas, within which direct impacts might occur. A wider study area encompassed important sites on which there would be no direct impact but where indirect impacts might affect their settings. The two Study Areas were subjected to different survey methods, in order to provide a level of information about them proportionate to the perceived potential development threat.

Plate 2 Trial trenching north-west of Winterbourne Stoke

Trial trenching (Pl. 2) was undertaken over the entire Preferred Route following an Archaeological Evaluation Strategy based on the results of the previous surveys, which had provided varying levels of information requiring different approaches to further evaluation:

a) Prospection for unknown sites
Where previous surveys had demonstrated an apparent absence of substantial archaeological remains, an array of trenches was deployed to test this. These trenches were normally aligned alternately along the axes of the OS National Grid (or other orientation to ensure that trenches could practicably be excavated within the specified areas).

b) Confirmation of sites known from limited evidence
Where previous surveys had indicated strong surface evidence (such as a dense surface artefact scatter), an array of trenches was deployed to test whether undetected archaeological features existed beneath the surface. The trenches were normally aligned with the OS National Grid (but see above).

c) Investigation of known buried remains
Where non-intrusive surveys had demonstrated the presence of buried archaeological features, trenches were located and aligned to answer specific questions about the nature and preservation of the features, rather than to prospect for remains.

Throughout, the archaeological evaluation strategy consisted of a staged approach which built on earlier (often non-intrusive) surveys, and which sought to provide information commensurate with the level of threat, whilst minimising intrusion on the archaeology of the WHS.

The long history of research in the area has resulted in the existence of several different methods of referring to sites. Individual authors developed their own systems of numbering and naming, in addition to the county monument numbers and other nomenclatures adopted within Historic Environment Records or the National Monuments Records. In this report, individual surveys undertaken as part of the A303 Stonehenge Improvement are identified numerically within a series of areas coded A–Z running from west to east along the route, which correspond to the areas of assessment (as in Fig. 5). Where these surveys coincide with upstanding or other recorded barrows, these are referred to using the established system of parish specific 'G'-prefixed numbers (Grinsell 1957).

The Surveys and the Research Framework

The surveys were designed to inform decisions relating to the development of the road design, and as such were not targeted with the intention of producing large archaeological data sets. Nonetheless, although individual surveys did not for the most part result in large bodies of structural evidence, as a whole the project – one of the largest programmes of archaeological investigation carried out in southern England to date – provided a broad east–west transect across some 12 km of the Stonehenge landscape, including both the WHS and areas immediately outside it. The first such project of its type, the various surveys together generated substantial amounts of data with the potential both to make significant contributions to several of the Issues and Objectives subsequently identified in the *Stonehenge World Heritage Site: an Archaeological Research Framework* (Darvill 2005), and to provide a broader local context against which the archaeology of the WHS could be judged. In this sense, even those elements that produced very little or negative evidence (true particularly for the Romano-British and post-Roman periods) allow a greater understanding of the changing nature of inhabitation and use of the areas around Stonehenge.

It is worth noting that only those results which were attributable to particular archaeological periods with any degree of certainty are reported on here. A number of undated features were encountered along the various routes (primarily pits and ditches containing no or chronologically insignificant materials) which have not been included in the following syntheses. Some (the lengths of ditch found towards the western end of the Scheme, for instance) may be associated with later prehistoric activity in the same general area, but no significant conclusions can be drawn from their existence that cannot be otherwise inferred from better-dated archaeology. Details of the full results of every stage of the investigations are available in the evaluation reports in archive.

The earliest deposits encountered in the surveys comprised a buried soil of Mesolithic date containing a Late Mesolithic flint assemblage west of Countess Farm in Area V (at Drainage Treatment Area (DTA) 6: see Figs 6 and 7). Neolithic activity was represented by low density scatters of stone tools across many of the survey areas, as well as by some more significant knapping scatters and upstanding earthworks. Two Beaker burials were found adjacent to the Wilsford G1 round barrow in Area P (Fig. 14). Bronze Age lithics were widely distributed across the surveys, if in no great numbers. East of Longbarrow Crossroads in Areas O and P a pair of Middle Bronze Age rubbish pits, and a shallow pit containing Middle Bronze Age pottery and re-deposited animal and human bone were all probably related to the excavated Bronze Age settlement at Longbarrow Crossroads (Figs 19 and 20).

West of Scotland Lodge, a large oval enclosure in Area C contained an Early Iron Age settlement, while a rectilinear subsidiary enclosure on the north-western side appears to be broadly contemporary. Settlement on the site seems to have continued into the later Iron Age and Romano-British period and other, smaller assemblages of Romano-British material may indicate other settlement activity in the vicinity (Fig. 22).

Saxon and medieval material was poorly represented across the surveys, being limited to small quantities of metalwork, pottery and ceramic building materials, much of which appears to derive from the 13th/14th century manuring of fields. A number of undated lynchets north of Winterbourne Stoke are likely to be medieval. Post-medieval material was similarly poorly represented, occurring primarily as stray finds.

After assessment, four principal research themes were identified, to provide a framework within which post-excavation analysis and reporting could be undertaken at a level above that of individual site analysis.

Theme 1: The prehistoric development and use of the chalkland landscape

The geoarchaeological data – in particular the evidence of soils and colluvial sequences – provides a valuable opportunity to examine the early development of the chalkland landscape. This augments ongoing work in the area (eg, Allen 2002) and may contribute to national examination of the development and use of chalkland landscapes (French *et al.* 2003; French *et al.* 2007).

Theme 2: Late Mesolithic and Early Neolithic activity and environment

The presence of Late Mesolithic activity from one site (DTA6: Area V, west of Countess Farm, Amesbury) is unique in this landscape and rare on the chalklands of England. The worked flint assemblage provides an opportunity to examine activity in a period for which evidence is otherwise almost entirely absent in the immediate area.

The rare preservation of a Neolithic buried soil beneath the Amesbury G14 long barrow in Area R on Stonehenge Down enables only limited analysis, but nonetheless makes a useful contribution which can be compared with the new data from on-going research excavations in the vicinity.

Theme 3: Later Neolithic and Early Bronze Age landscape and land use

The lithics scatters and other material recovered from various phases of the project belong predominantly to this period, and provide comparative material which can be assimilated into existing surveys.

Human remains, ceramics and associated radiocarbon dates from excavations adjacent to the Wilsford G1 barrow north of Normanton Down in Area P contribute significantly to knowledge of the Normanton Down Barrow group in particular, and to the sequence and development of Beaker activity in the region generally.

Theme 4: Later Bronze Age farming and settlement, and aspects of the 'missing' Iron Age

The Later Bronze Age and Iron Age are largely absent immediately around Stonehenge, with most sites lying on its periphery. Only a little work has been undertaken – at Longbarrow Crossroads and at Vespasian's Camp (Hunter-Mann 1999) for instance – but the evidence from the enclosed settlement in Area C at Scotland Lodge (WA 50157) allows a valuable contribution to studies of these periods in this area.

Table 1. The research themes

	Theme	*Issues*	*Objctives*
1	The prehistoric development and use of the chalkland landscape	25, 26	3, 15
2	Late Mesolithic and Early Neolithic activity and environment	23, 25, 26, 27	3, 4, 15
3	Later Neolithic and Early Bronze Age landscape and land use	9, 23, 25, 26, 28	2, 3, 4, 10, 13
4	Later Bronze Age farming and settlement, and aspects of the 'missing' Iron Age	23, 27, 28	3, 4, 15 16

The relationship of these themes to the Issues and Objectives of the WHS Research Framework, are outlined in Table 1.

The results of the surveys are presented in the following chapters organised chronologically as in Themes 2, 3, and 4. Securely dated material contributing to Theme 1 is incorporated into these chapters, while more general evidence for land use and landscape development are presented in Chapter 5. Supporting specialist data and analysis is available as a series of PDF reports, at http://www.wessexarch.co.uk/projects/wiltshire/A303/.

Radiocarbon dates have been calibrated using OxCal3.

Chapter 2
Late Mesolithic and Early Neolithic Activity and Environment

Matt Leivers, Philippa Bradley, David Norcott, and Chris J. Stevens

with Michael J. Allen, John Crowther, Phil Harding, Jessica M. Grim, Richard I. Macphail,

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Introduction

The Early Mesolithic saw the transition from a largely open late glacial landscape to one dominated by forest. Pollen evidence for this period comes from sediments within the Avon valley adjacent to Durrington Walls in the north-eastern corner of the WHS (Cleal *et al.* 2004), the basal deposits of which were radiocarbon dated to *c.* 8280–7200 cal. BC (8640±200 BP; GU-3239). This indicated a forested landscape dominated by pine woodland with birch, hazel, oak, and elm colonising a landscape previously dominated by herbs, grasses, and reeds. This pine woodland was itself gradually replaced, almost certainly during the course of the Mesolithic, by hazel and incoming oak and elm (Scaife 2004).

Little direct evidence for Mesolithic hunter-gatherer activity has been forthcoming from the region. Excavations in the visitors' car park at Stonehenge provided confirmation of human activity in the landscape during the Early Mesolithic (Allen 1995). This evidence took the form of pine wood charcoal within three post-holes (Bayliss *et al.* 1997; Allen 1995, 47). The size and quantity of pine wood, the general absence of oak (*Quercus* sp.) or other species, and the fact that pine has not been recovered from later contexts (Gale 1995) all imply that the post-pits themselves and their fills are of Mesolithic date, rather than the charcoal being reworked at a later period. This is supported by the pollen evidence, which demonstrates the same dominant pine and hazel woodland with some birch (Scaife 1995) as evidenced in the deposits of the Avon sequence described above. From the molluscan evidence, the pits appear to have been dug within open but long established mature woodland (Allen 1995, 51).

A colluvial sequence from Strawberry Hill on the northern edge of Salisbury Plain also indicated boreal woodland within the Mesolithic, with charcoal indicating the presence of pine, oak, juniper, and hazel (Allen and Scaife 2007).

Late Mesolithic activity (*c.* 6000–4000 BC) in the Stonehenge region is almost unknown. Approximately 30 artefacts are recorded by Wymer (1977), although there is some doubt over the chronological significance of some of these (Allen 1995). Incontrovertibly Mesolithic pieces include five tranchet axes and a smaller number of perforated mace heads (Darvill 2005). Understandings of the environment are little better: in 1995 Allen wrote that 'nowhere in the sequence is the Atlantic (late Mesolithic) represented' (Allen 1995, 62).

Pollen analysis of soils buried under the Late Neolithic banks at Durrington Walls indicated a hazel-dominated woodland, with birch, pine, oak, lime, and elm (Dimbleby in Evans 1971). Pollen will accumulate within soils over a long time period and, as such, sequences will contain elements of both the Mesolithic and earlier Neolithic landscapes. Consequently, while the evidence corresponds very well to the Late

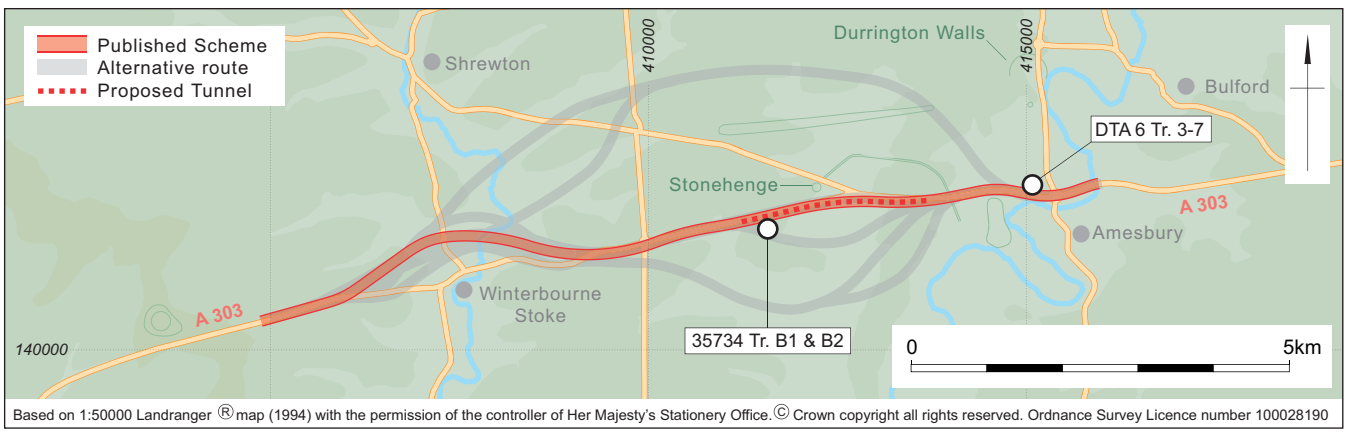

Figure 6 Late Mesolithic and Early Neolithic evidence

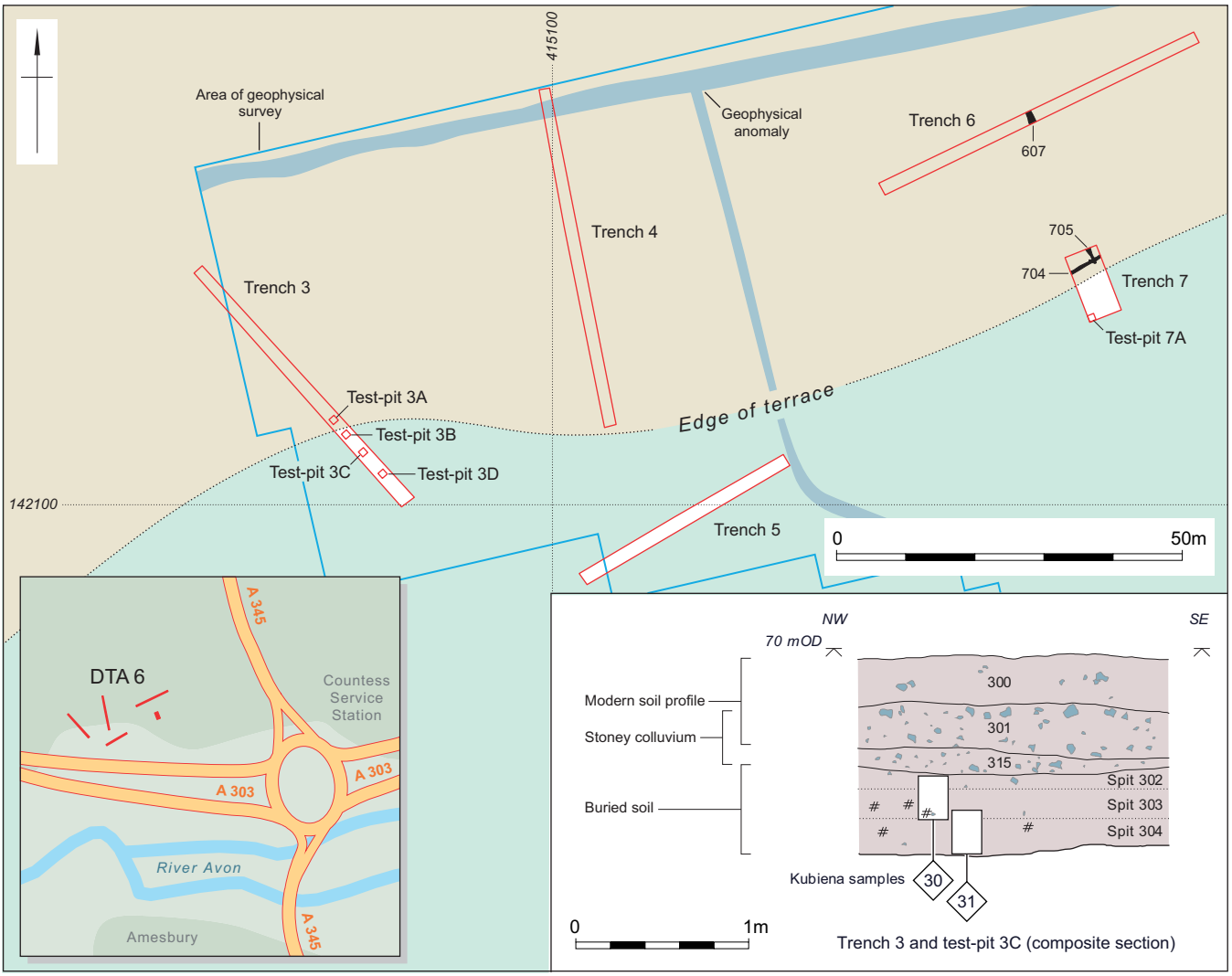

Figure 7 DTA 6 (WA 54379)

Mesolithic environments described above, to what extent such woodland survived into the Early Neolithic in this region remains unknown.

In this light, the recovery of Late Mesolithic flintwork with good contextual associations from the A303 Stonehenge Improvements is very important. The material was recovered from trial trenches and test pits at Drainage Treatment Area (DTA) 6, west of Countess Farm, Amesbury, in Area V (Figs 6 and 7). The site lay on the lower slopes of the valley side at the back of the higher floodplain of the River Avon, in an area of mapped calcareous gley alluvial soils (Frome 1 soil association) on chalky and gravelly river alluvium.

The Site

The site occupied gently sloping ground on a south-facing dry valley at *c.* 70–71 m aOD. A series of subtle but distinct benches or terrace-type topographical features was observed in the field surface, with higher ground in the northern part of the site dropping off to the south in several shallow, but distinct, breaks of slope. These terrace-type features extended roughly east–west across the site, and were cut by the river Avon in prehistory, probably during the late Glacial or early Holocene. They represent the northernmost extent of the former floodplain of the Avon at this point in its course.

It is not known where the active channel(s) of the Avon were located in the Late Mesolithic, but as an ecotonal area allowing access to both terrestrial and riverine/floodplain resources this would have been a potentially rich area for exploitation by hunter-gatherers.

Five evaluation trenches were opened (numbered 3–7; trenches 1 and 2 lay in an unrelated area and revealed no archaeological or palaeobotanical evidence), all positioned to investigate linear and pit-type anomalies seen on geophysical survey (Fig. 7). Trenches 3 and 7 straddled the most distinct of the breaks of slope, with Trenches 4 and 6 lying on the higher ground and Trench 5 being located 'off-terrace' on the lower ground of the floodplain itself.

Trench 3

Situated towards the western limits of the site, Trench 3 was orientated approximately north-west to south-east across the terrace edge (Fig. 7). In the northern half of the trench modern soils directly overlay weathered chalk or coombe deposits, whilst to the south a *c*. 0.25 m-deep reddish-brown buried soil was revealed, containing quantities of Late Mesolithic worked flint, and formed on alluvial sediments deposited during overbank flooding episodes. A series of four 1 m² hand dug test pits, numbered 3A–D from north to south, was excavated through this soil to establish the northern and southern limits of the flint scatter (Fig. 7). The test pits were excavated in 150 mm spits in order to record a vertical profile of the flint scatter, and in one pit (3C) the buried soil was sampled for micromorphological analysis. The same sequence was also sampled and assessed for pollen but counts were insufficient to enable any statistically reliable interpretations.

Flint

A total of 226 pieces of worked flint and 180 fragments of burnt unworked flint (3425 g) was recovered. The flint scatter was found to be confined predominantly within the relict soil just off the terrace edge (test pits 3B, 3C and 3D); it did not extend onto the terrace edge itself (test pit 3A). Worked and burnt flint was recovered throughout the depth of the soil, although greater numbers of worked flint were present within the uppermost spits, notably in test pit 3C; worked flint was also recovered from overlying and underlying colluvial layers.

Raw material and condition

The raw material comprises locally available chalk flint. The condition of the material is mostly very good, with little or no edge damage; cortication is light or absent. A little possible usewear was noted on one flake. Twelve pieces of worked flint were burnt and a little burnt unworked flint was also recovered. The majority of the burnt flint (both worked and unworked) came from test pits 3B–D. Some material is in less fresh condition, with rolling and edge abrasion apparent (eg, from overlying colluvium and topsoil). Here cortication is more variable; the flint is also chronologically mixed with most of it probably being of Bronze Age date.

Flintworking

Diagnostic Mesolithic flint was recovered from test pits in Trench 3; less diagnostic material came from some of the other trenches and the topsoil in Trench 1, and is

Table 2. Summary of worked flint from DTA 6

Context	*Flakes*	*Blades, bladelike flakes, bladelets*	*Cores (type) & frags*	*Chips*	*Irregular debitage*	*Retouched pieces*	*Total*
Test pit C							
302	46	30	6 (3 blade+ 3 frags)	15 (inc. 1 microburin)	1	1 (failed microlith)	99
303	22	7	–	3	1	–	33
304	3	–	–	–	–	–	3
305	4	1	–	–	–	–	5
Test pit B							
306	2	1	–	–	–	–	3
307	–	–	1 (flake)	1	–	–	2
308	1	–	–	–	–	–	1
310	10	8	2 (flake)	3	2	1 (microlith)	26
Test pit D							
311	1 (rejuv. flakes)	1	1 frag	–	–	–	3
Topsoil, subsoil (200, 300, 301, 503, 600, 700)	31 (inc. 2 rejuv. tablets)	–	6 (2 flake, 4 frags)	–	2	1 (end scraper)	40
Colluvial layer 702	6	–	3 (1 blade, 2 flake frags)	–	–	–	9
Fill later features 707	1	–	–	1	–	–	2
Total	127 (56.1%)	48 (21.2%)	19 (8.4%)	23 (10.2%)	6 (2.7%)	3 (1.%)	226

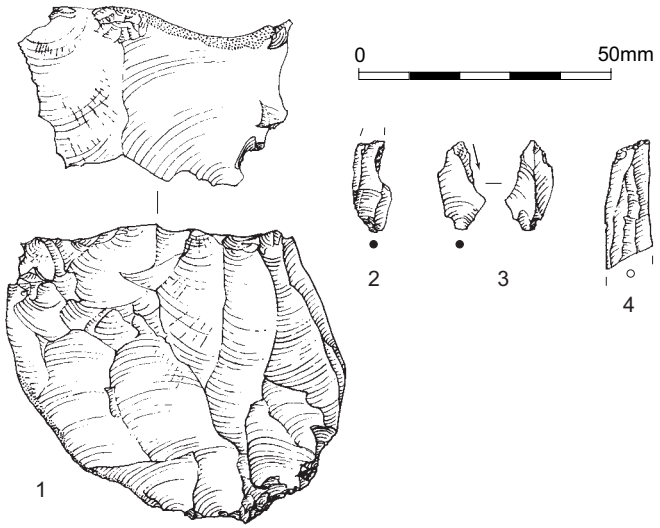

Figure 8 Lithics from DTA 6. 1) blade core; 2) failed microlith; 3) microburin; 4) truncated blade

probably of Bronze Age date. The composition of the assemblage is summarised in Table 2.

The struck flint from the test pits in Trench 3 has mostly been carefully knapped, using predominately soft hammers, although some probable later hard-hammer struck material was also found in the topsoil and other layers. All elements of the reduction sequence are represented, although the lack of refits suggests that this material may not be *in situ*. However, given the very fresh condition of this flint and the presence of small chips, it is unlikely to have travelled very far from its original place of deposition. Evidence for platform edge abrasion, to remove overhangs during knapping, was commonly noted. It can be seen that blades form a sizeable portion of the debitage and four blade cores were also recovered (Fig. 8.1; Table 2). The latter are mainly opposed platform types and have been extensively reduced. Core rejuvenation flakes, both tablet and face or edge types, provide evidence for platform maintenance during knapping.

Retouched pieces are limited to a failed microlith from spit 302 in test pit 3C (Fig. 8.2), and a truncation from the lower layer within test pit 3B (Fig. 8.4). The size of the failed microlith indicates a probable Late Mesolithic date. Microlith manufacture is also indicated by a microburin (Fig. 8.3).

An end scraper from topsoil has been quite neatly worked but is technologically distinct from the Mesolithic material and is probably Neolithic or Bronze Age in date. Moreover, an element of more crudely worked flint was recovered. This material was more difficult to characterise but it was recovered from various contexts. It is of note that none of this material was recovered from the buried soil in Trench 3. Flakes tended to be thicker, squat and less carefully knapped, preparation was almost entirely absent and some hinge fractures were noted. Very few retouched forms were recovered but it is probable that this material is of Bronze Age date. Given the quantity and distribution little more may be said of it.

The presence of burnt flint (both worked and unworked) suggests that hearths were being lit although there was no other evidence for this in the trial trenches.

Soil Sequence/Micromorphology

The lowest section of this soil (corresponding with the upper part of the lowest spit (304) in test pit 3C) showed evidence of accretion, mixing, and textural pedofeature formation which has been interpreted as being the product of animal trampling. This is supported by moderate levels of phosphate enrichment as well as iron and manganese replaced organic matter, presumably from animal waste. In another context these findings may have been taken as an indication of stock activity. In this circumstance, given the overlying Late Mesolithic material, it seems likely that this may have been an area used by wild animals going down to the river.

Above this, near the base of spit 303 – which contained considerable quantities of Late Mesolithic

Figure 9 DTA 6 soil micromorphology scan. Arrows show flint-rich junction between contexts 303 and 302. Slide width ~50 mm

flints – a layer of possibly trampled-in flints was observed in thin section (Fig. 9). Above this point the soil continued to accrete and still contained textural pedofeatures indicative of disturbance, but with lower levels of phosphate and mineral replaced organics. The suggestion is made that accretion was increasingly a result of colluvial additions rather than trample. This trend continues upwards, with upper spit 302 being tentatively interpreted as a ploughsoil colluvium, with features possibly indicative of *in situ* ard agriculture. This layer contained the bulk of the Late Mesolithic flintwork. Above this the soil was sealed by stony colluvial layers and topsoil.

Given the apparent colluvial nature of the upper portions of this soil sequence, it is clear that questions must be raised regarding the provenance of the worked flint. Given its very fresh and undamaged state it has clearly not travelled far or been subjected to much disturbance. This, and the fact that there is no later material in any of the spits, strongly suggests that although perhaps not entirely *in situ* it is most likely nearly so. A good working hypothesis would seem to be that the lower flints from spit 303 are effectively *in situ* (except for some movement by worm sorting and possibly animal trampling), and that the scatter originally continued upslope – this upslope material has then been disturbed by later (possibly Early Neolithic) cultivation and deposited back over the undisturbed material by colluviation.

This soil sequence gives a rare insight into an environment that is generally believed to have been an open pastoral rendzina by the Neolithic, and where any cultivation impact has not been evident. Along with the sequence from site 48067 (see Chapter 5), this demonstrates how any remaining post-glacial decalcified brown soils could have been eroded under human impact from Neolithic times onwards. The associated flint scatter is an equally rare survival which is currently unprecedented within the WHS.

Trench 4

Trench 4 was situated in the northern part of the site, upslope of the terrace edge. Isolated pockets of deeper brown earth soil were recorded, lying within natural hollows in the geology; these may explain the pit-type anomalies seen on the geophysical survey. No archaeological features were found and a linear anomaly seen in the geophysical survey could not be identified within the trench.

Trench 5

Trench 5 was situated towards the southern limits of the site, south of the terrace edge. It contained a colluvial sequence over 1m deep, overlying calcareous alluvium. A single natural feature was recorded.

Trench 6

Trench 6 was situated on the terrace in the north-eastern part of the site. A pit (605) of modern date was cut through colluvium. A gully (607), possibly a boundary or drainage ditch (Fig. 7), was also recorded on a roughly north-west to south-east alignment. A single sherd of abraded medieval (12th–13th century) pottery and a piece of medieval roof tile were recovered from the fill. The gully was not detected by the geophysical survey.

Trench 7

Trench 7 was situated in the eastern part of the site, straddling the terrace edge. In the northern part of the trench, on the terrace edge, gully 704 was orientated roughly east–west and cut the end of north-west to south-east orientated gully 705 (Fig. 7), assumed to be a continuation of gully 607; these are probably contemporary boundary or drainage features. Neither gully was definitely detected by the geophysical survey; a weak east–west linear trend may relate to the terrace edge.

In the southern part of the trench, the terrace edge dipped away and a colluvial sequence over 1m deep was revealed. Colluvial layer 702, which produced a number of finds including a blade core of likely Bronze Age date, medieval (12th–13th century) pottery, and animal bone, extended over the whole trench, sealing the features on the terrace edge.

Discussion

Mesolithic activity in the Stonehenge area is scarce (Cleal and Allen 1995, 470–3; Darvill 2005, 39–40, map F). Only a little Mesolithic material was recovered from the investigations along the A303: possible Mesolithic or Neolithic soft hammer struck flakes and blades were also recovered from fieldwalking immediately south of the A303 at Longbarrow Crossroads (WA 1992; 2007b); soft hammer struck blades were found during archaeological evaluations at Countess Roundabout during works associated with the proposed Stonehenge Visitor Centre (WA 1995).

