Landscapes with Lineage

Archaeological discoveries along the M9 motorway in south Kildare

by Colm Moloney, Patricia Long and Ros Ó Maoldúin

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With contributions by
Scott Timpany, Damian Shiels and James Eogan and illustrations by Hannah Sims, Sara Nylund, Jonathan Millar and Eavan O'Dochartaigh

TII Heritage 16

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Front cover—Visualisation of the ritual landscape during the Late Neolithic (by Eavan O'Dochartaigh).

Back cover—Pit circle under excavation, south of the River Lerr (photo: Airshots).

Contents

Foreword

I am delighted to see the publication of *Landscapes with Lineage: archaeological discoveries along the M9 motorway in south Kildare*. The M9 is a strategic inter-urban motorway connecting Dublin with the south-east of Ireland. Its development was carried out in accordance with all the relevant national and international environment and heritage requirements. As with all transport developments, our objective is to strike the correct balance between the need to provide a safe, sufficient and sustainable infrastructure while ensuring that we protect our shared heritage that communities value so deeply.

The Environmental Impact Assessment for the M9 Kilcullen to Carlow project highlighted the many significant heritage sites that survive in this part of Ireland including iconic sites such as the Moone high cross and Ardscull motte.

While great care was taken to minimise the impact of the new motorway on known heritage sites, this book describes the many previously unidentified archaeological sites that were discovered during the pre-construction archaeological investigations along the route. The excavations reveal how this is a landscape with a lineage that extends back almost 9,000 years to the pioneering hunter-gatherer communities.

The former N9 road broadly followed the route of the *Sligh Cualann*, one of the five great provincial roads of early medieval Ireland connecting the south-east to Dublin. One of the most significant places along the *Sligh Cualann* was the monastery of *Disert Diarmada*, now known as Castledermot.

Castledermot is an important heritage town with many upstanding archaeological monuments. Its significance as a monastic settlement is evident in its high crosses, cross-slabs and round tower, and its later development as an important Anglo-Norman town is evident in the placename and the surviving remains of the town wall and two friaries.

However, for many years prior to construction of the M9 Kilcullen to Carlow project Castledermot was choked with traffic, which impacted heavily on people living there as well as anyone trying to appreciate its rich archaeological and built heritage. The development of the M9 removed much of the through traffic, particularly heavy good vehicles. Ongoing research by Transport Infrastructure Ireland demonstrates the benefits of town bypasses which accrue from the reduction of traffic; these include increases in pedestrian footfall and substantial increases in the perception of the attractiveness of a bypassed town.[1]

Kildare County Council National Roads Office had responsibility for overseeing the project management of the M9 Kilcullen to Carlow. The project was funded by the Irish Government and the European Union

1 https://www.tii.ie/media/bpko2u03/tii-bypass-impact-evaluations_macroom_july-2024_final.pdf

through Kildare County Council/National Roads Authority, under the National Development Plans 2000–2006 and 2007–2013.

I would like to compliment the dedicated authors and editors at Rubicon Heritage Services and the 310 archaeologists, representative of up to 20 nationalities, who brought a wealth of experience and professionalism to bear on this project which now allows us to appreciate the long lineage of human activity in this landscape.

Peter Walsh
Chief Executive
Transport Infrastructure Ireland

Acknowledgements

Archaeological investigations along the M9 Kilcullen to Carlow motorway were carried out by Rubicon Heritage Services Ltd (formerly Headland Archaeology (Ireland) Ltd). Kildare County Council National Roads Design Office on behalf of Transport Infrastructure Ireland (formerly the National Roads Authority) was responsible for management of the project which was funded by the Irish Government and the European Union's European Regional Development Fund, under the National Development Plans 2000–2006 and 2007–2013.

Special thanks are due to all the landowners along the route.

The Environmental Impact Assessment was produced by Roughan and O'Donovan – Faber Maunsell Alliance. The Archaeological, Architectural and Cultural Heritage Assessment for the scheme was compiled by Valerie J Keeley Ltd. Geophysical survey was completed by Bartlett-Clark Consultancy; an aerial photographic survey was undertaken by Markus Casey. Pre-construction test-excavations were carried out by IAC Ltd and CRDS Ltd. Emma Devine, CRDS, directed two excavations to facilitate the diversion of a gas pipeline.

Archaeological investigations were conducted under licences issued by the National Monuments Service on behalf of the Minister for Environment, Heritage and Local Government in consultation with the National Museum of Ireland. Liaison with the National Monuments Service during the progress of the works was primarily with Martin Reid and thanks are also due to Brian Duffy and Mark Keegan for their assistance. We acknowledge the assistance of Mary Cahill and Maeve Sikora, Keepers of Irish Antiquities, Isabella Mulhall, Assistant Keeper, and Paul Mullarky, conservation department, National Museum of Ireland.

The NRA Project Archaeologist was Noel Dunne assisted by NRA Archaeologist Elspeth Logan, with assistance and support from colleagues, in particular Sylvia Desmond, Dáire O'Rourke, Rónán Swan and Mary Deevy. The project was overseen by the NRA Major Projects Section – John Fitzsimons, Regional Manager, Donal Clear and Winston Douglas, Senior Engineering Inspectors. Engineers for Kildare County Council were John Coppinger, David O'Grady, Hilary King and John Grealish. PJ Gilmartin was the Resident Engineer for Kildare County and Phil Shuttleworth acted as Client's Representative.

Senior archaeologists and post-excavation managers for Rubicon Heritage Ltd were Colm Moloney, Damian Shiels, Åsa Carlsson and Patricia Long.

The book is based on the reports of excavations directed by Lydia Cagney, Emer Dennehy, Lisa Doyle, Tara Doyle, Caitríona Gleeson, Liam Hackett, Tom Janes, Patricia Long, Gillian McCarthy, Angus Stephenson and Red Tobin who were assisted by a large team of excavation supervisors and assistants. Dissemination of the results

of the investigations was undertaken in partnership with Bridget Loughlin, Heritage Officer, Kildare County Council.

The discussion of the archaeology on the project has been informed by specialist analyses and interpretations by Steven J Allen, Katharina Becker, Miriam Carroll, Barry Cosham, Simon Gannon, Eoin Grogan, Sarah-Jane Haston, Albína Hulda Pálsdóttir, Alison Kyle, Susan Lalonde, Stephen Mandal, Davie Masson, Clare McCutcheon, Charles Mount, Paul Mullarky, Griffin Murray, Abby Mynett, Annette Quinn, Helen Roche, Laura Scott, Damian Shiels, Maria Soledad Mallia-Guest, Karen Stewart, Emma Tetlow, Scott Timpany, Claudia Tommasino Suárez, Auli Tourunen, Carmelita Troy, Jane Wheeler and Elizabeth Wincott Heckett.

Airshots carried out on-site aerial photography. Artefacts were drawn and photographed by Hannah Sims and Sara Nylund with further artefact photography by John Sunderland. Line drawings and maps by Rubicon Heritage Ltd were prepared for publication by Hannah Sims.

Visualisations are by Jonathan Millar, Sara Nylund and Eavan O'Dochartaigh. Some images have been reproduced courtesy of the National Museum of Ireland and the Discovery Programme. All photography, unless otherwise stated, is by Rubicon Heritage Services.

Artefact conservation was undertaken by Claudia Koehler and York Archaeological Trust. Thanks are also due to Dermot Mulligan, Museum Curator at Carlow County Museum.

Radiocarbon dating was carried out by the Scottish Universities Environmental Research Centre (SUERC), the ^{14}CHRONO Centre, Queen's University Belfast, Beta Analytic and the University of Waikato radiocarbon dating laboratories.

Early drafts of the book were read by Teresa Bolger, Dr Neil Carlin and Dr Damian Shiels and TII Archaeologists James Eogan and Lynda McCormack. The following TII colleagues also provided valuable assistance: Ken Hanley, Martin Jones and Jerry O'Sullivan.

Production of this book was managed at Editorial Solutions Ireland Ltd by Sheelagh Hughes. The design is by Ashley Bingham of Dogtag Creative and the index by Eileen O'Neill.

Archaeological Reports in the TII Digital Heritage Collections

The following excavation reports and ancillary data relating to the M9 Kilcullen to Carlow scheme are published online, free to view and download, in the TII Digital Heritage Collections at the Digital Repository of Ireland (https://repository.dri.ie/catalog/v6936m966). The reports are listed in alphabetical order by site name.

DRI identifier	Excavation Director	DRI web link
E2983 Ballycullane	Hackett, Liam	https://doi.org/10.7486/DRI.q237xt57w
Medieval pits and furrows		
E2872 Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.222815185
Multi-period site. Late Neolithic and post-medieval. *Fulacht fia*, stake-holes, pits, post-holes and ditches		
E2873 Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.8p592v46j
Multi-period site. Mesolithic, Early and Middle Neolithic and Early Bronze Age occupational debris. Early Bronze Age *fulacht fia*. Middle Bronze Age crouched inhumation		
E2874 Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.w089fs459
Multi-period site. Mesolithic activity. Late Bronze Age *fulacht fia*, ditches, a pitfall trap, pits, timber trackway (poss.) and a Late Bronze Age circular stone setting. Post-medieval boundary ditches		
E2875 Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.6q18g166k
Neolithic pits, post-holes, stake-holes and spreads		
E2876 Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.0000cf54w
Multi-period site. Bronze Age to Iron Age and post-medieval. Pits and a post-hole, an adult skull bone dating to the Iron Age and a complete Iron Age cow burial, a medieval slag pit furnace and ditches		
E2877 Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.w663hk13h
Post-medieval field boundary and furrows		
E2952 Ballynamony	Tobin, Red	https://doi.org/10.7486/DRI.r4958166b
Late Bronze Age/Early Iron Age *fulacht fia*, stake-holes and post-medieval furrows, drain and field boundary		
E2937 Ballyvass Site 1	Devine, Emma	https://doi.org/10.7486/DRI.fb49hq30f
Multiple instances of *in situ* burning		
E2938 Ballyvass	Doyle, Tara	https://doi.org/10.7486/DRI.s752kt904
Cereal-drying kiln with an Iron Age/early medieval transitional date. Shallow pits and stake-holes		
E2939 Ballyvass	Doyle, Tara	https://doi.org/10.7486/DRI.wh24m7627
Mesolithic activity. A burnt mound, pits, post-holes and modern drainage ditches		
E2944 Ballyvass	Tobin, Red	https://doi.org/10.7486/DRI.w376gp26b
Early Bronze Age structure (poss.), pits, post-holes, stake-holes and a cereal-drying kiln		

DRI identifier	Excavation Director	DRI web link
E2945 Ballyvass	Tobin, Red	https://doi.org/10.7486/DRI.pk02rs22q
Field clearance activity		
E2946 Ballyvass	Tobin, Red	https://doi.org/10.7486/DRI.pc28q054p
Early medieval hearth		
E2947 Ballyvass	Tobin, Red	https://doi.org/10.7486/DRI.rb699t34n
Multi-period site. Middle Bronze Age to Late Bronze Age pits, post-holes and stake-holes associated with Late Iron Age/early medieval cereal-drying kilns. Post-medieval agricultural features		
E2950 Ballyvass	Tobin, Red	https://doi.org/10.7486/DRI.v4065r86z
Linear, early medieval inhumation cemetery		
E2996 Ballyvass	Doyle, Tara	https://doi.org/10.7486/DRI.tb09xn14p
Multi-period site. Middle and Late Iron Age and early medieval activity. Ring-ditch with cremation burial, metalworking, ringfort and souterrain, cereal-drying kilns, pits, post-holes, post-medieval drains		
E2878 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.v6936n733
Multi-period site. Bronze Age and post-medieval. Hearth, slot-trenches, pits, post-holes and stake-holes		
E2879 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.6970bg30w
Natural features, variations in sub-soil and animal burrows. Finds include a flint flake and medieval pottery		
E2880 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.z0302m256
Multi-phase early medieval. Drain, ditch, gullies, field-boundaries, early medieval kiln with associated structure and wind-break, waste pit and slot-trench		
E2881 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.1j92vp985
Drains and furrows, pits, post-holes and field boundary ditch		
E2882 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.0574f722b
Pits, hearths and stake-holes. Early Neolithic pottery		
E2883 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.4b29qn501
Pits and furrows. Post-medieval pottery		
E2884 Baronsland	Dennehy, Emer	https://doi.org/10.7486/DRI.0z70pb94f
A single Early Neolithic pit		

DRI identifier	Excavation Director	DRI web link
E2885 Baronsland	Hackett, Liam	https://doi.org/10.7486/DRI.2z119574m
Post-medieval cereal-drying kiln, pits, drainage ditches and a field boundary ditch		
E2953 Belan	Tobin, Red	https://doi.org/10.7486/DRI.qz216798v
Late Neolithic to Bronze Age *fulacht fia* and pit. Human remains		
E2957 Belan	Tobin, Red	https://doi.org/10.7486/DRI.tq582650p
Early medieval (poss.) cereal-drying kiln, storage pit and post-medieval furrows and field drains		
E2958 Belan	Tobin, Red	https://doi.org/10.7486/DRI.w950jf94r
Multi-period site with activity spanning from the fifth to 10th centuries AD. A cereal drying complex comprising multiple cereal-drying kilns, a threshing area linear and curvilinear features of uncertain function		
E2961 Belan	Tobin, Red	https://doi.org/10.7486/DRI.q524z426m
No features identified		
E2962 Belan	Tobin, Red	https://doi.org/10.7486/DRI.vq28c3909
19th-century cobbled trackway		
E2963 Belan	Tobin, Red	https://doi.org/10.7486/DRI.wp98p130p
Variation in natural sub-soil		
E2871 Blackrath and Ballymount	McCarthy, Gillian	https://doi.org/10.7486/DRI.2r377d066
Multi-period site. Early Bronze Age, Iron Age and post-medieval. Burnt mound, post-holes, stake-holes, pits, spreads, a field boundary and drainage ditches, a townland boundary ditch, a structure, a terraced area and agricultural furrows		
E2870 Blackrath	McCarthy, Gillian	https://doi.org/10.7486/DRI.0r96mk261
Late Bronze Age cremation cemetery and post-medieval furrows		
E2855 Boleybeg	Dennehy, Emer	https://doi.org/10.7486/DRI.zs269q97k
Multi-period site. Late Iron Age and medieval/post-medieval activity. *Fulacht fia.* Drains and ditches		
E2862 Boleybeg	Dennehy, Emer	https://doi.org/10.7486/DRI.5q485426z
Furrows, a stone-lined drain, post-holes most likely associated with modern agricultural activity, and some probable tree-throw holes		
E2863 Boleybeg	Hackett, Liam	https://doi.org/10.7486/DRI.vt15d0770
Pit		
E2865 Boleybeg	Dennehy, Emer	https://doi.org/10.7486/DRI.5138xw38m
Drain, post-holes, stake-holes, pit, most likely associated with modern agricultural activity. Possible Bronze Age pottery found at this location during test excavation		
E2991 Bray Upper	Cagney, Lydia	https://doi.org/10.7486/DRI.xk81z189h
Multi-period site. Late Neolithic features and an early medieval/high medieval pit		

DRI identifier	Excavation Director	DRI web link
E2992 Burtown Big	Cagney, Lydia	https://doi.org/10.7486/DRI.3x81m3140
Multi-period site. Early Bronze Age and late medieval pits and a linear ditch		
E2994 Burtown Big	Cagney, Lydia	https://doi.org/10.7486/DRI.4455nv82j
Iron Age pits		
E2988 Burtown Little	Gleeson, Caitríona	https://doi.org/10.7486/DRI.2j635m38q
Late Bronze Age pit cremation burial and cremation burials (poss.), pit and structures		
E2989 Burtown Little	Gleeson, Caitríona	https://doi.org/10.7486/DRI.7h14q538h
Multi-period site. Bronze Age to Iron Age activity. Early Bronze Age ring-ditch and segmented ditch. Early Bronze Age cremation burials. A series of medieval and post-medieval ditches		
E2990 Burtown Little	Gleeson, Caitríona	https://doi.org/10.7486/DRI.1r66xg66n
Medieval lime kiln, a late medieval/post-medieval cereal-drying kiln and linear features		
E2940 Coolane	Doyle, Tara	https://doi.org/10.7486/DRI.td96zh98q
Multi-period site. Early and Middle Bronze Age burnt mounds, pits, burnt spread, a medieval well (poss.), stake-holes, post-medieval drains and ditches		
E2941 Coolane	Doyle, Tara	https://doi.org/10.7486/DRI.vh549b22m
Early medieval hearth/kiln and post-medieval ditches		
E2995 Coolane	Doyle, Tara	https://doi.org/10.7486/DRI.v9807j544
Bronze Age *fulacht fia*, post-holes, pits, stake-holes and modern linear drainage ditches		
E2936 Coolane Site 1	Devine, Emma	https://doi.org/10.7486/DRI.f762gt46t
Fulacht fia, pits and an Early Bronze Age waterhole		
E2864 Crookstown Lower	Dennehy, Emer	https://doi.org/10.7486/DRI.7366km023
Pit, ditch and drains most likely associated with modern agricultural activity		
E2866 Crookstown Lower	Hackett, Liam	https://doi.org/10.7486/DRI.6h44d7983
Pit		
E2985 Foxhill	Cagney, Lydia	https://doi.org/10.7486/DRI.63968p62p
Mesolithic pit and Early Bronze Age post-holes, hearth (poss.), linear ditch and cultivation furrow		
E2986 Foxhill	Cagney, Lydia	https://doi.org/10.7486/DRI.1544r462z
Late Iron Age/early medieval period kiln and post-hole		
E2993 Gallowshill	Cagney, Lydia	https://doi.org/10.7486/DRI.xs560t57z
Early Bronze Age *fulacht fia*, post-medieval and modern drain and furrows		

DRI identifier	Excavation Director	DRI web link
E2942 Hallahoise	Doyle, Tara	https://doi.org/10.7486/DRI.pz50wb583
Multi-period site. Early Bronze Age *fulacht fia*, pits, early medieval wells, metalled surface, drain and medieval ditch. Modern agricultural activity		
E2943 Hallahoise	Doyle, Tara	https://doi.org/10.7486/DRI.qj732p62f
Multi-period site. Bronze Age *fulacht fia*, pits, metalled surface, well, medieval and post-medieval agricultural features		
E2948 Hallahoise	Doyle, Lisa	https://doi.org/10.7486/DRI.rn30dg86x
Ditches and pits. Burnt bone dating to the Iron Age. Leinster cooking ware		
E2949 Hallahoise VOL 1 E2949 Hallahoise VOL 2	Doyle, Lisa	Vol. 1 - https://doi.org/10.7486/DRI.t722wr30j; Vol. 2 - https://doi.org/10.7486/DRI.98818650n-1
Multi-period medieval settlement. Early medieval human remains. Ditches, metalworking (poss.), slot-trenches, pits, stake-holes, an early medieval field system. Post-medieval field boundary ditches and agricultural activity		
E2867 Inchaquire	McCarthy, Gillian	https://doi.org/10.7486/DRI.7s75st90b
Multi-period site. Early Bronze Age *fulacht fia*, well, Middle Bronze Age stone-lined cist, pits, hearth, post-medieval ditches and furrows		
E2868 Inchaquire	McCarthy, Gillian	https://doi.org/10.7486/DRI.5x226w946
Pits		
E2869 Inchaquire	McCarthy, Gillian	https://doi.org/10.7486/DRI.wd37kb816
Early Bronze Age *fulacht fia*, a well, pits, post-hole, stake-hole, metalled surface		
E2886 Kilgowan	Hackett, Liam	https://doi.org/10.7486/DRI.3b59dr10d
Early Bronze Age *fulacht fia* and pits. Post-medieval drainage gullies and ditches		
E2965 Moone	Tobin, Red	https://doi.org/10.7486/DRI.sn00qd26b
Spread of charcoal-flecked soil		
E2968 Moone	Tobin, Red	https://doi.org/10.7486/DRI.pg15qw38c
Late Bronze Age *fulacht fia*, drainage gully, waste pit, linear and curvilinear features, field boundary and pond		
E2969 Moone	Tobin, Red	https://doi.org/10.7486/DRI.s178j222w
Pit		
E2974 Moone	Hackett, Liam	https://doi.org/10.7486/DRI.0k22js58k
Pit and modern field drain		
E2975 Moone	Dennehy, Emer	https://doi.org/10.7486/DRI.x633tg534
Bronze Age pottery. Pits, post-holes and post-medieval/modern furrows and drains		

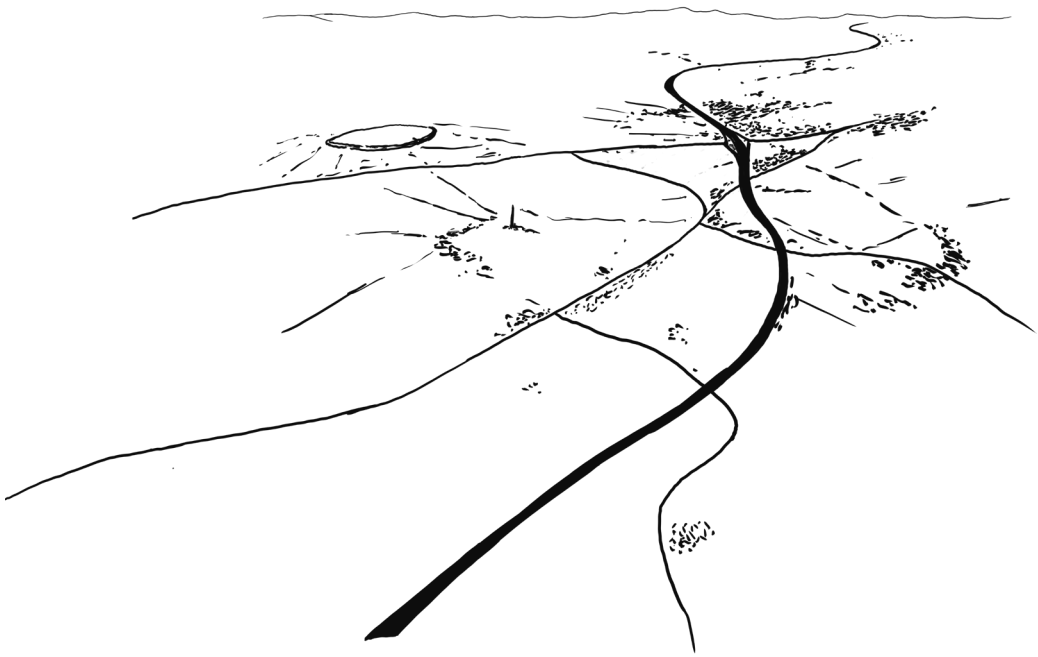
DRI identifier	Excavation Director	DRI web link
E2977 Moone	Dennehy, Emer	https://doi.org/10.7486/DRI.8910z910x
Middle Bronze Age to Early Iron Age funerary activity comprising a flat cremation cemetery and associated marker postholes. Iron Age metalworking activities comprising pits. Post-medieval boundary ditch		
E2980 Moone	Hackett, Liam	https://doi.org/10.7486/DRI.ws85px176
Neolithic ring-ditch. Early Bronze Age flat cemetery comprising cremation burials, inhumed pit burials, an inhumed cist burial and an Iron Age penannular ditch. Cereal-drying kilns, pits and agricultural features		
E2981 Moone	Dennehy, Emer	https://doi.org/10.7486/DRI.xd07w821m
Iron Age *fulacht fia*, a well, pits, post-holes and stake-holes		
E2982 Moone	Dennehy, Emer	https://doi.org/10.7486/DRI.th840d851
Multi-period site spanning the Middle Bronze Age to the post-medieval period. Pits, post-holes and stake-holes. Iron Age inhumation cemetery. Iron smelting furnaces and structures		
E2984 Moone	Dennehy, Emer	https://doi.org/10.7486/DRI.3r07j946t
Multi-period site. Bronze Age, medieval and post-medieval. Ditches with external banks, pits and stake-holes		
08E0100 Mullamast	Hackett, Liam	https://doi.org/10.7486/DRI.q237xt57w
Multi-period site spanning the Early to Late Bronze Age and the Early Iron Age. Pits, an Early Bronze Age crouched inhumation burial, stake-holes, post-holes cremation-pyre and modern furrows		
E2856 Mullamast	Stephenson, Angus	Vol. 1 - https://doi.org/10.7486/DRI.vd678f41k Vol. 2 - https://doi.org/10.7486/DRI.tq582653h Vol. 3 - https://doi.org/10.7486/DRI.1z4108340 Vol. 4 - https://doi.org/10.7486/DRI.wm11n449x Vol. 5 - (App. 3 - 9) - https://doi.org/10.7486/DRI.x059rp85x; Vol. 5 (App. 6) - https://doi.org/10.7486/DRI.4j03sf18r Vol. 6 - https://doi.org/10.7486/DRI.z6044c93w Vol. 7 - https://doi.org/10.7486/DRI.zk527z29w
Bronze Age burnt mound, pits, and a late medieval village		
E2857 Mullamast	Stephenson, Angus	https://doi.org/10.7486/DRI.vm41b7099
Bronze Age roundhouse, pit, ring-ditch and pit cremation burials (poss.)		
E2858 Mullamast	Stephenson, Angus	https://doi.org/10.7486/DRI.6w92ht34k
Late Neolithic to Early Bronze Age site. *Fulacht fia*, timber platform and stake-holes		
E2859 Mullamast	Stephenson, Angus	https://doi.org/10.7486/DRI.4x51x054m
Bronze Age pottery. Pits and furrows		
E2860 Mullamast	Dennehy, Emer	https://doi.org/10.7486/DRI.4x51x054m
Multi-period site extending from the Late Iron Age to the early medieval period. Cereal-drying kilns, hearth, roasting pit, pits, drainage ditches, linear features associated with agriculture and plough furrows		
E2861 Mullamast	Dennehy, Emer	https://doi.org/10.7486/DRI.2b893t700
Furrows, kiln, post-holes, pit, boundary ditch and linear feature of uncertain function		

DRI identifier	Excavation Director	DRI web link
E2972 Mullamast	Hackett, Liam	https://doi.org/10.7486/DRI.4q77v686d
Mesolithic, Neolithic and Bronze Age lithics. Pits, crouched inhumation burial, cremation pit (poss.), bowl furnace (poss.), pits, medieval cereal-drying kilns, curvilinear features and gullies, a series of linear agricultural furrows and post-medieval field systems		
E2973 Mullamast	Hackett, Liam	https://doi.org/10.7486/DRI.5h743b58g
Early Iron Age ring-ditch with token cremation burials. A Late Iron Age/early medieval cereal-drying kiln		
E2976 Mullamast	Hackett, Liam	https://doi.org/10.7486/DRI.td96zj01t
Pit, stake-holes and a drain		
E2978 Mullamast	Hackett, Liam	https://doi.org/10.7486/DRI.tm711969w
Modern ditch		
E2979 Mullamast	Hackett, Liam	https://doi.org/10.7486/DRI.7940nc70h
Pits, post-holes (poss.) and a ditch		
E2987 Mullamast	Dennehy, Emer	https://doi.org/10.7486/DRI.3j33gh78b
Post-hole		
E2854 Narraghmore	McCarthy, Gillian	https://doi.org/10.7486/DRI.zc786561b
Multi-period site. Early Bronze Age and early medieval activity. Pits, post-holes, stake-holes, ditches, kilns, slot-trenches, settlement enclosure (poss.) and field system		
E2887 Old Kilcullen	Cagney, Lydia	https://doi.org/10.7486/DRI.8336wh42q
Early Bronze Age burnt mound		
E2889 Old Kilcullen	Cagney, Lydia	https://doi.org/10.7486/DRI.7p88rz06s
Area of *in situ* burning		
E2890 Old Kilcullen	Cagney, Lydia	https://doi.org/10.7486/DRI.0c48h0901
Late Bronze Age/Early Iron Age. Two pits (poss.) and two possible [cut] features which were irregular in plan		
E2967 Prumpelstown Lower	Long, Patricia	https://doi.org/10.7486/DRI.qb990w947
Multi-period site spanning the Late Mesolithic to the post-medieval period. Pits, Bronze Age pit circle, pit cremation burials, a structure, a burnt mound, Iron Age ring-ditch cemetery, early medieval cemetery, timber trackway, wooden tread trap, ditches, post-medieval field boundaries, gravel extraction pits, drains, gullies and post-holes		
E2970 Timolin	Hackett, Liam	https://doi.org/10.7486/DRI.1c18sx308
Ring-ditches, pits, medieval settlement comprising structures (poss.), metalled surfaces, hearths, gullies, a cereal-drying kiln and post-medieval field boundary ditches		
E2951 Woodlands East	Doyle, Lisa	https://doi.org/10.7486/DRI.rv04g854d
Multi-period site. Early Neolithic to late medieval. Charcoal production pits, dump pits, deposits, stake-holes, post-holes, post-medieval linear ditches, metalled surfaces and a curvilinear ditch		
E2954 Woodlands East	Janes, Tom	https://doi.org/10.7486/DRI.st74s5940
Multi-period site. Early Neolithic, Late Bronze Age and medieval activity. Troughs, charcoal production pits, hearths, pits, medieval field boundary ditches, late medieval inhumation burial, post-medieval and modern ditches, furrows, drains, a spread and gravel extraction pits		

DRI identifier	Excavation Director	DRI web link
E2955 Woodlands East	Hackett, Liam	https://doi.org/10.7486/DRI.qr474g30x
Fulacht fia, Early Bronze Age pit and stake-holes		
E2956 Woodlands East	Hackett, Liam	https://doi.org/10.7486/DRI.rj43cm02v
Late Bronze Age *fulacht fia*, burnt mounds, pits, stake-holes, a post-medieval linear ditch and a modern drainage ditch		
E2959 Woodlands East	Janes, Tom	https://doi.org/10.7486/DRI.t148tz62b
Field-clearance activity		
E2966 Woodlands West	Long, Patricia	https://doi.org/10.7486/DRI.tx324018d
Multi-period site comprising a Mesolithic pit, Late Neolithic timber circles, post-holes, pits, Bronze Age cremation burials, Iron Age ring-ditch cemetery associated with pit cremations, a smelting furnace, a post-medieval lime kiln, field boundaries and a gravel quarry		
E2960 Woodlands West VOL 1 E2960 Woodlands West VOL 2	Janes, Tom	Vol. 1 - https://doi.org/10.7486/DRI.sf26nm584; Vol. 2 - https://doi.org/10.7486/DRI.vx02dw58v
Pits, early medieval kiln, post-holes, stake-holes, deposits, inhumation burials, Anglo-Norman enclosure and field boundaries (poss.)		
E2888 Yellowbog Common	Cagney, Lydia	https://doi.org/10.7486/DRI.3485bz42x
Early Bronze Age burnt mound, pits (poss.) and a ditch		
Ancillary data		
Excavation dataset: M9 Kilcullen to Carlow, County Kildare		https://doi.org/10.7486/DRI.pg15rg934

Chapter 1

Introduction



by Colm Moloney
and Ros Ó Maoldúin

Introduction

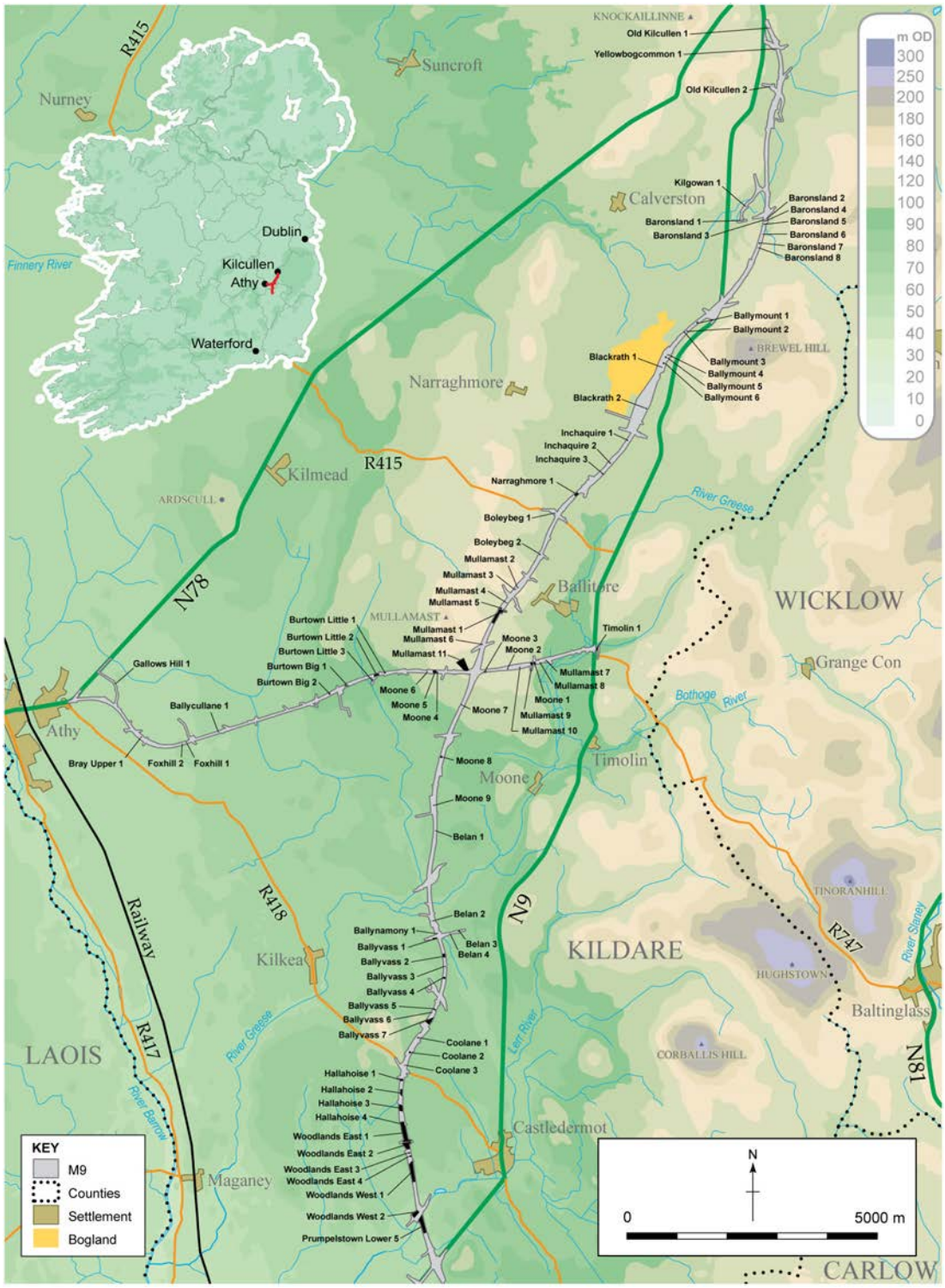
The landscape of south Kildare carries the legacy of countless generations who have inhabited and cultivated the land and practised their faiths there across thousands of years. This book describes and discusses the traces left by these communities revealed during the pre-construction archaeological work carried out in advance of the M9 motorway. Readers will discover an impressive collection of archaeological sites, including ancient hunter-gatherer deposits of carefully placed stone tools, burial grounds and settlements of various periods—some of which bridge major cultural transitions—and evidence of how people farmed and exploited the land and resources available to them. Readers will also be treated to details of objects that despite the effects of time have sometimes been preserved in fantastic condition. These archaeological findings illuminate evolving practices that reflect changing worldviews. Throughout these changes, each community adapted the landscape, often integrating and sometimes honouring earlier features, creating what can genuinely be described as 'landscapes with lineage'.

From motorway to monograph

The M9 Kilcullen to Waterford road scheme extends from Kilcullen southwards through the counties of Kildare, Carlow and Kilkenny, terminating at the north-west approaches to Waterford City. This major new inter-urban route linking Dublin with Waterford was developed as part of the National Development Plans (2000–2006 and 2007–2013) and received funding from both the Irish Government and the European Union's European Regional Development Fund. This volume presents the results of archaeological investigations along the Kildare section of the M9 Kilcullen to Carlow scheme, undertaken in 2007. It is one of three monographs produced by Rubicon Heritage Services Ltd on this project, alongside volumes covering the Carlow Bypass (Bolger et al. 2015: *A Journey along the Carlow Corridor: the archaeology of the M9 Carlow Bypass)* and the medieval village at Mullamast (Bolger 2017: *Colonising a Royal Landscape: the history and archaeology of a medieval village at Mullamast, County Kildare)*.

The Kildare section of the M9 scheme consisted of two parts: the main carriageway running north to south for 28.5 km from Kilcullen to Prumpelstown (2 km south-west of Castledermot), and the Athy link road running east to west for 11.2 km, connecting Timolin to Athy town (Illus. 1.1). The project was managed by Kildare County Council National Roads Design Office on behalf of Transport Infrastructure Ireland (formerly the National Roads Authority). Archaeological assessment proceeded through several phases: initial constraint study and route selection by Valerie J Keeley

Chapter title image: The M9 winding through the landscape towards Kilcullen town (by Hannah Sims).



Illus. 1.1 Map showing location of sites excavated along the M9.

Ltd; geophysical survey at targeted areas by Bartlett-Clark Consultancy (2002–2003); oblique aerial photography by Markus Casey (April 2004); and test-trenching by IAC Ltd and CRDS Ltd (2005–2006). 102 sites may have been discovered but some were amalgamated under one licence number. This process identified 97 archaeological sites requiring resolution before construction. The resolution works were undertaken by Rubicon Heritage Services Ltd (formerly Headland Archaeology (Ireland) Ltd) between March and December 2007. This volume summarises these excavations, providing an overview of the sites and highlighting the major findings and principal results.

County Kildare: an archaeological overview

County Kildare is a rich archaeological landscape. Settlement of the area, especially along the River Barrow valley, from the Mesolithic period onward is indicated through the discovery of stone tools and other related artefacts, and through survey data (Zvelebil et al. 1996). Several residual flint artefacts dating to the Mesolithic period (c. 8000–4000 BC) were recovered during the excavations along the road corridor, contributing to our understanding of Ireland's earliest inhabitants. In the wider landscape of County Kildare, there are few surviving Neolithic tombs, the most visible traces of Ireland's earliest farmers. The sites of two tombs, which no longer survive, are recorded in the county at Grangebeg, between Kildare and Monasterevin and at Carrigeen, just south of Clane. There are, however, numerous stone axes from the county recorded by the stone axe project (Cooney & Mandal 1998; Cooney et al. 2024) and a cluster of Neolithic houses revealed in a quarry at Corbally provide substantial evidence of Early Neolithic settlement (Purcell 1998; 2002). We also know that there was a small enclosure of Early Neolithic date and probably a burial, associated with Linkardstown-type pottery, on Dún Ailinne—the hill that eventually became known as the royal site of Leinster—located near the north end of our scheme but not directly impacted by the development (Johnston 2017; 2023).

There are particularly dense clusters of visible Bronze Age remains within the county. These include several standing stones, including the 23-foot-high standing stone at Punchestown, and numerous barrows and ring-ditches, especially in the Curragh Plains to the west of Dún Ailinne, but also alongside the Barrow and its tributaries. Burnt mounds or *fulachtaí fia* are also numerous, with development projects continuing to uncover them in increasingly large numbers, suggesting that their true quantity is vast (Hawkes 2018). Many bronze objects, possibly deposited as votive offerings, have also been recovered from the county. These include an internationally important hoard of metalworkers' tools from Bishopsland that has given its name to a phase within Bronze Age typologies, a bronze axe still in its leather sheath from Brockagh, a golden lunula hoard from Dunfierth, and a bronze rapier from the River Barrow at Riverstown. Hillforts are located at the south of the scheme, at Ballynacarrick and Hughstown, and to the north of Kildare town at Dunmurry West and north-east of Naas at Killhill. Once thought to be mostly of Iron Age date, we now know that the majority of these sites in Ireland date to the Late Bronze Age, with their use beginning in the Middle Bronze Age (O'Driscoll et al. 2024). The most famous Iron Age site within the county is undoubtedly

Dún Ailinne, one of the so-called royal sites of late prehistoric and early medieval Ireland. The archaeological remains revealed there during excavations (Johnston & Wailes 2007; Johnston 2017; 2023) bear similarities to those excavated at Emain Macha in Armagh and to those indicated through topographic and geophysical survey at Tara in Meath and Rathcroghan in Roscommon. There are also many important Iron Age finds from the county, including the bronze discs from Monasterevin, that Professor John Waddell (2018, 97) has argued display a stylised solar boat and reversed bird heads, motifs that are part of a shared Indo-European cosmology.

