TIMELINE

The Archaeology of the South Wales Gas Pipeline

by Timothy Darvill, Andrew David, Seren Griffiths, Jonathan Hart, Heather James
Ken Murphy and James Rackham

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Excavations between Milford Haven, Pembrokeshire and Tirley, Gloucestershire

by
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Ken Murphy and James Rackham

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Cotswold Archaeology Monograph No. 13
Cirencester 2020

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Published by Cotswold Archaeology
Building 11, Kemble Enterprise Park, Cirencester, Gloucestershire GL7 6BQ

Edited by Karen Walker and Alistair Barclay

ISBN 978-0-9934545-7-8

British Library Cataloguing in Publication Data
A catalogue record of this book is available from the British Library

Front cover image: Reconstruction drawing of the Late Neolithic henge at Vaynor during the Roman period by Mark Gridley
Back cover: route of the pipeline, the copper halberd and the wooden trough from Upper Neeston

Cover design by Daniel Bashford
Produced by Past Historic, Kings Stanley, Gloucestershire
Printed by Henry Ling Ltd, Dorchester

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Acknowledgements

Archaeological work associated with the pipeline involved a large number of staff from several organisations; not all can be named individually here, but all are thanked for their contribution to this important project. Lead contributors are named below.

The pre-construction *Archaeology and Heritage Surveys* along the entire route were undertaken under the direction of Richard Morton (Cotswold Archaeology), informed by geophysical surveys undertaken by Bartlett-Clark Consultancy. The evaluation trenching, earthwork surveys and fieldwalking surveys were undertaken by Cotswold Archaeology. The watching briefs and most of the excavations along the Milford Haven to Aberdulais sections of the pipeline were directed by Alistair Barber and managed by Clifford Bateman (both of Cotswold Archaeology). The other excavations along that section were directed by Amelia Pannett under the management of Kevin Blockley (both of Cambrian Archaeological Projects). The watching briefs and excavations along the Felindre to Brecon section of the pipeline were directed by Mark Brett (Cotswold Archaeology) and managed by Clifford Bateman. Recording along the Brecon to Tirley section and the Tirley Feeder Connector section was undertaken by Network Archaeology. The contribution of the fieldwork teams who worked in often difficult conditions is gratefully acknowledged.

Initial post-excavation assessment for the Milford Haven to Aberdulais, and Felindre to Brecon sections was undertaken by Alistair Barber and Amelia Pannett. Following this, Assessment reports were prepared by NACAP Land and Marine Joint Venture, which formed the basis for subsequent analysis and reporting undertaken principally by Peter Busby, Christopher Leonard, Greg Crees and Jonathan Hart under the direction of Jonathan Hart and the management of Karen Walker (all of Cotswold Archaeology). This work produced a series of archive reports (available online via the CA Reports Online page of their website https://reports.cotswoldarchaeology.co.uk) to which the following specialists contributed: Amelia Pannett (flint), Alex Gibson (prehistoric pottery), Jane Timby (Roman pottery), Paul Courtney† and E.R. McSloy (post-Roman pottery), R. Hall (ceramic building material, fired clay and daub), K. Leahy (metalwork, excluding halberd), Stuart Needham (halberd from Site 38.17), A. Vince† and K. Steane (stone), R. Doonan, D. Pitman and D. Broughton (metallurgical residues), Anna Fotaki and Malin Holst (human remains), J. Wood (faunal remains), James Rackham and Dana Challinor (palaeoenvironmental remains), and Seren Griffiths (radiocarbon dating and Bayesian analysis). The illustrations for those reports were produced by Daniel Bashford. Analysis and reporting of the findings along the Brecon to Tirley and Tirley Feeder Connector sections was undertaken by Network Archaeology. Subsequent post-excavation work was managed by Karen Walker and, latterly, Alistair Barclay (Cotswold Archaeology). The text was copy edited by Rachel Tyson. The illustrations for this book were produced by Daniel Bashford, with those for the Insets having been produced by Esther Escudero, both of Cotswold Archaeology. Figures 3.2 and 3.3 were initially drafted by Aleksandra Osinska (Cotswold Archaeology). The reconstruction drawings were created by Mark Gridley, freelance illustrator.

The washing and processing of soil samples, and the refloating and sorting of the residues of samples previously processed by Cotswold Archaeology and Cambrian Archaeological Projects was carried out by Trude Maynard, Angela Bain, Hannah Bowden and Catherine Sharrock-Walsh of the Environmental Archaeology Consultancy. The drilling to recover pollen cores along the route was undertaken by Site Investigation Services of Gainsborough, Lincolnshire. The pollen analysis of these cores was carried out by

Prof. Robert Scaife and Dr Catherine Langdon (Dept Geography, University of Southampton). The charred plant remains from the bulk samples were studied by Wendy Carruthers and John Giorgi.

The paper and digital archive from the Welsh sections of the project has been deposited by Cotswold Archaeology with the RCAHMW, whilst the finds from these sections have been deposited by Cotswold Archaeology within appropriate museums (detailed within the archive reports available online). The archives were prepared by Cotswold Archaeology staff under the direction of Hazel O'Neill (Cotswold Archaeology). The archives from the Powys, Gloucestershire and Herefordshire sections were prepared and deposited by Network Archaeology.

The authors would like to thank National Grid for funding the project, and in particular the support of Chris Clement and Phil Chick. The assistance of Scott Spencer and Tim Vaughan (Rhead Group) and the invaluable guidance of Linda Bonnor (Groundwork Archaeology) are gratefully acknowledged. Ken Murphy and Mike Ings of Dyfed Archaeological Trust, Mark Walters of Clwyd-Powys Archaeological Trust, Charina Jones of Glamorgan-Gwent Archaeological Trust and Alice Thorne and Natalie Ward of the Brecon Beacons National Park Authority are all thanked for their valuable insights during the course of this project. Tim Darvill, Martin Watts, Ken Murphy and Judith Doyle kindly read and commented on various drafts of the book during production.

The images AP_2006_3316, AP_2007_0780 and AP_2013_4428 (654190) are Crown copyright and are reproduced with the permission of the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW), under delegated authority from The Keeper of Public Records.

The Welsh translations of the Preface and Summary were kindly provided by Cymen.

Preface

The South Wales Gas Pipeline was as much of a unique project as it was challenging. At 317km, it is the UK's longest high-pressure gas pipeline, and is capable of transporting up to 20% of the country's gas demand. From its starting point at Milford Haven, Pembrokeshire, to its final connection at Tirley, Gloucestershire, the pipeline crosses an array of landscapes and habitats, rivers and streams, lowlands and wetlands, mountains and highlands, and provided a once in a lifetime opportunity to study, learn and record many of the characteristics of this terrain.

The sheer scale of the archaeological works was immense. The pipeline easement, which was effectively a 317km-long, 30m-wide trial trench, was a huge undertaking, and provided a unique insight into the archaeology that would have otherwise remained a secret. The management and logistics of teams of archaeologists was a real challenge, but the results were worth the long hours and hard work.

Being part of this project, and working closely with the archaeological specialists has been an incredibly rewarding experience. From the initial pre-construction site surveys, active investigations and digs during the project, to the collation of data, drafting of drawings and sketches, to this, the final publication. To be involved from start to finish has been a privilege.

I would like to thank everyone who has been involved in this project, from its inception, to final publication. I would also like to extend a special thank you to Alistair Barclay and Karen Walker of Cotswold Archaeology, for helping to get this over the line.

Chris Clement, National Grid

Rhagair

Roedd Piblinell Nwy De Cymru yn brosiect yn unigryw ac yn her. Yn 317km o hyd, dyma biblinell nwy pwysedd uchel hwyaf y DU, ac a fydd yn gallu cludo hyd at 20% o'r galw am nwy yn y wlad. O'r man cychwyn yn Aberdaugleddau, Sir Benfro, at y cysylltiad olaf yn Tirley, Swydd Gaerloyw, mae'r biblinell yn croesi pob math o dirweddau a chynefinoedd, afonydd a nentydd, iseldiroedd a gwlyptiroedd, mynyddoedd ac ucheldiroedd, ac roedd yn gyfle unwaith mewn oes i astudio, dysgu a chofnodi llawer o nodweddion y dirwedd hon.

Roedd graddfa'r gwaith archeolegol yn enfawr. Roedd hawddfraint y biblinell, a oedd i bob pwrpas yn ffos brawf 317km o hyd, 30m o led, yn brosiect anferth, ac roedd yn cynnig cipolwg unigryw ar yr archeoleg a fyddai wedi parhau'n guddiedig fel arall. Roedd rheolaeth a logisteg timau o archeolegwyr yn her wirioneddol, ond roedd y canlyniadau'n werth yr holl oriau hir a gwaith caled.

Roedd bod yn rhan o'r prosiect, a chael cydweithio'n glos ag arbenigwyr archeolegol yn brofiad boddhaus dros ben. O'r arolygon cychwynnol cyn y gwaith adeiladu ar y safleoedd, ymchwiliadau gweithredol a chloddfeydd yn ystod y prosiect, i gasglu data, gwneud y lluniadau a'r brasluniau, i hyn, y cyhoeddiad terfynol. Mi oedd yn fraint cael bod yn rhan o'r prosiect o'r dechrau i'r diwedd.

Hoffwn ddiolch i bawb sydd wedi bod yn gysylltiedig â'r prosiect, o'r dyddiau cyntaf, hyd at y cyhoeddiad terfynol. Hoffwn ddiolch yn arbennig i Alistair Barclay a Karen Walker o Cotswold Archaeology, am eu help i sicrhau ein bod wedi cyrraedd y llinell derfyn.

Chris Clement, National Grid

Summary

This volume contains a detailed overview and discussion of archaeological discoveries made along the length of the South Wales Gas Pipeline, a 317km-long undertaking that extended broadly eastwards from Milford Haven in Pembrokeshire to Tirley in Gloucestershire.

The pipeline traversed a varied landscape, from the coastal plain around Milford Haven in the west, over the uplands of the Brecon Beacons and into the Gloucestershire Severn Vale. During the construction works, remains potentially spanning the Palaeolithic period through to recent historical times were recorded. There were some stand-out discoveries, particularly of a previously unrecorded Late Neolithic henge monument, which had been revisited in Roman times, and of a copper halberd from a ring ditch at Trecastle. The halberd, which belongs to the Chalcolithic period when the use of metal was first introduced to Britain, is of Irish origin and is an internationally significant discovery.

Other highlights of the work arose from the sheer number of remains that were recorded, as well as through establishing places and times where human activity was relatively sparse, the latter an important indicator of how landscapes were used. The frequency with which Early Neolithic pits were found was a particularly surprising outcome of the work, as was the discovery of Early Neolithic buildings, which add to a small but growing corpus of such discoveries made across Britain. Burnt mounds, enigmatic features found near streams in parts of the western and central British Isles, were another frequent discovery along the western section of the pipeline, with most dating to the Bronze Age. An intensive programme of radiocarbon dating and statistical analysis demonstrated an extraordinary longevity to the burnt mound activity as a whole. One site had multiple mounds that collectively were in use at various times during a period that lasted for at least 1500 years, a revelation suggestive of long-lived traditions. Roman and post-Roman ovens used to process cereals were also found in significant numbers, attesting to the importance of the landscape as an arable resource, something which contrasts with its largely pastoral character today.

The vast quantity of data generated by the pipeline have allowed for the tempo of archaeological activity within the traversed areas to be examined. This revealed that human activity has ebbed and flowed over time, responding to the dynamics of social, political and environmental pressures. Some sites were revisited, often after significant lengths of time had elapsed, suggesting that people in the past created biographies for the landscapes they inhabited, and had as lively an interest in the past as many of us do today, although their motivations for this may remain as opaque as our own. One such site was Vaynor henge, a Late Neolithic monument which fell out of use when new belief systems became popular in the Bronze Age. It survived as an earthwork however, outlasting the Bronze Age beliefs to become the focus of what may have been religious ceremonies during the Early Roman period, some three millennia after it was constructed. This does not indicate any continuity of belief, rather it signifies that monuments surviving within the physical landscape could be appropriated into new worlds, beliefs and values long after their original significance had lapsed from memory.

This volume is arranged thematically. Chapter 1 describe how the archaeological work was undertaken, when and by whom, along with an introduction to the very extensive programme of radiocarbon dating undertaken for the project and enhanced by detailed statistical analysis. Chapter 2 describes the landscape traversed by the pipeline. Following this, Chapters 3 to 8 provide chronological overviews of the discoveries, along with their significance within the wider context of the archaeology of Wales and beyond. Chapter 9 discusses the evidence for the past natural environment, along with changes to this over time in response to

climate change and human activity, and arises from the extensive sampling for organic remains undertaken along the route. The findings of this palaeoenvironmental work challenge some preconceptions about our modern landscape, with, to take one example, 'timeless' wild areas such as the Brecon Beacons shown to have been very different during the Later Mesolithic period, when they were extensively wooded. Overall, the landscape, along with its fauna and flora, is shown to have been dynamic rather than stable, and this is the context within which human activity should be seen. The final chapter provides a broad overview of the significance of the discoveries made.

Throughout this volume, reference is made to numbered sites recorded along the pipeline; detailed reports on each of these within the Milford Haven to Felindre (Brecon) sections are available digitally via the CA website (https://reports.cotswoldarchaeology.co.uk/).

Crynodeb

Mae'r gyfrol hon yn cynnwys trosolwg manwl a thrafodaeth ar y darganfyddiadau archeolegol a wnaed ar hyd Piblinell Nwy De Cymru, gwaith 317km o hyd sy'n ymestyn fwy neu lai i'r dwyrain o Aberdaugleddau yn Sir Benfro i Tirley yn Swydd Gaerloyw.

Mae'r biblinell yn dilyn tirwedd amrywiol, o'r gwastadedd arfordirol yng nghyffiniau Aberdaugleddau yn y gorllewin, dros ucheldiroedd Bannau Brycheiniog ac i Ddyffryn Hafren yn Swydd Gaerloyw. Yn ystod y gwaith adeiladu, cofnodwyd gweddillion a oedd yn ymestyn o'r cyfnod Palaeolithig hyd y cyfnod hanesyddol diweddar. Bu rhai darganfyddiadau eithriadol, yn enwedig hengor o'r Cyfnod Neolithig diweddar nad oedd wedi'i gofnodi o'r blaen, ac a ailddefnyddiwyd yn ystod y cyfnod Rhufeinig, a halberd copr o ffos gron yn Nhrecastell. Mae'r halberd, sy'n dyddio o'r cyfnod Calcolithig, pan gyflwynwyd y defnydd o fetel i Brydain gyntaf, o darddiad Gwyddelig ac mae'n ddarganfyddiad o bwys rhyngwladol.

Mae uchafbwyntiau eraill y gwaith yn deilio o'r nifer enfawr o weddillion a gofnodwyd, yn ogystal â thrwy bennu lleoedd ac amseroedd lle'r oedd gweithgarwch pobl yn gymharol brin, gyda'r olaf yn ffordd bwysig o ddangos sut yr oedd tirweddau'n cael eu defnyddio. Roedd amlder y pydewau Neolithig Cynnar a ddarganfuwyd yn ganlyniad a barodd gryn syndod i bawb, ac roedd hynny'n wir hefyd yn achos darganfyddiad adeiladau Neolithig cynnar, sy'n ychwanegu at gorff bychan ond cynyddol o ddarganfyddiadau o'r fath sydd wedi'i gwneud ledled Prydain. Roedd twmpathau llosg, nodweddion hynod a geir ger nentydd yng ngorllewin a chanolbarth Ynysoedd Prydain, yn nodweddion a ddaeth i'r amlwg yn gyson ar hyd rhan orllewinol y biblinell, gyda'r rhan fwyaf ohonynt yn dyddio o'r Oes Efydd. Datgelodd rhaglen ddwys o ddyddio radiocarbon a dadansoddiadau ystadegol fod gweithgarwch twmpathau llosg wedi para am gyfnod annisgwyl o hir. Roedd un safle'n cynnwys nifer o dwmpathau a oedd gyda'i gilydd wedi bod yn cael eu defnyddio yn ystod cyfnodau amrywiol am o leiaf 1500 o flynyddoedd, datgeliad sy'n awgrymu traddodiadau hirhoedlog iawn. Roedd ffyrnau Rhufeinig ac ôl-Rufeinig yn cael eu defnyddio i brosesu grawn hefyd i'w gweld mewn niferoedd sylweddol, sy'n dangos pwysigrwydd y dirwedd fel adnodd âr, rhywbeth sy'n wahanol iawn i'w chymeriad bugeiliol heddiw.

Mae'r nifer enfawr o ddata a gasglwyd yn sgil y biblinell wedi galluogi i dempo'r gweithgarwch archeolegol o fewn yr ardaloedd sydd wedi eu trawslinio i gael ei archwilio. Mae hyn wedi dangos llanw a thrai gweithgarwch dynol dros amser, a oedd yn ymateb i ddynameg pwysau cymdeithasol, gwleidyddol ac amgylcheddol. Daeth pobl yn ôl i rai safleoedd, a hynny'n aml ar ôl treigl amser maith, sy'n awgrymu bod pobl yn y gorffennol wedi creu cofnodion o'r tirweddau lle'r oeddent wedi byw, a bod ganddynt ddiddordeb mor fyw yn y gorffennol ag sydd gan lawer ohonom ni heddiw, er bod eu cymhellion hwythau'r un mor annelwig â'n rhai ni. Un safle o'r fath oedd hengor y Faenor, heneb o'r cyfnod Neolithig Diweddar a adawyd pan ddaeth systemau cred newydd yn boblogaidd yn yr Oes Efydd. Fodd bynnag, goroesodd fel gwrthglawdd, gan bara'n hwy na

chredoau'r Oes Efydd i ddod yn ganolbwynt i'r hyn a oedd efallai yn seremonïau crefyddol yn ystod y cyfnod Rhufeinig Cynnar, a hynny tua thair mil o flynyddoedd ar ôl iddo gael ei adeiladu'n wreiddiol. Nid yw hyn yn awgrym o gred ddi-dor, ond yn hytrach mae'n dangos bod henebion sy'n goroesi yn y dirwedd ffisegol yn cael eu meddiannu gan fydoedd, credoau a gwerthoedd newydd ymhell ar ôl i'w harwyddocâd gwreiddiol fynd yn angof.

Mae'r gyfrol hon wedi'i threfnu fesul thema. Mae Pennod 1 yn disgrifio sut y gwnaed y gwaith archeolegol, pa bryd a chan bwy, ynghyd â chyflwyniad i'r rhaglen fanwl o waith dyddio radiocarbon a gynhaliwyd ar gyfer y prosiect ac a ategwyd gan ddadansoddiad ystadegol manwl. Mae Pennod 2 yn disgrifio'r dirwedd y mae'r biblinell yn ei dilyn. Yn dilyn hyn, mae penodau 3 i 8 yn rhoi trosolwg cronolegol o'r darganfyddiadau ynghyd â'u harwyddocâd yng nghyd-destun ehangach archeoleg Cymru a thu hwnt. Mae Pennod 9 yn disgrifio'r dystiolaeth ar gyfer amgylchedd naturiol y gorffennol, ynghyd â newidiadau iddo dros amser mewn ymateb i newid yn yr hinsawdd a gweithgarwch pobl, ac mae'n deillio o samplau niferus o weddillion organig a gymerwyd ar hyd y llwybr. Mae canfyddiadau'r gwaith palaeoamgylcheddol hwn yn herio rhai o'r rhagdybiaethau ynglŷn â'n tirwedd fodern. Un enghraifft o hyn yw tystiolaeth sy'n dangos fod ardaloedd gwyllt 'digyfnewid' fel Bannau Brycheiniog wedi bod yn wahanol iawn yn ystod y cyfnod Mesolithig Diweddar, pan oedd yn dirwedd goediog iawn. Ar y cyfan, gwelwyd fod y dirwedd, ynghyd â'i phlanhigion a'i hanifeiliaid wedi bod yn ddynamig yn hytrach na sefydlog, a dylid edrych ar weithgarwch pobl yn y cyd-destun hwn. Mae'r bennod olaf yn rhoi trosolwg cyffredinol o arwyddocâd y darganfyddiadau a wnaed.

Drwy gydol y gyfrol, cyfeirir ar safleoedd wedi'u rhifo a gofnodwyd ar hyd y biblinell; mae adroddiadau manwl ar bob un ohonynt o fewn y rhannau o Aberdaugleddau i Felindre (Aberhonddu) ar gael yn ddigidol ar wefan CA (https://reports.cotswoldarchaeology.co.uk/).

CHAPTER 4
EARLY FARMING COMMUNITIES: 4000–700 BC

Timothy Darvill

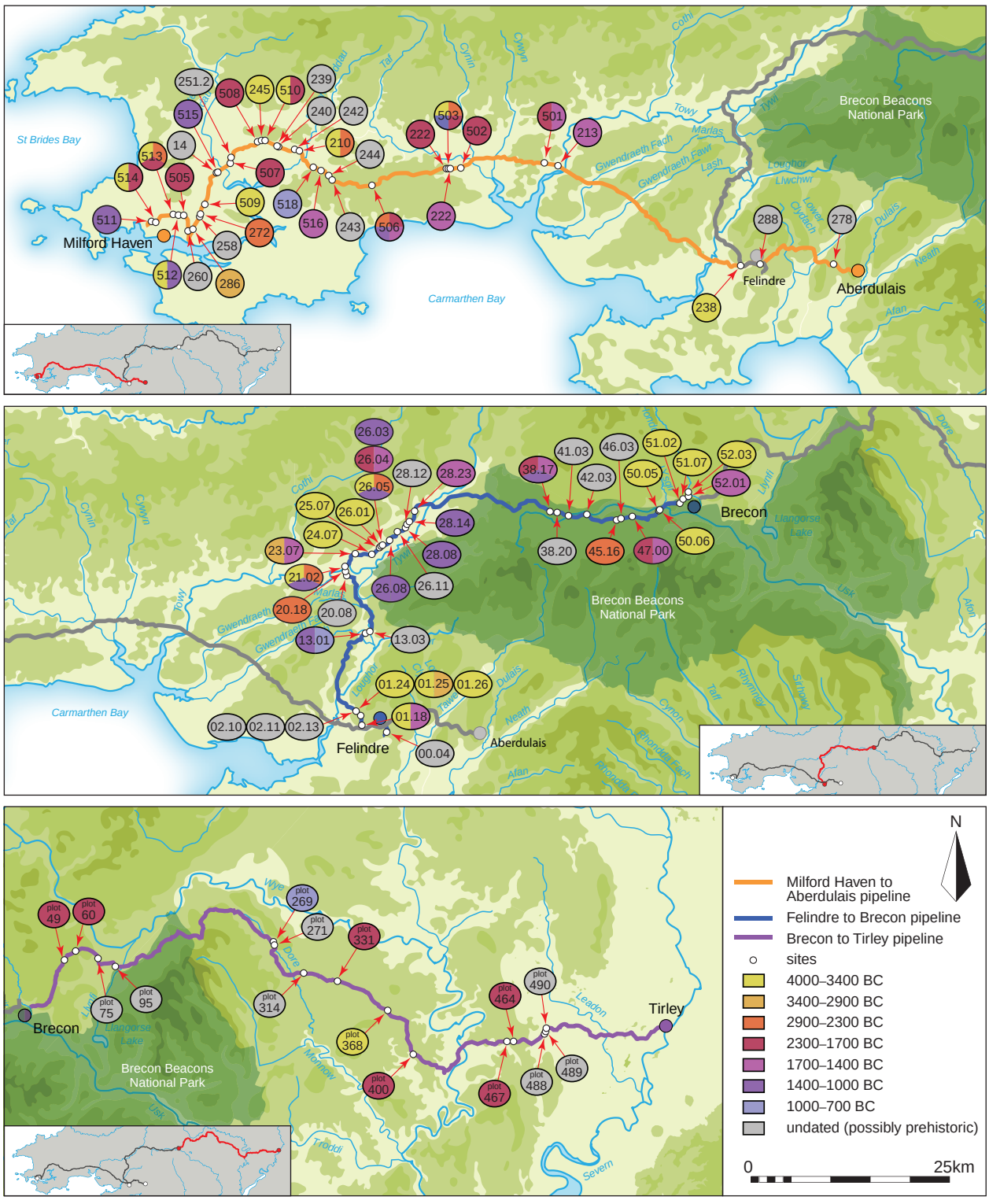
Introduction

Traversing the coastal plains and river valleys of south-west Wales, the uplands of the Brecon Beacons, and the hill and vale country of the southern Marches, the South Wales Gas Pipeline provides valuable insights into the lives of early farming communities living in the area between 4000 BC and 700 BC, the Neolithic and Bronze Age in conventional terminology. In all, 84 sites with evidence dated to this period were found along the 317km pipeline corridor (Fig. 4.1), an average density of 0.27 per km, with the Felindre to Brecon section nearly double that at 0.42 sites per km (Appendix B, Table B1). Nationally, such densities are high when compared to other linear schemes with similar archaeological mitigation, and serve to emphasise the archaeological richness of landscapes across South Wales and the mid-west of England. By comparison, the 62km Asselby to Pannal Natural Gas Pipeline across the eastern Pennines and Vale of York revealed just three Neolithic and Bronze Age sites, a density of 0.06 sites per km (Gregory *et al.* 2013, 30). Further south, the 44km Wormington to Sapperton Gas Pipeline through the western Cotswolds revealed seven early prehistoric sites or 0.15 per km (Hart *et al.* 2016, 15). And, on a rather larger scale, the 74km-long HS1 railway corridor through Kent impacted on 26 Neolithic and Bronze Age sites giving a density of 0.35 sites per km (Booth *et al.* 2011).

Averages of course hide detail. The distribution of sites, and the range of activities that they represent, were not evenly distributed across the landscape. Certain areas were preferred for particular activities at different times. The landscape was structured, and the social use of space at scales ranging from a single house to an occupied territory reflects attitudes towards a combination of environmental considerations, changing cultural preferences, and prevailing belief systems. Thus, the negative evidence showing where people did not do things is just as important as the positive indications of human impact represented by finds, structures, and environmental indicators. The high-quality systematic identification and recording of archaeological remains revealed by groundworks for the pipeline gives confidence to both the positive and the negative evidence.

This overview is based on the detailed reports prepared for each site on the pipeline route (available online at https://reports.cotswoldarchaeology.co.uk/ and via Archwilio https://www.archwilio.org.uk/arch/), cross-referenced to specialist contributions included in this volume. For convenience, the wealth of evidence discussed here is broken down into seven time-slices that broadly reflect changing traditions, archaeological representation, and key stages in the story of those communities that lived in the landscapes traversed by the pipeline. An extensive programme of radiocarbon dating provides a tight chronological framework for the analysis, although not every feature in every site could be dated in detail. Wherever possible use is made of modelled calendar dates BC for specific features or phases (see Chapter 1. Full details of the radiocarbon dates can be found on line https//reports.cotswoldarchaeology.co.uk), although individual calibrated dates are included where relevant and broad conventional chronological periods are used throughout for ease of reference.