A Mesolithic pit has been found at Boscombe Down which may be akin to those found in the Stonehenge car park, of Early Mesolithic date (Cleal *et al.* 1995; Allen and Gardiner 2002). Further to the north on Salisbury Plain a little Mesolithic material was recovered from excavations along the military Southern Range Road (including refitting blades from Boreham Farm Bungalow; Ellis and Powell 2008, 141) and a small assemblage of Mesolithic flint came from Breach Hill (Harding 2006, 87). The lack of Late Mesolithic material from the wider area simply reinforces the importance of the finds from Countess Farm, the valley

location perhaps being significant. However, there are limitations given the size of the assemblage recovered and the small areas investigated by the test pits. These results highlight the potential of this location but only further investigation will enable better characterisation of this activity.

Early Neolithic Evidence and Activity

While Late Mesolithic evidence is notable for its scarcity, Early Neolithic material is much more widespread, and includes not only artefact scatters and assemblages, but also earth and timber buildings and other structures. There is also an increased environmental dataset, which demonstrates that this period saw the first substantial woodland clearings and the establishment of pasture and secondary woodland (Allen 1997, 126–7).

The Early Neolithic Landscape

It was probably only within the Early Neolithic period that the first major episodes of clearance within the Stonehenge region took place, the Mesolithic having been typified by only limited clearings. This opening up of the landscape through the clearance of forest was probably a gradual process, with regeneration of woodland creating a complex mosaic of vegetation types (Cleal and Allen 1995).

Much of the evidence suggests that many of the ceremonial earthworks of the period were constructed in an open landscape. For example, analysis at Stonehenge showed degraded rendzina soils prior to the initial phase of the site at *c.* 3000 cal. BC, suggesting that much of the immediately surrounding landscape must have been largely deforested, comprising long-established open, probably grazed grassland prior to this date (Richards 1990, 108; Allen 1995, 60–2).

The extent and nature of Early Neolithic clearance in the region is still difficult to establish (Allen 1990, 267). While the landscape of the initial phases of Stonehenge appears to have been open, a short period of abandonment seems to have resulted in the encroachment and re-establishment of wooded scrub. Molluscan evidence from Durrington Walls also indicates a potentially open landscape during the Early and Middle Neolithic (Evans 1971; Evans and Jones 1979), in contrast to the pollen. Part of the pollen sequence from the nearby Avon valley has a potentially Neolithic date, although no direct dating was obtained. However, this sequence nevertheless indicated an open landscape, with potential cereal agriculture, and possibly small amounts of lime woodland. Such activity can also be correlated with the re-initiation of sedimentation (Scaife 2004).

Prevailing evidence in the region indicates that cattle were the main domesticated animal in the Early Neolithic (Maltby 1990a, 65; 1990b; Lawson 1997; Grigson 1999), but that pig and sheep/goat were both present. It is probable that roe and red deer were hunted along with wild aurochs and possibly wild pig. The large size of both roe and red deer further north at Windmill Hill near Avebury was suggested to indicate the continued presence of large tracts of woodland in this region (Grigson 1999). Charred evidence also indicated the frequent collection of hazelnuts during the Neolithic, also presumably from reasonably extensive areas of open scrub woodland (cf. Powell *et al.* 2006; Hinton 2004), a picture seen across England as a whole (Moffett *et al.* 1989).

Amesbury G14

The only upstanding earthwork of this period investigated as a part of the works reported on here was a long barrow lying on the southern side of the A303 in Area R, less than 1 km south-west of Stonehenge at NGR SU 115417 (WA 35734 Trenches B1 and B2: Figs 6, 10, and 14). This barrow (variously referred to as Wiltshire Monument No. 63c, Hoare's no. 165, Stonehenge Down SW, or Amesbury G14) is aligned south-south-east to north-north-west. In November 1977 Leslie Grinsell recorded it as 'in fair condition, with well-marked side ditches; under pasture' (Grinsell n.d., 15). The mound had previously been opened by John Thurnam who reported the disarticulated remains of three people beneath a stratum of black earth at the southern end; secondary interments and 'the entire skeleton of a goose' were also encountered (*ibid.*).

In 1992 two trenches were positioned to test the state of preservation and to determine the presence or absence of a ditch at the northern end (Fig. 10): geophysical survey had provided inconclusive results regarding this due to the accumulation of modern debris. No trace of the ditch was found, suggesting that – as is common – the mound was not encircled by such a feature, and that only flanking ditches on the long axis were present.

Trench B1, 30 m long and 1m wide, was excavated from the southern side of the A303 into the northern end of the barrow mound. Excavation showed the structure to be severely disturbed and a second trench, offset 1 m to the east of the first but otherwise continuing the line for 10 m, was opened in an attempt to define the extent of damage to the barrow.

Between the A303 and the barrow, the trench contained silty loam topsoil over chalk bedrock, cut by a number of modern features and plough marks. Material from the topsoil was mostly modern, but a small collection of struck flint did include a single crude scraper.

The body of the mound had also been disturbed by numerous pits or trenches, many of which coincided with irregularities in the turf-covered surface, and most of which contained modern artefacts. Disturbance

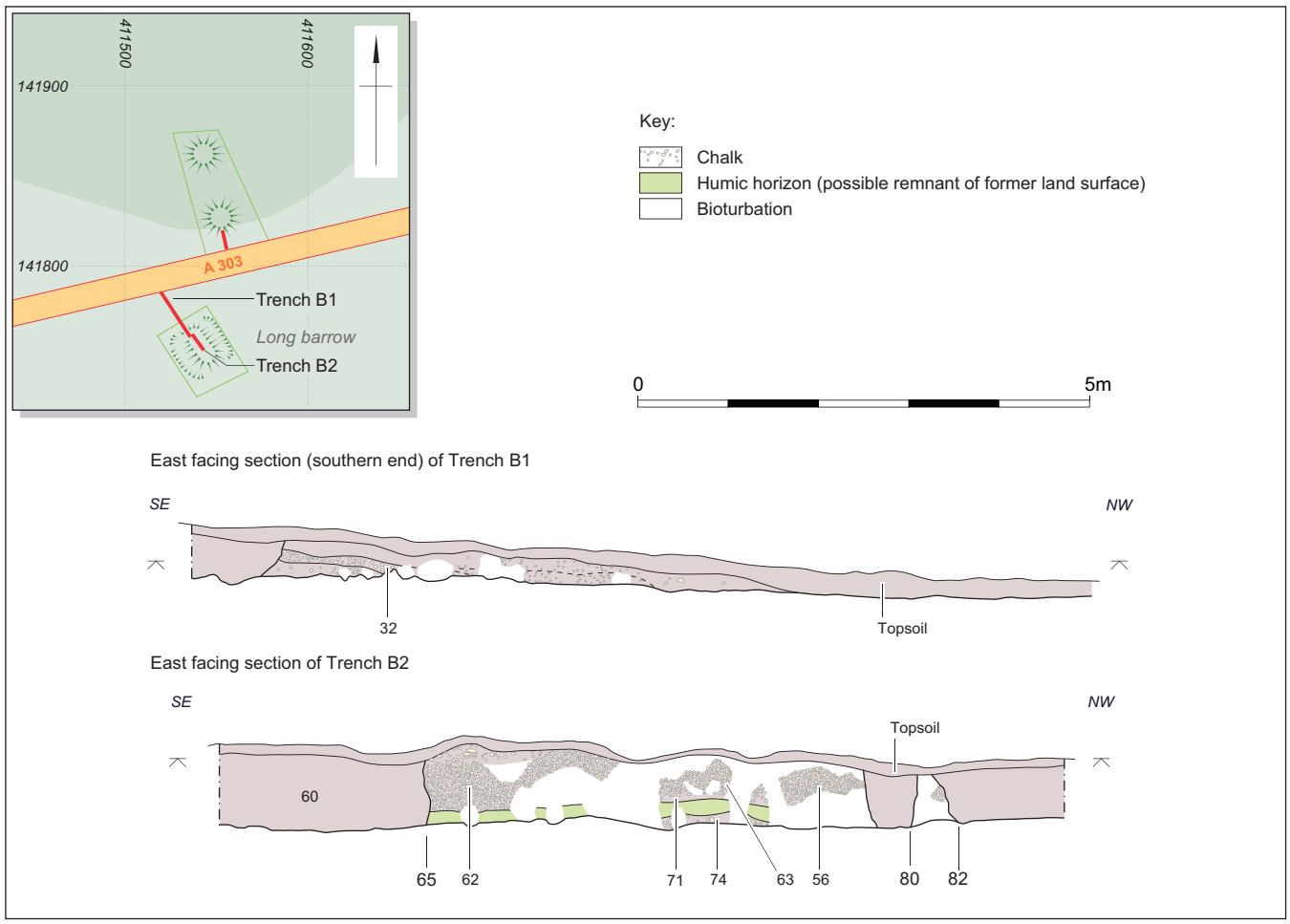

Figure 10 Amesbury G14 (WA 35734)

extended into the barrow mound for almost 12 m before *in situ* mound material was encountered, and much of the surviving structure south of that point was similarly disturbed. Even in areas where modern human disturbance of the mound appeared less severe, the structure was found to be much damaged by animal activity, with burrows and runs penetrating the barrow at all levels.

Doubtless, much of this disturbance was due to the barrow being surrounded by the buildings of Stonehenge Airfield during the Great War. The foundations of many such buildings were located nearby in both geophysics and trial trenching.

The surviving structure of the barrow was represented by areas of chalk rubble (32, 56, 62, 63). This rubble was variable in nature, in some areas being vacuous and clean, but elsewhere appearing more weathered and compact. Three fragments of red deer antler were recovered from the surface of the rubble during the excavation of an area of modern disturbance (65) towards the centre of the mound. Other finds from this layer included two pieces of struck flint, and modern material (two pieces of glass, four of metal) probably introduced from disturbance 65. Small fragments of mammal bones (sheep/goat or pig) were also recovered, including some heavily butchered juvenile sheep bones. The antlers – although possibly Neolithic – were not considered to be suitable for radiocarbon dating because of the range of later material associated with them.

In places the chalk rubble overlay patches of a thin stone-free dark brown humic soil of rendzina type, typical of an open chalk grassland environment, representing the existing soil cover sealed by the creation of the barrow mound. This buried soil survived as isolated 'islands' which lay directly above the natural chalk, sometimes with an intermediate A/C horizon of decomposed chalk noted in some areas (eg, 74). A similar deposit also overlay the buried soil in the same area (71); this is likely a result of animal activity.

Assessment of the land snails from this buried soil indicated an assemblage dominated by open-country species, concurring with the rendzina-type soil in indicating construction of the barrow in a pre-existing open environment. The occurrence of *Truncatellina cylindracaea*, a relatively rare species, is noteworthy as an indicator of very open dry (often grazed) downland. This species tends to be both spatially and temporally restricted, but has been recorded in Bronze Age contexts nearby at King Barrow Ridge (Allen and Wyles 2004a) and a little further north at Figheldean (Allen and Wyles 1993).

Discussion

The condition survey of Amesbury G14 allows comparison with the small number of other recently investigated long barrows in the Stonehenge area. Both Amesbury G42 and Netheravon Bake were sampled during the Stonehenge Environs Project (Richards 1990), and both produced evidence of multi-phase construction. No such indications survived at Amesbury G14, although given the highly disturbed condition of the mound it is impossible to argue conclusively one way or the other. Superficial similarities certainly existed – Thurnham's excavations at both Amesbury barrows uncovered multiple inhumations, for instance. Molluscan evidence from Amesbury G14 and G42 does, however, suggest that the two mounds were constructed in similar environments, on shallow rendzina soils indicating established grasslands prior to the erection of the buildings.

Chapter 3
Later Neolithic and Early Bronze Age Landscape and Land Use

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with Catherine Barnett and Jessica M. Grimm

Introduction

The Neolithic and Early Bronze Age periods are typified by the proliferation of building in earth, wood, and stone – the henges and circles and barrow cemeteries – and by the establishment and continued alteration of Stonehenge itself. As such, the period covered by this chapter is the most intensively studied within the World Heritage Site. Nonetheless, the A303 surveys produced significant new evidence for a range of activities throughout the period.

Middle Neolithic material is not uncommon in the Stonehenge environs but, consisting largely of objects preserved below or incorporated within later structures, the evidence is not easy to interpret (Darvill 2005, 45). Within the current project, only one feature contained material that was demonstrably Middle Neolithic in date, although some portion of the Neolithic flintwork recovered from fieldwalking could relate to activity in this period.

This feature (2118, Trench 21 in Area L, WA 50412 south-west of Longbarrow Crossroads; Figs 11, 12, and 19) was a large irregular hollow (*c.* 4 m across north–south). The deposits filling the hollow contained a mixed assemblage of worked flint; burnt flint; a single sherd from the rim of a Mortlake-type bowl, decorated internally and externally with twisted cord impressions; three sherds of grog-tempered (probably Early Bronze Age) pottery; and a cordoned sherd from an Early Iron Age shouldered jar. This mix of ceramics indicates that the deposits accumulated over a considerable period of time. Given the density of multi-period archaeological activity in the immediate area it is most likely that material accumulated in the hollow over some 2000 years and escaped modern ploughing and subsequent erosion.

Despite the lack of micromorphological data it is reasonably certain that the basal soil in this feature is another example of an ancient brown earth or argillic brown earth soil profile, developed in a large hollow of likely tree-throw origin and in wooded conditions of probable early or mid-Holocene date – a sequence comparable to that recorded in TP 121 opposite Stonehenge (see Chapter 5).

Despite the extensive evidence for ceremonial earthworks during the Neolithic as a whole, the evidence for arable agriculture in the region is sparse (Allen 1990, 267) and mainly confined to the Early Neolithic, for example emmer wheat from Robin Hoods Ball and Coneybury (Richards 1990, 65; Carruthers 1990, 250–2). It should be noted that while the evidence for charred cereals from Windmill Hill near Avebury was very poor (Fairburn 1999), impressions from pottery provide some evidence for cereal exploitation during the Early Neolithic (Helbaek 1952). While a general absence of evidence for settlement and fields is seen in the region prior to 1500 cal. BC (McOmish *et al.* 2002), such a picture is generally consistent with that known for much of the British Isles.

Large quantities of lithics have been recovered in programmes of both fieldwalking and excavation

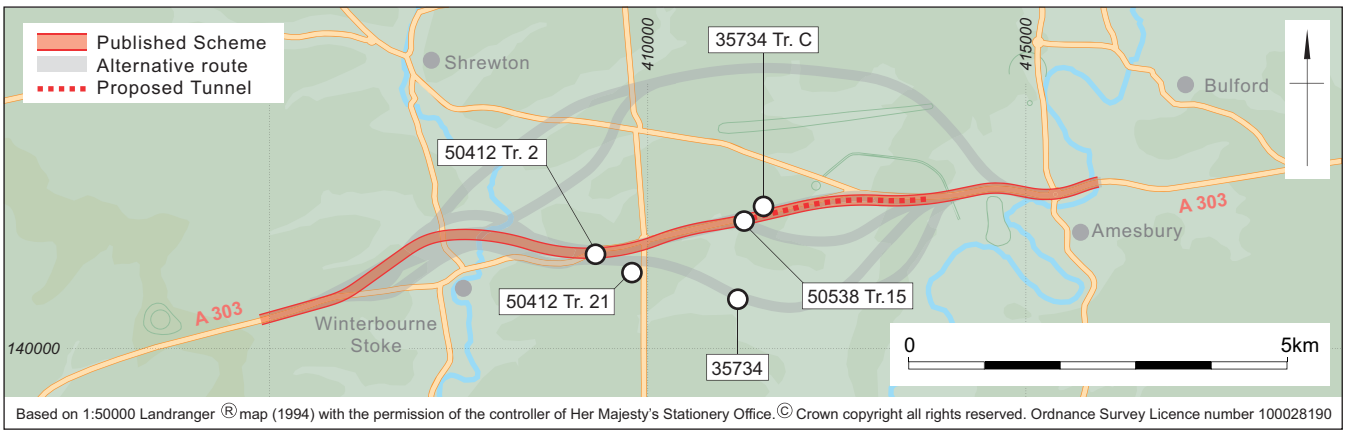

Figure 11 Later Neolithic and Bronze Age evidence

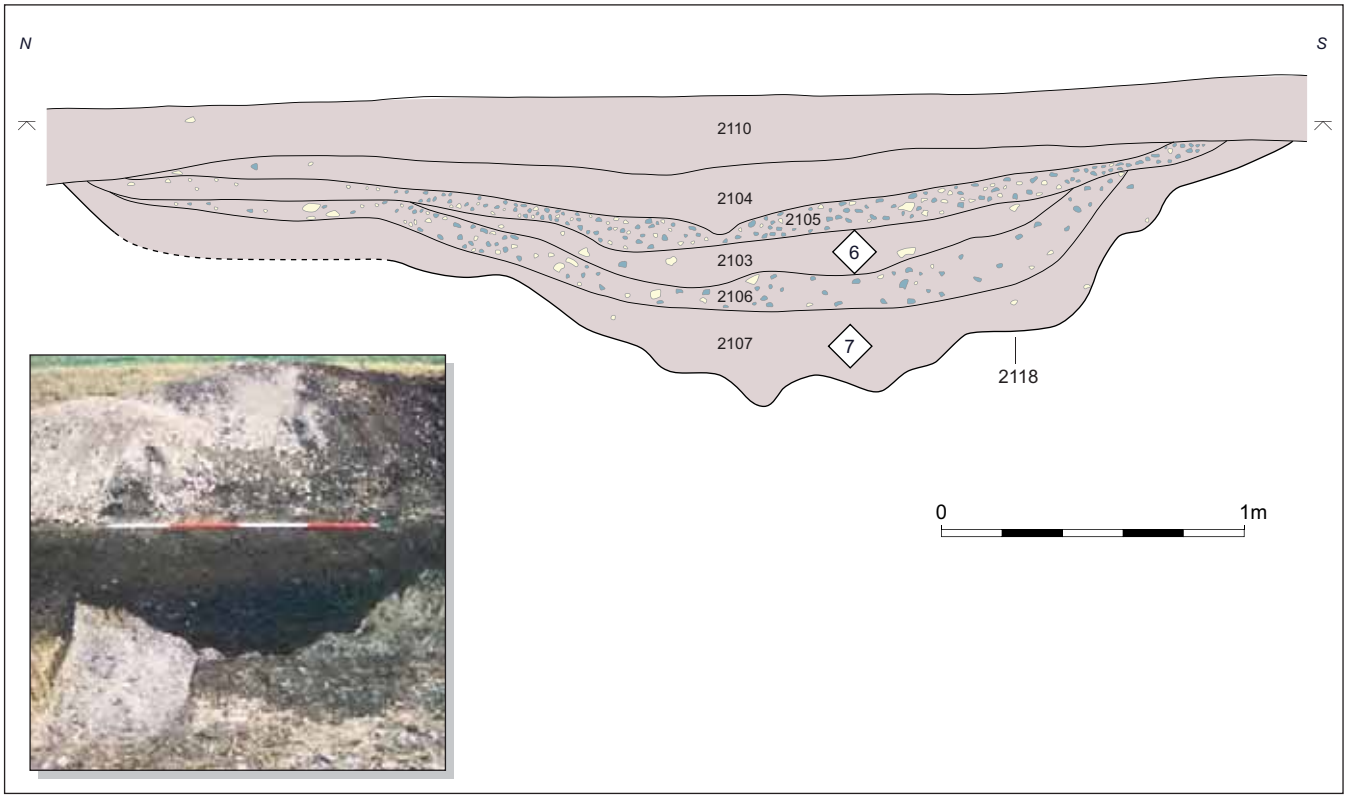

Figure 12 Feature 2118 (WA 50412)

(Richards 1990). The results of the A303 fieldwalking programmes are summarised later in this chapter, but more detailed mention must first be made of two sites with more significant evidence.

North Kite and Wilsford Down

Three trenches were excavated across geophysical anomalies and evidence from aerial photography seemingly related to upstanding earthwork features of the North Kite enclosure, a Scheduled Monument (south of Area P, WA 35734; Figs 11 and 13). Trench 1 was 23 m long and 1 m wide, and lay 33 m north of the surviving earthworks. It was intended to test the possible continuation north of the upstanding earthworks, while Trenches 2 and 3 crossed the linear earthwork systems visible on aerial photographs approximately 700 m to the west. Trench 2 (27 m by 1 m) crossed two parallel linear ditches; Trench 3 (10 m by 1 m) crossed a curving cropmark feature. All three trenches contained sub-surface features cut into the underlying chalk.

In Trench 1 neither the bank of the North Kite, nor of any old ground surface, survived. The only trace of the bank's location was a slightly raised chalk surface which had been preserved from plough reduction by the former presence of the earthwork. The accompanying ditch was defined but was not completely excavated, in accordance with the agreed methodology. In Trench 2, both ditches were revealed and investigated; Trench 3 contained a natural trough in the chalk.

Flint

A total of 643 pieces of worked flint and seven pieces of burnt unworked flint was recovered from the trenches. The majority of the flint came from two layers of subsoil (contexts 5 and 23), which filled natural hollows in the underlying chalk, in Trenches 1 and 2 (Table 3). A single chisel arrowhead provides a later Neolithic date for at least some of this flint. This material was examined in some detail to try and elucidate the apparent differences between the groups from the two different contexts, which appeared to be *in situ* knapping debris.

The raw material comprises locally available chalk flint. The flint is in variable condition. The material from subsoil hollows (contexts 5 and 23) is very fresh with sharp edges. However, flint from other contexts is worn and rolled. Small isolated patches of 'race' (calcium carbonate concretion) were seen on some pieces. Cortication is generally light.

Contrasting technologies were identified during the assessment of the flint from contexts 5 and 23 (WA 1993a, 4). Context 5 contained more blades, blade-like flakes and bladelets than 23, although the overall numbers are relatively low (Table 3). A few blade scars on the dorsal faces of flakes were also noted. Flakes from context 5 are also thinner and more carefully struck with a higher proportion of narrow butts than those in context 23. Three faceting chips also indicate some degree of core preparation was being exercised. Evidence for platform edge abrasion was commonly noted in the material from context 5 but was generally

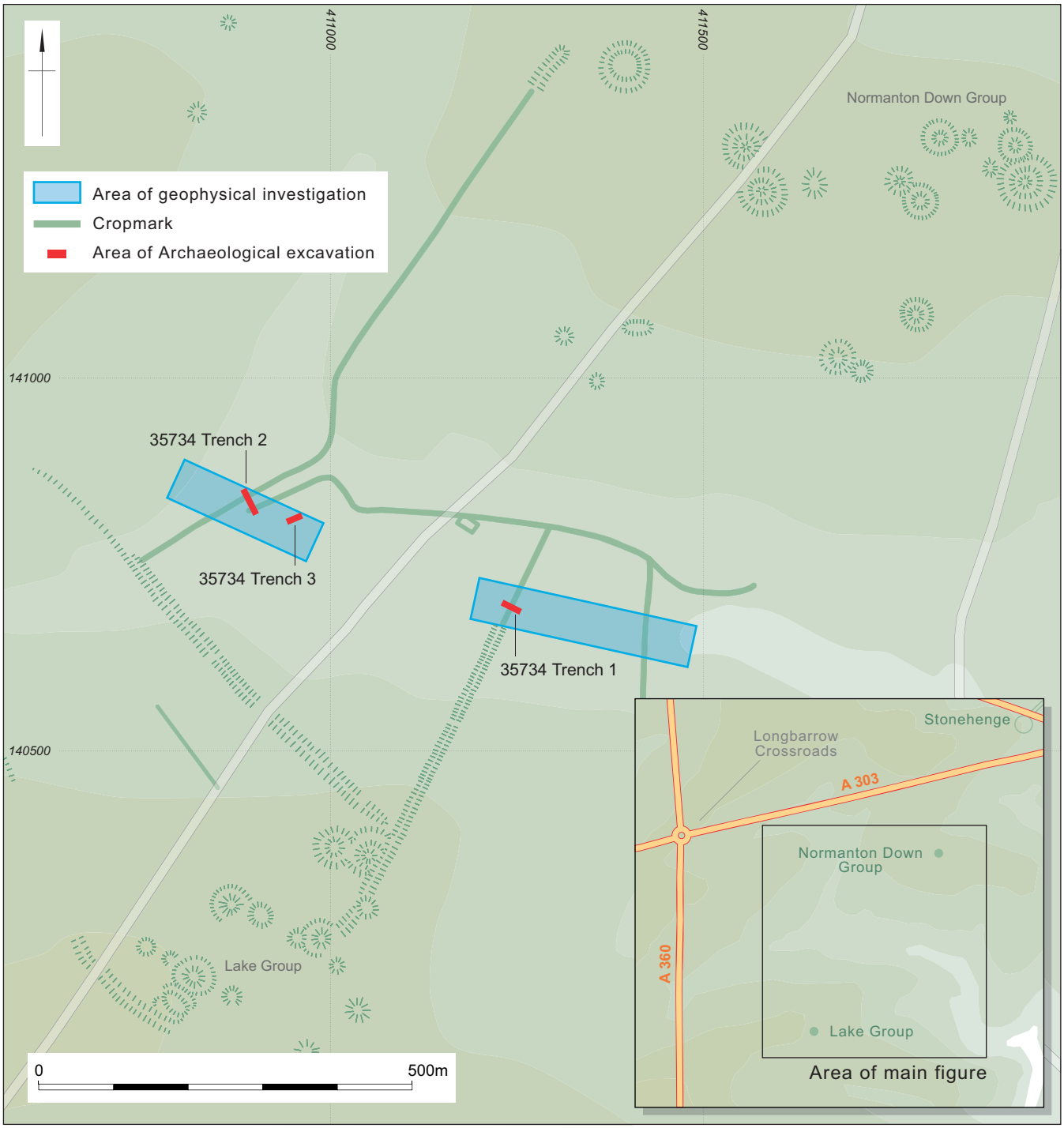

Figure 13 The North Kite

absent from the flint in context 23. Broad, plain or cortical butts were frequent in context 23. Otherwise the composition of the material from these two subsoil layers is similar. Retouched forms are limited but include a finely worked chisel arrowhead, a broken notch, and a much-worn serrated flake.

The slightly higher proportion of blades may suggest a slightly earlier date for the material in context 5. No diagnostic retouched pieces were recovered that would support this, however, and the general composition and appearance of the flint is similar to that from context 23. It may just be that the material from context 5 is the residue of slightly more controlled knapping. No true blade cores were recovered but the quantity of blades does suggest something more than just fortuitous production. A fine blade from an opposed platform blade core was found in the subsoil in Trench 3 (context 43), suggesting that some blade production was occurring, or at least carefully produced blades were being brought to the area.

A few refitting pieces were identified. These included a thick flake that had split in two from the platform (a Siret fracture) in context 5, and two flakes that had broken across the middle in context 23. There are also

Table 3. Summary of worked flint from North Kite and Wilsford Down

Context	*Flakes*	*Blades, bladelike flakes, bladelets*	*Cores (types) & fragments*	*Chips*	*Irregular debitage*	*Retiuched pieces*	*Total*
Topsoil (1, 21)	66	–	2 (flake, inc. 1 with prepared platform)	3	2	1 (end scraper)	74
Subsoil (5)	164	20	3 (flake)	10	10	2 (1 broken notch, 1 worn serrated flake)	209
Subsoil (23)	104	3	4 (2 flake, 2 frags)	7	11	2 (1 chisel arowhead, 1 misc. ret.)	131
Other subsoils (7, 30, 43)	110	4	3 (flake)	1	12	3 (1 scraper, 2 misc. ret.)	133
Ditch fills (2, 6, 10, 25, 27, 32)	81	–	8 (flake)	1	5	1 (misc. ret.)	96
Total	525 (81.6%)	27 (4.2%)	20 (3.1%)	22 (3.4%)	40 (6.2%)	9 (1.4%)	643

at least two groups of flakes of similar raw material from context 5, one group of approximately 12 flakes with very smooth, white cortex, and two flakes with distinctive yellow–red staining. None of these pieces could be refitted but it is probable that they came from the same nodule originally. No refits could be made between the two contexts.

It seems likely that these two groups of material are the residues of differing technologies, one producing slightly more blades than the other. However, given the similarities in raw materials, overall composition and technology it seems likely that they are both broadly Late Neolithic in date. The only diagnostic piece, a chisel arrowhead from context 23, would support this dating. The little refitting flint that was recovered and the limited retouched component suggest that the products of the knapping episodes were removed for use elsewhere.

Discussion

The North Kite remains enigmatic in terms of both its form and purpose, but the work reported on here are not inconsistent with the suggestions of dating provided by Greenfield's 1958 excavations and Richards' trenches (Richards 1990), of an enclosure of the Beaker period. It also allows a degree of certainty to be claimed in terms of the existence of the sub-surface features suggested by aerial photography which conform more or less closely to the kite-shaped enclosure of some 8ha seen by Stukeley in 1740.

The flint knapping debris from the surface hollows add another element to the increasing evidence of a focus of activity in the area. The North Kite is adjacent to extensive Late Neolithic activity at The Diamond (W31), where industrial production of lithics was occurring, exploiting a nearby outcrop of flint (Richards 1990, 158ff). The North Kite flint fits into a pattern of Neolithic activity in the area (see for example Cleal *et al.* 1995; Darvill 2005; Richards 1990) recently confirmed by fieldwalking programmes (WA 2007b). Other diagnostic Late Neolithic flint from the investigations is sparse, with datable pieces limited to another chisel arrowhead from field walking on Area 12 in Area O (WA 35734), although other material is considered to be of this date on technological grounds (WA 2007a).