From Palladius and Patrick's fifth century AD missions and other historically recorded missionaries, to Ireland's female patron saint Brigid, Kildare played host to many people with pivotal roles in the introduction of Christianity to Ireland. The remains at the important early monastic centres of Kildare and Moone, and several other places named in the annals, exist within an early historic landscape where these people lived and had an impact. Castledermot was founded somewhat later in the late eighth century AD by Diarmuid, a member of the *céili Dé* reform movement. Castledermot and Athy both became important medieval towns. Numerous ringforts—early medieval farmsteads—are found in Kildare and the county was also frequented by Vikings; there are records of raids and a Viking hogback stone grave marker, the only example of its kind in Ireland, can be seen in Castledermot. Prior to the Norman invasion, the main Gaelic families who controlled much of Kildare were the O'Byrnes, O'Tooles, O'Moores and O'Conors. In this period, a new Anglo-Norman family—the Fitzgeralds—rose to prominence; they eventually became the Earls of Kildare and one of the most powerful families in Ireland. Motte and baileys, tower houses and castles are features typical of this period. The motte at Ardscull is a fine example of an early Norman fortification probably constructed in the late 12th century. Maynooth Castle was the home of the Fitzgeralds and remains an impressive structure to this day; the main tower is the largest of its kind in Ireland. White's Castle in Athy is another impressive fortification from later in this period, built in the 15th century. Tower houses were built and inhabited by both the Anglo-Normans and indigenous Irish lords during their struggle for control over land, and there are almost 50 examples to be found in County Kildare. Many settlements that were founded during the late medieval period did not survive to become modern towns and villages. These deserted medieval villages were often abandoned because of war or disease. Over 20 are known from the county, one of which, Mullamast, was within the footprint of the M9 (Bolger 2017).

How this book is organised

The archaeological excavations along the M9 motorway route revealed numerous important findings. This volume gives an overview of these discoveries but also focuses on several key geographical areas that yielded particularly significant archaeological evidence.

Chapter 2 explores the extensive prehistoric ritual landscape at and near Mullamast Hill. This area encompasses four townlands—Moone, Timolin, Mullamast and Burtown Little—on the eastern and southern slopes of Mullamast Hill and in the valley of the River Greese, a tributary of the River Barrow. It contains an astonishing array of ritual and funerary sites dating from

the Late Neolithic through the Late Iron Age and into the early medieval period. During the early medieval period, this area became the location of the royal inauguration site of Maistiu.

Chapter 3 explores the archaeological discoveries along both banks of the River Lerr, in Woodlands West and Prumpelstown Lower townlands. The Lerr—another tributary of the Barrow—was a significant focus of both ritual and everyday life for thousands of years. The evidence from the excavations associated with the M9 includes a Mesolithic storage pit, Late Neolithic wooden buildings, burial sites from the Bronze and Iron Ages, various structures from these periods, and nationally significant burial grounds dating from the Late Iron Age to early medieval times. Such sites illuminate this transformative period during which Christianity was introduced.

Chapter 4 examines archaeological findings from both the early and later medieval periods along the M9 route. County Kildare played a crucial role in Ireland's transition to Christianity, and several sites discovered during this project contribute new insights to this historical narrative. The area surrounding Castledermot was particularly rich in medieval remains. Archaeological evidence revealed extensive farming activities, including both crop cultivation and livestock grazing, which supported the growth of both the local monastery and the later town. This chapter also explores the Anglo-Norman colonisation of the region and its far-reaching impacts. By comparing the archaeological evidence with traditional historical accounts, we can enhance our understanding of this period.

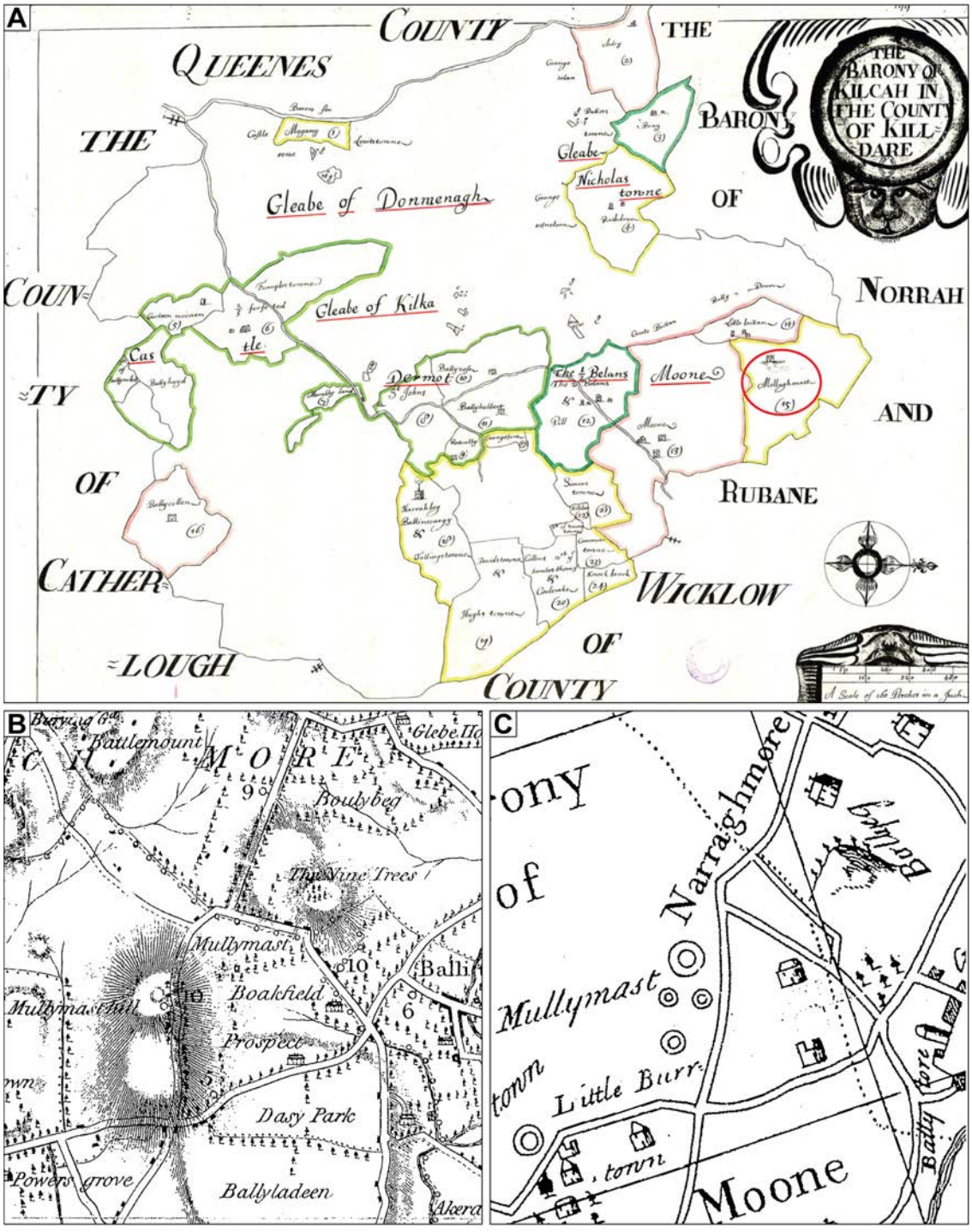
Chapter 5 examines the paleoenvironmental evidence from the excavations. Through analysis of the environmental remains—palaeobotanical materials, charcoal, waterlogged remains and faunal remains—from 102 archaeological sites, the ways in which human activities shaped and transformed the local environment over approximately 8,000 years are revealed.

Chapter 6 highlights other notable archaeological discoveries along the route. These include a concentration of Early to Middle Neolithic sites in Ballymount townland, located near wetlands at the western base of Brewel Hill, and remains of a Late Neolithic building in Bray Upper. The excavations also revealed an Early Bronze Age settlement at Baronsland, several burnt mounds, and Late Bronze Age to Early Iron Age pits discovered near Dún Ailinne at Old Kilcullen—the only archaeological site found in this historically significant area.

The landscape of the scheme

The southern section of the scheme runs north alongside the River Barrow valley, carved by the river through the Carboniferous limestone lowlands, while the northern portion curves eastward to meet the River Liffey. This landscape is flanked by contrasting terrains: to the west lies the Castlecomer Plateau with its rushy pastures built on layers of shale, sandstone, siltstone and mudstone, while the eastern side features Carlow's expansive granite landscape (Aldwell 1975). This limestone corridor, with its gently winding river, has historically served as a crucial connection between Ireland's midlands and south-eastern regions.

Across this undulating countryside, intensive mixed farming dominates. The soil is largely fertile and well drained, supporting extensive cultivation. The 17th-century Down Survey maps provide



Illus. 1.2 Mullamast located on an extract from (A) the 17th-century Down Survey map of the barony of Kilcah, Co. Kildare; (B) Noble and Keenan map of 1752; (C) Alexander Taylor map of Kildare, 1783 (© National Mapping Division of Tailte Éireann CYAL50441807).

Illus. 1.3 Mullamast located on an extract from (A) the First Edition 6-inch Ordnance Survey map (1839); (B) the 25-inch Ordnance Survey map (1909); (C) Satellite imagery (2025) (© National Mapping Division of Tailte Éireann CYAL50441807).

an early, relatively detailed view of this landscape's boundaries and routes around the barony of Kilcah and Mullamast (Illus. 1.2). Later maps—from Noble and Keenan's 1752 survey to Taylor's more detailed 1783 representation—offer increasingly precise information. However, the first truly comprehensive view, which shows individual field boundaries, comes from the First Edition 1839 6-inch Ordnance Survey (Illus. 1.3). Remarkably, comparing these historical records with the 1909 25-inch Ordnance Survey maps and modern satellite imagery reveals that the basic field patterns around Mullamast, and elsewhere along the scheme, have remained largely unchanged for centuries. There has been significant drainage work, however, and many formerly boggy areas have been converted into productive farmland, expanding the agricultural potential of the area.

Chronology and radiocarbon dates

For the purposes of consistency, the following chronological periods are used (Table 1.1). The radiocarbon date ranges cited in the book are the two-sigma (95.4% probability) calibrated ranges reported by the dating laboratories. The radiocarbon dating dataset is available to download from the Transport Infrastructure Ireland (TII) Digital Heritage Collections at the Digital Repository of Ireland (https://doi.org/10.7486/DRI.p841pq25f).

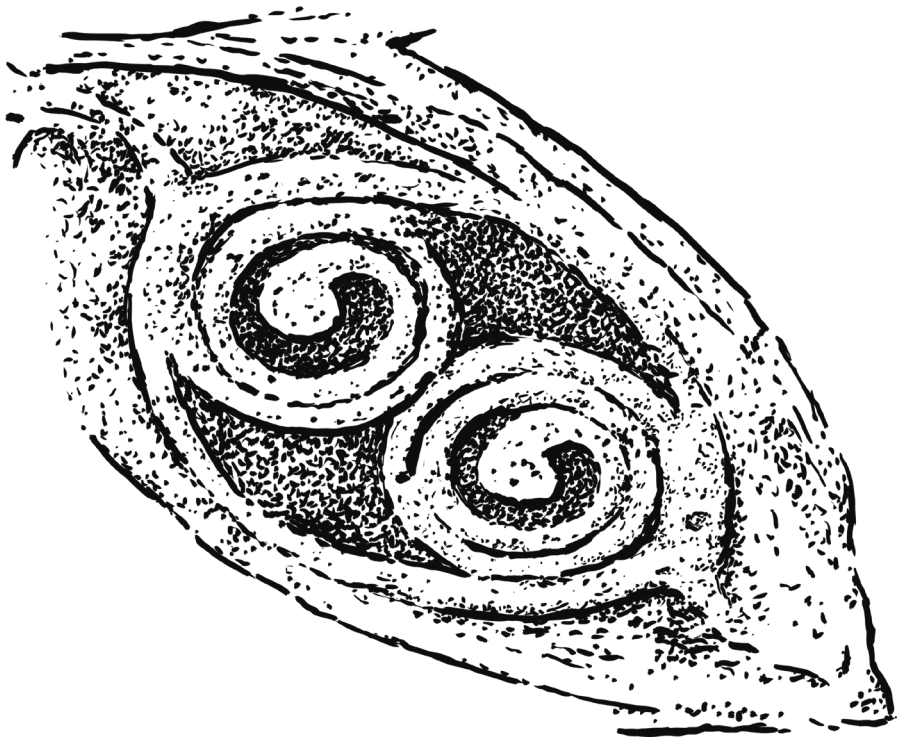
Table 1.1—Chronological time periods used in this book

Period	Date
Early Mesolithic	8000–6700? BC
Late Mesolithic	6700?–4000? BC
Early Neolithic	4000?–3600 BC
Middle Neolithic	3600–3100 BC
Late Neolithic	3100–2500 BC
Chalcolithic/Copper Age	2500–2200 BC
Early Bronze Age	2200–1600 BC
Middle Bronze Age	1600–1100 BC
Late Bronze Age	1100–800 BC
Early Iron Age	800–400 BC
Middle/Developed Iron Age	400 BC–0 BC/AD
Late Iron Age	0 BC/AD–AD 400
Early medieval	AD 400–c. 1169
Late medieval	c. AD 1169–1540
Post-medieval	AD 1540–1700
Early modern	post AD 1700

Although this schema largely aligns with the recently published PeriodO Archaeological periods for the island of Ireland (Carlin et al. 2022), the time periods discussed in text are largely consistent with the original excavation reports. Radiocarbon dates for the M9 Kilcullen to Carlow were originally calibrated using OxCal version 3.10.

Chapter 2

Prehistoric Remains in the Shadow of Mullamast



by Patricia Long, Colm Moloney
and Ros Ó Maoldúin

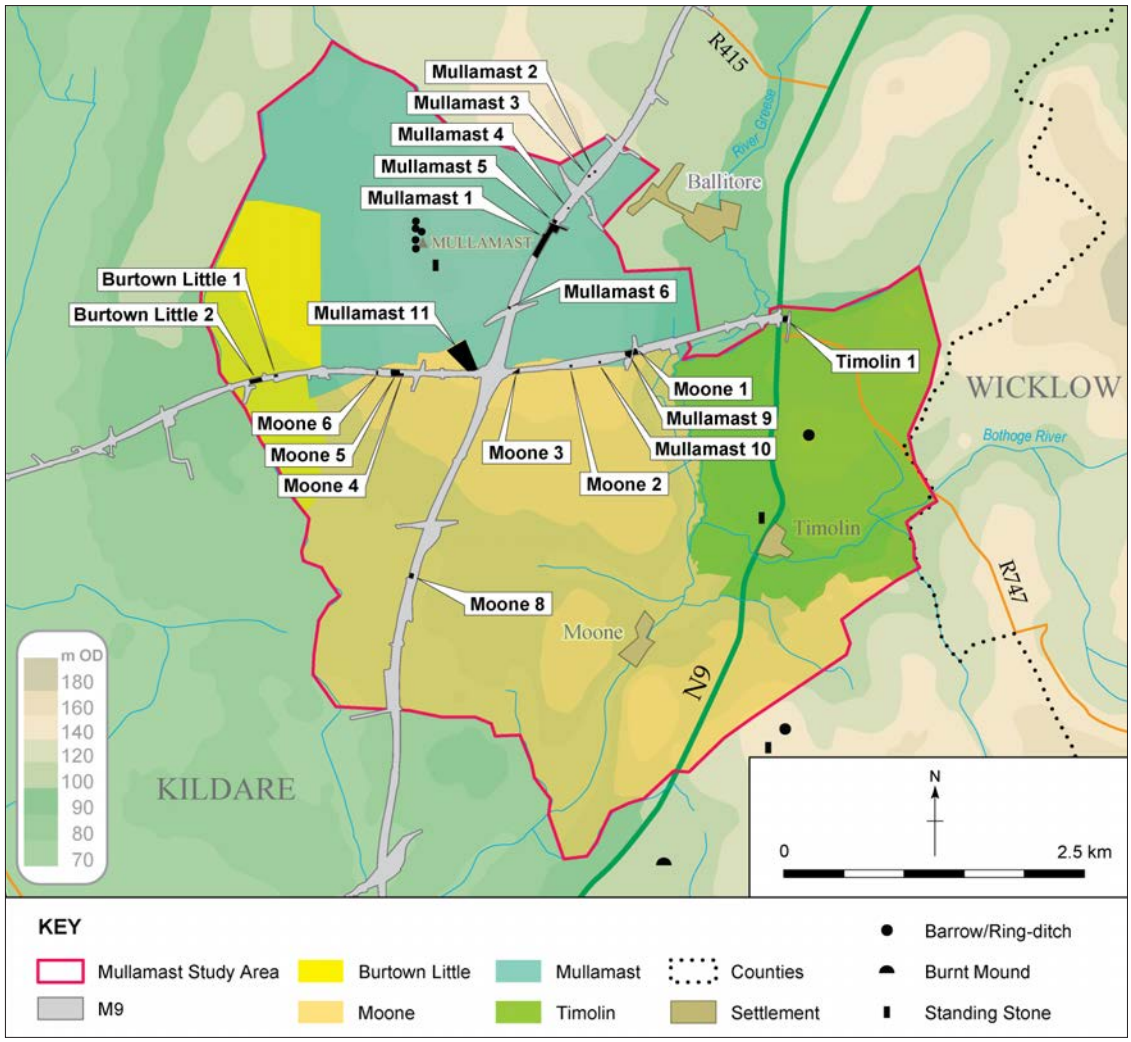
Prehistoric Remains in the Shadow of Mullamast

'The death of Maistiu came without glorious effort
by Gris daughter of Richis,
the death of Gris, skilled in bloody arts,
came by the spear of Daire Derg fresh of face.'
(Gwynn 1903-35, 135)

During the early medieval period, Mullamast Hill or *Maistíu* in Irish, served as the 'royal site' of the Uí Muiredaig sept of the Uí Dúnlainge (Byrne 1973, 150; Smyth 1982, 18). Like many 'royal sites', archaeological evidence suggests its significance was rooted in earlier prehistoric times. This chapter explores the prehistoric remains uncovered during the advance works for the M9 on the eastern and southern slopes of the hill and in the neighbouring River Greese valley, which runs north–south alongside its eastern foot (Illus. 2.1). This study area—henceforth known as the Mullamast Study Area—encompasses four townlands: Moone, Timolin, Mullamast and Burtown Little. The M9 scheme formed a cross-shape through these townlands, with the Athy link road and main motorway forming a major junction just south-east of the hill. Within this footprint, 19 sites containing prehistoric remains were identified. These discoveries offer insights into both the prehistoric communities that inhabited this landscape and the early significance of what would later become a prominent royal site.

Mullamast Hill is located on the western edge of the east Kildare uplands. At 167 m OD, it is the highest point within the study area and offers commanding views over the low-lying plains of Kildare to the north, west and south, and of the Wicklow Mountains to the west. The underlying bedrock consists of Silurian greywacke, siltstones and shales while the soil is mostly grey-brown podzolics with associated gleys and brown earths, and glacial deposits of sand and gravel also occur in the form of pronounced kames or eskers (McConnell et al. 1994). The area falls within the catchment of the River Barrow, and the River Greese—a tributary of the Barrow—runs along the eastern side of the hill and forms the townland boundary between Moone and Timolin. The River Bothoge—a tributary of the Greese—flows through Timolin townland and joins the Greese at the foot of Mullamast Hill. The hill's summit features a distinctive arrangement of monuments aligned roughly SSE to NNW, including five levelled barrows, an enclosure, and a ringfort. To the east of this alignment's south-eastern terminus, perhaps 10 m from its original position, stands a prehistoric standing stone known as the long

Chapter title image Spiral motifs carved on the Mullamast pillar stone (by Hannah Sims).



Illus. 2.1 Distribution of prehistoric sites within the Mullamast Study Area.

stone. Additional enclosures are scattered across the hill's sides, and a cist containing cremated bone was found in a now ploughed-out barrow on the south-western slopes of the hill (Fitzgerald 1891–5). A beautifully decorated stone pillar—now in the National Museum of Ireland—is also believed to have come from the hill (Fitzgerald 1905); through comparison with metalwork it is dated to around the sixth century AD, and grooves and burnishing on its sides may be marks left by swords drawn across its surface in rites associated with the affirmation of 'treaties and oaths, or… as a roll call of ancestral kings' (Newman 2009, 426). There are also two saddle querns recorded as being from reclaimed boggy lands on the slopes of Mullamast (Mount 2001, 34); these could date from as early as the Neolithic but are most likely to be Bronze Age in date (Connolly 1994). On the far side of the River Greese, a low hill in Timolin is crowned by a large barrow; several Early Bronze Age burials were found on the south-east of the

hill (Fitzgerald 1899; Breen 1999; Ó Floinn & O'Connor 2011, 227–31) and an Early Bronze Age cemetery was found to the south of this on the northern edge of Moone village (Ó Ríordáin 2000). This concentration of monuments from different prehistoric and historic periods is characteristic of royal sites, where it appears that structures and features from earlier eras were often incorporated into the political and ceremonial practices of subsequent groups (Newman 1997, 225–326; Schot 2011).

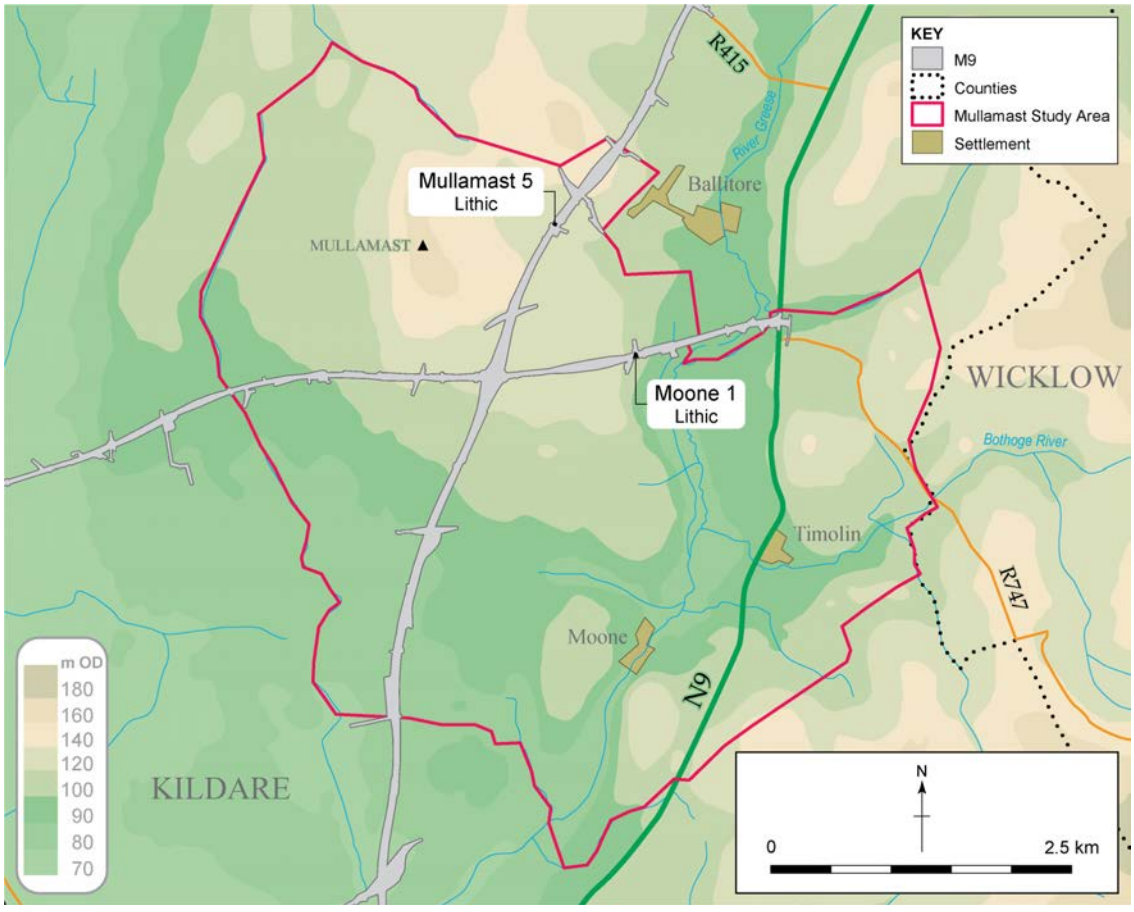
Once Maistiu emerged as a royal site, the deliberate reuse of ancient monuments likely helped legitimise the authority of those inaugurated there by creating tangible connections to the past rooted in the landscape. Although the site does not figure prominently in the annals, it is mentioned in several mythic and literary texts. In some legends, it is known as home to Áine, one of the fairy queens of the Tuatha Dé Dannan, and it is also traditionally known as the burial place of Ailill, son of Dúnlaing (Newman 2009, 426–7). The Metrical Dindsenchas, or lore of places, provides an origin story for the names of the hill and river (Gwynn 1903–35; see quote above). According to this tale, Maistiu, daughter of Oenghus and wife of Daire Derg, was slain by Gris, an otherworldly princess who was in turn slain by Daire Derg. Maistiu gave her name to the hill and in his revenge, Daire Derg caused the waters of the nearby River Snuad to flow over Gris; from that time on it became known as the An Grís or the River Greese. While these origin tales are—at least in part—medieval literary constructs written for contemporary audiences, they contain motifs that resonate with what we know of other royal sites and the importance of female sovereignty goddess figures (Waddell 2014, 110–26). Close parallel can be seen at Tara, where Newman (2011, 22–43) has argued the Níth River was seen as issuing from the Goddess Mebh Lethderg, before joining with the Gabhra, the river of the white mare.

Historically, the locality was best known for its association with early medieval ecclesiastical centres at Moone and Timolin—especially the high cross at Moone. The positioning of these important Early Christian ecclesiastical sites next to Maistiu is likely another sign of its late prehistoric significance, and is a pattern seen at other royal sites, such as the location of Old Kilcullen next to Dún Ailinne.

This chapter presents a chronological analysis of the archaeological evidence uncovered during the M9 excavations (Table 2.1), from the Mesolithic through the Neolithic, the successive phases of the Bronze Age (Early, Middle and Late), and the Iron Age periods (Early, Middle/Developed and Late). Each phase is examined within the context of existing archaeological knowledge from the surrounding area. The discussion culminates in an exploration of how these findings enhance our understanding of the successive communities that inhabited this landscape and considers how their activities may have contributed to the area's eventual emergence as a 'royal site'.

The emergence of a ceremonial landscape (Early to Middle Neolithic)

While some residual Mesolithic artefacts were recovered—a single large core rejuvenation flake from Moone 1 and a modified point that might have functioned as some kind of pick/borer from Mullamast 5 (Illus. 2.2)—the earliest dated ceremonial feature discovered within the Mullamast Study Area was a possible ring-ditch of



Illus. 2.2 Distribution of Mesolithic finds within the Mullamast Study Area.

Middle Neolithic date, located on the apex of a glacial kame at Moone 1, on the south-eastern slopes of Mullamast Hill, overlooking the River Greese (Illus. 2.3, 2.4). At just over 6 m north–south and 7 m east–west, it was more sub-rectangular than circular and had a 1.2 m-wide entrance in its south-eastern corner. No human remains were found within it, but it still may have served as a cenotaph, where the dead were commemorated without physical remains (Woodward 2000, 40).

A single animal bone found within its fill returned a radiocarbon date of 3520–3350 BC (SUERC-25312)—a Middle Neolithic I–II date (McLaughlin et al. 2016, 125) that is early for a ring-ditch, which in Ireland are typically dated to the Bronze Age or later (Waddell 2022, 152, 297–304, 330–5). In McLaughlin et al. (ibid.) Early Neolithic I is defined as pre-3720/3680 cal BC and Early Neolithic II as 3720/3680–3640/3620 cal BC. The radiocarbon date from the Moone 1 animal bone was supported by the presence of three lithics typical of the Neolithic, and it is noteworthy that similarly early dates have recently been returned from a barrow in the west of Ireland (Ó Maoldúin 2024). There are impressive panoramic views from the site of the ring-ditch at Moone, to the north, south and east, particularly of the Wicklow Mountains. To the west of the site, the land rises gently to the summit of Mullamast Hill.

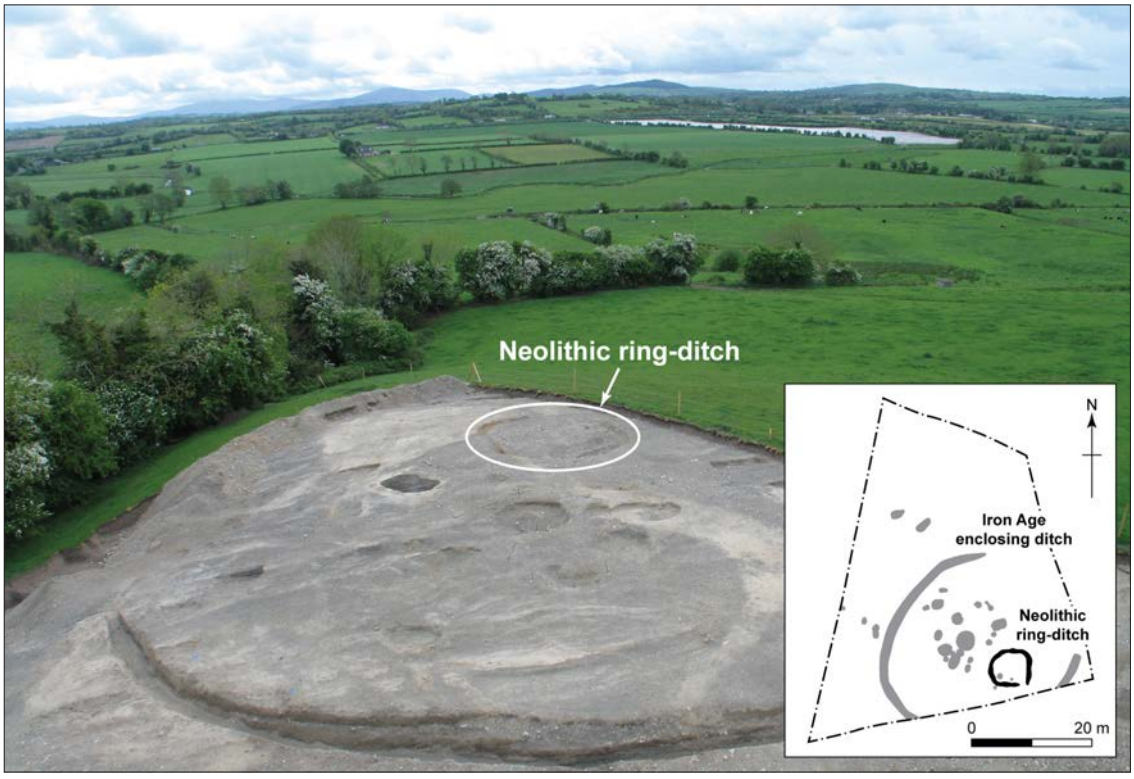
Table 2.1—Excavated archaeological sites with prehistoric activity excavated in Moone, Timolin, Mullamast and Burtown Little (sites presented chronologically with the earliest features on site determining placement)

Sites	Features	Type of activity
Moone 1	Middle Neolithic ring-ditch	Ceremonial/funerary followed by industrial
	Early Bronze Age flat cemetery with pits	
	Developed Iron Age pit	
	Developed/Late Iron Age pits	
	Late Iron Age enclosure and cereal-drying kiln	
	Late Iron Age/early medieval cereal-drying kilns	
Mullamast 5	Late Neolithic/Chalcolithic burnt mound and trough	Industrial
	Chalcolithic/Early Bronze Age burnt spread and timber platform	
Moone 3	Chalcolithic/Early Bronze Age possible building	Domestic followed by funerary followed by industrial
	Middle to Late Bronze Age flat cremation cemetery	
	Early to Developed Iron Age pit (possible token cremation) and metalworking	
	Developed Iron Age kiln/smoker	
	Late Iron Age ditch and ironworking	
Mullamast 6	Early to Middle Bronze Age roundhouse, penannular ring-ditch with post-holes in base and stake-holes at entrance, some features with unidentifiable burnt bone	Domestic and ceremonial/ funerary?
Mullamast 1	Early/ Middle Bronze Age pits with burnt mound material	Industrial
Mullamast 11	Early Bronze Age pits and crouched inhumation	Domestic followed by funerary followed by domestic
	Middle Bronze Age cremation pit	
	Late Bronze Age domestic pits	
	Middle/Developed Iron Age domestic pits	
Timolin 1	Early to Middle Bronze Age ring-ditches and pits (no confirmed human remains)	Ceremonial/funerary?
Moone 5	Early Bronze Age pottery	Domestic, industrial and funerary
	Late Bronze Age pit	
	Late Bronze Age/Early Iron Age pits and post-holes	
	Iron Age burials, structures, hearths, metalworking furnaces, roasting pits and waste pits, as well as many pits of uncertain function, post-holes and stake-holes	

Sites	Features	Type of activity
Moone 6	Early/Middle Bronze Age pits, post-holes and stake-holes, hearth	Domestic
Burtown Little 2	Early Bronze Age ceremonial complex with segmented ditch, penannular ring-ditch, post-holes and cremations	Ceremonial/funerary
	Iron Age penannular ring-ditch with human bone	
Moone 2	Middle to Late Bronze Age pits	Domestic
Burtown Little 1	Middle to Late Bronze Age cremations, large charcoal-rich pit and a four-post structure, rectangular structure, other pits and post-holes	Funerary and domestic
Moone 8	Late Bronze Age burnt mound	Industrial
Mullamast 4	Late Bronze Age pits and a post-hole	Domestic
Moone 4	Early and Late Iron Age burnt mound complex	Industrial
Mullamast 9	Prehistoric cluster of pits (dating based on lithics)	Domestic followed by funerary followed by domestic
	Early Iron Age crouched inhumation	
	Iron Age waste pit and storage pit	
Mullamast 2	Late Iron Age/early medieval kiln, waste pit and post-holes	Industrial and domestic
Mullamast 3	Some Late Iron Age but mostly early medieval cereal-drying kilns and associated features	Industrial
Mullamast 10	Middle/Developed Iron Age sub-circular ring-ditch	Ceremonial/funerary

Elsewhere on the scheme, at Ballymount 5 around 5 km north of the Mullamast Study Area, Early Neolithic carinated bowl sherds and Middle Neolithic Impressed Ware bowl sherds were found with associated charcoal-rich deposits and associated stake-holes, pits and post-holes (Chapter 6).

There are no known Neolithic monuments within the study area, but there are several in the wider surrounding landscape. County Carlow features seven portal tombs, an outstanding example of which is located c. 16 km south-west of the study area at Kernanstown. Five passage tombs are located within 20 km of the study area: four in a north-east to south-west line in the foothills of the Wicklow Mountains near Kilcullen, and a fifth east of Baltinglass. While some of these may be Early Neolithic in origin, they were likely still in use during the Middle Neolithic. Two Middle Neolithic Linkardstown-type cists occur within 20 km south of the study area—the namesake Linkardstown tomb and the Baunogenasraid tomb—and sherds of Linkardstown pottery were found at Dún Ailinne (Johnston 1990). Early Neolithic houses have also been found less than 20 km north of the study area at Corbally (Purcell 1998; Tobin 2001) and approximately 15 km to the south at Russellstown 1 and Busherstown 4 (Carlin et al. 2015, 97). There is also evidence that large hilltop enclosures in the region may have origins in the Early Neolithic; these



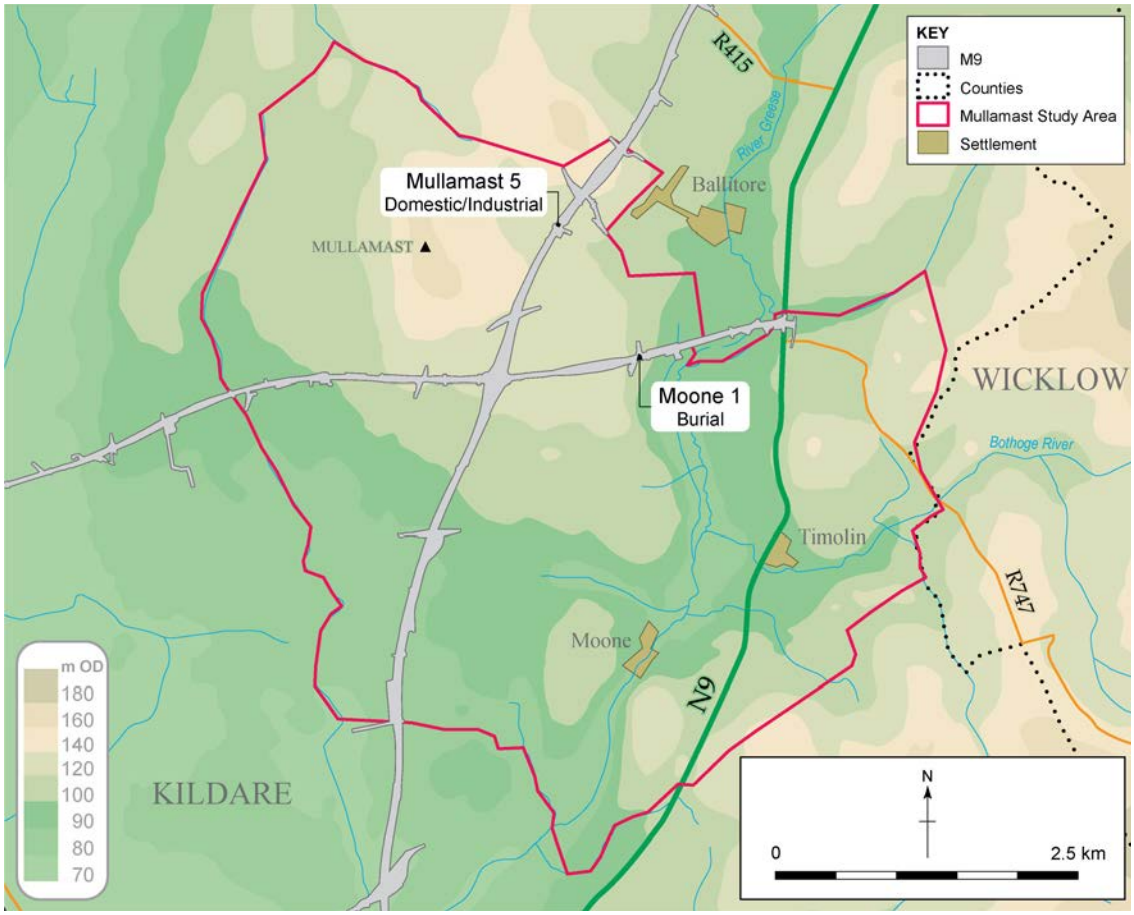
Illus. 2.3 Aerial view of the Neolithic penannular ring-ditch at Moone 1, looking south-east (photo: Airshots).

include Dún Ailinne (Chapter 1), Hughstown Hill west of Baltinglass (within 10 km of the project), Spinans Hill, Co. Wicklow (c. 13 km from the project) and Rathcoran (Baltinglass Hill), Co. Wicklow (10 km from the project) (O'Driscoll et al. 2024).