Fig, 4.1 (opposite)
Map showing location and age of key pipeline sites dated to the period 4000 BC to 700 BC


St Brides Bay
Milford Haven
Carmarthen Bay
Brecon Beacons National Park
Felindre
Aberdulais
Brecon
Tirley
Llangorse Lake
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
4000–3400 BC
3400–2900 BC
2900–2300 BC
2300–1700 BC
1700–1400 BC
1400–1000 BC
1000–700 BC
undated (possibly prehistoric)
N
0
25km

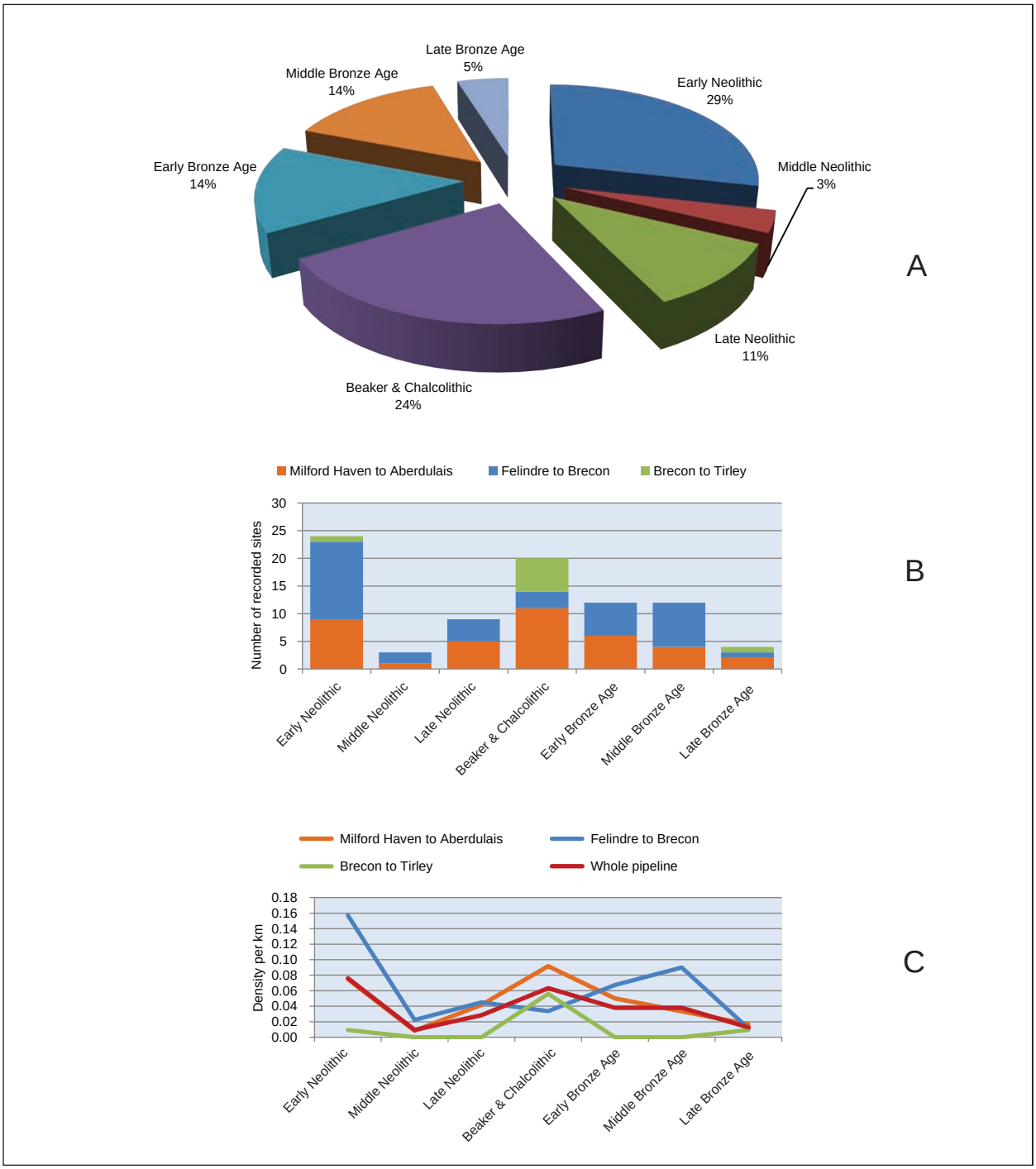


Fig. 4.2 Neolithic and Bronze Age sites investigated. A. Analysis of the well-dated sites divided by period; B. Analysis of the number of recorded sites by pipeline sector; C. Analysis of the density of recorded sites on each pipeline sector by date

Figure 4.2 shows the distribution of recorded sites by the main periods represented, as well as the number and density of sites recorded in each of the three defined sections of the pipeline. Known upstanding monuments were deliberately avoided during the pre-construction design-stage and feature very little in the following account. But, as often happens during major infrastructure developments, important previously unrecognised structures were brought to light for all periods of early prehistory thereby adding significant new dimensions to the accumulating narrative.

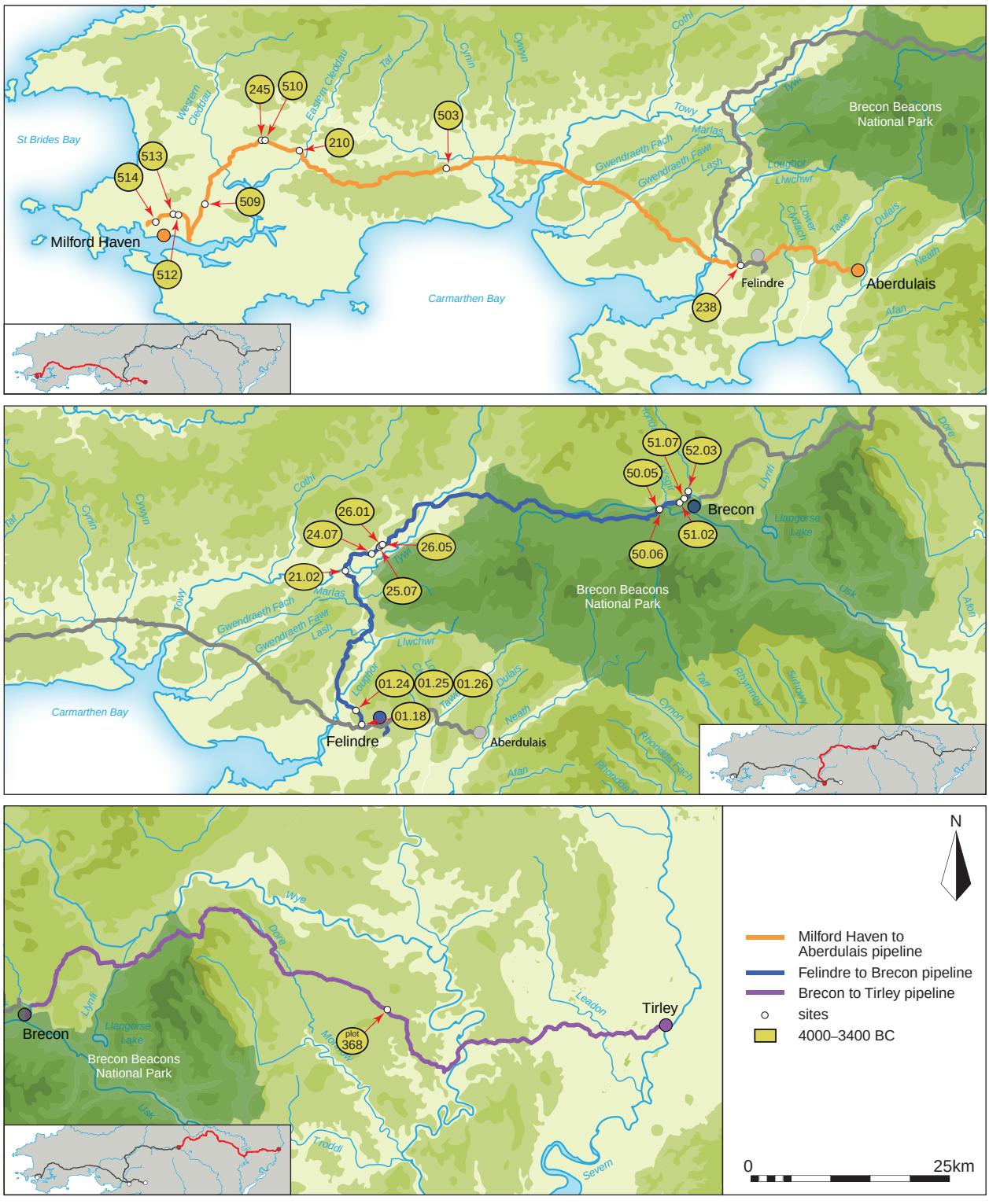
Attention here focuses on the Milford Haven to Aberdulais, and Felindre to Brecon sections, but results from the Brecon to Tirley section are mentioned where relevant. In situating the rich material uncovered along the pipeline, and results from detailed post-fieldwork studies, comparisons are drawn with known sites and monuments across South Wales, the Welsh Marches, and the mid-west of England. The wider archaeological contexts of these areas are usefully summarised, working west to east, by Timothy Darvill and Geoff Wainwright (2016), Frances Lynch and colleagues (2000), Stan Stanford (1980), Keith Ray (2015) and Timothy Darvill (2011a).

4000–3400 BC (Early Neolithic)

Around 4000 BC, influences from communities living on the continental mainland, including migrations of people from western France and Iberia, caused fundamental changes to the lifeways of people across the British Isles (Brace *et al.* 2018; Cunliffe 2001, 139–81; Darvill 2010, 77–130). This was especially notable along the Atlantic coastlands where stone monuments including dolmens, long barrows and passage graves started to be constructed. Ditched enclosures were built at intervals to provide meeting places for dispersed family-sized communities mainly living in settlements situated in woodland clearings around the coast and along most of the main river valleys. Simple farming based on the cultivation of wheat and barley and husbanding cattle, pigs, and sheep supplemented food chains based on hunting wild animals and gathering nuts, fruits, berries, tubers, herbs and other plant-stuffs. Distinctive pottery with shouldered or carinated forms began to be made, and other elements of material culture changed in support of the new subsistence practices. Interest in respected and meaningful persistent places in the landscape continued from earlier times, especially in relation to prominent rocks, springs, rivers, lakes and perhaps sacred trees standing out in the local wildwood. Spanning six centuries, this period saw relationships with the landscape change from people living with nature to a new-found domination of nature.

In all, 24 sites on the pipeline route can confidently be assigned to this period, 29 percentage of all recorded Neolithic and Early Bronze Age remains along the route. As Figures 4.3 and 4.4 show, most of the recorded Early Neolithic sites lie on relatively low-lying ground in the main river valleys; only two sites are known above 200m AOD and, importantly, there is strong negative evidence for an absence of activity on higher ground in the Brecon Beacons (Fig. 4.3). Environmental evidence suggests that all areas were well-wooded at this time; the species represented, and therefore the character and appearance of the landscape, varied from the oak and hazel stands of the lower ground in the south and west, birch woods on the higher ground, and lime woods to the east (Chapter 9). Small-scale clearances in the wildwood, some resulting from natural processes, others from human intervention, provided glades for settlements, garden plots, and perhaps places to keep livestock, but these were essentially forest people, living and working amongst the trees.

One or two Early Neolithic sites showed slight evidence of continuity in the use of places that had been visited by Mesolithic people, but none of the recorded sites truly span the later fifth and early fourth millennia BC. Conversely, something of the scale and impact of Early Neolithic activity can be seen by the wide spread of residual material from this period at 14 later sites along the pipeline, including struck flint or pottery from superficial deposits or the fills of later features at ten sites. Examples include a leaf-shaped arrowhead in the fill of a palaeochannel at Dolau Farm, Carmarthenshire (Site 26.01); stray finds including a flint


St Brides Bay
Milford Haven
Carmarthen Bay
Brecon Beacons National Park
Felindre
Aberdulais
Brecon
Tirley
245
510
503
210
513
514
509
512
238
51.07
52.03
50.05
51.02
50.06
26.01
24.07
26.05
21.02
25.07
01.24
01.25
01.26
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plot 368
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
4000–3400 BC
N
0
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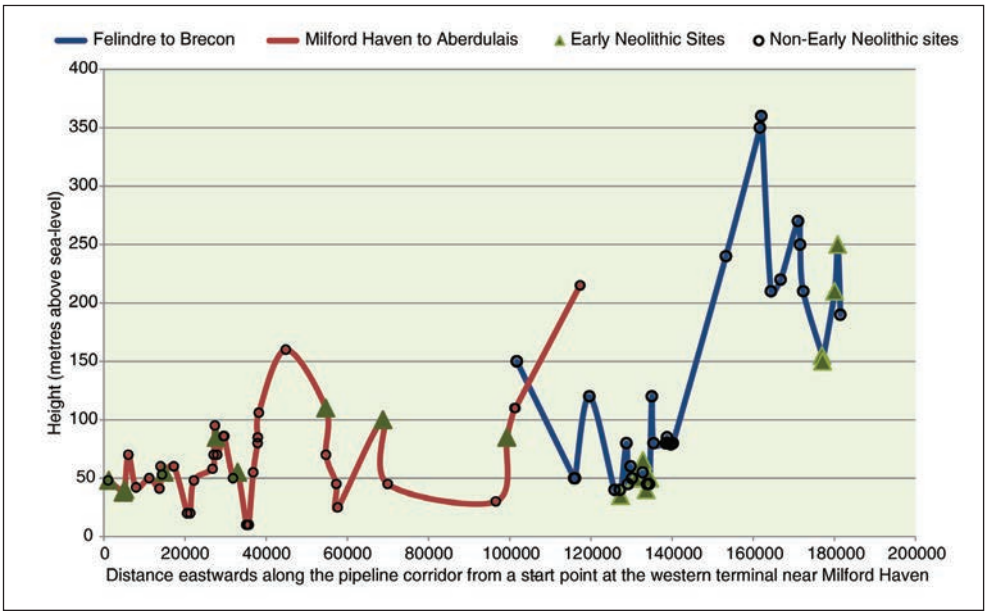


Fig. 4.4 Graph showing the elevation of the dated Early Neolithic sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Early Neolithic sites

scraper from Steynton, Pembrokeshire (Site 512); a leaf-shaped arrowhead from Kilpeck, Herefordshire (Plot 368); and a hazelnut shell dated to 3940–3700 cal BC (Beta-257723) from a medieval context at Brynwgan, Carmarthenshire (Site 25.07).

Pit clusters represent the most common type of Early Neolithic site encountered. Common right across the British Isles throughout the Neolithic and Early Bronze Age, they are sometimes interpreted as the remains of truncated settlements, especially where associated with postholes and structural remains (Field *et al.* 1964). Increasingly, however, pairs and small groups of pits are seen as small intimate ceremonial sites (Anderson-Whymark and Thomas 2012) representing occasional visits to significant places, perhaps to deposit material from a special event such as a feast or ritual act, to celebrate the forest and its trees, or to communicate with chthonic spirits. Drawing on the evidence of sites in the Towy Valley discussed below, Amelia Pannett (2012, 141) considered that some pit groups might have played a role in the expression of land ownership and social permanence.

The most extensive pit cluster found on the pipeline comprised 12 pits and a tree-throw hole at Pant-y-ffin, Swansea (Site 01.25) on the lower slopes of Mynydd Pysgodlyn. One pit near the centre of the group contained two pieces of struck flint. Just over a kilometre to the south, at Gelli-Wern-Isaf near the western foot of Mynydd Pysgodlyn, Swansea (Site 238), a group of four small pits was recognised; one had a stony fill containing charred hazelnut shell fragments and hazel fuelwood charcoal, and was dated to 3640–3370 cal BC (SUERC-57303). Groups of three pits were represented at Pant-y-ffin, Swansea (Site 01.26), where one pit was capped by a stony fill, and at Wiston, Pembrokeshire (Site 245), where the pits contained Carinated

Fig. 4.3 (opposite)
Map showing the distribution of Early Neolithic (4000–3400 BC) sites along the pipeline

Bowl pottery, burnt stones, struck flints, charred hazelnut shell fragments, and a few charred cereal grains. A pair of pits was found at Yscir, Powys (Site 51.02), where their fills contained burnt pebbles, two small sherds of Early Neolithic pottery, struck flints, and a quartzite flake. Charcoal from both pits included charred grains of wheat, charred hazelnut shell fragments, and oak and hazel charcoal. At Cilsan, Carmarthenshire (Site 21.02), pottery was present in one pit and contemporary material was residual in later features, while at Pant-y-ffin, Swansea (Site 01.24), a pair of sizable oval pits each had a stony upper fill and there were struck flints within the overlying topsoil. At Gurrey Cottage, Carmarthenshire (Site 24.07), a single circular pit contained the charred remains of hazelnut shell fragments, crab apples and a few wheat grains, along with a single flint chip and has two identical dates of 3770–3640 cal BC (SUERC-57298 and 57299). Undated pit clusters, probably of this same period to judge from their position and fills, were identified at a further 29 sites.

Less common, but more significant, are the settlement sites of this period, of which three were identified along the pipeline. Each comprises the tell-tale ground-plan of one or two timber-framed houses and a scatter of pits. The most substantial is at Cwmifor, Carmarthenshire (Site 26.05), in the Towy valley.

Cwmifor lies on a low terrace near the confluence of the Rivers Towy and Dulais and investigations revealed the remains of a small settlement of the early fourth millennium BC (Fig. 4.3B). Residual pieces of worked flint and a charred hazelnut shell fragment dated to 6650–6450 cal BC (Beta-257726) show that the area had been visited by Mesolithic hunter-gatherers and it may have been a persistent place in the landscape. The scale of activity increased dramatically after 3800 BC as a small homestead deep in the wooded valley was established for a few generations.

In the centre of the site were the remains of a house represented by a group of rather truncated pits and postholes dated to the early fourth millennium cal BC by three radiocarbon determinations (Beta-257727, SUERC-54561 and 54562). There was also a fine edge-polished flint knife. Small assemblages of charred emmer wheat and hazelnut shell fragments were recovered alongside charcoal from oak and hazel fuelwood.

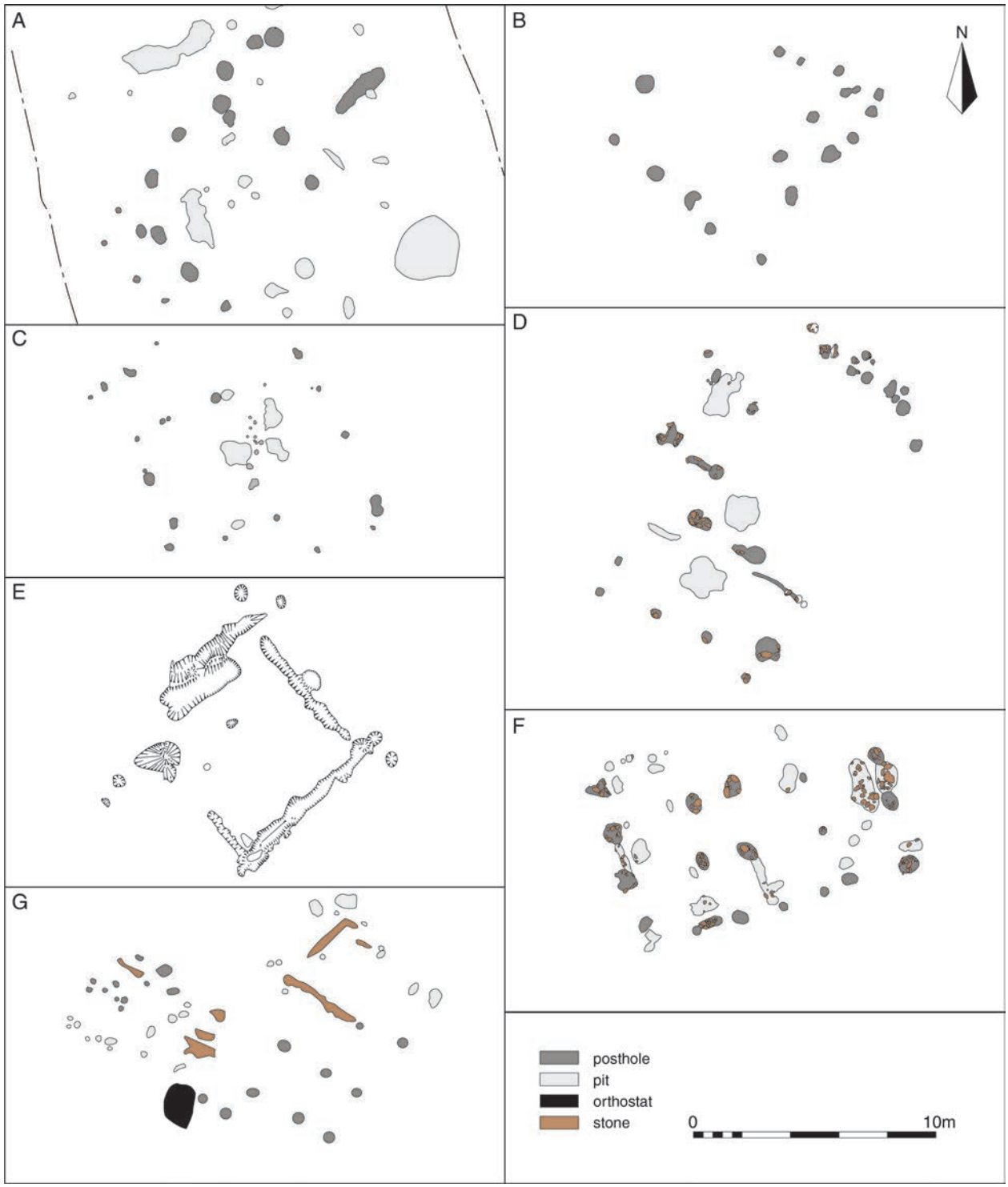
Based on the pattern of recorded features, several reconstructions are possible, including a horseshoe-shaped setting of pits (cf. Pannett 2012, 137–9), a rectangular structure 10m by 6m, or, most plausibly, a square timber-framed structure about 6m across. If the last-mentioned is right, then inside was a hearth containing charred fragments of more than 80 hazelnut shells, the greatest concentration on the site.

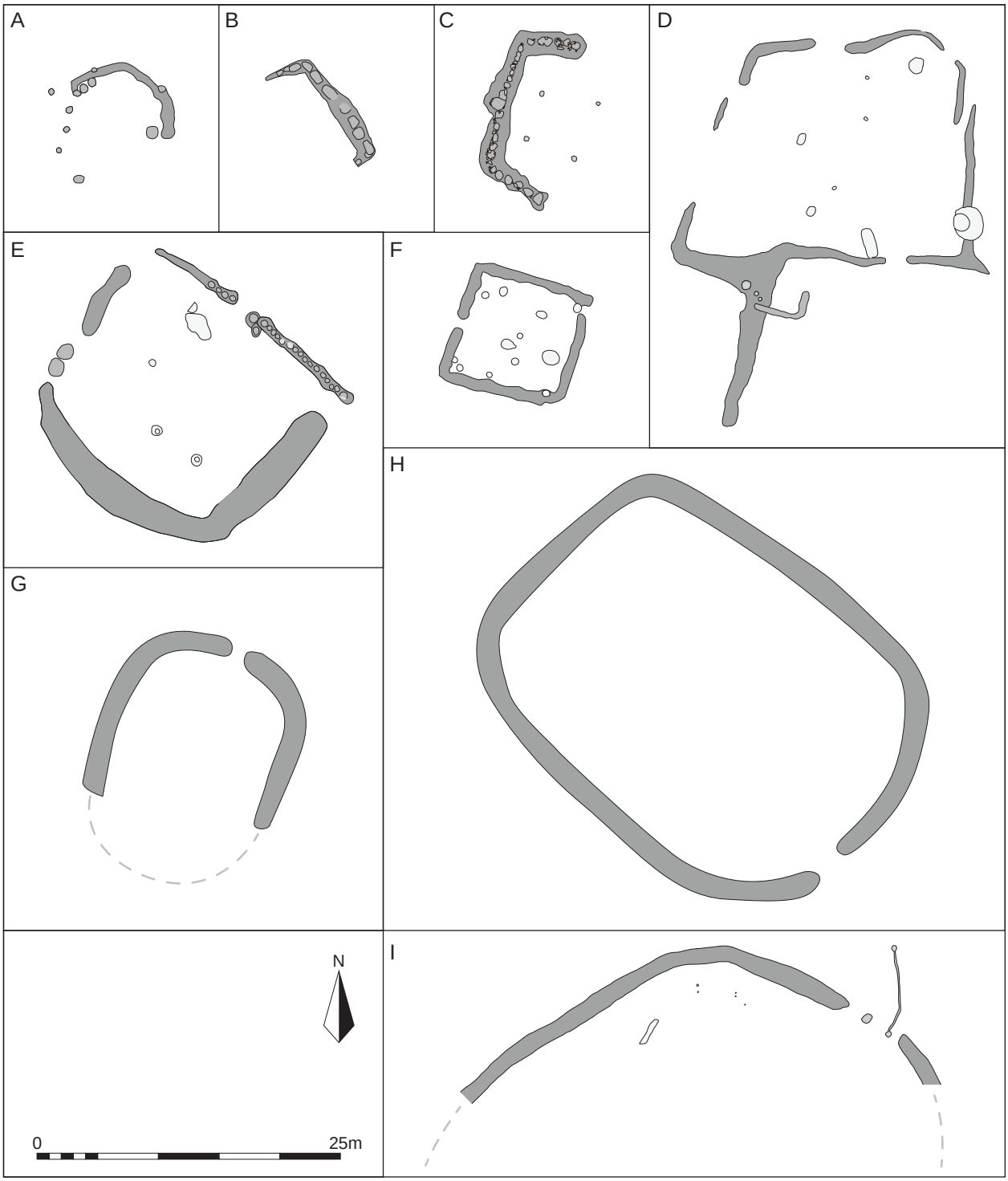
Outside the structure to the north-east were three pits and a scatter of scoops and hollows. The pits contained pieces from at least ten Carinated Bowls, some in a quartz-tempered fabric and others in a vesicular ware of the kind probably used for vessels intended to store liquids needing to be kept cool. Remnants of flintworking included cores, micro-debitage, and waste flakes made from fresh dark-grey raw material. A few undiagnostic fragments of burnt and unburnt animal bone, charred emmer-wheat grain and chaff, a few grains of barley, and abundant charred hazelnut shell fragments represented the remains of a midden.

The full extent of the settlement is not known, but at Site 26.04, less than 200m to the south-west, residual hazel charcoal from a spread of burnt material overlying a tree-throw hole was dated to 3780–3640 cal BC (SUERC-54566), while at Site 26.01, just 600m further to the south-west, a leaf-shaped arrowhead was found in an infilled ancient river channel.

Two more possible Early Neolithic houses were found on the pipeline, both overlooking the River Honddu.