The Early Bronze Age Environment and Landscape

Work on both colluvium and land snails has suggested that the widespread clearance of large tracts of downland dates to the Early Bronze Age (Allen and Scaife 2007). Despite the evidence for clearance, in the earlier Bronze Age there is generally little evidence for cultivation in the region (Richards 1990, 274; cf. Entwistle 1990). Rather, the prevailing body of evidence for cultivation accompanies the appearance of field systems that can be dated in many cases to the Middle Bronze Age.

Wilsford G1

One of the more significant results of the investigations adjacent to the existing route of the A303 was the discovery of two further Beaker burials immediately to the north of the barrow at the westernmost end of the Normanton Down barrow group (although arguably not a member of that group), Wilsford G1 in Area P (WA 50538 Tr. 15; Figs 11 and 14). Originally opened in 1805 by William Cunnington, this mound was found to cover a central grave containing a skeleton, 'drinking cup' and stag antlers. Unpublished excavation in 1960 demonstrated that the central grave had contained at least two inhumations and a cremation burial, and

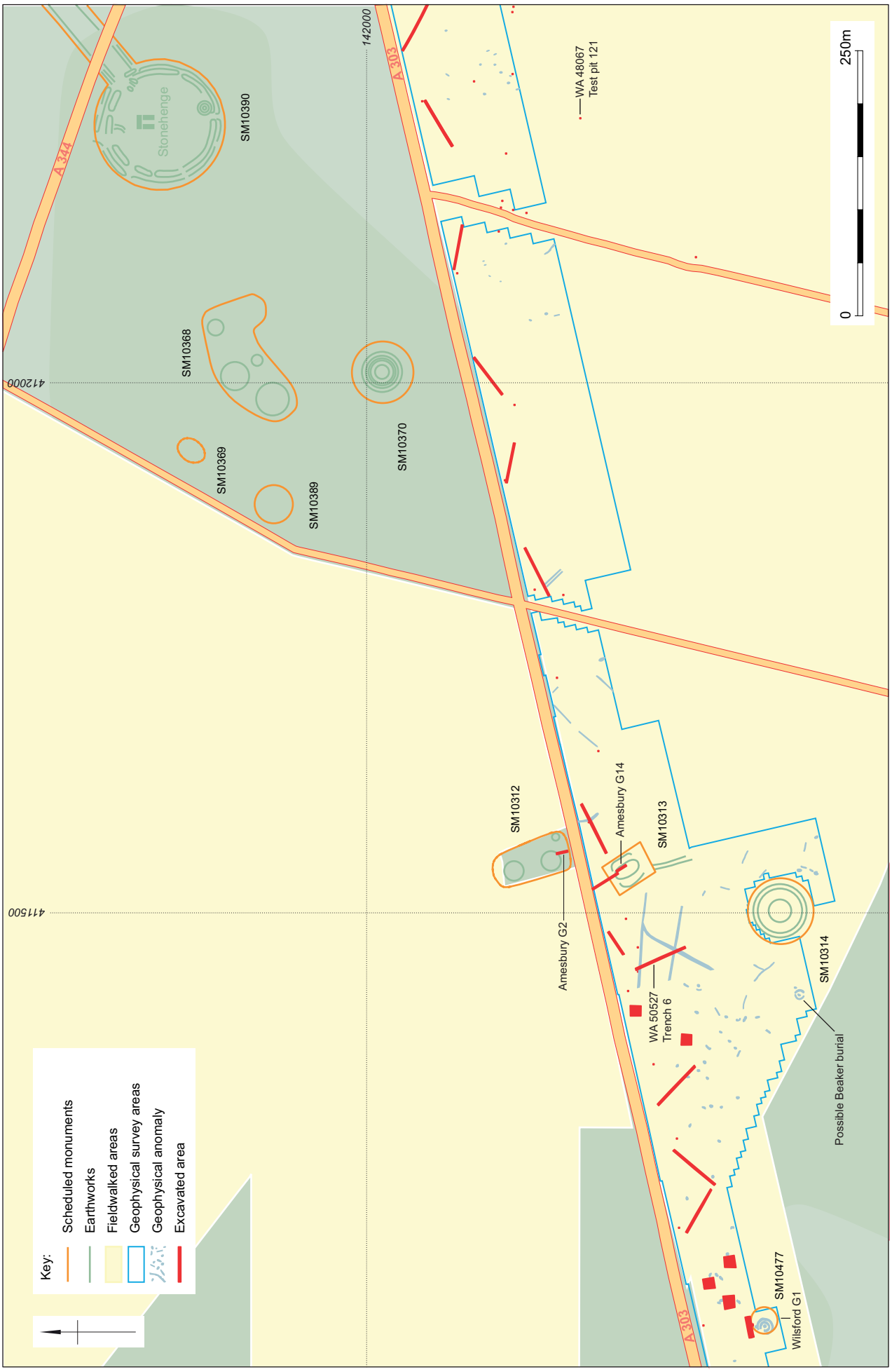

Figure 14 Surveys north-west of the Normanton Down group

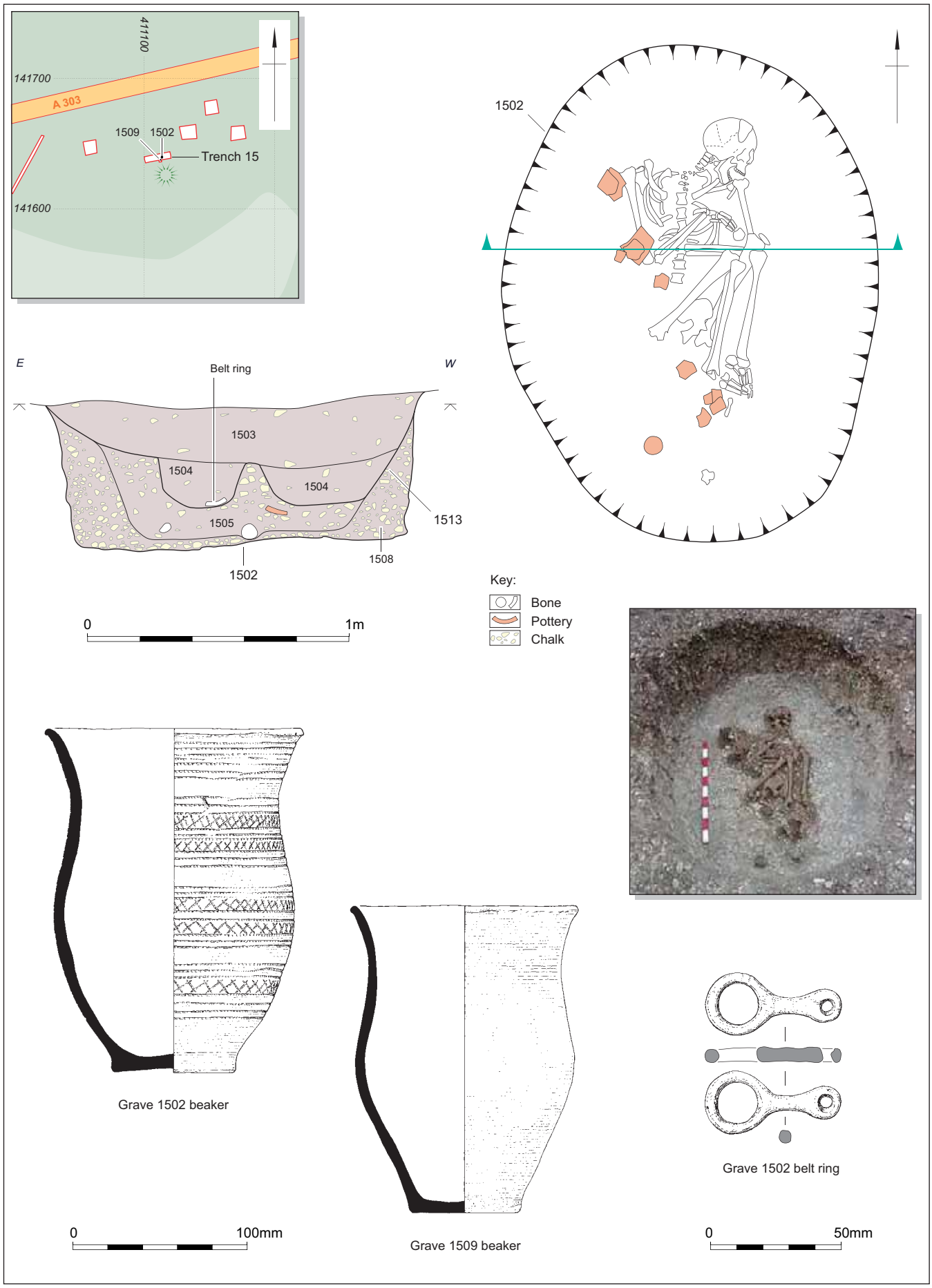

Figure 15 Wilsford G1 (WA 50538)

fragments of a Beaker were recovered. Eleven further burials were situated in the north side of the barrow, including seven infant inhumations (six with Beakers in the Wessex/Middle Rhine tradition, one with a small urn) (Field 1961).

Trial trenching to investigate geophysical anomalies recorded in surveys undertaken during the current works revealed two graves, 1502 and 1509, seemingly further members of the group excavated by Field (Fig. 15). The first grave was 2.22 m long, 1.64 m wide and 0.55 m deep. It contained the remains of a north–south aligned, loosely crouched adult male lying on its left side with an almost complete but fragmentary fine grog-tempered Beaker decorated with all-over comb impressions, of Wessex/Middle Rhine type. A radiocarbon determination on the right femur gave 2460–2290 cal. BC at 95.4% confidence (NZA 29534; 3878±20 BP; Fig. 16).

Both the pottery and human remains showed signs of displacement or disturbance (much of the Beaker was by the feet, while large portions overlay the right arm). The representation of skeletal parts (below) suggests that this displacement results from the grave having been revisited following the decomposition of the soft tissue. A cattle cranium fragment from the left side, a large mammal cranium fragment (probably cattle), a right humerus shaft fragment of sheep/goat, and bone belt ring were recovered from the disturbed material. The belt ring is of Clarke's class 1 shanked type, with a 'magnifying glass' handle (Clarke 1970, figs 143 and 261). There are no clear indications of asymmetric wear or polish: most of the surface is polished, with a roughened area on the shank. The original position of the piece in relation to the body is uncertain, as it was recovered from the disturbance. Clarke suggested an exclusive association of this class of artefact with male burials (1970, 113).

The human remains are of an adult male, *c.* 23–27 years of age at death (*c.* 86% skeletal recovery), relatively well-

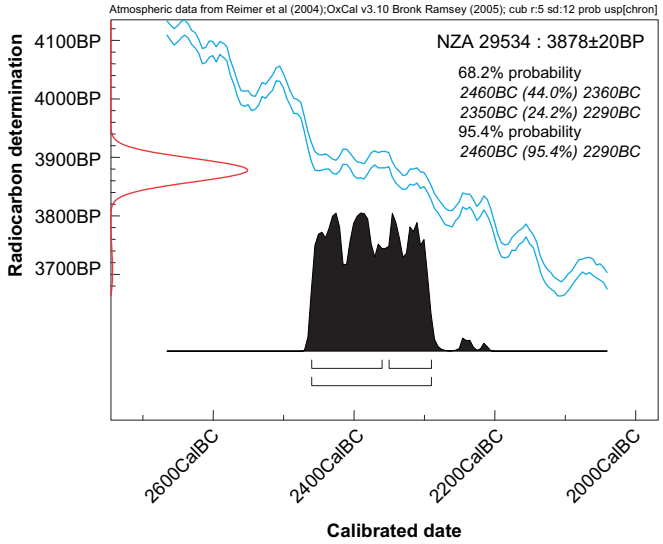

Figure 16 Probability distribution of the radiocarbon date on the skeleton from grave 1502

preserved, with the bones of the left upper limb showing poorer preservation than those elsewhere and almost total loss of the vertebral bodies. The skull was heavily fragmented (mostly fresh breaks) and slightly warped as a result of soil pressure. Dry longitudinal cracks, suggestive of exposure to the elements, were observed in the frontal vault, clavicles and right scapula.

Most of the bone loss was clearly the result of poor preservation due to the action of the burial micro-environment. The absence of any parts of the right innominate and the sacrum is, however, unexpected given the depth of the deposit, and the condition and survival of the rest of the bone. The body had been laid on its left side and it is generally this lowermost side of the skeleton which shows poorer preservation. Some parts of all areas of the spine were recovered with the exclusion of the sacrum, and the left innominate is almost complete and in a good state of preservation. It appears possible, therefore, that the grave was revisited at some time following decomposition of the soft tissues, at which time the right innominate and sacrum were removed.

There is some stratigraphic evidence to suggest that the burial was coffined or that the grave may have been sealed by some form of temporary cover rather than backfilled after the burial was made, which would have facilitated later access. A number of graves at Boscombe Down can be shown to have been revisited, sometimes resulting in significant disturbance to the original burial. In each case the corpse must have been at least almost fully decomposed, a process which could take from as little as a few months to *c.* 5 years dependent on a number of factors (Evans 1963; Henderson 1987).

With an estimated stature of 1.81m (*c.* 5 ft 11¼ in) the young adult male would have presented an unusually tall figure amongst his contemporaries. Data from recently excavated graves of this date at Boscombe Down show a range of 1.74–1.78 m (*c.* 5ft 8½–5 ft 10 in), with an average 1.77 m for the adult males (McKinley in prep.). Data from five other Beaker period sites in southern England (13 males) – Barnack, Cambridgeshire (Wells 1977); Amesbury, Wiltshire (Brothwell *et al.* 1978); Stonehenge, Wiltshire (O'Connor 1984); Chilbolton, Hampshire (Stirland 1990); and Fordington Farm, Dorset (Jenkins 1991) – show a slightly broader range of 1.63–1.78 m, with a mean of 1.73 m. In their 2003 survey of 61 Bronze Age males Roberts and Cox (2003, 86) calculated a range of 1.67–1.77 m, with a mean of 1.72 m; a similar mean being recorded by Brothwell in 1973 (*c.* 1.74 m; 1973, table 149). Although the muscle attachments were not strongly developed in this relatively young male, his general skeletal morphology was very large and relatively robust, as reflected in his estimated stature.

Analysis of strontium isotopes from premolar and third molar teeth suggest a single strontium isotope domain throughout childhood, indicating that the man remained in one area within the landscape during childhood. The low values are entirely consistent with a person born and raised in an area dominated by chalk,

the base geology of the Stonehenge region, and contrasts with immigrants such as the Amesbury Archer (Evans *et al.* 2006).

The charcoal from this grave was entirely oak except for a single piece of pomaceaous fruit wood. As the feature is a grave with no associated cremation-related material the source of the charcoal is open to question. A possible explanation for its presence might be that the material is intrusive, having entered from a background scatter when the burial was made or disturbed. However, the quantity and condition of the charcoal suggests otherwise. Alternatives include that it derives from the suggested coffin or temporary cover, burnt when the grave was revisited and bones removed, or that it represents the remains of a hearth or burnt offering from the time of the inhumation or its revisiting.

The second possible grave (1509) contained the disturbed remains of a neonate *c.* 2–5 months old (*c.* 5% recovery; heavily eroded upper and lower limb elements). The grave was 1.28 m long, 1.05 m wide and 0.24 m deep, and contained a complete but broken plain Beaker. This vessel is in a grog-tempered fabric very similar to that of the decorated Beaker from the first grave, but this second vessel is completely plain, although relatively well finished. Both vessels are of similar form, with smooth, S-shaped profiles, although the decorated example verges on the Short-Necked and the plain example on the distinctive Tall Mid-Carinated form of Needham's scheme (Needham 2005 and pers. comm.).

Discussion

The importance of these graves lies in their association with the immediately adjacent burials at Wilsford G1, and in their provision of the first published date for the group (2460–2290 cal. BC). Published summaries of the site indicate that:

> 'during the late summer of 1960, Edwina Proudfoot undertook the excavation, on behalf of the Ancient Monuments Inspectorate of the Ministry of Works (now English Heritage), of three barrows on Normanton Down in the parish of Wilsford (South). Two of these, Nos 1 and 33, were bowl barrows … the third, 33a … a pond barrow … Although upon the land surrounding Stonehenge, purchased after a national appeal in 1927–8 and in the care of the National Trust, the bowl barrows had been severely damaged by deep ploughing … Edwina Proudfoot's excavations were designed to salvage as much as possible and were carried out as part of the then Ministry of Works' barrow excavation programme' (Ashbee *et al.* 1989, 1).

The excavation summary records that the central grave (originally emptied by Cunnington in 1805) had contained:

> 'at least two inhumations and a cremation. Fragments of a bell beaker were also recovered with the burnt and inhumed bones in the original grave fill' (Field 1961, 30).

This central grave was surrounded by a small ditch (what David Clarke considered to be 'a ring foundation trench, perhaps a palisade' (1970, 94).

The excavator recorded that:

> 'Total excavation brought to light 11 burials, all of which were situated in the north side of the barrow. Burials 5–10 were infant inhumations, and contained beakers; Burial 4 was also an inhumed infant, but contained a small vessel of urn type. Grave 11 contained the crouched skeleton of a young adult lying on its right side; behind the skull was a fragment of slate, which may be a copy of an early Irish flat bronze axe. Beaker sherds were also found in the grave filling' (Field 1961, 30).

David Clarke, in his corpus of Beaker pottery, added more detail:

> 'an exceptionally fine example of what amounts to a cemetery of this [Wessex/Middle Rhine] beaker group, is the barrow at Wilsford (G1), Wilts., nos. 1154–61 … Eight burials had been placed in pits extending in a rough alignment south [sic] of the three burials in the central pit. At least one skeleton had a wooden coffin or cist, and six Wessex/Middle Rhine beakers accompanied the secondary burials, whilst the primary vessel was a crushed European Bell Beaker of a Rhenish type intermediate to the typical Wessex/Middle Rhine forms. Body no. 10 in this barrow had the bone belt ring and boar's tusk toggle, while bodies nos. 7 and 8 had the decorated and undecorated beakers nos. 1159–60 and body no. 11 an imperforate stone plaque. The whole barrow ritual, the pottery and the associations, suggest that this cemetery belonged to a family or group of families only a generation away from the Rhineland' (Clarke 1970, 94).

Lawson clarified the location of the burials:

> 'seven burials of infants and one young adult were found on the north side of the barrow, each accompanied by an early (Wessex/Middle Rhine) Beaker, one of which was plain and undecorated. Four burials had been made in the ditch and three beyond it. One of the graves beyond the ditch was also furnished with an antler ring and a pendant made from a pig's tooth, and another with a smoothed slate pebble. Subsequently, a second ditch [broader and shallower than the first, according to Clarke 1970, 94] was dug outside the first, cutting one of the graves, and presumably the mound was enlarged. In the early Bronze Age, a secondary burial accompanied by an urn was cut into the mound' (Lawson 2007, 153–4).

One of the Beakers (Clarke's no. 1160) was undecorated, and Clarke considered pots of this type to be accessory vessels:

> 'in nine or possibly ten cases a beaker of this [Wessex/Middle Rhine] group has been accompanied by a second vessel … in two cases an undecorated beaker … The two undecorated beakers are the small biconical vessels from Durrington, Wilts., no. 1108 and Wilsford (G1), Wilts., no. 1159, both with fine Wessex/Middle Rhine beakers' (Clarke 1970, 101).

He also suggested that: 'the custom of placing extra accessory beakers in graves is strongly linked with women and child burials …' (*ibid.*, 265).

Grave 1502 confirms many of the characteristics of early Beaker male burials: individual inhumation burials in a loosely crouched position, laid on the left side with the head to the north, accompanied by single vessels and a limited number of other objects, in a grave that may have facilitated access at some point after the burial had been made.

The burials at and around G1 are, as Clarke stated, unusual in southern England in that they represent a Beaker cemetery. The relative sequence of the burials is not yet clear nor is the date of the barrow mound in relation to them, but it is possible that, in common with contemporary Beaker cemeteries elsewhere in Europe, one grave in what was otherwise a flat cemetery was covered by a barrow. Whether the original Beaker period barrow was as large as the barrow surviving today is also uncertain as the later elaboration of these monuments is relatively well attested (Lawson 2007, 154–7).

The discovery of these graves at a site which had been investigated on two occasions previously highlights the success of the non-intrusive and intrusive survey methods adopted during the A303 Improvement, and the potential for similar graves to exist in the immediate environs of the many other barrows which are such a common feature of the Stonehenge WHS.

One other feature that may be related to Beaker-period activity in the area of the Normanton Down group was revealed by survey undertaken by GSB Prospection as part of the overall geophysical cover of the route (Fig. 14). Centred on NGR 411423 141592, the anomaly revealed by geophysical survey consisted of a central feature (putatively a grave) surrounded by an interrupted ditch of perhaps 9m diameter, with gaps on the approximate north and south sides. This may be a small example of the causewayed barrows discussed by Darvill (2005, 51).

Amesbury G2

A single trench, 10m long and 1m wide, was positioned to test the state of preservation of one of a group of round barrows on the southern side of Stonehenge Down in Area Q (Amesbury G2; Scheduled Ancient Monument, Wiltshire Monument No. 63b; WA 35734 Tr. C) immediately north of the A303 and opposite the Amesbury G14 long barrow (Figs 11, 14, and 17). This barrow is one member of the group famous for Cunnington and Colt-Hoare's discovery of the 'Stonehenge Urn', 'the largest sepulchral urn we have ever yet found' (Colt-Hoare 1812, 126). Grinsell noted another five barrows in the same group destroyed before 1912 (Grinsell 1957, 149).

Limited excavation indicated that the mound was generally well-preserved, although some evidence of animal disturbance and erosion (probably the result of ploughing) was noted (Fig. 17).

Topsoil was between 0.10 m and 0.19 m deep, being deepest over the buried ditch surrounding the mound. Layers of loam with chalk and flint lay beneath the topsoil, perhaps made up of material displaced from the mound, interleaved with relatively stone-free dark humic loams, apparently buried turf and soil horizons indicating periods of stabilisation. The earliest and latest of these layers extended far enough to cover the barrow ditch (the earliest directly sealing it). The lowest showed some evidence of *in situ* burning and – where this was interrupted by irregular striations – possible ploughing. It is worth noting that only one piece of flint from this context showed any obvious sign of having been burnt. The ditch was not excavated.

A small gully (42) lay at the southern end of the trench, south of the barrow ditch (45). The feature was only well-defined where it cut chalk bedrock, and contained no chronologically-distinctive material. A second gully (51) was sealed by the earliest humic loam (52/53) sealing the barrow ditch. The lithics recovered from this feature generally exhibit much damage. Many of the flakes which have been broken or edge-damaged have a light milky patina over the areas of damage. This suggests that these contexts have been disturbed at some point in antiquity, consistent with an interpretation of the gully as a pre-barrow feature, disturbed when the barrow was constructed.

Most of the excavated deposits contained struck flint (312 pieces total), mostly unretouched flakes. These are typified by fairly thick, squat, irregular pieces with no sign of platform preparation and with many hinge fractures. The few cores are small and crudely worked with the exception of a single 'Levallois' type core from the layer sealing the barrow ditch. This type of core is Late Neolithic and frequently associated with the manufacture of transverse arrowheads. The few retouched pieces consist of a scraper, two rough scraper/borers, two large and very roughly-worked nodules with heavily abraded edges (probably hammers or choppers), and an edge retouched flake. One small, burnt piece is probably a thumbnail scraper. Overall, the material seems likely to be of Late Neolithic or, more probably, Bronze Age date.

Only two pieces of contemporary pottery were recovered, both body sherds, one sandy and one grog-

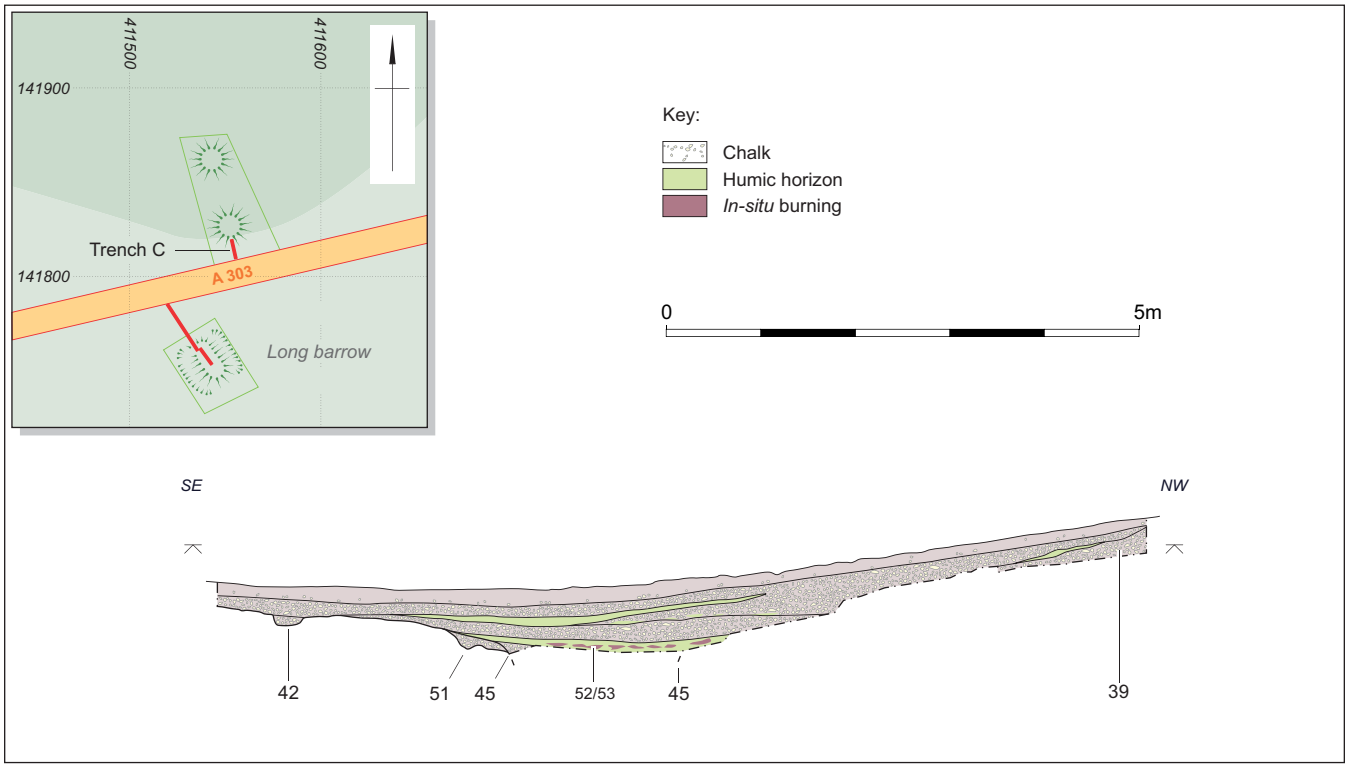

Figure 17 Amesbury G2 (WA 35734)

tempered. One piece came from the mound material (39), the second (decorated with irregular jabbing) from burnt horizon (53).

Miscellaneous Smaller Sites

Very little other evidence of Early Bronze Age date was recovered as part of the A303 Stonehenge Improvement surveys. Apart from undiagnostic grog-tempered body sherds from vessels of probable Beaker or Urn type, only one site produced any evidence datable to this period. A small pit (feature 203 in Trench 2 of WA 50412, west of Longbarrow Crossroads in Area L; Figs 11 and 19) identified by geophysical survey was found to contain 17 sherds weighing 57 g from a grog-tempered vessel, probably a Collared Urn. The sherds are fairly abraded, but there is one fragment from the rim, and one body sherd has traces of impressed (perhaps twisted cord) decoration. Collared Urn ceramics from other contexts are fairly common in the immediate area, occurring for instance in the Wessex Series of barrows (one particularly fine example comes from the nearby Wilsford G7).

Fieldwalking Evidence

The majority of evidence relating to the later Neolithic and Bronze Age periods recovered from the A303 investigations consists of scatters of struck flint, mostly recovered from programmes of fieldwalking (WA 34852 south and west of Longbarrow Crossroads; WA 35734 Areas 9, 10, 11, and 13 on routes south of Stonehenge, Area 12 south-west of Longbarrow Crossroads; WA 37874 along the western portion of the northern route; WA 47422 immediately north-east of Winterbourne Stoke; WA 50275 Stage II fieldwalking survey of previously un-walked areas of the Preferred Route: see Fig. 4).

Surveys took place based on a 25 m grid set out according to the Ordnance Survey National Grid on hectare divisions. Each full hectare consisted of 16 collection units in four 25 m-long north–south runs. On WA 47422 the fieldwalking pattern was centred on the centreline of the preferred route and consisted of parallel transects spaced at 25 m. Each collection transect was 2 m wide and the artefact collection was carried out in 25 m stints. On WA 50275 a collection interval of 25 m was applied and each collection interval was allocated a unique number, but hectare and field numbers were not applied. Collection units were defined to cover the full width of the Projected Planning Corridor; Stage 1 surveys (WA 34852, 35734, and 37874) had instead examined an area 50 m either side of the centreline of the route options.