Stray finds also attest to Neolithic activity in the vicinity. The Irish Stone Axe Project has recorded 126 axes from within 10 km of the road scheme (Cooney et al. 2024), with notable concentrations from the River Barrow near Athy. Some of the axes were made from stone not local to the region, such as 10 made from porcellanite which originally came from County Antrim and four from green Tuff, likely sourced from Scafell Pike in the Lake District of Cumbria in England (Cooney & Mandal 1998, 111). These probably reached the region through a series of exchanges and attest to the connections within Ireland and across the Irish sea during the Neolithic.

The Late Neolithic

A burnt mound at Mullamast 5 (Illus. 2.4) was the only site within the Mullamast Study Area that returned a potentially Late Neolithic date. The trough under the mound returned a Late Neolithic to Chalcolithic date of 2550–2230 BC (SUERC-25720). Previous excavations have shown that some burnt mounds do date to the Late Neolithic but that the majority date to the Chalcolithic and Bronze Age (Hawkes 2018, 115–52). In this case, further Chalcolithic dates from the overlying material suggest a focus of activity in that period (see below).



Illus. 2.4 Distribution of Neolithic sites excavated within the Mullamast Study Area.

Substantial Late Neolithic remains including timber circles or square-in-circles associated with Grooved Ware pottery were found elsewhere on the M9 scheme, c. 7 km to the south of the study area adjacent the River Lerr (Chapter 3) and at Prumpelstown 2 on the Carlow bypass (Carlin et al. 2015, 105). Scatters of pits, post-holes and hearths were also found on various other sites; however, there was little evidence for coherent structures, except for a possible Late Neolithic example at Bray Upper 1, which was also associated with Grooved Ware pottery (Chapter 6).

The Chalcolithic

Around 2500 BC, copper was first mined in Ireland by peoples who were also using a new international style of pottery, Beaker pottery (O'Brien 2004). It would be another several hundred years before copper was alloyed with tin and the Bronze Age proper can be said to have started. Scholars differ on whether this period should be named separately (O'Brien 2012; Carlin & Brück 2012); those that believe it should be, call it the 'Chalcolithic', which means the Copper-stone Age. Beaker pottery is a distinctive ceramic associated with Chalcolithic/Copper Age material

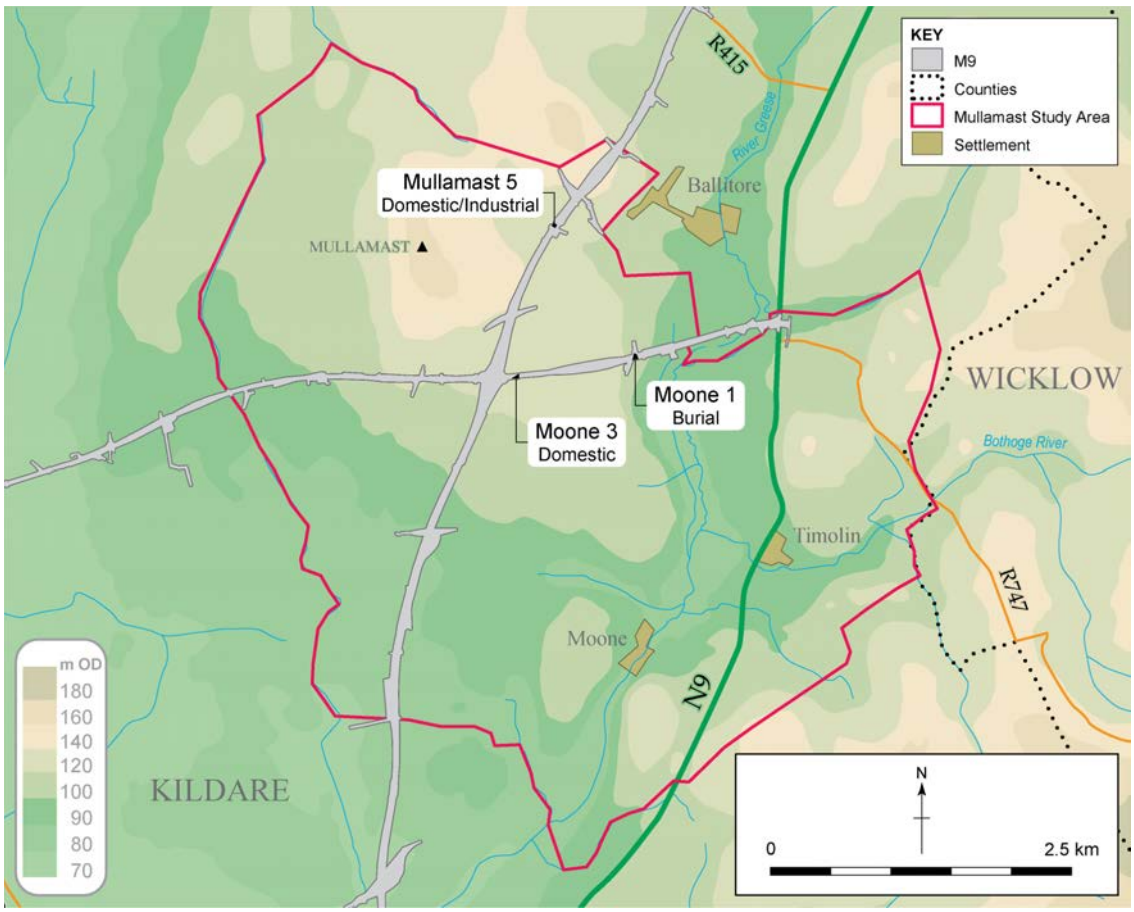
culture and social practices dating to 2500–2200 BC (Carlin 2018).

The only upstanding monuments known to date to the Chalcolithic are wedge tombs and these do not occur in Kildare. Neither are there any known Beaker associated artefacts, such as polypod bowls, copper daggers, golden lunulae and discs, wrist bracers, battle axes, or v-perforated buttons from the area (Carlin 2018, 173–96). This lack of visible material in the landscape heightens the importance of the Chalcolithic material found on this and other developments in the region.

Chalcolithic remains were found on three sites within the Mullamast Study Area: Moone 3, Moone 1 and Mullamast 5 (Illus. 2.5).

Moone 3

A stake-hole associated with a possible structure at Moone 3 produced a sherd of Beaker pottery and a radiocarbon date from a pit in the same cluster returned a date of 2490–2290 BC (SUERC-25335). The possible structural outline comprised a roughly circular arrangement c. 5 m in diameter of post-holes, stake-holes, pits and a single curvilinear slot trench on its south-eastern



Illus. 2.5 Distribution of Chalcolithic sites excavated within the Mullamast Study Area.

side. Putative Chalcolithic or Beaker related houses are few in Ireland and Carlin (2018, 62) argues that 'no distinct architectural form… is recognisable'.

Moone 1

Beaker pottery sherds were also found in two graves of the Early Bronze Age cemetery at Moone 1. One in fill overlying an Early Bronze Age crouched inhumation and the others within an inverted vase urn (see below). These may have been residual artefacts or intentionally deposited heirloom items.

Mullamast 5

As mentioned above, a burnt mound and trough found at Mullamast 5 were likely of Chalcolithic date. The site was located on the gentle lower south-facing slope of Nine Tree hill, east of Mullamast Hill, overlooking the River Greese valley. The trough was a rectangular or trapezoidal structure, 1.55 m long, 1.3 m wide and 0.25 m deep. The base was formed by ash planks held in place with alder stakes, and the sides by a mixture of alder ash and hazel roundwoods. A fragment from one of the ash base planks returned the Late Neolithic–Chalcolithic date of 2550–2230 BC (SUERC-25720). Fragments of a wooden vessel were retrieved from the trough and the overlying material contained several cattle bones, including skull and teeth, and some deer bone. A fragment of alder charcoal from here returned a Chalcolithic date of 2470–2210 BC (SUERC-25332) and another from an overlying layer of burnt mound material returned another of 2400–2130 BC (SUERC-25331). Activity seems to have continued into the Early Bronze Age with the construction of a timber platform and further burnt mound related activity (see below), but the main phase of use was clearly Chalcolithic.

At Belan 2, just over 2 km south of the Mullamast Study Area, another Chalcolithic burnt mound and trough were discovered (Chapter 6). Disarticulated human bones found on this site were dated to the Chalcolithic and Early Bronze Age.

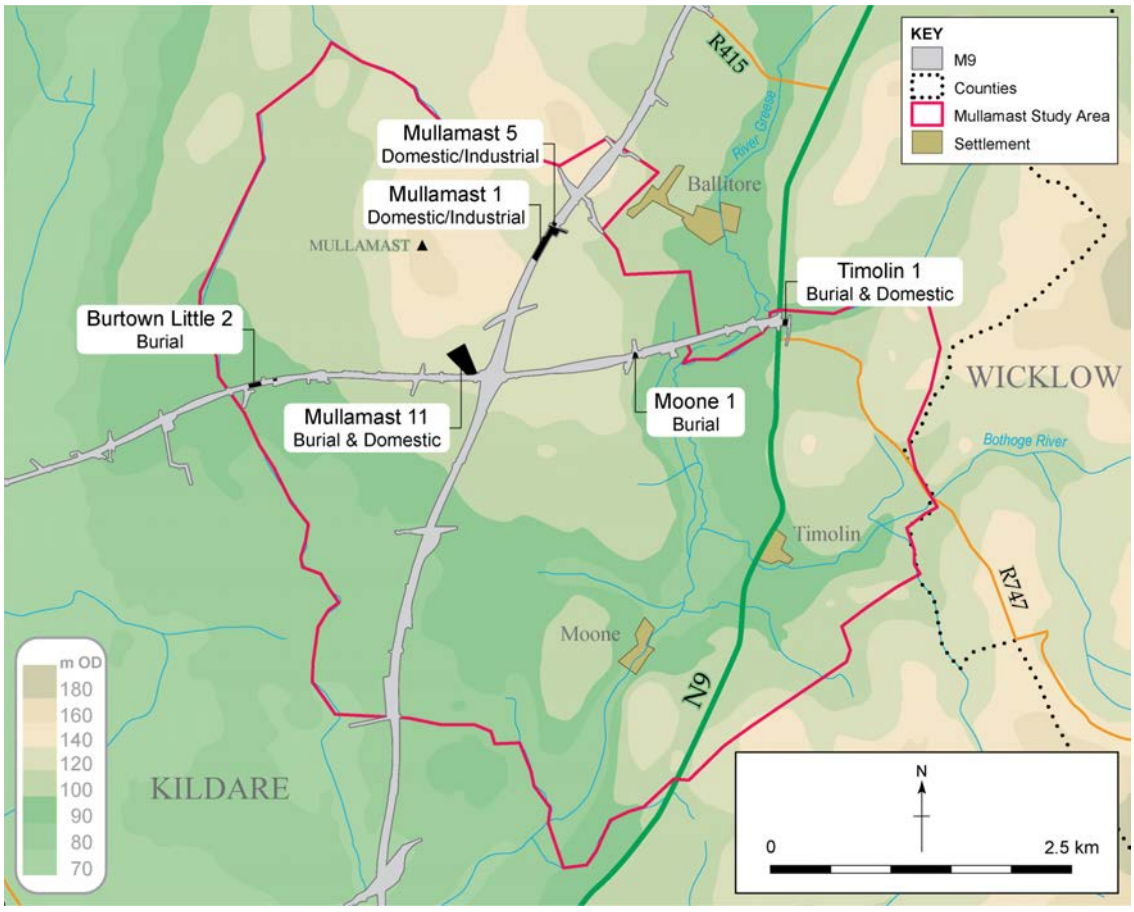
The Early Bronze Age

The Early Bronze Age material uncovered in the Mullamast Study Area was primarily of funerary character and concentrated on the southern slopes of Mullamast Hill at Moone 1, Burtown Little 2 and Mullamast 11, and further east at Timolin 1 (Illus. 2.6). Burnt mound activity of similar date was also found within the study area at Mullamast 1, and further activity was carried out at the earlier burnt mound at Mullamast 5.

Moone 1

During the Early Bronze Age, an unenclosed flat cemetery was placed on the summit of a gravel kame north-west of the Middle Neolithic ring-ditch (Illus. 2.7) on the south-east slopes of Mullamast Hill. Most burials were of crouched inhumations; however, several cremations were also interred (Table 2.2). The full extent of the cemetery was excavated.

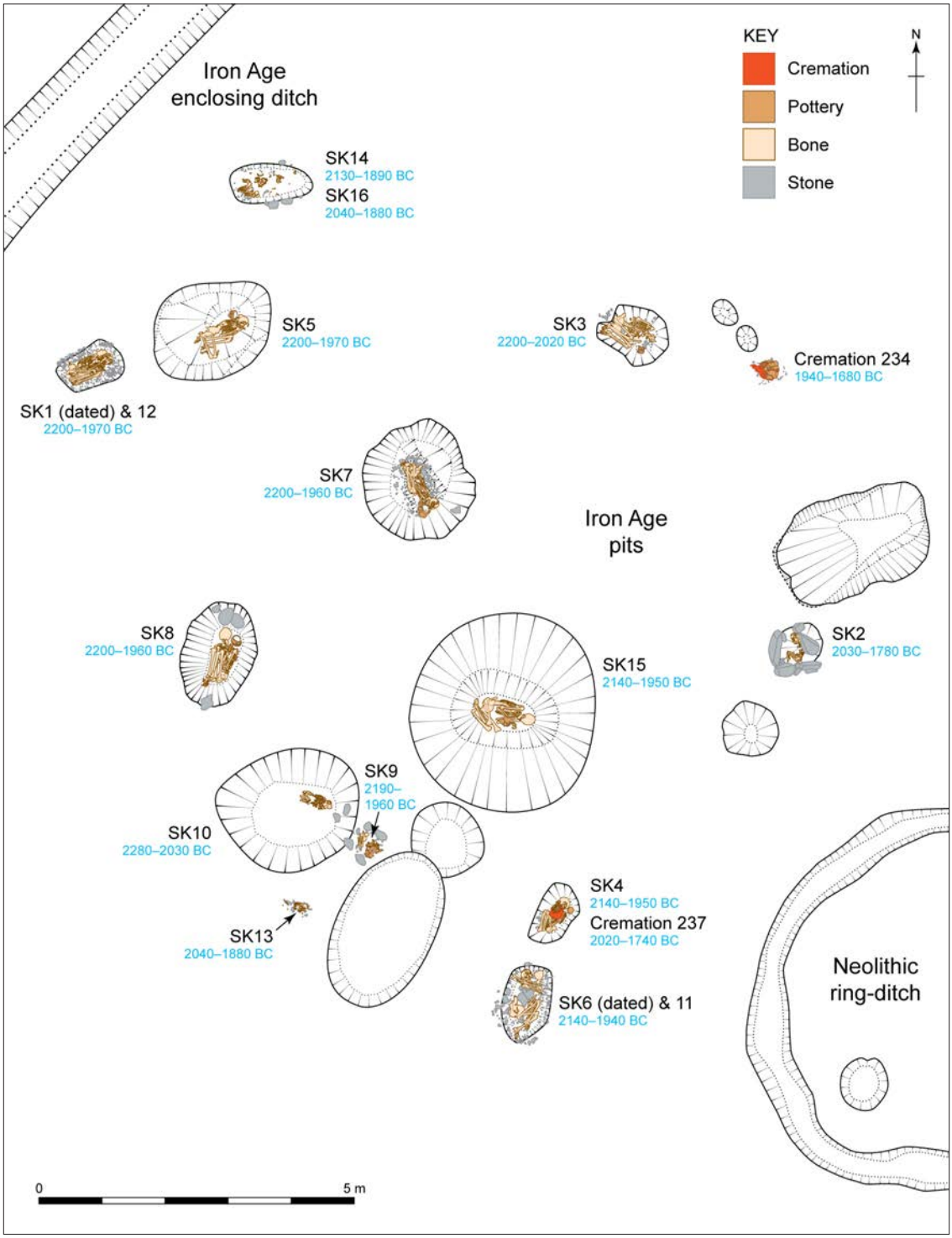
The Early Bronze Age burials at Moone 1 were positioned beside a Neolithic ring-ditch on a distinctive kame summit, which rises from Mullamast Hill's eastern slopes above the River Greese. This pattern of Bronze Age burials being placed near Neolithic monuments is also seen at Woodlands West 2 (Chapter 3) and elsewhere in Ireland.



Illus. 2.6 Distribution of Early Bronze Age sites excavated within the Mullamast Study Area.

At Fourknocks and Tara, Co. Meath, Early Bronze Age cemeteries were established at Neolithic passage tombs, while at Kilshane, Co. Dublin, Bronze Age burials and rituals took place at a former Neolithic segmented enclosure (Cooney & Grogan 1999, 109; O'Carroll 2024, 26–53, 94–9).

The Moone 1 cemetery exhibits characteristics typical of Early Bronze Age burial practices, though its scale is noteworthy. Archaeological investigations revealed 14 burial features containing at least 19 individuals. Another cist, six pit burials and a 'surface' burial were also uncovered close to the summit of the north–south orientated sand and gravel ridge during excavations undertaken in advance of construction of the N9 Moone to Timolin Road realignment in 2000 (Ó Ríordáin 2000). While this exceeds the typical size for contemporary cemeteries, it falls within the known range, with some sites like Knockast in County Westmeath containing over 40 burials (Hencken & Movius 1934). Research by Mount (1997a, 148) on Early Bronze Age cemeteries in south-eastern Ireland showed that most contained just three graves, though mixed cist and pit cemeteries like Moone 1 averaged five burials, with total numbers varying from two to more than 20. The relatively small number of graves at these sites suggests that formal burial was reserved



Illus. 2.7 Plan of graves identified at Moone 1 cemetery.

Table 2.2—Moone 1. Summary of the burials

SK/C no.	Human remains (age/sex) and grave type	Radiocarbon dates
SK10	Crouched inhumation of juvenile (16–34 mths/?) in pit	2280–2030 BC (SUERC-24984)
SK3	Crouched inhumation of adult (30–35 yrs/F) in pit with tripartite bowl sherds	2200–2020 BC (SUERC-24974)
SK1, SK12	Double crouched inhumation of adult (25–35 yrs/F) and child (6–8 yrs/?) in her arms, in pit	2200–1970 BC (SUERC-24972) (SK1)
SK5	Crouched inhumation of adult (35–45 yrs/F) in pit, with ribbed tripartite bowl, bronze awl, lithics, hammerstone, polisher and honestone	2200–1970 BC (SUERC-24976)
SK7	Crouched inhumation of adolescent (13–15 yrs/?) in pit with partial stone lining, with ribbed tripartite bowl, lithics and part of a plano-convex knife	2200–1960 BC (SUERC-24981)
SK8	Crouched and possibly bound inhumation of adult (17–25 yrs/M) in pit, with ribbed tripartite bowl	2200–1960 BC (SUERC-24982)
SK9	Crouched inhumation of juvenile (3–5 yrs/?) in stone-lined pit with ribbed tripartite bowl sherds and indeterminate pottery sherds	2190–1960 BC (SUERC-24983)
SK15	Crouched inhumation of adult (30–35 yrs/M) in pit with ribbed bipartite bowl, chert core	2140–1950 BC (SUERC-24987)
SK6, SK11	Double crouched inhumation of adult (22–25/F) with child (6–8 yrs/?) in her arms in pit	2140–1940 BC (SUERC 24977) (SK6)
SK13	Flexed inhumation of juvenile (14–32 mths/?) in pit with partial stone lining	2040–1880 BC (SUERC-24985)
SK14, SK16	Multiple inhumation burial with parts of adult (?/?) and juvenile (8–14 mths) in pit with partial stone lining, with flint flake	2130–1890 BC (SUERC-24986) (SK14) 2040–1880 BC (SUERC-24991) (SK16)
SK2	Crouched inhumation of juvenile (2–4 yrs/?) in cist	2030–1780 BC (SUERC-24973)
SK4, C237	Crouched inhumation of juvenile (8–10 yrs/?) with adolescent cremation (15–17 yrs/?) in the chest area in pit, with plain tub-shaped bowl food vessel	2140–1950 BC (SUERC-24975) (SK4) 2020–1740 BC (SUERC-25365) (C237)
C234	Cremation of adult (over 21 yrs/F) in inverted vase urn	1940–1680 BC (SUERC-25364)

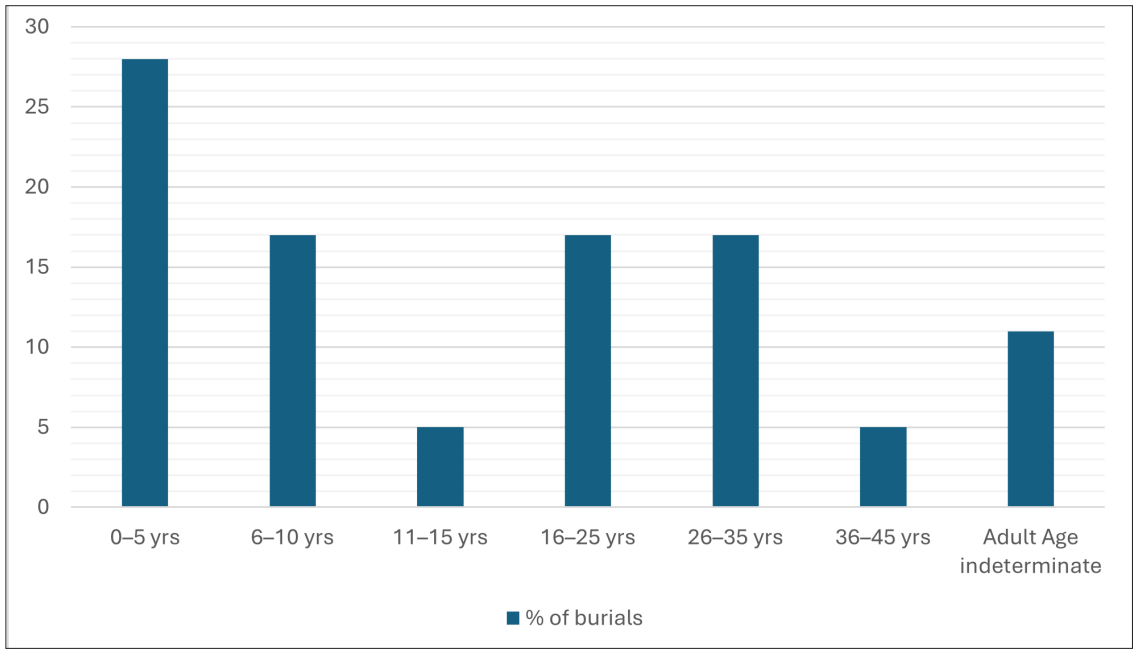
for certain members of society. However, it is important to consider that many of the cemeteries in Mount's study were only partially excavated, meaning the documented burials likely represent just a portion of the original total. These factors make Moone 1 particularly valuable for understanding both regional burial patterns and broader Early Bronze Age mortuary practices across Ireland.

The chronological sequence at Moone 1 has been established through comprehensive radiocarbon dating of almost all individuals interred there, revealing that burials took place over a span of 90–330 years. A period of 90 years aligns with the ceramic evidence, specifically the bowl food vessels, which are all early forms and indicate a date range of approximately 2100–2000 BC (Brindley 2007, 238–51). This suggests a pattern of regular, successive burials by a local community over just a few generations rather than sporadic use. Only one burial, the cremation found in the vase urn (C234), returned a date range too late to fall within the main period of use.

The Moone 1 cemetery exhibited diverse burial practices. Pit graves were most common, but there was at least one cist burial and several of the pits were partially stone lined. The pit graves demonstrated considerable variation in their construction, featuring different depths, profiles (including three deep pits and two stepped examples), and varying degrees of stone lining. The treatment of the deceased also showed significant variation. Burial positions included crouched, crouched-and-bound, and flexed inhumations, while two individuals were cremated. The range of grave goods was equally varied, from burials without accompaniments to those containing elaborate pottery vessels and other artefacts. While this diversity in burial practices suggests multiple funerary options were available to the community, and though social status may have influenced these choices, no clear patterns emerged based on the age or sex of the deceased.

Pit and cist graves are regularly mixed in Early Bronze Age cemetery sites, but a higher number of pit graves compared to cists—as at Moone 1—is a common characteristic and is especially apparent on the larger and better-preserved sites (Mount 1997a, 126). The cemetery previously excavated at Moone (Ó Ríordáin 2000) also contained only one cist, with six pit burials. It seems that cists, which required more effort to construct, were only used for a minority of individuals. This increased effort could be seen as reflective of a higher social status of the deceased. The cist at Moone 1, however, was relatively poorly constructed and without evidence of a capstone and so could be considered as only a partial cist. It is unlikely to have taken significantly more effort to construct than the largest pit graves.

Children often appear underrepresented in Early Bronze Age burials, prompting some to suggest that they weren't considered full members of society (Cooney & Grogan 1999, 108). Past records for the south-east of Ireland do show sub-adults comprising only 20% (Mount 1997a) to 28% (Haughton 2021, 366) of remains. However, Moone 1 challenges this pattern with sub-adults representing 50% of the cemetery population (Illus. 2.8). From the data available to them at the time, Cooney and Grogan (1999, 108) proposed that children typically only received formal burial alongside adult relations or in reopened family graves. While this did occur at Moone 1 in three instances—two juveniles (SK11 and SK12) were buried with adult females and one (SK14) with disturbed adult



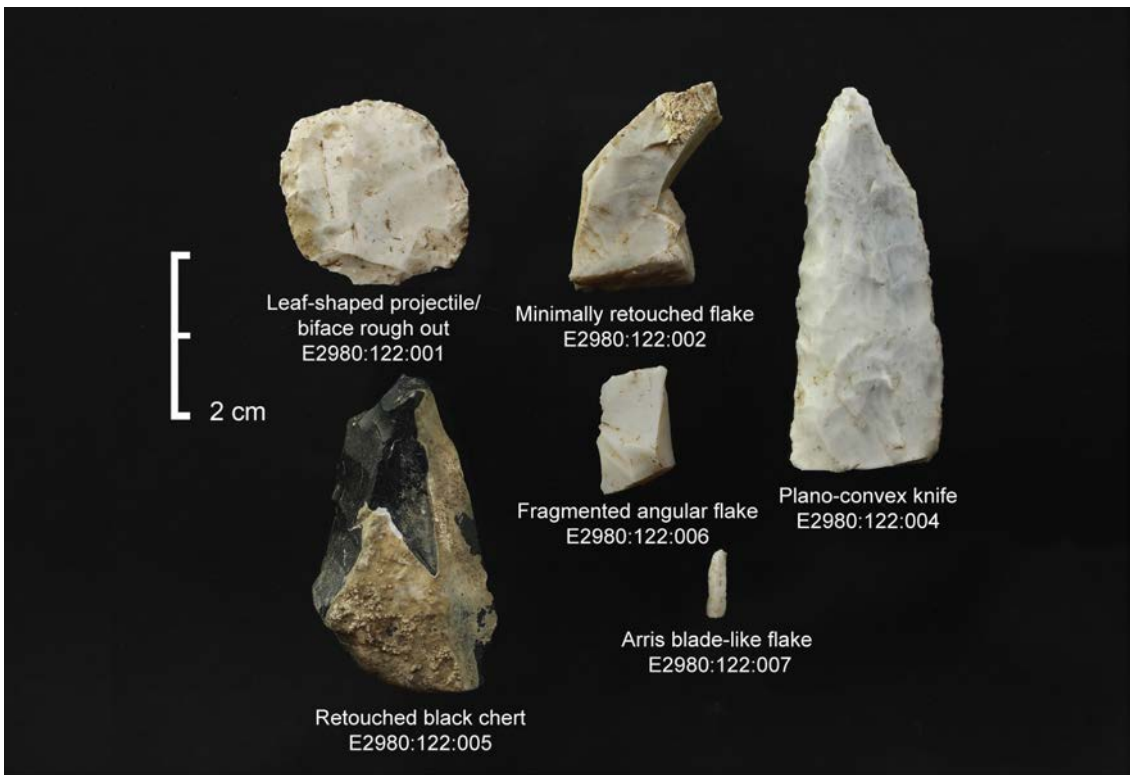
Illus. 2.8 Age profile of the burials at Moone 1.

Illus. 2.9 Moone 1, double crouched inhumation of adult (SK1) and child (SK12), facing north-east.

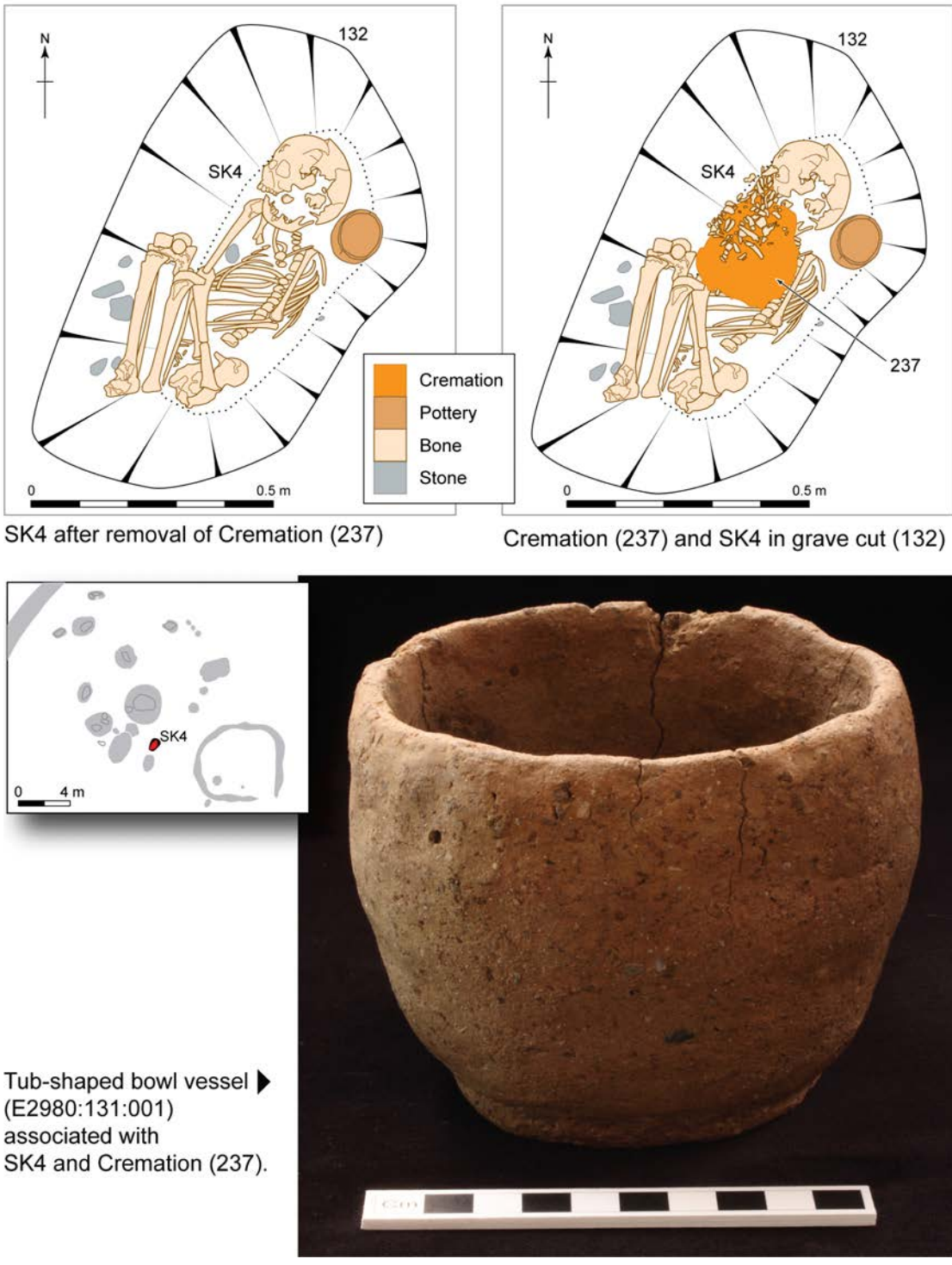
Illus. 2.10 Moone 1, juvenile SK2 within cist grave, facing north.

remains (SK16)—the complete excavation reveals more complexity (Illus. 2.9). Five sub-adults received individual burials (SK2, 7, 9, 10 and 13), and two were buried together (SK11, cremation C237). Children also occupied prominent positions within the cemetery. A 16–34-month-old child (SK10) represented one of the earliest burials, while the site's only cist grave contained a child (SK2) (Illus. 2.10). Two sub-adults (SK7 and SK9) were buried with decorated ribbed tripartite bowls, with SK7 also containing lithics (Illus. 2.11). A later juvenile burial (SK4, 8-10 years) included cremated adolescent remains (15–17 years) and a plain tub-shaped bowl food vessel (Illus. 2.12). This more equal treatment at Moone might reflect a particularly child-centred community or one in which status was inherited rather than earned. Alternatively, the complete excavation may have simply provided a more accurate representation of Early Bronze Age practices than partial excavations elsewhere. Similar child prominence appeared at Fourknocks I, Co. Meath, including a cist burial of an eight-year-old with a bowl food vessel (Hartnett 1957, 202). A previously excavated cemetery in Moone townland showed a different pattern, where among a total of nine individuals, three of the four sub-adults were late teens (Ó Ríordáin 2000).

Of the eight adults whose biological sex could be determined at Moone 1, five were female and two were male. This female-dominated pattern differs from broader regional trends identified by Mount (1991, 21), where males comprised approximately 70% of single and 60% of multiple burials. However, Mount's (1997a) analysis was based on earlier sex determinations which often



Illus. 2.11 Moone 1, lithics accompanying SK7.



Illus. 2.12 Moone 1, SK4 and cremation burial, with accompanying flat-bottomed vessel.

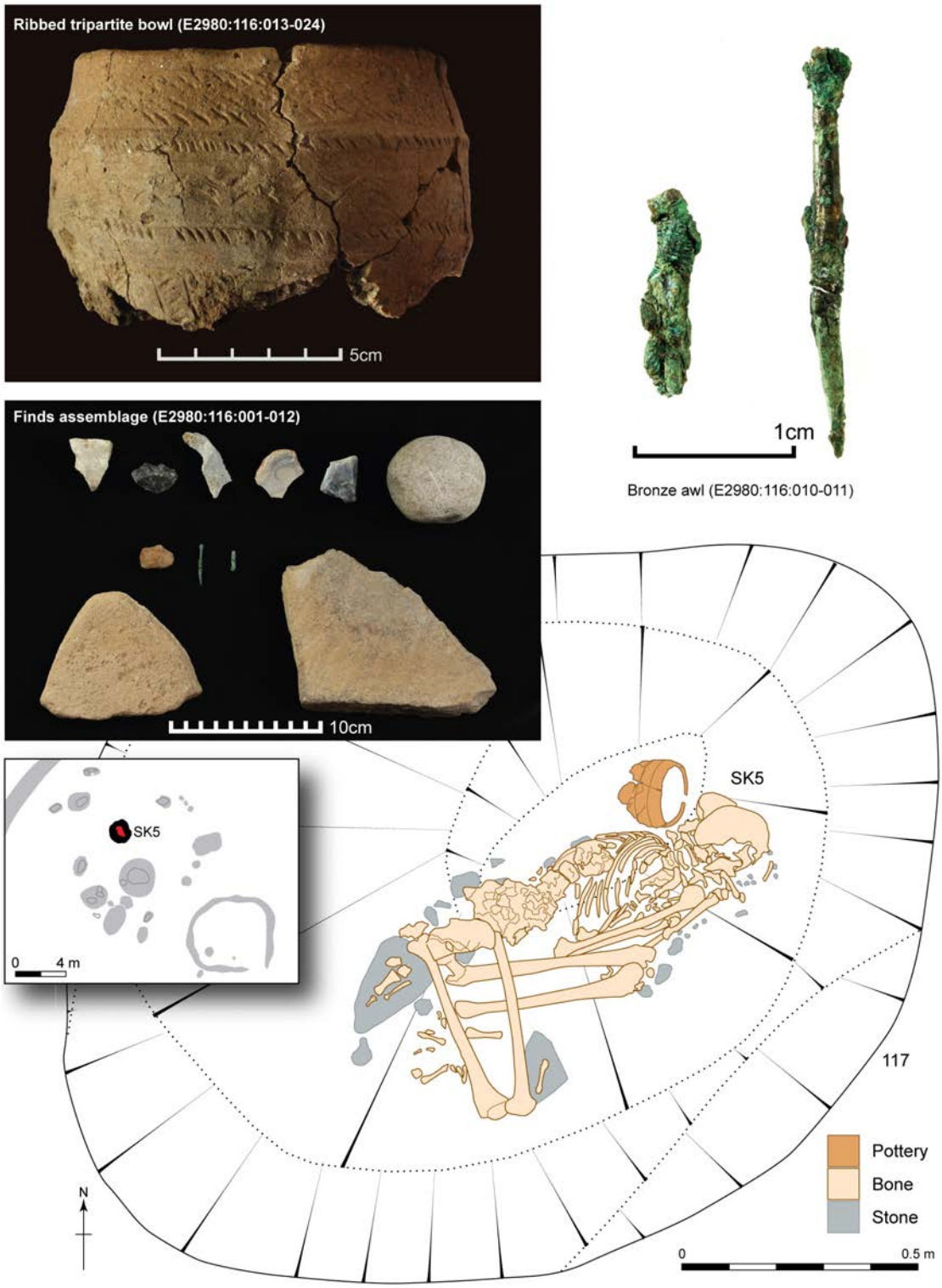
lacked a rigorous osteological methodology and could only determine sex for 40% of adult burials. The recent excavations at Moone 1 and the other nearby Moone cemetery (Ó Ríordáin 2000)—where all sexable individuals were female—employed comprehensive osteological analysis, and both revealed a predominance of female burials. These newer findings, based on more robust methodological approaches, may better reflect the actual gender distribution in Early Bronze Age burial practices than previous studies with their methodological limitations.

Of the five females at Moone 1, two (SK1, SK6) were buried with children and no grave goods, while three had individual burials with pottery (SK3, SK5 and cremation C234). SK3 and SK5 contained decorated tripartite bowls. SK5 was the richest burial, containing a bronze awl, lithics, and stone objects. Her unusual position included one partially flexed leg supported by stones, and a finger placed in her mouth where teeth were missing (Illus. 2.13). These features may reflect her physical condition, as analysis revealed degenerative joint disease and significant tooth loss. At 35–45 years, she was the cemetery's oldest individual, and her rich grave goods and careful burial suggest she held high status. The final burial was a female cremation (C234) in an inverted vase urn (Illus. 2.14).