Fig. 4.5 (opposite)
Comparative plans of Early Neolithic houses. A. Cwmifor, Carmarthenshire (Site 26.05); B. Pen-y-Crug, Powys (Site 51.07); C. Kilmainham 1C, Co. Meath, Ireland (after Smyth 2014, fig. 3.11); D. Llanfaethlu, Anglesey (after Rees and Jones 2016, 47); E. Fengate, Peterborough, Cambridgeshire (after Pryor 1974, fig. 4); F. Llandegai II, Gwynedd (after Kenney 2008, fig. 7); G. Gwernvale, Powys (after Britnell and Savory 1984, fig. 13)


A
B
N
C
D
E
F
G
posthole
pit
orthostat
stone
0
10m


A
B
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H
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I
0
25m

At Yscir near Pen-y-Crug, Powys (Site 51.07), a group of 17 postholes defined a roughly square structure about 8m across (Fig. 4.5B). Outside this structure to the north-east was a group of seven pits, one dated to 3710–3630 cal BC (SUERC-54692) and a second to 3670–3530 cal BC (SUERC-54691). Small quantities of Carinated Bowl pottery along with fired clay, debitage from flintworking, small amounts of burnt bone, and charred plant remains including cereals and hazelnut shell fragments were also found. Less than 1km to the north-east was another possible settlement at Gwenffrwd, Llandefaelog, Powys (Site 52.03), represented by a group of pits, postholes and a gully. A large assemblage of charred plant remains, fired clay, worked flint, burnt animal bone and a single piece of pottery was recovered, while a nearby natural hollow was cut by a pit whose fill contained a reworked polished stone axe tentatively assigned to petrological Group VIII whose origins lie about 120km to the west within or around the Preseli Hills of north Pembrokeshire (Darvill 2011b, 134). One feature produced cremated human bone from an individual aged at least 21 years.

If correctly identified, the two settlements in Powys may represent the homes of those who built and used some of the long barrows forming the Black Mountain group of Cotswold-Severn tombs (Darvill 2004, 86–7; RCAHMW 1997, 27–63). These large stone-built mounds with internal chambers were not only burial places but also acted as territorial markers. Settlements were usually several kilometres away, and in this regard it is interesting that Plots 110 and 111 near Talgarth, Powys, were adjacent to the Pipton long barrow overlooking the confluence of the Rivers Llynfi and Wye (Savory 1956) but yielded no evidence of contemporary activity.

All three Early Neolithic houses can be paralleled amongst a range of post-built Early Neolithic structures elsewhere in the British Isles (Darvill and Thomas 1996; Smyth 2014). Figure 4.5 shows a selection of comparative ground plans. Cwmifor (Fig. 4.5A) compares favourably with some of the rectangular houses such as Llanfaethlu 3, Anglesey (Fig. 4.5D), Llandegai II, Gwynedd (Fig. 4.5F), and Gwernvale, Powys (Fig. 4.5G). Pen-y-Crug (Fig. 4.5B) is comparable to Kilmainham 1, Co. Meath, Ireland (Fig. 4.5C), including the presence of a small enclosed area in one corner that is also seen at Llanfaethlu 3, Anglesey (Fig. 4.5D).

Towards the far western end of the pipeline are two possible ceremonial sites of the early fourth millennium. Site 514 at Upper Neeston, Pembrokeshire lies north of Milford Haven beside a small stream issuing into Gelliswick Bay. The most distinctive feature was a C-shaped ditch with steep sides and a flat base defining an arc about 9m across and with the open ends facing towards the south-west (Fig. 4.6A). The fill of the ditch was fairly clean except near the south-eastern terminal where the fill contained sherds of Carinated Bowl pottery, charcoal, charred hazelnut shell fragments and worked flints. Amongst the flints was residual later Mesolithic material. One of the hazelnut shells provided a radiocarbon date of 3780–3640 cal BC (SUERC-54698). About 5m north of the ditch was a small pit containing Carinated Bowl pottery, worked flints, charred hazelnut shell fragments and charcoal from fuelwood. One of the nutshells provided a radiocarbon date of 3760–3640 cal BC (SUERC-54699). It is hard to know how to reconstruct the C-shaped ditch, especially as it appears to have been truncated to the extent that it is difficult to say whether it ever held timber uprights. It may represent the remains of a partial ring ditch similar to that recorded at Buttington Cross, Powys (Mann and Hurst 2014), or perhaps the remains of some kind of a 'cove' structure of the kind more commonly

Fig. 4.6 (opposite)
Comparative plans of Early Neolithic ditched features. A. Upper Neeston, Pembrokeshire (Site 514); B. Redlands Farm, Raunds, Northamptonshire (after Harding and Healy 2007, fig. 3.26); C. Street House, Cleveland (after Vyner 1984, fig. 9); D. Middle Bastleford, Pembrokeshire (Site 509); E. Grendon, Northamptonshire (after Gibson 1985, fig. 4); F. Windmill Hill, Wiltshire (after Smith 1965, fig. 10); G. Pengoilan, Carmarthenshire (Site 20.08); H. Lower Luggy, Powys (after Gibson 2006, fig. 6); I. Raunds, Northamptonshire (after Harding and Healy 2007, fig. 3.49)

found in stone (Burl 1988). Alternatively, it may have been the remains of a façade structure of the kind represented at Redlands Farm, Northamptonshire (Harding and Healy 2007, 76–80; Fig. 4.6B) and Street House, Cleveland (Vyner 1984, 165; Fig. 4.6C). At both these sites, the façade was later elaborated through being incorporated into the terminal of a long barrow, although at Upper Neeston no further elaboration is evident. However, the site lies in an area where just such activities were in progress during the fourth millennia BC and a possible long barrow has been recognised 900m to the west at Herbrandston Hall.

Rather different is the enclosure at Middle Bastleford, Pembrokeshire (Site 509), located on the coastal plain close to springs feeding small tributaries of the Westfield Pill on the north side of Milford Haven (Fig. 4.6D). Along with Sites 512 to 514, it is one of the more westerly Early Neolithic sites recorded along the pipeline and comprises a roughly square enclosure 20m by 15m defined by a series of irregular ditches. Near the centre was an oval pit containing Carinated Bowl pottery and a substantial assemblage of worked flint, some burnt. Fuelwood charcoal of oak and hazel as well as charred hazelnut shell fragments, charred grain, and the charred remains of fruits from hawthorn, apple, pear and whitebeam were found within the pit fills. A hazelnut shell provided a radiocarbon date of 3900–3660 cal BC (SUERC-54570) and charcoal from the same context was dated 3780–3640 cal BC (SUERC-54571). Other pits outside the enclosure to the north-east and east contained similar assemblages and one was dated to 3710–3630 cal BC (SUERC-54572). More undated features lay within and around the enclosure. Broadly comparable sites include the D-shaped enclosure at Grendon, Northamptonshire (Gibson 1985; Fig. 4.6E) and the square enclosure at Windmill Hill, Wiltshire (Smith 1965, 30–3. Fig. 4.6F), both of which can be seen as part of the mortuary enclosure tradition (Darvill 2010, fig. 42; Loveday 2006, 45–87). Interestingly, 3km to the north-west of the Middle Bastleford enclosure is the Hanging Stone at Burton, a well-preserved dolmen whose large capstone is more than 3m across (Barker 1992, 36–7; Darvill and Wainwright 2016, 85).

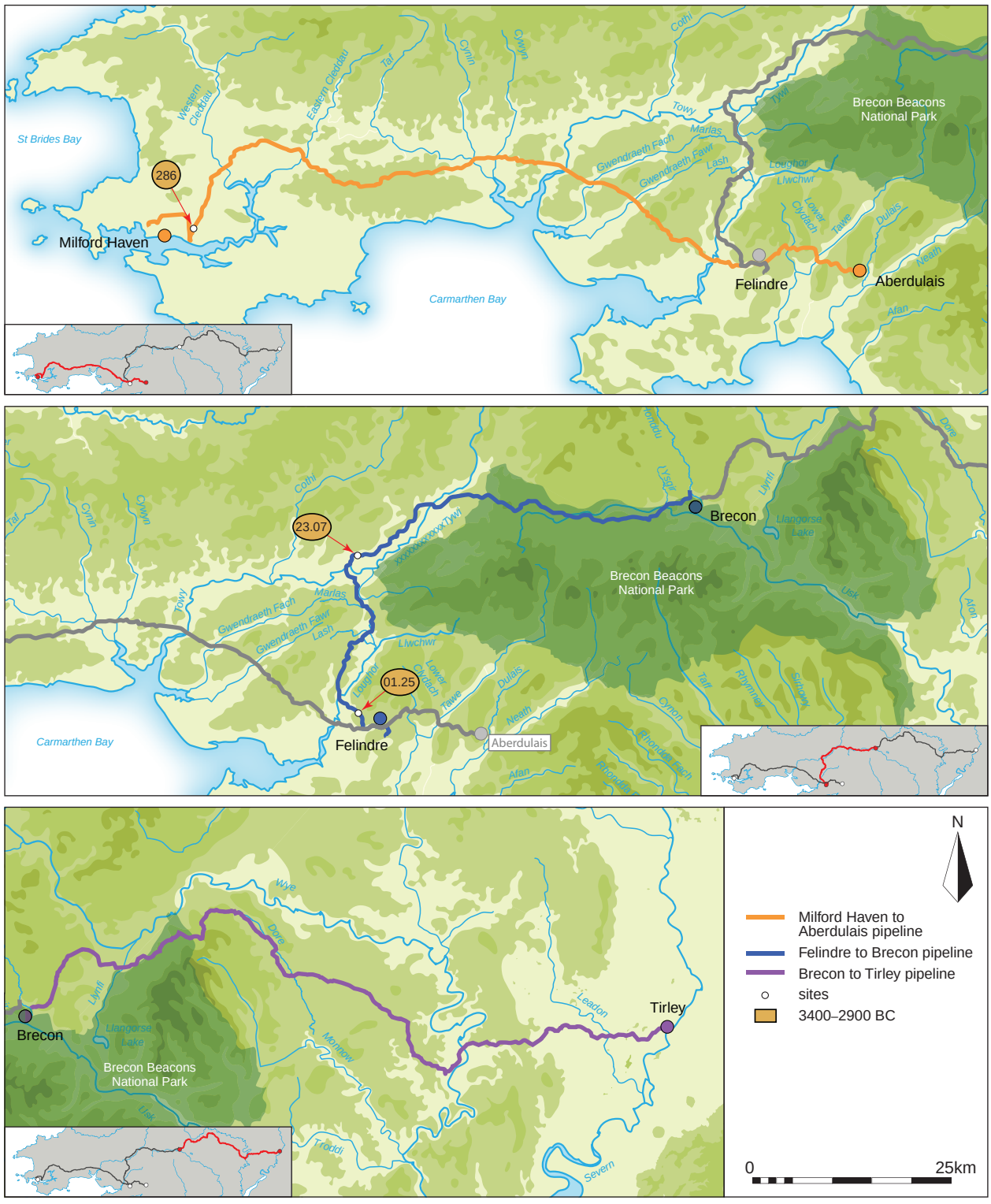
Finally, at Pengoilan, Carmarthenshire (Site 20.08), an undated ditched enclosure with an entrance opening to the north-east was found partly within the excavated area (Fig. 4.6G). The ditch had a V-shaped profile and there was a scatter of small pits and postholes on the inside. An elongated pit within the enclosure had a charcoal-rich fill that included large quantities of burnt stone and hazelnut shell fragments. One pit yielded pottery from a Carinated Bowl, while pieces of struck flint derived from the fills of the enclosure ditches and surrounding areas. Although only partially defined, the enclosure is very like the mid fourth-millennium BC enclosure at Lower Luggy, Powys (Gibson 2006; Fig. 4.6H) and the undated example at Raunds, Northamptonshire (Harding and Healy 2007, 104–11; Fig. 4.6I).

3400–2900 BC (Middle Neolithic)

After a period during which early farming communities expanded their influence and impact in the early and mid fourth millennium BC, the following centuries saw occupation contract, and the production of cereals curtailed in favour of pastoralism in at least some areas, including Wales (Bishop 2015; Stevens and Fuller 2012; Treasure *et al.* 2019). Accompanying changes to material culture included the introduction of Impressed Ware pottery, in Wales characterised by Mortlake and Fengate Ware (Gibson 1995). The construction of traditional monuments stopped, and existing long barrows, causewayed enclosures, and settlements were either abandoned completely or visited only rarely (Ard and Darvill 2015).

Evidence from the pipeline supports the wider picture. Only three sites dated to the Middle Neolithic were recorded along the pipeline (3% of all recorded Neolithic and Bronze Age sites), all of them pit clusters established in earlier centuries that were subject to continuing periodic visits. Figures 4.7 and 4.8 show their

Fig. 4.7 (opposite)
Map showing the distribution of Middle Neolithic sites (3400–2900 BC) along the pipeline


St Brides Bay
Western Cleddau
Eastern Cleddau
Tâf
Cynin
Cynwyn
Cothi
Towy
Marlas
Gwendraeth Fach
Gwendraeth Fawr
Lash
Tywi
Brecon Beacons National Park
Llwchwr
Lower Clydach
Tawe
Dulais
Neath
Afan
286
Milford Haven
Carmarthen Bay
Felindre
Aberdulais
23.07
Brecon
Llyfni
Llangorse Lake
Usk
Taff
Rhymney
Sirhowy
Cynon
Rhondda Fach
Afan
01.25
Wye
Dore
Monnow
Leadon
Tirley
Troddi
Severn
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Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
3400–2900 BC
0
25km

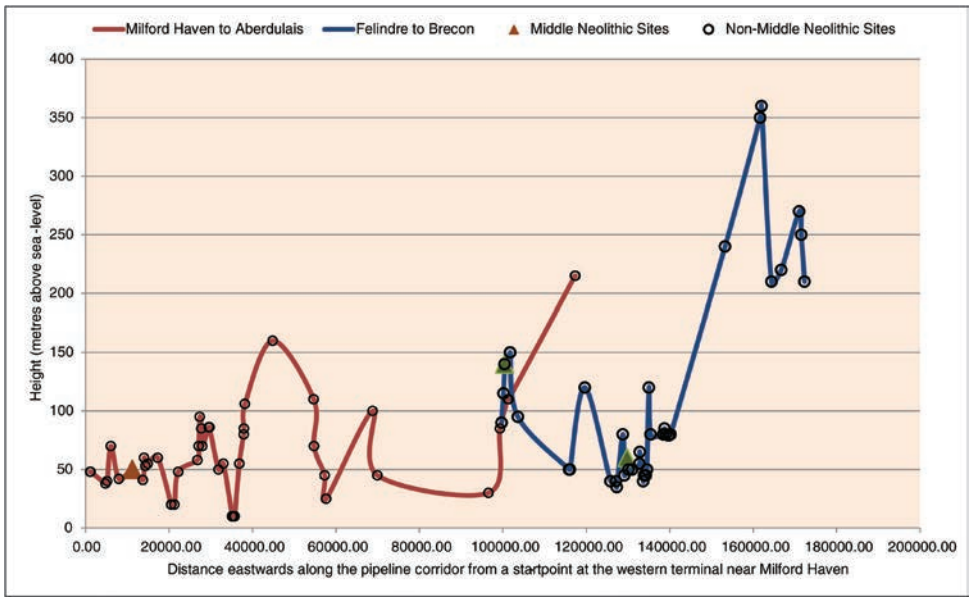


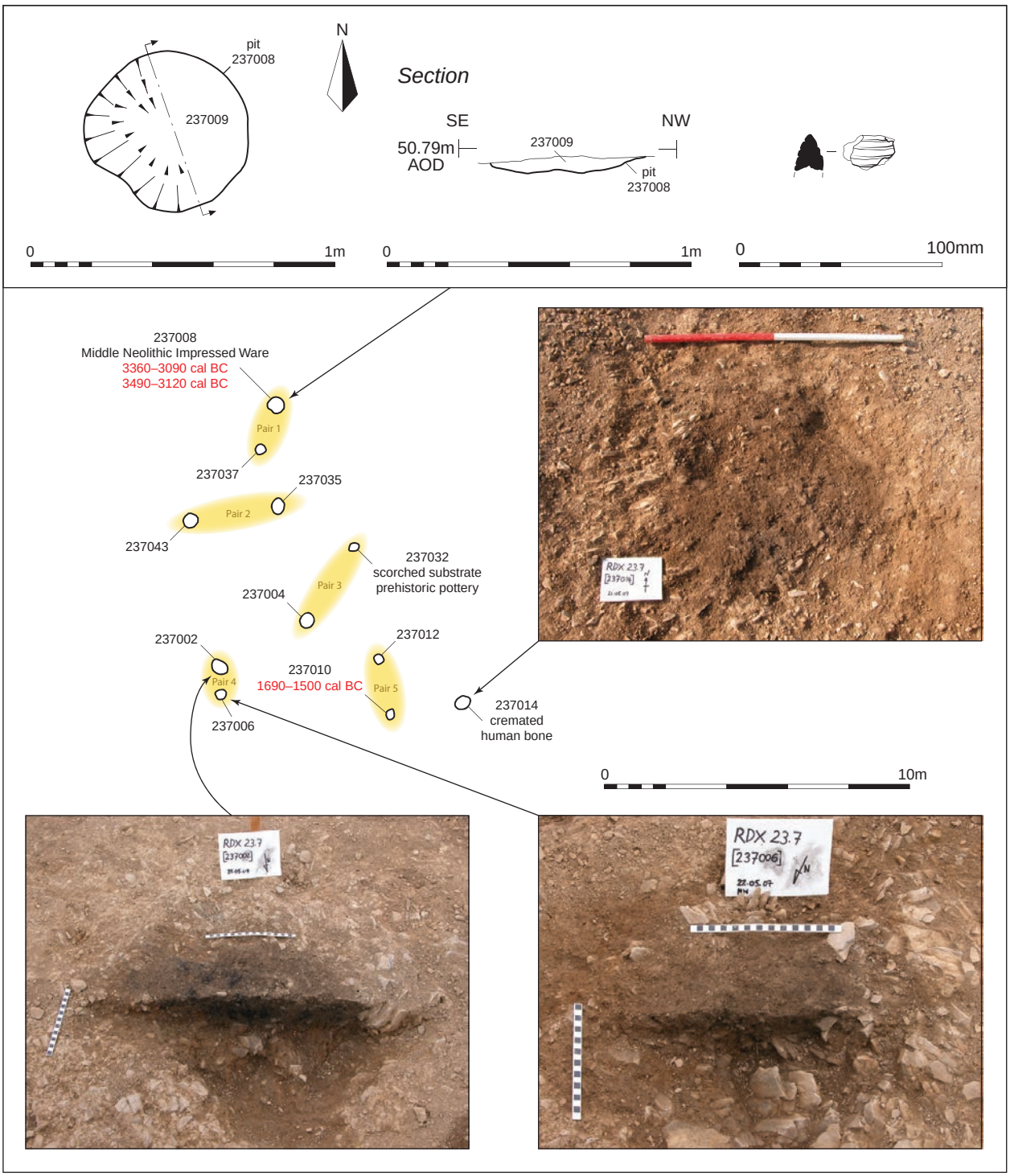
Fig. 4.8 Graph showing the elevation of the dated Middle Neolithic sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Middle Neolithic sites

location and altitudinal distribution, suggesting a preference for intermediate ground between about 50m and 150m AOD. It is possible that some of the undated but presumed Early Neolithic sites noted above belong to this later period, but, in the absence of distinctive material culture or radiocarbon dates, firm attribution is impossible.

Pant-y-ffin, Swansea (Site 01.25), was one of the most extensive pit clusters uncovered, with a total of 12 pits and two tree-throw holes. Visits here began in the Early Neolithic (see above), but continued into the Middle Neolithic as one of the pits towards the northern end of the spread was dated to 3490–3120 cal BC (Beta-257712) and included struck flint, charred hazelnut shell fragments and charcoal. Lower Scoveston, Pembrokeshire (Site 286), comprised two elements about 30m apart. The northern cluster was formed of five small pits, all containing worked flint. Two pits also contained Early Neolithic Carinated Bowl-style pottery, whilst three pits contained Impressed Wares. Charcoal, animal bone and charred hazelnut shell fragments were also present, but no cereal grains. The southern cluster contained three pits and two postholes, but yielded no finds. The third site, Pen-y-banc, Carmarthenshire (Site 23.07), is more typical of Middle Neolithic pit clusters.

Set in a gently undulating low-lying landscape beside a small stream, the Pen-y-banc pit cluster probably started life under woodland. Five pairs of pits were recognised, together with a single pit containing cremated human remains (Fig. 4.9). The chronology of the cluster depends on two dated features, but suggests a progression from

Fig. 4.9 (opposite)
Plan of Middle Neolithic pits at Pen-y-banc, Carmarthenshire (Site 23.07), showing suggested pairing of pits, with selected photographs (20cm and 50cm scales) and a detail plan and section, and drawing of a sherd of Impressed Ware


pit
237008
237009
N
Section
SE
NW
50.79m
AOD
237009
pit
237008
0
1m
0
1m
0
100mm
237008
Middle Neolithic Impressed Ware
3360–3090 cal BC
3490–3120 cal BC
Pair 1
237037
237035
Pair 2
237043
237032
scorched substrate
prehistoric pottery
237004
Pair 3
237002
237012
237010
1690–1500 cal BC
Pair 4
Pair 5
237006
237014
cremated
human bone
0
10m
RDX 23.7
[237008]
RDX 23.7
[237006]

north to south, perhaps representing episodic visits over a period of more than a thousand years. What attracted attention to this spot is not known, but it could have been the stream just 100m to the west.

Both pits in Pair 1 at the northern end of the cluster contained burnt stone, charred hazelnut shell fragments, and a mixture of oak and hazel charcoal. The larger of the pair also contained ten sherds of Mortlake Ware from a single vessel, a flint flake and a small quantity of undiagnostic burnt bone. Pieces of hazelnut shell were dated to the period 3490 to 3090 cal BC (SUERC-54700, Beta-257720).

The Pair 2 pits both included burnt stone and charred hazelnut shell fragments. The Pair 3 pits both included hazelnut shells, while the northernmost of these also contained burnt stone, a few crumbs of pottery, and had scorched sides suggesting it had once contained a small fire. The Pair 4 pits both had a grey-black fill that included charred hazelnut shell fragments and charred cereal grains. Pair 5, the southernmost, both had grey-black fills containing burnt stone and burnt clay and the southernmost of these also contained charred hazelnut shell fragments, charred cereal grains, oak charcoal, and burnt bone. One of the hazelnut shells was dated to 1690–1500 cal BC (Beta-257721), making this the latest feature on the site.

East of Pair 5 was a single pit whose brown fill differentiated it from the other pits; it contained a single small piece of struck flint and about 25g of cremated human bone identified as the very partial remains of a post-adolescent.

Comparable pit clusters providing parallels for all three sites are well-known across the British Isles and represent an enduring tradition spanning the fourth and third millennia BC (Anderson-Whymark and Thomas 2012). As previously noted, debate surrounds their exact purpose, but most are considered to have been cut during ceremonies involving the placement of selected items, communications with the spirits of the earth, and, increasingly through the fourth millennium BC, the deposition of cremated human remains. Periodic visitation could well be connected with mobile pastoralist elements of society which Peterson (2003) suggests were prevalent across much of Wales by the early third millennium BC.

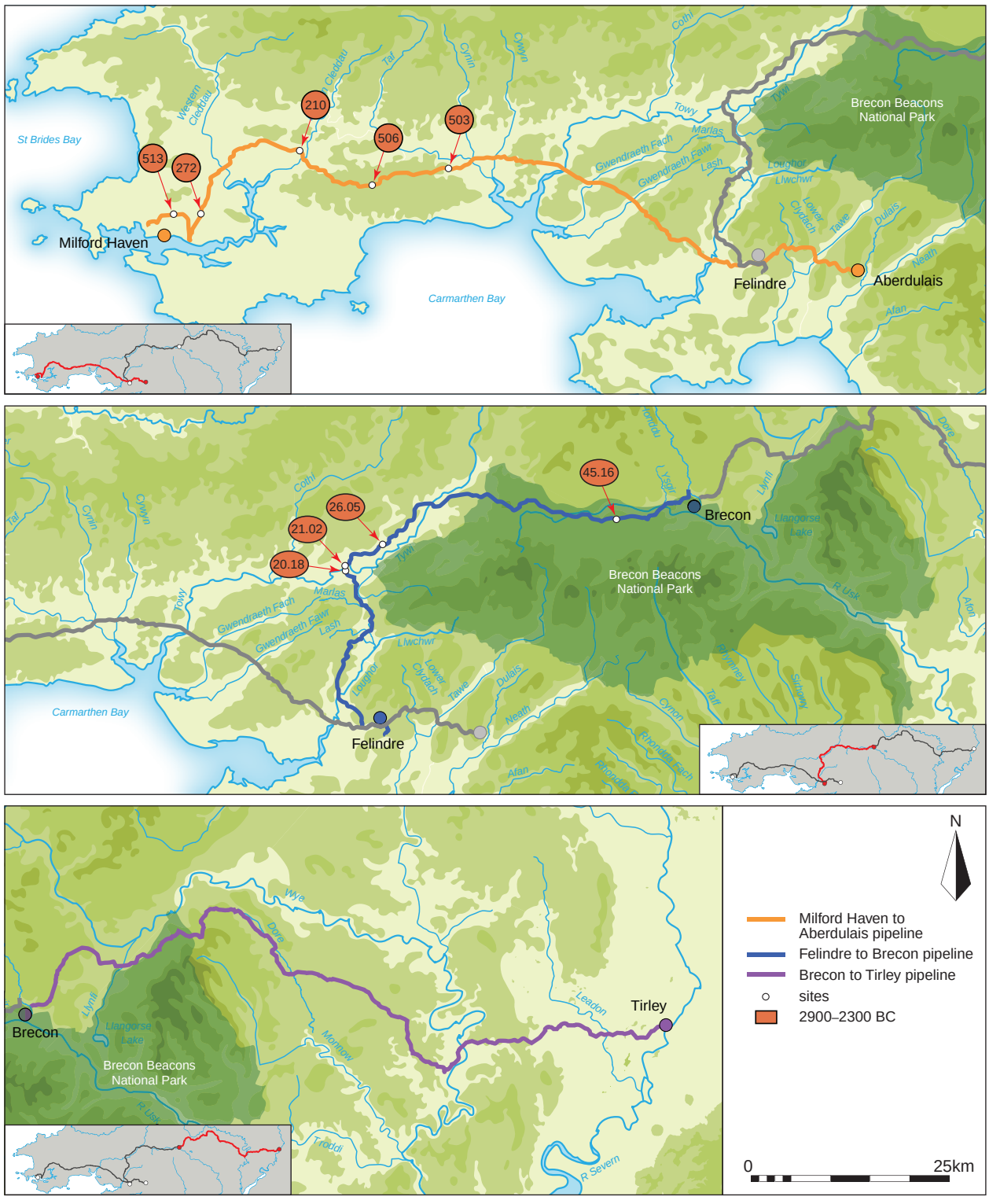
2900–2300 BC (Late Neolithic)

Changes across Britain in the period around 3000 BC are reflected in South Wales by the appearance of Grooved Ware pottery. This seems to have been associated with semi-mobile communities whose economic base was mainly pastoralism with limited cultivation of wheat and barley in small plots within woodlands not so different from those of earlier times, albeit with larger cleared areas. Styles of flintworking changed, and distinctive tools and weapons such as the triangular arrowhead found in topsoil at Croft Farm, Pembrokeshire (Site 210) were made. Pit clusters continued with an increasing emphasis on use as burial places, while novel types of monument such as henges become foci within local or regional ceremonial centres.