Although low in density, the distribution of worked flint recovered from fieldwalking was relatively even across the survey areas. Small concentrations were apparent in Fields 5, 6, and 8 of WA 34852 around the Longbarrow Crossroads barrow group, where the bulk of the 851 pieces conformed to a Bronze Age date: typologically distinctive tools were limited to thumbnail scrapers. Area 12 on WA 35734 lay immediately south of WA 34852 Field 5 in the south-west angle of the A303 and A360 junction at Longbarrow Crossroads, and had

certain similarities, although the presence of a chisel arrowhead, a possible knife made on a blade, a rejuvenation tablet from a core with an abraded striking platform and at least one scraper with a finely retouched edge indicate that the material is mixed. The amount of archaeological activity in the vicinity of Longbarrow Crossroads, which includes the Early Neolithic long barrow, numerous Bronze Age round barrows, and a Late Bronze Age settlement, makes it unlikely that only a single period is represented in this material.

Other small concentrations were recovered from Plots 2 and 3 of WA 37874 (east and west of Winterbourne Stoke) and in fieldwalking Areas 1, 2, 6, and 9 of WA 50275 (spread along the length of the route). The burnt, unworked flint shows a similarly even distribution. Although concentrations coincided with those of the worked flint in Field 5 and Areas 1 and 2, no correlation was found with the worked flint concentrations in Fields 6 and 8 or Areas 6 and 9. No clear patterns of distribution were apparent within any of the WA 35734 survey areas; all contained individual 25 m runs with no finds.

Fieldwalking of a 25m wide strip adjacent to the A303 in connection with the Stonehenge Conservation and Management Project (SCMP) (WA 1991, Area E) also recovered worked flint consistent with a Bronze Age date. In WA 37874, 83 blades or blade-like flakes were recovered from the three fieldwalking plots on Parsonage Down, perhaps indicating a widespread Neolithic element amongst the otherwise predominantly Bronze Age material.

The 106 pieces from fieldwalking (WA 50275) exhibit the general technological characteristics of the Early/Middle Bronze Age, although it is possible that some earlier material is also present. Flakes are generally squat, thick forms, with frequent hinge terminations and prominent bulbs of percussion indicative of hard hammer technique, although there are a very small number of narrow, blade-like flakes. Core material is scarce but appears to consist entirely of fragments of unprepared cores. Retouched forms comprise six end scrapers and another possible retouched piece, none of which are chronologically distinctive.

Comparisons with the Stonehenge Environs Project

The concentrations of worked flint are generally insignificant in comparison with those identified by the Stonehenge Environs Project (SEP: Richards 1990, fig. 10): plotting of the worked flint recovered during the course of fieldwalking according to the categories used by Richards (*ibid.*, fig. 8) shows that the worked flint recovered during all fieldwalking generally falls into the lowest level of activity, at between 0 and 10 flints per quadrat. This, combined with the fact that most of the areas with the highest densities are not adjacent to each other, suggests that the worked flint recovered during the course of fieldwalking does not form a coherent assemblage. Indeed, the densities of the assemblages seem rather low for the area of study, although similarly barren areas were noted in Richards' work (*ibid.*, fig. 10). Plotting of the worked flint recovered during fieldwalking using the three categories of density used by Blore *et al.* (1995, fig. 9) shows that all of the results fell within the lowest category of density.

Where areas fieldwalked lie adjacent to areas covered by these previous analyses, the results seem to confirm those of the previous work. Significant areas of high density worked flint have been noted within the WHS, but little that lies along the current line of the A303.

Discussion

Perhaps the most important – but in retrospect perhaps unsurprising – result of the works reported here is the very small amount of evidence that can be attributed to the period when Stonehenge and indeed Durrington Walls and Woodhenge were being built or had been recently completed.

The precise chronology of the building of Stonehenge is uncertain. There is a general consensus that what have been traditionally seen as the major stone settings date to between, say, 2700 and 2200 cal. BC. Beyond this, there is less certainty. The stratigraphic evidence itself at Stonehenge and the records made of it when excavated are such that it is possible to produce quite different yet internally consistent accounts and dates for the major stone settings (eg, Bayliss *et al.* 2007; Parker-Pearson *et al.* 2007). The possibility, first raised in the 1920s, that the first stone setting at Stonehenge was of bluestones that stood in the Aubrey holes at around 2900 BC has also been revived recently (Pitts 2008). All of this leaves the relative chronology of sites such as Stonehenge and Durrington Walls in a state of some uncertainty.

What is certain, though, is that the most frequent finds from the current project are flints that were found in fieldwalking and that their quantities are small. Apart from small concentrations around the Winterbourne Stoke barrow group the quantities are so small that they fall into the lowest level of activity defined in the systematic surveys of the Stonehenge Environs Project. Fine dating of these fieldwalking finds is not possible but it seems likely that they span a 1500 year period. There are no concentrations that can be interpreted within current frameworks as indicating the presence of a settlement and this is supported by the results of the extensive geophysical surveys. This is consistent with the results of the Stonehenge Environs Project.

The only possible settlement examined was the well-known, but poorly understood, North Kite enclosure. The limited works undertaken were intended to assess preservation and while they indicated the potential for survival they could not further advance previous interpretations.

Perhaps the most substantive results come from the trenches adjacent to the Wilsford G1 barrow. They provide the excavation to a modern standard of Beaker graves and the analysis has provided detailed records of

the physical anthropology of the deceased, isotope studies and a radiocarbon date, as well as further evidence for the re-opening of Beaker graves in the area. It cannot be said, though, that the discovery of these remains close to the edge of a known, albeit very rare, Beaker cemetery was unexpected. For the moment the precise place of the two burials in the relative chronology and sequence of the cemetery cannot be established until the results of earlier work are published. Their place in relation to the building of Stonehenge is also uncertain, but in one scenario the date of the adult burial (2460–2290 cal. BC) could prove to be contemporary with the later stages of the major stone settings. It would also place the burial contemporary with that of an adult male within the infilled ditch of Stonehenge, and with others in other nearby Beaker cemeteries, such as those on Wilsford Down, Boscombe Down, and elsewhere.

The landscape at the time that Stonehenge was built and in the centuries that followed into the Early Bronze Age has often been characterised as a ritual one. This report is not the place for a discussion of the precise meanings and implications of this phrase. What can be said, however, is that within the area that came to be defined by the well-known Early Bronze Age barrow cemeteries that are both visible from Stonehenge and look into it, the current project yielded little evidence for activities at this time that have survived in the archaeological record as it is currently constructed and understood.

Chapter 4
The Middle Bronze Age to Romano-British Periods

Matt Leivers and Chris J. Stevens

with Catherine Barnett, Jessica M. Grimm, and Sarah F. Wyles

The change from the Early to Middle Bronze Age is marked – as across much of Britain – by very obvious changes in landscape organisation and material culture, with the emergence of new types of pottery, the much more widespread use of metals, the first permanent settlements and the establishment of field systems on a large scale. From the Middle Bronze Age much of the area around Stonehenge was cleared and farmed, with regular bounded fields given over to arable production and grazed downland pasture. Field systems are known from Parsonage Down on the west to Earl's Farm Down on the east. Known settlement locations within these systems are, however, scarce (Darvill lists only four: 2005, 66–8).

Environment and Landscape in the Middle and Late Bronze Age

The prevailing body of evidence for cultivation accompanies the appearance of field systems that can be dated in many cases to the Middle Bronze Age. Examples in the region include Snail Down (Thomas 2005), while those at Burford Ranges and Tidworth (also to the north) are thought to be of similar date (McOmish *et al.* 2002).

Extensive field systems which are probably of this date are known closer by to the north-east at Figheldean, Longstreet, and Netheravon, and to the north of Winterbourne Stoke at Maddington and Orcheston (McOmish *et al.* 2002). Such field systems appear to be encompassed within larger ranch boundaries, with these boundary ditches often some two to eight metres in width. While the direct evidence for cultivation in the region also increases during this period (see below), the general pattern of land use is seen as predominantly pastoral with only limited arable agriculture (Bradley *et al.* 1994, 18–25). The wind-borne silts filling the Y-holes at Stonehenge are interpreted as derived from the cultivation of fields in the surrounding area (Cleal and Allen 1995, 491).

Direct evidence, beyond molluscan analysis, for the nature of the Middle to Late Bronze Age landscape comes from the Wilsford Shaft, where the basal waterlogged deposits preserved pollen, insects and plant macrofossils (Ashbee *et al.* 1989). Not only did the pollen and waterlogged plant macrofossil evidence indicate a largely open, probably arable environment, but the insect fauna from Wilsford Shaft included many more species that are directly associated with weeds of annual disturbance (Robinson 1997).

The range of crops seen from the Wilsford Shaft included flax, emmer wheat and six-row hulled barley (Robinson 1989). Charred remains dated to the Middle to Late Bronze Age are, however, relatively rare within the area. Remains of emmer wheat and hulled and naked barley were recovered to the south from near Salisbury (Powell *et al.* 2005), and similar evidence has been recovered from Down Farm in Cranborne Chase to the south-west (Jones 1991). Late Bronze Age to Early Iron Age deposits from Potterne to the north indicated the presence of emmer, spelt and barley (Straker 2000). Evidence from England as a whole suggests spelt wheat is introduced within the Middle Bronze Age, although no direct evidence is presently available for this part of Wiltshire.

Pig, cattle and sheep/goat are all present within Middle to Late Bronze Age/Early Iron Age deposits in the region. Sheep bones dominated the Middle Bronze Age assemblage at Wilsford Shaft (Grigson 1989), and came to dominate the later accumulation of the midden at Potterne (Locker 2000). The increased importance of sheep is also reflected in the increase in objects associated with weaving and spinning, as seen at Potterne. Cattle still featured within the local Middle Bronze Age economy, however (Powell *et al.* 2006).

It might be noted that the pollen sequence from the Avon near Durrington Walls, where a cleared open landscape with some cereal agriculture is evidenced, may well also relate to this period or indeed later (see Scaife 2004).

Middle Bronze Age Settlement

In the A303 surveys, Middle Bronze Age evidence was concentrated to either side of Longbarrow Crossroads (Figs 18–20). To the west, in Area L of WA 50412, three features contained Deverel-Rimbury ceramics. Pit or post-hole 711 in trench 7 and feature 1307 in trench 13 contained five undiagnostic flint-tempered sherds, likely to belong to the Deverel-Rimbury tradition. Also in trench 7, pit 710 contained 221 sherds representing a vessel, probably placed in the ground complete, although truncated by ploughing which had removed part of the rim. The vessel, which is in a fabric tempered with frequent but well-sorted calcined flint, is a large, bucket-shaped form, relatively thin-walled, with a

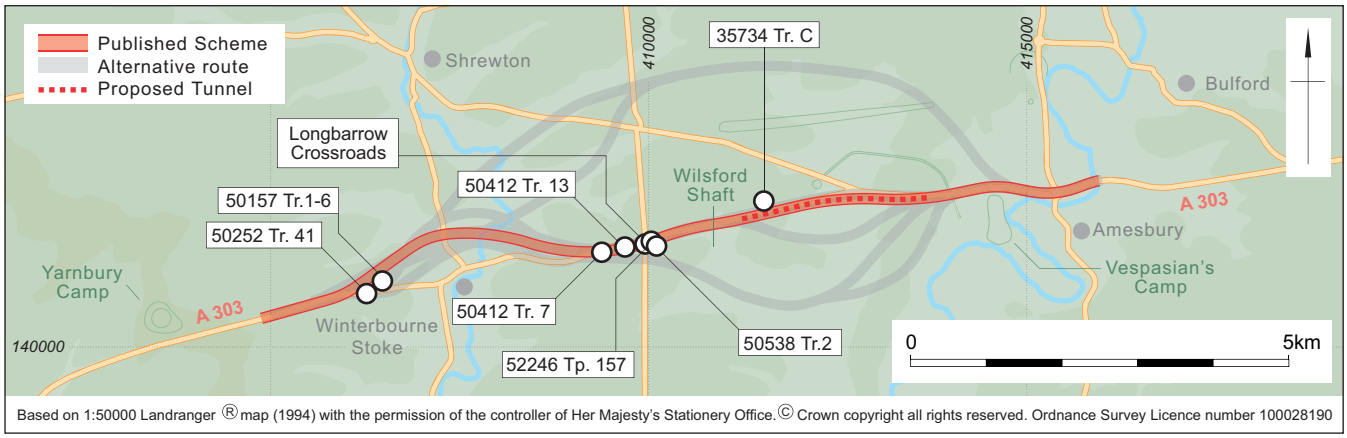

Figure 18 Later Bronze Age and Iron Age evidence

thickened and flattened rim, decorated with one row of finger impressions below the rim and a second about one-third of the way down the wall. Form and decoration are both well paralleled within Deverel-Rimbury assemblages from the Wessex region (Annable and Simpson 1964).

East of the crossroads, in trench 2 of evaluation Area P on WA 50538, two Middle Bronze Age pits were found, both containing animal bone, struck flint, and Deverel-Rimbury pottery. Only six sherds weighing 47 g were recovered from the two features: those from pit 203 were thick-walled and tempered with coarse frequent shell inclusions; those from pit 205 were coarsely flint-tempered. No diagnostic sherds were present, and the material is therefore dated on fabric grounds alone.

The animal bone from pit 203 contained a fused right proximal humerus fragment of cattle as well as a large mammal fragment. Pit 205 contained eleven cattle bones, a piece of red deer antler, a right sheep/goat radius (distally unfused) and a fragment of large mammal bone. It seems that juvenile, subadult and adult cattle are present in this small assemblage.

A third Middle Bronze Age pit was encountered in test pit 157 of WA 52246, also in Area P. This test pit was immediately adjacent to trench 2 of WA 50538, and these three pits are evidently parts of the same set of features, presumably belonging to a Middle Bronze Age settlement, perhaps related to the undated field system and excavated Late Bronze Age settlement at Longbarrow Crossroads (see Fig. 14). The pit (131003) was less than 0.30 m deep, but produced a moderate assemblage of pottery and animal and human bone.

The pottery consisted of two sherds in a coarse shelly fabric and five coarse flint-tempered sherds. As with the material from the adjacent pits, diagnostic features are absent, but a radiocarbon determination on animal bone (below) confirms the Middle to Late Bronze Age date suggested by the fabrics.

The animal bone was mostly cattle, and comprised bone from all parts of the carcass. The bone survived in good condition, although clear evidence of carnivore damage suggests that it is redeposited (the same is true of the single human femur in the assemblage). A cattle metacarpus produced a radiocarbon determination of 1210–1010 cal. BC (NZA 29535; 2911±25; Fig. 21).

The pit also contained a few cereal remains comprising grains of barley (*Hordeum vulgare* sl), most probably hulled barley, and some unidentified grains. Only a single glume of either emmer or spelt wheat (*Triticum dicoccum/spelta*) was seen. There were relatively few weed seeds in this sample and none was identifiable beyond family. The sample also had a thorn of either sloe (*Prunus spinosa*) or hawthorn (*Crataegus monogyna*), as well as a stone of hawthorn and one probably of sloe. The presence of sloe and hawthorn may relate to the burning of hedging material rather than the collection of wild foods. Finally a tuber of false-oat grass (*Arrhenatherum elatius* var. *bulbosum*) was also recovered.

Late Bronze Age

At the Scotland Lodge enclosure (Area C, WA 50157, see below) no structural features were encountered which pre-dated the Early Iron Age. However, small quantities of pottery were recovered which fit more comfortably within Late Bronze Age ceramic traditions. These include sherds from finger-impressed shouldered jars (Fig. 29.1–3) and other impressed sherds in similar fabrics. This material may be redeposited from an early unenclosed phase of settlement, which may have extended in a low density spread westwards along the low spur on which the Iron Age enclosure is situated.

Other evidence of Late Bronze Age activity in this area includes a pit (4103), approximately 250 m to the west of the Scotland Lodge enclosures (Area C, WA 50252 Trench 41: Fig. 22), containing a dump of Late Bronze Age pottery and burnt and struck flint. The 26 sherds included one from a finger-impressed shoulder. Further finger-impressed shoulders came from fieldwalking in Area C (on WA 34852 Field 1), west of Scotland Lodge.

Two samples from pit 4103 contained barley grains and a single wheat grain and glume of spelt wheat (*Triticum spelta*). Weed seeds, which mainly came from the lower fill, were on the whole from larger seeded

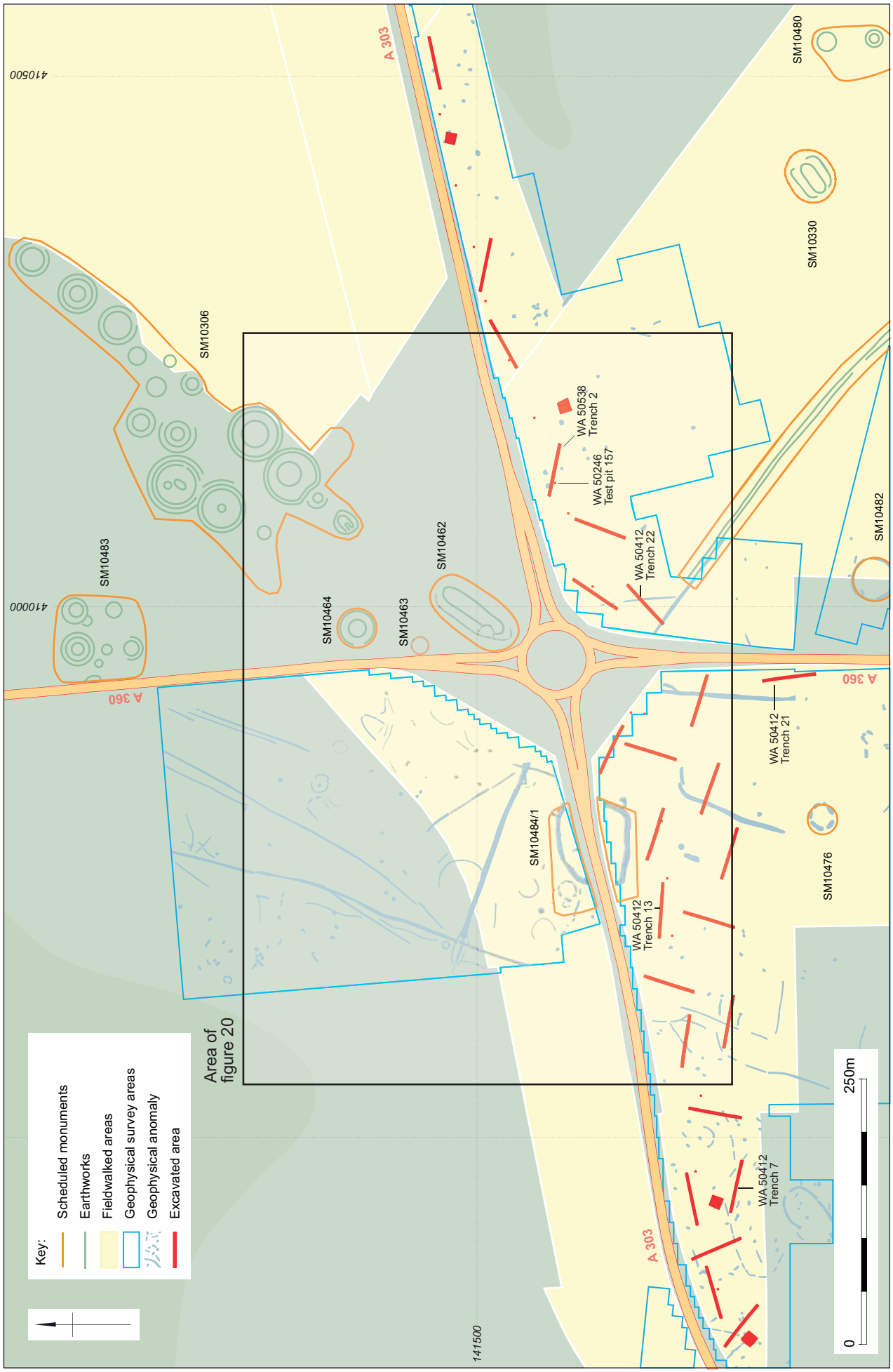

Figure 19 Earthworks, geophysics, test pits and trial trenches around Longbarrow Crossroads

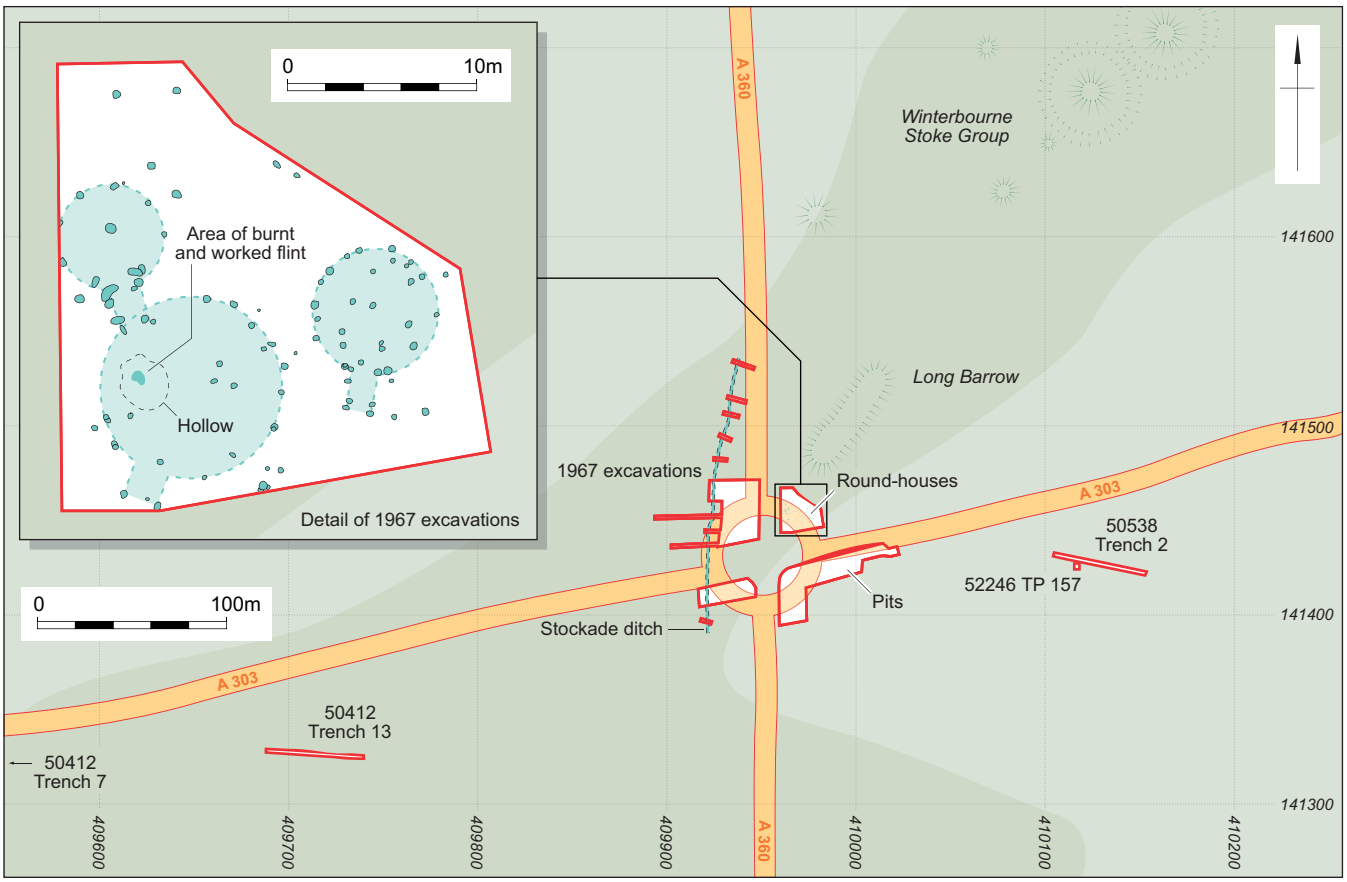

Figure 20 Excavations and evidence at Longbarow Crosroads

common arable species including cleavers (*Galium aparine* or *G. tricornutum*), buttercup (*Ranunculus acris/repens/bulbosus*), black bindweed (*Fallopia convolvulus*), field madder (*Sherardia arvensis*), and possibly fool's parsley (*Aethusa cynapium*). There were also a number of seeds of species that often stay with the grain by virtue of appendages, for example, black medick (*Medicago lupulina*), docks (*Rumex* sp.), and hedge parsley. Smaller seeded species included those of common stitchwort (*Stellaria media*), red bartsia (*Odontites vernus*), orache (*Atriplex* sp.), and selfheal (*Prunella vulgaris*).

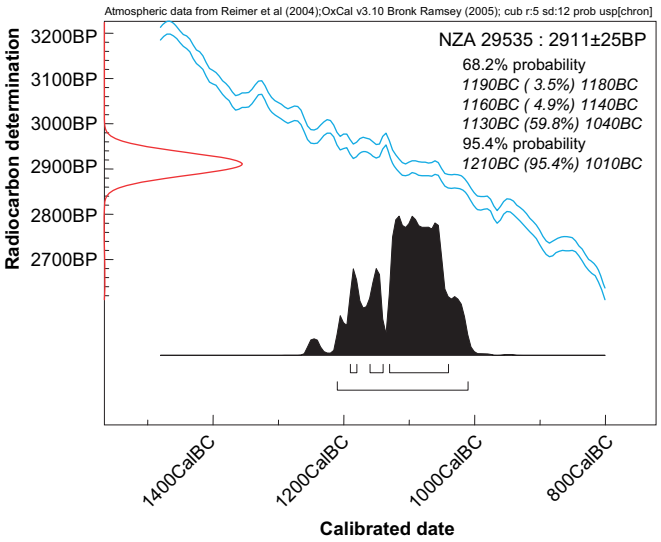

Figure 21 Probability distribution of radiocarbon date on the cattle bone from 131003

This evidence indicates the cultivation of barley (*Hordeum vulgare* sl), and probably hulled wheat. The Late Bronze Age samples were broadly similar in the composition of wild species to those discussed for the Iron Age below, and it is probable that the majority of farming practices outlined below apply also to this earlier period.

The limited evidence from the current project adds to the rather scant material known from among the largely undated but presumed Middle and Late Bronze Age field systems. Earlier work relating to alterations to the A303 has revealed contemporary evidence, particularly in the area around Longbarrow Crossroads where a watching brief in 1967 encountered a portion of a Late Bronze Age settlement consisting of at least three round-houses, possibly in association with a north-south 'stockade' trench (Vatcher and Vatcher 1968; Richards 1990, 208–10; Fig. 14). Geophysical survey north-west of the roundabout has detected many linear and circular anomalies which are possibly further elements of this settlement (Figs 19 and 20). Known Late Bronze Age settlements are by no means common in the region, perhaps because they are unenclosed and consequently

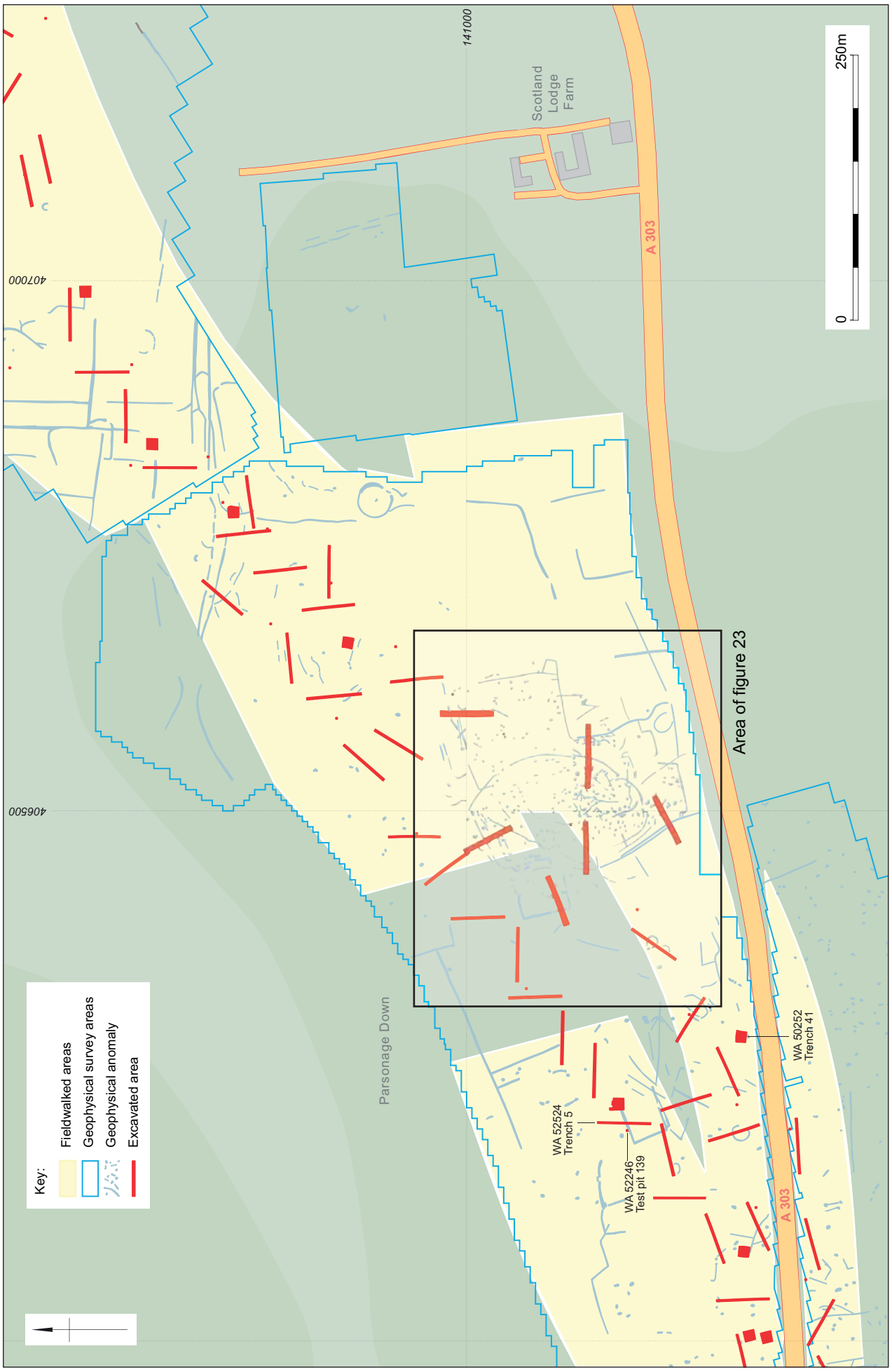

Figure 22 Geophysics, test pits, and trial trenches around the Scotland Lodge enclosures

difficult to identify. However, such evidence as there is suggests that the Longbarrow Crossroads settlement is a typical example of the type (Lawson 2007).