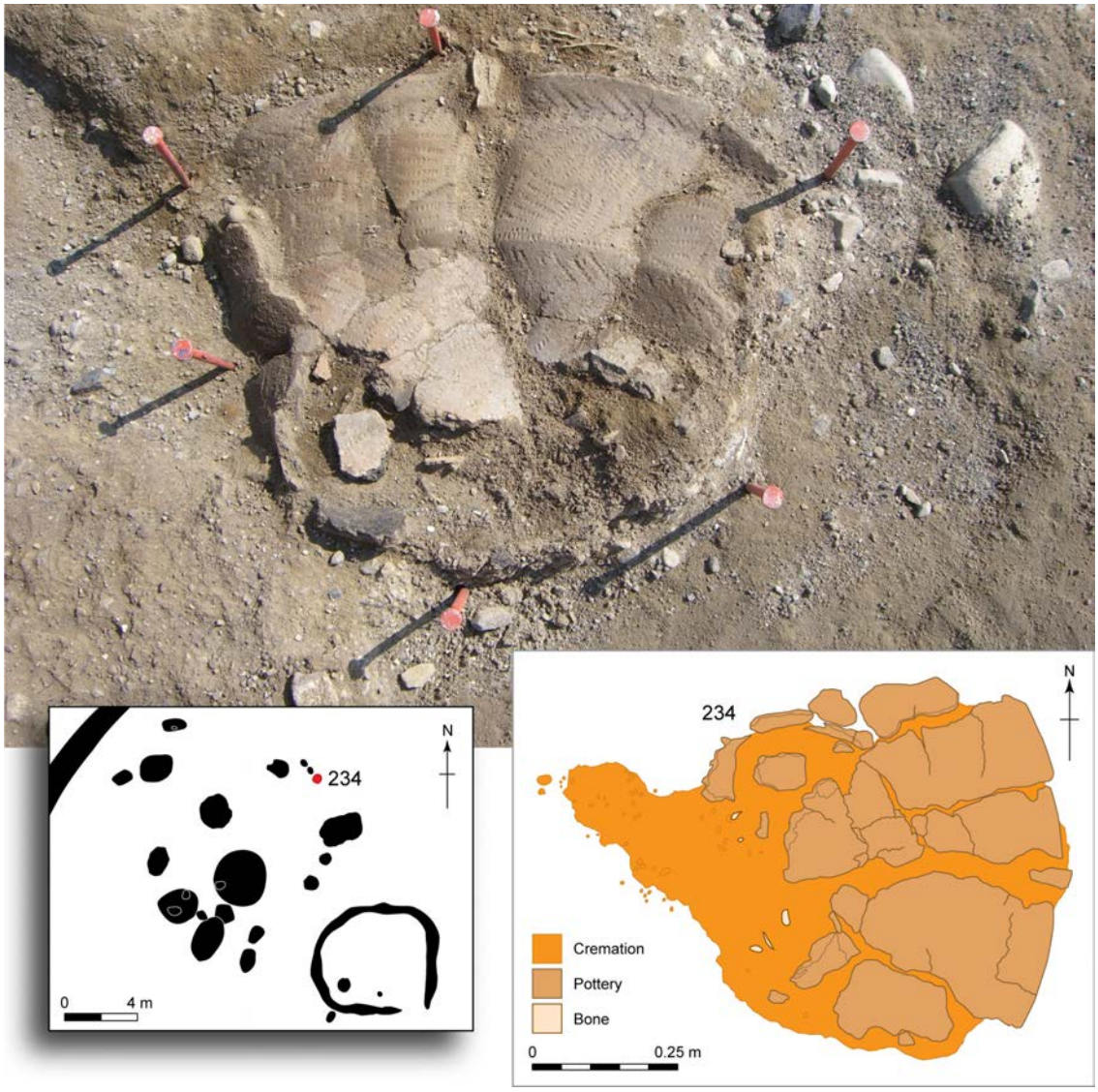
Although there were only two males buried in the cemetery, it is notable that they were buried with decorated bowls and had healthier skeletons than the females, indicating lighter work and better diet. Their mean height of 186.5 cm also significantly exceeded average male heights from contemporary burials in both Ireland (180 cm; Troy 2010) and Britain (172 cm; Roberts & Cox 2003, 388). One (SK15) also occupied the largest and most centrally located pit (Illus. 2.15). Although its radiocarbon dating results overlapped with most other burials, it may have been the earliest interment, with subsequent burials potentially arranged around it.

When viewed in isolation, the cemetery at Moone 1 presents a picture of a relatively egalitarian community. However, it must be remembered that only a select group is represented in the cemetery in the first place. What is intriguing is that more women and children qualified for this select group at Moone 1 than is commonly seen throughout the country. The previously excavated cemetery at Moone (Ó Ríordáin 2000) indicates the use of similar selective criteria given that all the identifiable individuals were female. This could suggest that women held greater significance in the Early Bronze Age society of the Moone area compared to elsewhere, but alternative explanations must be considered. For instance, individuals may have earned formal burial through kin relationships rather than social status. Moreover, our understanding of prehistoric social organisation and gender roles is inherently limited by available archaeological data. As new evidence emerges and excavation and analytical techniques improve, we must remain open to revising our interpretations and models of Bronze Age society.

Radiocarbon dates have been obtained for each burial in the cemetery providing a rare opportunity to examine how burial practices developed at the site. The earliest graves are crouched inhumations within pits, sometimes accompanied by bipartite or tripartite bowl food vessels and other non-ceramic items (Table 2.2). Later in the sequence was the cist. While cists generally predate pits in the chronological succession of burial forms in Ireland they are also



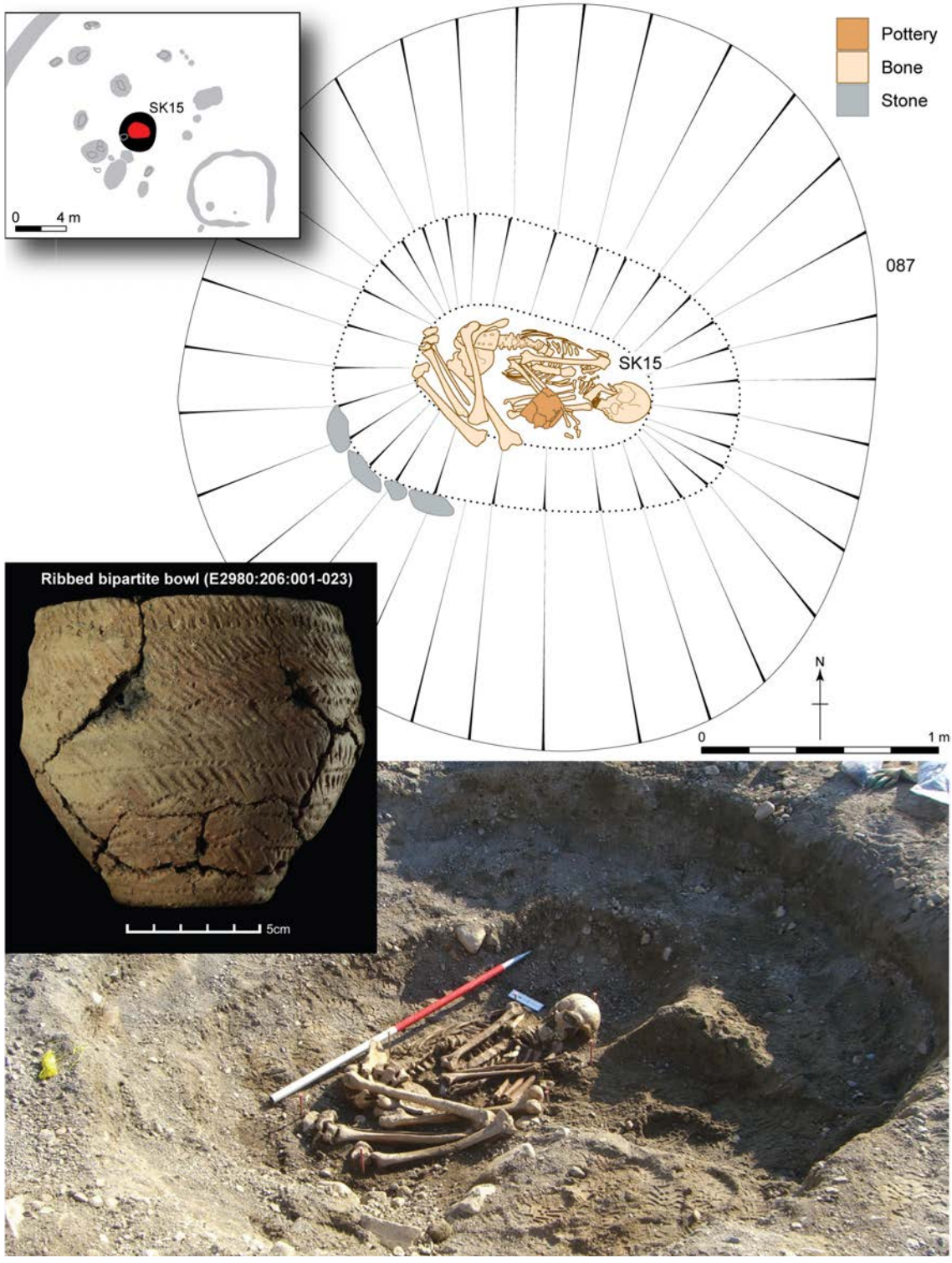
Illus. 2.13 Moone 1, SK5 and associated gravegoods.



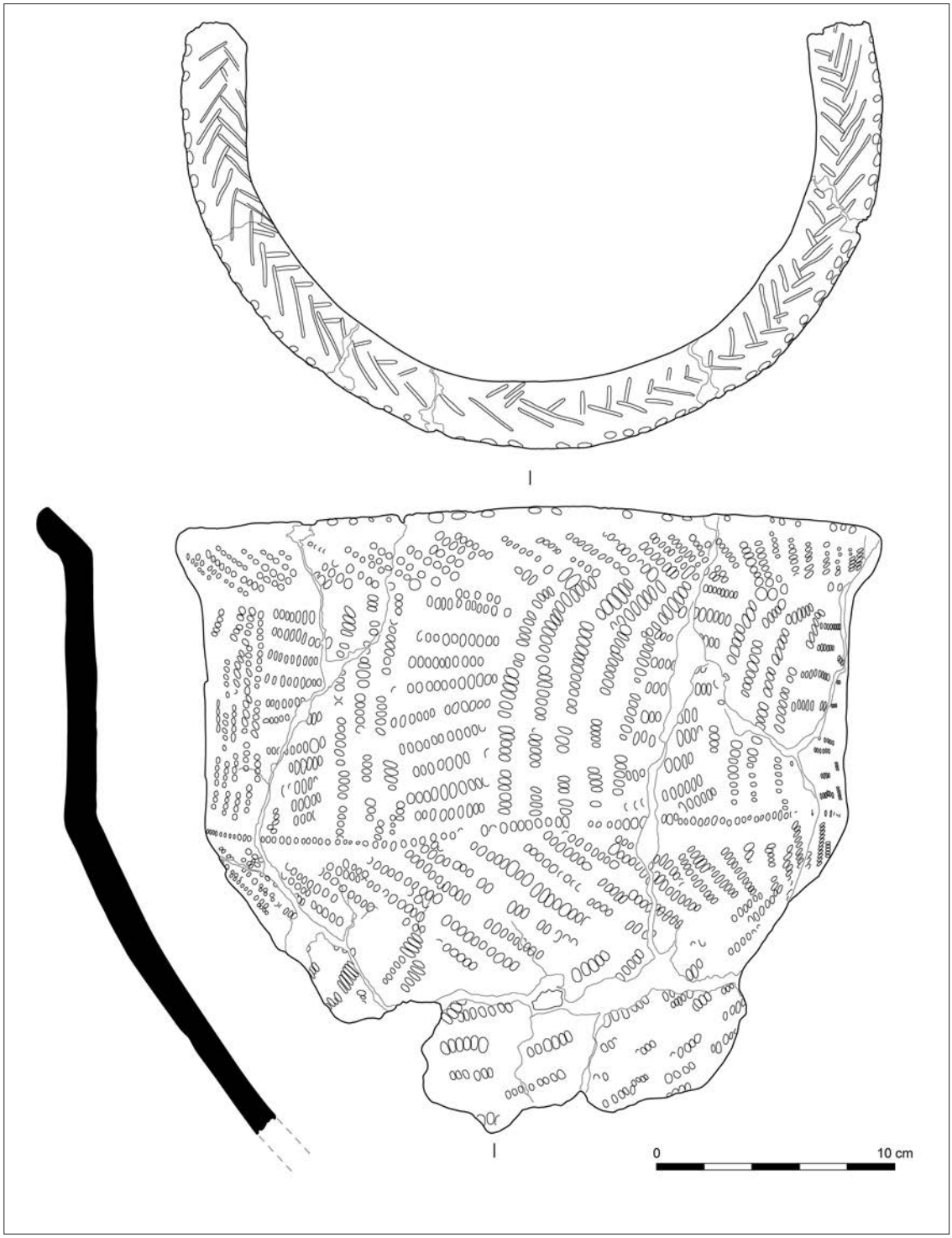
Illus. 2.14 Moone 1, urned cremation burial (234).

found to have been used contemporaneously with pits (e.g. Cooney & Grogan 1999, 106; McSparron 2021) and so the appearance of the cist towards the end of the burial sequence at Moone 1 is not totally at odds with evidence from elsewhere.

Crouched inhumations accompanied by pottery vessels were gradually replaced by cremations placed within inverted urns during the Early Bronze Age. Moone 1 is a classic example of this progression. The earliest cremation at the site accompanied an inhumation in a pit grave; the radiocarbon dates overlap and there is no evidence for recutting of the grave, so it is presumed the two were placed into the grave together. The pottery in this pit was a plain tub-shaped vessel, probably of the Bowl Tradition



Illus. 2.15 Moone 1, SK15 and associated bipartite vessel.



Illus. 2.16 Moone 1, vase urn (E2980:002:001) which contained a cremation (by Hannah Sims).

(Grogan & Roche 2010a). This double burial appears to signal a pivot point between the inhumation tradition and the cremation tradition—a possible hybrid burial reflecting an interface between the two traditions. The last burial at Moone 1 is a cremation (C234) within an inverted vase urn and represents the completion of the transition in mortuary practices. By this stage the cremation was a standalone burial placed within an urn rather than a pit. The Moone 1 urn is unusual (Illus. 2.16); the decoration is not readily paralleled within the corpus. Only one other example of a vase urn has been identified in County Kildare at a small cemetery in Oldtown which also produced bowl-associated burials (Grogan & Roche 2010b).

The occurrence of Beaker type pottery sherds in two of the graves at Moone 1 is also notable. A sherd was found in the fill overlying SK5, and sherds were also found within the cremation inside the inverted vase urn. As these contexts post-dated the generally accepted timeframe for Beaker use, the excavator interpreted these sherds as residual material accidently included in the burials. This would indicate that the site was utilised during the time between the Neolithic ring-ditch and the establishment of the cemetery, though no other Beaker pottery or features from this period were identified. However, an association between the Bowl Tradition and sherds of Beaker pottery has been recognised at several sites (Carlin 2011, 95) and the possibility that the Beaker sherds were deliberately deposited

Illus. 2.17 Burtown Little 2, Early Bronze Age ring-ditch in bottom right of photo, with larger Iron Age ring-ditch in the background (photo: Airshots).

in the burials at Moone 1 (perhaps as heirlooms) cannot be ruled out (ibid.).

Burtown Little 2

Burtown Little 2 was situated on level ground at 100 m OD, 3.2 km west of Moone 1 on the Mullamast Hill's south-western slopes. The site's earliest dated feature was a penannular ring-ditch, 5 m in diameter and with an entrance facing north-east. A charred hazelnut shell recovered from it was dated to 2290–1970 BC (SUERC-25475); while this could be residual, its date was backed up by the presence of a sherd of Beaker pottery. The fill also contained numerous fragments of unidentifiable animal bone and a small amount of cremated human bone. A large post-hole was found in one of the ring-ditch terminals and two more were discovered in the entrance area. These likely supported substantial wooden posts that would have made the monument visible across the surrounding landscape (Illus. 2.17).

Early in the second millennium BC, the ring-ditch became a focal point for a cemetery comprising seven cremation pit burials, arranged without any apparent organisational pattern. Radiocarbon dating of these burials yielded dates spanning 1890 to 1450 BC (Table 2.3), placing them within the Early to Middle Bronze Age period, later than most and potentially all the burials at Moone 1. The excavation area completely

Table 2.3—Burtown Little 2. Summary of Early to Middle Bronze Age cremation burials

Radiocarbon dates	Human remains	Artefacts	Other information
—	—	Three sherds of a possible cordoned urn	—
1890–1620 BC (SUERC-25374)	Multiple burial including at least two adults	Flint debitage	One fragment of bone from an infant was identifiable
1890–1630 BC (SUERC-25369)	Adult female	25 ceramic beads	—
—	Adult male	Flint debitage	—
—	—	—	Truncated and largely destroyed by an Early Bronze Age ditch
—	Adult possibly female	—	—
—	—	—	Token cremation
1740–1450 BC (SUERC-25375)	Adult male	Fragment of a copper-alloy ring, copper wire fragment and flint	The flint was burnt and may have been present during cremation
1750–1510 BC (SUERC-25377)	Adult	—	One fragment of bone from an infant was identifiable and the grave appeared to be partly stone lined

Illus. 2.18 Burtown Little 2, Early Bronze Age ceramic beads.

encompassed both the ring-ditch and all burial features, with no evidence suggesting that additional burials existed beyond the excavated area.

Unlike Moone 1, the burial population at this site was predominantly adult, with an equal distribution between males and females among those burials where sex could be determined. Two of the adult burials also contained infant remains. The cremation burials appeared to be intentionally placed around the ring-ditch, suggesting that this monument remained both visible—perhaps as an earthwork—and culturally significant to the local community throughout the Early Bronze Age. This continued importance is particularly noteworthy given the gap of over 100 years between the ring-ditch's backfilling and the placement of the earliest cremation. While this pattern of reuse mirrors that seen around the ring-ditch at Moone 1, the features at Burtown Little 2 were more closely spaced in time.

Twenty-five ceramic beads were retrieved from a cremation pit, which contained the cremated remains of an adult female. These ceramic beads (Illus. 2.18) are a rare example of Early Bronze Age personal adornment and are unique in the Irish archaeological record. Their closest parallel are faience beads recovered from cremation burials in Staffordshire and Wiltshire in England and clay examples from Altanagh, Co. Antrim (Grogan et al. 2016, 8). Graves containing beads across Britain and Ireland (ibid., 9) are predominantly associated with females and such personal ornament may reflect social standing.

A fragmentary copper-alloy object was recovered from the fill of a cremation pit. The object is curved and, though it is difficult to ascertain its precise function with any great certainty, it may represent part of a ring. Given its association with cremated human remains this may have been an item of jewellery or a dress accessory (Carroll & Quinn 2010).

Another cremation pit contained three body sherds from what was likely either a cordoned urn or its domestic variant. Though the vessel had previously been used in a domestic setting, the undisturbed nature of the burial suggests these sherds were intentionally placed rather than being fragments from a pot that broke during the burial process. The practice of including pottery sherds rather than complete vessels is characteristic of burial customs from the late Early Bronze Age and early Middle Bronze Age periods (Grogan 2004, 68). However, the fabric composition of the Burtown Little sherds more closely resembles that of Early Bronze Age cinerary urns rather than Middle Bronze Age plain wares (Grogan & Roche 2010b). This suggests a date of approximately 1600–1400 BC, which aligns well with the radiocarbon dates obtained from the burials in two pits.

Mullamast 11

Excavations at Mullamast 11, located on

Illus. 2.19 Mullamast 11, mid-excavation view of Early Bronze Age crouched inhumation burial 027 (east to top of image).

the southern slopes of Mullamast Hill, revealed a unique inhumation burial. The deceased was placed in a flexed position within an unusually deep oval pit (0.79 m deep) and covered by nine large stones (Illus. 2.19). Radiocarbon dating of a sample from the fill yielded a date of 1878–1688 BC (UBA-12023). This timing is particularly noteworthy as it falls within a period when cremation was the standard burial practice, with similar inhumations known only from a few sites such as Topped Mountain, Co. Fermanagh and Burial 30 at Tara (Brindley 2007, 373). Though poorly preserved, the skeletal remains were identified as those of a young adult between 17 and 25 years old. Evidence of grave markers was found in the form of stake-holes on either side of the burial.

The exceptional depth of the grave and the placement of stones over the body may represent ritual practices intended to contain the deceased's spirit within the grave. This burial's timeframe coincides with the use of Burtown Little 2 as a cremation cemetery, demonstrating that both inhumation and cremation practices coexisted in the Mullamast Study Area during the late Early Bronze Age. The site also yielded evidence of earlier activity, including a pit dated to 2112–1897 BC (UBA-12024) associated with an occupation spread, and vase food vessel fragments discovered in a separate pit.

Early Bronze Age burials in Timolin

The townland of Timolin also contains significant later prehistoric remains some of which are dated to the Early Bronze Age. A large barrow crowns the summit of a low hill near the centre of the townland. In the early 1900s a cist and a standing stone (KD036-027001-2) were identified on the lower western slopes of this hill (Fitzgerald 1899) and in the 1980s two further Early Bronze Age cist burials were found; one contained the disarticulated, unburnt remains of a single adult male and two food vessels, while the other contained the disarticulated remains of at least one other individual and no grave goods (Ó Floinn & O'Connor 2011). The N9 Moone–Timolin Road realignment crossed the fields in which these sites were located and partly impacted on a low mound. Excavation of the affected portion of the feature uncovered two pit burials and two cist burials. The graves were found to contain at least two inhumations and three cremations along with a vase urn and an undecorated pottery vessel (no analysis of the bone or pottery is detailed in the available report) (Breen 1999).

Non-funerary activity in the Mullamast Study Area in the Early Bronze Age

The excavations in the Mullamast Study Area also provided extensive evidence of domestic activity. At Mullamast 1, numerous pits and burnt mound) deposits were discovered near a silted-up pond, indicating areas of sustained daily use. Similarly, at Mullamast 5, situated in a low-lying area on Mullamast Hill's north-east side, a burnt mound established during the Chalcolithic continued to be used into the Early Bronze Age, marked by the construction of a timber platform during this later period. At Mullamast 11, domestic activity was evidenced by pits containing hazelnut shells, while a vase food vessel sherd, though typically associated with funerary contexts (Kyle 2010), may here represent household use.

This evidence points to a conscious organisation of the landscape during the Early Bronze Age, where although both ritual

and domestic activities occurred within the same general area, a degree of spatial separation was maintained between formal cemetery sites and areas of daily life. This pattern suggests a deliberate structuring of the landscape that respected and maintained distinct zones for living and commemoration.

Other Early Bronze Age funerary evidence on the scheme

Outside of the Mullamast Study Area, the only other definite Early Bronze Age burial found on the M9 scheme in Kildare was a single crouched inhumation of a 35–45-year-old dated to 1940–1750 BC (SUERC-24992) at Ballymount 5 (Chapter 6). Buried in a pit and possibly surrounded by a ring-ditch, the burial was furnished with a bipartite bowl and a stone grinder.

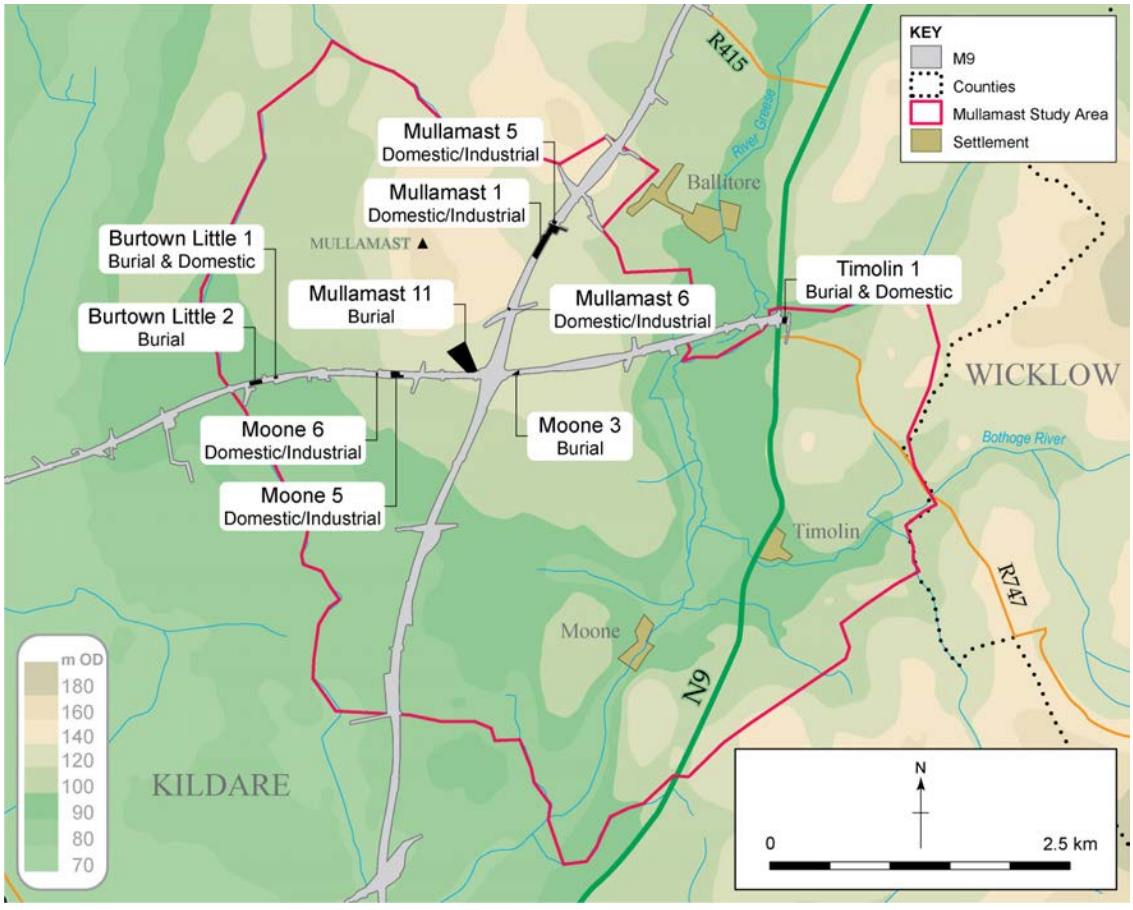
Early Bronze Age activity in the surrounding landscape

County Kildare possesses a rich prehistoric burial landscape, with 135 barrows, 67 ring-ditches, and 37 mounds documented in the Sites and Monuments Record. The distribution of these monuments shows distinct patterns, with ring-barrows concentrated on the Curragh Plains between Newbridge, Kildare, and Kilcullen, while ring-ditches predominate along the River Barrow between Athy and Castledermot. This variation may reflect preservation conditions rather than ancient preferences, as intensive tillage farming in the fertile river valley likely destroyed above-ground barrows, while the Curragh's pastoral use preserved its monuments (Barrett 2002; 2006). Within a 10 km radius of the Mullamast Study Area, the prehistoric ritual landscape is particularly rich, featuring both clustered and isolated monuments. Notable concentrations include Brewel Hill (Brewel West townland), located 8 km north-east of Mullamast, which features three ring-barrows, an unclassified barrow, an enclosure, and a stone circle. Other significant groupings include five ring-ditches at Castleroe West (10 km south), four ring-ditches in Bray Upper (4 km west), and two in Nicholastown (2.5 km south-west). A single barrow is positioned on Tinoranhill's north-east slope, near Baltinglass.

The broader landscape demonstrates a deliberate pattern of monument placement, with ritual structures strategically positioned on glacial hills and ridges. This includes the monuments on Mullamast Hill itself, a large barrow that crowns the summit of a low hill in Timolin townland and a probable barrow or tomb on 'Nine Tree Hill' (an esker in Boleybeg townland north of Mullamast), a mound 1.5 km south-west of Mullamast Hill in Burtown Big, and the combination of standing stones and mounds marking the heights of Knockdoo and Knoxtershill north-east of the study area. This pattern extends to Simonstown West, where a standing stone and barrow occupy another summit. Such consistent positioning of monuments on elevated locations suggests a deliberate strategy of marking and claiming prominent points in the natural landscape.

Early to Middle Bronze Age transition

Four sites excavated within the Mullamast Study Area returned radiocarbon dates which straddle the Early to Middle Bronze Age transition period: Burtown Little 2, Moone 6, Mullamast 6 and Timolin 1 (Illus. 2.20). At Burtown Little 2 there was evidence that the cremation cemetery remained in use at the end of the Early Bronze Age (Table 2.2)



Illus. 2.20 Distribution of excavated Middle Bronze Age sites within the Mullamast Study Area.

and perhaps into the Middle Bronze Age. At Moone 6, approximately 1 km east of Burtown Little 2, a settlement consisting of a light rectangular structure and a scattering of associated pits, ditches and stake-holes was revealed. Radiocarbon dating of a post-hole, pit and hearth point to a single phase of activity dating to between 1680 and 1410 BC. A single sherd of Early to Middle Bronze Age pottery was also recovered. Transitional dates—ranging from 1690–1430 BC—were also obtained from features at Mullamast 6 but activity at that site occurred mainly during the Middle Bronze Age, which is discussed below.

Some of the activity uncovered at Timolin 1, the only site in the study area east of the River Greese, is broadly dated to the Early to Middle Bronze Age based on the association of pottery and lithics from these periods with features. Two ring-ditches were identified at the site leading to the suggestion that activities related to the veneration of the dead were being carried out (Illus. 2.21). One of the ring-ditches measured 8.9 m in diameter and contained animal bone and one piece of flint debitage. The second was smaller, at 5.5 m in diameter, and only a fleck of unidentifiable burnt bone was recovered from the fill. The smaller one was c. 15 m north-east of the larger one. No identifiable human bone was found in association

Illus. 2.21 Timolin, plan of ring-ditches.

with these monuments, however. Early Bronze Age ring-ditches without associated human remains are not unknown in the archaeological record; for example, two ring-ditches with no accompanying burials were excavated at Ballylegan, Co. Tipperary (McQuade et al. 2009a, 123). It may be that there were never burials directly associated with the monuments at Timolin 1, but there is also the possibility that evidence for burials had been removed by repeated ploughing. Two nearby pits are thought to have been related to the ring-ditches. One contained a lithic artefact and the other sherds of an Early to Middle Bronze Age urn, possibly of the Cordoned Urn Tradition. Blackened accretions on the internal surfaces of the pot suggest it may have been used for cooking.

Similar pottery to that identified at Timolin 1 was identified from a crushed vessel embedded in the subsoil at Moone 5. The absence of cordons, the fabric and the heavy cord ornament indicate that it was a domestic variant within the Cordoned Urn Tradition dating from the start of the Middle Bronze Age (c. 1600 BC) (Grogan & Roche 2009, 129), though no accretions were present to indicate use in cooking. It may have been used for storage or even intended for funerary use (ibid.). A small amount of a

second vessel of similar type was found in a shallow circular depression 11 m north-west of the first vessel at Moone 5.

The Middle Bronze Age

Evidence was also identified for Middle Bronze Age burial in the Mullamast Study Area—primarily at Mullamast 6, Moone 3 and Mullamast 11 (Illus. 2.20)—although there were notable changes in the character of this activity compared to the Early Bronze Age. These developments align with trends observed nationally (e.g. Grogan 2004; Grogan et al. 2007; Cooney 2023); for example, all the Middle Bronze Age burials were of cremated remains buried in simple pits and most contained only token amounts of cremated bone with no pottery. A notable shift in the spatial relationship between living spaces and burial grounds also occurred. Although some earlier burial sites—such as Burtown Little 2 and Mullamast 11—continued in use, the placement of burials near dwellings at other locations suggests a significant change in burial site selection criteria. As Cleary (2005, 27) notes, 'The idea that formal burials or cemeteries were placed within the environs of the settlement and visible to all in the area is significant'. This arrangement may have helped assert ownership of burial grounds and their surroundings and the presence of isolated pits at settlement peripheries might have served to mark symbolic boundaries between different areas.

Mullamast 6

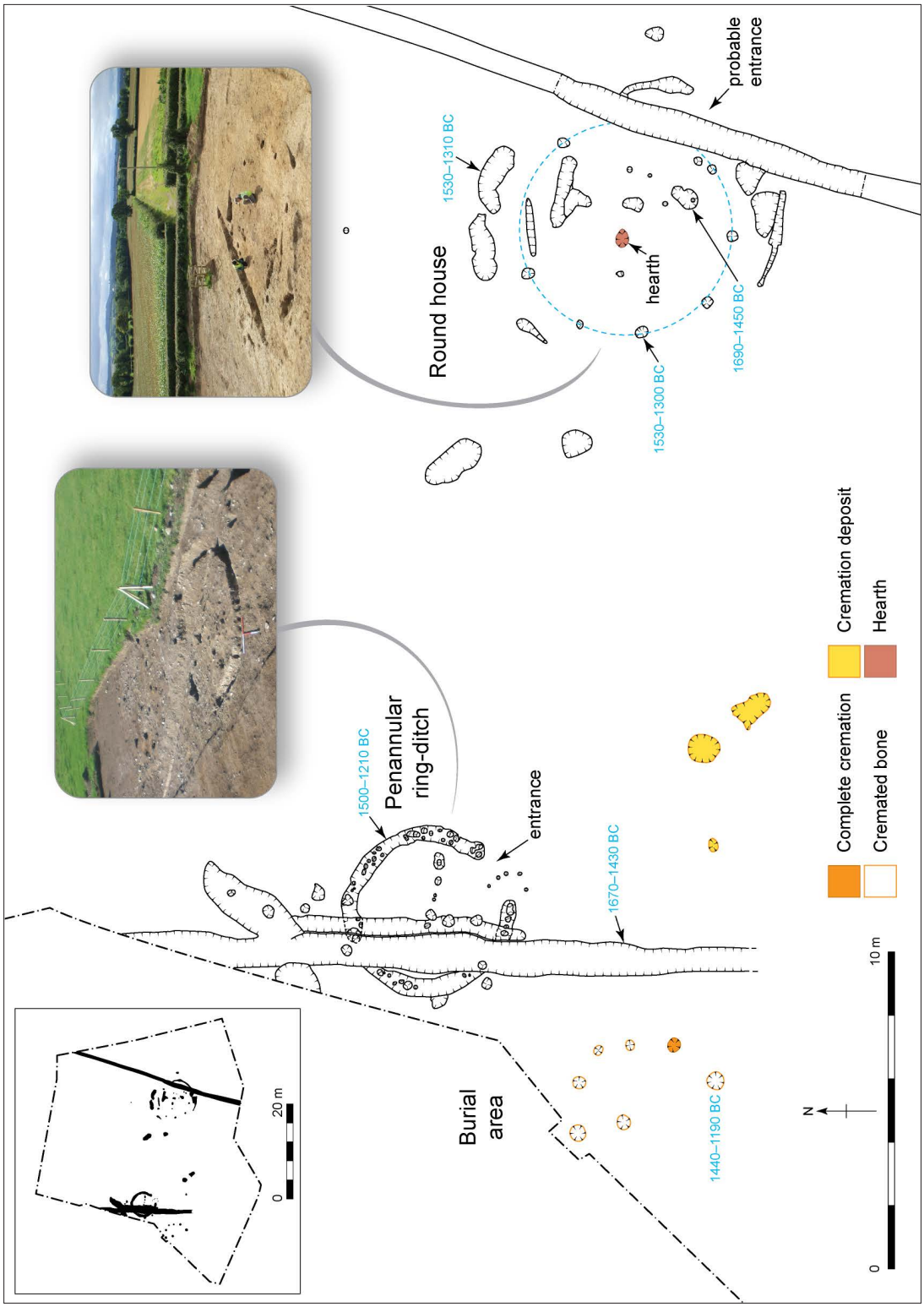
Archaeological excavations at Mullamast 6, located on the south-eastern slopes of Mullamast Hill, revealed remains primarily dating to the Middle Bronze Age period of 1530–1190 BC. The site's main features consisted of a domestic structure and a burial area positioned approximately 20 m to its west (Illus. 2.22). The dwelling comprised an inner ring of posts c. 6.5 m in diameter encompassed by a partial outer circuit of short slots or linear pits measuring about 9 m across. The structure featured a central hearth and included various stake-holes, with evidence suggesting an entrance oriented to the south-east.

The burial area included a ring-ditch and multiple funerary deposits. These comprised a complete cremation of an adult female, three token deposits, and six separate collections of cremated bone that could not be identified further. While one deposit of burnt bone was located within the ring-ditch itself, most of the remains were arranged in a semi-circular pattern approximately 10 m south-west of the enclosure. This burial cluster extended to the excavation's edge at the road-take, suggesting the cemetery may have originally continued beyond the excavated area to the north-west.

This site is particularly significant as it demonstrates a deliberate placement of domestic and funerary spaces near each other. This arrangement marks a distinct departure from earlier sites in the study area, where evidence of domestic activity was rarely found in direct association with burial locations.

Moone 3

A flat cremation pit cemetery was established at Moone 3, approximately 0.5 km downslope from Mullamast 6, during the Middle Bronze Age, 1 km to the west of the Early Bronze Age cemetery at Moone 1. No pattern could be detected among the excavated features, and it is possible that the cemetery extended to

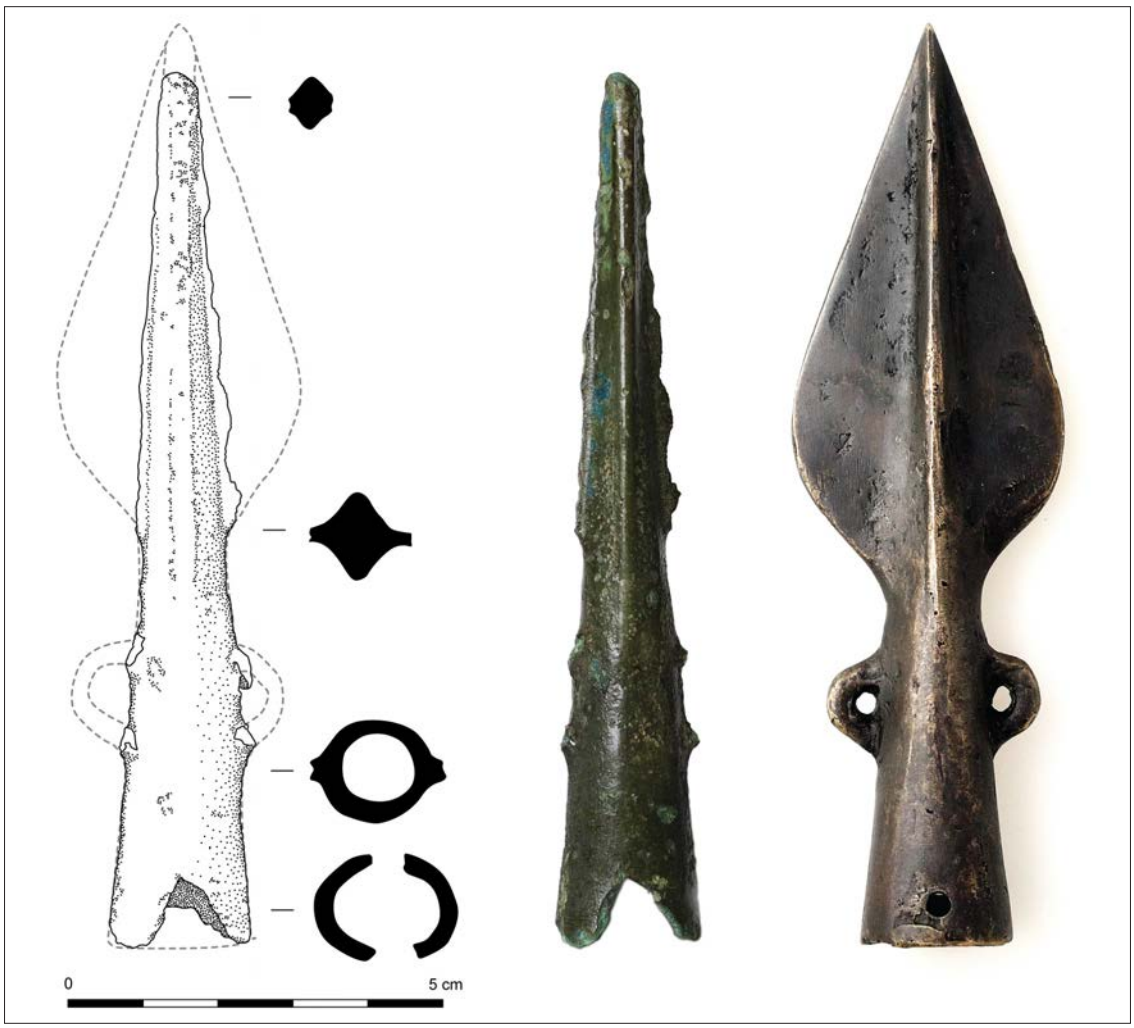


Illus. 2.22 Mullamast 6, plan of features excavated.

the north beyond the edge of the excavation area. The earliest cremation pit at the site was that of an adult dating to 1500–1260 BC (SUERC-25384). A further two token cremations were found to date to the Middle to Late Bronze Age transition (1410–1000 BC) (SUERC-25465 and SUERC-25379). Possible slag and burnt clay were found within one of these cremations. It is possible that this resulted from the heat of the pyre or that it is intrusive from later metalworking that took place in the immediate area. Cremations continued to be buried at this location into the Late Bronze Age (see below).