Nine sites on the pipeline yielded evidence of activity during the Late Neolithic, three times the number known from the previous period (Fig. 4.10). As Figure 4.11 shows, most were situated in the main river valleys, but occasionally they lie on higher ground up to 260m AOD. Houses of this period tend to be small square temporary structures, such as those at Site B on Stackpole Warren, Pembrokeshire (Benson *et al.* 1990, figs 22c–d) and Trelystan, Powys (Britnell 1982, figs 3–4).

Six pit clusters are represented, all seemingly without evidence of domestic activity in the immediate vicinity and therefore continuing the tradition of ceremonial pit digging in what must be significant places. At Steynton, Pembrokeshire (Site 513), 11 pits of various shapes and sizes were uncovered. Near-identical radiocarbon dates both giving a range of 2880–2570 cal BC (SUERC-54659 and 54660) were obtained on samples of *Corylus* charcoal from two of the pits. The remainder are considered contemporary and were

Fig. 4.10 (opposite)
Map showing the distribution of Late Neolithic (2900–2300 BC) sites along the pipeline


St Brides Bay
Milford Haven
Carmarthen Bay
Brecon Beacons National Park
Felindre
Aberdulais
Brecon
Tirley
210
503
506
513
272
45.16
26.05
21.02
20.18
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
2900–2300 BC
N
0
25km

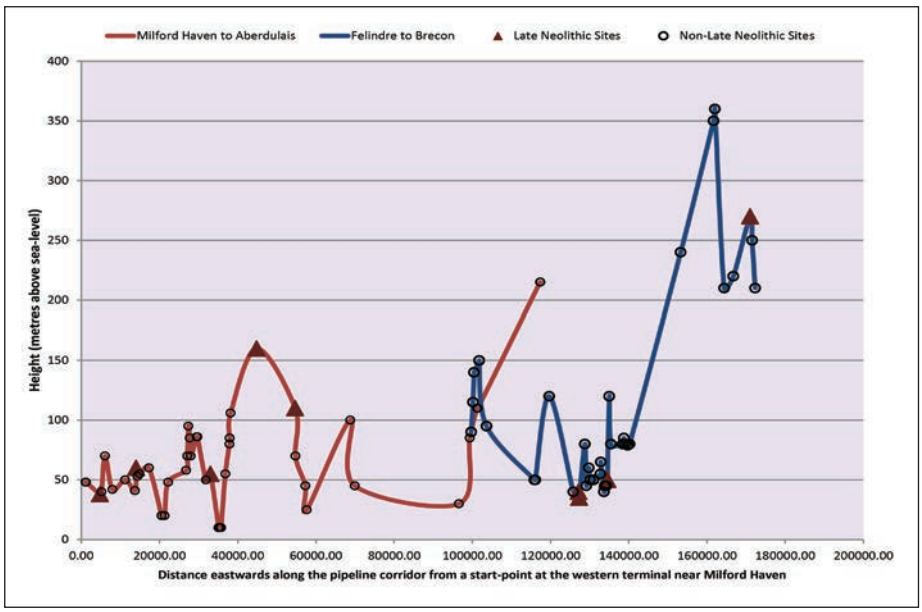


Fig. 4.11 Graph showing the elevation of the dated Late Neolithic sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Late Neolithic sites

variously associated with the remains of at least four Grooved Ware vessels along with charred hazelnut shell fragments and burnt bone. One of the Grooved Ware vessels showed signs of having been repaired, something that is not uncommon and reflects the value of pottery vessels. Four pits were present at Cilsan, Carmarthenshire (Site 21.02), again associated with Grooved Ware pottery, as well as a few worked flints, pieces of stone, charcoal and charred hazelnut shell fragments. One pit yielded two similar radiocarbon dates (SUERC-56039 and 56040) with ranges of 3010–2870 cal BC and 2910–2690 cal BC.

Three bowl-shaped pits were present at Westfields, Pembrokeshire (Site 272), all associated with charcoal, burnt stones and worked flint. One also contained a small quantity of burnt bone. Radiocarbon dates from charred hazelnut shell fragments found in separate pits dated the group to about 2860–2470 cal BC (SUERC-57286 and 57287). A pair of pits at Maescar, Powys (Site 45.16) was associated with pieces of flint, a small quantity of burnt bone, two small sherds of pottery, charcoal dominated by oak and hazel but also including ash and lime, abundant charred hazelnut shell fragments, and charred cabbage/mustard-type seeds. A date of 2580–2460 cal BC (SUERC-57283) from one of these pits places this activity in the mid third millennium BC. Single pits were found at Cwmifor, Carmarthenshire (Site 26.05) and Cilsan Mill, Carmarthenshire (Site 20.18), associated with hazel/alder charcoal and charred hazelnut shell fragments, of which the Cilsan Mill hazelnut shell gave a date of 2880–2570 cal BC (SUERC-57309).

Two sites expand the repertoire of monuments known in South Wales from this period. The first, and most impressive, is the henge monument at Vaynor Farm, Carmarthenshire (Site 503)

Vaynor henge represents a major addition to the national picture of later Neolithic ceremonial sites in Britain. Initially found during pre-construction geophysical surveys in 2005, and verified through field evaluation in autumn 2005, the site was fully excavated during pipeline construction over the summer of 2006 (Fig. 4.13 and Key Site 6). Invisible on the surface because of heavy truncation by later prehistoric,

Roman, medieval, and recent cultivation, this hilltop monument overlooks the confluence of the River Taf and a small watercourse. When built, it lay in open country with woodland in the surrounding valleys and has extensive views to the south and east.

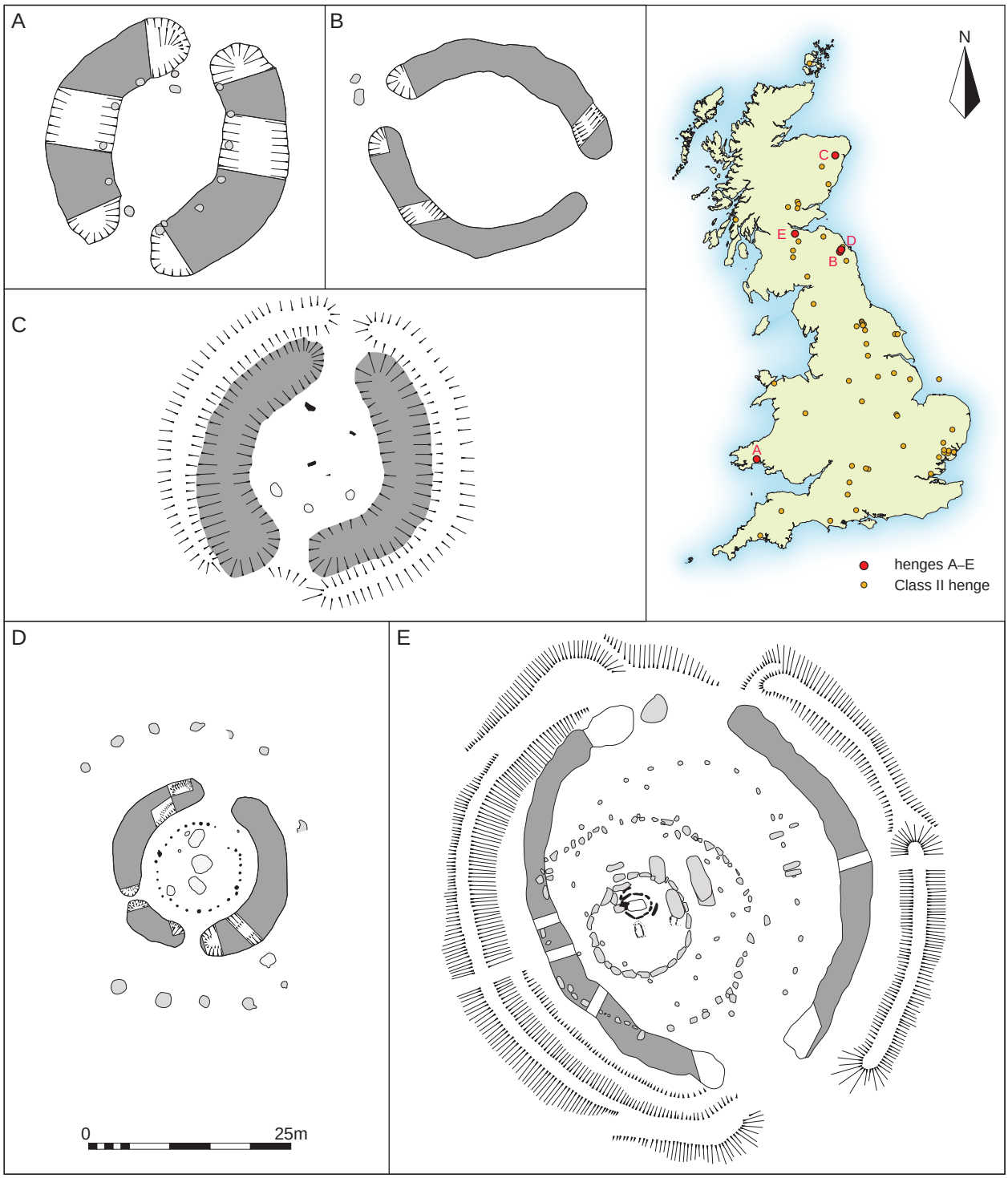
The henge comprises a pair of banana-shaped ditches defining an oval interior space 18.5m by 13m, although this may have been somewhat wider (perhaps by as much as 3m) and reduced over time due to erosion and later human activity. The ditches were rock-cut, originally about 5m wide but eroded out to almost 8m in places, with steep sides and a flat bottom, generally 1.9m to 2.5m deep but with deeper northern terminals reaching 3.3m. Areas of scorched rock on the ditch floor may reflect the use of fire-setting to break up the rock during quarrying, or the placement of fires in the ditch during the use of the henge. Two opposed entrances, each about 4m wide, open to the north-east and south-west, creating a longitudinal axis through the monument roughly aligned on the rising sun at the midsummer solstice and the setting sun at the midwinter solstice. Outside the ditches there would originally have been flanking banks estimated to be 5m wide and up to 3m high, but slighting and subsequent erosion had removed these.

Inside was a setting of 12 pits or sockets arranged in an oval, doubled-up near the south-eastern ditch terminal with an additional socket. Although now preserved on the inner lip of the ditch, originally these sockets stood about 1m in from the ditch edge. The layout of the sockets reflects exactly the line of the ditches, and their spacing reflects the opposed entrances. All were substantial, 0.9m to 1.2m across and 0.6m to 1.2m deep, with steep sides. Five contained packing stones suggesting that they had originally held timber posts or standing stones. No other features contemporary with the use of the henge were found in the interior, and nothing remained of the original ground surface.

The ditch fills were complicated and reflect a long history of construction, use and erosion. The primary fills resulted from the rapid erosion of the external bank and the upper ditch sides. Although devoid of finds, analysis of the charcoal suggests that hazel, oak and hawthorn from the surrounding landscape were used as fuelwood, presumably for offerings or feasts associated with ceremonies undertaken at the henge. After perhaps a decade or two, the fill stabilised and a sediment slowly accrued. Within this secondary fill were coarse Beaker pottery sherds and scrappy sherds from three other vessels that might be Collared Urns; all probably derive from activities inside the monument during the Chalcolithic period. Plant remains were scarce but included a few cereal grains, charred hazelnut shell fragments, and charcoal representing mainly oak and hazel. Subsequent fills relate to what may have been deliberate slighting of the banks and infilling of the ditches, although these left the banks and ditches as slight earthworks, visible at least into the Roman period.

A comprehensive radiocarbon-dating programme (including Bayesian modelling, results shown in italics) provides a clear picture of the age and life of the henge. A single date of 7580–7470 cal BC (SUERC-51706) on a burnt hazelnut shell fragment from the primary ditch fill suggests early activity in the area, although what form this took is unknown. Three samples from the early ditch fills suggest that construction of the earthworks started before *2600 cal BC* and that they were finished by *2490–2290 cal BC*. Six dates from the fills of the internal pits show this structure began about *2640–2350 cal BC* and was out of use by about *2470–2120 cal BC*. Bayesian modelling of the radiocarbon dates and stratigraphy indicate that it may have been in use for as little as a century or so *(1–230 years)*. The secondary ditch fills are represented by six dates showing that these deposits started accumulating about *2440–2220 cal BC* and had part-filled the ditch by *1900–1400 cal BC*. The remaining eight dates relate to later activity on the site and in the tertiary ditch fills from around 1000 BC through into the Roman period.

Like most henges, there is evidence for a range of broadly contemporary activities in the general vicinity, including a cremation cemetery (Site 222) about 200m to the east (see below) while 350m to the north is a second extensive cremation cemetery of 78 urned and un-urned burials found during the upgrading of the A477 St Clears to Red Roses road in 2013 (Barber *et al.* 2019, 30–41).


A
B
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henges A–E
Class II henge
0
25m

This is a significant and unexpected discovery that extends the distribution of known examples into south-west Wales. Classic henges are found in a range of sizes, from small examples less than 20m across up to the largest at Avebury in Wiltshire some 350m across; they have either one, two or four entrances (Gibson 2012; Harding with Lee 1987, 30–56). Vaynor falls towards the lower end of the size-spectrum of so-called Class II henges characterised by two opposed entrances, of which about 60 are known across the British Isles (Fig. 4.12). Of excavated examples, four have rings of pits or postholes in the interior, while six contain stone circles. There is increasing evidence that the earthworks were built after the internal settings as if to enclose or contain them (Bradley 2011, xviii–xix; Bradley and Nimura 2016, 119–20). All seem to be ceremonial places, and in many cases, including Vaynor, they became the focus for a cluster of related monuments forming a ceremonial centre serving a regional community that came together at such places for social, economic and spiritual reasons.

Another new kind of monument in the area is well represented at Glan-rhŷd Bridge, Pembrokeshire (Site 506). Here a group of 11 burnt mounds lay beside a small stream.

Scattered along the west side of a small tributary stream feeding the River Marlais, not far below a spring at the source of the stream, was a group of nine burnt mounds and troughs constructed over a period of more than 1500 years through the later third and second millennia BC (Fig. 4.14). More may exist beyond the area excavated for the pipeline.

An intensive dating programme (including Bayesian modelling of the results shown in italics) focused on seven of the nine mounds and allows insights into the development of the site. The earliest mounds lay in the central part of the stripped area. The first (Mound 506007) was oval in plan, 6m by 4m, and 0.15 thick. Charcoal from the burnt mound pit (506074) gave inconsistent radiocarbon results within *2820–2620 cal BC* and *2760–2620 cal BC* (SUERC-52550 and 52549), while a trough (506068), 2.8m by 1.2m and 0.7m deep, at the southern end was found to contain abundant charred hazelnut shell fragments and is securely dated to the first half of the third millennium cal BC (SUERC-52551 and 52552). Stakeholes in the base of the trough may have supported some kind of superstructure or lining.

The next burnt mound (506004) in the dated sequence lay north of the first. It too was oval, 4m by 1.8m and 0.2m thick. Below it was a hearth set within a natural hollow and a trough dated by two statistically consistent results to *2470–2280 cal BC* (SUERC-52568 and 52564). Broadly contemporary was a third burnt mound (506034) towards the western end of the line. It was probably oval and at least 10m wide, but extended beyond the excavated area. Radiocarbon dates (SUERC-52544 and 52548) on charcoal from within this mound places it in the late third millennium BC, *2470–2290 cal BC* and *2470–2280 cal BC*. A fourth mound (506082), also oval and at least 10m wide, was also dated to the late third millennium cal BC (SUERC-52562 and 52563: *2470–2280 cal BC* and *2460–2200 cal BC*). To what extent the use of these four mounds overlapped is unclear, but taken at face value, the dates would allow them to be broadly successive over a period of around five or six centuries.

A slight hiatus can be seen around 2000 cal BC, at least in the burnt mounds investigated (although the gap could be filled by examples outside the excavated area). The next mound to be used (Mound 506019) lay at the

Fig. 4.12 (opposite)
Comparative plans of Class II henge monuments in Britain and map showing the distribution of recorded Class II henges in Britain (sources: various). A. Vaynor, Carmarthenshire (Site 503); B. Yeavering, Northumberland (after Harding 1981, fig. 28); C. Broomend of Crichie, Aberdeenshire (after Bradley 2011, fig. 1.26); D. Milfield North, Northumberland (after Harding 1981, fig. 12); E. Cairnpapple, Lothian (after Piggott 1948, fig. 3)

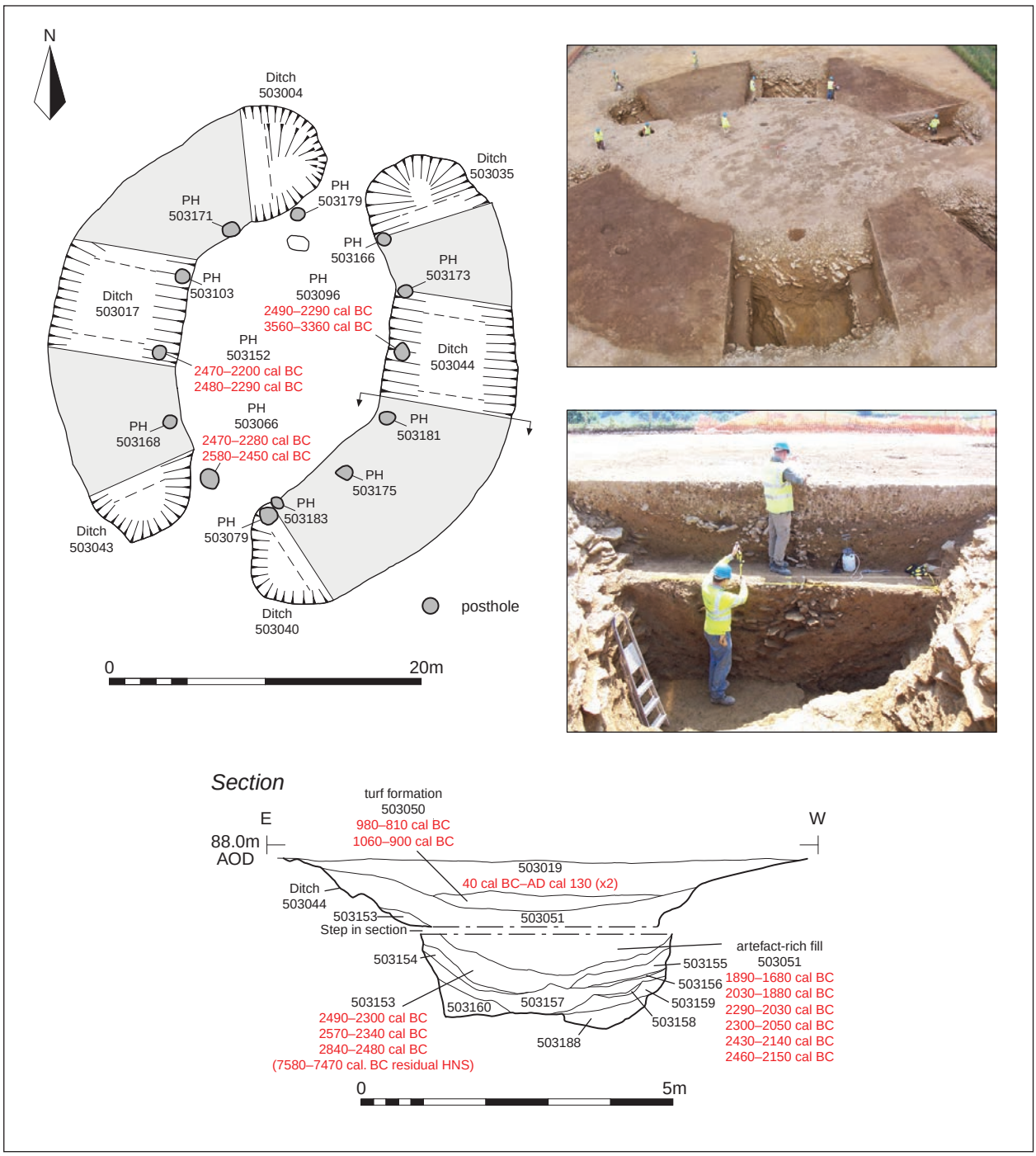


Fig. 4.13 Plan (1:400), section (1:100) and photographs of the henge at Vaynor Farm (Site 503)

far west end of the line. It was slightly crescent-shaped in plan and larger than earlier mounds at 15m across and 0.3m thick. Charcoal from the matrix dates it to the early second millennium BC, about *1950–1760 cal BC* and *1880–1690 cal BC* (SUERC-52541 and 54542). Towards the middle of the second millennium cal BC a trough (506078) some 2m square and 0.4m deep with vertical sides and a flat base was cut into the central part of the excavated area, but there was no associated burnt mound; it was dated to within the second quarter of the second millennium cal BC (SUERC-52572 and 52571: *1750–1620 cal BC* and *1640–1510 cal BC*).

The last two mounds were built around 1500 BC or soon after. The most easterly mound investigated (Mound 506012) was oval in plan, 11m wide and up to 0.5m thick. It overlaid part of an earlier line of the stream and may have been set over a former springhead. Although only partially sampled by excavation, charcoal from the mound places it in the mid second millennium cal BC (SUERC-52559 to 52561). Unusually, soil samples from this mound revealed charred cereal grains. Finally, the last mound to be built (Mound 506051) was towards the western end of the line. Although poorly preserved, it was dated to the later second millennium cal BC (SUERC-52553 and 52554: *1460–1370 cal BC* and *1420–1270 cal BC*).

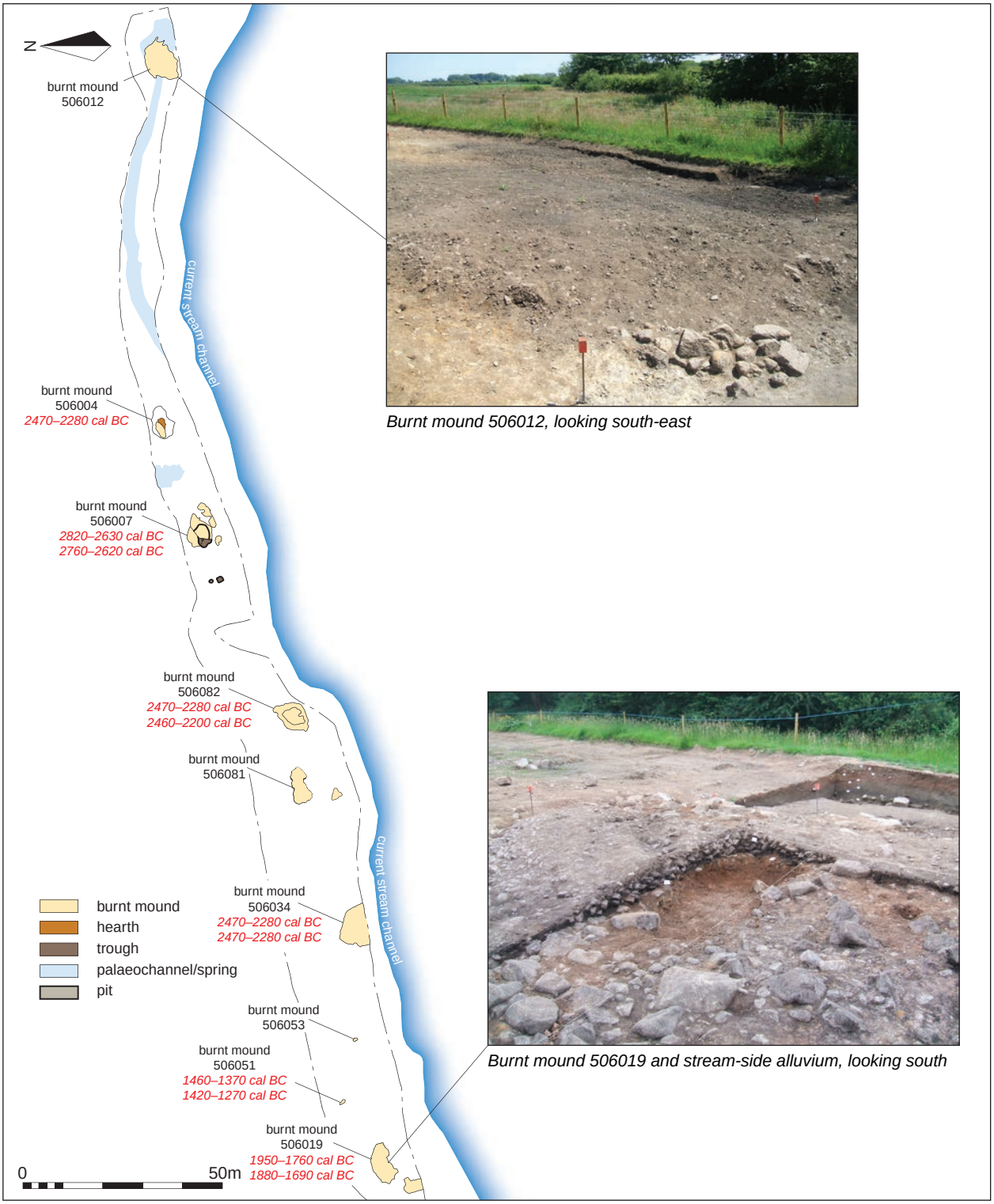
Finds from Glan-rhŷd Bridge were extremely sparse and contribute little to understanding the use of the burnt mounds.

Like most such sites, these burnt mounds comprise oval or crescent-shaped accumulations of burnt stone in a matrix of charcoal-rich soil that results from raking out hearths and fire pits used to heat stones. They typically occur adjacent to watercourses, and upon excavation are usually found to centre on a hearth or trough (Barfield and Hodder 1987; Hodder and Barfield 1991). Over 500 burnt mounds have now been found in Wales, principally in the west of the country from Pembrokeshire to Anglesey (Manning and Crane 1999; Kenney 2012; Williams 1990); 39 examples of various periods were found along the pipeline (Hart *et al.* 2014). What makes the Glan-rhŷd Bridge group special is their early date. The earliest was constructed in the first half of the third millennium BC, soon after 2800 cal BC, with four more built over the next five centuries. This fits comfortably with the idea that burnt mounds originate during the fourth millennium BC on the western side of the Irish Sea where they are known as *fulacht fiadh* (Hawkes 2014). Elsewhere in south-west Wales early burnt mounds have been found at Site B on Stackpole Warren, Pembrokeshire, associated with Grooved Ware representing at least two vessels (Benson *et al.* 1990, 199–202), and at Carne, Pembrokeshire (James 1986), where charcoal from within the mound was dated to 2460–2030 cal BC (CAR-292: 3790±70 BP).

There has been much debate about the role and purpose of burnt mounds in north-west Europe (Barfield and Hodder 1987; Drisceoil 1988; Hodder and Barfield 1991). The archaeological evidence indicates that water was being heated up for some purpose and experiments show their suitability as cooking places. In Ireland Michael O'Kelly (1954) showed that water in a 450-litre trough could be brought to the boil in 30 minutes using hot stones. A similar experiment at Carne, Pembrokeshire with a smaller trough demonstrated that around 70kg of stone might have been used for each boiling (James 1986). Another theory is that the burnt mounds may have been used as saunas, an interpretation sometimes extended to include the use of hallucinogens (Barfield and Hodder 1987). Other suggestions include use as brewing places (Mullally 2012; Wilkins 2011), for tanning, or for textile production (Brown *et al.* 2016). Whatever their function, and there might have been many over the lifespan of the tradition, these mounds demonstrate continuity in the use of certain places over long periods through the third and second millennia BC.