A substantial earthwork thought to be of Late Bronze Age date runs towards the roundabout from the south-east across Wilsford Down, continuing to the north-west as a feature visible on aerial photographs and as a geophysical anomaly. A portion of this feature identified by geophysical survey immediately south-east of the roundabout was tested by excavation (Area O, WA 50412 Trench 22: Fig. 19). A very large 'V'-profiled ditch approximately 4 m wide and 1.50 m deep corresponded with the line of the feature surviving to the south-east as an earthwork. Trial trenches on the upstanding earthwork demonstrated that it cut an earlier boundary ditch (Area O, WA 35734 Trenches A1 and A2). Another ditch running parallel to this was traced on geophysical survey in Area L and encountered in Trenches 59 and 63 in Area J.

A second large linear ditch, also known from a cropmark, this time running north-east to south-west across Wilsford Down towards the Amesbury G14 long barrow, Amesbury G2 round barrow, and in the direction of Stonehenge, was found to be 'V'-profiled, 2 m wide and 1 m deep. Evaluation trenches north of the long barrow revealed no trace of the feature in that location, suggesting that it stops before reaching them (feature 601 in Area R, WA 50527 Trench 6: see Fig. 14). A similar feature appears on aerial photographs of Stonehenge Down, and it is assumed that after a break, this major linear boundary continues on an adjusted alignment to the north-west.

These earthworks undoubtedly belong among the many later prehistoric linear earthworks (previously characterised as ranch boundaries or linear ditches) which typify much of Salisbury Plain (the so-called Wessex Linear Ditch System). The larger 'spinal' elements of this system (of which the excavated ditch at Longbarrow Crossroads is a part) seem to have functioned as major land divisions, and to have been maintained and refurbished at intervals. At Longbarrow Crossroads there was evidence of the recutting of the ditch, and a single sherd of Romano-British pottery from the upper fills gives some indication of how long this part of the feature may have survived.

The Iron Age enclosure at Scotland Lodge

The Iron Age enclosed settlement at Scotland Lodge lies immediately north of the A303, on the eastern end of a low spur between two dry valleys joining the river Till 1.2 km to the east (Figs 22 and 23). Although invisible on the ground, aerial photographs, geophysical survey and fieldwalking indicated a large ovate enclosure with an extensive rectilinear enclosure system on the eastern and southern sides and a small sub-square enclosure on the west. Linear features suggesting boundary earthworks, trackways, and a surrounding field system cover some 5 ha (Figs 22–4). The site did not suffer modern ploughing until the parcel of land within which it lies was sold in the 1980s.

The most prominent and well-studied Early Iron Age sites in the locality are hillforts. These tend to be situated above the river valleys, and include those overlooking the Avon at Amesbury and Great Durnford, both at a distance of some 8 km east and east-south-east of Scotland Lodge (Area C, WA 50157) respectively (Fig. 18). Vespasian's Camp at Amesbury is a univallate hillfort covering approximately 16 ha. Limited trial trenching demonstrated two phases of construction for the rampart, and recovered some Early Iron Age pottery (Hunter-Mann 1999). Ogbury Camp at Great Durnford covers 26 ha and has been the subject of even less investigation. Ogbury is associated with systems of rectilinear fields, both adjacent to and within the single circuit of rampart and ditch (Lawson 2007).

Closer at hand, Yarnbury Castle lies only 3 km to the west, clearly visible from Scotland Lodge. The hillfort is associated with an extensive system of fields, trackways, and enclosures which cover much of Berwick and Parsonage Downs. It is within this system that the Scotland Lodge enclosure lies, and it seems very likely that the two sites were related both socially and economically. Other similar enclosed settlements are found scattered across Salisbury Plain to the north and (alongside the open examples which are similarly widespread) will have formed 'the basic settlement pattern of compounds, hamlets and farmsteads' (Darvill 2005, 72) thought to typify the Early Iron Age.

The Iron Age Environment

The post-Bronze Age state of the landscape around Stonehenge is reconstructable only in broad outline. Recent summaries have noted:

> 'a mixture of both tillage and pasture … indicated from the analysis of the colluvium at Figheldean (Allen and Wyles 1993) and at Vespasian's Camp molluscan evidence suggests the presence of pasture, or at least short-trampled grassland, which might be the result of stock grazing or human trampling' (Gardiner 1995, 333).

As with the evidence for England as a whole, there is little or no indication for the laying out of new (or modification of existing) field systems prior to the immediate pre-conquest/Roman conquest period. Whether existing field systems continued in use is difficult to determine, although it is probable that land divisions delineated by now long-established hedges continued in use (cf. French *et al.* 2003). Certainly, activity in the Romano-British period would seem to indicate the alteration of pre-existing field systems,

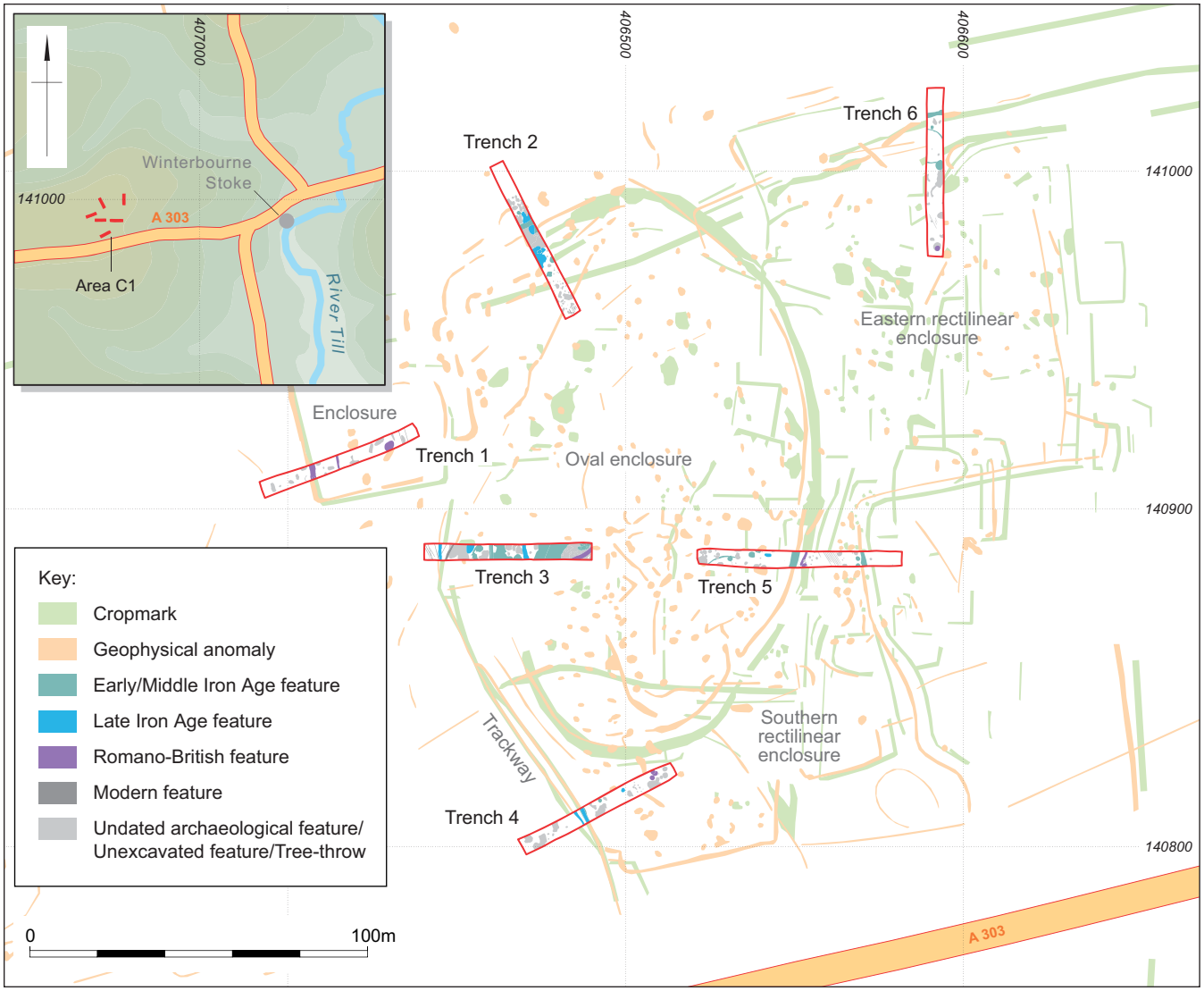

Figure 23 The Scotland Lodge enclosures

implying that those established within the Middle and later Bronze Age continued in use over the rest of the millennium.

Within the region in general, there is usually an increase in arable activity during the Iron Age (Bradley *et al.* 1994). Analysis of molluscan evidence within the area to the north indicated that open downland had existed for some time prior to the Iron Age (Entwistle 1994).

By the Iron Age, spelt wheat had almost entirely replaced emmer within the general region, with hulled six-row barley also forming an important component (Stevens 2006; Clapham and Stevens 2008; Campbell 2000).

The Scotland Lodge Enclosures

Six evaluation trenches, each 50 x 5 m (with the exception of Trench 5: 60 x 5 m), were excavated in locations designed to determine the character, date and state of preservation of both archaeological remains and blank areas suggested by the non-intrusive surveys, in positions potentially affected by the various Preferred Route alignments. Three main periods of activity were identified, although these do not have sharply defined boundaries. Activity on the site seems to have begun in the Early Iron Age and continued more or less continuously into the Late Iron Age or early Romano-British period at least, with more sporadic activity thereafter.

Early to Middle Iron Age (*c.* 700–100 BC)

The main oval enclosure and associated settlement features were shown to date to the Early Iron Age, and to continue in use into the Middle Iron Age at least. There is a small quantity of pottery that pre-dates the construction of the enclosure, although this is limited and difficult to typify (see above). On the basis of pottery it is likely that the main period of activity is Early Iron Age, dating to the 6th–4th centuries BC.

For most of its length the enclosure boundary was defined by a bank with a single external ditch. Geophysical survey and the distribution of features in

Figure 24 Aerial photograph of cropmarks at Scotland Lodge. © Crown Copyright, NMR 15829/02

Trench 2 suggest a trackway and other features north of the boundary ditch on the northern side, while a series of four ditches to the south-west in Trenches 3 and 4 seem to represent the enclosure boundary, a droveway and other trackways or stock control systems. Only two of these ditches were tested by excavation.

The oval enclosure ditch

The main ditch of the oval enclosure was encountered in Trenches 2, 3, and 5. In each instance, the ditch was 'V'-shaped with a fill sequence of varying complexity indicating a slow process of gradual infilling (Fig. 25). Each excavated section had one or two main fills apparently derived from material eroded from an internal bank, ditch sides and ground surfaces, with other fills representing individual, localised, short-lived episodes of erosion or deposition. The gradual nature of these processes is indicated by the presence in Trench 2 of stabilisation horizons within the fill. Ceramics from the lower ditch fills indicate an Early Iron Age date for the construction of the main enclosure.

Figure 25 shows the ditch fills and profile in Trench 2, where the ditch (275) was deepest and the fill sequence most complex. Depth varied from 1.7 m in Trench 2 to 1.1 m in Trench 3.

In Trench 5 the partially-silted ditch appeared to have been recut, with pottery recovered from the uppermost fill of this feature including a rolled-out rim dating to the Middle Iron Age. The recut was shallow (0.8 m), with a broad 'U'-shaped profile, and is most

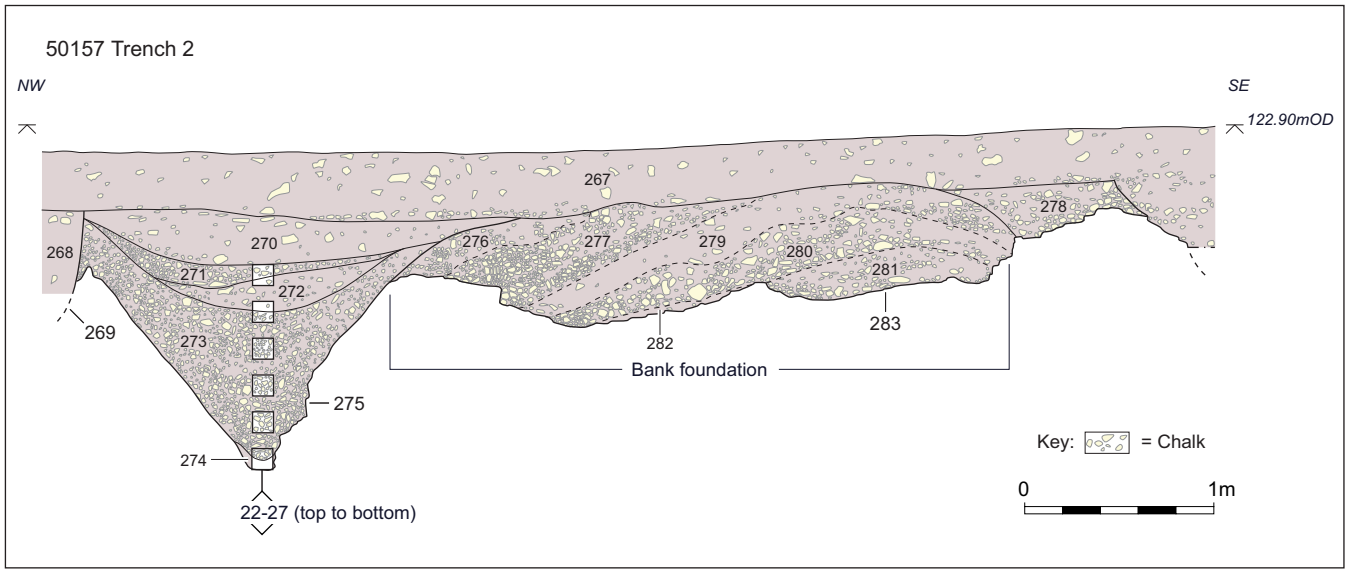

Figure 25 Scotland Lodge: oval enclosure ditch section

likely to have been a stock-control feature, perhaps intended to maintain the segregation between the oval enclosure and the rectilinear enclosures to the east.

Samples taken for molluscan analysis from the fill sequences in Trenches 2 and 5 were dominated by open country species, although shade-loving species were also present in Trench 2, particularly in the lower fills, probably representing patches of long grass around the ditch rather than woodland. The presence of introduced Helicellids in the upper fill of the enclosure ditch indicates a date in the Romano-British period at the earliest for the final silting of the ditch in some trenches.

The internal bank

The mounded remains of the foundation to a bank were identified on the inner edge of the enclosure ditch in Trench 2 (Fig. 25), filling a hollow (283) which may have been a quarry belonging to an earlier, unenclosed, period of activity. The bank material, comprising layers of chalk rubble and clay loam, was mounded up immediately to the south of the ditch and lay directly on the exposed chalk. Archaeological material recovered from within the bank came from basal fill 281 and soil layer 279. The former contained single sherds of flint-tempered and red-finished pottery; the latter animal bone, a flint scraper, and more flint-tempered and sandy pottery, confirming an Early Iron Age date. The survival of the bank was very localised: it was not visible in the east-facing section of Trench 2 or in other trenches, where its existence was only suggested by fill patterns. Combined with the substantial nature of the ditch, the presence of the bank may point to the initial creation of this enclosure as a defensive feature. Fill patterns in the recut in Trench 5 suggest that this later ditch cut also had an internal bank, although given the dimensions of the recut this must have been a much smaller structure.

Rectilinear enclosures

Outside the main oval enclosure, a rectilinear arrangement of ditches defined a further pair of enclosures. In Trench 4 (Figs 23 and 28), ditch 408 was one of a series of four ditches at the south-western corner of the oval enclosure. This ditch was steep-sided and flat-bottomed, and contained a sequence of three fills. Sandy pottery recovered from each confirms an Early/Middle Iron Age date for the creation and silting of this ditch, which was later re-cut to form one side of a droveway (see below). The plan of the ditches in this area is somewhat more complex than elsewhere on the site: the standard line of the oval enclosure is continued by the (unexcavated) innermost ditch, doubled for a short length on the south-west by the middle ditch (also unexcavated). The third ditch (408) runs parallel to the inner two but, rather than turning eastwards with them, continues in a broadly southwards direction to form the westernmost side of a rectilinear enclosure.

Internal features

The main and rectilinear enclosures contained scatters of features of various sorts. Those tested by excavation included pits, structural elements (post and stake-holes; drip gullies), and industrial features.

Quarries and hollows

In Trenches 2 and 3 there was evidence for quarrying inside the enclosure which, in Trench 3, had clearly taken place prior to the creation of the bank and ditch (Fig. 26). A large, shallow, flat-bottomed hollow had completely silted up before being partially cut away by the digging of the enclosure ditch. The fills of this quarry contained animal bone but no intrinsically datable material.

Two other intercutting linear quarry hollows (324 and 325) lay within the enclosure in Trench 3. The earlier of the two features (325) was a steep-sided flat-bottomed hollow 3.5 m wide and 0.7 m deep, which almost completely obliterated an earlier ditch (326). Quarry 325 may have been dug to create a working hollow or to extract chalk, and was subsequently allowed to silt up naturally, although there is some evidence for episodes of dumping within the five deposits recorded in the feature. Animal bone, burnt flint, and

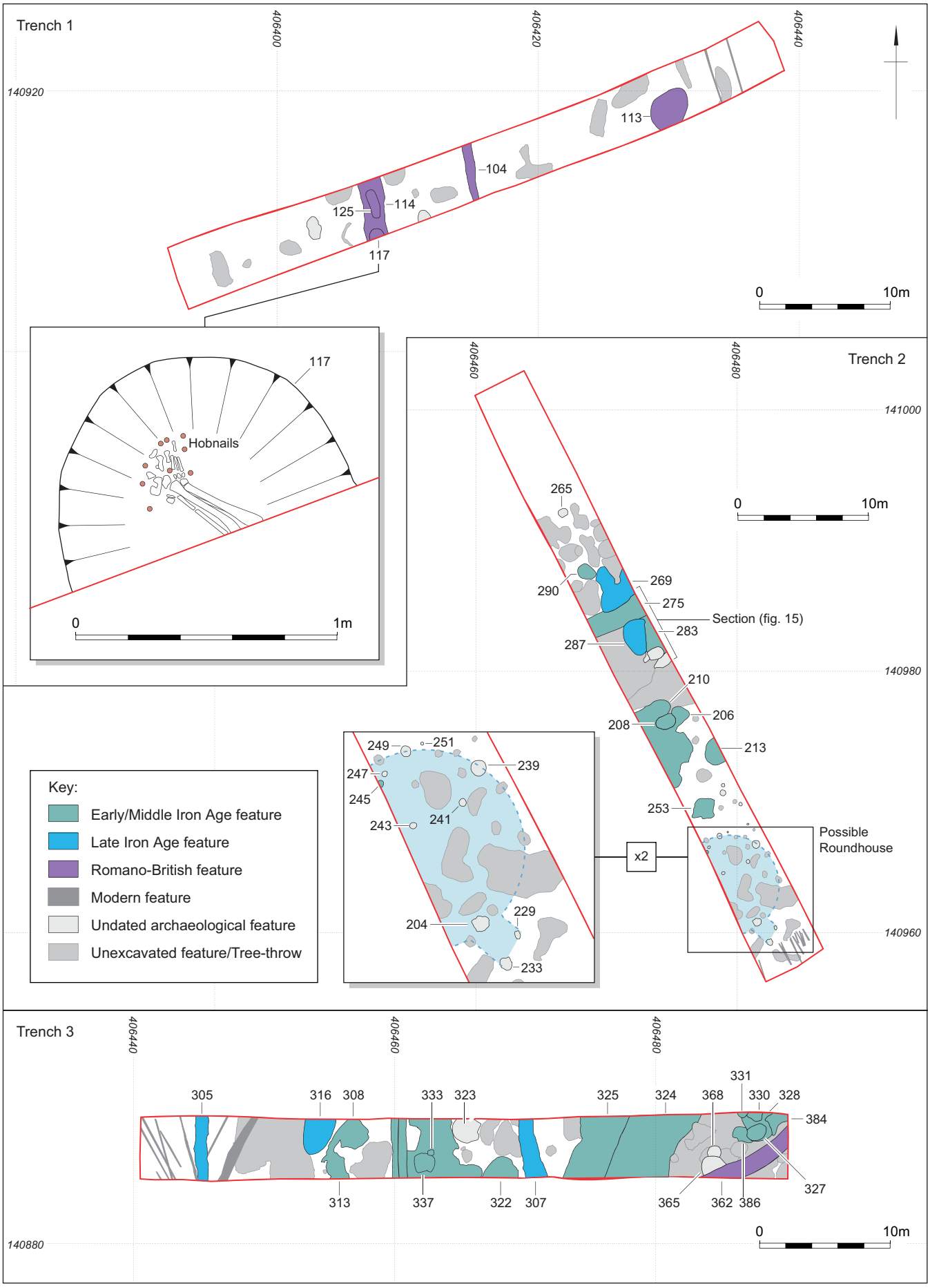

Figure 26 Scotland Lodge: Trenches 1–3

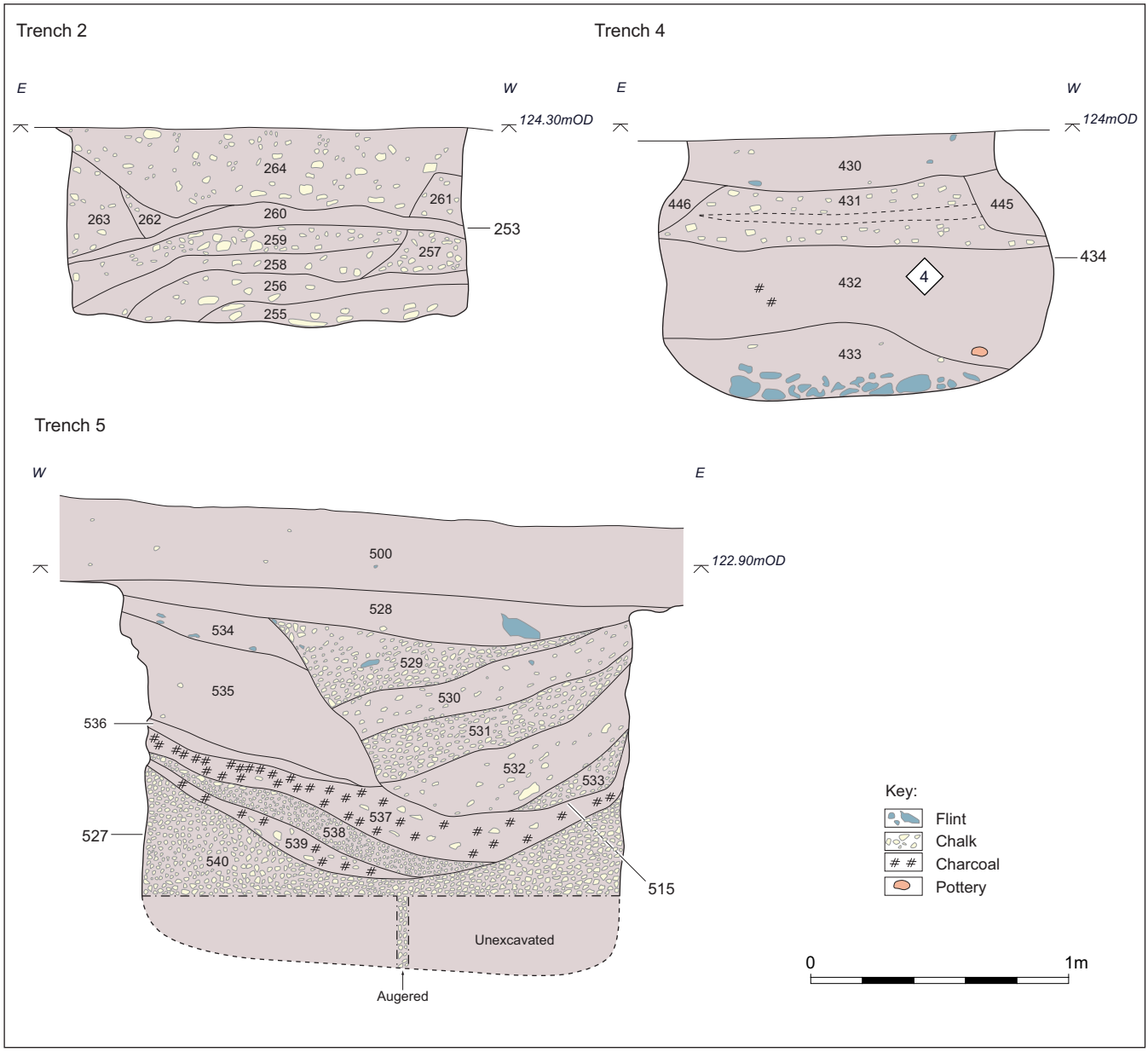

Figure 27 Scotland Lodge: pit sections

Early Iron Age sandy pottery were recovered from the primary fill, while at the top of the sequence animal bone and sherds of Early/Middle Iron Age pottery were present.

Once completely filled, 325 was cut by the western edge of a second quarry hollow of similar form (324), slightly larger at 5 m wide and 0.75 m deep. As with 325, its fill sequence indicates a general slow silting interspersed with occasional dumping of material. Pottery from the two fills (including a sherd from a red-finished burnished bowl and an Oolite-tempered sherd from the lower fill and shell-tempered sherds in the upper) suggests a broad Early/Middle Iron Age date for the use and abandonment of this feature.

The function of the two hollows is not certain. Both are apparently linear, steep-sided and flat-bottomed. Although both have irregular profiles, these seem likely to derive from single instances of quarrying, rather than from a series of pitting episodes. Any interpretation of these features must be regarded as tentative, although similar hollows are common on Iron Age sites.

Structural post-holes

At the south-eastern end of Trench 2 a group of post-holes appeared to represent the settings for a round-house approximately 7.8 m in diameter, with a possible four-post porch structure on the south-east side (Fig. 26). A further four post-holes were situated within the area of the putative structure and may have been associated with it. In total 13 features were confirmed as shallow post-holes, although there was some variation both in form and depth, even within those forming the suggested round-house. Post-hole 245 (inside the round-house) contained two small sherds of Early/Middle Iron Age pottery, although given the occurrence of similarly sized sherds as redeposited material elsewhere on the site, the post-hole cannot be dated closely by the presence of these two sherds; that said, the structure seems likely to date to the Iron Age.

Ditches and gullies

In Trench 3 ditch 326 survived as a very vestigial feature

largely cut away by later quarrying. Although two fills were recorded both were heavily truncated, and neither contained any finds. A second small ditch (358; 0.85 m wide and 0.40 m deep) containing sherds from four sandy Early Iron Age vessels (one burnished) cut the fills of quarry hollow 324.

In Trench 5, 576 was thought to be the terminus of a gully continuing beyond the limits of the excavation to the south. Gully 504 was a steep-sided flat-bottomed feature, describing a portion of an arc which could represent a round-house drip gully. The gully was approximately 9 m in diameter, suggesting a structure of a similar size to that in Trench 2. Both features in Trench 5 contained pottery of Early/Middle Iron Age date.