Mullamast 11

A single Middle Bronze Age cremation pit was identified on the predominantly Early Bronze Age cemetery at Mullamast 11. Mullamast 11 was at a similar elevation to Moone 3 and approximately 0.4 km west of it. It contained an adult, possibly female, radiocarbon dated to 1492–1316 BC: UBA-12021). An unburnt sandstone bead and a burnt piece of flint were found within the cremation



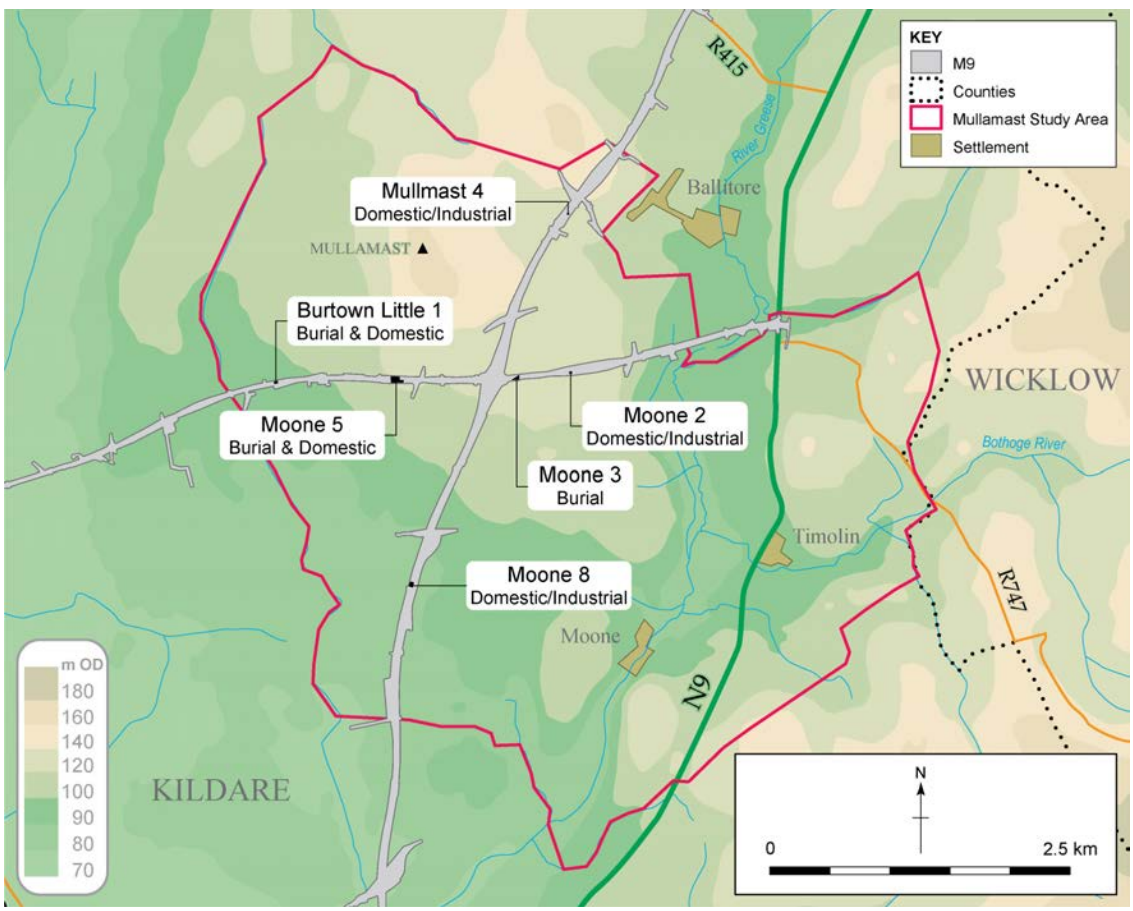
Illus. 2.23 Mullamast 11, Middle Bronze Age bronze spearhead 08E100:058:001 (by Sara Nylund).

fill. At Caltragh, Co. Sligo, 16 stone beads divided between two adult cremation pits were interpreted as a single necklace split as mementos (Danaher 2007, 73). Two burnt stone beads were also recovered from Middle Bronze Age cremations at Camlin 4, Co. Wexford (Troy et al. 2024, 148).

A Middle Bronze Age side-looped, leaf-shaped spearhead was found in a shallow pit 5 m south-east of the cremation (Illus. 2.23). Though damaged, with missing point, blades and loops, the surviving spearhead measures 114 mm long with a flattened oval socket (12 mm by 15 mm internally) that contains traces of a wooden haft. The socket shows triangular damage suggesting broken rivet holes. The size is slightly below the regional average of 125 mm for leaf-shaped spearheads in south-east Ireland, which typically range from 80–183 mm (Mount 1997b, 142).

Other Middle Bronze Age activity in the area

A Middle Bronze Age burnt mound and associated post-hole structure at Mullamast 1, dated to 1630–1410 BC (SUERC-25424), was located 250 m upslope from the earlier burnt mound at Mullamast 5, demonstrating continued pyrolithic activity in the area.



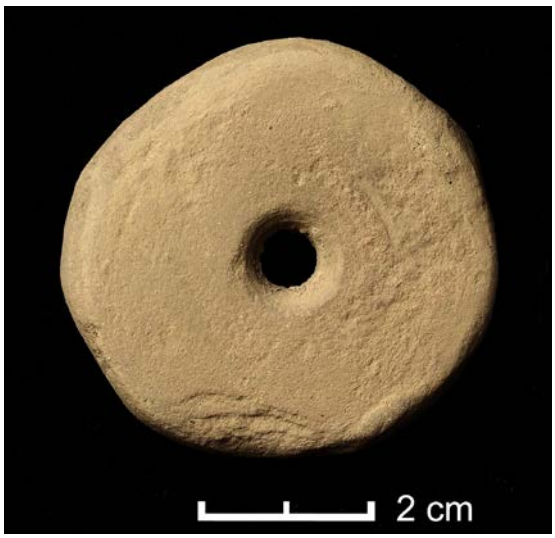
Illus. 2.24 Distribution of excavated Late Bronze Age sites within the Mullamast Study Area.

Middle to Late Bronze Age transition

Burtown Little 1

A cremation burial and some structural remnants of Middle to Late Bronze Age date were found at Burtown Little 1 (Illus. 2.24).

Located in the northern section of the site, the cremation burial was situated near what appeared to be a kiln, hearth, and pit. The remains consisted of a token amount of cremated bone (36.3 g) deposited in a simple pit, which yielded a date range of 1300–970 BC (SUERC-25464). The pit also contained a sandstone spindle whorl (Illus. 2.25) and two well-crafted chert flakes. Spindle whorls are known from Bronze Age contexts (O'Brien 2009a); however, they are typically found on settlements and the discovery of this example in a funerary context is noteworthy. A comparable discovery was made at Rath-Healy 1 during the N8 Rathcormac/Fermoy Bypass scheme, where a possible sandstone spindle whorl was found in an Early to Middle Bronze Age cremation pit (Linnane 2006, 35). Elsewhere along the M9 Kilcullen to Carlow, several textile manufacturing artefacts were identified on occupation sites spanning the Middle/Late Bronze Age into Early Iron Age. Examples recovered from a pit at Inchaquire 2, Co. Kildare, were of Late Bronze Age/Early Iron Age date (Mallia-Guest 2009). Middle to Late Bronze Age stone spindle whorls were also found at a sub-rectangular enclosure in Ballyveelish, Co. Tipperary (Waddell 2022, 193).



Illus. 2.25 Burtown Little 1, Spindle whorl (E2988:014:001) recovered from cremation pit.

A small, 1.1 m-wide, square, post-built structure and a large, elongated pit were found less than 20 m south-east of the cremation burial at Burtown Little 1. Fragments of Middle Bronze Age pottery and some unidentifiable fragments of burnt bone were retrieved from the post-holes. Similar square arrangements of post-holes—such as those found at Tober, Co. Offaly (Walsh 2011)—are sometimes interpreted as grain storage structures and this could also have served such a purpose. However, another possibility is that it could have served as an excarnation platform. Excarnation and curation of bone are believed to have been common in Bronze Age Britain and Ireland (Brück & Booth 2022). Charcoal from the pit found next to it returned a Late Bronze Age date, 1130–840 BC (SUERC-25458), and it also contained unidentifiable burnt bone and similar pottery, typologically considered to be Middle Bronze Age.

An L-shaped arrangement of post-holes, 6.5 m SW–NE and 5.5 m SE–NW was located c. 8.5 m further south of the smaller square structure. A charcoal sample from one of the post-holes returned a Late Bronze Age radiocarbon date of 1010–840 BC (SUERC-25325). Bronze Age houses are typically circular; rectangular examples have also been found but these tend to be built

in footing trenches (Doody 2000, 139–41). While there was one internal post-hole that could have served as an internal support, this arrangement does not appear substantial enough to suggest a building and it is more likely to have served as a fence line.

Mullamast 11

A pit and post-hole at Mullamast 11 were dated to 1192–1004 BC (UBA-12025) demonstrating another phase of use on this long-lived site (see above). This may represent a return to domestic activity following the Early and Middle Bronze Age burials on the site.

Mullamast 4

A Middle to Late Bronze Age flat-bottomed, bucket-shaped vessel was recovered from one of a cluster of three pits at Mullamast 4. This is of a type that recent research, at for example Corrstown, Co. Derry (Roche & Grogan 2008), has indicated was emerging by c. 1400 BC. Similar pottery was also recovered from one of two isolated pits at Moone 2.

Late Bronze Age

Late Bronze Age funerary activity

Late Bronze Age mortuary activity in the Mullamast Study Area was concentrated at Moone 3, where four of the eight cremations dated to this period. Three pits contained cremations all dating to 1130–840 BC (SUERC-25386, 25380 and 25378). All only contained token amounts of bone, and they could represent individuals or all be from a single individual divided between them. One contained sherds from a flat-bottomed coarse ware pot. The fourth cremation, dated to 1050–810 BC (SUERC-25385), included a retouched chert scraper. Associated stake- and post-holes likely supported grave markers, while only one burial preserved enough bone to identify it as an adult.

Apart from the remains at Moone 3, the only other potentially Late Bronze Age burial remains identified within the study area was the Middle to Late Bronze Age transitional dated cremation at Burtown Little 1.

The limited Late Bronze Age burial evidence from the Mullamast Study Area indicates some continuity in burial practices between the Middle and Late Bronze Age, though formal burial sites appear to have become less frequent during this later period. This trend aligns with broader patterns observed across Ireland, where formal burials generally became less common during the Late Bronze Age (Cooney & Grogan 1999, 144). This period marks a shift in the archaeological record, with non-funerary sites, while still few, outnumbering burial sites for the first time in the Bronze Age. However, it's important to note that additional remains from this period may exist beyond the currently excavated areas within the study area.

Other Late Bronze Age activity within the study area

At Moone 5, immediately west of Moone 4, a large pit containing burnt material including mammal bone and grain returned a radiocarbon date of 980–790 BC (SUERC-25860). Two slightly later intercutting pits with a radiocarbon date spanning the Late Bronze Age to Early Iron Age transition period (830–530 BC; SUERC-25861) and two post-holes were located nearby. A Late Bronze Age burnt

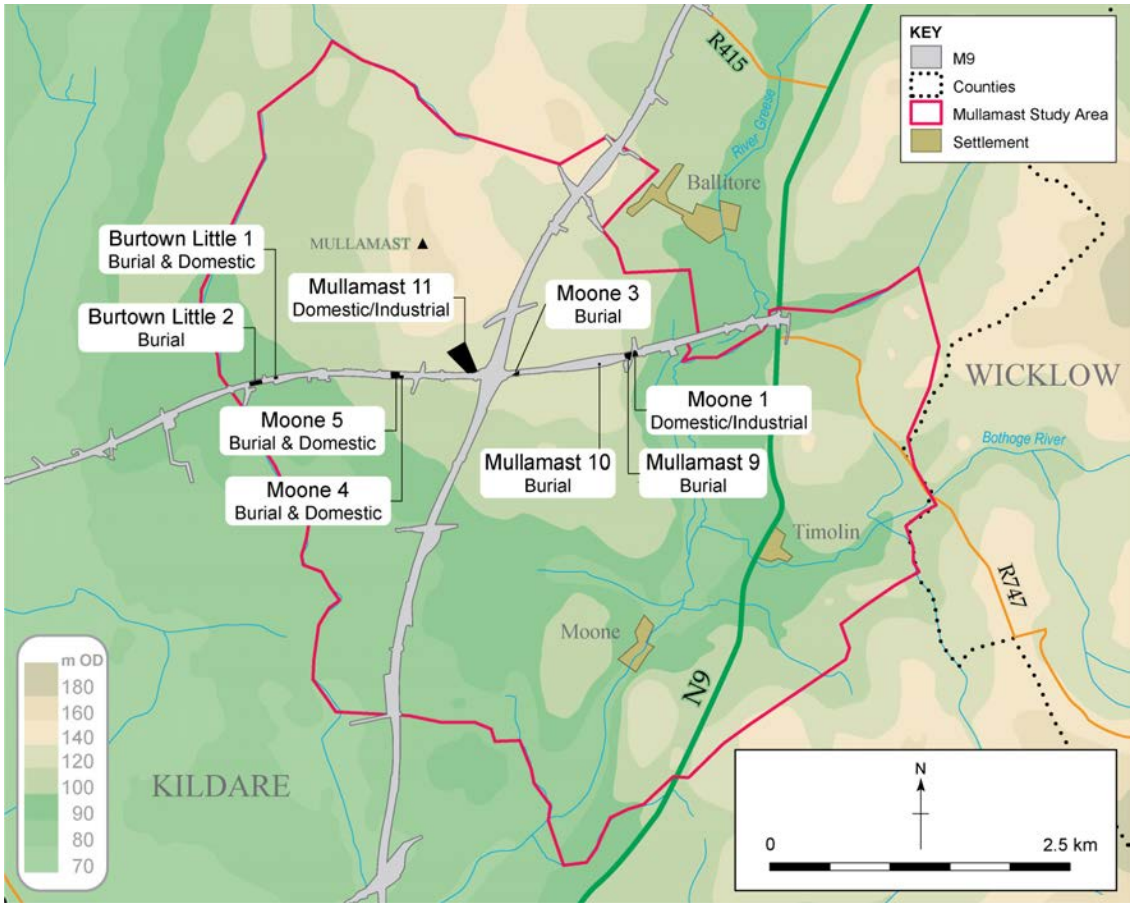
mound was found at Moone 8 which returned a radiocarbon date of 900–800 BC (SUERC-25324).

Late Bronze Age activity elsewhere on the scheme

A small scattering of pits was identified at Blackrath 2, to the west of Brewel Hill (Chapter 6). Among these were two Late Bronze Age cremations dating to 1120–840 BC (SUERC-25366) and 1050–810 BC (SUERC-25367). The first of these contained insufficient bone for demographic analysis but elements from an adult female were found in the second.

Early Iron Age

Archaeological evidence from the Mullamast Study Area shows limited Early Iron Age activity (Illus. 2.26), matching broader patterns of reduced occupation across Ireland. A notable discovery at Mullamast 9 was a crouched inhumation of a male (35–45 years) dated to 760–410 BC (SUERC-24971) (Illus. 2.27), during the Hallstatt Plateau (Hamilton et al. 2015, 642–60). Located 65 m west of the Early Bronze Age cemetery at Moone 1, this burial represents the area's first inhumation since Mullamast 11, circa 928 years earlier. The crouched position and unburnt state are significant,



Illus. 2.26 Distribution of excavated Iron Age sites within the Mullamast Study Area.

Illus. 2.27 Early Iron Age crouched inhumation at Mullamast 9, with the head to the west.

as articulated unburnt burials were rare in Ireland during 800–400 BC (McGarry 2010, 173), and crouched inhumations were previously thought to reappear only in the first centuries BC/AD due to British influence (O'Brien 2020, 34). While based on a single radiocarbon date, this discovery suggests both inhumation and crouched positioning may have been practised in this region earlier in the Iron Age than previously documented. At Moone 3, a cremation dating to 750–200 BC (SUERC-25466) represents the more typical Iron Age burial practice. The burial pit contained a fragmented amber bead, and nearby metalworking features may have been contemporary with this cremation.

The Iron Age developments at Mullamast should be examined in relation to contemporaneous activity at Dún Ailinne, a ceremonial complex situated on Knockaulin hill near Kilcullen, Co. Kildare, roughly 13 km north of the study area. Dún Ailinne consists of a major hillfort defined by substantial earthworks—a bank and internal ditch encircling the summit, with an eastern entrance. Archaeological investigations combining excavation and geophysical surveys have revealed multiple phases of large timber structures within the enclosure (Johnston & Wailes 2007; Johnston 2017). The site's occupation spans from the Neolithic (marked by a probable burial and 26 m-diameter enclosure) through the Bronze Age (evidenced by ceramic and bead finds), into its Iron Age ceremonial zenith. The Iron Age architectural features at Dún Ailinne indicate spaces designed for large assemblies, suggesting ceremonial or political functions (Johnston 2017, 116–17). The recovery of tools, ornaments, and armaments, including a sword, points to elite activities at the site.

Instead of interpreting Dún Ailinne as exercising control over Mullamast and the Greese Valley, these areas might better be understood as parallel, complementary developments. Both locations experienced marked intensification during the Middle/Developed Iron Age, though manifested differently; Dún Ailinne emerged as a ceremonial gathering centre, while the Mullamast/Greese Valley area demonstrated a pronounced mortuary focus. This distinction may reflect different but complementary functions within the broader regional context. The creation of Dún Ailinne's impressive ramparts and structures would have demanded significant workforce mobilisation, likely drawing from neighbouring populations. Though the site clearly held regional significance, its direct influence over Greese Valley communities remains uncertain, particularly given

the separation between these areas. Dún Ailinne's prominence in early medieval texts and legendary narratives indicates its lasting regional importance, though its relationship with surrounding communities likely evolved through time.

Early Iron Age activity was found elsewhere on the scheme. At Ballyvass 7 on the east slopes of Burrow Hill, north-east of Mullaghreelan (Chapter 4), the earliest activity was Early Iron Age metalworking but during the Middle/Developed Iron Age the area was used for burial, as evidenced by a ring-ditch with an internal diameter of 4.25 m. While there seemed to be disturbance to this feature from medieval activity at the site (Chapter 4), it contained some cremated human bone that was dated to 60 BC–AD 80 (SUERC-26270). Neither the age nor sex of the individual could be determined from the small quantity of bone, which probably represents a token burial. Four pits, a slag pit furnace and three ditches were discovered at Ballymount 2 (Chapter 6). The earliest pits were probably Bronze Age in date, and these were truncated by two Developed Iron Age pits which contained a notable amount of animal bone but also fragments of a human skull with a perforation.

Developed and Late Iron Age

The Developed Iron Age saw a resurgence of activity within the study area, with a continued emphasis on ritual associated with the dead, though industrial activity such as cereal-drying and metalworking was also prevalent. The Late Iron Age also saw repeated or reuse of Developed Iron Age or older sites.

Moone 4

A single right humerus from an adult human—radiocarbon dated to 360–110 BC (SUERC-24993)—was found within the fill of a burnt mound trough at Moone 4. Charcoal from a well on this site also produced Developed Iron Age dates (SUERC-25477). A range of animal bones was recovered from the burnt mound including cattle, horse, sheep/goat, pig, deer and hare. The faunal assemblage aligns with established interpretations of burnt mound sites as locations for meat consumption after slaughter and initial butchery (O'Kelly 1954, 105; Ó Neill 2009, 172; Hawkes 2018, 156–60). However, the discovery of human remains alongside bones from juvenile bovines suggests the possibility that ritualistic activities and communal feasting may have occurred at this location. It is also tempting to relate this to the adjacent cemetery site at Moone 5 (see below). Elsewhere on the M9, human bone was also recovered from a *fulacht fia* at Belan 2, including skull fragments from the trough fill which were Early Bronze Age in date. However, other disarticulated bone found in the topsoil was dated to the Late Neolithic or Early Bronze Age suggesting that it was *ex situ* and probably not linked to the site's use as a *fulacht fia*.

While human remains are rarely found in *fulachtaí fia* contexts, a few notable examples have been documented. These include Site 1 Grange, Co. Tyrone (Masser & Bailey 2008), and two sites where the remains have been interpreted as possible votive offerings post-dating the final use of the *fulacht fia*: Cragbrien, Co. Clare and Inchagreenoge, Co. Limerick (Grogan et al. 2007, 94, 103). At Cragbrien, human skull fragments were discovered within the mound

at a level post-dating the Middle Bronze Age, while at Inchagreenoge, the skull of a young adult male dating to the Middle to Late Bronze Age was found deposited in a spring associated with a burnt mound. In another rare instance, a human femur was recovered from a burnt mound of probable Early Iron Age date at Busherstown, Co. Carlow (Breen & Richardson 2009). The human bone fragment at Moone 4, found within the trough fill, could similarly represent a votive offering made after the trough's final use. The placement may suggest some form of ceremonial activity associated with 'closing' a trough or *fulacht fia* site, particularly at locations that saw repeated use over extended periods. While these scattered examples indicate that human remains were occasionally deposited in *fulachtaí fia* during both the Bronze Age and Iron Age, such deposits represent an exceptional rather than common practice, with the Developed Iron Age example at Moone 4 being particularly noteworthy for its late date.

Mullamast 10

Ring-ditches were first constructed within the Mullamast Study Area during the Neolithic period (at Moone 1, see above) but they continued to form part of the ceremonial landscape well into the Iron Age. This correlates with research throughout Ireland which shows that ring-ditches dominate the burial record during the Iron Age (e.g. McGarry 2009, 413). A ring-ditch with a diameter of c. 7 m was found at Mullamast 10 in a prominent location

Illus. 2.28 Mullamast 10, Developed Iron Age ring-ditch, facing east.

with clear views to the Wicklow Mountains (Illus. 2.28). The basal fills of the ditch contained cattle, horse and dog bone as well as three lithic artefacts. The upper fills contained three token human cremations, as well as scattered cremated bone. All the identifiable bones were adult skull fragments, one of which was dated to 360–40 BC (SUERC-25467). A second phase of activity at this site was unrelated to the ring-ditch. It comprised a figure-of-eight-shaped cereal-drying kiln which was dated to the Late Iron Age or early medieval period—AD 250–550 (SUERC-25484).

Burtown Little 2

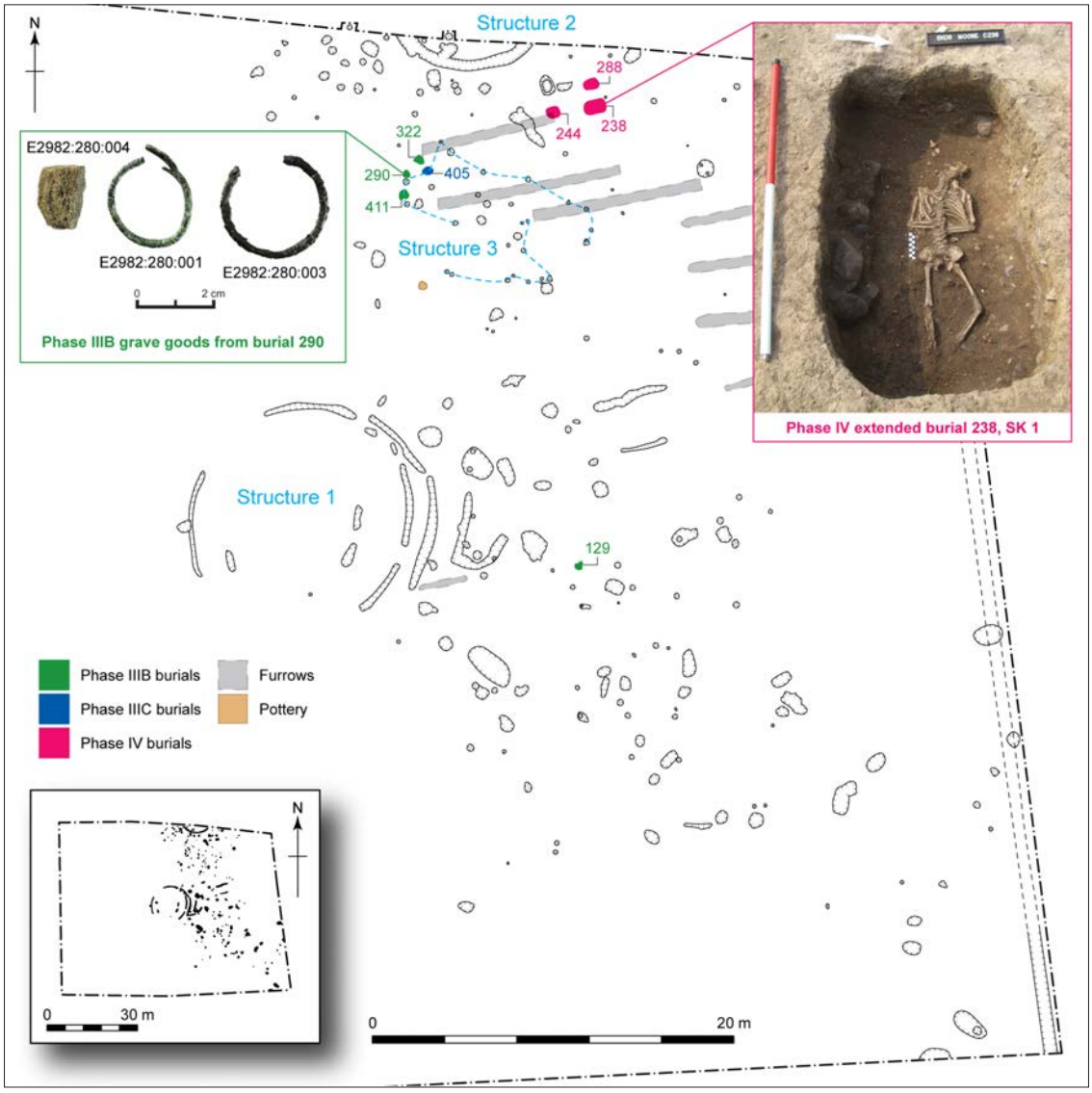
The continuity in the use of ring-ditches is even more readily apparent at Burtown Little 2 where an Early Bronze Age example (discussed above) was followed by a slightly larger (9 m diameter) ring-ditch, placed just 2.5 m to the south-west, at the end of the Developed Iron Age (Illus. 2.17). The Iron Age monument was penannular with a north-east-facing entrance like its predecessor. The earliest fills contained lithics, slag and animal bone which was radiocarbon dated to 200–50 BC (SUERC-27166). Cremated human bone in the upper fills indicated that the ring-ditch continued to be the focus of burial activity into the Late Iron Age—AD 20–250 (SUERC-25370). A pit cut into the upper ditch fill contained an adult cremation burial which dated to the Developed to Late Iron Age transition period—20 BC–AD 240 (SUERC-25376).

It is interesting that at both Mullamast 10 and Burtown Little 2 the human remains were confined to the secondary ring-ditch fills while animal bone was prevalent in the early ditch fills. Neither of the ring-ditches had burial pits either internally or externally, though the possibility remains that originally the ring-ditches defined a barrow or mound and that any internal burials were lost because of the levelling out or ploughing down of the mound.

Moone 5

The largest Iron Age cemetery within the Mullamast Study Area was established at Moone 5 at the end of the Developed Iron Age. A total of eight inhumations—all of infants less than two years of age—were found (Table 2.4; Illus. 2.29), five of which dated to the Developed Iron Age or had dates straddling the BC/AD transition. Four of these were closely clustered together while the fifth was located 20 m to the south. A second phase of burial occurred between the mid-third and mid-sixth centuries AD. These three were also clustered together, less than 10 m north-east of the earlier burial cluster.

The first phase of burial at Moone 5 (Phase IIIB and IIIC burials) comprised four crouched inhumations and one burial too poorly preserved to determine its position. The graves were either circular or oval in plan and concave in profile. They were associated with post-holes and stake-holes defining an irregular structure which may have functioned as an enclosure, within which ritual activities related to the burials may have been carried out (Illus. 2.29, Structure 3). Although very irregular in plan, the arrangement of post-holes appeared to form a roughly east–west aligned rectangular pattern measuring approximately 7.5 m east to west by 6 m north to south and with an irregular L-shaped extension to the south. Internal features were also difficult to interpret and comprised five post-holes, two pits and a stake-hole with no obvious pattern. Fragments of daub were recovered



Illus. 2.29 Moone 5, Iron Age burials, structures and finds.

from one of the pits, a possible indicator of building material used for wall construction. Another possible interpretation is that the structure, or individual components of the structure, may have been used as grave markers, erected to mark the chosen location for burials in advance of deposition or to mark the location of the graves to facilitate the return of visitors for veneration purposes. One of the post-holes forming the structure was truncated by a burial pit indicating at least one of the burials post-dated the structure. Metal rings were associated with two of the infant burials. One of these, a crouched inhumation burial (290) of a 3–6-month-old infant, had an iron penannular ring (E2982:280:003) and a copper-alloy penannular ring (E2982:280:001) placed around its right shoulder region, a piece of cut antler and

some cattle and sheep/goat bone. The second burial (129) was of an infant under one year of age and contained a single copper-alloy penannular ring (E2982:130:001) and a piece of mammal bone shaft. While the location of the artefacts in this burial was not recorded, green staining on the left ulna suggests the penannular ring was placed around the upper arm region, and if it were crouched like the other burial, not far from the shoulder. Copper-alloy rings from Iron Age burial contexts have been variously interpreted as finger, ear, hair and toe rings (Burenhult 1981, 14; Cleary 2024, 71–5), and more recently also as possible sandal attachments (Schweitzer 2005). All three of the metal rings found with the infant burials at Moone were between 2 cm and 3 cm in diameter, between 0.19 cm and 0.26 cm thick and were either broken or intentionally penannular. Narrow bands c. 0.7 mm wide and set an average of 2.5 mm apart decorated the length of the best-preserved one (E2982:280:001). Penannular copper-alloy rings and a decorated antler tine were among the objects accompanying the Iron Age child burials at Knowth (Cleary 2024, 71–5). The rings found with one child were positioned near the left hand alongside bone beads and have been interpreted as part of a bracelet or finger rings.

The second phase of burials (Phase IV) dated to the Late Iron Age/early medieval transitional period. There were some notable differences from the burial rite of the first phase which attest to the changes in cultural and religious practices occurring at this time. The second phase of burial comprised three inhumations, buried in grave cuts with a more rectangular form and all of which were aligned west–east. The best-preserved skeleton was buried in a supine position, but the other burials were too poorly preserved to determine their position. None of the second phase of burials were accompanied by grave goods. These burials are characteristic of the style that spread into Roman Britain from the continent and began to penetrate Ireland from the late fourth century AD (Bhreathnach et al. 2008–2010, 16). By the fifth century, the Romano-British tradition of west–east orientated inhumation burial had become widespread throughout the country (O'Brien 1992, 131–2; McGarry 2007, 9–14) and it seems from the changed character of the graves that this influence may have reached Moone 5 by the time of this second phase of burial at the site.

The settlement at Moone 5 was established in the Developed Iron Age. There were three phases of settlement and two of burial. The earliest settlement phase comprised a circular building approximately 8 m in diameter, defined by a ring of post-holes (Structure 3). After this structure fell into disuse, during the Developed/Late Iron Age, a larger c. 12 m-diameter circular building composed of discontinuous curvilinear slots (Structure 1) was constructed, and the first phase of burials were interred. The third phase of settlement was represented by a partially exposed circular building, c. 9 m in diameter, of Late Iron Age date (Structure 2). This was contemporary with some of the extended west–east orientated inhumations. No area within the settlement appeared to have been formally designated as a separate burial ground; burials were placed within and around the existing domestic structures.

In summary, there was clustering of some graves, but no evidence that they were enclosed or otherwise delineated; there was also an isolated burial (Burial 129). All the graves were in very close proximity to structures that were probably occupied at the time the remains were deposited. The

fact that all the burials were of very young children may be key to their presence within the settlement. These children may not have acquired the social status which would merit interment at a recognised burial monument such as a ring-ditch (as would have been expected to occur with adult, juvenile or older child burials). At these more formal burial sites, ring-ditches, barrows and cairns would have acted as markers in the landscape, creating focal points for ongoing ceremony and burial. While the children at Moone 5 were carefully buried there may not have been above-ground grave markers, allowing the graves to fade into the domestic setting. The death of such young children may only have retained significance for the immediate family rather than the whole community. The inclusion of items of personal adornment with two of the burials could also be seen as familial tokens rather than signs of importance within wider society. In this respect, the child burials at Moone 5 differ from the earlier child burials in the more ceremonial setting of the Early Bronze Age cemetery at Moone 1, where the children were interred in the formal cemetery on the gravel kame. Here, the children were intermingled with adults and so we can determine that at least some children were given the same treatment and grave goods as the older members of society. Despite these

Table 2.4—Moone 5. Summary of the inhumation burials

Burial no.	Human remains, age, grave type and artefacts	Radiocarbon dates
First phase of burials (Phase IIIB and Phase IIIC on Illus. 2.29)		
C129	Incomplete, position undetermined, infant (< 1 yr) in a shallow sub-circular pit, with copper-alloy ring and copper staining on left arm	180–0 BC (SUERC-25245)
C290	Crouched inhumation, head to west, infant (3–6 mths) in a shallow pit, with a small copper-alloy ring, an iron ring and an antler cutoff in right shoulder region	100 BC–AD 70 (SUERC-24995)
C322	Crouched inhumation, head to north, infant (2–3 mths) in a shallow oval pit	50 BC–AD 120 (SUERC-25241)
C411	Crouched inhumation, head to south-west, of infant (perinate) in shallow sub-circular pit with limestone capstone	90 BC–AD 70 (SUERC-25243)
C405	Incomplete, position undetermined, infant (0–6 mths) in a shallow sub-circular pit	200–30 BC (SUERC-25242)
Second phase of burials (Phase IV on Illus. 2.29)		
C238	Incomplete, position undetermined, infant (perinate) in oblong NE–SW pit	AD 250–410 (SUERC-24996)
C244	Incomplete, position undetermined, infant (3–9 mths) in oblong NE–SW pit	AD 390–540 (SUERC-25244)
C288	Supine inhumation, one leg flexed, head to west, young child (1.5–2 yrs) in oblong NE–SW partly stone-lined pit	AD 400–550 (SUERC-24994)

differences between the two cemeteries, though, it is remarkable that children are once again prominent in the prehistoric burial record in the townland of Moone.

While sites comparable to Moone 5 in terms of date and burial rite are rare, what seems to make the site unique in the Irish archaeological record is that the entire cemetery population were infants under two years old. Also, these burials were placed inside an apparently busy contemporary settlement. While child-only cemeteries are well known in the eras after the introduction of Christianity (see Donnelly & Murphy 2018), the cemetery at Moone 5 was clearly established in the context of a much earlier pre-Christian pagan tradition.

Moone 1

The gravel kame at Moone 1 once again became the site of human activity during the Iron Age. The earlier Neolithic ring-ditch and Early Bronze Age funerary activity were enclosed by a ditch and several pits and kilns indicating a mixture of agricultural, domestic and craft/industrial activity. The ditch was penannular in plan and open to the north-east. It enclosed an area of c. 30 m in diameter around the summit of the kame, enclosing all the previous burials and the earlier ring-ditch (Illus. 2.3). The ditch was up to 1.7 m wide, 1 m deep and contained a rich array of archaeological material. This included cereal grains, worked bone and antler, bone artefacts such as a knife/sword handle, pin, needle and spoon, copper objects, an iron needle and a large amount of animal bone, including a single whalebone with cut marks. Two radiocarbon dates were obtained from material retrieved from the ditch—AD 130–340 (SUERC–25315) and AD 130–350 (SUERC–25311), giving those fills a terminus post quem in the Late Iron Age; however, it is possible the ditch was in existence before that time.

Three pits were filled with a range of domestic waste including charcoal, animal bone, cereal grain, slag and lithics. Samples from these returned radiocarbon dates of 400–200 BC (SUERC-25314) and 50 BC–AD 80 (SUERC-25307). Small amounts of disarticulated human bone and flecks of burnt bone, as well as the presence of sherds of an Early Bronze Age vase urn in one of the pits, point to the disturbance of earlier material related to the Bronze Age cemetery.

One of three cereal-drying kilns located immediately outside of the enclosing ditch was also found to be Late Iron Age—radiocarbon dated to AD 130–380 (SUERC–25313)—while another returned a date in the Late Iron Age/early medieval transitional period—AD 340–580 (SUERC–25456). The cereal-drying activity evident at Moone 1 seems to have continued in the neighbouring site of Mullamast 9 where a range of early medieval cereal-drying kilns and associated features were excavated. Despite all this industrial activity, the enclosed area containing the cemetery at Moone 1 remained largely undisturbed. Whether this was deliberate or good fortune is open to debate. The excavation director, Liam Hackett (2008), felt strongly that the presence of the cemetery was the reason that the kame was enclosed and that it was a deliberate and successful attempt to protect the burials.

Other Developed and Late Iron Age activity within the Mullamast Study Area

Other activity within the Mullamast Study Area dating to the Late Iron Age was

restricted to a series of isolated pits and possible industrial activity located within Mullamast and Moone townlands. An isolated pit at Mullamast 9, which contained burnt material including cereal grains, was dated to 210 BC–AD 60 (SUERC-25480) and a second domestic type pit on this site produced a Late Iron Age date—AD 0–240 (SUERC-25478). Another pit—located at Mullamast 11—contained burnt material including unidentifiable burnt bone and returned a date of 362–192 BC (UBA-12020). A pit at Moone 4 also produced a radiocarbon date of 40 BC–AD 130 (SUERC-25708).

Moone 3

At Moone 3 a large kiln-like feature was found to date to 60 BC–AD 80 (SUERC-25334). The function of this feature, however, remains unclear. No plant remains were within the fills as would be expected if it was related to cereal-drying, though the morphology of the feature was otherwise consistent with cereal-drying kilns of this period. One other possibility is that it served as a smoker for meat or hides, which would account for the evidence for burning/high temperature working but which might not have left any other distinguishing traces other than of the fire/furnace. Also, at Moone 3, three clusters of furnaces and associated metalworking features were found to date to this period. Three structures at this site may also date to the later prehistoric period and represent domestic activity at the site.