2300–1700 BC (Chalcolithic/Beaker period)

Shifting relationships between Britain and the continent prompted fundamental cultural changes around 2300 BC, most clearly reflected in the replacement of Grooved Ware, first with Beaker pottery and, later, Food Vessels and Collared Urns, and also in the introduction of metalworking, and a series of innovations in



Burnt mound 506012, looking south-east

Burnt mound 506019 and stream-side alluvium, looking south

burial practices, belief systems and subsistence strategies (Needham 2005; Parker Pearson *et al*. 2019). These were turbulent times. Recent genetic studies suggest the migration into Britain of Beaker-using people from the Rhine Valley area, although their ancestry and cultural ties link them to communities that originated in Iberia (Armit and Reich 2018; Fitzpatrick 2017; Hellenthal *et al.* 2014; Olalde *et al*. 2018; Oppenheimer 2010, 132; Parker Pearson *et al*. 2019). What happened to the local indigenous population is far from clear, although they may be represented by communities that used Food Vessels and Collared Urns living contemporaneously with Beaker-using communities.

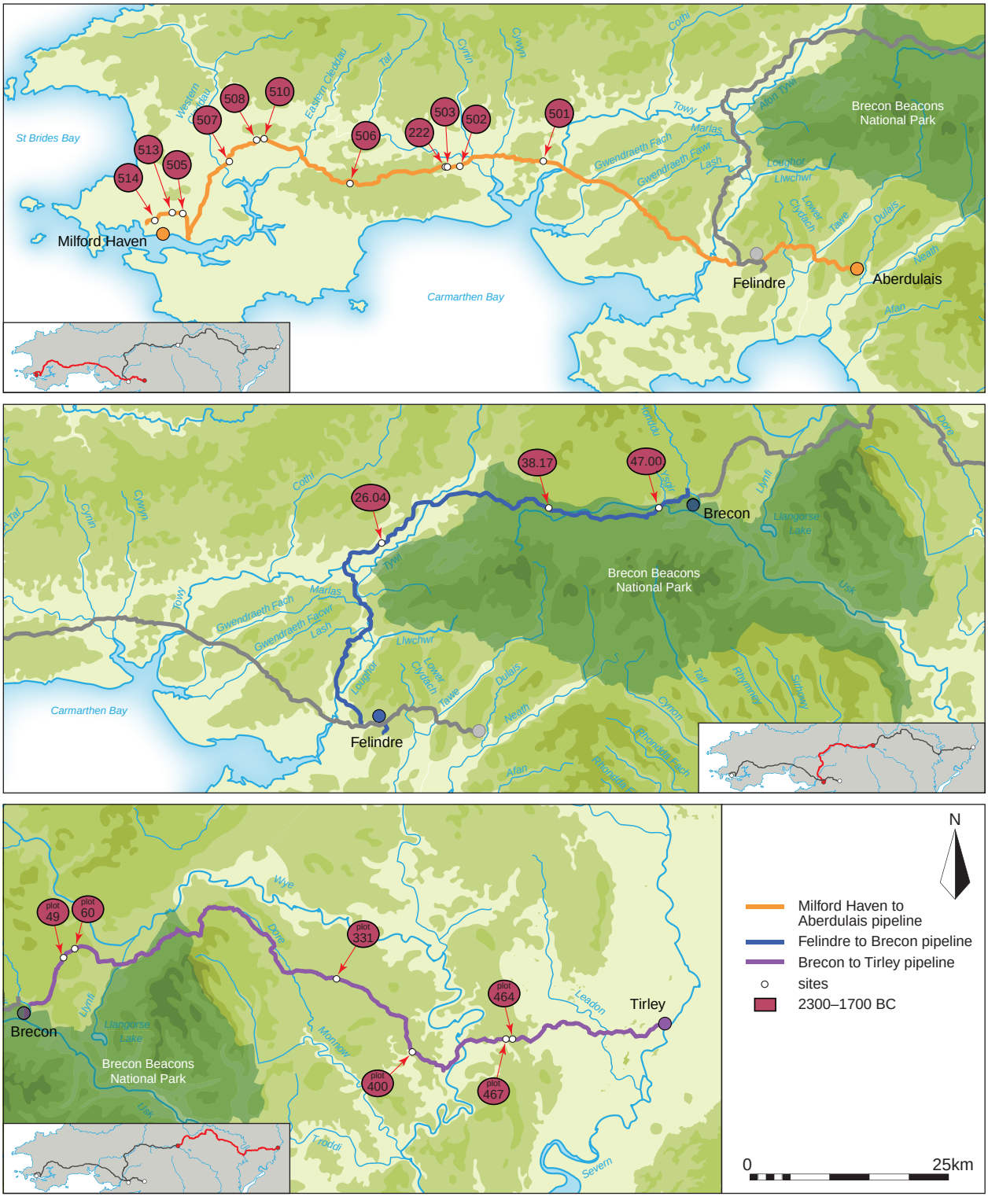
At least 20 sites along the pipeline relate to the period 2300 to 1700 BC (Fig. 4.15). Most of them lie towards the western end of the scheme on the coastal plains of south Pembrokeshire, and along the valleys of the Rivers Loughor, Towy and Usk. Some lie on higher ground in the Brecon Beacons (Fig. 4.16), thus marking the start of a period when settlement reached well into the uplands. Initially this was probably pastoralist communities making better use of the uplands for grazing, but lingering to build cemeteries and monuments to commemorate their dead. Increasing clearance allowed cultivation in some areas, but the development of upland heath (see Chapter 9) suggests some over-use of these fragile environments.

One continuing earlier tradition was the digging of ceremonial pits. At Marsh Lane, Herefordshire (Plot 400), 35 pits and postholes in four groups were associated with Beaker pottery and small amounts of cremated bone, while at Phode Green, Herefordshire (Plot 464), a pair of pits was recorded. Activity also continued inside the henge at Vaynor, Carmarthenshire (Site 503), well dated and with a stabilisation horizon appearing in the ditch fill associated with coarse domestic-style Beaker pottery (see above). Stray finds of Beaker pottery came to light at Old Gore, Herefordshire (Plot 467).

Activity associated with burnt mounds also continued, especially in south Pembrokeshire. At Glan-rhŷd Bridge, Pembrokeshire (Site 506), an oval mound 15m across and 0.3m thick (Mound 506019) was dated to the later part of this period (see above). Nearby at Church Hill, Pembrokeshire (Site 507), a smaller burnt mound 6.5m wide beside a small stream was dated to between 2120 and 1850 cal BC (SUERC-54701 and 54702). At Scurtle, Pembrokeshire (Site 510), an oval mound 7m by 6m in extent sealed two troughs and was dated to the period 2130 to 1530 cal BC (SUERC-54654 and Beta-249354). Three further troughs lay south-west of the mound, one of them dated 1950–1760 cal BC (SUERC-54658).

Settlements of this period are rare on a national scale, but at Stackpole Warren, Pembrokeshire, excavations in 1972–9 revealed plough marks within a series of small embanked fields dated to the late third millennium cal BC. At Stackpole Warren Site A there were three roundhouses of which the earliest (Roundhouse 500) was an oval post-built structure associated with more than 45 Beakers (Benson *et al*. 1990, fig. 4). Smaller yet broadly contemporary assemblages were recorded at Stackpole Warren Sites B and C (ibid., 215). On the pipeline half a dozen sites provide tantalising glimpses of occupation. At Dolau Farm, Carmarthenshire (Site 26.04), a circular stone-lined hearth over a metre across and rich in charcoal was dated to between 2020–1770 cal BC (Beta-222403), while five undated oval pits, some with scorched stones and signs of *in situ* burning, were probably the remains of a settlement area pre-dating a burnt mound on the site. Three postholes found at Nitchell's Coppice, Herefordshire (Plot 331) were dated to 2140–1890 cal BC (Beta-315443 and 315444). Of similar date was Mylett, Carmarthenshire (Site 502), where pits, one dated 2140–1950 cal BC (SUERC-54569), were found with Beaker pottery, charcoal from oak fuelwood and charred cereal grains. These, together with several smaller pits, postholes, and three undated tree-throw holes, may be the last remnants of a settlement originally set within a substantial curving ditch. At Conkland Hill, Pembrokeshire (Site 508), a pit truncated by a later ditch may have been the source of a charred oat grain

Fig. 4.14 (opposite)
Plan and selected photographs of the burnt mounds at Glan-rhŷd Bridge (Site 506)


St Brides Bay
Milford Haven
Carmarthen Bay
Felindre
Aberdulais
Brecon Beacons National Park
Brecon
Tirley
Western Cleddau
Eastern Cleddau
Taf
Cynin
Clywyn
Cothi
Towy
Marlas
Gwendraeth Fach
Gwendraeth Fawr
Lash
Loughor
Llwchwr
Lower Clydach
Tawe
Dulais
Neath
Afan
Afon Tywi
Llymfi
Llangorse Lake
Usk
Rhymney
Sirhowy
Rhondda Fach
Rhondda Fawr
Dore
Wye
Monnow
Leadon
Troddi
Severn
508
510
507
513
505
514
506
222
503
502
501
38.17
47.00
26.04
plot 49
plot 60
plot 331
plot 464
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N
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
2300–1700 BC
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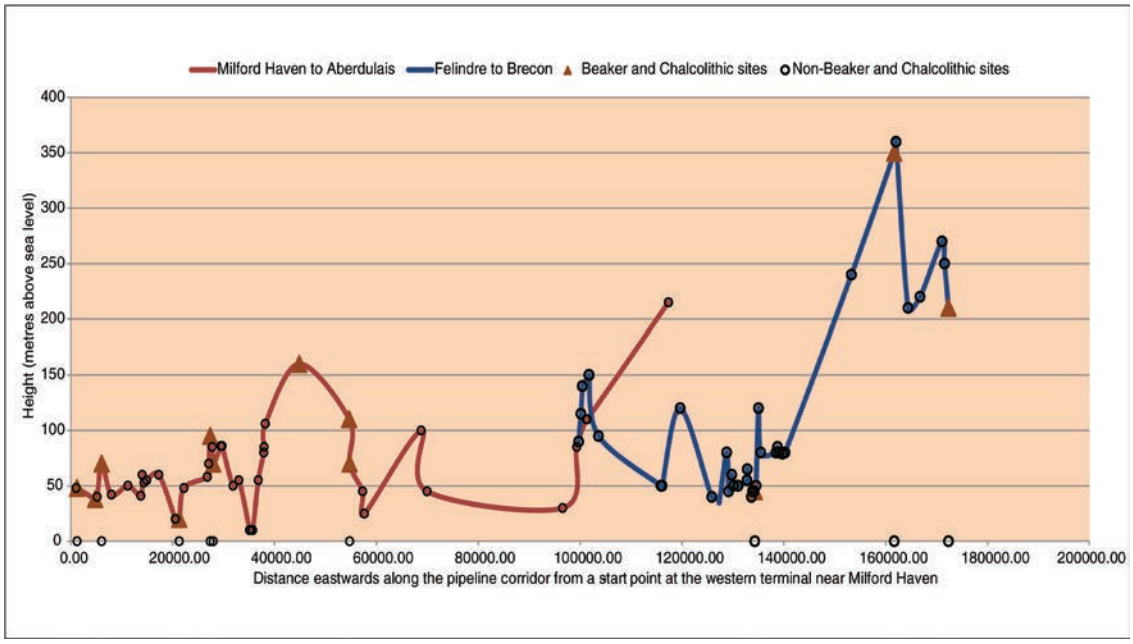


Fig. 4.16 Graph showing the elevation of the dated Beaker and Chalcolithic sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Beaker and Chalcolithic sites

dated to 1890–1680 cal BC (Beta-249350). Slightly more substantial were the remains at Upper Neeston, Pembrokeshire (Site 514), where a scatter of pits and postholes seems to have defined the edge of an oval house associated with Beaker and Food Vessel pottery. One pit contained Beaker sherds and 21 worked flints, mostly flakes, but including a blade, three scrapers and a quantity of debitage from flintworking.

Little is known about the subsistence base of these communities, but it seems to have included crop cultivation, animal husbandry, and some hunting and foraging. Nationally, this was a time of expanding occupation and the transition to full-scale mixed farming as a more continental climate favoured the exploitation of all kinds of landscapes (Taylor 1980a, 123).

Burials of the period were sometimes accompanied either by Beaker or Food Vessel-style pottery, but many were not and can only be identified through radiocarbon dating. Some communities continued using simple open cremation cemeteries; four that started life during this period were encountered along the pipeline.

About 120m east of the henge monument at Vaynor Farm, Carmarthenshire, was an extensive flat cremation cemetery on high ground overlooking the valley of the River Taf (Site 222). Within the investigated area were 27 graves, 12 of which contained cremated bone. The earliest dated to 2570–2340 cal BC (SUERC-55523) and another was dated to 1880–1660 cal BC (SUERC-55524), suggesting the continued use of the site over several generations.

Further east, at Llwyn, Carmarthenshire (Site 501), an area was investigated adjacent to a previously

Fig. 4.15 (opposite)
Map showing the distribution of Beaker and Chalcolithic (2300–1700 BC) sites along the pipeline (1:750,000)

unknown standing stone located on low-lying ground overlooking a small tributary of the River Towy. The environs of the stone had been used as a cemetery over a long period, but especially in Beaker and Chalcolithic times, and the excavation revealed three scatters of pits. Group A, west of the standing stone, comprised six pits and three postholes; one of the pits included charred hazelnut shell fragments dated to 2040–1780 cal BC (SUERC-56057). Group B, the largest, comprised 36 pits and a posthole. Amongst these, one pit contained six conjoining sherds of Beaker pottery along with charred plant remains dated to 2190–1970 cal BC (Beta-257706). Group C, east of the standing stone, comprised two pits and a posthole dated to 2040–1780 cal BC (SUERC-56058). Overall, it looks as if the standing stone was a marker for this cemetery, providing a long-term memorial to those whose remains were committed to the earth. Similar traditions have been noted elsewhere in south and west Wales, for example at St Ishmaels very close to the western end of the pipeline (Williams 1989), at Parc Maen, Pembrokeshire (Marshall and Murphy 1991; Williams 1988, 46), and at Coity, Bridgend (Richmond *et al*. 2015). In these cases, whether the burials were placed around an existing stone or the stone was added as a marker cannot be determined.

To the north, at Cwm-Camlais-Isaf, Powys (Site 47.00), overlooking the River Usk, two distinct clusters of burials were found. The northern cluster had 13 pits, nine of them with cremated bones, and five postholes. The most northerly pit was lined with sandstone slabs creating a cist that contained a double cremation representing an adult burial and a juvenile dated to 2120–1890 cal BC (SUERC-54650). A second cist also contained a small quantity of cremated bone, and one pit contained the remains of at least three individuals (two adults, one female, and a juvenile) deposited with a bone bead and traces of other bone objects. Single cremations were found in four pits which contained the cremated remains of three adults and a child. Two of the adults were dated to 2120–1890 cal BC and 2030–1880 cal BC respectively (SUERC-54653 and 54652). Two of the pits contained worked flints, and one contained a small piece of a segmented faience bead, the first known from south-eastern Wales (Sheridan and Shortland 2004, 271) and suggestive of long-distance contacts to Wessex (Gerloff 1975) or other parts of Britain. The southern cluster comprised five pits and a posthole, but probably extended beyond the limits of the excavation area. All contained cremated remains and one was dated to 1880–1650 cal BC (Beta-253579).

Further north still at Werntoe Farm near Llandyfalle Hill, Powys (Plot 49), a small cremation cemetery of seven pits clustered around a central pit dated to 2190–1980 cal BC (Beta-315440). Three contained cremation burials in Collared Urns whilst an un-urned cremation was dated to 2020–1880 cal BC (Beta-315439). Just 2.5km north again, at Llaneglwys, Powys (Plot 60), two cremations were dated to 1940–1770 cal BC and 1890–1740 cal BC (Beta-318515 and 318514).

Unenclosed cemeteries of the later third and early second millennia BC are relatively rare in Britain, perhaps because they lack a monumental aspect, but two examples illustrate the wider tradition. At Ewanrigg, near Maryport on the Cumbria coast, 28 burials from the period 2460 to 1520 BC had been placed around the summit of a natural knoll (Bewley *et al*. 1992); associated pottery included Beakers and Collared Urns. At Blaen y Cae, Garndolbenmaen, Gwynedd, 12 pits dating to the period 2100 to 1750 BC were identified, two of which contained Collared Urns (Smith 2006).

Two other kinds of burial sites from this period are more elaborate: round barrows and enclosed cemeteries. Round barrows appear in various forms and sizes but are united by having one or more burials covered by a mound of earth or stone. More than 4000 round barrows and cairns are known in Wales (Britnell 2013, 22), and they are well represented within the landscapes traversed by the pipeline. However, recorded examples were avoided as a result of careful early planning of the route and none are amongst the excavated sites.

Enclosed cemeteries comprise groups of burials contained with a circular space that was variously defined by a ring ditch, ring cairn, or wooden fence, what Garwood refers to as 'open arena monuments' (2007, 41). They are relatively rare and are hard to see on the ground as field monuments: about 200 are known as ring

ditches in Wales (Britnell 2013, 22; Lynch 1972). Most were built in fairly conspicuous locations, often forming part of extensive ceremonial centres or barrow cemeteries. Some known examples were avoided while designing the pipeline route, but three previously unrecognised examples came to light during groundworks. One example was found high in the Brecon Beacons at Llwyn-Meurig, Trecastle, Powys (Site 38.17; Fig. 4.17).

Situated on a ridge of high ground at 350m AOD overlooking the headwaters of the River Usk to the south and the source of the Nant Gwydderig to the north, this relatively small ring ditch north of Llwyn-Meurig forms part of a rather straggly linear barrow cemetery spread over a distance of about 2km along Mynydd Bach Trecastell (see Key Site 3). The cemetery is marked at the eastern end by the Tyle Mawr Cairn, and at the western end by the Pant Madog Cairn (RCAHMW 1997, 79). Further west are a pair of stone circles, stone rows, a standing stone, and further cairns at Y Pigwn (Grimes 1963, 135–6).

The ring ditch at Site 38.17 was 9m in diameter internally with a ditch 0.8m wide and 0.3m deep (Fig. 4.17). Finds in the ditch included charcoal flecks, a small amount of burnt bone, and four flint flakes. Some of the charcoal gave a date of *2440–2200 cal BC* (SUERC-52593).

Two main phases of activity were represented by features within the ring ditch. The first comprised a pit and a grave just east of the centre. The grave was 1.2m across, over 1.2m long, and 0.5m deep. The main fill comprised stony clay with charcoal flecks. Near the top was an Irish style, Roscrea type, three-rivet copper halberd with the remains of its wooden haft attached (see Needham 2015 for full description). The wood, from the *Pomoideae* subfamily that includes apple, pear, hawthorn and rowan, was dated to *2450–2200 cal BC* (see above). This makes the item one of the earliest metal weapons known in Britain. The pit was roughly circular, about 1.2m across, and was filled with pale grey clay and red-brown clay mixed with small stones. Charcoal from this feature gave dates centred on 2300 cal BC (SUERC-52590 to 52592).

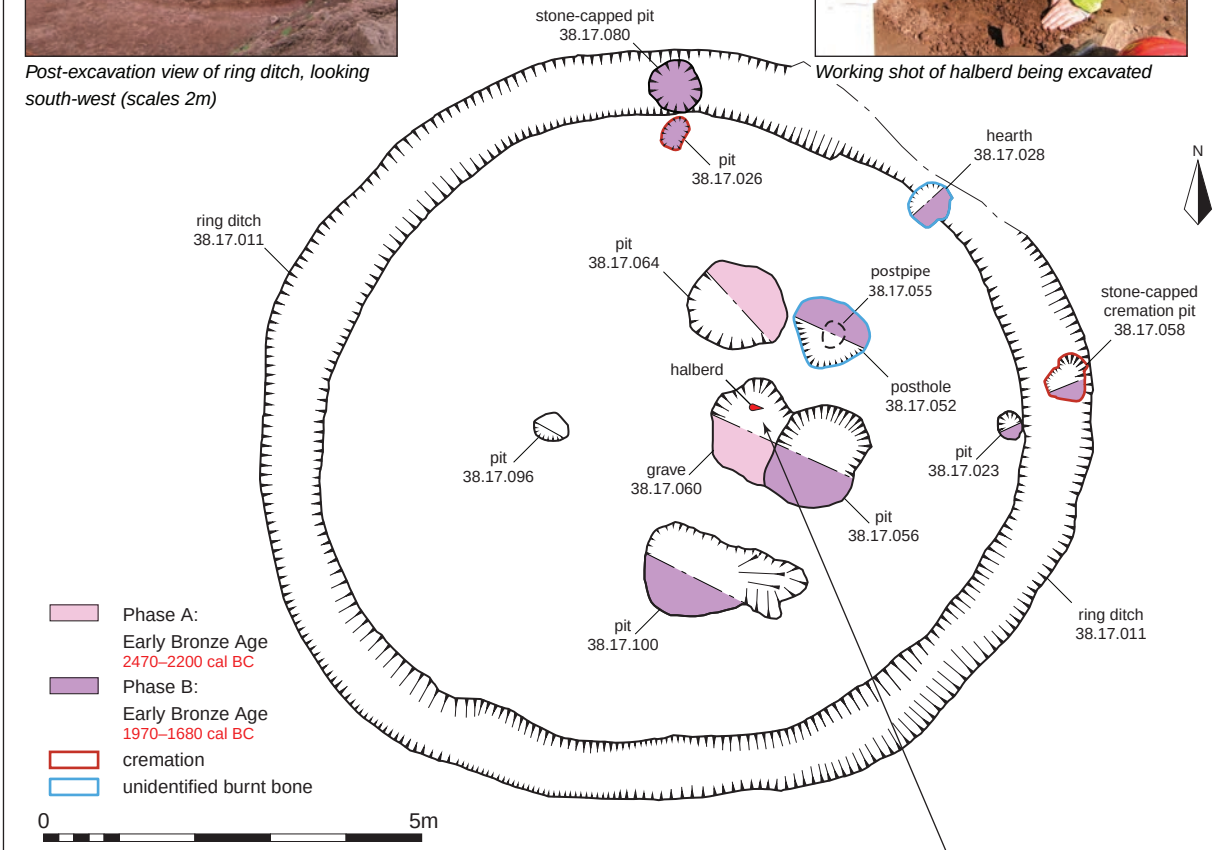
During a second phase of activity, at least eight features were dug within and around the ring ditch, mostly in its north-eastern quarter. A pit cut into the edge of the ditch contained 223.8g of cremated human bone from a young adult, dated to *1890–1740 cal BC* (SUERC-52598), along with charcoal of oak and birch. An adjacent pit contained patches of charcoal dated to *1890–1740 cal BC* (SUERC-52580). On the north side of the ring ditch was a second pair of pits, one with a quantity of cremated bone mixed with oak and birch dated to 1960–1780 cal BC (SUERC-52594), and its partner, without a cremation, dated by charcoal to 1880–1690 cal BC (SUERC-52588). A hearth had been cut into the northern part of the infilled ditch, the fill being rich in charcoal and some cremated bone. Charcoal from both fills gave dates that centred on 1700 cal BC (SUERC-52581 and 52582, Beta-253577). A large posthole, 1m wide and 0.4m deep, between the two cremation deposits had packing stones around its central postpipe. Charcoal from the posthole fill was dated to *1880–1690 cal BC* (SUERC-52584). Finally, within the ring ditch was an irregular steep-sided pit with a single stony fill that included charcoal flecks and charred hazelnut shell fragments dated to 1780–1620 cal BC (Beta-253578).

What this all shows is that following the construction of the ring ditch and the deposition of the furnished halberd grave, the start of activity associated with the earliest ring ditch features occured in *2590–2320 cal BC*, the site continued to be used for six or seven centuries down to the period *1760–1510 BC* and the last activity associated with large features on the site. No evidence of a central mound was discovered, and it must be concluded that for most of its life the place was marked by the simple circular ditch. In its later stages, however, perhaps when the ditch was less easily visible, a large and highly visible timber post marked the position of the site.