In Trench 6 the penannular drip gully of another round-house (603/605/607/622/624) was dated by flint-tempered and sandy pottery to the Early/Middle Iron Age. Two undated post-holes (619 and 621) lay within the area defined by the gully and may be related to this structure. The absence of the gully against the eastern edge of the trench suggests that the entrance to the building probably lay to the south-east.

Pits

The most frequently encountered features within the enclosures were pits. Some appear to have functioned as storage pits, others used or re-used for the disposal of refuse, while others were put to less readily identifiable uses. Refuse disposal pits are typified by the pair located to the north of the round-house in Trench 2 (Fig. 26), in which a pattern of deliberate dumping of material interspersed with periods of more gradual silting was seen. The southernmost (253) was 0.78 m deep with vertical sides and a flat base 1.60 m in diameter (Fig. 27). The pit contained ten fills, most of which appear to represent episodes of dumping or deliberate backfill, including three dumps of chalky material which may have acted as sealing deposits. The lowest fill contained pig bones and two sherds of sandy pottery (one from a burnished vessel); successive layers alternated between deposits containing domestic waste (a cow mandible; sandy pottery including a sherd from a burnished red-finished bowl and unidentified animal bone; a quern fragment and three sherds from a red-finished sandy bowl; sandy and shell-tempered pottery, one sandy sherd with scored decoration) and collapses of the pit sides. The pottery indicates an Early Iron Age date for the inception and use of the pit, with the final fill at least dating to the Middle Iron Age.

North of the round-house and rubbish pits in Trench 2 lay a series of intercutting pits containing large quantities of burnt flint in their upper fills. Three were excavated (206, 208, and 210), all relatively shallow with a maximum depth of 0.3 m. Pits 206 and 208 contained animal bone and pottery (Early or Middle Iron Age sandy sherds from 208; apparently redeposited sherds from two grog-tempered vessels of probable Late Iron Age date from 206). Layer 212, which sealed all three pits, contained flint-tempered, sandy, and shell-tempered sherds of Early and Middle Iron Age date and much burnt flint. The function and precise date of these pits is unclear: they appear to be unrelated to the spread of material sealing them, which may represent burnt domestic waste.

Similar sequences of intercutting pits were encountered in

Plate 3 Pits 527 and 515

Trenches 3 and 6. In Trench 3 a complex of nine lay east of intercutting quarry hollows 324 and 325. In this sequence, the second earliest (327) may have functioned as a storage pit, subsequently re-used for other purposes, with its lowest fill (370) containing a partial dog burial and Early Iron Age pottery. In Trench 6 a series of pits cut into the drip gully of the possible structure. Pit 630, excavated in order to characterise and date the complex, was clearly open for a considerable period of time, as the sides and base were heavily weathered, and the fills showed evidence for collapses of the sides of the feature. The remaining fills represent slow silting episodes interspersed with deliberate dumps, including large amounts of fired clay and daub (over 2 kg, many pieces with wattle impressions), burnt flint, and (from the upper half of the fill sequence) small quantities of oolitic and sandy Early to Middle Iron Age pottery, including sherds from a burnished bowl.

Storage pits are more difficult to identify, since they were commonly reused for rubbish disposal. Large storage pit 527 (Pl. 3) for instance was 1.53 m deep (basal 0.33 m augered only; Fig. 27). The pit appeared to have been partially backfilled with dumps of chalk rubble interspersed with layers of burnt material, before being allowed to silt up naturally. The thicker of these burnt deposits was sampled for charred plant remains and produced high levels of charred grain, chaff, and weed seeds. A sample taken from the first of the natural silting episodes also produced similarly high quantities of charred grain and weed seeds, and the differences in species make-up between the two samples (one dominated by smaller-seeded weeds including quite high proportions of smaller-seeded species, such as scentless mayweed, stitchwort, poppy, parsley-piert, red-bartsia, common cornsalad, annual meadow grass, and/or cat's-tail; the other by more normal large-seeded weeds) suggests hearth or midden waste from two different processing events. Large sherds from an Early Iron Age jar with external wiping were spread throughout the lower half of the feature as were portions of a very coarsely flint-tempered jar. The condition of this material suggests the primary discard of domestic refuse.

Most of the analysed Iron Age charred plant remains came from similar probable storage pits. Although individual samples differed in their details, in general assemblages were dominated by spelt wheat, with some barley. Glume bases were far more numerous than grains in every case. Most weed seeds came from larger-seeded species, such as buttercup, cleavers, fumitory, narrow-fruited cornsalad, field madder, oats, brome grass, and corn gromwell. Most of these species are associated with drier soils.

Other probable storage pits were reused for less obviously prosaic acts of deposition. In Trench 3 (Fig. 26) the fills of the early quarry hollow were cut by pit 337, one of a number of intercutting features in this area. Pit 337 may have been dug as a storage pit, and contained three very chalky fills apparently derived from gradual erosion of the sides, suggesting that the feature remained open for some time. No datable material was recovered, but the upper fill was cut by a shallow oval feature (333) which contained a single fill – a deliberate dump of material which included portions of the rim and neck of a red-finished Early Iron Age bowl and the skull and mandibles of a large dog.

In Trench 5 a substantial steep-sided flat-bottomed pit (514) cut the potential drip gully (504). A cow skull had been placed inverted on the base of the pit, along with three sherds from a shell-tempered vessel with a slightly everted rim of Early to Middle Iron Age date. The pit was then backfilled with a sequence of seven ashy deposits, the uppermost of which contained a substantial quantity (14.3 kg) of fired clay and calcareous and burnished sandy pottery, indicating a Middle Iron Age date for the final filling. The fired clay appears to be structural in origin, and may derive from a hearth, pit lining, or a building. A sample taken from the basal fill (526) was relatively rich in grain and charred weed seeds (corn gromwell was particularly common in this deposit).

Dog burials

Dog burials appeared to be concentrated on Trench 3, where there were four. One occurred at the base of pit 327. Only the articulated front legs (one showing a severe joint infection), two vertebrae, and half a mandible were present. This is almost certainly a deliberately placed deposit at the bottom of what had been a grain storage pit.

A second dog burial was encountered in 357, a shallow, steep-sided scoop cut into the fills of quarry hollow 325. The small dog was substantially complete although part of the vertebral column was missing. Cut marks noted on the distal tibia of the skeleton suggest that the dog may have been skinned prior to burial. It is uncertain whether this represents a deliberately placed deposit or the disposal of waste, although a large number of flint nodules recovered from the feature and possibly representing the remains of a small cairn seem to indicate the former.

Shallow oval feature 333 cut pit 337. Its single fill contained a deliberate dump of material which included the skull and mandible of a large dog, likely to be a third placed deposit. The use of dog skulls and remains in placed deposits on Iron Age sites is well documented, at for instance Danebury, where eight complete or partial skeletons and eleven skulls came from special deposits (Grant 1984, 525).

A further dog burial was partially recovered from the subsoil layer 301, which sealed quarry hollows 324 and 325. This was only visible in the trench section above the backfilled hollow 324; because of its location in the stratigraphic sequence, this dog burial is likely to be post-Roman in date.

External features

Geophysical survey indicated a dense and well-defined spread of possible features immediately outside the enclosure ditch in Trench 2 (Fig. 26). Excavation confirmed the presence of two of these (pit 290 and post-hole 265), and also the absence of features north of the limits of occupation suggested by the geophysical survey. These features may indicate an area of occupation north of the main boundary ditch at this point, possibly associated with a second ditch or trackway. Similar features (pit 308 and an associated curving gully (313) which cut it) lay just outside the enclosure ditch in Trench 3.

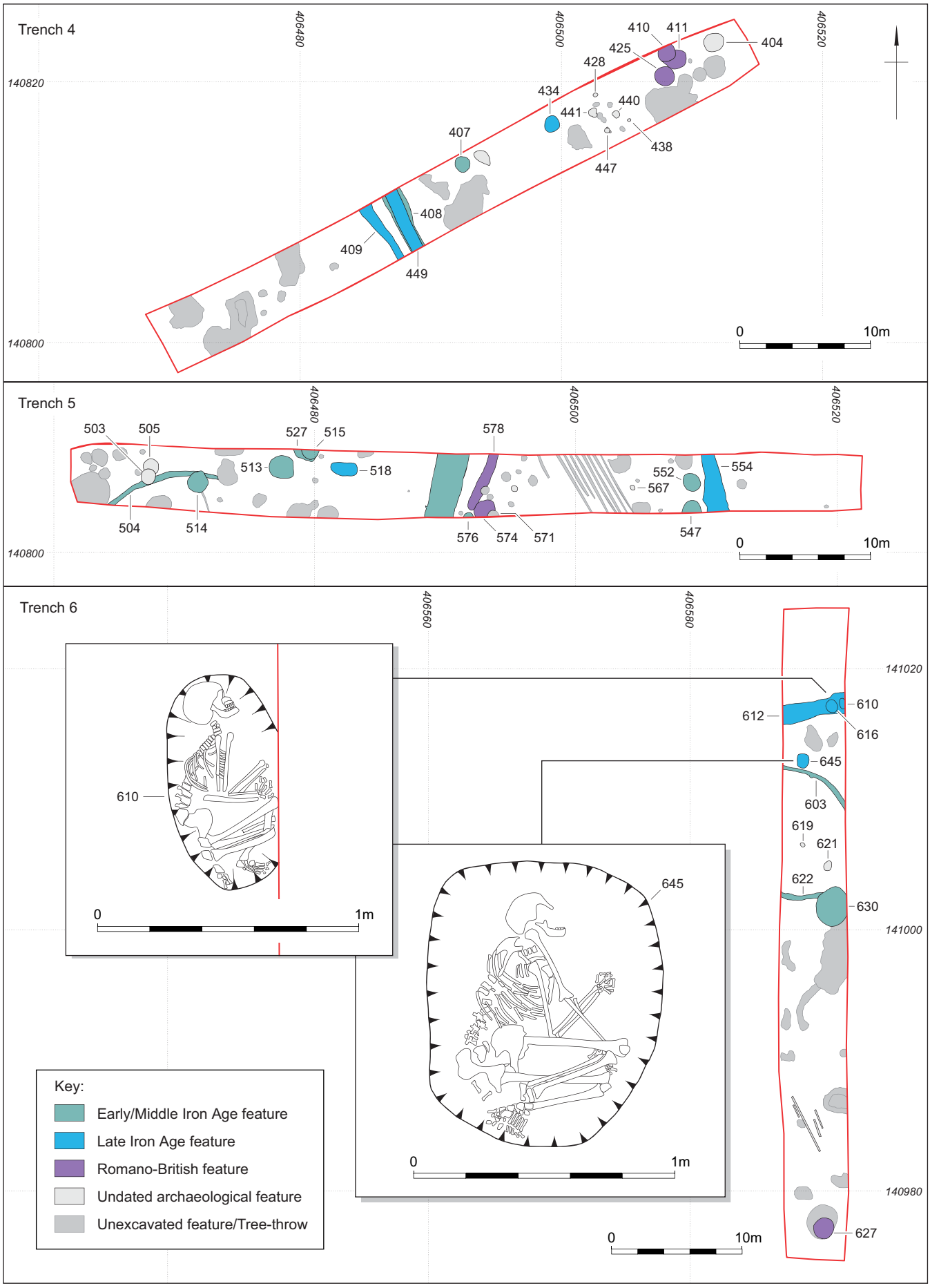

Figure 28 Scotland Lodge: Trenches 4–6

Early and Middle Iron Age material

Chronologically diagnostic material of this period was limited to pottery. The vast majority of the 411 sherds recovered from the trenches at Scotland Lodge is Early or Middle Iron Age, with less than 1% of the material dating to the Late Iron Age (although wares which were in production before and after the Roman conquest are not included in these numbers). Many of the fabrics identified are common to the Early and Middle Iron Age, and this has hindered precise chronological identification, especially since diagnostic forms are few, and sherd sizes for the most part small.

The Early Iron Age element is generally in good condition and probably represents largely primary refuse from settlement activities. A variety of fabric types are present, predominantly sandy, but including shell-tempered, oolitic, and other limestone, and flint-tempered wares. Recognisable vessel forms include coarseware jars and long-necked, fineware bowls, some of which have been red-finished. These forms are characteristic of the All Cannings Cross-Meon Hill ceramic tradition, which has a date range from the 6th to the 3rd centuries BC (Cunliffe 2005, fig. A:6). There are very few decorated sherds. A coarseware jar has a finger-impressed shoulder; a red-finished sherd (probably a bowl) has deeply incised crossing lines.

Only small quantities of ceramics were recovered from the main oval enclosure ditch, but some patterning was visible: flint-tempered fabrics were only present in the basal fill in Trenches 2 and 5 while shelly fabrics only occurred in the later fills in Trench 2. Few vessels were at all distinctive, although one red-finished sherd came from the basal fill in Trench 5; the equivalent fill in Trench 2 contained a sandy vessel with flat base, finger-tip impressions on the body and a square rim.

The pottery identified as Middle Iron Age constitutes a much smaller group. Only eleven contexts contained pottery that could be firmly dated to this period, which has been identified on the basis of fabric (mainly sandy wares) and vessel form (rounded vessels, one with a distinctive expanded rim).

A number of sherds can only be broadly dated, in the absence of diagnostic material, as Early/Middle Iron Age; fabrics are mainly sandy with one oolite-tempered sherd.

Late Iron Age (*c.* 100 BC–AD 43)

Activity of Late Iron Age date is even less well represented in and around the enclosures. Although there are no indications that the site was abandoned and re-established, it is likely that the nature of occupation changed, especially since the ditch of the main oval enclosure was allowed to fill, and pits were cut through it (in Trench 2).

The south-western sector of the oval enclosure appears to have been elaborated, as the addition of a

Plate 4 Grave 610

steep sided, flat-bottomed ditch (305) in Trench 3 seems to have formed the western boundary of a track or droveway. It contained a single slowly formed deposit, from which came animal bone and two small sherds of Early/Middle Iron Age pottery which are likely to be redeposited since other evidence indicates a Late Iron Age date.

The eastern side of this track was probably formed by feature 316, lying 7 m to the east. Feature 316 appears to have been the terminus of a ditch, suggesting an entrance into the enclosure at this point. It appears to have silted naturally over a long period of time, and pottery from the upper two of the three fills (including forms resembling proto-bead rims) suggests a Middle–Late Iron Age date for the feature.

Ditch 305 is almost certainly the same feature as that excavated in Trench 4 as 409. This was a small ditch aligned broadly north-west to south-east. The single fill contained Late Iron Age and redeposited Early/Middle Iron Age pottery. In Trench 4 the eastern side of the track was formed by ditch 449, a recut of Early/Middle Iron Age ditch 408. Ditch 449 had a shallower, 'U'-shaped profile with two fills, both containing pottery dated to the Late Iron Age and Early Romano-British periods. Clearly, this boundary was in use for a considerable time, and was recut in order to re-establish the line in late prehistory or the early Romano-British period.

In Trench 5, the ditch (554) defining the western side of the rectilinear enclosure was a steep-sided, roughly 'V'-shaped feature 0.6 m deep. The three fills accumulated gradually and fill patterns suggested the presence of a bank to the east of the ditch. A single sherd of oolitic Early Iron Age pottery was recovered from the upper fill, together with a hobnail of Roman date and a femur shaft from a human adult. As this deposit represents the final silting of the ditch, none of these finds need necessarily date the construction of the feature, although a Late Iron Age date seems more likely on the basis of better-dated parallels at other sites.

Trench 6 was located across the line of a rectilinear enclosure to the east of the oval enclosure. The northern enclosure ditch (612) showed two phases of gradual silting, but produced no dating evidence. By analogy with morphological changes at other better dated sites, this enclosure is likely to be Late Iron Age.

Two features were cut through the partially silted ditch of the eastern rectilinear enclosure, the first of which (610: Pl. 4) contained the flexed burial of a juvenile or subadult human, 11–14 years old, laid on its left side (Fig. 28). Some elements of this skeleton had a slight dark staining which may be indicative of the body having been wrapped or covered by some form of organic material, perhaps leather or skins, at the time of burial. Two small sherds of sandy pottery recovered from the grave fill dated to the Early/Middle Iron Age.

Plate 5 Grave 645

Plate 6 Pit 434

To the west of grave 610, the single fill of pit 616 contained a number of bones from an adult human hand. Clearly, the line of this enclosure ditch had been chosen for the interment of human remains, as was the (later) western rectilinear enclosure ditch (see below).

To the south of the enclosure ditch, a deep sub-ovoid pit (645: Pl. 5) contained the remains of a second human burial not lifted): an adult, also flexed on the left side (Fig. 28). A very small sherd of Early/Middle Iron Age pottery was recovered from the backfill of this grave, which also contained a large flint nodule, recovered from directly above the skull.

Several pits were identified in Trenches 4 and 6 which date to this period, suggesting that these enclosures were the foci for later activity. A bell-shaped pit (434: Pl. 6) with a flat base, probably initially used as a storage pit, lay within the rectilinear enclosure defined in part by 449 (Figs 27 and 28). Once it had gone out of use, a number of large flint nodules had been placed on the base of the pit, which was then partially backfilled with waste material, including a large portion of hearth lining, animal bone, burnt flint, and pottery dating to the Late Iron Age or early Romano-British periods. These dumps were sealed with two layers of rammed chalk, and the pit was then allowed to silt up gradually. Environmental samples taken from the dump layers contained large quantities of charred grain, together with some chaff and weed seeds, while a sample from the final silting layer produced notably less charred grain. Unlike earlier features, samples from this pit did not contain barley, and a single seed of spikerush is one of the few species indicators not associated with drier soils.

Late Iron Age pottery

The Late Iron Age is marked by a distinct change in ceramic tradition, with a decline in sandy fabrics and the appearance of grog-tempered fabrics of Savernake type, in distinctive vessel forms. This ceramic tradition is found across north Wiltshire and beyond from the 1st century BC to at least the 2nd century AD (Swan

Plate 7 Burial 117

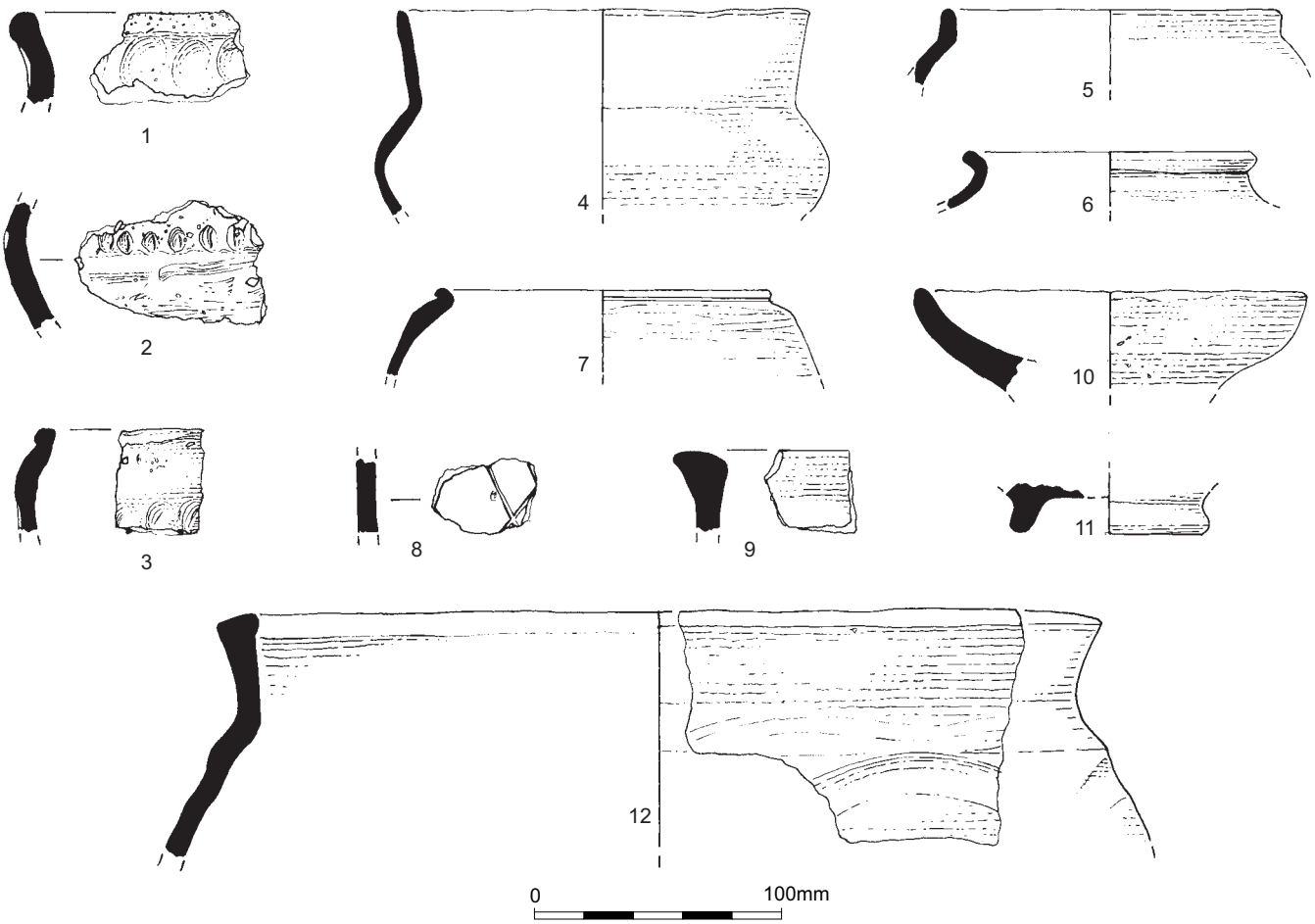

Figure 29 Scotland Lodge: pottery. 1–3) Late Bronze Age finger-impressed shouldered jars. 4, 8, 10) Iron Age bowls (4 and 8 red-finished); 5–7, 9, 12) Iron Age jars (12 with external wiping);11) Iron Age footring base

1975). Vessel forms present here include necked and bead rimmed jars, some with cordons.

Romano-British (AD 43–AD 410)

Although dating predominantly to the Early and Middle Iron Ages, the Scotland Lodge enclosures were remodelled and re-used into the Romano-British period. On the west side of the oval enclosure, geophysical survey and aerial photography identified a sub-square arrangement of ditches, surrounding a scatter of pits and other features (Fig. 23). Trench 1 provided a section across the internal features, boundary ditch, and the apparently empty area outside this rectilinear enclosure.

The excavation demonstrated that the enclosure was defined on its western side by a deep, U-profiled ditch (114/128) with an internal bank (surviving only as lower ditch fills 115/127). Both the lower and upper fills (116/126) indicated a slow filling sequence, with the lower fill demonstrating the collapse of an internal (eastern) bank and the upper fill suggesting a combination of natural and plough erosion. No dateable material was recovered from the fills; however, inhumation burials of late Roman date were found to have been dug through the fills of the silted ditch, providing a terminus ante quem for the enclosure's construction and use.

Burial 117 (Pl. 7) was made within a grave dug 1.09 m into the chalk, aligned south–north along the line of the ditch. The northern half of the burial was exposed and recorded, revealing the legs flexed to the east, with hobnails present around the feet. The skeleton lay within a layer of chalk rubble, sealed in turn by two layers of deliberate backfill containing animal bone, burnt flint and sherds of Romano-British pottery; a single redeposited sherd of Early Iron Age pottery was recovered from the upper fill of the grave.

Burial 125 was dug to a depth of 1.01 m. Only a single toe bone was observed, associated with a single hobnail, again sealed by a layer of rubble, here a mixture of chalk and flint nodules, and two deliberate backfills. The human bone in both graves was left *in situ*. The presence of the burials prevented the excavation of the full profile of the enclosure ditch.

The placing of Roman burials, probably of late Roman date on the basis of the burial rite and the presence of footwear, within ditches is well attested (eg, Esmonde Cleary 2000, 137–8).

Within the area defined by the enclosure ditch, a shallow north–south gully (104) ran on a parallel

alignment some 7 m to the east. This feature had a shallow 'U'-shaped profile and a single fill containing animal bone, Romano-British pottery and a hobnail.

Four further features were excavated, all interpreted as tree-throws. Of these, feature 113 contained two sherds of Romano-British pottery. Land snails recovered from this feature comprised a mixed assemblage of open country and shade-loving species, indicating small areas of open woodland around and within the enclosure, in areas of open grassland.

The largest concentration of Romano-British material came however from the eastern end of Trench 3, within the main oval enclosure. Here, a densely-packed area of inter-cutting features revealed a sequence ending with a 'V'-shaped ditch (362), containing large amounts of pottery in each of its two fills. The upper fill (363) contained 117 sherds diagnostic of middle and late Roman date. Redeposited sherds of Early/Middle Iron Age and early Roman pottery were also recovered. The lower fill (364) contained 72 sherds of pottery, predominantly dated to the Romano-British period and including a sherd of early Roman samian ware. Other finds from these layers included animal bone, burnt flint, fired clay, and two worked bone pins (both broken: one with incised decoration), perhaps clothes fasteners or hair pins (Cool 1990).

Within the rectilinear enclosure in Trench 5, ditch 578 terminated just to the north of Iron Age ditch 576. The single fill of 578 contained Romano-British pottery, demonstrating that the feature was unrelated to ditch 576 despite their physical proximity. Ditch 578 was partially truncated by a shallow, flat-bottomed pit (574) containing a group of nine sheep mandibles. Pottery from the two fills of this pit also suggested a Romano-British date, although redeposited sherds of Early and Middle Iron Age pottery were also recovered.

A rectilinear enclosure known from geophysical survey and probably forming another part of the system of enclosures and field systems was encountered 250 m to the west of the main enclosure complex in Area C during a watching brief on geotechnical investigations (WA 52246 test pit 139) and in subsequent evaluation trenching (WA 52524 trench 5: both on Fig. 22). Other smaller assemblages of Romano-British pottery and other material encountered during fieldwalking may indicate other settlement activity in the vicinity

Romano-British material

Much of the grog-tempered pottery occurred with more 'Romanised' wares. This part of the assemblage is dominated by coarse greywares, almost certainly from more than one source; vessel forms are utilitarian bowls and dishes, of which few are closely datable although drop-flanged bowls (mid-3rd/4th century AD) were recognised. There is also a handful of sherds of Black Burnished ware from the Poole Harbour area of Dorset. Finewares are represented by five sherds of samian.

Trench 3 produced two unstratified Late Roman bronze coins – one a Barbarous Radiate (AD 270–290) and the second a Gloria Romanorum (AD 364–378).

Later and undated features

In addition to those features mentioned above, which are arguably assignable to one of the chronological phases on the basis of morphology or (less certainly) location, a number of other features were encountered for which no date can be proposed. Many of these were tree-throws, which occurred in fairly large numbers across the excavated areas. These are not discussed further.

In Trench 3 the sequence of hollows and ditches was sealed by layer 345 which contained a substantial amount of burnt flint (over 26 kg, the most from a single layer on the site). A negative lynchet truncated Iron Age and Romano-British remains and is assumed to be medieval or early post-medieval. In Trench 4 a small group of post-holes was identified towards the eastern end of the trench, of which five (428, 438, 440, 441/443, 447) were excavated. None of these contained any dated material, and all were relatively shallow and ephemeral. No pattern is evident in the distribution of these post-holes, although they lie within a relatively well-defined area. The possibility that these represent part of a structure should not be discounted. In Trench 5 Romano-British pit 574 was cut by post-hole 571, which produced redeposited sherds of Early/Middle Iron Age pottery from its two fills. Nearby post-hole 565 was undated. These post-holes are among ten potentially similar features identified in this area; these do not appear to form a coherent structural pattern, however. A further single undated post-hole (567) lay further to the east.

Environment and economy

The charcoal assemblages are interpreted as the remains of small-scale Iron Age domestic fires. Selection of oak (*Quercus* sp.) was ubiquitous but small quantities of hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), cherry type (eg, blackthorn or wild cherry), hazel (*Corylus avellana*), and alder (*Alnus glutinosa*) was also used. The types selected are deciduous types, with the exception of holly, and all are relatively common woody taxa of open woodland, hedgerow and scrub. The presence of alder wood charcoal in pit 526 indicates local availability and exploitation of wetter areas such as fen or floodplain edge during the Iron Age. The types represented show some similarity to those found in Late Iron Age contexts at Maiden Castle, Dorset, as reported by Salisbury and Jane (1940) and Gale (1991) where oak (but also ash) were dominant in the landscape prior to hillfort construction, with hawthorn, cherry type, and hazel also collected from open woodland and on woodland margins.

The agrarian economy in the Iron Age was dominated by the production of spelt wheat. This is common in the general area at the time, and is known from Battlesbury (Clapham and Stevens 2008), Fyfield Bavant (Biffen 1924; Helbaek 1952), Gussage All Saints (Evans and Jones 1979), Coombe Down South (Stevens 2006), and also further afield, for instance to the south-east in Hampshire (Campbell 2000; Jones 1984).