Mullamast 2 and 3

At Mullamast 2 and 3 several early medieval cereal-drying kilns and associated structural features and pits indicate that the area was a centre for cereal processing. This activity may have originated at the end of the Late Iron Age as some of the kilns returned radiocarbon dates which span the Late Iron Age/early medieval transitional period (similar to the latest of the three examples at Moone 1). The samples chosen for dating the kilns came from charred cereal grains and therefore would not have been impacted by an 'old wood effect'.

Developed to Late Iron Age activity elsewhere on the scheme

In contrast to the Early Iron Age, there was very little evidence for activity from this period elsewhere on the scheme. It was limited to a skull fragment from an 18–34-year-old adult found in a pit at Ballymount 2, which was dated to the Developed Iron Age (360–50 BC; SUERC-26402: Chapter 6).

Discussion

The archaeological evidence from the Mullamast Study Area reveals a complex ritual landscape in use from the Middle Neolithic through to the early medieval period, with significant burial sites of Early Bronze Age and Iron Age date. This prehistoric ceremonial landscape laid the foundation for Mullamast Hill's emergence as the royal site of Maistiu during later prehistory and the early medieval period. The excavations uncovered 19 prehistoric sites within four townlands, with 10 containing burial components, demonstrating both the intensity and longevity of ritual activity in this area.

Three key aspects emerge from analysis of these sites:

Changing burial practices

The burial record reveals diverse and changing mortuary practices, both within individual sites and across the broader assemblage. This included single and collective burials, pit and cist burials, and both cremation and inhumation rites—sometimes occurring simultaneously at the same site. The increasing monumentalisation of the landscape over time is reflected in the construction of ring-ditches at several sites, aligning with the broader pattern observed in north Kildare where ring-barrows and earthwork monuments are notably abundant (Clancy 2006, 36–47). This architectural development suggests a growing emphasis on creating visible markers in the landscape, perhaps indicating evolving social or ritual practices.

The Early Bronze Age cemetery at Moone 1 is particularly significant for challenging an established understanding of prehistoric burial practices. The site's high proportion of child burials (50% compared to typical rates of 20–28%) and female burials suggests either different social values in this community or that previous excavation methods may have underrepresented these demographics (Mount 1997a; 1997b; Haughton 2021). The cemetery's complete excavation provides valuable insights into Early Bronze Age mortuary practices that partial excavations elsewhere may have missed.

The Iron Age cemetery at Moone 5 is particularly noteworthy as one of the few known prehistoric cemeteries in Ireland containing exclusively child and infant burials. The site's evolution from Developed Iron Age crouched burials to Late Iron Age west–east oriented burials reflects the gradual adoption of new cultural practices, possibly indicating Romano-British influence (O'Brien 2020, 37).

Spatial organisation and social implications

The sites reveal three distinct patterns in the relationship between burial and other activities:

- Exclusive burial/ceremonial spaces (e.g., Burtown Little 2, Mullamast 10)
- Contemporary burial and domestic/industrial activity in close proximity (e.g., Burtown Little 1, Moone 5 and Mullamast 6)
- Multi-period sites with changing functions (e.g., Moone 1, Moone 3, Timolin 1, Mullamast 9 and 11).

This variety suggests complex social rules governing the relationship between spaces for the living and the dead. The Middle Bronze Age shows a notable shift toward placing burials closer to settlements, which Cleary (2005, 27) suggests may have helped assert ownership and territorial claims.

Continuity and change in ritual landscapes

The repeated use of certain locations for ritual activity, sometimes spanning millennia, demonstrates the remarkable persistence of some sacred places, even when potentially punctuated by periods of abandonment or diminished use. This is particularly evident at Moone 1, where the Middle Neolithic ring-ditch became a focus for Early Bronze Age burials, and at Burtown Little 2, where an Iron Age ring-ditch was

deliberately placed next to its Early Bronze Age predecessor. This pattern of reuse mirrors practices seen at other major ritual centres like Tara and suggests that certain places retained their sacred significance across multiple cultural changes (Newman 1997, 237–42) and that past monuments played an active role in prehistoric presents (Bradley 2002).

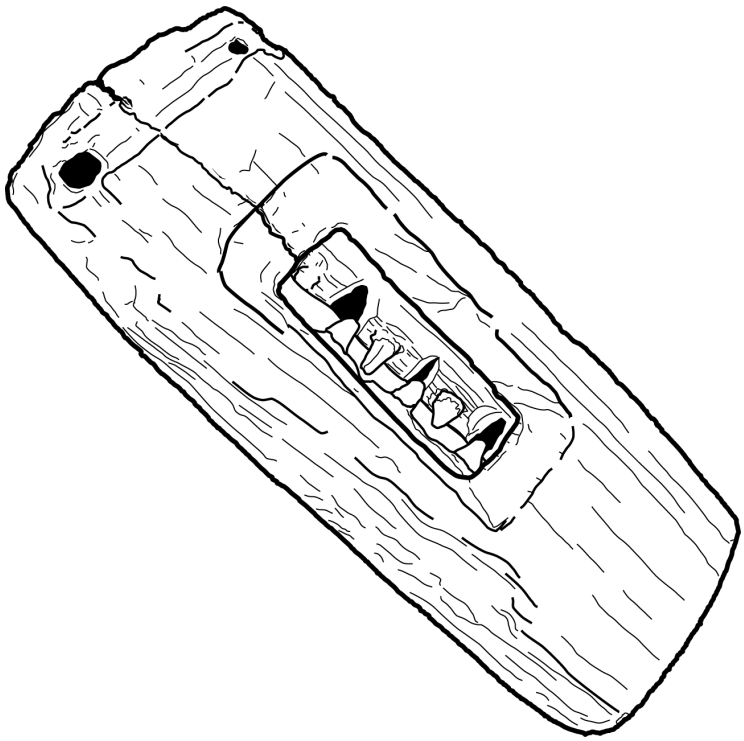
The Late Iron Age enclosure of earlier burials at Moone 1 indicates that these monuments remained culturally significant, so must either have been visible in the landscape or preserved in oral tradition. This conscious preservation of ancient ritual or sacred places may have contributed to Mullamast's eventual emergence as a royal site, where the deliberate incorporation of ancient monuments into subsequent ritual and/or political discourses are arguably characteristic (Newman 1997, 237–42).

The reasons for Mullamast Hill's initial selection as a focus for ritual activity remain unclear, though its commanding views of the Wicklow Mountains, particularly Lugnaquillia, Tonelagee and Duff, may have held significance for prehistoric communities. The simultaneous use of multiple ritual sites in the study area raises questions about potential social differentiation in burial practices, though the evidence cannot determine whether different locations served distinct family, tribal, or hierarchical groups.

This rich ceremonial landscape provides essential context for understanding Mullamast's later significance as a royal site. The excavations demonstrate that the hill's importance was rooted in millennia of ritual activity, with successive communities maintaining and adapting sacred spaces while incorporating them into evolving social and ceremonial practices.

Chapter 3

Alongside the River Lerr—Millennia of Ritual and Domestic Activity



by Patricia Long, Colm Moloney and Ros Ó Maoldúin

Alongside the River Lerr—Millennia of Ritual and Domestic Activity

Excavations on either side of the River Lerr, 1.8 km south-west of Castledermot, revealed evidence of human activity spanning 8,500 years, dating from the Early Mesolithic to the post-medieval period. Among the archaeological remains many facets of life are reflected, from ceremonial and burial to settlement, agriculture and craft. This chapter explores the nature of this activity and what it tells us about life and beliefs within the region and the interconnectedness with other places that this reflects.

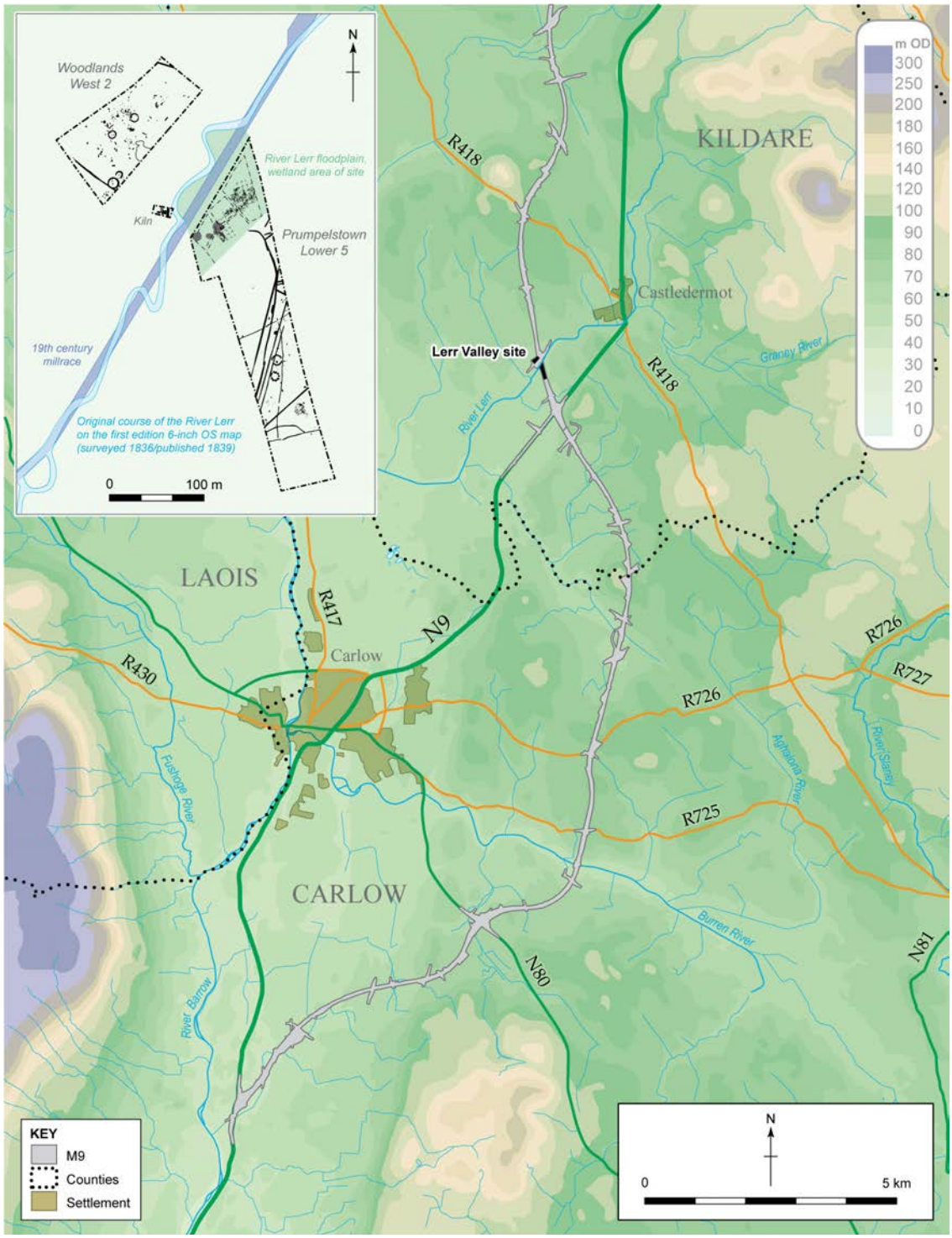
The River Lerr rises in the foothills of the Wicklow Mountains to the north of Castledermot and passes through an area of Ordovician Leinster Granite before entering the River Barrow at the boundary between counties Kildare and Carlow. Two areas, Woodlands West 2 (E2966) and Prumpelstown Lower 5 (E2967) that encompassed over 23,000 m², were excavated on either side of the River Lerr where it was crossed by the M9 (Illus. 3.1). Woodlands West was to the north and Prumpelstown Lower was to the south. These areas will henceforth be referred to collectively as the Lerr Valley site. To the west of the site are lowland plains and to the east the hilltops of east Kildare gradually rise to the Wicklow Mountains. The surrounding landscape is dominated by glacially deposited gravel ridges that run parallel with the river. The river was partly canalised and straightened to form a headrace for a flour mill prior to 1907, when the survey for the 25-inch Ordnance Survey map was carried out (Illus. 3.2b). The original meandering course of the River Lerr can be seen on the 1841 First Edition 6-inch Ordnance Survey map (surveyed 1836; Illus. 3.2a).

Prior to the excavations in advance of the M9 road scheme, there was no known archaeology within the road-take at this location. However, the character of the terrain was highlighted as having high potential for archaeological remains at an early stage (Valerie J Keely Ltd 2003) and there were several factors which suggested that the area would have been attractive to settlers in the past. The river would have provided not only a water source but also flora and fauna which could have been exploited for food and raw materials. In addition, rivers acted as routeways and/or territorial boundaries, and were often associated with spiritual, religious and ritual activities. The gravel ridges on either side of the floodplain offered elevated areas with commanding views and well-drained soils—perfect locations for settlement and associated activities.

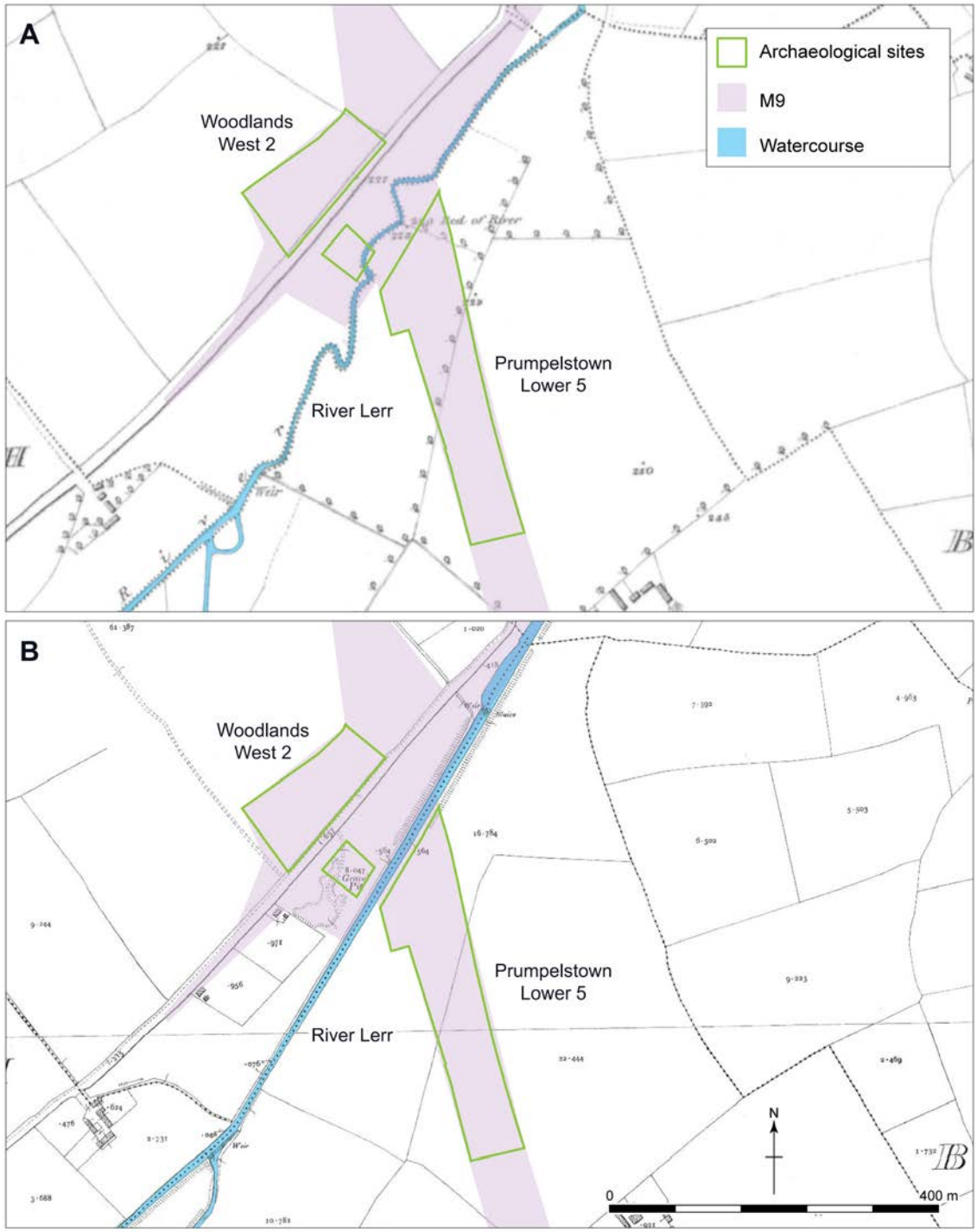
Mesolithic pits and lithics

The earliest evidence of human activity within the Lerr Valley site was from a pit on

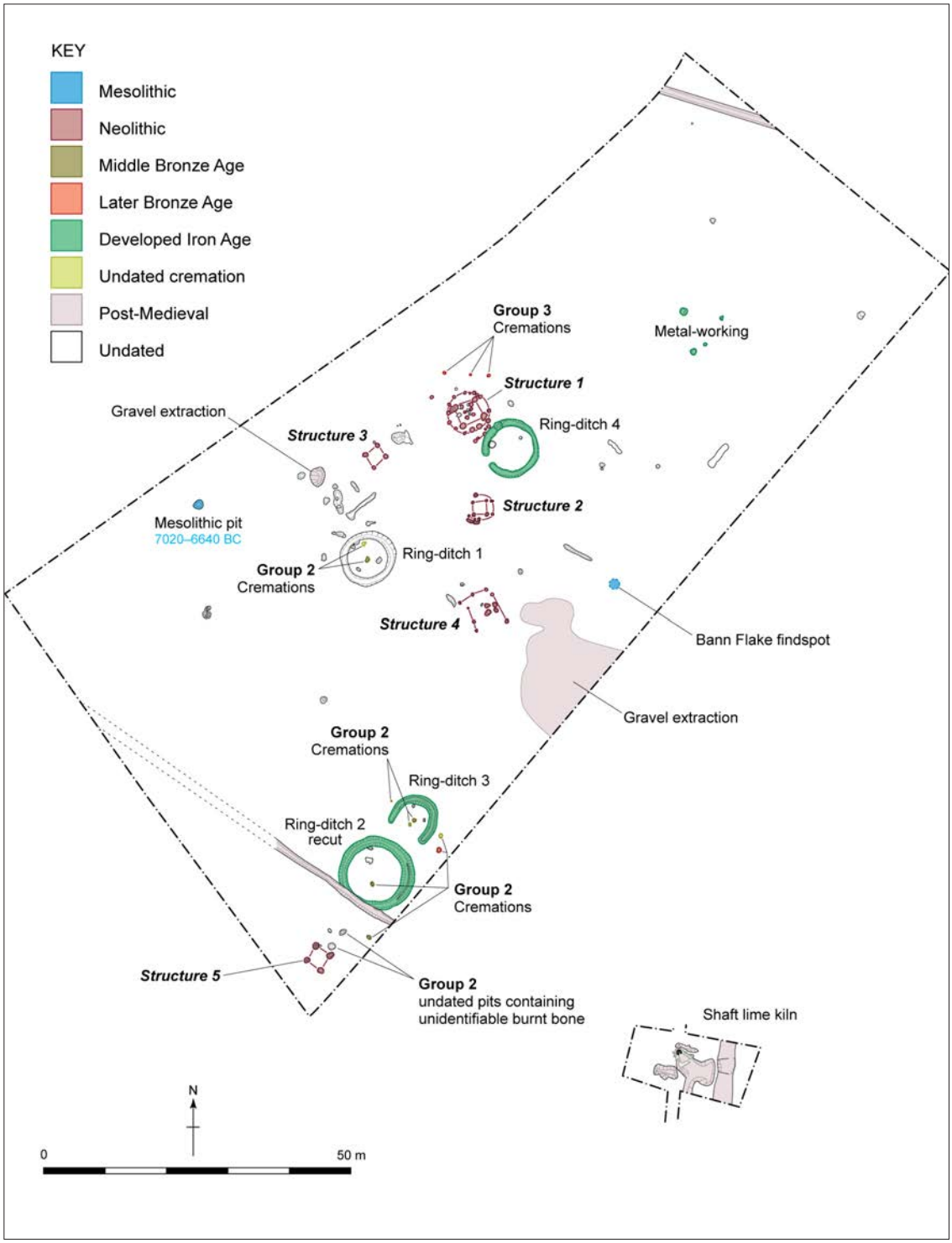
Chapter title image The early medieval tread trap discovered at Prumpelstown Lower 5 (by Hannah Sims).



Illus. 3.1 Location of the Lerr Valley site.



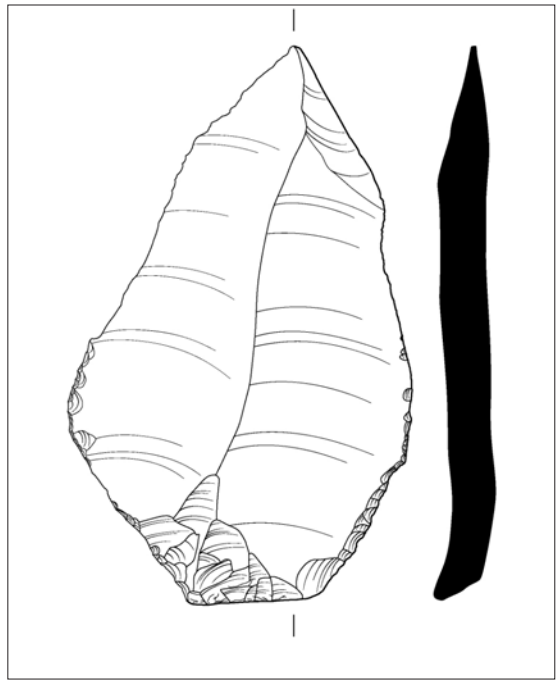
Illus. 3.2 The Lerr Valley site on extracts from (A) the First Edition 6-inch (1839) and (B) the 25-inch (1909) Ordnance Survey maps (© National Mapping Division of Tailte Éireann CYAL50441807).



Illus. 3.3 Plan of the Lerr Valley site, north of the River Lerr (Woodlands West 2).

the summit of a gravel ridge overlooking the Lerr River, from the north (Illus. 3.3). A fragment of hazel charcoal from it returned a radiocarbon date of 7020–6640 BC (SUERC-27172), which spans the Early to Late Mesolithic transition. The pit was sub-circular in plan, 1.62 m long, 1.18 m wide, 0.9 m deep, had irregular edges and contained four fills but no artefacts. The radiocarbon sample came from a charcoal-rich lens in the uppermost fill. It is large for a Mesolithic pit (Blinkhorn et al. 2017, 214), and its isolated nature and the lack of artefacts constrain discussion on its likely function, but its presence provides evidence for activity from the period, which is rare in the region. A Late Mesolithic 'Bann' or 'butt-trimmed' flake was recovered from the topsoil, c. 65 m east of the Early/Late Mesolithic pit (Illus. 3.4); similar flakes have previously been interpreted as fish spears and/or multipurpose knives (Woodman et al. 2006, 118–23; Warren 2022, chapter 7).

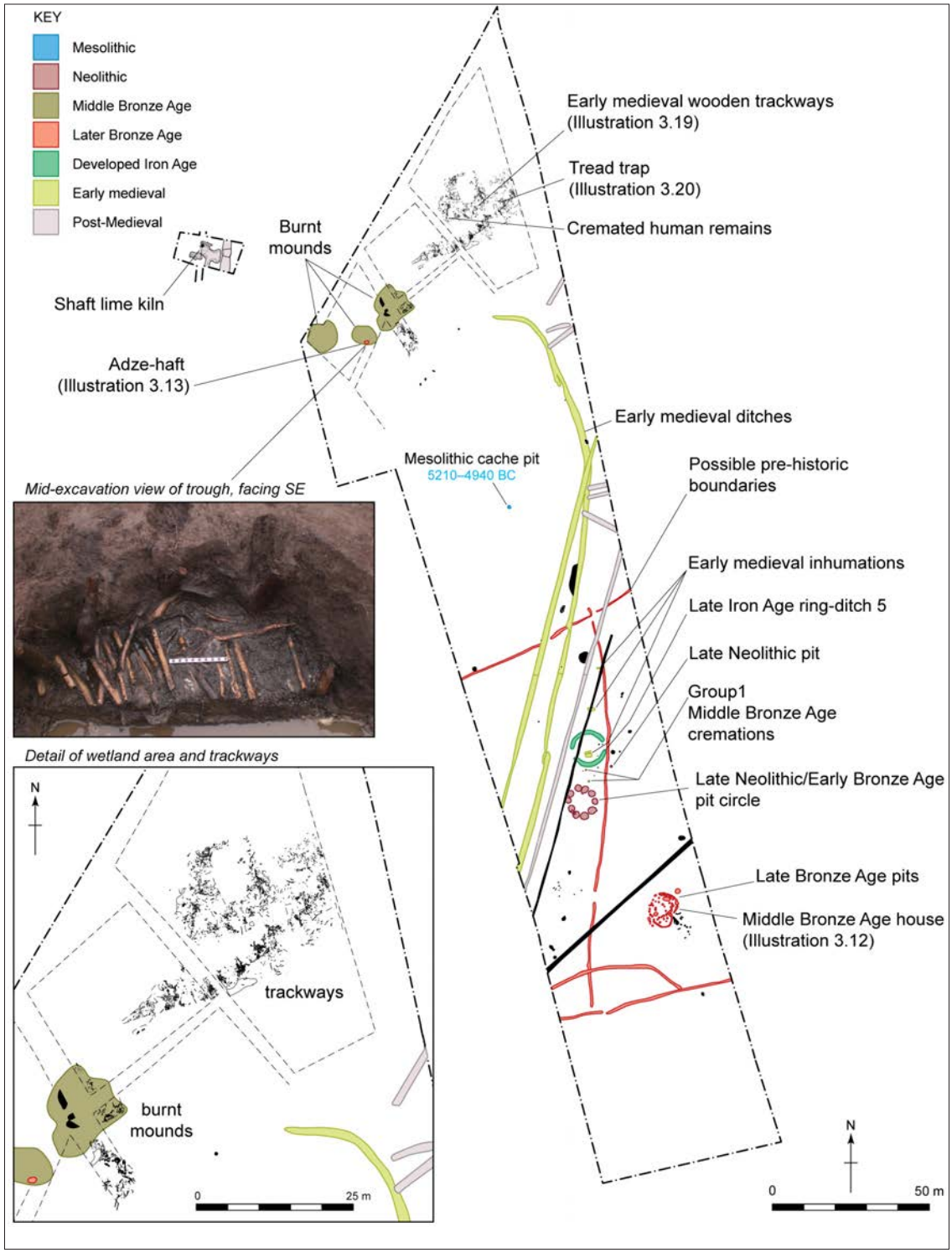
On the south side of the River Lerr, another isolated pit was found (Illus. 3.5). It contained three Late Mesolithic lithic tools (Illus. 3.6), a piece of possible mudstone debitage, a single unburnt and unidentifiable animal bone fragment and some hazel charcoal. A sample of the charcoal returned a radiocarbon date of 5210–4940 BC (SUERC-27192). The debitage may have been accidently incorporated but the lithic tools were likely intentionally deposited. Two of the tools were utilised chert blanks and the third was a retouched single arris mudstone blade; again these belong to the broad general classification of 'butt-trimmed flakes'. Nyree Finlay (2003) has classified Late Mesolithic pits like this as 'cache pits' and has noted a recurring pattern, where three or multiples of three lithics were often placed in such pits. The inclusion of three large blades in the Lerr Valley site pit may therefore have been a part of an intentional or structured practice that reflected shared ideas or beliefs, widespread in Ireland during the Later Mesolithic.



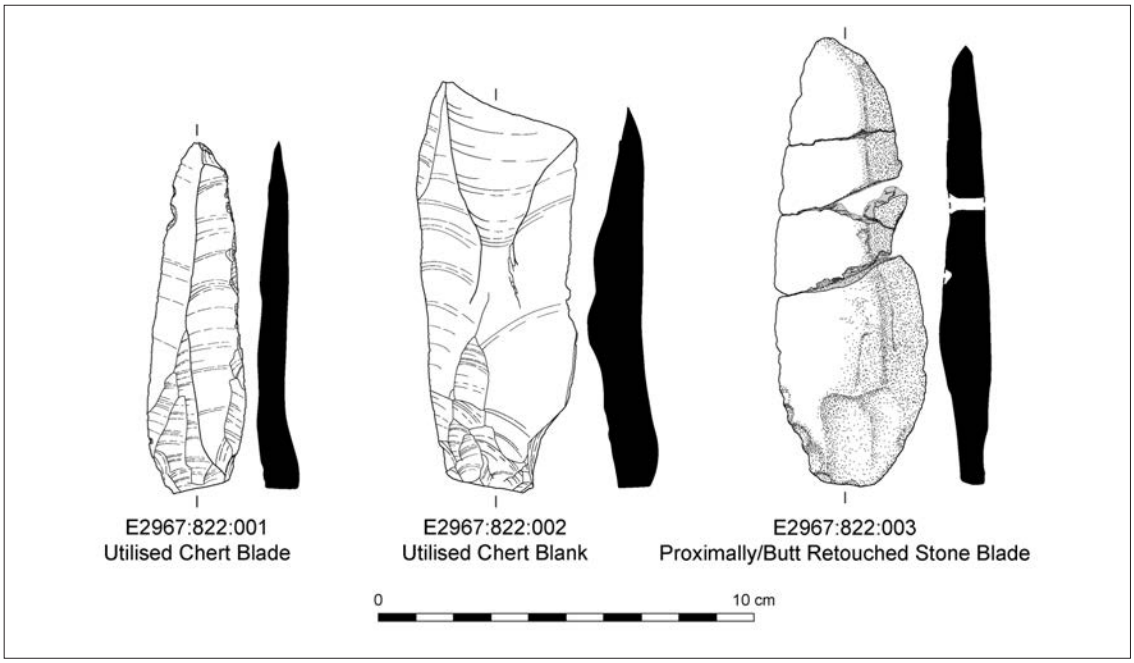
Illus. 3.4 Drawing of butt-trimmed flake (E2966:001:003) from north of the River Lerr (by Hannah Sims).

Early to Middle Neolithic traces

Over two hundred knapped lithics were found on the Lerr Valley site. Among these were forms that may be Early or Middle Neolithic; however, there were no diagnostic tools of this date and most of these could also date to other periods. The earliest Neolithic date returned from the Lerr Valley site was a Middle Neolithic I–II radiocarbon date of 3640–3370 BC (SUERC-27178) obtained on a hazelnut shell from one of four large post-holes, with an average diameter of 1 m and depth of 0.6 m, in a rectangular arrangement (Structure 5, Illus. 3.3, 3.7). This date is unusual and similar structures on the site



Illus. 3.5 Plan of Lerr Valley site, south of the River Lerr (Prumpelstown Lower 5).



Illus. 3.6 Cache of Late Mesolithic artefacts from south of the River Lerr (by Hannah Sims).

were found to be Late Neolithic (c. 3000–2500 BC). No diagnostic material culture of a comparable date was discovered on the site and so the date must be treated with caution as it could be anomalous or residual.

Late Neolithic timber structures and other evidence

Activity on the site intensified during the Late Neolithic. The footprints of four structures of this date (five, if one includes the structure that returned a Middle Neolithic radiocarbon date) were found north of the river on the Lerr Valley site. Two of these were square-in-circle arrangements and three were rectangular four-post arrangements; these are arrangements recognised to be typically Late Neolithic and as being associated with a particular type of pottery, Grooved Ware. Grooved Ware pottery was found with them on the Lerr Valley site, and the radiocarbon dates corroborated the date. To the south of the river a pit was also dated to the Late Neolithic or very early Chalcolithic, and a pit circle that returned dates from the Early Bronze Age to the Iron Age, also has its closest parallels in the Late Neolithic.

The Late Neolithic structures, to the north of the river, were clustered towards the centre of the excavation area up on the gravel ridge overlooking the river (Illus. 3.3).

Structure 1 (timber square-in-circle)

The most prominent of the structures was a square-in-circle post-hole arrangement situated on the highest point of the site (Illus. 3.7). This comprised a ring of 16 post-holes (5.8 m in diameter), with a post-defined entranceway at the SSE (0.4 m wide), surrounding a square arrangement of four large post-pits, which in turn enclosed a smaller rectangular arrangement of post-holes and pits. Many of the post-holes were

quite substantial in size, averaging 0.6 m in diameter and approximately 0.4 m deep, though the gravelly nature of the subsoil made for poor preservation of the cuts. Deposits of charcoal-rich material including burnt bone hazelnut shells and artefacts were placed in several of the post-holes and pits. A charcoal-rich deposit found in the uppermost part of one of the large entrance post-holes appears to have been placed there after the original post had been extracted. This contained hazelnut shells, two Grooved Ware sherds, unidentifiable burnt bone (0.8 g), a retouched flint artefact and eight flint flakes. The other entrance post-hole produced a flint flake and hazelnut fragments from its uppermost deposit, one of which produced a radiocarbon date of 2850–2480 BC (SUERC-27181). A sandstone hammer was found in the top fill of a post-hole on the east side of the circle and another of the perimeter post-holes, to the north, contained three flint and chert flakes. The easternmost of the four large internal post-pits produced hazelnut shells, unidentifiable animal bone fragments, two Grooved Ware pottery sherds and three flint artefacts, including a convex side scraper. An upper deposit from the westernmost yielded unidentifiable animal bone and charred hazelnut shell, radiocarbon dated to 2620–2470 BC (SUERC-27179). At the centre of the timber circle, in line with the entrance identified in the outer ring, were two shallow pits found to contain burnt bone from pigs, cattle and other unidentifiable species, as well as hazelnut shell fragments. A radiocarbon date of 2860–2460 BC (SUERC-25389) was obtained from the bone. A pit located 2.5 m north-west of the timber circle also contained 17 sherds from a Grooved Ware vessel (Illus. 3.3), a flint flake and hazelnut shells.

Structure 2 (possible timber square-in-circle)

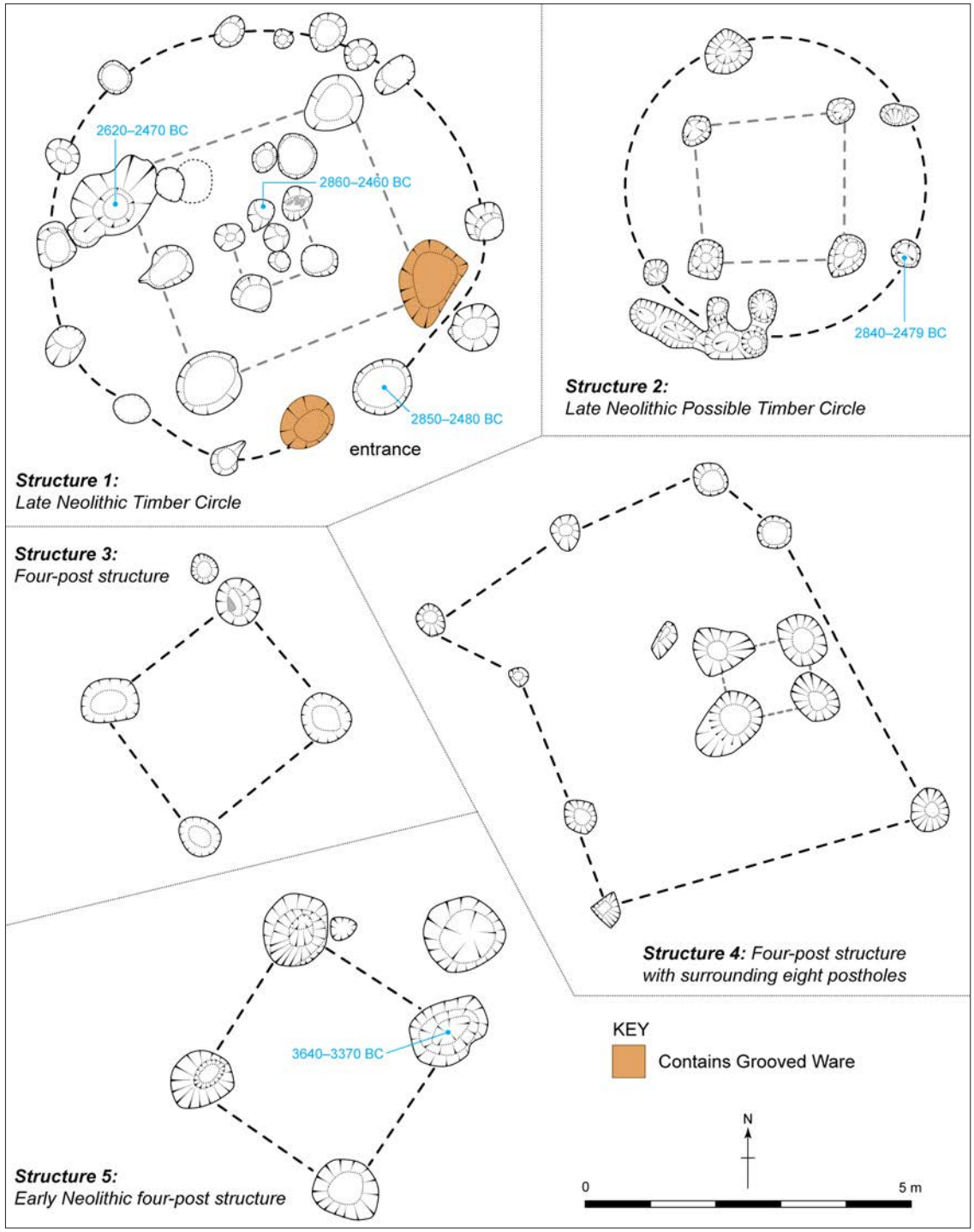
A cluster of features located 10 m to the south of Structure 1 may represent the remains of another timber circle, though this interpretation is more tentative (Illus. 3.7). A square arrangement of four post-holes evenly spaced 2.2 m apart was identified. Six post-holes forming an incomplete circle were found to partially surround this four-post structure. Despite the absence of post-holes on the west side this layout is typical of a Late Neolithic timber circle, and it seems likely that the remains of the western post-hole/s have simply not survived. A secondary deposit in the south-eastern post-hole in the circle contained two flint flakes and hazel charcoal which produced a radiocarbon date of 2840–2470 BC (SUERC-27180). A chert convex end scraper was also retrieved from the south-eastern post-hole of the internal four-post arrangement.

Structure 3 (four-post structure)

Another four-post structure was identified 12 m to the west of Structure 1 (Illus. 3.7). The posts were relatively evenly spaced c. 1.8 m apart, and a bipolar flint flake was recovered from the secondary fill of the northernmost of these. A small post-hole was located just north of this structure but there was no evidence for an enclosing ring (Illus. 3.3, 3.7).

Structure 4 (four-post structure)

A small square arrangement of four large equidistant post-holes, 0.2 m apart, surrounded by a concentration of smaller post-holes was discovered 25 m to the south of Structure 1 (Illus. 3.7). While no diagnostic artefacts were recovered from



Illus. 3.7 Lerr Valley Neolithic square-in-circle and four-post structures, north of the river.

this structure and no material suitable for radiocarbon dating was obtained, the four-post layout mirrors the dated Late Neolithic structures and suggests contemporaneity.