The copper halberd from Llwyn-Meurig, Trecastle, known as the 'Trecastell' halberd, complete with traces of its wooden haft-grip, is a hugely important find because of its early date 2470–2200 cal BC (Beta-240338), good survival, secure archaeological context, and the evidence it gives for cultural connections

Post-excavation view of ring ditch, looking south-west (scales 2m)

Working shot of halberd being excavated



Detail shot of halberd following conservation

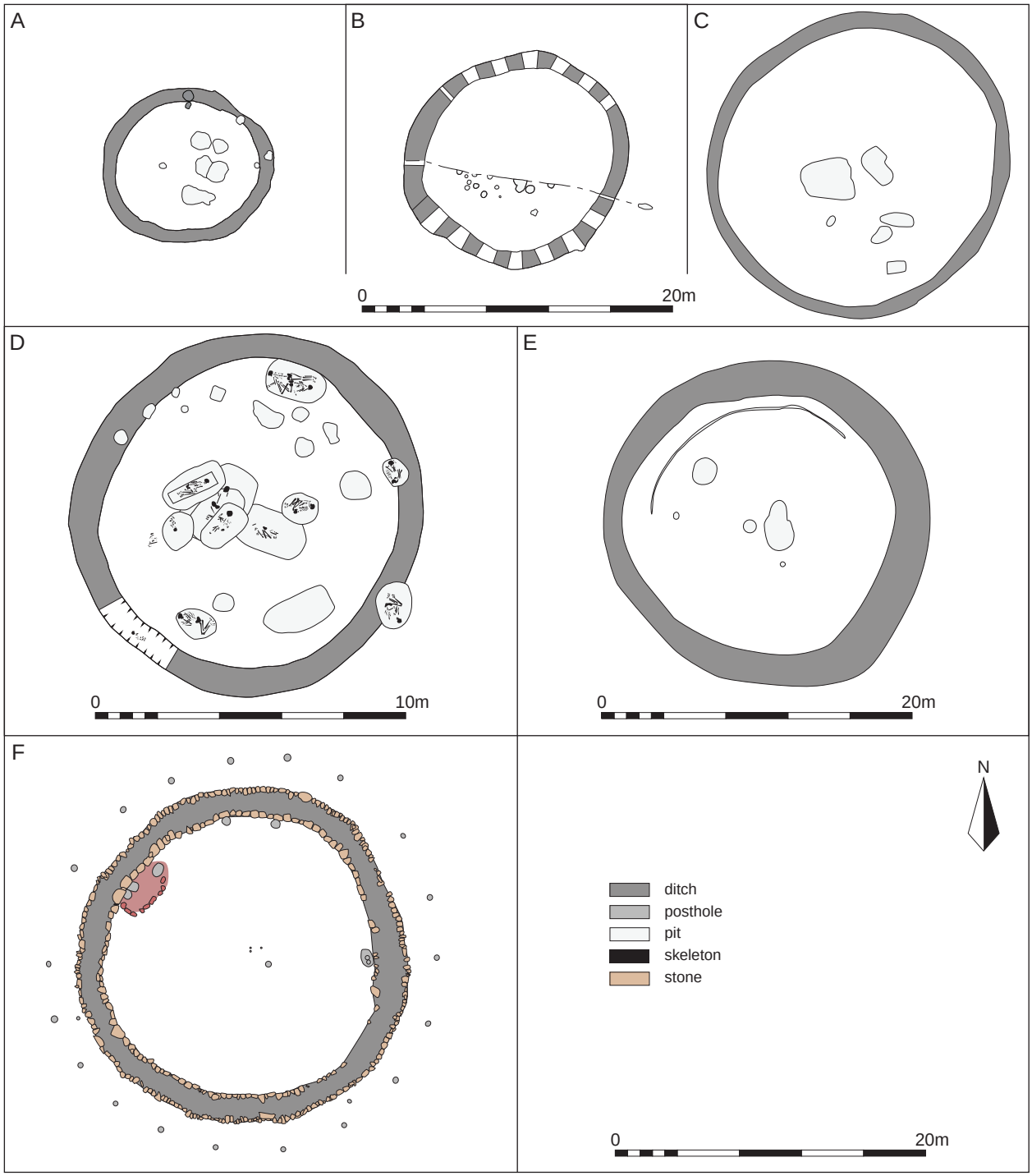
Detail shot of halberd in situ (scale 0.1m)

with Ireland through its style and the source of the copper used in its manufacture (Needham 2015). But while the halberd is rare, parallels abound for the enclosed cemetery and the burial traditions represented. At Seafield West, Highland, a ring ditch (Fig. 4.18C) enclosed a pair of inhumation burials, one contained in a log-coffin with a Butterwick-type bronze dagger whose scabbard of wood and cattle hide produced an unexpectedly late date of 1870–1520 cal BC (AA-29064: 3385±45 BP); the other lay in a plank-built coffin associated with an Irish Bowl style of Food Vessel. Within the enclosure was a pit containing a cremation burial dated to 2470–2140 cal BC (AA-29062: 3845±50 BP) and several cists containing cremated remains (Cressey and Sheridan 2003). Similarly, at Barnack, Cambridgeshire, the first stage of a multi-phase monument comprised a ring ditch containing some or all of the 16 graves found through excavation (Donaldson 1977; Last 1998, 44–50; Fig. 4.18D). One grave, near the centre, contained the inhumation of an adult male with a Beaker, a stone wristguard with gold-capped attachment rivets, a bone pendant, and a tanged copper dagger/knife. Charcoal with the burial was dated to 2139–1734 cal BC (HAR-1645: 3570±80 BP). In this case a round barrow that developed through at least three phases was built over the ring ditch. Similar sequences can be seen at South Barrow, Tynings Farm, Somerset (Lewis 2007, 75–7), and Brampton, Cambridgeshire (White 1969). Many are known in northern England: a recently excavated example at Clitheroe, Lancashire included nine burials within a ring ditch about 17.5m across with a modelled start date of 1995–1765 cal BC and an end-date of 1750–1530 cal BC (Dyson 2019). In mid Wales, ring ditch 1 at Coed-y-dinas, Welshpool, Powys, dated to the early second millennium BC, while ring ditch 2 at the same site was slightly later (Gibson 1994, 162–7). Further north at Tandderwen, Clwyd, a pair of ring ditches, the smaller of which may have been the quarry for a round barrow, was associated with a group of four unenclosed cremation burials (Brassil *et al*. 1991, 49–62). Within the larger ring ditch were two separate inhumations accompanied by late-style Beakers, a cremation with a Food Vessel, and two unaccompanied cremations (Fig. 4.18E). Mention may also be made of ring cairns such as that at Brenig 44, Clwyd (Fig. 4.18F), which enclosed four burials and a handful of other features dated to the period 2290–1740 cal BC (HAR-501: 3630±100 BP) through to 1395–993 cal BC (HAR-1136: 2960±70 BP) and associated with Collared Urns (Lynch 1993, 117–43).

Enclosed cemeteries also appear on low ground, and two were identified on the pipeline near Steynton, Pembrokeshire. At Steynton (Site 505), geophysical surveys revealed a ring ditch 30m in diameter with a central feature, possibly a grave. No upstanding mound was visible, although records exist of a round barrow in the area and this could be the remains of a ploughed-out round barrow. Partial excavation was possible, revealing that the ditch was rock-cut and up to 2.9m wide and 0.9m deep with steep edges and a broad, flat base. Sherds of Food Vessel and Collared Urn pottery were found in the fills while a charcoal-rich layer containing mainly blackthorn was dated to around 1800 cal BC (Beta-249346). Less than 1km to the west was a second ring ditch (Site 513) that contained far more extensive evidence for burials.

Set on a plateau just below the crest of a low hill overlooking a minor tributary of Hubberston Pill, this ring ditch at Site 513 encloses a cremation cemetery of at least 23 burials. The northern two-thirds of the site and its interior were truncated (Figs 4.19 and 4.20 and Key Site 4). The ring ditch, 11.5m across internally, was defined by a U-shaped ditch 1.8m wide and over 0.5m deep. There was probably an internal bank about 2m wide, no longer extant but implied by the distribution of the internal features. Residual finds within the

Fig. 4.17 (opposite)
Llwyn-Meurig, Trecastle, Powys (Site 38.17). Plan of the ring ditch and associated features with views of the excavation in progress and details of the copper halberd during excavation (bottom right) and during conservation (bottom left)


A
B
C
0
20m
D
0
10m
E
0
20m
F
N
ditch
posthole
pit
skeleton
stone
0
20m

ditch fills included worked flints and Neolithic pottery, perhaps derived from activity at a pit cluster 50m to the west.

Within the untruncated third of the ring ditch, in a band across its middle, were a series of graves and a posthole (Appendix B, Table B2). All were cremations and 20 out of 23 were accompanied by or contained within ceramic vessels: two Food Vessels and nine Collared Urns (some of which contained multiple human remains). Six of the vessels had been buried upright; four were inverted. By age group, five of the burials were adults, 12 were adolescents or juveniles, and three were infants. No group of burials included more than one adult, but adults were accompanied by up to five younger people. One adolescent was buried without an associated pottery vessel but careful excavation suggested containment within an organic bag of some kind. All the bone had been heavily burnt, and no information about the sex of the individuals could be determined.

An extensive series of 13 radiocarbon dates allows Bayesian modelling to provide a secure chronological framework for the use of the cemetery. It seems that burials associated with Collared Urns started in the period *2020–1890 BC* and continued until *1870–1700 BC* with the Food Vessel burial occuring at the same time (most probably in *1990-1890 cal BC*: SUERC-54663). The duration of activity is estimated as *1–300 years*, a maximum of 12 generations. However, it is not known how many burials were lost within the truncated area and thus what the original population might have been; between 40 and 60 would be a reasonable estimate.

All the burials had been deposited in simple pits. Few grave goods were recognised, although a core for the manufacture of flint blades was present with Burials 17 and 18, and 19, whilst the backfill of the grave containing Burials 14 and 15 contained struck flint flakes and micro-debitage. There was no evidence that the graves had been covered by a mound, although low piles of soil may have covered each grave. A posthole on the south side of the graves, but still within the ring ditch interior, may have held a marker post indicating the position of the cemetery.

A protracted burial process can be glimpsed in a few cases. It is notable, for example, that the cremated bone representing Burials 5–10 was significantly older than the residues on the urn in which they were contained and the associated charcoal that most likely derived from fuelwood used in the cremation pyre. Charcoal from the backfills of the pits containing Burials 4 and 13 was also younger than the human remains. This all supports the idea that burials were sometimes storied as mummies before burial (Parker Pearson *et al*. 2007).

The early date and secure context for the 'Trecastell' copper halberd from Llwyn-Meurig, Trecastle suggests that it had a special significance, perhaps as a ceremonial weapon. Stuart Needham has noted geographical zoning in the deposition of halberds in western Britain while copper tanged daggers and knives are confined to the east of Britain (Needham 2016, fig. 2.5). Competing elites with different ideologies and symbolism may be visible here, and, at a local level, adjoining territories may have been controlled by very different cultures. Mention may also be made of the early dates for the cremations in Collared Urns at Steynton. As with the metalwork, little is known about the social context or implied identities of Beaker, Food Vessel and Collared Urn-using communities, but from about 2000 BC, cremation became increasingly popular as a

Fig. 4.18 (opposite)

Comparative plans of Beaker and Chalcolithic ring ditches in Britain. A. Llwyn-Meurig, Trecastle, Powys (Site 38.17). B. Steynton, Pembrokeshire (Site 513). C. Seafield West, Inverness, Highland (after Cressey and Sheridan 2003, illus. 3). D. Barnack, Cambridgeshire (after Donaldson 1977, fig. 4). E. Tandderwen, near Denbigh, Clwyd (after Brassil et al. 1991, fig. 3). F. Brenig 44 Ring Cairn, Clwyd (after Lynch 1993, fig. 11.1) (A, B, D; C, E, F)

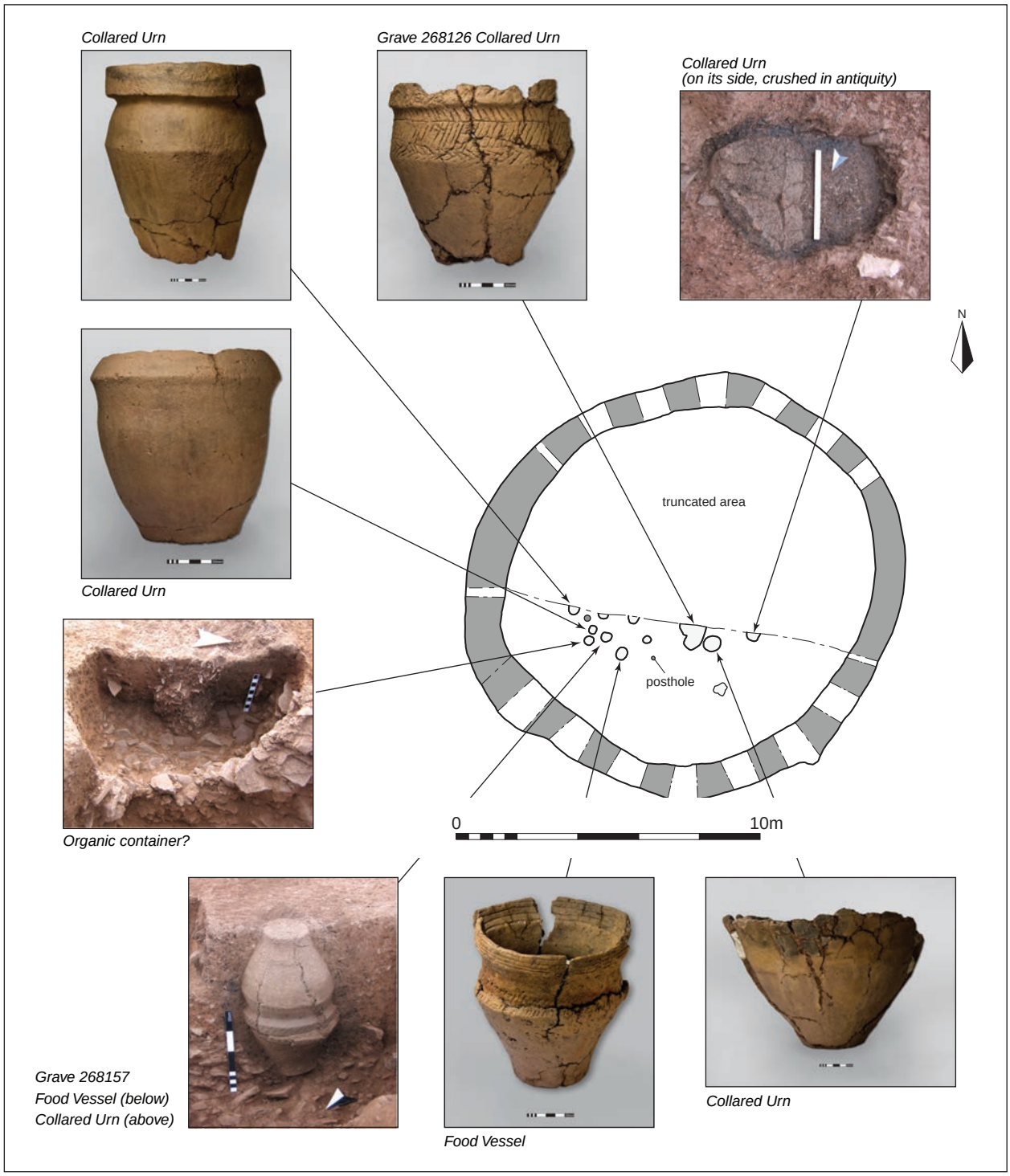
Fig. 4.19 The ring ditch at Steynton, Pembrokeshire (Site 513), looking north towards the wooded valley (2m scales)

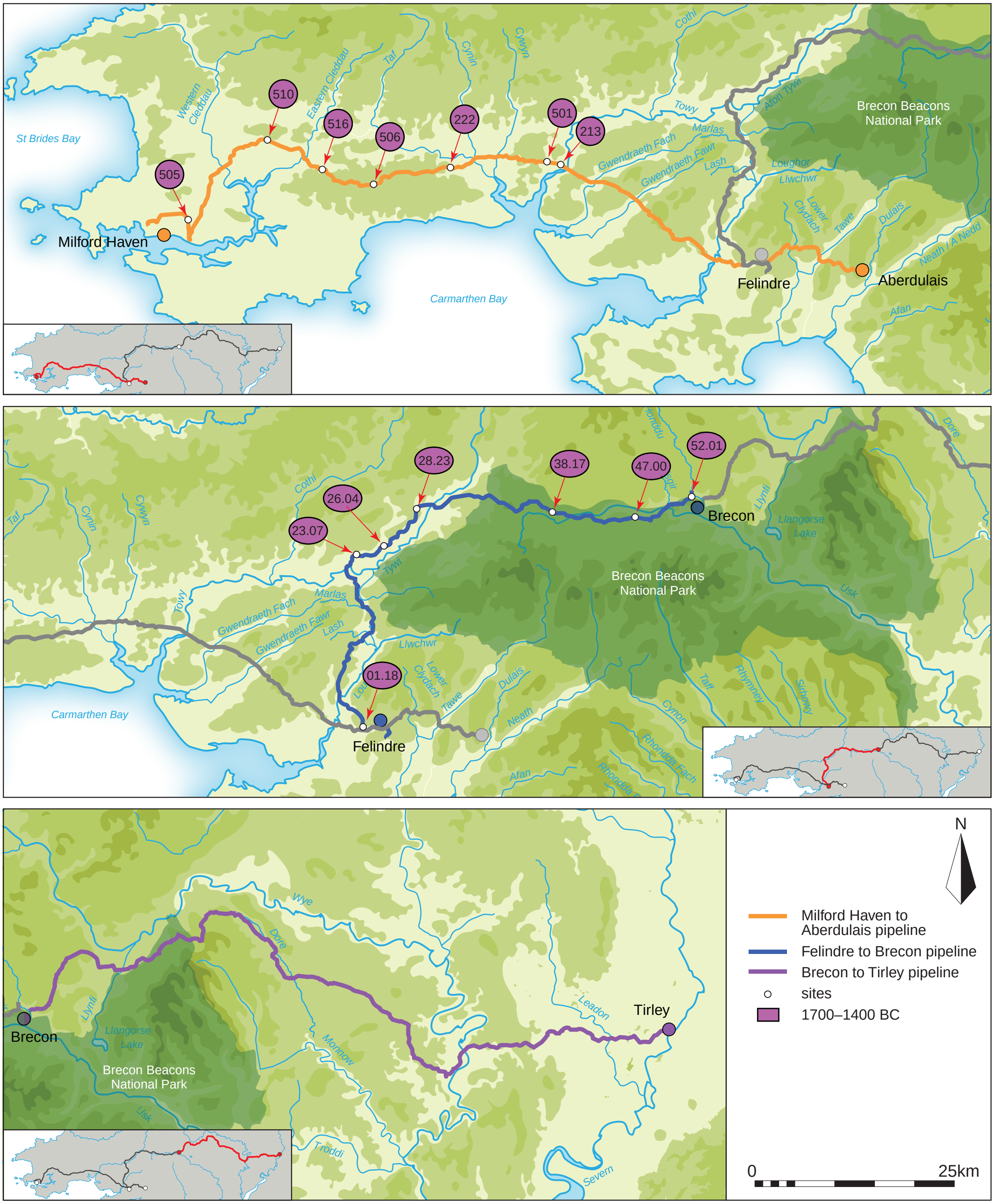
means of treating the dead. Maybe it was the revival of an earlier interest in cremation, or perhaps it was a reaction by indigenous populations against introduced Beaker styles of burial.

1700–1400 BC (Early Bronze Age)

Many characteristics of the preceding period carry through into the middle centuries of the second millennium BC. Along the pipeline 12 sites yielded evidence for activity in the period 1700 to 1400 BC, of which five (40%) show evidence for continuity from earlier times, well reflected in the continued use of Collared Urns (Longworth 1984). Most of the sites of this period lie in the central sections of the pipeline route (Fig. 4.21), mainly on low ground and in river valleys, but occasionally in upland areas (Fig. 4.22). Continuity of a pastoral economy is represented in the environmental evidence, but while this was probably based on sheep husbandry, the poverty of faunal remains makes clarification difficult.

Fig. 4.20 (opposite)
Plan of the ring ditch at Steynton, Pembrokeshire (Site 513) and photographs of the associated urns (50mm scale)


Collared Urn
Grave 268126 Collared Urn
Collared Urn
(on its side, crushed in antiquity)
N
truncated area
posthole
Collared Urn
Organic container?
0
10m
Grave 268157
Food Vessel (below)
Collared Urn (above)
Food Vessel
Collared Urn


St Brides Bay
Milford Haven
505
510
516
506
222
501
213
Western Cleddau
Eastern Cleddau
Taf
Cynin
Cywyn
Cothi
Towy
Afon Tywi
Marlas
Gwendraeth Fach
Gwendraeth Fawr
Lash
Loughor
Llwchwr
Lower Clydach
Tawe
Dulais
Neath / A Nedd
Afan
Brecon Beacons National Park
Felindre
Aberdulais
Carmarthen Bay
28.23
26.04
23.07
38.17
47.00
52.01
01.18
Brecon
Tywi
Llynfi
Llangorse Lake
Usk
Dore
Taff
Rhymney
Sirhowy
Cynon
Rhondda Fach
Rhondda
Wye
Leadon
Tirley
Monnow
Trothi
Severn
N
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
1700–1400 BC
0
25km

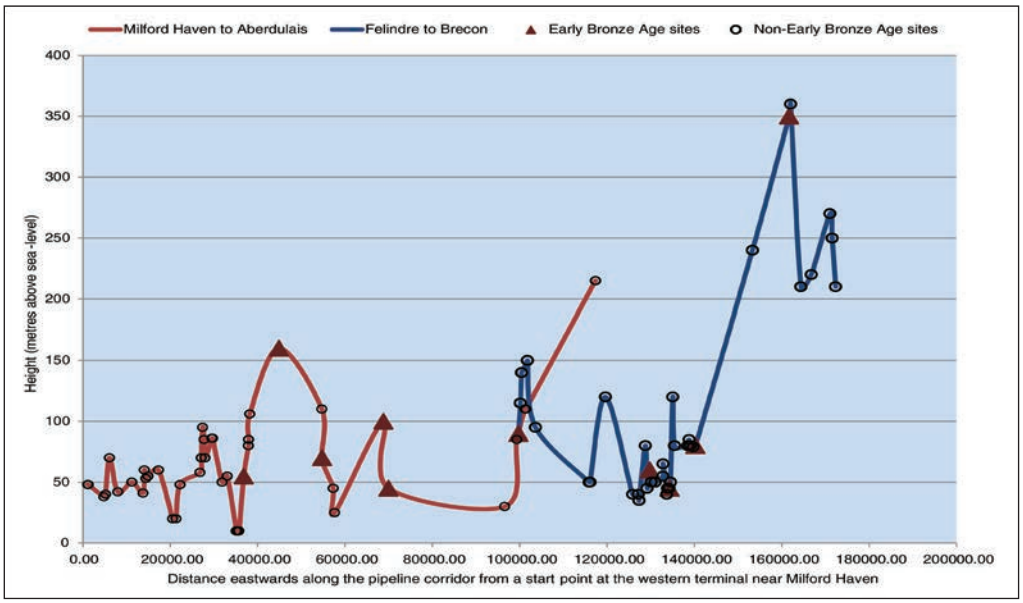


Fig. 4.22 Graph showing the elevation of the dated Early Bronze Age sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Early Bronze Age sites

Few settlements of the early second millennium BC have been identified in Britain, still fewer with houses (Longworth 1984, 76–8). Those known tend to be timber-framed and circular or slightly oval in plan, often with an eavesdrip gully around the outside. One possible example was identified at Crwca, Swansea (Site 01.18), and is described below (Fig. 4.23A).

Situated on the lower southern slopes of Cefn Drum and Mynydd Pysgodlyn at about 90m AOD the features revealed west of Crwca suggest a small settlement of the mid second millennium BC (Fig. 4.23A). At the focus is a house edged by an eavesdrip gully with an entrance opening to the south. The gully, which was between 0.7m and 1.1m wide and up to 0.5m deep, defined an area 9m by 7m. A setting of 10 small postholes lay around the inside edge of the gully, with one more in the interior. A surface made from redeposited natural substrate extended over the entrance area both inside and outside the structure. Twelve sherds of undecorated grog-tempered pottery, probably Collared Urn, was found in the interior of the building, while a handful of struck flint and chert, probably residual, was recovered from the topsoil and one of the postholes of the roundhouse.

Two external postholes and a pit were identified to the south-east, and a further pit lay to the north-west.

A similar and comparatively well-preserved example was found sealed below a sand-dune at Stackpole Warren Site A, Pembrokeshire (Benson *et al.* 1990, 185–9). Here the house was 4m across (Fig. 4.23B), dated to between 2134–1700 cal BC (CAR-475, 3570±70 BP) and 1880–1460 cal BC (CAR-100: 3350±70 BP), and had more than 17 broken Collared Urns scattered across the floor (Benson *et al.* 1990, 216–18).

Fig. 4.21 (opposite)
Map showing the distribution of Early Bronze Age (1700–1400 BC) sites along the pipeline

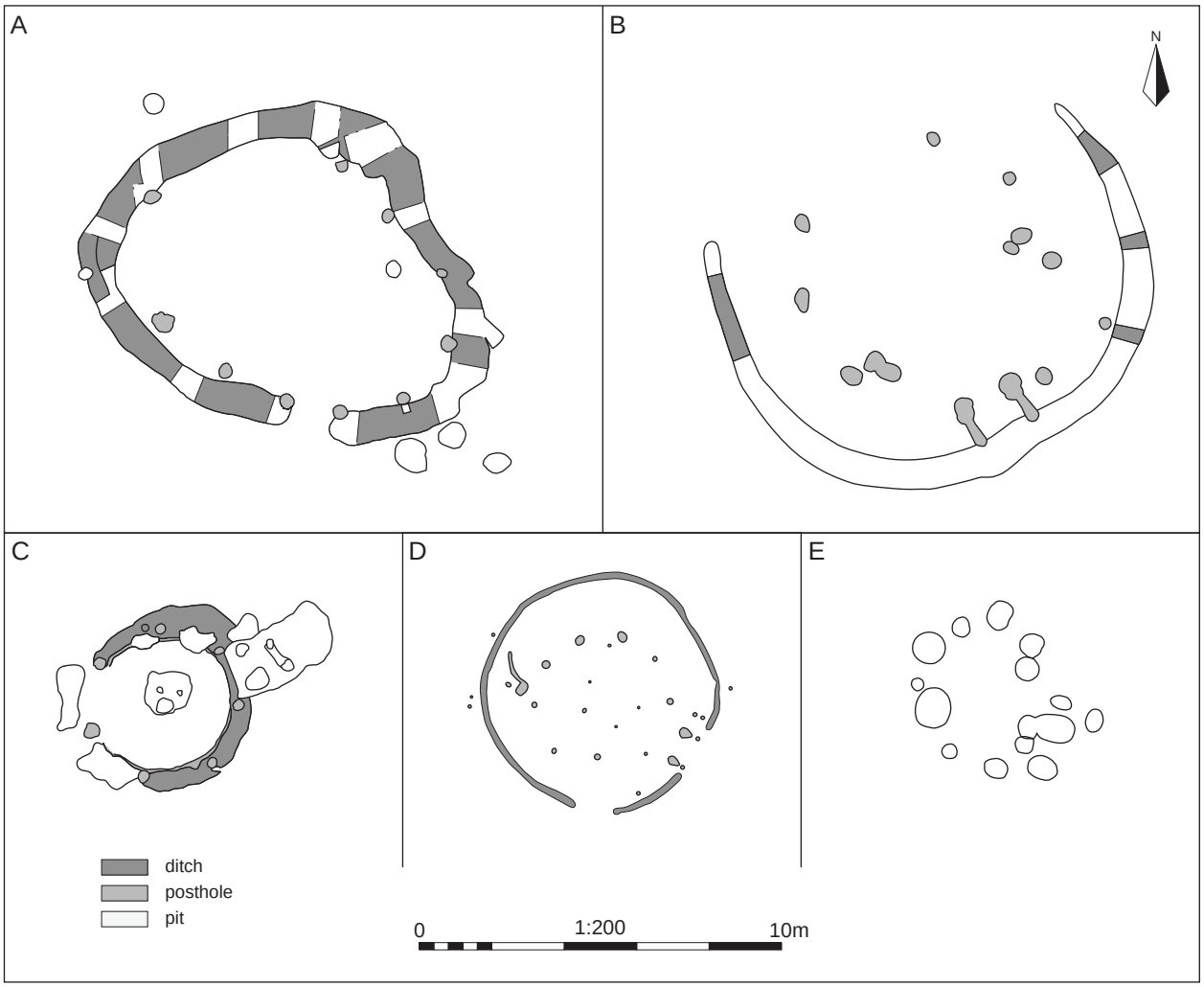


Fig. 4.23 Comparative plans of house-like structures associated with Collared Urn pottery in Britain. A. Crwca, Mawr, Swansea (Site 01.18). B. Stackpole Warren (Roundhouse 146), Pembrokeshire (after Benson et al. 1990, fig. 5). C. Newark Road, Fengate, Peterborough (after Pryor 1974, fig. 35). D. Edgerley Drain Road (Structure 1), Fengate North, Peterborough (after Evans et al. 2009, fig. 4.16). E. Glanfeinion (Britnell et al. 1991, fig. 1)

Elsewhere in south-west Wales, another possible settlement associated with Collared Urn pottery and dated to between 2200–1960 cal BC (Beta-255069: 3690±40 BP) and 2010–1760 cal BC (Beta-255072: 3550±40 BP) was uncovered during the construction of the liquid gas storage facility near the start of the pipeline at South Hook, Pembrokeshire (Crane and Murphy 2010b). Proximity to the contemporary cemetery at the Steynton ring ditch (Site 505), just 4.5km to the east, is an interesting juxtaposition. Two or three broadly similar structures, also probably houses, were identified at Fengate, Peterborough (Pryor 1980, 50–66; Evans *et al.* 2009, 136–41; Fig. 4.23C and D). Slightly later structures include the roundhouse at Glanfeinion,

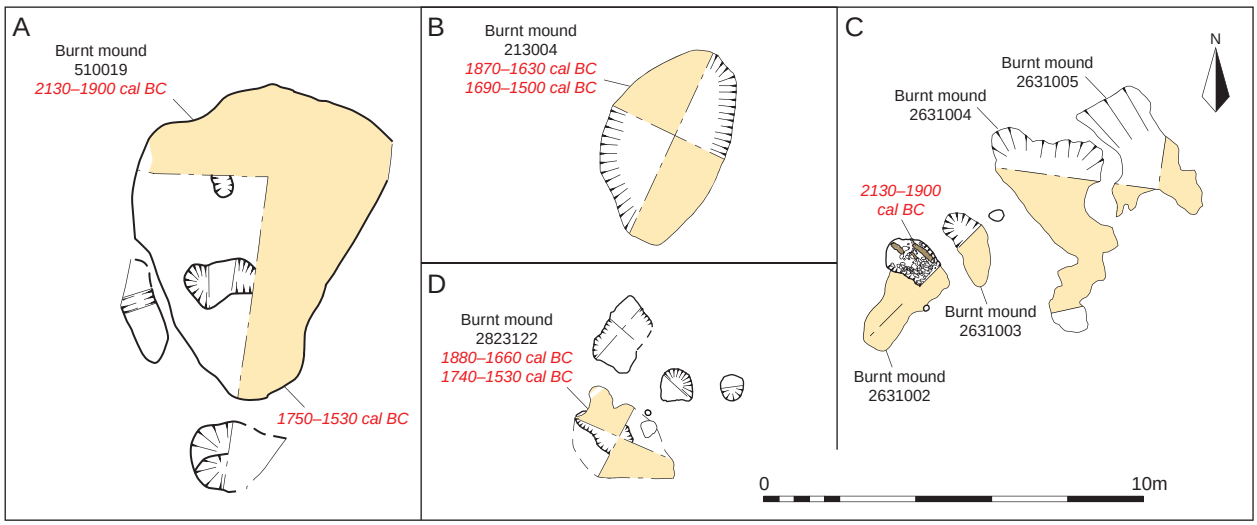


Fig. 4.24 Comparative plans of early Bronze Age burnt mounds found along the pipeline. A. Scurtle, Pembrokeshire (Site 510). B. Gilfach, Carmarthenshire (Site 213). C. Dolau Farm, Carmarthenshire (Site 26.04). D. Aber-Marlais Park, Carmarthenshire (Site 28.23)

Powys (Britnell *et al.* 1997, fig. 1; Fig. 4.23E), and the Type 2 structures at Corrstown, Co. Londonderry, in Northern Ireland (Ginn and Rathbone 2012, 15–16).