As at most of these sites, weed seeds from the assemblages were dominated by larger-seeded species. This is reflective of the storage of crops after threshing, winnowing, and fine and coarse sieving, most probably conducted immediately after harvesting in summer, since larger seeds are often only removed by hand in the very final stages of processing, by virtue of being a similar size as the grain (Hillman 1981; 1984; Stevens 2003). Some seeds – such as large-seeded grasses – may be tolerated, while others may have been considered more detrimental to the taste and general consistency of resulting food products. Corn gromwell (*Lithospermum arvense*) is particularly undesirable in that the seed coat is extremely hard. Seeds of this species are common upon many of the sites listed above, and were found in high numbers in individual samples at both Battlesbury (Clapham and Stevens 2008) and Coombe Down South (Stevens 2006).

The smaller-seeded varieties present in pit 527 have already been noted. The presence of high numbers of seeds of scentless mayweed (*Tripleurospermum inodorum*) in this feature may relate to grain-sized seed-heads or a dominance of this species in the field. However, given the reasonable number of other smaller-seeded species present, as well as culm nodes, it might imply that the sample relates to a crop that was less well processed prior to being stored. As such the differently-sized seeds in the two samples from this feature imply that the two deposits comprise hearth or midden waste from two different processing events and quite possibly from two different stores. It might be expected that the processing of grain from each stored crop would generally produce similar types of assemblage and also that only one store might be in use at any one time. As such it might imply that the deposition of these fills is separated by months or perhaps even years.

The range of species across the site is generally that which might be expected, with many species being characteristic of drier, calcareous, lighter soils. Given that only one sample of Late Iron Age/Romano-British date was examined it is questionable how much should be read into the differences between this and the earlier samples in terms of changes in crop husbandry. However, it might be noted that the only seed of a wetland species identified (spikerush (*Eleocharis palustris*)) came from the sample of this date. This species is rare upon many comparable sites in this region but is common in the Thames Valley where it is associated with fields on marginal, occasionally flooded land (cf. Jones 1988a; 1988b). This might imply that only within this later period did fields at Scotland Lodge extend into the Till valley.

It is probable that most fields were cultivated by ard at this time. Regarding the time of sowing it might be noted that the samples contain a high number of seeds of possible cleavers (*Galium aparine*), a species often associated with autumn sowing (Jones 1981; Reynolds 1981). Seeds of cleavers are quite difficult to identify to species and while most archaeobotanical finds are usually thought to be of common cleavers (*Galium aparine*), it might be noted that the now rare, similarly sized corn cleavers (*G. tricornutum*) was once a common weed of the chalklands in this country only becoming diminished by modern seed-cleaning techniques (Salisbury 1961, 31–40). The latter species is a short-seed bank species whose survival in crops depended on being harvested and subsequently sown, probably by the broadcast method, with the crop. In common with many such species it is likely it would have been present in both autumn and spring sown crops.

Hillman (1981; 1984) outlines how the method of harvesting may be discerned from the species present within archaeobotanical samples. The presence of free-standing species, such as corn gromwell, indicates harvesting by sickle and along with slightly lower growing species such as clover (*Trifolium* sp.) and field madder (*Sherardia arvensis*) implies the cutting of the crop relatively low down on the culm between 0.5 m and 0.3 m. The presence of occasional tubers of false oat-grass (*Arrhenatherum elatius* var. *bulbosum*) has been taken to indicate harvesting by uprooting (cf. Campbell 2000; Clapham and Stevens 2008). However, given the presence of free-standing weeds it is more probable that such tubers were just uprooted during harvesting by sickle.

A similar pattern of an open landscape with areas of both arable and pasture has been seen elsewhere in the locality. The molluscan studies at the Iron Age hillfort of Vespasian's Camp have indicated a changing landscape of open rough pasture to short trampled grassland to tillage to tillage or short grazed grassland (Allen 1999). The colluvium studied in the dry valley at Figheldean also showed periods of varying land-use, namely grassland, followed by arable followed by arable and grassland (Allen and Wyles 1993). The mollusc assemblages analysed from a linear ditch at Earl's Down Farm also indicate periods of less intensive grazing and intermittent tillage (Allen and Wyles 2004b).

Discussion

The Scotland Lodge enclosure is typical of many Early–Middle Iron settlements on the chalklands of Wessex. In its size, shape, and length of occupation, the enclosure may be compared with well-known excavated enclosed settlements such as Little Woodbury, Wiltshire and Old Down Farm and Winnall Down, Hampshire (Cunliffe 1984, 18–30, fig. 2. 11–12; 2000, 167–70). Such sites appear to be representative of a much wider range of enclosures known through air photography and field survey (eg, McOmish 1989) and the proximity of enclosures to hillforts, in this case Yarnbury 3 km to the west, has been noted (Payne *et al.* 2006, 139–41).

The series of smaller, rectilinear, enclosures to the east of the main, oval, enclosure is poorly dated, containing either no finds or the occasional sherd of Early Iron Age pottery. However, the evidence from comparable, but fully excavated, sites including Old Down Farm and Gussage All Saints (Dorset), suggests that the rectilinear enclosures are most likely to be Late Iron Age in date. As such they would represent a change from a single, large, enclosed settlement that was

circular in shape to a series of smaller rectilinear enclosures (Cunliffe 1984, 34, fig. 2.18).

As the work at Scotland Lodge was evaluation, only a relatively small amount of information about the activities that were undertaken within it are available. It may be said, though, that the evidence for farming, the material culture, and also the evidence for burials of both people and animals are characteristic of settlements in Wessex, even if the interpretation of the burials still remains a matter of debate (eg, Wilson 1981; Wait 1985; Cunliffe 1992; Hill 1995; Fitzpatrick 1997; Craig *et al.* 2005).

In general, the trial trenches produced a coherent picture of activity beginning in the Late Bronze or Early Iron Age and continuing with varying intensity into the late Romano-British period.

Small quantities of later post-Deverel-Rimbury pottery hint at activity pre-dating the establishment of the enclosure. The foundation of settlement cannot be closely dated, but is most likely to lie after 700 BC. The pottery suggests that the enclosure was mainly in use in the 6th–3rd centuries BC, with less activity later, although continuing into the 1st century AD.

The balance of evidence suggests a relatively large enclosed settlement, concerned with crop production and livestock management. Pits (many originally perhaps dug for grain storage) and their contents indicate a concern with the kinds of special deposits, well-known from other Early Iron Age settlement sites: deposits of charred grain, placed animal skulls and carcasses, querns; other, smaller pit features tend to contain less notable (or no) material.

At some point in the Middle Iron Age, settlement pattern and activity altered. The ditches of the main ovate enclosures at least portions of the rectilinear enclosures were allowed to silt (in some locations replaced by far less substantial boundaries), and the majority of attested activity shifted to the smaller southern and eastern rectilinear enclosures. Some of the former boundary ditches became foci for human burials.

The density of later Iron Age features and material is not sufficient to allow a convincing reconstruction of economy, settlement density or longevity. However, by the Romano-British period, further enclosure was underway, and activity continued within the earlier enclosures, although by this time the boundary ditches must have survived as very reduced features. Late Roman burials in the ditch of the western enclosure demonstrate activity in this period, but there is no suggestion of continuation of settlement after that date. The area had almost certainly been given over to agriculture by the medieval period.

The archaeological and environmental evidence for Iron Age activity in an around the enclosures at Scotland Lodge indicate an agricultural settlement that fits very well within the patterns of evidence known from the aerial photographic and geophysical evidence for field systems and small enclosures which cover the ridge between the hillfort at Yarnbury Castle some 3 km to the west. Yarnbury and the Scotland Lodge enclosure would have been clearly intervisible, and are physically linked by the extensive field systems and trackways covering much of Berwick and Parsonage Downs. A scatter of features encountered along the ridge west of the enclosure indicate that structural and other activities were not limited to the area of the Scotland Lodge enclosed settlement. The various pits, post-holes, and linear features encountered west of the enclosure do not amount to a coherent picture, but do suggest activity taking place within a series of small land parcels or plots.

Given the relative paucity of investigated Iron Age evidence in the immediate vicinity it is difficult to say how typical was the role of the settlement at Scotland Lodge within any local system, but the clear relationship between the hillfort, field system, and smaller and larger enclosures points to an extensive system of some longevity. Given the frequency of such field systems around the boundaries of the WHS and on Salisbury Plain (Fulford *et al.* 2006), the near absence of evidence for contemporary activity in the immediate Stonehenge environs becomes even more notable.

The continued inhabitation of the Scotland Lodge settlement into the Romano-British period can be paralleled at the similar sites at Figheldean and Woodbury, and field systems are discernable on (for instance) Oatlands Hill, where they run in a broadly north–south alignment towards the old linear boundary that crosses the A303 at Longbarrow Crossroads. The indications are again of relatively small-scale agricultural settlements operating within a well-established rural landscape.

Bearing in mind the scale of the earthworks envisaged for the Scotland Lodge enclosure, it is surprising that no trace of it remains on the surface. Moreover, no hint of its presence could be gleaned from known documentary sources or place-name evidence. The mechanism by which all traces of the enclosure disappeared has not yet been understood, but the site is a salutary reminder of the vulnerability of even the most substantial prehistoric sites.

Chapter 5
Geoarchaeological and Environmental Evidence

David Norcott, Michael J. Allen, and Chris J. Stevens

with contributions from Michael Grant, Richard I. Macphail and John Crowther,

and Sylvia Peglar

As well as the sequences obtained during investigations of dated sites and reported on in earlier chapters of this volume, the A303 Stonehenge Improvement also provided a series of purely geoarchaeological and environmental investigations (Fig. 30). Soil and sediment surveys were undertaken through boreholes and 121 archaeological test pits excavated in advance of geotechnical site investigation works along the Preferred Route (NGR 405100 140640 to 415400 142200), and within these some longer colluvial sequences were discovered.

Although buried soils have been discovered beneath some of the major earthworks in the region (see Evans 1971; 1984; Evans and Jones 1979), much of the landscape investigated as part of this scheme was plough damaged and the potential for such soils to survive within the scope of these works was remote.

Environmental Background and Potential

The environmental archaeology of the area has been summarised most recently by Allen (1997; Cleal and Allen 1995). It is important to recognise that our knowledge of the prehistoric landscape of the Stonehenge area is constrained by the limited range of depositional environments which have been available for study. The predominantly calcareous nature of the geology means that bone and molluscs are generally well preserved. However, as deposits on the chalk are generally free-draining and well aerated (or at best only intermittently waterlogged), deposits favouring the preservation of pollen are scarce (Scaife in Cleal and Allen 1994; Waton 1983). For the same reason waterlogged deposits containing plant and insect remains are very rare. Notable exceptions to this rule in the Stonehenge landscape include the Wilsford Shaft (Ashbee *et al.* 1989) and the waterlogged peat and alluvial sequences at Durrington Walls (Cleal *et al.* 2004).

Colluvium and Buried Soils

Previous investigations in the area have indicated that colluvial deposits are generally less extensive within the Stonehenge landscape than elsewhere on the chalk (Richards 1990), where prehistoric clearance and agriculture has led to widespread and often metres-thick deposits of hillwash at the base of slopes, particularly within dry valleys. These deposits have the potential both to seal archaeological remains and prehistoric land surfaces, and to provide an indication of changing environment and land-use through time. Despite research campaigns specifically designed to locate and study colluvial sequences and deeper soil profiles in the Stonehenge landscape (Richards 1990, 210–11; Allen 1994, 268–71), few have hitherto been located. Explanations posited for this apparent lack of colluviation have included the gently sloping terrains, perhaps tied in with the nature, organisation, and

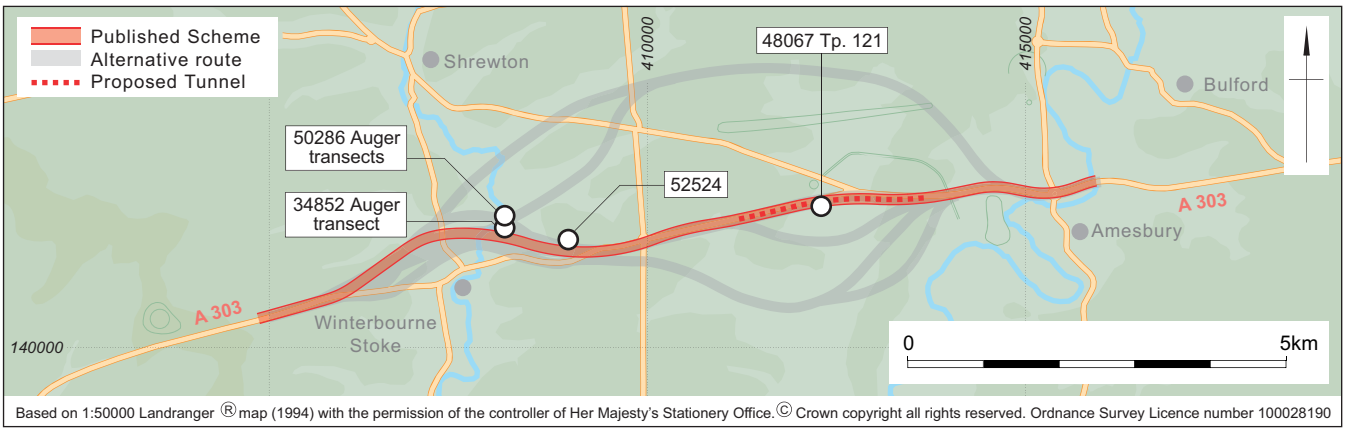

Figure 30 Location of surveys discussed in Chapter 5

distribution of various land uses in the prehistoric and historic periods. A perhaps less likely suggestion has been that higher water tables in the past, coupled with a wider extent of seasonal streams, may have led to the removal of colluvial material down the valley axes.

Alluvium

In contrast to many of the deeply-incised rivers of southern England that carve their way through the chalk forming deep sediment sequences of up to 6 m depth (cf. Scaife and Burrin 1983), many of the chalk river valleys of Salisbury Plain have relatively shallow veneers of Holocene alluvium in broad, flat valley floors (Barron 1976). Nevertheless, these shallow covers of alluvium may be extensive and have the potential to seal and bury archaeological evidence, as well as to perhaps contain deeper sequences containing valuable palaeo-environmental sequences.

South of Stonehenge (WA 48067) NGR 412250 141800

Amongst the many test pits and trenches investigated as part of the Scheme, one is particularly significant to this discussion. The test pit (No. 121) was excavated in Area T some 350 m south of Stonehenge, south of the modern A303, on a shallow south-facing slope of Upper Chalk (Figs 14 and 30). The test pit was excavated in the centre of a natural bowl or depression *c.* 30 m across and *c.* 1.5 m deep, itself a product of natural (most likely Late Devensian) processes, which had not been quarried or altered.

The test pit revealed a sequence *c.* 0.8 m deep which included a locally rare example of a buried argillic brown earth profile (12103), overlain by fine colluvium in which a later soil had formed. This in turn was sealed by a stony layer of colluvial gravel fan material (12102), which was again overlain by finer colluvial deposits (12101). A mixed assemblage of prehistoric worked flint was recovered from above and to some extent within the gravel fan layer.

The sequence was sampled by monolith and subjected to soil micro-morphological, geo-chemical and pollen analysis. The full results of these analyses can be found in Appendices 1 and 2. A detailed field description of the profile is given in Table T1_1 in the appendices, and a section drawing and photograph is in Figure 31.

Gravel Fan/Worked Flint

The colluvial gravel fan (12102) recorded in the hollow appears to have been exploited as a source of flint for tool manufacture. Although the flint assemblage recovered from the colluvium is chronologically mixed, suggesting some colluvial incorporation of flint material from upslope, a proportion of the assemblage is probably the result of one or more localised knapping episodes.

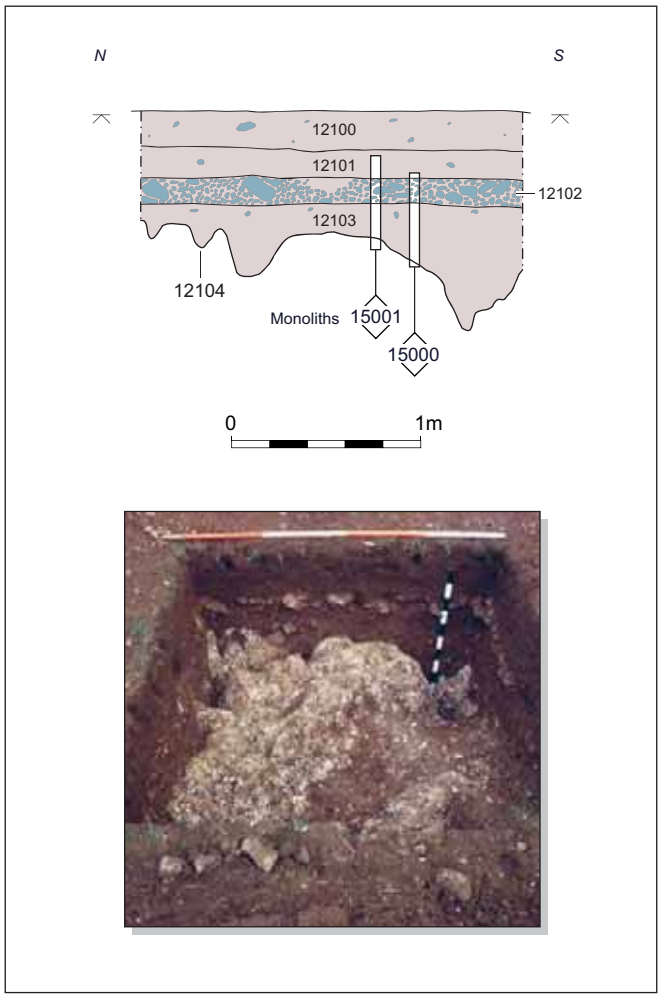

Figure 31 WA 48067

Argillic Brown Earth

The modern soils of the area are thin rendzinas over chalk, mapped as belonging to the Icknield soil association. In contrast, the palaeosol (12103) recorded in the lower sequence here is best described as a typical argillic brown earth (Charity 1 series) developed on flinty silty drift (Jarvis *et al.* 1984).

Argillic brown earths are created by the process of clay translocation under well-drained and stable forested conditions, in which clay particles are moved down profile (leaving an eluvial or Eb horizon which is clay-denuded) and redeposited (illuviated) in what is termed a textural B (an argillic or Bt) horizon (French *et al.* 2003).

It has been presumed that soils of this type were more prevalent on the chalk in prehistory, having been formed under the dense climax forest vegetation thought by some to have been ubiquitous in the early to mid-Holocene and having since largely been destroyed by prehistoric and modern clearance and farming (Allen

1997). The patchy and problematic pollen records from chalkland areas has made the extent and nature of woodland cover in prehistory very difficult to determine with accuracy (see above); however, this model of dense climax woodland has been increasingly challenged in recent years. Recent work in the Allen Valley in Cranborne Chase, on the South Downs and elsewhere has suggested that dense climax woodlands and their associated deep brown earth profiles were by no means as widespread as previously assumed on the southern English chalklands (French *et al.* 2003, 193–7; French *et al.* 2007; Allen and Scaife 2007).

The discovery of a relict argillic profile on the chalk of southern England is rare, and preservation has occurred here due to the low lying topographical situation and the accumulation of sediments within the hollow. The burial of the sequence by colluvial deposits has ensured that the soil sequence and flint assemblage has not been ploughed out, unlike most of the surrounding landscape (Richards 1990).

Despite research campaigns specifically designed to locate and study colluvial sequences and deeper soil profiles in the Stonehenge landscape (Bell in Richards 1990, 210–11; Allen 1994, 268–71), few have hitherto been located (Allen 1997). The presence of this relict argillic brown earth and colluvial profile in the Stonehenge landscape is, therefore, of some importance. It has been shown to contain localised remnants of the prehistoric soil cover, and demonstrates that such sequences exist within the Stonehenge landscape, with the potential to reconstruct prehistoric environment, landscape and land use.

Soil Micromorphology

By Richard I. Macphail and John Crowther (with David Norcott)

Remnants of two distinct soils were found to be present in the sequence, represented by layer 12103; a lower argillic horizon of possible early Holocene date and a later humic topsoil, formed in the fine colluvium that buries the earlier soil, and which may be the product of arable cultivation. The latter topsoil is undated but is thought may be of potential Neolithic or Bronze Age date, and certainly formed within the post-clearance landscape.

A potential early Holocene soil

The micro-morphological samples taken from the lowest buried soil (Monolith 15000; Fig. 31) showed this lower part of the sequence (lower 12103) to comprise a decalcified argillic brown earth formed in moderately flinty drift within a solution hollow within the chalk. At the microscopic scale it was apparent that this clay-rich lower horizon was strongly mixed with more recent silt loam material from higher up the profile, possibly by mechanism of tree-throw (Fig. 32). This mixing explains the relatively homogeneous pollen profile (described below), and hinders the identification

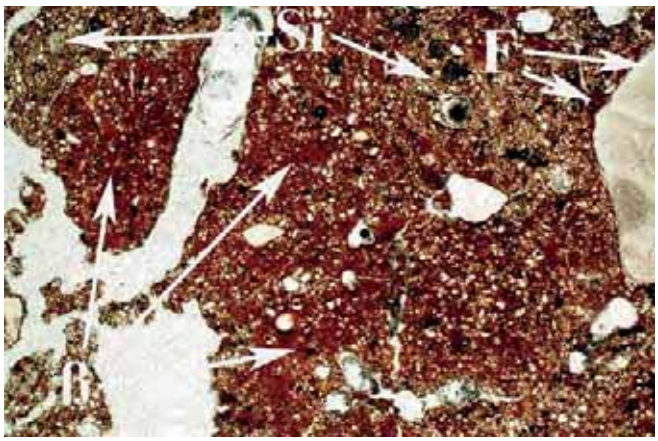

Figure 32 Photomicrograph of lower 12103; with reddish argillic ßclay from weathered chalk (ß) and associated texural pedofeatures, burned flint and embedding clay (F), mixed with loessic silt (Si). Plane polarised light (PPL), frame width ~4.62 mm

of any distinction between these episodes of soil accumulation by means of microfossil evidence.

No dating evidence was recovered from these contexts, but given the locally wooded conditions inferred from the presence of the soil itself a relatively early Holocene date is a distinct possibility for the formation of the argillic brown earth.

Rare traces of charcoal and a further phase of textural pedofeatures (very dusty clay containing very fine charcoal) are indicative of probable ensuing human impact on this soil, including the colluvial burial of the soil itself.

The later colluvial soil

The upper part of 12103 comprises a humic colluvial topsoil, which from the pollen results relates to a post-clearance landscape that potentially may be Neolithic or Bronze Age in date. This soil was subsequently buried beneath the gravel layer 12102. There are no indications that the colluvium in which this soil was formed was the product of soil erosion caused by the clearance of woodland; but rather the analysis showed the deposit to be the result of accreting well-sorted hillwash, of a type most likely produced by arable land use. However, it might be noted that the pollen results (described below) suggest that arable cultivation was neither extensive nor local.

Pollen

By Sylvia Peglar (with Michael Grant)

Four sub-samples from the sequence through 12103, covering both soil horizons, yielded sufficient pollen to enable statistically reliable interpretations, albeit only at an assessment level (Fig. 31 Monolith 15000; Fig. 33).

The pollen is fairly homogeneous, but suggests that deposition is post-clearance (tree pollen less than 15%). The tree pollen present is probably derived from the

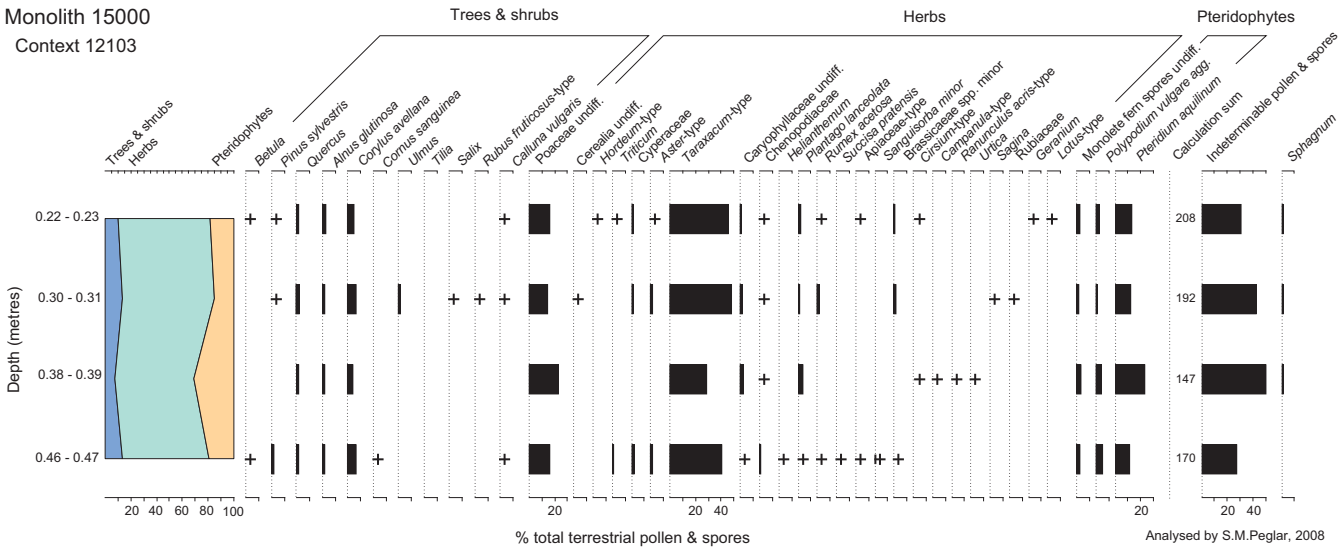

Figure 33 Pollen diagram, Monolith 15000

wider landscape or small isolated patches of trees near to the site. Herb pollen is abundant and indicative of chalk grassland. *Taraxacum*-type (dandelion) and Poaceae (grass) pollen are abundant and this can be attributed to poor preservation, these pollen types being easy to identify and more resistant to decay than many other pollen types.

Cereal pollen is present at low values, and although this may indicate some cereal cultivation, it is unlikely to be either extensive or local. However, anthropogenic indicators, such as *Plantago lanceolata* (ribwort plantain) and *Rumex acetosa* (common sorrel), do suggest some pastoral activity. High *Pteridium aquilinum* (bracken) values (up to 20%) do not necessarily indicate that bracken was extensive in the area, particularly in the absence of woodland and heathland with which it is commonly associated. High values have also been found in the upper Allen Valley (French *et al.* 2007), and although the spore looks like *Pteridium aquilinum* it is possible that these may be derived from another pteridophyte (vascular plants that neither flower nor produce seeds).

Dating of the sequence is difficult to estimate from pollen evidence alone as the landscape is already largely open with few indicative species. The isolated occurrence of cereals may indicate a post-Mesolithic date, but bioturbation could have resulted in the incorporation of some younger sediments (and hence pollen) into the lower sequence. Dating of these features is therefore problematic based upon pollen evidence alone.

Dry Valleys to the North and East of Winterbourne Stoke (WA 52524) Area 3 – NGR 407300 141400, Area 4 – NGR 408200 141500

Evaluation trenching in two dry valleys in Area J (WA 52524 Areas 3 and 4; Fig. 30) north and east of Winterbourne Stoke revealed typical asymmetrical dry valley profiles with colluvial sequences. In Area 4, the colluvium was restricted to a narrow band in the valley centre. Despite extensive trenching very few artefacts were recovered and, therefore, sequences from both dry valleys are effectively undated, although certainly of Holocene date. Probable buried soils near the base of the sequences demonstrate the potential for burial of prehistoric land surfaces in this landscape, as well as archaeological sites. Limited magnetic susceptibility work did not elucidate the nature of the sequences; however, molluscan sequences were obtained from Area 4. These are presented in Appendix 3.

Auger Survey across the Till Valley (WA 34852 and WA 50286) NGR 407900 141200

The Till Valley extends from Tilshead in the north to Stapleford where it meets the Wylye. In its northern reaches between Tilshead and Shrewton it carries water only seasonally (a winterbourne), while south of Shrewton it is a classic shallow flat-bottomed chalk stream with a clean gravel bottom. Adjacent to Winterbourne Stoke the valley has a broad (*c.* 200 m), generally flat meandering valley floor, in which the Till flows over a bed of medium chalk and flint gravel in a small but well-defined, steep-sided channel.

The course of the Till has been artificially aligned as a result of 'floated meadow' management. Remnant distribution channels are visible from a system that was initiated in the 18th century. Doubtless, this system contributed to the alluvial sediments noted in the survey (see Appendix 3, 46). The river management is perhaps the latest zone of agrarian management. Winterbourne Stoke is attested in *Domesday*, and the remnant lynchets noted on either side of the Till Valley attest to intensive use of the valley sides in the medieval period (investigated without significant result in Areas G and J).