The discovery of two Late Neolithic timber square-in-circles is a significant addition to the growing number of these monuments discovered in Ireland. Hartwell et al. (2023, 182) noted 23 excavated examples. These include one in County Carlow and seven in County Kilkenny. The Carlow example, Prumpelstown Lower 2, was located less than 800 m to the south of the Lerr Valley site (Bolger et al. 2015, 105–6). The Kilkenny examples occurred in two clusters, three in Paulstown (Elliot 2008), c. 28 km to the south and four at Scart, c. 37 km to the south-west, just east of Kilkenny city (Laidlaw 2017, 33–56). Although recent discoveries have widened the known distribution of these monuments, timber circles have still mainly been found in the eastern half of the country, with a notable concentration occurring in the Boyne Valley and surrounding areas (Hartwell et al. 2023, figure 11.15). As at the Lerr Valley site, they are often located on locally elevated positions such as ridges or slopes overlooking their surroundings. The Lerr Valley, Prumpelstown and Paulstown examples are all located within the catchment of the River Barrow, while the Scart examples are close to the River Nore. This link to a major river is a recurring theme in the siting of timber square-in-circles, and other timber circles. Many of those in Meath are notably sited near the River Boyne (i.e. Knowth, Newgrange, Balgatheran, Rathmullan and Bettystown) while others (Slieve Breagh and Kilmainham) are sited near one of its tributaries, and those in County Down (Ballynahatty and Dromore) are located next to the River Lagan. Other sites in south Leinster include Ask, in County Wexford (Stevens 2011; 2012). There are only two recorded in Connaught, both are in County Mayo, one at Lowpark and the other at Kilbride, and there is only one in Munster, at Ballynacarriga, Co. Cork.

All Irish Late Neolithic timber circles and square-in-circle structures fall within Darvill's 'Small Circle' tradition, those less than 30 m in diameter (Darvill & Barnwell 2022, 80). They are generally symmetrical structures comprising a ring of post-holes measuring between 5 m and 15 m in diameter that enclose a square structure of four large post-holes and a well-defined south/south-east-facing entrance that is often flanked by an additional screen or façade of posts (Carlin et al. 2015, 105). Thus, Structure 1 is a typical example. While the circle of posts in Structure 2 was incomplete, it is probable that this was simply due to poor preservation rather than atypical morphology. The occurrence of more than one timber square-in-circle at a single site is also not unusual, as these monuments often formed part of a complex.

Grooved Ware pottery is a Late Neolithic pottery tradition found exclusively in Britain and Ireland. It seems to have emerged in Orkney and then to have been adopted more widely around Britain and Ireland (Copper et al. 2021). It is a common occurrence at Late Neolithic timber circles and square-in-circles that was also in evidence at the Lerr Valley site. According to Grogan and Roche (2010a, 34) timber circles are the principal contexts for the recovery of Grooved Ware. It was also found at the Prumpelstown Lower 2 timber circle, and at another Late Neolithic pit (radiocarbon dated to 2569–2310 BC; UBA-8723) 100 m further south at Prumpelstown

Lower 3 (Carlin et al. 2015, 105–8). Grooved Ware has also been recovered from free-standing four-post structures, such as Balgatheran, Ask and Scart, and, although more rarely, at a small number of enclosures, pits and domestic houses (Grogan & Roche 2010a, 34). The assemblage from the Lerr Valley site was mostly from the more complete square-in-circle structure, Structure 1, and was generally worn and fragmentary. It included at least three fine-walled vessels with close comparisons among the Knowth assemblage. Burial evidence has come from two sites associated with Grooved Ware pottery—Knowth and Steelstown, Co. Dublin (Eogan & Roche 1997; Duffy 2005). At the Lerr Valley site, burnt bone was identified in the central pits and in one of the entrance post-holes. However, the bone was unfortunately too fragmentary and could not be identified to species. The few fragments that were identified from the central pits were of pigs and cattle.

All the artefacts and ecofacts from the Late Neolithic timber structures at the Lerr Valley site were found within secondary contexts that were deposited after construction, probably towards the end of the monument's use-life. In Structure 1, these deposits seem to have been deliberately placed in specific locations, with a particular focus on the entrance and the central four-post arrangement. These could be seen, as suggested for other sites, as ritualised acts of abandonment commemorating the past use of the structure (Carlin & Cooney 2017, 42–6). Timber square-in-circles are often assumed to be ceremonial, in part because of their occurrence at sites such as around the passage tombs in the Boyne Valley and adjacent to the passage tombs and great henge at Ballynahatty, and as Hartwell et al. (2023) have argued, it is difficult to imagine the larger ones as anything other than ceremonial. However, the possibility that some, especially smaller examples, might be domestic houses has also been considered (Monteith 2008; Laidlaw 2017). As Monteith (2008) has pointed out, the smaller examples are similar in size to the few recorded houses of the Late Neolithic, the material found at them is often domestic in character and 'the line between domestic and ritual may not be as distinct as often believed'. Reflecting aspects of the designs of homes in tombs or other ceremonial architecture, and vice versa, is not unusual (Bradley 2012, chapter 4).

Pit

A small sub-circular pit, located on the gravel ridge to the south of the river, was also dated to the Late Neolithic period (Illus. 3.5). It contained cereal grain, animal bone fragments, a charred hazelnut and lithics, including a convex flint scraper, and two flakes of debitage. The hazelnut shell returned a radiocarbon date range of 2620–2460 BC (SUERC-27190). Though this pit appeared to be isolated, it suggests that people were active and perhaps living on the gravel ridge on this side of the River Lerr, from where they would have had a clear view of the complex to the north. This situation is mirrored at Prumpelstown Lower 2 and 3 where two Late Neolithic pits containing heat-shattered stone and charcoal were located 100 m to the south of a timber circle (Bolger et al. 2015, 11–13). If we accept that the circles and square-in-circle timber monuments are primarily ceremonial, perhaps what we are seeing is a division, where more domestic activity is occurring at a remove but within sight of the ceremonial complexes.

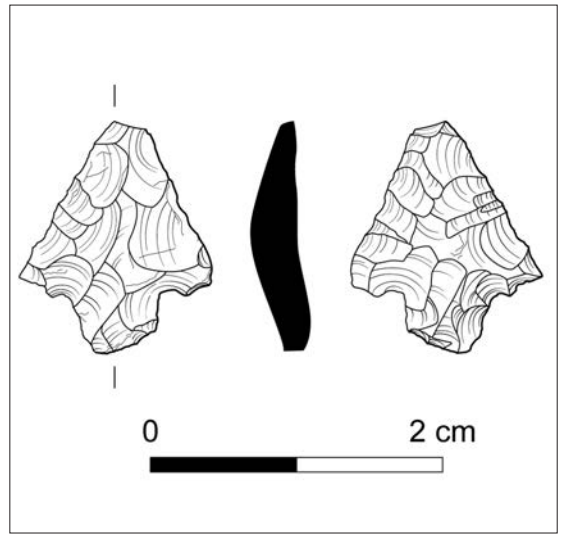
The pit circle

A pit circle was discovered on the summit of the gravel ridge on the south side of the River Lerr (Illus. 3.5). It comprised a circular arrangement of 10 large, closely spaced, oval pits that formed a ring with an external diameter of 11 m (Illus. 3.8). There was no obvious entrance, and the interior was devoid of features. The pits were large, 2.1–2.65 m long by 1.77–2.55 m wide and between 0.41 m and 1.14 m deep and displayed some evidence for successive recutting and backfilling of their deposits. A secondary deposit within one of the pits produced an Early Bronze Age date range of 2130–1890 BC (SUERC-27187). The uppermost fill of another of the pits contained a sherd from a Middle Bronze Age domestic vessel and an antler fragment that returned an Iron Age radiocarbon date of 340–40 BC (Beta–243987). The recut of another pit also contained a sherd from a Middle Bronze Age domestic vessel. Other deposits from these pits yielded flint and chert debitage, rye grains, cattle bone fragments, a horse bone fragment and over 150 unidentified animal bone fragments. All the material recovered from this monument came from secondary contexts that were deposited sometime after its construction. Thus, these are unlikely to date to the original use of this circle. All that can be said for definite about the dating of these pits, is that they appear to have been dug at some stage before 1890 BC.

The closest parallels for the pit circle

Illus. 3.8 Pit circle under excavation, south of the River Lerr (photo: Airshots).

are found in southern and central England where, although still rare, they typically date from the Middle to Late Neolithic and have been found in association with several other contemporary ritual/ceremonial monuments, such as Dorchester-on-Thames in Oxfordshire, or Ferrybridge in Yorkshire (Historic England 2018, 3). They are defined by Darvill (2009) as 'a class of Middle and Late Neolithic monument found in the British Isles comprising an arc or ring of shallow but regular oval scoops. In overall diameter such circles are rarely more than 20 m across'. Some may originally have had low banks or piles of upcast immediately inside the ring of pits, and there may also be upright posts set in the pits or within the circle. In Ireland, this monument type is exceptionally rare, and no exact parallels appear in published reports. Although of a much larger size, the Late Neolithic 'south-eastern' Grooved Ware related pit circle at Newgrange is worth mentioning (Sweetman et al. 1985; Stout & Stout 2008, 85–6), as is the smaller 'western' Beaker (Chalcolithic) related pit and post circle; it was closer in size but differed in comprising a pair of concentric circles. Perhaps of better comparison is a ring of six pits which was excavated at Ennisnag/Danesfort 12, Co. Kilkenny (Jennings 2008; Grogan & Roche 2009), 45 km to the south-west. A Middle to Late Neolithic date of 3261–2923 BC (UBA-15549) was obtained from a hazelnut within one of the pits and it was enclosed by an Early Bronze Age ring-ditch with a central pit which produced sherds from a small vase food vessel. Clearly reuse of such monuments after considerable passages of time was not unusual and at the Lerr Valley site, it may be the case that the pit circle was originally constructed in the Late Neolithic, before being subjected to various episodes of commemorative re-digging. For this to have occurred, the pit circle must have maintained some form of above-ground expression, marked in a way that did not easily degrade, such as the internal bank or piles of earth suggested by Darvill (2009). It is possible that the use of the pit circle coincided (for at least a time) with the timber circles and the four-post structures which would have been visible on the opposite side of the River Lerr during the Late Neolithic.



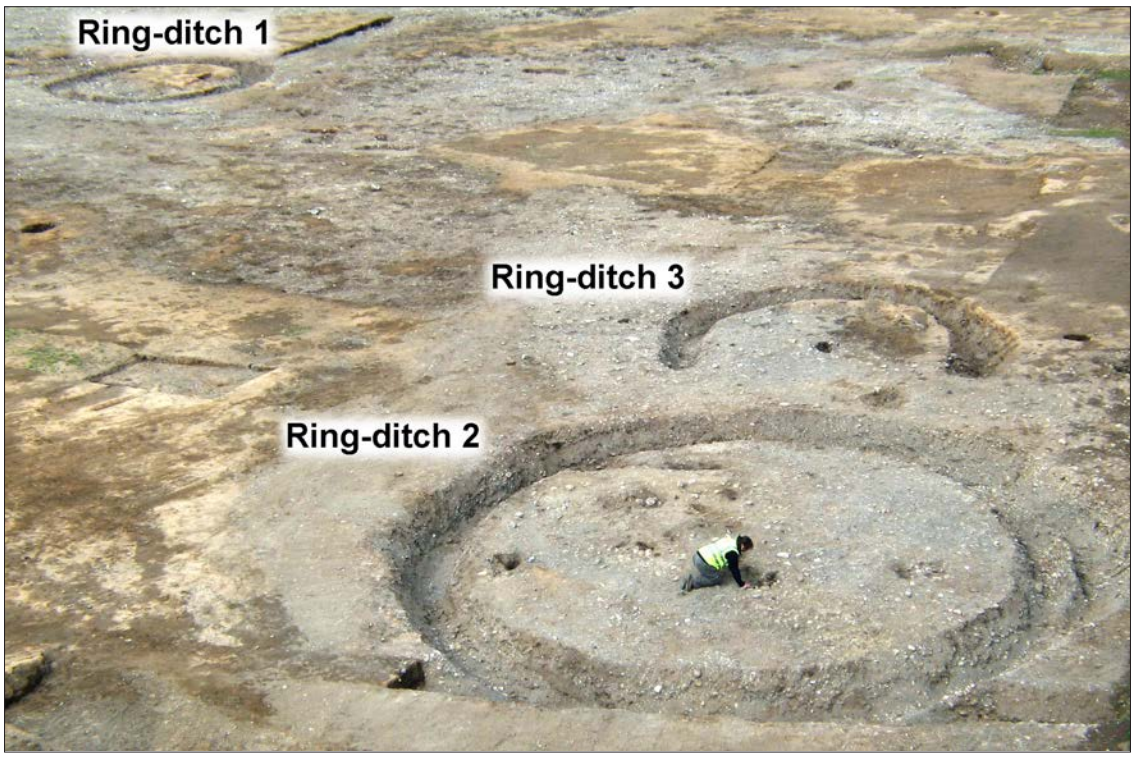
Illus. 3.9 Barbed-and-tanged arrowhead E2966:069:001 (by Hannah Sims).

There appears to have been continued or episodic activity on the southern side of the River Lerr, during the Early Bronze Age at the pit circle; however, there appears to have been a hiatus in activity to the north of the river. A barbed-and-tanged arrowhead of Chalcolithic or Early Bronze Age date was retrieved from a ring-ditch (Illus. 3.9), but this was a residual find from a much later monument and may have simply been a casual loss.

Middle to Late Bronze Age funerary activity

There were 13 pits containing cremation deposits north of the river and two south of the river (Table 3.1). All of those dated, the two south of the river and six to its north, returned radiocarbon dates which fell within or extended to within the Middle and Late Bronze Age. Those north of the river were concentrated around three ring-ditches (Ring-ditch 1–3; Illus. 3.3, 3.10), while those south of the river were placed just north of the pit circle, which also appears to have been recut during this period (Illus. 3.5). The other two ring-ditches found on the site (Ring-ditch 4 and 5) seem not to have been built until the Iron Age (see below).

To the south of the river there were two small shallow pits containing cremation deposits, located 3.2 m apart, between the pit circle and a ring-ditch (Illus. 3.5). The amounts of cremated bone were clearly tokenistic; only 229.30 g were retrievable from one pit and 73.30 g from the other. The larger deposit included bone from an adult, over 21 years old, that was radiocarbon dated to the Middle Bronze Age (1448–1319 BC; UBA-9402). The smaller deposit returned a Middle to Late Bronze Age radiocarbon date of 1320–990 BC (SUERC-25395). No obvious grave goods were found within them; however, charred hazelnuts, seeds, and unidentifiable animal bone retrieved from their fills, may be remains of intentional deposits. The charred seeds included fat head and ivy-leaved speedwell, which today are usually considered weeds but are both edible and could be the remains of foodstuffs. The respective radiocarbon date ranges returned



Illus. 3.10 Ring-ditches 1, 2 and 3, north of the River Lerr at Woodlands West 2 (photo: Airshots).

for the two cremations means that they could have been contemporary or separated by several centuries. No evidence of grave markers survived but we might imagine that their locations were marked in some way. The pit circle to the south of them (see above) appears to have been in use before and after these burials, so it is almost certain to have been a landscape feature and the Middle Bronze Age house, c. 45 m to the SSW, may

Table 3.1 — Woodlands West 2 and Prumpelstown Lower 5: human remains from the Lerr Valley site

South of River Lerr: Prumpelstown Lower 5			
Period	**Location**	**Radiocarbon dates**	**Notes**
MBA	One of two cremation pits 3.2 m apart	Cremated bone: 1448–1319 BC (UBA-9402)	229.3 g of cremated bone (adult >21)
M–LBA	One of two cremation pits 3.2 m apart	Cremated bone: 1320–990 BC (SUERC-25395)	73.3 g of cremated bone. Also contained charcoal, charred hazelnut, a fat hen seed and unidentified animal bone
LIA–EM	In the peat next to a trackway	Cremated bone: AD 340–580 (SUERC-25396)	55.4 g of cremated bone
LIA–EM	In a charcoal-rich deposit on the dryland	Cremated bone: AD 410–560 (SUERC-27168)	Not positively identified as human
LIA–EM	Skeleton 1: southernmost of two inhumations north of Rd5	Human bone: AD 430–620 (SUERC-25246)	Adult male, 45–50. Two cholesterol gallstones and five natural chunks of quartz (alongside the right arm and leg)
LIA–EM	Skeleton 2: southernmost of two supine inhumations inside Rd5	Human bone: AD 414–575 (UBA-9401) Burnt bone (species unidentifiable): 20 BC–AD 130 (SUERC-27169)	Adult female, 35–45, in a stone-lined grave. Two cholesterol gallstones, a flint flake, eight natural chunks of quartz, charred hazelnut shells, unidentified cereal grains, and unidentifiable burnt bone (2.3 g)
LIA	Skeleton 3: northernmost of two inhumations north of Rd5	Dating from AD 250–430 (SUERC-25247)	Adult, over 21, in a stone-lined grave 6 m north of the ring-ditch
LIA–EM	Skeleton 4: northernmost of two inhumations inside Rd5	Human bone: AD 262–536 (UBA-9403)	Adult male, 35–45, in an earth-cut grave. Also contained oyster shell and unidentified animal bone

Pits containing cremation deposits north of River Lerr: Woodlands West 2			
Period	**Location**	**Radiocarbon dates**	**Notes**
MBA	Cremation in centre of Rd1	Cremated bone: 1448–1319 BC (UBA-9402)	653.3 g of cremated bone, adult individual
—	Cremation in northern section of Rd1	—	1226.2 g of cremated bone, adult individual, three lithics and partial stone lining
E–MBA	Lone cremation pit south of annular Rd2	Cremated bone: 1610–1310 BC (SUERC-25387)	280.7 g of cremated bone containing elements of an adult
M–LBA	Lone cremation deposit inside annular Rd2	Cremated bone: 1420–1120 BC (SUERC-25394)	15.5 g of cremated bone; no sex or age determinable
M–LBA or IA	Central of three cremation pits inside Rd3	Pomoideae charcoal: 1200–990 BC (SUERC-27182)	0.6 g of unidentified burnt bone; no species, age or sex determinable, contained bronze rings and glass beads more typical of IA date
LBA	Southernmost of two cremation pits south-east of Rd3	Cremated bone: 980–790 BC (SUERC-25388)	83.3 g of cremated bone; no sex or age determinable
—	South-western of three cremation pits within Rd3	—	859.5 g of cremated bone (adult elements). Contained charcoal, charred hazelnut and onion couch grass tubers
—	North-eastern of three cremation pits within Rd3	—	39.7 g of unidentified burnt bone. Contained charcoal, hawthorn fruit stones/buds and a grain of charred hulled barley
—	Northernmost of two cremation pits south-east of Rd3	—	141.2 g of cremated bone—two fills, also hawthorn buds and charcoal
—	Lone cremation pit north-west of Rd3	—	10.6 g of unidentified burnt bone; two lithic flakes and possible slag
LBA– EIA	Westernmost of three cremation pits in line north of centre of excavation area	Cremated bone: 920–660 BC (SUERC-25390)	56.6 g of cremated bone, including adult bone. Contained a black glass bead
—	Central of three cremation pits north of centre of excavation area	—	80.1 g of burnt cremated bone, including adult bone
—	Easternmost of three cremation pits north of centre of excavation area	—	0.1 g of unidentified burnt bone
KEY: EBA = Early Bronze Age; MBA = Middle Bronze Age; LBA = Late Bronze Age; EIA = Early Iron Age; IA = Iron Age; LIA = Late Iron Age; EM = early medieval; Rd = Ring-ditch			

also have been broadly contemporary (see below). A ring-ditch located just north of these cremations does not seem to have been built until later, during the Iron Age (see Ring-ditch 5 below).

On the north side of the river the earliest dates associated with human remains came from three shallow pits containing cremation deposits. Two of these were placed in the interior of annular ring-ditches (Ring-ditch 1 and 2), suggesting they may be foundation burials associated with the construction of the ring-ditches (Illus. 3.10). The third was located to the south-west of one of those ring-ditches (Ring-ditch 2).

Ring-ditch 1

Ring-ditch 1 was annular in plan. It was c. 9 m (externally) and was defined by a ditch between 1 m and 1.54 m wide and up to 0.48 m deep. There was no evidence for an external bank or internal mound, but the upcast from the excavation of the ditch is likely to have contributed to one or the other. There was no datable material in its initial fills, which appear to have been a result of natural silting and collapse, rather than deliberate deposition; however, there were two cremations deposited within pits on its interior, one near its centre and the other near its northern internal edge. The central one, which is likely to have been a foundation burial, returned a Middle Bronze Age radiocarbon date (1448–1319 BC; UBA-9402). Both cremation deposits were tokenistic, and each contained elements of a least one adult, but no more details of age, sex or pathologies could be discerned. Two stones in the northern cremation pit, a large flat one on its base and a smaller one against its northern side, may have been the disturbed remnants of a stone lining. Three flakes, two flint and one chert, were found amongst its fill; all three were very weathered and unburnt, so may have been residual rather than intentionally placed grave goods. The ring-ditch appears to have filled up with a natural accumulation of silt and collapsed sides and then been recut at a much later date. It seems likely that, like the recut of the other annular ring-ditch in this area (Ring-ditch 2), this was during the Iron Age (see below).

Ring-ditch 2

Ring-ditch 2 was annular in plan, approximately 11.5 m in diameter (externally) and defined by a ditch that was 1.2–1.7 m wide and 0.54–0.78 m deep with a profile that was V-shaped but with a rounded base. A later addendum-like horseshoe-shaped ring-ditch (Ring-ditch 3) was set 2.5 m back, to its north-west, in a manner that suggested an external bank surrounded Ring-ditch 2, and that Ring-ditch 3 was later (Illus. 3.3, 3.10). Similar to Ring-ditch 1, no dateable material was retrieved from its initial fills, which appear to have silted up or accumulated from collapsing sides over time. A Middle Bronze Age cremation (1420–1120 BC; SUERC-25394) found within its interior may be a foundation burial. The cremation deposit was, like many of the others, tokenistic (15.50 g bone) and no sex or age of the deceased was determinable. The recut in Ring-ditch 1 contained material dated to the Iron Age and is discussed with the other activity of that date below. Another cremation deposit found to the south-west of Ring-ditch 1 returned an Early to Middle Bronze Age radiocarbon date (1610–1310 BC; SUERC-25387) and again comprised only a tokenistic amount (280.70 g) and included the bones of an adult.

Ring-ditch 3

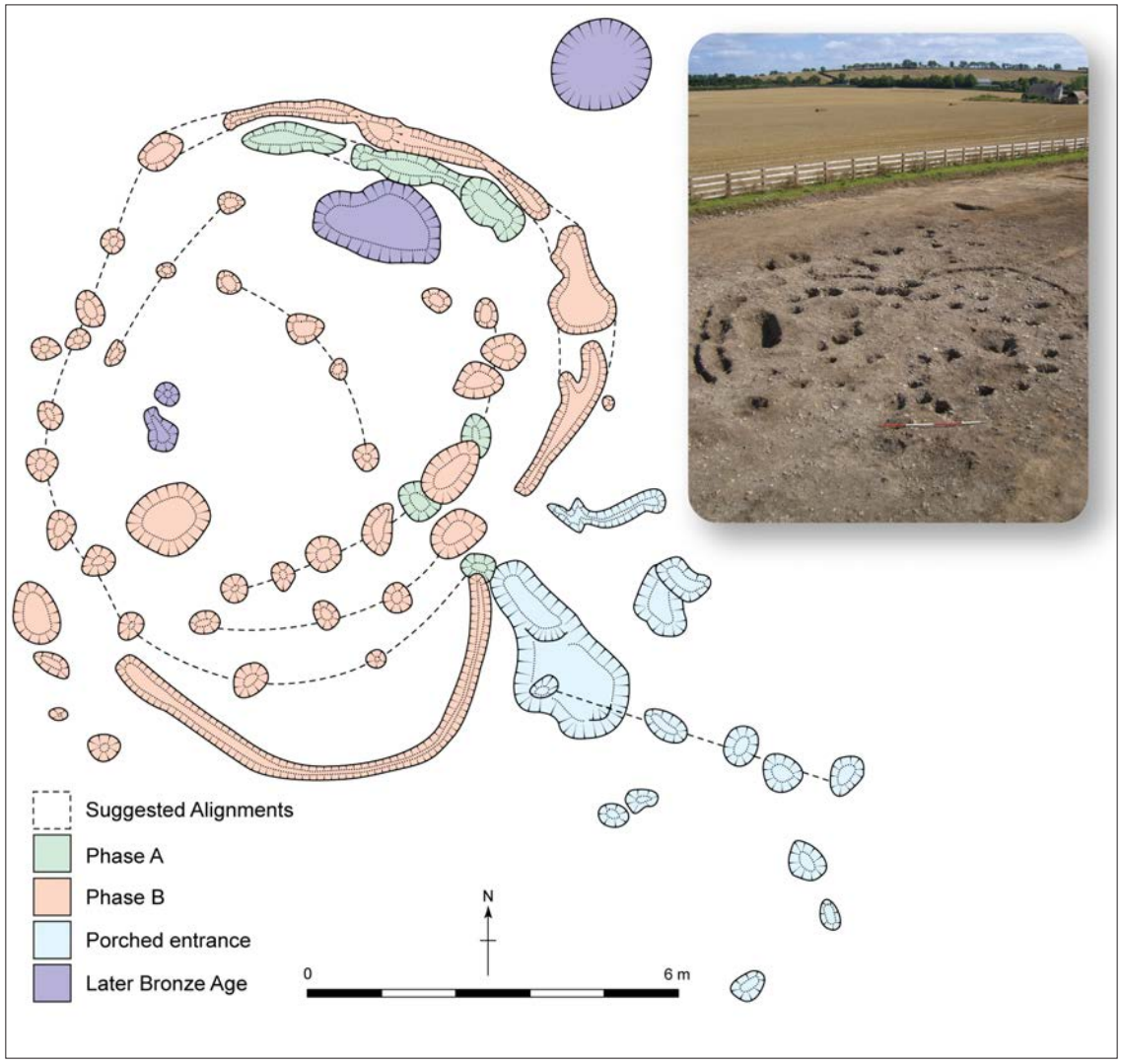
Ring-ditch 3 was a horseshoe-shaped addendum-like ring-ditch, seemingly tacked onto the side of Ring-ditch 2. It had an external diameter of c. 7.4 m and was defined by a ditch 0.76–1.36 m wide, 0.25–0.38 m deep, with a V-shaped profile. There was no direct evidence for a bank or internal mound but the upcast from its excavation probably formed one and it seems most likely that, like Ring-ditch 2, it would have had an external bank. There were three pits containing cremation deposits in its interior and three to its exterior, two to the south-east and one to the north-west. The central one of the cremation deposits in the interior returned a Middle to Late Bronze Age date (1200–990 BC; SUERC-27182) and the southern of the two cremations to its south-west returned a Late Bronze Age date (980–790 BC; SUERC-25388); however, the central one also contained bronze rings and glass beads more typical of a later, Iron Age, date (Illus. 3.13; see further discussion below). Regardless of the uncertainties this creates, the Bronze Age dates demonstrate Late Bronze Age activity here and suggest that this addendum-like ring-ditch may have been added at that time.

An east–west line of three cremation burials was located towards the north extent of the site, just north of the site of the Neolithic timber circle, Structure 1 (Illus. 3.3). One of the pits contained the cremated remains of an adult as well as a small black glass bead. The radiocarbon date from the bone returned a Late Bronze Age to Early Iron Age date (920–660 BC; SUERC-25390). Glass beads of such an early date in Ireland are unusual but not unknown (e.g. O'Driscoll & Becker 2022) and black glass beads of this date are known from central and Mediterranean Europe (Conte et al. 2018).

In all, there were 13 probable cremation pits north of the river and two south of the river. The cremated bone in them ranged from 0.06–859 g in weight. The poor preservation of bone made it impossible to identify the remains to species; however, in all cases where it could be identified it was human. The small quantities of poorly preserved bone revealed little about the age and sex of the people buried there, but in all cases where it was determinable it was from adults. Other than the secondary recutting of the ring-ditches and the finds of Iron Age date from the centre of Ring-ditch 3, the majority appear to have been of Middle to Late Bronze Age date, although one of the radiocarbon date ranges returned starts late in the Early Bronze Age. The small amounts of bone in some cremations and larger amounts in others may be indicative of date. Although the practice of depositing token amounts of bone did occasionally occur during the Early Bronze Age, it was more common to deposit more complete cremations (Cooney 2023, 209). During the Middle and especially the Late Bronze Age, depositing token amounts of cremated bone became more common, and it also became typical to deposit cremated bone outside of typical burial contexts, in lakes, rivers, settlement sites, burnt mounds and a variety of other places (ibid., 233–41).

Middle to Late Bronze Age settlement on the gravel ridge south of the river

Sometime in the Middle to Late Bronze Age, people built a timber roundhouse on the south terrace of the river, a short distance, c. 40 m SSE, from the pit circle (Illus. 3.5, 3.11). Two phases of construction were identified. An earlier phase (Phase A) comprised a



Illus. 3.11 Plan of the Middle Bronze Age house and photo of the house, looking south-east (Airshots).

group of post-holes and a slot trench which are believed to have formed the east and north sides of a circular structure, likely around 6 m in diameter. Charred material found within the slot trench of this earlier phase returned a Middle to Late Bronze Age radiocarbon date (1360–1050 BC; Beta-243986). The second, and principal, phase of construction (Phase B) comprised a sub-circular arrangement of interrupted slot trenches (10 m in diameter). A combination of gullies and post-holes formed a south-eastern porched entrance, and there was also an internal ring (8 m in diameter) of post-holes which probably provided support for the roof. The house and its structural features produced two chert core fragments and two flakes of chert debitage, 13 fragments of unburnt animal bone (species unidentifiable), a small amount of charred cereal grains (species unidentifiable) and seeds from wild plants. Two sub-circular pits

were also found, one inside and the other immediately outside the house. The internal pit contained several fragments of unburnt human bone, one of which returned a Late Bronze Age radiocarbon date (920–800 BC; SUERC-27170), as well as some burnt animal bone and cereal grains, a large broken granite saddle quern, two fragments of granite grinding equipment, a grinding stone and a possible whetstone. The deposition of fragments of human bone and fragmented quernstones in Bronze Age roundhouses conforms to a previously recognised pattern (Cleary 2018) and suggests that this was part of a deliberate structured deposition. The external pit contained charred plant remains as well as fragments of cattle bone and unidentified bone and a flint core. Hazel charcoal from this pit produced a radiocarbon date of 1000–830 BC (SUERC-27189). These two pits appear to post-date the use-life of the house and may represent closing or commemorative deposits placed after it was dismantled. While the deposition of human bone in the house contrasts with the rites practised at the purpose-built funerary monuments, it also underlines how domestic and ritual life appears to have been entangled during the Bronze Age.

The discovery of a single house on well-drained soils near a river is also entirely characteristic of the period. The ground plan of the Prumpelstown Bronze Age house, with its internal posts, outer slot and south-easternly projecting porch is like other previously discovered Middle and Late Bronze Age structures. The external slot trench—which was most pronounced at the entrance and appeared to be shaped to create a slight funnel in towards the house—is a particular feature of a number of Middle Bronze Age houses discovered in the south of the country, for example, Structure 1 at Mitchelstown 1, Co. Cork (Tierney & Johnston 2009a, 107) and Structure A at Cloghabreedy, Site 125.4, Co. Tipperary (McQuade & Moriarty 2009b, 115).

While the structural features represent two phases of construction, they are all related to the lifetime of a single building that had been repaired and modified over time. Other features identified, however, are more likely to have been created after the house went out of use.

Late Bronze Age depositions in the peat south of the river

Along the south bank of the River Lerr in Prumpelstown Lower 5, evidence for activity broadly contemporary with the Late Bronze Age pits was uncovered in the floodplain. Beneath various alluvial deposits was a series of peaty deposits the uppermost of which contained a Late Bronze Age wooden adze haft dating from 1050–890 BC (SUERC-29035) (Illus. 3.12). This was manufactured from the junction of a side branch of hazel, with the main stem whittled to fit into a presumably metal, socketed tool head. Although finely worked, there is little sign that the object was ever used as the bark was still present on the handle and the handle itself seemed too weak to have been functional. Most other known axe or adze handles are of ash or oak—e.g. Flag Fen, near Peterborough, Cambridgeshire, England, (Taylor 1992, 476–98)—which were both valued for their strength and workability. The deposition of the well-made but unused object in the wetland area may be significant. It may be seen as part of the wider practice of deposition of significant objects in wetland contexts during the Bronze Age (Cooney & Grogan 1999, 146–7; Grogan et al. 2007, 95).

The peat deposits were truncated by a

Illus. 3.12 Late Bronze Age hazel adze haft.

small sub-circular wicker-lined trough made from alder roundwood and stakes (Illus. 3.5). This was filled with, and overlain by, a deposit containing heat-affected stones, alder charcoal and uncharred wild taxa. The alder charcoal produced a date range of 905–800 BC (SUERC-27186). To the north of this, several burnt mound deposits were identified within and overlying various natural water channels. Charcoal from one of these, which was sealing several earlier layers, produced a Middle to Late Bronze Age radiocarbon date of 1260–1010 BC (SUERC-27617). All these features and deposits seem to represent the remains of ongoing episodic and probably seasonal activity involving the use of hot-stone technology to boil water for various purposes in this area even though it was prone to regular flooding. This is typical of burnt mounds as these are generally located in boggy or marshy places at the interface between dry and wet and at the boundary between the cultural and the natural landscape (Hawkes 2018, 203–7).

The Iron Age funerary and other activity

There was a significant amount of Iron Age funerary and/or ceremonial activity on both sides of the gravel ridges (Illus. 3.3, 3.5). The two annular Bronze Age ring-ditches (1 and 2) on the north side of the river were recut long after fill had accumulated in their ditches, and the addendum-like Ring-ditch 3 also appeared to have been recut. In two cases (Ring-ditch 2 and 3), this was evidently done during the Iron Age, and it seems likely that this was done during the same general period in Ring-ditch 1. A fourth ring-ditch was also built on the north side of the river and a fifth was constructed to the south.

Only scraps of burnt bone were retrieved from the ring-ditches to the north of the river and funerary rituals may only have been one aspect of what occurred in the ring-ditches there. There was more substantial evidence for burial in the ring-ditch south of the river, including inhumations from very late in the Iron Age and perhaps into the early medieval period.

North of the river, the annular Ring-ditch 2 and its addendum-like horseshoe extension (Ring-ditch 3) both appear to have been recut in the Iron Age and a cremation deposit was buried in the centre of the addendum-like extension accompanied by fine grave goods.

Ring-ditch 2

The recut in Ring-ditch 2 was V-shaped in profile, 1.12–1.63 m wide and 0.47–0.74 m deep. To the north it ran in the centre of the original ditch, but on the south-east side ran outside the original line of the ring-ditch and only clipped its outer edge. It was truncated by a later ditch on its south-western side, but the recut did seem to be petering out there, suggesting that it was penannular in plan with an entrance to the south-west. It contained between two and six fills, the uppermost of which produced alder charcoal that was radiocarbon dated to the Late Iron Age AD 0–130 (SUERC-27171). Burnt and unburnt bone (some of which was identifiable as cattle and none of which was identifiable as human), some fired clay, and slag were retrieved from its fills. The slag from the ring-ditch was not diagnostic; however, two hearths and a smelting furnace of Iron Age date were found c. 100 m to the north-west (Illus. 3.3) and this along with slag found in other features on the site may be evidence of its ritual deposition.

Ring-ditch 3

The uppermost fill in Ring-ditch 3 contained a charcoal-rich deposit with 13.2 g of unidentifiable burnt bone which returned a Middle to Late Iron Age date (2 BC–AD 82; UBA-9449). The truncated nature of the ring-ditch and the scant remnants of this deposit meant that it was unclear if this was the fill of a shallow recut or a fill simply placed into the topographical trace of the ditch; however, it clearly relates to a very late phase of the monument's use, one likely contemporary with a deposition of cremated remains at the centre of the ring-ditch. The deposition at the centre was contained in a simple pit and, while charcoal from it returned a Late Bronze Age date, the accompanying artefacts—three bronze rings and two glass beads—were typical of the Iron Age (Illus. 3.13; see further discussion below). One of the bronze rings is plain, while the other two are penannular pseudo-twisted rings. The rings and beads are similar to examples found at Knowth, Co. Meath, where beads and rings were found with an Iron Age child burial (Burial 25, Eogan 2011, 39–40; Cleary 2024, 74–5). Similar rings were also found with one of the so-called Gamblers (Burial 9) at Knowth, which was dated to 40 BC–AD 130 (Eogan 2011, 358). The Iron Age burial at the centre of Ring-ditch 3 may have incorporated some earlier charcoal or may even have been intentionally placed with and intermingled with an already ancient burial.

Ring-ditch 1

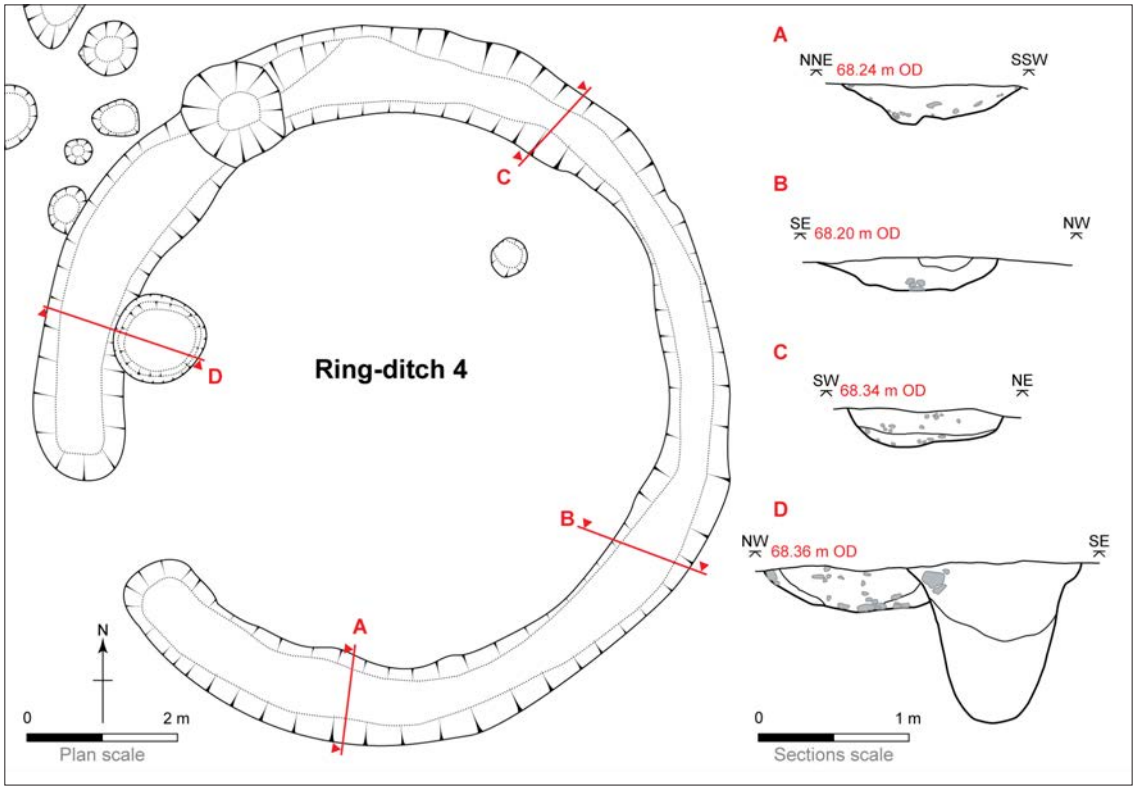
The recutting of Ring-ditch 1 also happened long after its initial period of use, after fill had accumulated in its ditch through a combination of silting and collapse. The recut

Illus. 3.13 Bronze rings and blue glass beads recovered from a cremation.

was 0.45–0.6 m wide, between 0.11 and 0.41 m deep and had steep sides that broke gradually to a concave base. A causeway c. 0.85 m wide appears to have been left on its north-west side and later it was backfilled with stones. There were no diagnostic artefacts or secure dateable remains within the fills of the recut, but it seems likely that this was done in the same general period as at Ring-ditches 2 and 3 and the construction of the nearby penannular Ring-ditch 4.