Pit clusters, such a feature of earlier periods, declined in number and significance through the early second millennium BC. At Pen-y-banc, Carmarthenshire (Site 23.07), one pit out of 11 was dated to 1690–1500 cal BC (Beta-257721), suggesting some lingering use of the site. It contained unidentified burnt bone and charred plant remains. The site at Llandefaelog, Powys (Site 52.01) included a handful of undistinguished pits loosely associated with a few scraps of Early Bronze Age pottery.

Burnt mounds, by contrast, are strongly represented in this period, with eight examples discovered mainly in the western sections of the pipeline, a selection of which are shown on Figure 4.24. Some continuity of use can be seen at Scurtle, Pembrokeshire (Site 510), by the radiocarbon date of 1750–1530 cal BC (Beta-249354) from material in the mound, although its primary use was rather earlier (Fig. 4.24A). Evidence for continuity can also be seen at Canaston Wood, Pembrokeshire (Site 516), where samples from an oval-shaped mound gave dates of between 1750 and 1430 cal BC (SUERC-56066, 56067 and 56087, Beta-249356). Further east at Glan-rhŷd Bridge, Pembrokeshire (Site 506), Mound 506012 at the eastern end of the line of ten (see above) was used between about 1630 and 1410 cal BC (SUERC-52559 to 53561). Nearby, a neat trough, 2m square and 0.4m deep with vertical sides and a flat base, was dated to much the same period but had no associated mound. An adjacent pit (506071) contained charcoal dated to 1750–1610 cal BC and 1620–1450 cal BC (SUERC-52569 to 52570), again illustrating the longevity of use.

Newly established burnt mounds in this period include Gilfach, Llangain, Carmarthenshire (Site 213) where an oval mound, 5.3m by 3.35m and 0.1m thick, was investigated (Fig. 4.24B). There was no sign of a trough, but charcoal from the mound dated to between 1870–1630 cal BC and 1690–1500 cal BC (SUERC-55508 and 55512). Eastwards, at Dolau Farm, Carmarthenshire (Site 26.04), a trough 1.7m by 1.2m was dated to 1530–1400 cal BC (Beta-222402) and was surrounded by the rather fragmented remains

of a burnt mound that sealed two postholes (Fig. 14.24C). Finally, at Aber-Marlais Park, Carmarthenshire (Site 28.23), of three burnt mounds beside a small stream, the best preserved included two troughs and a hearth (Fig. 14.24D) used between 1880–1660 cal BC and 1740–1530 cal BC (SUERC-55516 and 55515). Burnt mounds at Upper Neeston (Site 511) and Steynton (Site 512) discussed in the next section may also have started life in the Early Bronze Age.

Cemeteries used during the early second millennium all showed continuity in the form of episodic activity into the Early Bronze Age. At Vaynor Farm, Carmarthenshire (Site 222), the open cremation cemetery contained burials dated to between 1610–1430 cal BC and 1500–1300 cal BC (SUERC-55522 and Beta-257704). Similarly, at Llwyn, Carmarthenshire (Site 501), there was continued use of the cemetery associated with a standing stone: one pit in Group A was dated 1750–1530 cal BC (Beta-257705) and contained a small collection of burnt bone as well as fragments of fired clay, charred cereals and charred hazelnut shell fragments. At Cwm-Camlais-Isaf, Powys (Site 47.00), an adult in one of the graves was dated to 1650–1460 cal BC (Beta-253580), and was perhaps one of a number of additions to a cemetery that started life around 2000 BC. Similarly, high in the Brecon Beacons, the ring ditch at Llwyn-Meurig, Trecastle, Powys (Site 38.17; see above) saw renewed activity, with two pits dug inside the enclosure around 1780–1620 cal BC.

1400–1000 BC (Middle Bronze Age)

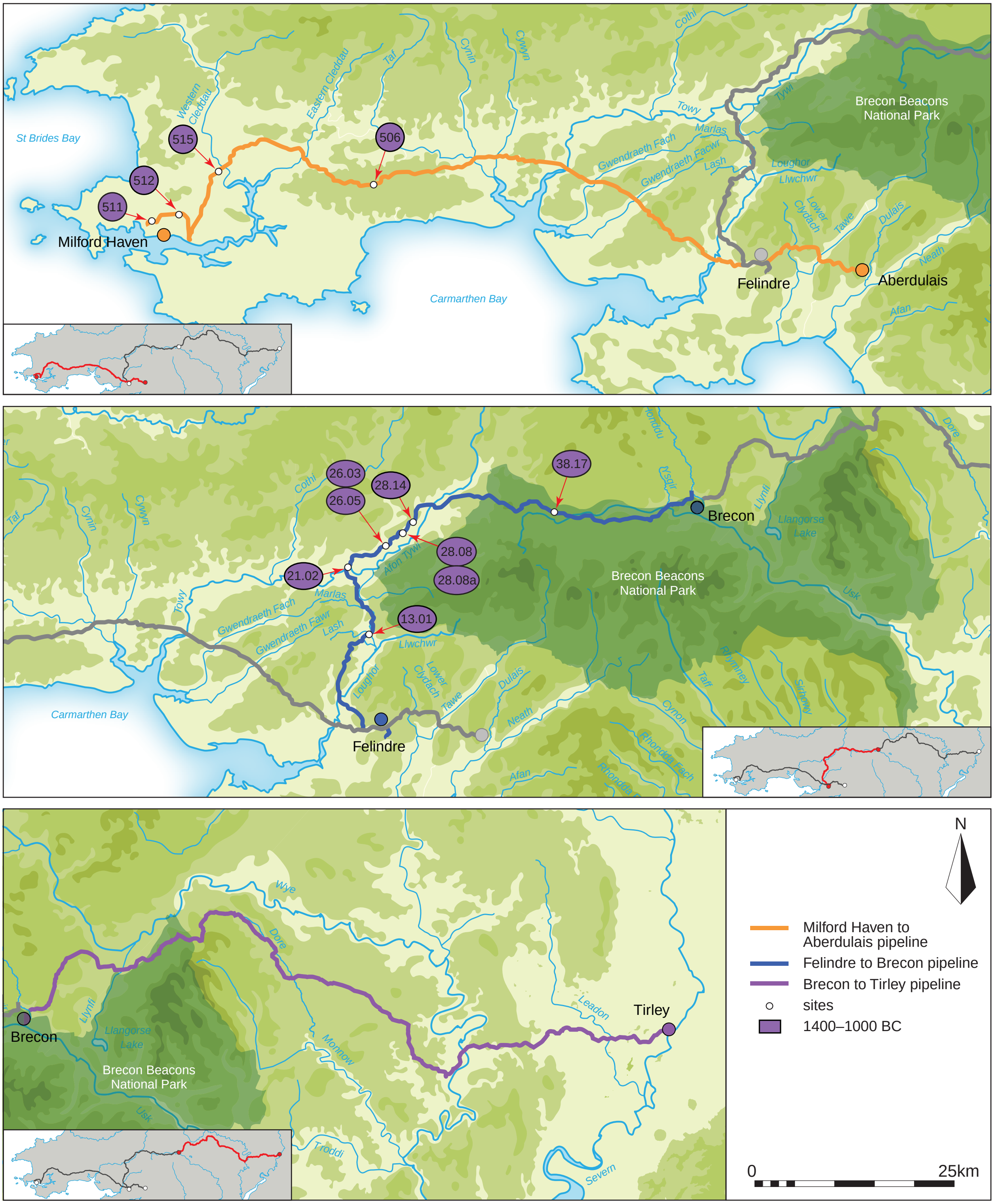
An expansion of settlement and changing subsistence practices favouring arable agriculture in the later second millennium BC, so clearly seen across many areas of southern and eastern Britain (Darvill 2010, 190–222), is less visible in the landscapes traversed by the pipeline. In fact, the number of sites found along the pipeline dated to the Middle Bronze Age is comparable to that of the preceding period, their concentration on the lower ground suggesting a contraction of activity (Figs 4.25 and 4.26). In part, this may reflect difficulties in dating sites of this period. All those known rely on radiocarbon determinations since pottery used during this period belonged to a regional variant of the Deverel-Rimbury styles, represented as Encrusted Urns, Bucket Urns and Globular Urns which are not distinctive when fragmentary. Of the 12 sites where activity in the late second millennium BC was recorded, all but two were burnt mounds.

In western Britain the late second millennium BC seems to have been the zenith of burnt mound construction and use, although the origins of the tradition extend back into the fourth millennium BC. Two scatters of sites were recognised and although no associated settlements were located along the pipeline route, mention may be made of the contemporary house at Newton, Llanstadwell, Pembrokeshire, discovered during groundworks for the installation of gas storage tanks (Crane 2004).

The most westerly scatter of burnt mounds investigated on the pipeline is around Milford Haven. Upper Neeston, Pembrokeshire (Site 511) was one of the best-preserved sites on the whole scheme. About 200m south-east of a spring, on the east side of a small stream that empties into Gelliswick Bay lies a substantial burnt mound. Oval in plan, 12m by 17m, layers of burnt stone and intermixed charcoal were preserved to a thickness of about 0.15m. Samples of charcoal from the mound date its formation and use to the period from 1530–1400 cal BC through to 1500–1320 cal BC (Beta-257710 and 257711, SUERC-55517 and 55518).

Downslope of the mound, adjacent to a marshy area, was a well-preserved oak trough set in a purpose-made pit cut into the eastern bank of what had been a small stream. Preserved as a single piece of timber 4.26m long and 0.98m wide, although originally somewhat larger, it was made from a massive tree trunk

Fig. 4.25 (opposite)
Map showing the distribution of Middle Bronze Age (1400–1000 BC) sites along the pipeline


St Brides Bay
Western Cleddau
Eastern Cleddau
Taf
Cynin
Cywyn
Cothi
Towy
Tywi
Marlas
Gwendraeth Fach
Gwendraeth Facwr
Lash
Loughor
Llwchwr
Lower Clydach
Tawe
Dulais
Neath
Afan
Brecon Beacons National Park
515
512
511
506
Milford Haven
Felindre
Aberdulais
Carmarthen Bay
26.03
26.05
28.14
38.17
28.08
28.08a
21.02
13.01
Afon Tywi
Gwendraeth Fawr
Brecon
Ysgir
Llynfi
Llangorse Lake
Usk
Rhymney
Taff
Sirhowy
Cynon
Rhondda Fach
Rhondda
Dore
Wye
Monnow
Leadon
Tirley
Troddi
Severn
N
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
1400–1000 BC
0
25km

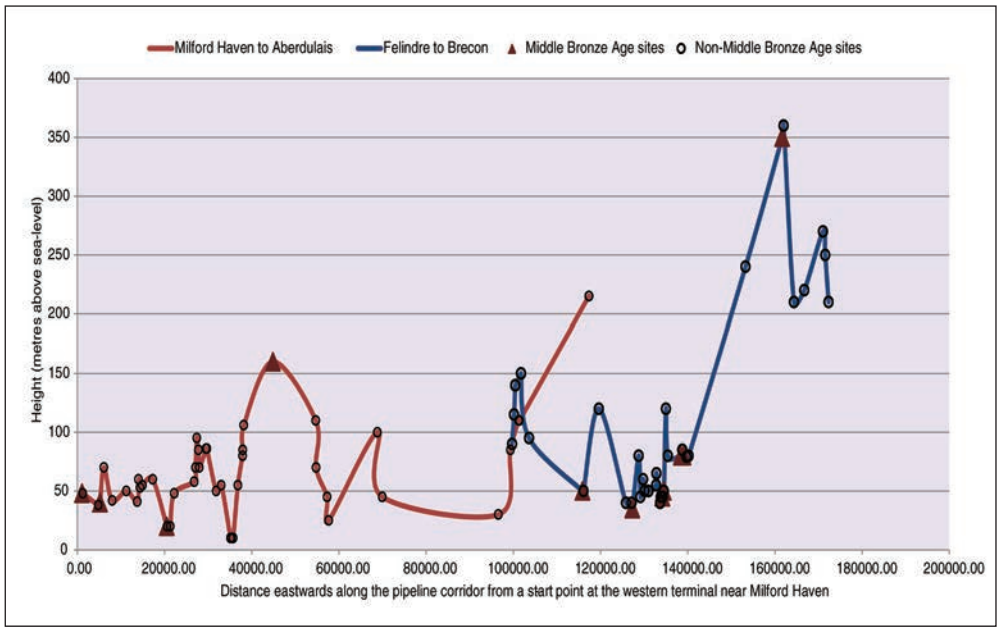


Fig. 4.26 Graph showing the elevation of the dated Middle Bronze Age sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Middle Bronze Age sites

hollowed out and shaped to give a flat base with raised sides. The tree was at least 200 years old when it was cut down at around 1530–1300 cal BC (Beta-218656). Within the trough were quantities of oak and hazel fuelwood as well as burnt stone. Two vertical wooden stakes may have helped stabilise the structure, while a hearth at the eastern end had been used to heat rocks before they were used to heat water in the trough. Several postholes were found surrounding the eastern end of the hearth and trough, perhaps the remains of a cover or windbreak.

Eastwards of Upper Neeston is a site at Steynton, Pembrokeshire (Site 512), where the burnt mound was crescent shaped, and 12m by 18m in extent. Radiocarbon dates suggest it was used between 1510 to 1320 cal BC (SUERC-55488, 55494 and 55495). Two troughs were found underneath it, one dated to 1450–1300 cal BC (SUERC-55487). A little to the north was the burnt mound at Uzmaston, Pembrokeshire (Site 515). At least 10m in diameter, it was used between 1260 to 900 cal BC (Beta-249355, SUERC-56060 and 56061). Further west is the long-lived site at Glan-rhŷd Bridge, Pembrokeshire (Site 506), with around a dozen burnt mounds (see Fig. 4.14). An oval mound (506051) at the southern end was used between 1460 and 1230 cal BC (SUERC-52553 and 52554) and is the latest mound in the group, marking the end of a tradition here spanning more than a thousand years.

A second scatter of Middle Bronze Age burnt mounds was recorded on the relatively low-lying lands north of Ammanford, Carmarthenshire: at Site 13.01, an oval mound 15m by 12m was dated to 1370–1110 cal BC (SUERC-55502). Fuelwood included oak and hazel, but charred cereal grain and charred hazelnut shell fragments were also found. The undated but probably contemporary mound at Pistyll-bâch, Carmarthenshire (Site 15.02) was unusual in having eight troughs. Further north, on the edge of the River Towy's floodplain, was a small mound at Cilsan, Carmarthenshire (Site 21.02). Just 4m by 1.2m, charcoal samples gave dates

suggesting use between 1260 and 1010 cal BC (SUERC-55506 and 55507). A rectangular pit to the north and a circular pit to the west of the mound were probably troughs. A group of three burnt mounds beside a tributary of the River Towy included one at Dolau Farm, Carmarthenshire (Site 26.03) that was at least 6m across. Alder charcoal gave a radiocarbon date of 1380–1050 cal BC (SUERC-50641). Northwards again at Bail y Llwyd, Carmarthenshire were two burnt mounds about 200m apart. One (Site 28.08) was oval, about 7m by 5m and sealed a posthole and a circular trough. The fill included burnt stones and charcoal dated to 1440–1230 cal BC and 1410–1120 cal BC (SUERC-56046 and 56042). The second (Site 28.08a) was 9m by 6.6m. Below the mound was a sub-rectangular trough that yielded dates of 1440–1230 cal BC and 1400–1120 cal BC (SUERC-56047 and 56048). Further north again a burnt mound at Bail y Llwyd, Carmarthenshire (Site 28.14), was circular and 6m across. Here, charcoal representing oak, alder, hazel, hawthorn and holly were recovered from the mound and gave dates suggesting use around 1450–1270 cal BC (Beta-396752 and 296753).

Apart from burnt mounds, the only other evidence recorded for this period was residual material in a tree-throw hole at Cwmifor, Carmarthenshire (Site 26.05), dated to between 1390 and 1120 cal BC (SUERC-54567 and 54568), and some continued activity at the upland ring ditch at Llwyn-Meurig, Trecastle, Powys (Site 38.17). Here three pits were dug 100m east of the ring ditch. One contained a little burnt bone, while another contained a few sherds of pottery with charcoal providing radiocarbon dates of 1510–1400 cal BC and 1420–1260 cal BC (SUERC-52573 and 52574). Charcoal from the third pit dated to 1420–1260 cal BC and 1380–1120 cal BC (SUERC-52578 and 52579). Together they suggest episodic visits over a century or more.

1000–700 BC (Late Bronze Age)

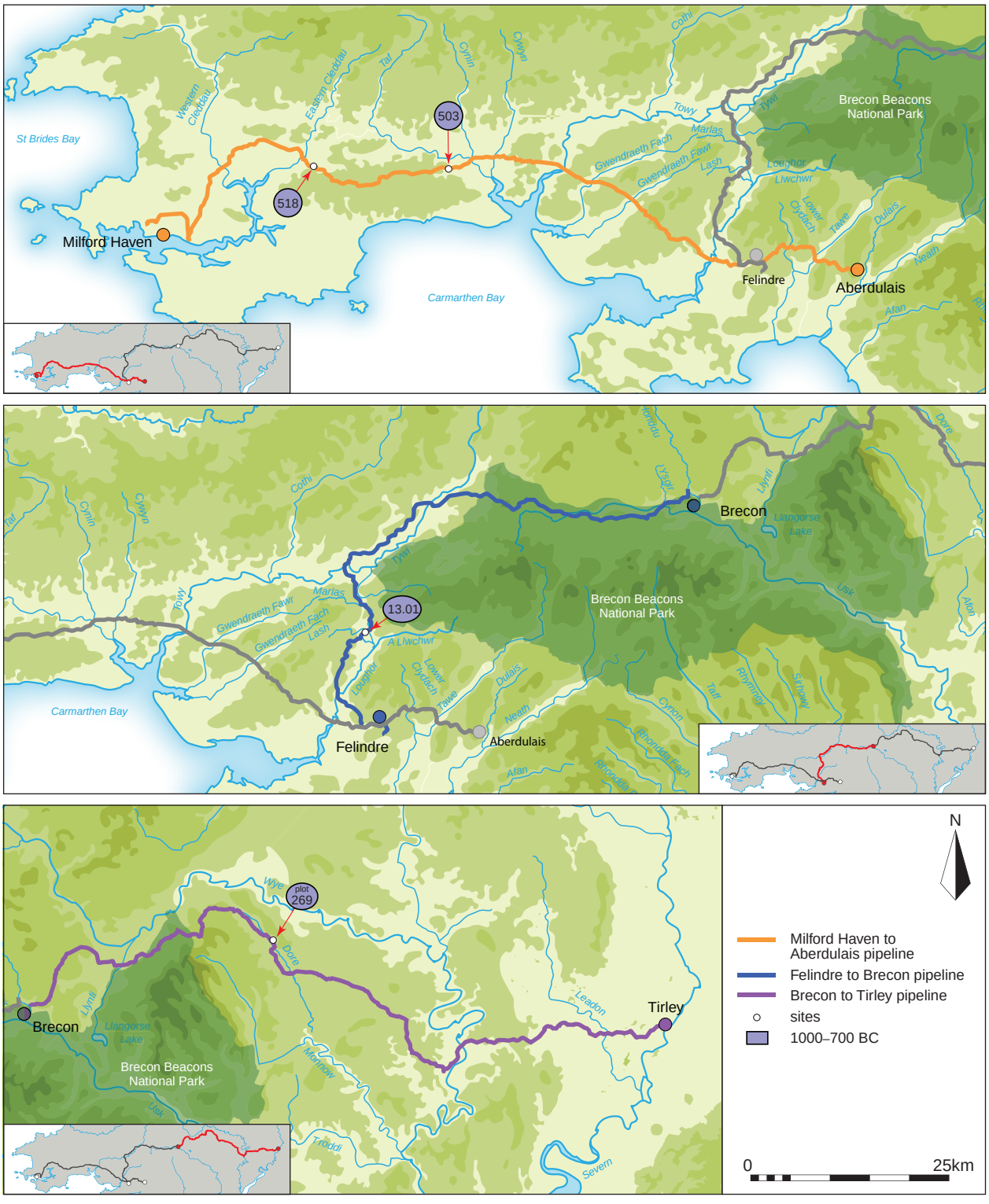
The early first millennium BC is poorly represented along the pipeline with only four recorded sites, mainly on lower ground in the central part of the route (Fig. 4.27). This may in part be attributed to difficulties in recognising distinctive sites and dateable deposits; Post-Deverel-Rimbury pottery is not well represented in western Britain and by about 700 BC the use of pottery had been abandoned in favour of containers made from organic materials. However, this was also a period of deteriorating climate, with the abandonment of many upland areas and increasing emphasis on defence evident in the appearance of fortified enclosures (Darvill 2010, 238–43). New ceremonial monuments are rare, although some existing places did continue to attract attention. At Vaynor Farm, Carmarthenshire (Site 503), for example, the ditch fills trapped material indicating activity within the former henge.

Continuing activity at burnt mounds is also represented. At Ammanford, Carmarthenshire (Site 13.01), an oval mound 13m long covered a large central trough dated to 980–820 cal BC (SUERC-55498). Cutting the mound was a second trough. Two nearby postholes dated to 1280–1110 cal BC and 1060–900 cal BC (SUERC-55497 and 55496) suggest periodic visitation and refurbishment. Charcoal representing oak, alder and hazel was found in the mound, while birch and cherry/blackthorn was present in the later trough. The latest burnt mound revealed along the pipeline lay in Canaston Wood, Pembrokeshire (Site 518). Crescent-shaped in plan, 6m by 3.5m, it dated to 900–790 cal BC (Beta-249351).

The only new kind of monument that can be tentatively assigned to this period is the possible pit alignment recorded at Peterchurch, Herefordshire (Plot 269), although nothing is known of its date or purpose.