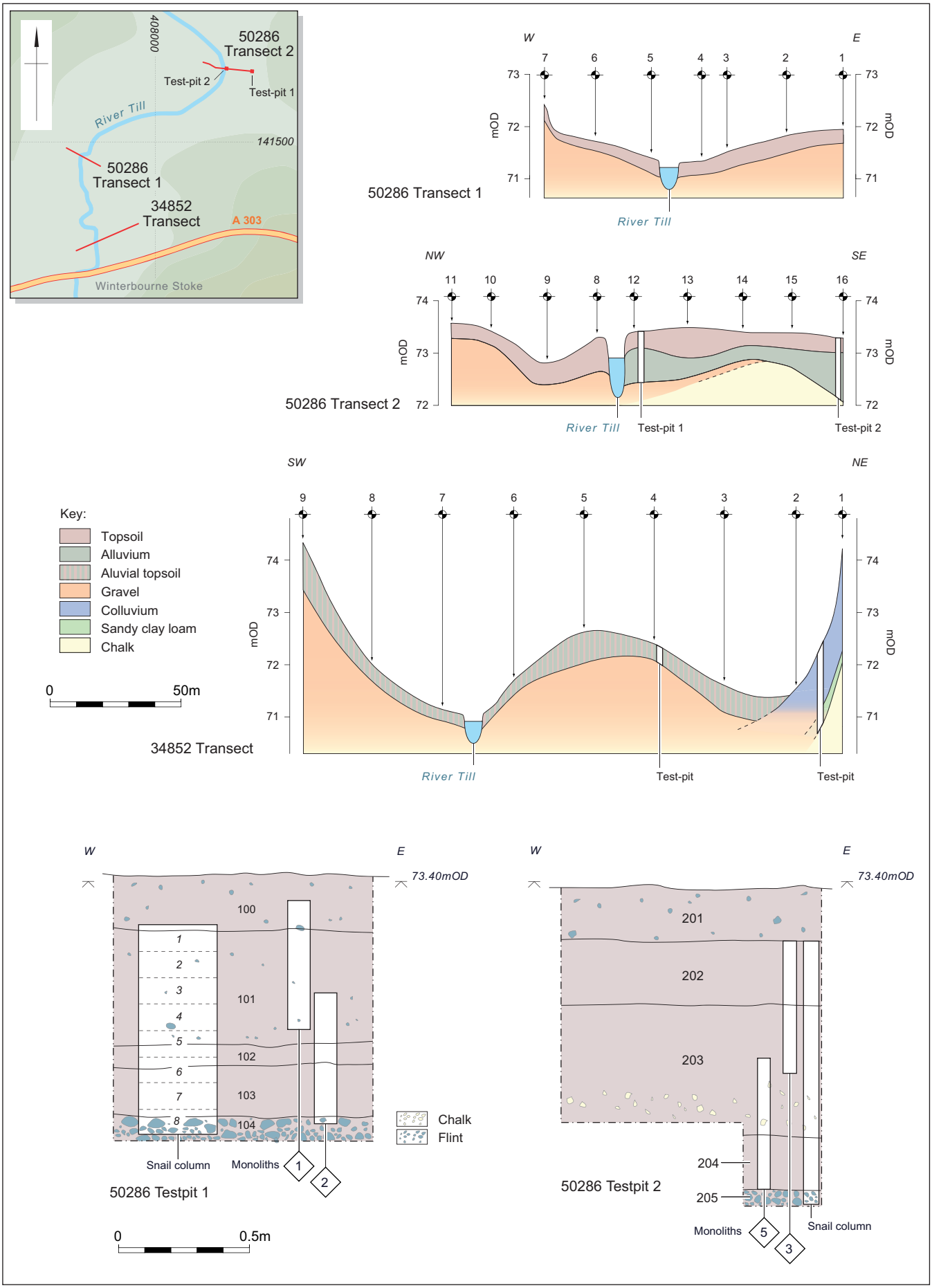

Figure 34 WA 34852 and 50286

The interfluves support brown, grey and humic rendzinas of the Andover 1, Upton 1, and Icknield Associations respectively, with argillic brown earths of the Charity Association locally over the Drift. The Till Valley floor, in contrast, supports typical brown calcareous earths of the Coombe 1 Association and calcareous alluvial gley soils over flinty and chalky drift and alluvium.

Auger surveys and targeted test pits were carried out in 1992 and 2002 (Fig. 30) along three transects to the east and north-east of Manor Farm, Winterbourne Stoke, in Area H (Fig. 34). The surveys were conducted in order to assess the presence of colluvial and alluvial deposits which could mask archaeological sites or themselves contain sedimentary sequences of high palaeoenvironmental potential.

Results

The auger transect undertaken in 1992 (WA 34852) straddled the river Till, with the greater part lying east of the river (NGR 407850 141210). Two test pits were excavated on the line of this transect, one at the foot of the slope on the eastern side of the valley; the other nearer to the river at the eastern side of a slightly raised area, possibly a relict channel feature.

The test pit at the slope foot revealed a shallow (0.62 m deep) colluvial sequence derived from clay-with-flint deposits further upslope. A single pottery sherd of Saxon date was recovered along with a quantity of animal bone. No significant alluvial deposits were encountered in either test pit or the auger survey. Shallow (<0.25 m) fine alluvial deposits representing overbank flooding events directly overlay Valley Gravels.

Transect 1 undertaken in 2002 (WA 50286) was located about 200 m north of that conducted in 1992 (Fig. 34). The transect was orientated approximately north-west to south-east, perpendicular to the valley axis. A series of seven auger holes revealed a shallow (maximum 0.3 m deep), typical brown earth soil profile, comprising a dark brown humic, almost stone-free matrix, over chalk to the east and over gravel in the main valley floor. Only on the eastern edge (in an equivalent position to where the 1992 survey downstream located a colluvial footslope deposit) were deposits over the gravel any deeper (here 0.55 m). This sequence was incised by the steep-sided river channel, which cut into and exposed the underlying valley gravel. Survey showed that the channel had cut less than 0.2m into this gravel surface (Fig. 34).

Transect 2, located approximately 400 m to the north-east of Transect 1, was orientated west to east in a broad meander of the valley, including the lower bluff of the inside of the meander on the west side (Fig. 34). A series of nine auger holes revealed a profile comprising typical brown earth and calcareous alluvial gley soils (0.3 m deep) over calcareous largely stone-free alluvium (max 1.2 m total depth), over gravel.

To the west of the current channel of the river Till (auger holes 11–8), deep typical brown earths (probably Coombe Series; cf. Jarvis *et al.* 1984, 126) to depths of up to 0.47 m overlay gravel. In contrast, the floodplain to the east is at a consistently slightly higher level and thin humic brown earths and calcareous alluvial gley soils overlie calcareous alluvium here. To the east of the river the gravel rises before dipping towards the footslope of the chalk valley margin: this may represent a buried former broad and shallow infilled channel against the chalk 'river cliff' (Fig. 34). This profile is similar to that recorded in 1992 approximately 600 m to the south-west (Fig. 34; Wessex Archaeology 1992, fig. 5).

Two 1 m square test pits were hand dug through the deeper alluvial stratigraphy recorded by auger Transect 2, in order to facilitate more detailed description and interpretation of the alluvial sequence and allow sampling of the sequences. Test pit 1 was located immediately to the east of the present river channel (test pit 1, Fig. 34) to examine the sequence recorded in auger hole 12. Test pit 2 (Fig. 34) was located at the eastern end of Transect 2 to examine the infill of the possible relict palaeochannel as revealed in auger hole 16. The sediment sequences recorded for both test pits are given in the appendices.

Discussion

The Floodplain Alluvium

The floodplain alluvium is characterised by uniform, massive, fine-grained calcareous marl, which represents the flooding of highly calcium carbonate charged water, and the deposition of fine chalky silt over the floodplain. A zone of mottling (context 102 in WA 50286 test pit 1) may represent incipient soil ripening preserved within the sequence. The alluviation is clearly the product of gentle, regular events on the floodplain, resulting in gradual accretion. Any evidence of discrete and individual depositional events (laminae or flood couplets) has been destroyed by *in situ* pedogenic activity on that surface. These deposits represent a typical seasonal flooding regime.

The Palaeochannel Sequence

The auger survey (WA 50286 Transect 2) revealed the presence of a former, infilled palaeochannel situated against the chalk river cliff on the eastern edge of the floodplain. This feature is just observable in the present ground surface as a relict palaeochannel. This may be the same as a similar feature located in the 1992 auger survey (WA 34852) on the eastern side of the valley floor and partially buried by colluvium.

The sequence in the palaeochannel recorded in test pit 2 comprises very fine-grained calcareous marl. The

sequence here is very similar to that recorded on the floodplain (test pit 1), and again probably represents overbank (rather than channel-fill) alluvium: it is suggested that after this channel became cut off from the river, it was infilled by flood sediment washed over the floodplain from the active river channel. This depositional environment has produced a somewhat finer, well-sorted marl character than that seen in the floodplain alluvium. At the base of the sequence, however, is a truncated humic alluvial gley soil (204) that formed on the floodplain and in the 'dry' relict channel prior to sedimentation. Apart from this buried soil, the palaeochannel sequence reflects the floodplain sequence described from test pit 1.

Summary

The floodplain alluvium was found to be extremely localised, and where it occurred was characterised by uniform, massive, fine-grained calcareous marl. A zone of mottling may represent incipient soil ripening preserved within the sequence. This alluviation is the product of gentle, regular overbank flooding events on the floodplain, and represents a typical seasonal flooding regime. The sequence in the palaeochannel was very similar to that recorded on the floodplain, and probably represents flood sediment washed over the floodplain from the active river channel, rather than deposition within the former channel itself. At the base of this sequence a humic alluvial gley buried soil was identified.

The presence of alluvium in the valley bottom is patchy, discontinuous and variable both across the valley profile and along its longitudinal corridor. Although the sequences are shallow (generally less than 1 m), their extent provides the potential for them to mask, bury, and seal archaeological horizons, as illustrated by the buried soil recorded at the base of the relict palaeochannel. The lack of dating evidence from the sequences, and the lack of datable material within them, makes dating the sediment or any palaeo-environmental sequence difficult.

Chapter 6
Summary

Matt Leivers and Chris Moore

with Michael J. Allen, Catherine Barnett, Jessica M. Grimm and David Norcott

The purpose of the archaeological surveys was to locate, characterise and assess the potential of archaeological remains along the route of the A303 Stonehenge Improvements (and variants thereof), with the principal aim of avoiding damage to archaeological remains. In order to place the results of the surveys in the context of other work undertaken in the area, the post-excavation analysis was approached in terms of a number of issues and objectives identified within the Stonehenge World Heritage Site Archaeological Research Framework (Darvill 2005).

Particular objectives included contributing to the monument dating programme; modelling environment and landscape change; understanding occupation; barrow cemetery surveys; extending the fieldwalking dataset; filling data gaps; and validating and dating features revealed by aerial photography (Objectives 2, 3, 4, 10, 13, 15, and 16 respectively). The issues which it was felt the available results could usefully address were barrow cemetery evolution, structure and meaning; filling the gaps and understanding distributions; environment and change to the physical landscape; the hidden landscape; the missing slices of time; chronology and dating the undated (Issues 9, 23, 25, 26, 27, and 28).

Presenting the results of the various surveys in wider landscape terms is challenging. Such is the profile of Stonehenge and its surrounding World Heritage Site, and such the body of data that exists (1490 sites in the Stonehenge GIS, for instance) that any new material from evaluations (however large an area those evaluations ultimately cover) tends to either corroborate or deny existing models, rather than engender entirely new understandings. A concomitant problem is that such understandings tend to focus on the notion of Stonehenge itself as a supremely important monument. While in the later Neolithic and Early Bronze Age the presence and meaning of that site was undoubtedly a major shaping factor in – for instance – the location and development of the barrow cemeteries, in earlier periods the place is unlikely to have had anything like the same significance, even though it is tempting to extrapolate backwards over millennia in order to account for the post-holes in the Stonehenge visitor's car park. From the middle of the 3rd millennium BC onwards, the significance of the place and its status as somehow special would – while not vanishing by any means – have shifted and transformed, much as the physical configuration of the stones did throughout its life. The encroachment of settlement and particularly of field systems from the Middle Bronze Age onwards point to the changing perceptions of the social and physical landscape throughout the final millennia and a half BC.

Even with these caveats, certain aspects of the works reported on here have contributed to understandings of the WHS and its surroundings. Four themes were formulated during post-excavation analysis to provide a framework within which the material could be interpreted. Within that framework, the results of the various surveys can be summarised as follows:

Theme 1: The Prehistoric Development and Use of the Chalkland Landscape

The geoarchaeological data – in particular the evidence of soils and colluvial sequences – provide a valuable opportunity to examine the early development of the chalkland landscape. The most significant results in this regard fall within Themes 2 and 4, and are more fully discussed there.

Theme 2: Late Mesolithic and Early Neolithic Activity and Environment

One of the major contributions of the surveys in terms of providing evidence for periods which were hitherto very poorly or unrepresented in the Stonehenge landscape was the identification of the remnants of a Late Mesolithic flint knapping scatter on the terrace of a palaeochannel of the Avon at DTA 6 in Area V. Although not strictly entirely *in situ* (some of the material seems to have been carried over the terrace edge by later agricultural and colluvial processes), the lithics are a very rare example of material of this date from stratigraphic situations the taphonomy of which can be readily understood, and which can be directly related to the deposition and immediately subsequent movement of the material. Such a lithics assemblage is locally very rare, and provides an opportunity to examine activity in a period for which evidence is otherwise almost entirely absent in the immediate area. The current understanding of the material and its context (necessarily hampered by the very small scale of the interventions) as a site of transitory activity associated with the hunting of animals on the banks of the Avon at this point are based on both the lithics and the palaeoenvironmental evidence.

The presence of undated ploughsoil colluvium, with features possibly indicative of *in situ* ard agriculture

dating to the Early Neolithic period at the same site are similarly noteworthy. Cultivation impact has not been previously evident in what is generally thought of as an open pastoral rendzina environment. This decalcified soil sequence then gives a rare insight into a pre-pastoral rendzina environment.

Further suggestions of previously undetected Neolithic soils include the argillic brown earth in test pit 121in Area T: despite research campaigns specifically to locate and study colluvial sequences and deeper soil profiles in the Stonehenge landscape (Bell in Richards 1990, 210–11; Allen 1994, 268–71), few have been located (Allen 1997). The presence of this relict argillic brown earth, apparently eroded and sealed by colluviation caused by likely arable cultivation is, therefore, important. Along with the sequence from DTA 6, this demonstrates how any once widespread post-glacial decalcified brown soils could have been eroded under human impact from Neolithic times onwards. It represents localised remnants of the prehistoric soil cover, and demonstrates that sequences exist within the Stonehenge landscape which may be used to reconstruct prehistoric environment, landscape and land use.

Theme 3: Later Neolithic and Early Bronze Age Landscape and Land Use

Two pieces of work advanced understandings of activity in the Stonehenge landscape in the Late Neolithic and Early Bronze Age. At both the North Kite and Wilsford G1, the results of the surveys contributed significantly to knowledge of these structures or activity associated with them.

The largest proportion of the surface scatters of flint recovered during programmes of fieldwalking belongs to these periods. Small concentrations around the Winterbourne Stoke barrow group conformed to a Bronze Age date, although mixed with earlier material. In general, concentrations of worked flint were within the lower end of the range of densities encountered during the Stonehenge Environs Project, mostly falling between 0 and 10 flints per quadrat. This, combined with the fact that most of the highest results do not conjoin, suggests that the worked flint recovered during the course of fieldwalking does not form a significant assemblage. Where areas fieldwalked lay adjacent to areas covered by the previous analyses, the results confirmed those of the previous work. Very few areas along the current line of the A303 have been found to contain significant areas of high density worked flint, although these do exist elsewhere within the World Heritage Site.

One such dense area of fieldwalked lithics lies between the Normanton Down and Lake barrow groups, east of the North Kite. Excavations at the North Kite itself have revealed apparently *in situ* assemblages of Late Neolithic lithic debitage (both during the A303 Improvements and previously) which add some support to suggestions that the locality was one particularly frequented for the manufacture of stone tools in the Late Neolithic period, taking advantage of a locally outcropping seam of good quality flint.

The most obvious contribution to the archaeology of the Early Bronze Age made during the Scheme was the excavation of two additional graves in the group beneath and around the Wilsford G1 barrow. Several aspects of these two graves are noteworthy, beyond the simple observation that – despite at least two previous episodes of investigation and excavation – more remains to be learnt about that complex site. Skeletal remains, ceramics, and associated radiocarbon dates from excavations adjacent to the Wilsford G1 barrow contribute significantly to knowledge of the Normanton Down Barrow group in particular, and to the sequence and development of Beaker activity in the region generally. Strontium isotope analysis shows the man had been born and had grown up in the locality, unlike some other individuals recovered from Beaker graves.

The radiocarbon date derived from this burial (2460–2290 cal. BC) not only provides a broad date for the G1 Beaker cemetery, but also for the Normanton Down group of barrows: whilst it is arguable that Wilsford G1 is not strictly a part of that group – lying as it does at the extreme western end of the line and separated from the others by a gap of some 350 m and a small dry valley – it might be the case that it provided a new stimulus for the laying out of the rest of the group (including the famous Bush Barrow).

Other aspects of the excavation confirm what was already known from earlier excavations at both G1 and elsewhere. The infant grave provided another instance of the recurring link between neonates and undecorated Beaker vessels – surely a very meaningful relationship, hinting at both social status of infants and the grammar of Beaker decoration – while the disturbance of the adult remains provides another clear example of grave re-opening and corpse manipulation.

Theme 4: Later Bronze Age Farming and Settlement, and Aspects of the Missing Iron Age

Two aspects of the archaeology of this period as revealed by the Scheme are of particular importance. Firstly, the occurrence of Middle Bronze Age features and material around Longbarrow Crossroads provides further convincing evidence of settlement activity there, presumably in some way associated with the enclosed settlement encountered during the construction of the roundabout, the focus of which is suggested by geophysical survey to lie north-west of the current junction. Secondly, the identification of an extensive and well-preserved Iron Age enclosed settlement at Scotland Lodge is of some importance.

Evidence of Iron Age activity (particularly settlement) is largely absent within the wider Stonehenge landscape, with most sites lying on its

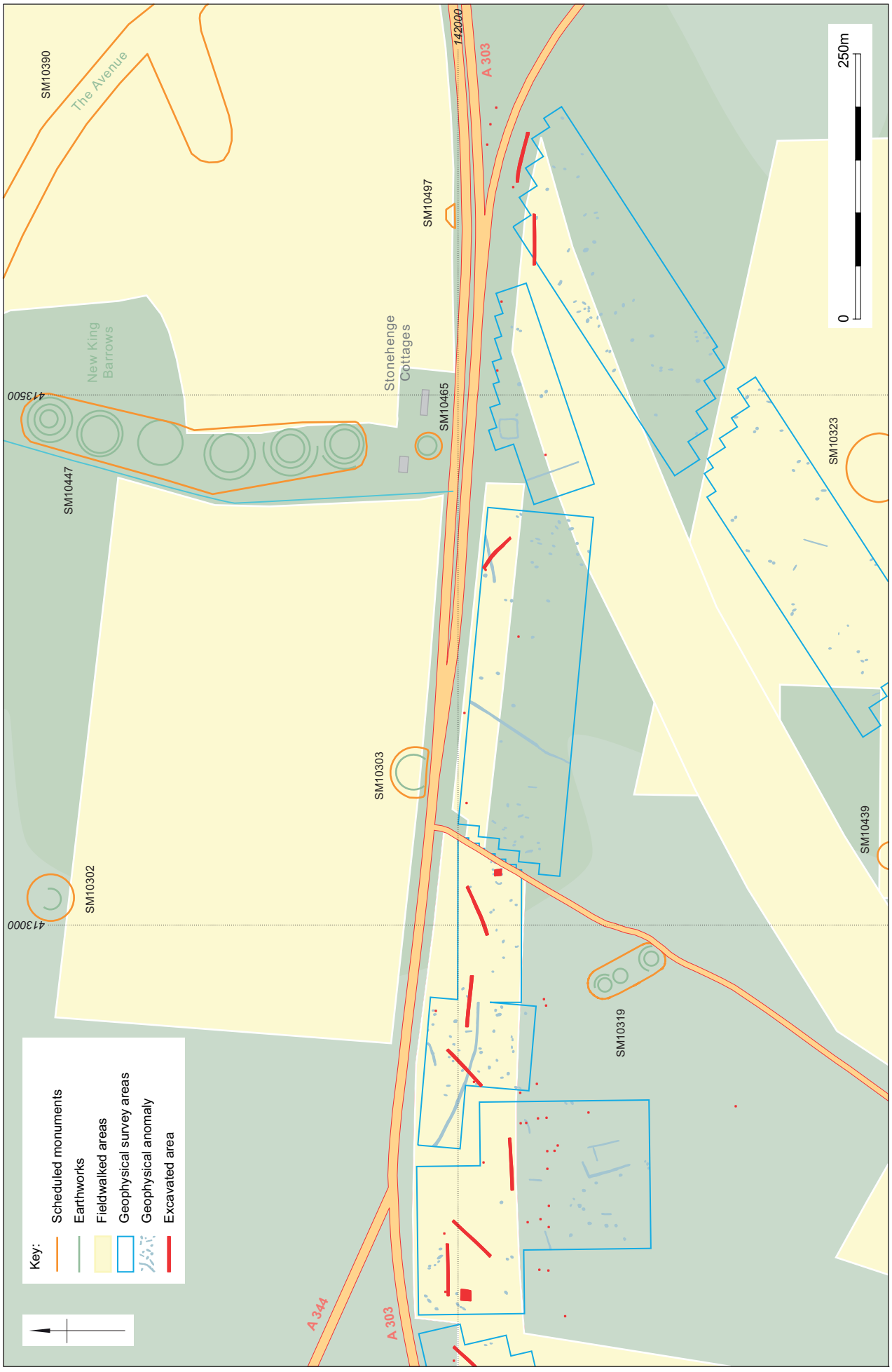

Figure 35 The route between Stonehenge and King Barow Ridge

periphery. Little work has been undertaken at Vespasian's Camp, and the evidence from the enclosed settlement at Scotland Lodge consequently allows a useful contribution to Iron Age studies in this area.

Even given the limited scale of the interventions, the work at Scotland Lodge allowed for the characterisation of activity and duration over a long period. Particularly important was the suite of environmental and burial evidence produced. While the limited structural and material evidence provided a broad-brush picture of the enclosures, the environmental evidence was considerably more detailed.

Charcoal assemblages interpreted as the remains of small-scale domestic fires indicated relatively common woody taxa of open woodland, hedgerow and scrub, all deciduous types with the exception of holly, while the presence of alder wood charcoal indicated the local availability and exploitation of wetter areas such as fen or floodplain edge.

Faunal remains indicated an Iron Age economy dominated by the breeding, raising and slaughter of sheep and cattle with some pig and horse. All species were slaughtered and their products processed locally; age/sex analysis suggested that cattle were kept mainly for traction and secondary products, while sheep were primarily a meat source. Pigs would have been kept as 'waste-to-meat' converters, and horses and dogs – although not kept primarily for their meat – were occasionally butchered in the Iron Age, although horse does not appear to have been eaten in the Romano-British period.

As elsewhere, the agrarian economy in the Iron Age was dominated by the production of spelt wheat, with weed seeds from the assemblages dominated by larger-seeded species. This is reflective of the storage of crops after threshing, winnowing, and fine and coarse sieving, most probably conducted immediately after harvesting in summer, since larger seeds are often only removed by hand in the very final stages of processing, by virtue of being a similar size as the grain.

The range of species across the site was generally characteristic of drier, calcareous, lighter soils, with the only seed of a wetland species identified from a sample of Late Iron Age/Romano-British date. This might be taken to imply that only within this later period did fields at Scotland Lodge border such areas, although the presence of alder wood charcoal has already been noted to indicate local availability and exploitation of wetter areas during the Iron Age.

It is probable that most fields were cultivated by ard at this time, with autumn sowing. The presence of free-standing species indicates harvesting by sickle. The charred plant remains and animal bones concur with the analysed mollusc assemblages in indicating a landscape of mixed environments, with localised patches of long grass and disturbed soil in the immediate vicinity of the enclosure ditch and internal banks within a wider open area of both arable and pastoral land use. Small areas of open probably deciduous woodland appear to have decreased over time. This pattern of an open landscape with areas of both arable and pasture has been seen elsewhere in the locality, at Vespasian's Camp, Figheldean, and Earl's Down Farm.

Absent Evidence

A consideration of the range of work undertaken, and particularly of the extensive array of trial trenches and test pits that were excavated (Figs 2–4) highlights the fact that a sizeable proportion of these did not reveal any significant evidence. In many instances, this was due to the absence of any material to provide a direct or comparative date. A considerable number of sections were excavated through ditches, and an equally large number of pits and other features were encountered that were essentially undatable. This is an unavoidable consequence of projects of this type, and does nothing to lessen the merits of the approach.

More significant, in terms of understanding the use of the landscape, are the survey areas which appear to contain no archaeological remains. From the western limits of the Scheme on Berwick Down as far as the western edge of the barrow cemetery on Stonehenge Down the test pits and trial trenches encountered a greater or lesser density of prehistoric archaeological features. East of the Stonehenge Down cemetery there were virtually no prehistoric features of any type as far as King Barrow Ridge (Fig. 35). Geophysical surveys here showed a square enclosure south of the A303 at the end of the New King Barrows. Although undated, evaluation trenching in the vicinity associated with proposals for the Stonehenge Visitor Centre encountered Late Neolithic and Beaker features.

The implication of this is clear: once Stonehenge had been constructed, there seems to have been a 'blank space' around it in terms of activities which left any significant archaeological trace. This empty space is broadly defined by the barrow cemeteries on Stonehenge Down, Normanton Down, King Barrow Ridge and along The Cursus, and this pattern of presence and absence is confirmed almost exactly by the results of the A303 Improvements. The various A303 surveys demonstrated in addition is that the effect of the 'blank space' around Stonehenge lasted into the Iron Age, even if the blank area shrank, and its significance altered.

Concluding Remarks

The development of the A303 Stonehenge Improvements benefited from a considered approach to the archaeological assessment of each option and design iteration over nearly 15 years. The potential importance of the Scheme as one of the key means by which the objectives of the Stonehenge Management Plan might be delivered demanded an exemplary approach from the outset, with an unprecedented level of consultation and debate. That the Scheme itself has not progressed to

completion should not detract from the efforts to ensure that the scheme offered a deliverable solution to the environmental problems that continue to beset Stonehenge.

The archaeological work reported here was conceived as part of a carefully considered programme of evaluation and assessment of the likely impacts of the road scheme. This programme was part of an archaeological strategy, developed through extensive discussion that sought to obtain maximum data on the presence or absence of significant archaeological remains, whilst minimising the physical impact of the evaluations on the archaeological resource of the WHS. The same archaeological strategy and standards were applied across the whole scheme, both within the WHS and outside it. The principal objective was to allow the identification and avoidance of nationally important remains as part of the scheme design. At every stage from initial identification of options to detailed design of the Published Scheme, therefore, the development of the scheme was informed by archaeological data compiled from a wide range of non-intrusive and intrusive surveys, to an extent unrivalled in the UK. Written reports were generated from each element of the fieldwork, and were submitted to English Heritage, the county archaeologist and other interested parties. These reports form part of the extensive field archive from the project (Appendix 9).

The scale of this work was instrumental in the recognition of the need for a research framework to provide a context for archaeological work within the WHS, whether for research purposes or in response to development threats. The individual surveys have produced significant material and structural data that have contributed directly to research objectives identified in this framework, and have served to highlight the potential for comparatively small-scale work to contribute effectively to expanding knowledge of the WHS and its environs, both in terms of understanding the nature of occupation and landuse and how this has changed over time, and in understanding the formation of the landscape that the WHS seeks to protect.

This volume serves as a summary guide to the results of the surveys. The archive is to be deposited with Salisbury and South Wiltshire Museum, Salisbury, and technical reports are available on the internet.

Internet Reports

Index of Specialist Reports

http://www.wessexarch.co.uk/projects/wiltshire/A303

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This volume reports on the archaeological works undertaken between 1998 and 2003 as part of the A303 Stonehenge Improvement highway scheme promoted by the Highways Agency.

The A303 trunk road and the A344 which pass Stonehenge are widely agreed to have a detrimental effect on its setting and on other archaeological features within the World Heritage Site. Around Stonehenge there is noise and visual intrusion from traffic and also air pollution. Each year nearly one million people visit the World Heritage Site and surroundings, using visitor facilities intended to cater for a much smaller number.

Many plans that might improve this situation have been examined, involving partnership working across many organisations. Common to all these has been the aim of removing traffic from the area of Stonehenge and at the same time addressing highways issues with regard to road capacity and safety.

This volume sets out the objectives of the extensive programme of archaeological work that was undertaken to inform the planning of the highway scheme, the methods used, the results obtained, and to explain something of the significance of works which provided a 12 km transect across the WHS and beyond: the first of its kind ever undertaken.

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