Conclusion

The 84 sites dating to the fourth, third, second, and early first millennia BC found along the pipeline show pulses of expansion and contraction in the pattern of settlement and land-use. Two high spots can be seen


St Brides Bay
Milford Haven
Western Cleddau
Eastern Cleddau
Taf
Cynin
Cywyn
503
518
Cothi
Towy
Tywi
Brecon Beacons National Park
Marlas
Gwendraeth Fach
Gwendraeth Fawr
Lash
Loughor
Llwchwr
Lower Clydach
Twrch
Dulais
Neath
Afan
Felindre
Aberdulais
Carmarthen Bay
Dore
Llynfi
Brecon
Llangorse Lake
Usk
13.01
A Llwchwr
Rhymney
Sirhowy
Cynon
Rhondda Fach
Rhondda Fawr
plot 269
Wye
Leadon
Tirley
Monnow
Troddi
Severn
N
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
Brecon to Tirley pipeline
sites
1000–700 BC
0
25km

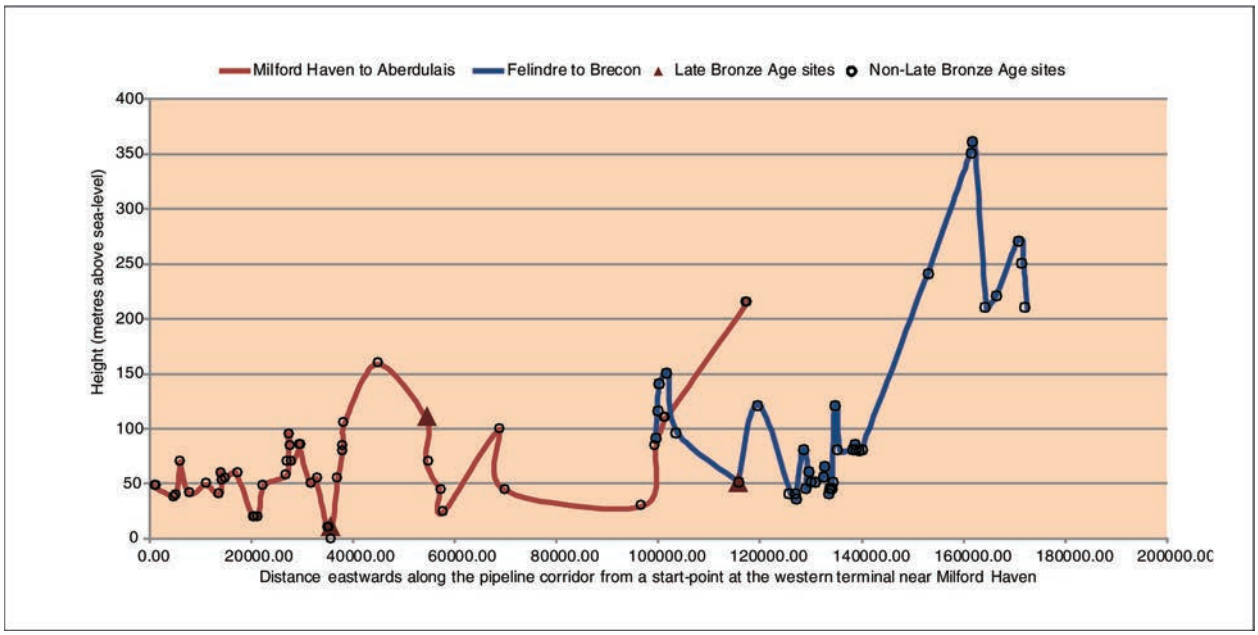


Fig. 4.28 Graph showing the elevation of the dated Late Bronze Age sites in relation to the topography of the Milford Haven to Aberdulais and Felindre to Brecon sections and non-Late Bronze Age sites

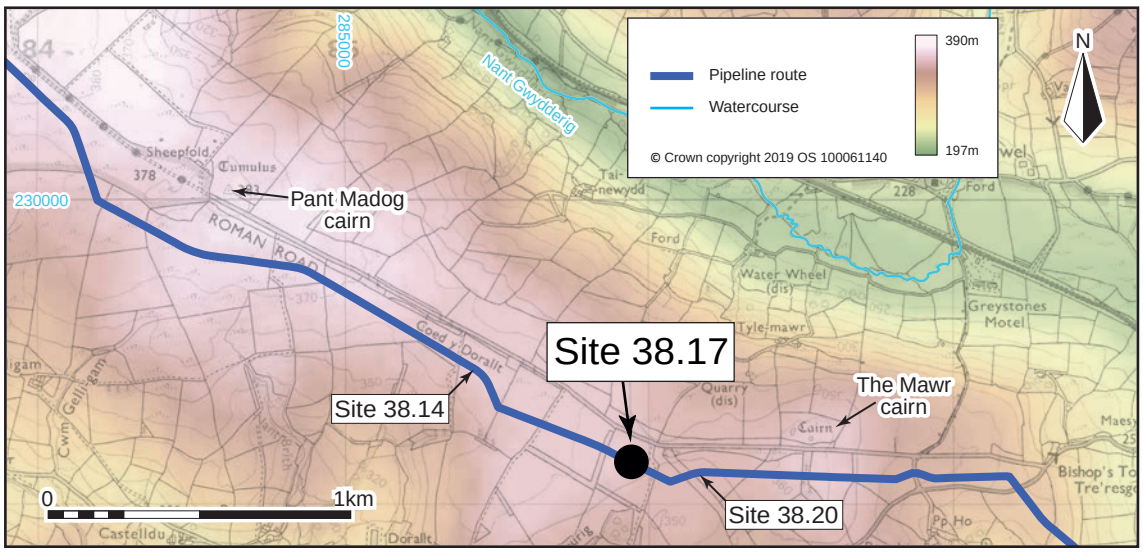
in terms of the extent and density of occupation. The first reflects the successful spread of early farming communities across the coastal plain and along the major river valleys during the earlier fourth millennium BC. The second shows expansion into the uplands coincident with the use of Beaker pottery in the period 2400 to 1700 BC, also linked to a period of migration and social change that in west Wales may also be connected to the search for metal ores.

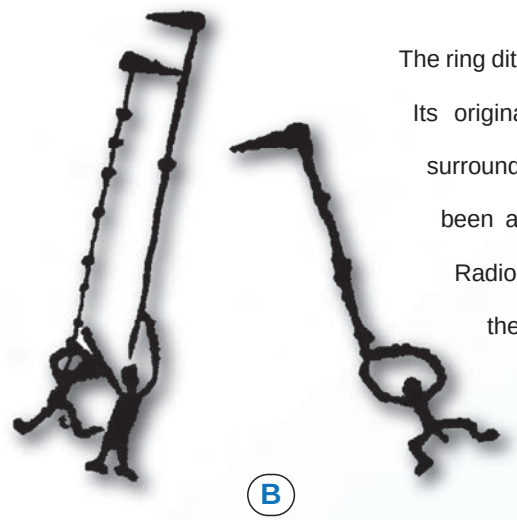
Fig. 4.27 (opposite)
Map showing the distribution of Late Bronze Age (1000–700 BC) sites along the pipeline

KEY SITE 3

A Beaker-period ring ditch and Early Bronze Age reuse at Llwyn-Meurig, Trecastle, Powys (Site 38.17)

Near Trecastle, the pipeline traversed a ridge extending eastwards from Mynydd Bach Trecastell/Mynydd Myddfai and overlooking the River Usk to the south and the Nant Gwydderig to the north. Machining towards the eastern end of the ridge revealed a ring ditch.

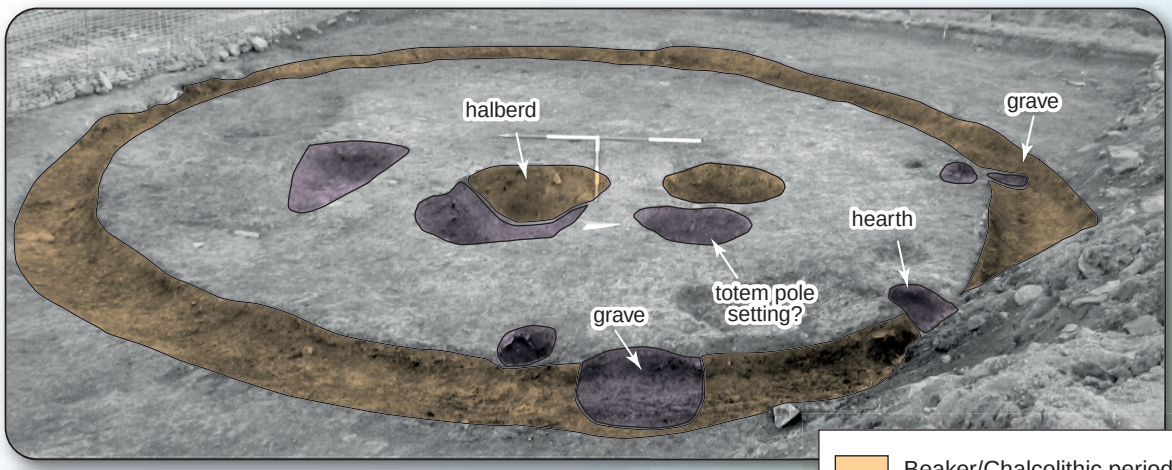




The ring ditch was 9m in diameter and surrounded several pits and postholes. Its original form is not known: the ditch may have held a palisade surrounding a small ceremonial enclosure, or the monument may have been a barrow, with an internal bank or mound, since ploughed flat. Radiocarbon dating revealed that the ring ditch was constructed during the earliest part of the Bronze Age - the Beaker or Chalcolithic period - when metal items were rare and prestigious.

B

One pit, located just off centre, was found to contain the head of a copper halberd (**A**). Remarkably, part of the wooden haft had survived, allowing the object to be radiocarbon dated, which revealed that it belonged to the same period as the ring ditch. These pick-like weapons were probably ceremonial items belonging to group leaders (**B**), and it is this period which saw society becoming more stratified. Why this item was buried in a pit is unclear, but it may have been an offering to the underworld or buried in lieu of a body.



Looking north-west towards Mynydd Bach Trecastell

The monument remained in the landscape and perhaps in local memory long after it was built, but seems to have been left more or less alone for some 230 years. During the Early Bronze Age, it was reused for the burial of at least two individuals whose cremated remains were placed within small graves cut into the partially filled ditch. These were capped with stones. In the interior, further pits were dug, including one which had evidently supported a large post. This post perhaps served as a totem pole, adorned with icons providing a narrative relating to the monument, the individuals buried there and their perceived roles in the community and cosmos.

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Appendix A: Concordance of Milford Haven to Brecon Pipeline Survey, Excavation and Watching Brief Sites Mentioned in the Text

All of the sites below have been reported on within reports available online via *Archwilio* https://www.archwilio.org.uk/arch/ and Cotswold Archaeology's *Reports Online* page of their website https://reports.cotswoldarchaeology.co.uk/, the latter searchable using the report numbers. The sites (Plots) eastwards from Brecon have been reported on by Network Archaeology (NA 2013) and are not listed below.

Site no.	Site name	Location	Main findings	Report no.
		Milford Haven to Aberdulais		
14	Land South of Uzmaston Farm	Uzmaston and Boulston, Pembrokeshire	evaluation: part of shrunken medieval village of Uzmaston	13292
100	Land South of Uzmaston Farm	Uzmaston and Boulston, Pembrokeshire	earthwork survey: part of shrunken medieval village of Uzmaston	13326
201	Land North of Gwempa	Llangyndeyrn, Carmarthenshire	early medieval pit with charred cereals	13341
210	Land South of Croft Farm	Llawhaden, Pembrokeshire	Mesolithic/Early Neolithic flint flakes; Late Neolithic triangular flint arrowhead	14232
213	Land at Gilfach	Llangain, Carmarthenshire	Early and Middle Bronze Age burnt mound	13142
221	Land West of Maes-y-Lan	Llanddowror, Carmarthenshire	early medieval pit with charred cereals; undated pits; medieval or later field boundaries	13148
222	Land North-East of Vaynor Farm	Llanddowror, Carmarthenshire	27 Beaker to Middle Bronze Age pits, 12 with burnt bone: part of a cemetery or settlement	13176
238	Land South-West of Gelli-Wern-Isaf	Mawr, Swansea	Early Neolithic pit; undated pits	13218
245	Land South of Wiston	Wiston, Pembrokeshire	three Early Neolithic pits	13201
246	Land North of Fenton Brook	Wiston, Pembrokeshire	early medieval ditch and undated pit, both with burnt remains	13202
249	Land at Merryborough Farm	Wiston, Pembrokeshire	a hearth and three undated pits	13179
250.1	Land at Merryborough Farm	Wiston, Pembrokeshire	undated pit	13179
251.2	Land North of Creamston Road	Uzmaston and Boulston, Pembrokeshire	post-Roman crop-processing pit or oven	13197
257	Land East of Rose Hill	Rosemarket, Pembrokeshire	possible Roman iron-processing remains	13208
269	Canaston Wood	Llawhaden, Pembrokeshire	saw pits, hollow-ways, charcoal-burning platforms; burnt mound	13215

Site no.	Site name	Location	Main findings	Report no.
270	Land South of Uzmaston	Uzmaston and Boulston, Pembrokeshire	undated ditch, possibly part of Uzmaston shrunken medieval village	13212
272	Land West of Westfields	Rosemarket, Pembrokeshire	three Late Neolithic pits	13214
283	Land North of Blaenhiraeth	Llangennech, Carmarthenshire	charcoal-burning platform	13160
285	Canaston Wood	Llawhaden, Pembrokeshire	burnt mound	13215
286	Land West of Lower Scoveston	Milford Haven, Pembrokeshire	Early to Middle Neolithic pits and postholes	13216
290	Land North-West of Gwempa	Llangyndeyrn, Carmarthenshire	medieval or post-medieval rectangular stone-founded building	13171
293	Land South-West of Felindre	Mawr, Swansea	two early medieval crop-processing ovens	13241
500	Land South of Ty'r Gate	St Clears, Carmarthenshire	medieval enclosure associated with cereal processing; possibly a farmstead	13245
501	Land South-West of Llwyn	Llangain, Carmarthenshire	Early Neolithic, Beaker and Bronze Age pits and postholes within 70m of a previously unrecorded standing stone	13246
502	Land South of Mylett	Llanddowror, Carmarthenshire	Early Bronze Age pits	13247
503	Land East of Vaynor Farm	Llanddowror, Carmarthenshire	Class II henge; Roman features cut into henge	13328
504	Land at Merryborough Farm	Wiston, Pembrokeshire	Early Neolithic pit/ditch; medieval furrows, quarry pits and L-shaped ditch	13179
505	Steynton Ring Ditch	Steynton, Pembrokeshire	Early Bronze Age ring ditch	13248
506	Land East of Glan-rhŷd Bridge	Lampeter Velfrey, Pembrokeshire	several burnt mounds spanning 1570 years from the Late Neolithic through to the Middle Bronze Age	13249
507	Land East of Church Hill	Uzmaston and Boulston, Pembrokeshire	Early Bronze Age burnt mound; undated possible trough	13250
508	Land at Conkland Hill	Wiston, Pembrokeshire	Early Bronze Age feature; Late Iron Age/ Early Roman hilltop enclosure; early medieval metalworking and sunken-floored building	13251
509	Land West of Middle Bastleford	Rosemarket, Pembrokeshire	Early Neolithic pits; undated but possibly Early Neolithic enclosure	13252
510	Land South of Scurtle	Wiston, Pembrokeshire	Early Bronze Age burnt mound	13253
511	Land South-East of Upper Neeston	Herbrandston, Pembrokeshire	Middle Bronze Age burnt mound with wooden trough	13254
512	Land North of Steynton	Milford Haven, Pembrokeshire	Middle Bronze Age burnt mound; early medieval pit with charred grains	13355

APPENDIX A – CONCORDANCE OF SITES

Site no.	Site name	Location	Main findings	Report no.
513	Land North-West of Steynton	Milford Haven, Pembrokeshire	residual Mesolithic/Early Neolithic flints; Late Neolithic pits; Early Bronze Age ring ditch with Collared Urn and Food Vessel cremation graves	13261
514	Land South-East of Upper Neeston	Herbrandston, Pembrokeshire	Early Neolithic curvilinear ditch; Early Neolithic, Beaker and Early Bronze Age pits; Roman fields and possible grave	13254
515	Land South of Uzmaston	Uzmaston and Boulston, Pembrokeshire	Middle to Late Bronze Age burnt mound	13257
516	Land East of Canaston Wood	Llawhaden, Pembrokeshire	Middle Bronze Age burnt mound	13258
517 & 518	Canaston Wood	Llawhaden, Pembrokeshire	burnt mound; early medieval ditches; charcoal-burning platform	13215
519	Land West of Thornton	Tiers Cross, Pembrokeshire	penannular ditch and four-post structures: undated but probably prehistoric	13260
		Felindre to Brecon		
01.18	Land West of Crwca	Mawr, Swansea	Early Bronze Age penannular ditch	13263
01.24–01.26	Land East of Pant-y-ffin	Mawr, Swansea	early prehistoric pits	13284
02.09–02.14	Land at Cefn Drum	Pontarddulais, Swansea	prehistoric or medieval cairns; possible medieval building platforms; post-medieval quarries	13298; 13286
04.22	Land East of Llanedi	Llanedi, Carmarthenshire	post-Roman pit with charred cereals	13317
13.01	Land North of Ammanford	Llandybie, Carmarthenshire	residual Mesolithic/Early Neolithic flints; Middle Bronze Age burnt mound; Late Bronze Age burnt mound; medieval enclosure with charcoal	13265
15.01	Land West of Llwynypiod	Llandybie, Carmarthenshire	three rectangular stone-founded buildings: probably medieval or post-medieval	13285
15.02	Land South of Pistyll-bâch	Llandybie, Carmarthenshire	undated burnt mound on hillslope	13267
20.08	Land West of Pengoilan	Llanfihangel Aberbythych, Carmarthenshire	Neolithic or Bronze Age pit or trough; Late Iron Age/Early Roman roundhouse and pits; medieval features; undated enclosure	13287
20.18	Land East of Cilsan Mill	Llangathen, Carmarthenshire	Late Neolithic pit	13269
21.02	Land East of Cilsan	Llangathen, Carmarthenshire	Early to Middle and Late Neolithic pits; Middle Bronze Age burnt mound	13338
22.02	Land North of Pen-y-banc Farm	Llangathen, Carmarthenshire	Roman road	13293

Site no.	Site name	Location	Main findings	Report no.
22.09	Land South of Llwyncelyn Farm	Llangathen, Carmarthenshire	undated burnt mound	13294
23.02	Land East of Ffrwd-y-drain	Manordeilo and Salem, Carmarthenshire	early post-medieval hearth	13271
23.07	Land South of Pen-y-banc	Manordeilo and Salem, Carmarthenshire	Middle Neolithic to Early Bronze Age pits or cremation graves	13268
24.01	Land to the South-East of Pen-y-banc	Manordeilo and Salem, Carmarthenshire	Early Roman hollow	13295
24.06 & 24.07	Land North-East of Gurrey Cottage	Llandeilo, Carmarthenshire	Early Neolithic pit; post-medieval farmstead; two post-Roman crop-processing ovens	13274
25.07	Land South-West of Brynwgan	Manordeilo and Salem, Carmarthenshire	four early medieval to medieval crop-processing ovens	13310
25.08	Land South of Brynwgan	Manordeilo and Salem, Carmarthenshire	undated but possibly Late Iron Age or Roman roundhouse associated with metal processing; early medieval crop-processing oven and pits	13276
25.12	Land North-West of Closglas	Manordeilo and Salem, Carmarthenshire	undated but Roman or later smithy	13269
26.01	Land South of Dolau Farm	Manordeilo and Salem, Carmarthenshire	Early Neolithic leaf-shaped arrowhead; undated burnt mound; possible second burnt mound	13311
26.02, 26.03 & 26.04	Land South of Dolau Farm	Manordeilo and Salem, Carmarthenshire	two Middle Bronze Age burnt mounds; one undated burnt mound	13279
26.05	Land West of Cwmifor	Manordeilo and Salem, Carmarthenshire	Early Neolithic building; Late Neolithic/ Early Bronze age and Middle Bronze Age features	13308
26.06	Land East of Llechwen-dderi	Manordeilo and Salem, Carmarthenshire	Middle Iron Age burnt mound	13282
28.08/28.08a	Land East of Bail y Llwyd	Manordeilo and Salem, Carmarthenshire	two Middle Bronze Age burnt mounds	13303
28.14	Land North-East of Bail y Llwyd	Manordeilo and Salem, Carmarthenshire	Middle Bronze Age burnt mound	13305
28.23	Land West of Aber-Marlais Park	Llansadwrn, Carmarthenshire	Early Bronze Age burnt mound; two undated burnt mounds; two late medieval/early post-medieval brick-producing kilns	13307
33.01	Land North of Tynycoed	Myddfai, Carmarthenshire	early medieval and medieval crop-processing remains	13313
38.04–38.08	Mynydd Myddfai	Mynydd Myddfai, Carmarthenshire	early prehistoric palaeosols and pits; Middle Iron Age roundhouse settlement	13291

APPENDIX A – CONCORDANCE OF SITES

Site no.	Site name	Location	Main findings	Report no.
38.14	Land North of Dorallt	Llywel, Powys	possible Roman road	13314
38.17	Land North of Llwyn-Meurig	Trecastle, Powys	Beaker/Early Bronze Age ring ditch with halberd; Middle Bronze Age pits	13315
42.03	Land South-East of Pantysgallog	Llywel, Powys	undated pit with unidentifiable burnt bone. Upper Palaeolithic flint blade and flake thought to come from this site	13319
45.16	Land West of Maescar	Maescar, Powys	two small pits including flint, pottery and Early Neolithic charred nut shell	13321
47.00	Land North-West of Cwm-Camlais-Isaf	Trallong, Penpont and Llanfihangel, Powys	Early Bronze Age cremation cemetery	13323
48.06	Site 48.06, Land South of Penpont	Penpont and Llanfihangel, Powys	charcoal-burning platform	13324
50.05	Land West of Aberyscir Court	Yscir, Powys	residual Later Mesolithic and Early Neolithic flints; unstratified probable Early Neolithic pottery; Roman crop-drying ovens	13256
50.07	Land West of Aberyscir	Yscir, Powys	two areas of archaeological deposits with Mesolithic flints, and Neolithic pottery and flint	=13327 (50.06)
50.10	Land North of Aberyscir	Yscir, Powys	medieval or later buildings	13337
50.11	Road Sections at Yscir	Yscir, Powys	residual Mesolithic and Early Neolithic flints; Roman road deposits	13325
51.02	Land at Pysgodlyn Farm	Yscir, Powys	two Early Neolithic pits	13330
51.07	Land North-West of Pen-y-Crug	Yscir, Powys	Early Neolithic settlement; Early Iron Age settlement	13220
51.11	Land North of Pen-y-Crug	Honddu Isaf, Powys	post-Roman cereal- and iron-processing deposits	13332
52.01–52.05	Land South of Llandefaelog, including Gwenffrwd (52.03)	Yscir, Powys	possible Bronze Age pit; Roman or post-medieval road	13333

Appendix B: Chapter 4 Data Table and Burial Details from Steynton (Site 505)

Timothy Darvill

Table B1*: Summary of recorded monuments and finds dating to the period 4000 – 700 BC by pipeline section*

	Section length (km)	Early Neolithic	Middle Neolithic	Late Neolithic	Beaker & Chalcolithic	Early Bronze Age	Middle Bronze Age	Late Bronze Age	Totals	Density (sites per km)
Milford Haven to Aberdulas	120	9	1	5	11	6	4	2	38	0.31
Felindre to Brecon	89	14	2	4	3	6	8	1	38	0.42
Brecon to Tirley	107	1	0	0	6	0	0	1	8	0.07
Whole pipeline	**316**	**24**	**3**	**9**	**20**	**12**	**12**	**4**	**84**	**0.27**

Table B2*: Summary of the burials recorded within the enclosed cremation cemetery at Steynton (Site 505), Milford Haven, Pembrokeshire.*

No	Burial	Pottery	Deposition	Dating
1	Adolescent	Tripartite Food Vessel	Vessel containing cremations from two individuals inverted within pit.	2140–1940 BC (SUERC-54663: 3651±29 BP)
2	Juvenile			
3	Adult	Decorated Bipartite Collared Urn	Cremated bone from two individuals placed beside the pottery vessel that fell on its side in antiquity. The date from charred residue on the wall of the urn (SUERC-54681) is consistent with SUERC-54680 on hazel charcoal but younger than SUERC-54679 on cremated human bone.	2120–1890 BC (SUERC-54679: 3619±29 BP) 1900–1690 BC (SUERC-54680: 3484±29 BP) 1890–1690 BC (SUERC-54681: 3462±29 BP)
4	Sub-adult			
5	Adult	Bipartite Vase Food Vessel	Cremated bone from three individuals placed in both ceramic vessels; the Collared Urn was then deposited up-side down over the upright Food Vessel.	1890–1690 BC (SUERC-54673: 3478±29 BP) 2040–1880 BC (SUERC-54672: 3605±29 BP)
6	Adolescent			
7	Juvenile			
8	Adolescent	Tripartite Collared Urn		
9	Juvenile			
10	Juvenile			
11	?Adult	Tripartite Collared Urn	Cremated remains from a single individual placed inside the ceramic vessel which was buried upright.	2030–1880 BC (SUERC-54678: 3588±29 BP) 1960–1770 BC (SUERC-54674: 3549±29 BP)

APPENDIX B – CHAPTER 4 DATA TABLE AND BURIAL DETAILS FROM STEYNTON (SITE 505)

No	Burial	Pottery	Deposition	Dating
12 13	Juvenile Infant / young juvenile	Undecorated Tripartite Collared Urn	Cremated bone from two individual placed with the ceramic vessel that was deposited inverted in the pit. The date from charred residue on the wall of the urn (SUERC-54668) is consistent with SUERC-54669 on cremated human bone but younger than SUERC-54664 on charcoal used as fuel.	1870–1630 BC (SUERC-54668: 3416±29 BP) 1890–1690 BC (SUERC-54669: 3470±29 BP) 1960–1770 BC (SUERC-54664: 3542±29 BP)
14 15	Adult Infant	Tripartite Collared Urn	Cremated bone from two individuals placed in the ceramic vessel that was deposited inverted in the pit. The backfill of the pit contained flints and microdebitage.	1940–1750 BC (SUERC-54671: 3522±29 BP) 1900–1690 BC (SUERC-54670: 3484±29 BP)
16	Adolescent	None	Cremated bone from a single individual found packed together in a way suggestive of having been buried in a bag.	
17 18	Adult Non-adult	Tripartite Collared Urn	Cremated bone from two individuals placed with the ceramic vessel which was buried upright. A flint blade core was found in the backfill of the burial, possibly a deliberately placed residual item.	
19	Infant	Undecorated Tripartite Collared Urn	Cremated bone from a single individual and a flint blade core was placed with the ceramic vessel which was buried upright.	
20	Juvenile	Undecorated Tripartite Collared Urn	Cremated bone from a single individual placed within a ceramic vessel that was buried upright.	
21	Not known	Tripartite Collared Urn	Truncated pit found during the construction works; no details of burial rite known.	
22	Not Known	None recorded	Truncated pit found during the construction works; no details of burial rite known.	
23	Not Known	None recorded	Truncated pit found during the construction works; no details of burial rite known.	

Appendix C: Period Coverage of the Studied Pollen Sequences

James Rackham

Approx. AOD	Site name	Site code	EMeso	LMeso	Neo	EBA	MBA	LBA	IA	ROM	Emed	Med	Post-med
157m	Glan-rhŷd Bridge	506									Lpaz 1	Lpaz 2	
48m	Upper Neeston	511											Lpaz 1
95m	Aber-gelli-fach	FTP0		Lpaz 1	Lpaz 2-3	Lpaz 3?							
137m	Cefn Drum	02.12							Lpaz 1	Lpaz 1-2	Lpaz 3?		
11m	Tal-y-cynllwyn	RLX01			Lpaz 1-3	Lpaz 3?	Lpaz 4	Lpaz 4-5	Lpaz 5	Lpaz 5	Lpaz 5	Lpaz 6	
114m	Maes-y-llan	RDX05		Lpaz 1-2	Lpaz 3	H?	H?	Lpaz 3-4	Lpaz 4				
147m	Llwynypiod	RDX14R				Lpaz 1	Lpaz 2	Lpaz 2-3	Lpaz 3	Lpaz 3-4	Lpaz 4		
40m	Ffrwd-y-drain	RDX23									Lpaz 1-2	Lpaz 2-3	Lpaz 4-5
75m	Parc-glas	RDX28/23						Lpaz 1	Lpaz 2	Lpaz 2?			
56m	Bog Wood	RVX21						Lpaz 1	Lpaz 1-2	Lpaz 2?			
67m	Cwmcowddu	RDX31	Lpaz 1-2	H?	Lpaz 3				Lpaz 3-4	Lpaz 4			
409m	Mynydd Myddfai	TP229a			Lpaz 1	Lpaz 2-3			Lpaz 3	Lpaz 3-4	Lpaz 4?		
371m	Mynydd Myddfai	TP78			Lpaz 1	Lpaz 1			Lpaz 2	Lpaz 2	Lpaz 2-3	Lpaz 3	Lpaz 4
370m	Mynydd Bach Trecastell	TP1							Lpaz 1-2	Lpaz 2	Lpaz 3	Lpaz 3	Lpaz 4
209m	Rach-fynydd	RVX36						Lpaz 1-2	Lpaz 2 H?	Lpaz 3	Lpaz 3?		
97m	Thruxton	RDX95	Lpaz 1	Lpaz 2-3	Lpaz 4	Lpaz 5			Lpaz 6				Lpaz 6

Lpaz = local pollen assemblage zone; H? = hiatus?

See Fig. 9.3 map for site locations. The detailed pollen sequences and pollen assemblage zones are published elsewhere and available in the archive reports.