Ring-ditch 4

Ring-ditch 4 was located north of the river on the summit of the gravel ridge (Illus. 3.14). It was penannular in plan, had an external diameter of c. 9.5 m and a 1.9 m-wide south-western entrance. There was no evidence for an external bank or internal mound, but the upcast created from its excavation is likely to have contributed to one. It was defined by a ditch that was 0.6–1.45 m wide and 0.2–0.37 m deep, with moderately sloping sides that broke gradually to a concave base. A large sub-oval post-hole containing cattle and pig bone was cut into the base of the ring-ditch at the NNW of its circuit and a blue glass bead fragment and a flint flake were deposited in its base. This feature was sealed beneath the deposits filling the ring-ditch, suggesting that the post had been placed there soon after the ring-ditch was constructed. The blue glass bead fragment is of a similar type to the Iron Age examples found in the centre of Ring-ditch 3, suggesting a Middle to Late Iron Age date for the post-hole. The basal fills of the ring-ditch contained lithics, animal bone, and charred cereal grains and hazelnuts, and one of the nutshells returned a Middle Iron Age date (364–1 BC; UBA-9400). The upper

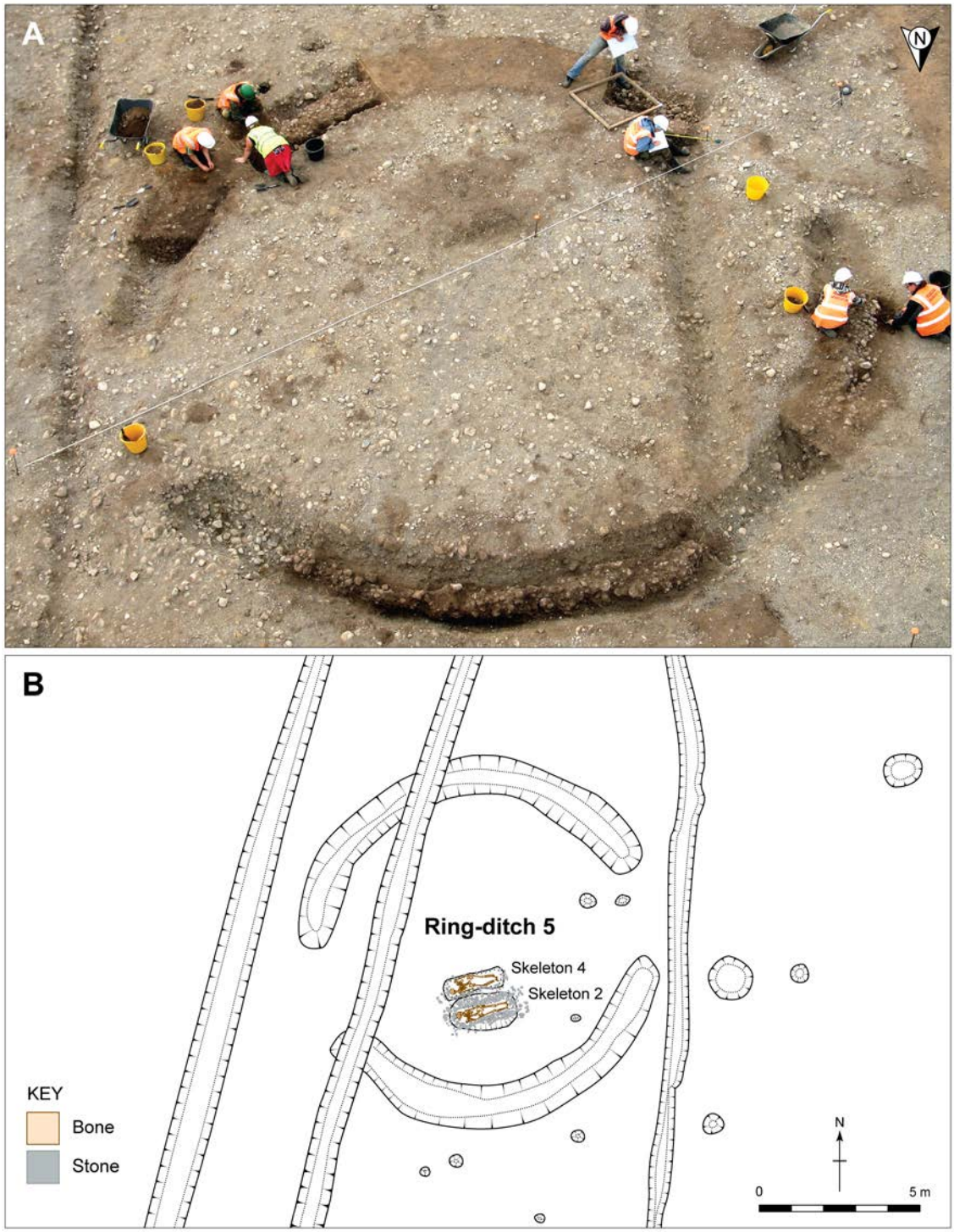


Illus. 3.14 Ring-ditch 4, north of the River Lerr at Woodlands West 2.

deposits contained a significant amount of animal bone deriving from cattle, horse, red deer and pig, and some residual lithics. Most of the animal bone was concentrated on the east and south-east side of the ring-ditch, including five cattle mandibles that appeared to have been carefully and deliberately placed. Interestingly, the cattle were all elderly and past their optimum age for consumption. A fragment of a possible tiny white bead with impressed dots was also retrieved from one of the upper fills. A second large post-hole was found cutting the inner edge of the ring-ditch, c. 2 m south of the other post-hole. This post-hole must have post-dated the fills that survived in the truncated ring-ditch, but the ring-ditch was still likely a topographic feature when it was placed there. No burials were found in direct association with Ring-ditch 4; however, the monument had clearly been truncated by ploughing and it seems likely that any associated burials would have been obliterated. The two large post-holes appear to have supported upright posts at different times during the use of the monument and might have been intended as grave markers.

Ring-ditch 5

Ring-ditch 5 was located on the gravel ridge to the south of the river. It was 11 m in diameter with two opposing causewayed entrances, one at the east and the other at the west (Illus. 3.5, 3.15). The ditch displayed evidence for having been deliberately backfilled and redug several times. One of the deliberate deposits present

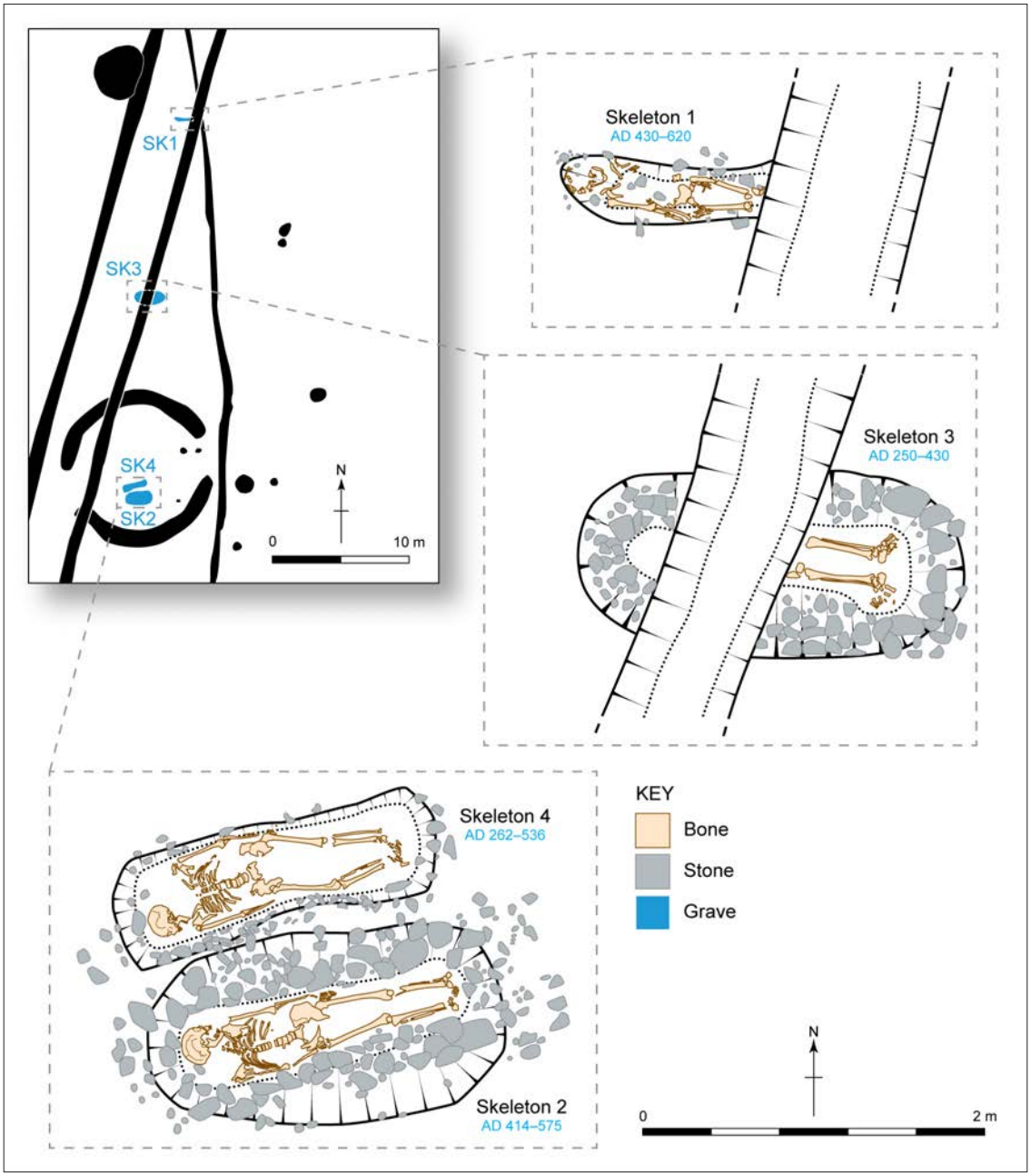


Illus. 3.15 (A) Photo of Ring-ditch 5, south of the river, looking south (photo: Airshots); (B) Plan of Ring-ditch 5.

in both ditch segments consisted almost exclusively of well-sorted large stones and contained charred hazelnut shells, an unidentified cereal grain, a small amount of animal bone (species unidentifiable) as well as lithics including seven flakes of flint debitage, a flint core fragment and a flint blank. Alder charcoal from this deposit produced a radiocarbon date of AD 170–390 (SUERC-27188). Stratigraphically later deposits also contained lithics including flint debitage, a core, five convex scrapers, as well as animal bone fragments and charred plant remains. Fruitwood charcoal from this deposit produced a radiocarbon date of AD 60–230 (SUERC-27191). The uppermost deposit contained flint debitage, a flint scraper, charred hazelnut shells, cereal grains (species unidentifiable), a cattle bone fragment and other fragments of unidentified animal bone as well as burnt human bone. Analysis of the burnt bone could not reveal the age or number of individuals represented.

During the very Late Iron Age or very early medieval period, two unburnt bodies (Sk2 and Sk4) were buried within the interior of the ring-ditch, just south of centre (Illus. 3.16) and another two (Sk1 and Sk3) were buried to its north c. 6 m and 18 m away respectively (Illus. 3.5). All four were supine west–east burials in earth-cut sub-rectangular graves.

The southernmost of the graves inside Ring-ditch 5 was stone lined and contained an adult female (Sk2), who was between 35 and 45 years old at the time of her death. While buried supine, her head had been turned to face the neighbouring burial to the north. Pathology on her bone suggests she had suffered from degenerative joint disease and had poor dental hygiene, with abscesses and the loss of several of her teeth. She had also suffered childhood malnutrition, possibly from iron-deficiency in her diet. Two cholesterol gallstones, a flake of flint debitage, eight natural chunks of quartz, charred hazelnut shell fragments, three unidentified cereal grains, and some burnt bone (2.3 g, species unidentifiable) were also found within her grave cut. The burnt bone returned an earlier Iron Age date (20 BC–AD 130; SUERC-27169) broadly contemporary with the radiocarbon dates obtained from the fills of the ring-ditch, suggesting that her grave may have disturbed an earlier cremation burial. Alternatively, older material may have been deliberately deposited into her grave as some kind of offering. The northernmost of the graves inside the ring-ditch was unlined and contained a 35–45-year-old male (Sk4) buried supine but with his head turned south to face the neighbouring female burial. He was about five feet and four inches tall and like the female he had suffered from degenerative joint disease and poor dental hygiene. Fragments of oyster shell and unidentifiable animal bone were retrieved from the fill of his burial. The man and woman buried in Ring-ditch 5 may well have been contemporary and related through blood or marriage. They were buried beside one another and the way their heads were turned to face one another appeared a deliberate act. A sample of her bone was radiocarbon dated to AD 414–575 (UBA-9401) and a sample of his to AD 262–536 (UBA-9403), with the overlap suggesting they died and were buried during the fifth or early sixth centuries AD. The closest of the other inhumations (Sk3) was buried in a stone-lined grave 6 m north of Ring-ditch 5. This person was over 21 years old at the time of their death, but the bone was too poorly preserved to identify their sex; a sample of the bone



Illus. 3.16 Lerr Valley site inhumations.

returned a Late Iron Age radiocarbon date (AD 250–430; SUERC-25247). Fragments of animal bone were retrieved from the grave fill but were all too small or degraded to be identifiable. The fourth inhumation (Sk1) was of a 45–50-year-old male who was buried in an unlined grave; a sample of his bone returned a Late Iron Age to early medieval date (AD 430–620; SUERC–25246). He had poor dental hygiene and had lost three

teeth during his life, had degenerative joint disease in his upper back/neck vertebrae and had problems with his knees. In addition, two cholesterol gallstones were found in his grave. Five natural chunks of quartz were found, seemingly placed, alongside the right arm and leg. The radiocarbon dates returned for these four extended inhumations suggest that they could all be roughly contemporary in the early fifth century AD or could have been buried over a period of three and a half centuries, between the mid-third and early seventh centuries (AD 250–620).

Trackways

Several patchy trackways were identified in the peat south of the river. A deposit of cremated human bone was found in a layer immediately over a trackway (Illus. 3.5) and returned a radiocarbon date of AD 340–580 (SUERC-25396). Analysis could not reveal the age or number of individuals represented. Several charcoal-rich deposits were also found on the dryland on the margins of the peat. At least one of these contained burnt bone, and while the bone could not be positively identified as human, these deposits may be the remains of cremation pyres. A fragment of the burnt bone was dated to AD 410–560 (SUERC-27168), a date with considerable overlap with that of the human bone deposited in the peat. The rite of cremation is now accepted to have continued well beyond the arrival of Christianity in Ireland, as late as the seventh century and perhaps later (O'Brien 2020, 30–3). It also overlaps in date with the inhumations in and near the ring-ditch on the gravel ridge to the south, and the importance of this potential contemporaneity of inhumation and cremation on the one site is acknowledged by O'Brien (ibid., 50). The only other example she lists is at Annaghilla, Co. Tyrone, where at an Iron Age penannular ring-ditch enclosed by a later early medieval enclosure, cremated bone continued to be deposited in post-holes and pits alongside inhumation burials between the fifth/sixth and seventh/ninth centuries (ibid., 51). One of the other key transitional sites excavated, but with crouched inhumation and extended inhumation, was at Mullamast alongside the River Greese (ibid., 51).

Excavation of a section of one the trackways that ran parallel to the river revealed a yew spear with a length of 1.9 m formed of roundwood (Illus. 3.17) that returned a Late Iron Age radiocarbon date (AD 130–340; SUERC-29039). Branches had

Illus. 3.17 Late Iron Age yew spear (2 m scale).

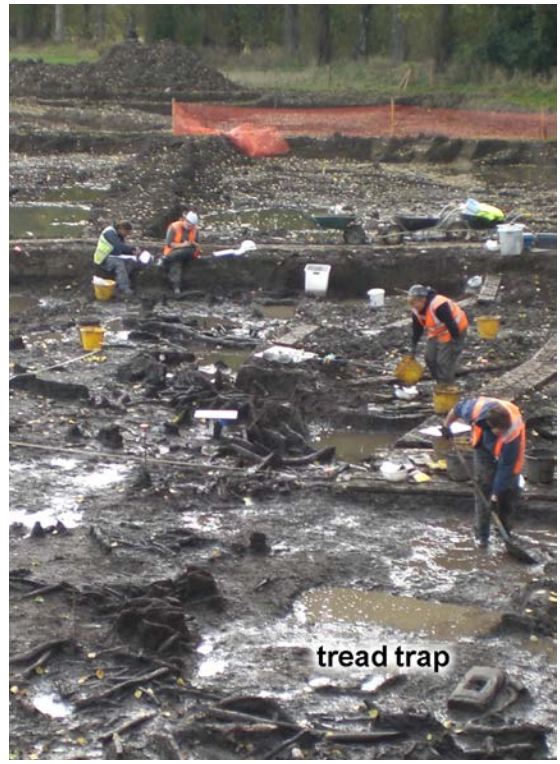
been trimmed along its length and the point was very finely worked. Two very similar pointed yew objects from Edercloon, Co. Longford, have been interpreted as spear shafts (Moore 2008 and pers. comm.); however, the fine point on the Lerr Valley object suggests that it may have functioned without a spearhead.

Ironworking features

An iron-smelting furnace base and two iron-smithing hearths were found north of the river, in the north-easternmost part of the site (Illus. 3.3). One of the hearths produced a radiocarbon date of 390–200 BC (SUERC-27177) and the other a date of 370–110 BC (SUERC-27620). The dates were both obtained from oak and could therefore be the subject of old wood effect and the events they date could be up to 150 years younger. The furnace was 0.6 m by 0.5 m in plan and 0.25 m deep, filled with charcoal and slag-rich deposits and had highly oxidised edges. No tap slag was identified within the assemblage, so the furnace is likely to have been of the non-tapping variety. It was probably a shaft or slag pit furnace either of which would have had a substantial clay superstructure above ground. The ore was likely collected in a nearby bog and bloom (raw iron) would have been produced in the smelting furnace.

Ditches

A series of ditches, pre-dating those of early medieval date, traversed and divided the area of the gravel ridge to the south of the river (Illus. 3.5). These appeared to respect the locations of the Iron Age Ring-ditch 5 and earlier pit circle, and while they could be earlier it seems most likely that they were



Illus. 3.18 Working shot of the peat in the river floodplain, with wooden trackway and tread trap, facing south-west.

Iron Age in date. This would suggest a highly organised landscape with linear divisions defining fields during this period.

Medieval activity

Early medieval activity was also identified within the peat in the floodplain. A whetstone fragment as well as bones from cattle, horse, sheep/goat, pig, red deer and dog were recovered from a deposit which also contained numerous closely spaced but discrete concentrations of worked and unworked wood. These various concentrations seem to form different parts of wooden trackways, including one well-defined alignment and at least two

Illus. 3.19 Early medieval tread trap.

other possible examples (Illus. 3.3, 3.18). The most substantial trackway had an average width of 1.5 m and traversed SW–NE across the northernmost part of the floodplain for 50 m, beyond the northern limits of excavation. It ran parallel to the river and seemed to begin at or lead to a raised sandy deposit to the south-west. Three stakes from different sections along the trackway each returned broadly contemporary early medieval radiocarbon dates of AD 660–810 (SUERC-29031), AD 660–780 (SUERC-29032) and AD 640–770 (SUERC-29033). At the edge of this trackway, a remarkable composite wooden tread trap was found (Illus. 3.19). This is discussed in more detail in Chapter 4. An isolated early medieval pit of uncertain function was also found on the site.

The latest archaeological feature on the southern side of the river was a curvilinear ditch of uncertain function which extended from the edge of the floodplain across the gravel ridge and beyond the limit of the excavation (Illus. 3.5). A plain copper-alloy polyhedral-headed ringed pin dating from the mid-10th to 11th centuries (Illus. 3.20) (Fanning 1994, 3) and undiagnostic medieval pottery were recovered from the upper fill of this feature suggesting that it was of medieval date, though no other medieval features were identified inside the area enclosed by this ditch.

Post-medieval activity

The site both north and south of the river was traversed by several field boundaries

Illus. 3.20 Copper-alloy polyhedral-headed ringed pin (E2967:708:001) from a late medieval curvilinear ditch.

and other agricultural linear features (Illus. 3.3, 3.5). A post-medieval lime kiln was also excavated in the floodplain.

Conclusion

The archaeological excavations at the Lerr Valley site revealed evidence for human activity spanning eight and a half millennia, from the Early Mesolithic to the post-medieval period. While some periods were represented by more substantial remains than others, the following discussion draws together the key findings and their significance within the broader context of Irish prehistory and early history.

The transient nature of hunter-gatherer activity means that Mesolithic sites often comprise only scant remains such as a single find or radiocarbon-dated feature, and its discovery, as was the case at the Lerr Valley site, often only happens during the careful excavation of more easily located later material. Nevertheless, this and the scant Mesolithic remains found elsewhere on this project, have revealed a much more extensive presence in the Barrow catchment than was previously discernible and indicate some patterns showing where that was concentrated. Like previous projects and surveys within the wider River Barrow catchment (Zvelebil et al. 1996; Eogan & Hession 2024, 75–7; Green & Zvelebil 1990), it suggests activity was focused on, but not restricted to, the river and its tributaries. These areas would likely have been resource-rich locations and have been the main routes through what would have been a heavily

forested landscape. The remains found on the Lerr Valley site included a remarkable Late Mesolithic 'cache pit' containing three lithics. Previously found 'cache pits' typically contained three or multiples of three objects, often set vertically (Finlay 2003; Woodman 2015, 140–3). While difficult to interpret, this shared, structured practice was presumably intended to elicit some form of response from or return an obligation to the earth or chthonic spirits that resided therein and is likely to have marked places as special. As mentioned earlier, the high incidence of flint among Mesolithic lithics from the area of the River Barrow has been interpreted as potential evidence of contacts with the flint-bearing regions of the north of Ireland (Zvelebil et al. 1996). Since the Zvelebil et al. survey, a leaf-shaped butt-trimmed flake of a banded rhyolite flake, likely sourced in Tardree, Co. Antrim, was found among the upper reaches of the River Barrow, on a monastic site in Clogheen townland just north of Monasterevin, Co. Kildare (Kador 2007). The high degree of mobility that these finds suggest is supported by the limited isotopic analysis that has been done on Mesolithic Irish human bone; in one case a person buried in Sligo seems to have been born in north-eastern Ireland, and another individual found at Islandbridge, Co. Dublin, did not seem to be local (Kador et al. 2014). The widespread shared ritual practices evident in the 'cache pits' further underlines this impression of communities with extensive island-wide connections in Late Mesolithic Ireland.

There were possible traces of Early and Middle Neolithic activity north of the river, but it was during the Late Neolithic that it became a focus of significant activity. The remains found there included the impressions left by two square-in-circle timber structures and three four-post structures, from which a significant number of Grooved Ware pottery sherds were recovered. The earliest Grooved Ware pottery is found in Orkney (Copper et al. 2021) and it and timber square-in-circles are seen as a phenomenon that began there and then was introduced or adopted elsewhere around Britain and Ireland (Smyth 2013, 319). In Ireland, both are largely restricted to the east, and often occur in association with passage tombs (Hartwell et al. 2023). Despite a growing number which have come to light during development-led archaeological investigations, notably in advance of road schemes such as this one (Carlin et al. 2015; Carlin & Cooney 2017) and the excavations at Ballynahatty near Belfast (Hartwell et al. 2023), timber square-in-circles arguably remain poorly understood. The larger examples that have been found, such as those at Brú na Boinne, Ballynahatty and Armagalughey Co. Tyrone, are generally understood to have been ceremonial monuments (ibid., 180–5), and by extension the smaller ones are often considered 'ritual'. However, it has also been argued that some of the smaller examples are more likely to have been domestic (Laidlaw 2017). Several common traits can be discerned among timber square-in-circles, and these traits appear to occur in both the larger and smaller examples. They are often located near and/or overlooking a river. They typically comprise an internal arrangement of four upright posts enclosed by a circle of smaller upright posts with an entrance orientated to the south-east. A careful analysis of the entrance orientations led Barrett (2023, 187–98) to conclude that a significant proportion are orientated on the rising sun at winter solstice, or more broadly during the winter months. Grooved Ware

Illus. 3.21 Visualisation of the ritual landscape during the Late Neolithic (by Eavan O'Dochartaigh).

pottery is commonly found in association with timber square-in-circles. This pottery, and other finds, are often found concentrated in the upper, secondary fills of the entrance or central square post-holes, in a way that has been interpreted as intentional deposits done in 'ritualised act[s] of abandonment or commemoration' (Carlin & Brück 2012, 200). These shared architectural layouts and patterns of deposition would seem to suggest similar practices with similar purposes. However, as Bradley (2012; 2013) has shown, there may not have been a clear distinction between ritual and domestic life, and it was common for the monumental (ceremonial) and domestic structures to copy one another in prehistoric Europe. Carlin (2013, 24) recognises that these circles have a strong similarity to domestic houses and suggests some may in fact have started life as domestic structures which have been 'monumentalised' at the end of their domestic use to create a memorial to past inhabitants or events (also Carlin & Cooney 2017, 46). We have imagined them through the ritual lens through which they have typically been interpreted (Illus. 3.21).

It is not clear when the pit circle on the south side of the river was first created. Pit circles are not common in Ireland, and apart from much larger examples such as at Newgrange, there are only very few comparisons. The closest parallels are found in Britain where they are considered along with henges and other 'circles'—timber circles, stone circles and pit circles—as ritual

structures that were built in the third and early second millennia BC (Historic England 2018). The example on the Lerr Valley site may have been built in the Late Neolithic and then have been subjected to various episodes of commemorative re-digging during the Bronze Age and Iron Age. It must have had above-ground expression, possibly an internal bank, that marked its presence in the landscape for this to have occurred. During the Middle Bronze Age, at a time when one of those commemorative re-diggings appears to have occurred, two token cremation deposits were placed in pits just north of whatever above-ground expression it maintained. Around 40 m SSE of the pit circle, there was a lone Middle to Late Bronze Age roundhouse. There appears to have been an initial building of c. 6 m in diameter, later extended or replaced by a building of c. 10 m in diameter, finally followed by the digging of two large pits. One of the pits, which was dug through the floor inside the house, contained broken quernstone fragments and human bone. This conforms to a previously recognised pattern of deposition in Bronze Age houses (Cleary 2018). At the Lerr Valley house this seems to have been done as part of a closing or commemorative deposit after the building had gone out of use.

There may have been a gap in activity on the north side of the Lerr Valley site after the Late Neolithic. A Chalcolithic or Early Bronze Age date barbed-and-tanged arrowhead was found in a later Iron Age ring-ditch, but this residual artefact could have been a casual loss, and the next major phase of activity discernible in this area was during the Middle Bronze Age. It's not clear if the Late Neolithic timber structures would have left any trace on the landscape, but it is possible that the square-in-circles were surrounded by low banks, as has been theorised for the examples at Ballynahatty and Newgrange (Hartwell 2023, 183–4). If so, they may have appeared like slight barrows that marked out the site as special to later communities. During the Middle and Later Bronze Age the area was a significant focus of burial. Similar to the examples found south of the river, cremated bone was buried in pits, but north of the river one of these pits was stone lined, and two were surrounded by annular ring-ditches (1 and 2). Although the initial construction dates of the ring-ditches are not certain, it seems likely that they were constructed for foundation burials in their interiors. Ring-ditch 2 had an external bank and it seems likely that Ring-ditch 1 did too; they would have been upstanding ring-barrows, perhaps also with small internal mounds. Further cremation burials were buried in and around the ring-ditches during the Middle to Late Bronze Age and again during the Iron Age. One of these, buried just north-west of Ring-ditch 2, possibly of Late Bronze Age date, was surrounded by another addendum-like ring-ditch which tacked on to Ring-ditch 2. This addendum-like construction (Ring-ditch 3) seems to be a very conscious attempt to reference the earlier monument. It may have been an attempt to represent lines of descent, real or fictive, and have lent legitimacy to those buried there or their living relatives. Three pits containing cremation deposits were placed just north of one of the earlier square-in-circles (Structure 1) in an east–west line. Such linear arrangements might also be an expression of relations, such as lines of descent. The central of these contained a black glass bead. The accompanying bone was dated to between the Late Bronze Age and very Early Iron Age. This is an early but not unparalleled date for glass in Ireland (e.g. O'Driscoll & Becker 2022), and contemporary black glass beads

are known from central Europe (Conte et al. 2018). It suggests that during the Late Bronze Age/Early Iron Age, the Lerr Valley community had access to exotic goods which could only have been obtained through extensive networks.

There was a resurgence in burial activity during the Middle/Developed Iron Age. To the north of the river the two annular ditches (Ring-ditch 1 and 2) and the addendum (Ring-ditch 3) were recut, and one new ring-ditch was constructed (4), and to the south of the river a new ring-ditch (5) was constructed. Interestingly, all were penannular, a form that Eogan (2012) has argued was particularly prevalent during this period in the south of Ireland. Although the evidence is slight, it is likely that these had external banks and/or slight internal mounds. Cremation continued to be the main burial rite during this period, but there were few identifiable discrete deposits suggesting only token amounts were deposited or scattered. A cremation deposit in the centre of Ring-ditch 3 and several other deposits did produce burial goods of Middle/Developed to Late Iron Age type, including bronze rings and glass beads. These have close comparison among the remains buried at Knowth (Eogan 2011) and, like those, likely signal contacts with the Roman world. We do not know whether the Iron Age people buried on the Lerr Valley site were descended from those buried there in the Middle and Later Bronze Age. However, it is apparent, from the recutting of older monuments, that they knew the site to be an ancient burial ground and it is likely that it was through the burial of the dead here that they claimed real and/or fictive relations or associations with the earlier inhabitants; this would have legitimatised or reinforced their ownership of the land.

Iron slag was found in some of the ring-ditches north of the river and a smelting furnace and two smithing hearths were located to their north-east. This connection between metalworking and ring-ditches, and perhaps by extension death, is a phenomenon that has been previously noted (Dowling 2014) and suggests the rituals surrounding both may have in some way been connected.

Toward the end of the Late Iron Age, new burial rites were introduced at the Lerr Valley site. Extended inhumations were buried in and just north of Ring-ditch 5 to the south of the river. The radiocarbon dates returned for these suggest they could all date to the early fifth century AD, c. 430 AD, or have been buried over a period spanning three and a half centuries, between the mid-third and early seventh centuries AD. Cremation also continued and deposits of bone were placed into the peatland in the floodplain just south of the river sometime between the fourth and sixth century AD. We now know that cremated bone can be the subject of old wood effect (Olsen et al. 2013), but if this was the case it would mean the cremation was even later in date. Extended inhumation occurs in Britain from the second century AD, but apart from one exception in Bray, does not become common in Ireland until the fifth century (O'Brien 2020, 45–6). According to O'Brien (ibid., 49–51), the switch to extended inhumations is not necessarily an indication of Christianity, but it did happen in the context of intense interaction between Ireland and Western Britain. Cremation on the other hand, which seems to have continued in use up until the seventh or even perhaps eighth century (Gleeson & McLaughlin 2021), is evidence of pagan practices and O'Brien (2020, 31) sees its continuity as implicit evidence of toleration

by Church authorities. The seemingly overlapping practices at the Lerr Valley site are extremely important; O'Brien (ibid., 31) could list only one other example at a small ring-ditch in Annaghilla, Co. Tyrone. As O'Brien (ibid., 69) put it 'peoples or kin-groups, with two distinct burial traditions were burying their dead in parallel at this ancestral, and probably sacred, site perhaps as late as the sixth century'. Like the earlier Iron Age cremation deposits, the burial of these inhumations, especially those in the ring-ditch which was an already ancient burial monument, would have legitimised their community's claim to the surrounding land. In the early medieval period, such sites were known as ferta, and our understanding of them is derived not only from archaeology but also early medieval literature (ibid., 64–82); ferta and the ancients buried within were seen as guardians of a territory and occupants or newcomers could legitimise their claims through burials within them.

Although much of the identifiable archaeological remains found on the Lerr Valley site were located on the gravel ridges to the north and south of the river, it would have been the river itself that drew people to the site and marked it as an important place. At times, it may have been a routeway or central place around which people congregated and at others it may have been conceived of as a territorial boundary. The floodplain to its south was covered in peat deposits which preserved a remarkable array of archaeological remains, including burnt mounds, partial trackways, depositions of cremated human bone, wooden artefacts and lithics. Riverine environments such as this can be highly dynamic but direct dating of objects and remains has allowed us to disentangle some of what occurred here. During the Late Bronze Age, the area was used for burnt mound related activities, where water was heated with stone, and several mounds of burnt stone and charcoal accumulated near a wicker-lined trough. A Late Bronze Age axe/adze haft was found deposited near one of the trackways in what may have been an intentional ritual act, suggesting that the wetland was likely perceived of as other. A still pointed and usable Iron Age yew spear found deposited in another part of the peat may also have been deposited in a similar act and highlights the likely importance of the place as a hunting ground. Very Late Iron Age or early medieval cremated human bone found deposited into the peat, and possible pyre remains on the margins of the peat, are even more explicit indications of ritual and that the wetland was perceived of as other. That the wetland continued to be a focus for hunting into the early medieval period is also evidenced by the remarkable wooden tread trap (Illus. 3.19; Chapter 4). The trackways in the peatland would have been used both to traverse peat and to access the wetland for the hunting of wild game, collecting wild herbs that grew there and for making depositions of objects and human remains. The most substantial of them was radiocarbon dated to between the seventh and eighth century AD, but it is likely that several phases from at least the Late Bronze Age were represented. The animal bones found in the peat included cattle, horse, sheep/goat, pig, red deer and dog bones. Some of these may have been discarded waste but it is also possible that some are the remains of sacrifices placed in this liminal location, where human remains were also deposited.

The Lerr Valley site revealed a remarkable range of archaeological remains focused on the gravel ridges, north and south of the river and in the floodplain. The Late

Mesolithic 'cache pit', the Late Neolithic timber square-in-circles, the Middle and Late Bronze Age cremation burials, Middle to Late Bronze Age house, the trackways, and many artefacts are all of great importance. However, it is perhaps the burial remains that straddle the period of conversion that are the most important and intriguing. These provide an insight into the centuries during which Christianity was introduced to this island; contrary to the idea that paganism was immediately replaced, this site provides evidence that communities continued to engage with the two religious ontologies, sometimes side by side for several centuries.

Chapter 4

The Early to High Medieval Period in South Kildare

By Colm Moloney, Damian Shiels
and Ros Ó Maoldúin

The Early to High Medieval Period in South Kildare

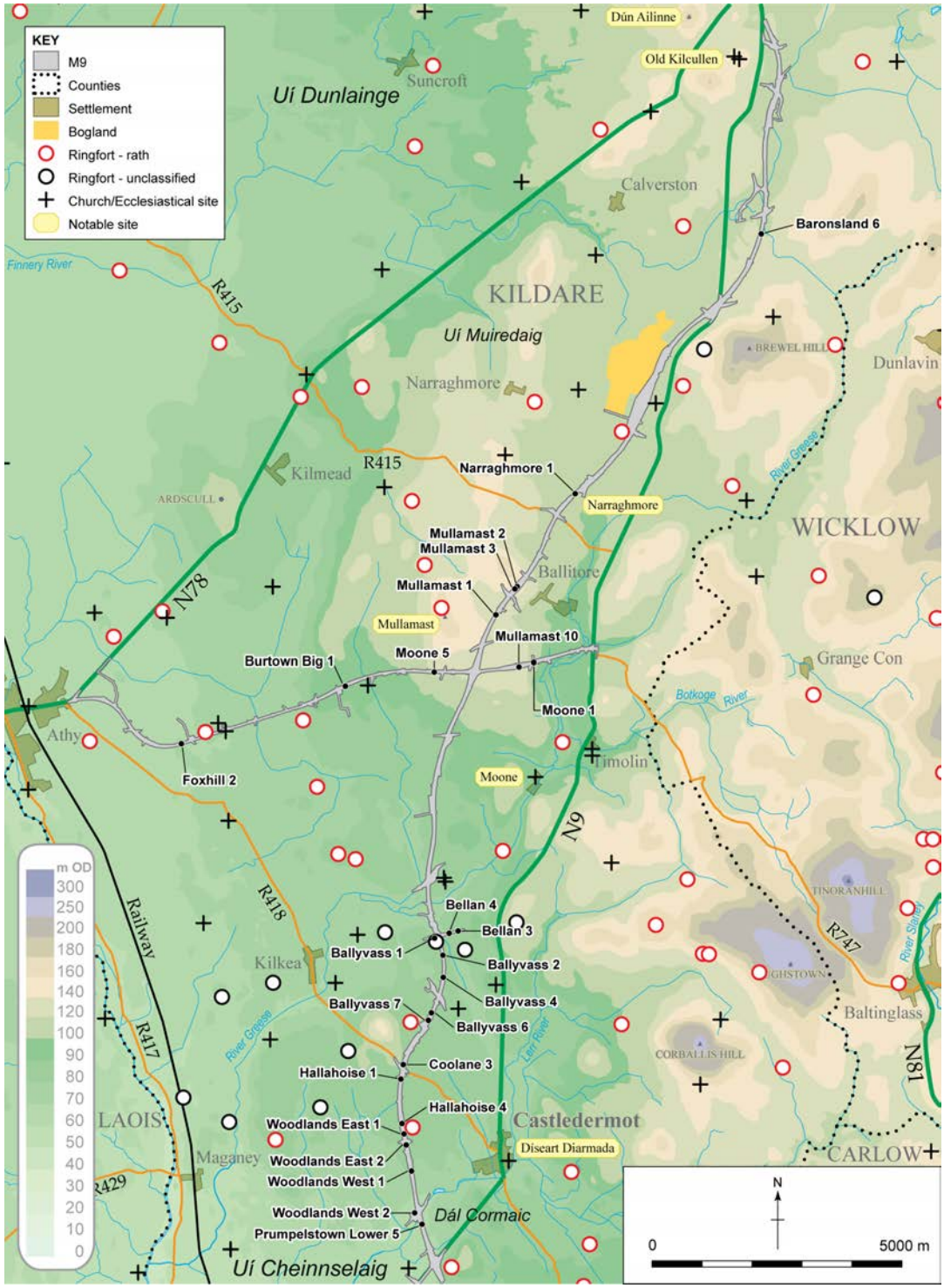
The archaeological excavations along the M9 corridor uncovered a rich array of exceptional medieval sites and artefacts (Illus. 4.1, 4.2). These discoveries span both the early and later medieval periods, ranging from rare preserved wooden objects to extensive evidence of settlement and industrial activity. The archaeological record traces the region's transformation from the arrival of Christianity through the final centuries of Gaelic lordship, and into the era when Anglo-Norman colonisers reshaped the political, economic, and physical landscape through feudal systems. Among these discoveries, the deserted medieval village at Mullamast stands out as the most significant medieval settlement. It has already been the subject of a separate monograph (Bolger 2017). While this site, along with others near Mullamast and along the River Greese discussed in Chapters 2 and 3 respectively, are mentioned here, they do not constitute the focus of this chapter. Instead, it takes a thematic approach, analysing the newly discovered remains through several lenses: settlement patterns, farming and subsistence practices, industrial/craft activities, trade and economy, and religious and mortuary practices. However, before delving into the archaeological evidence, it is essential to establish the broader archaeological and historical context of these sites.

Early medieval archaeological and historical context

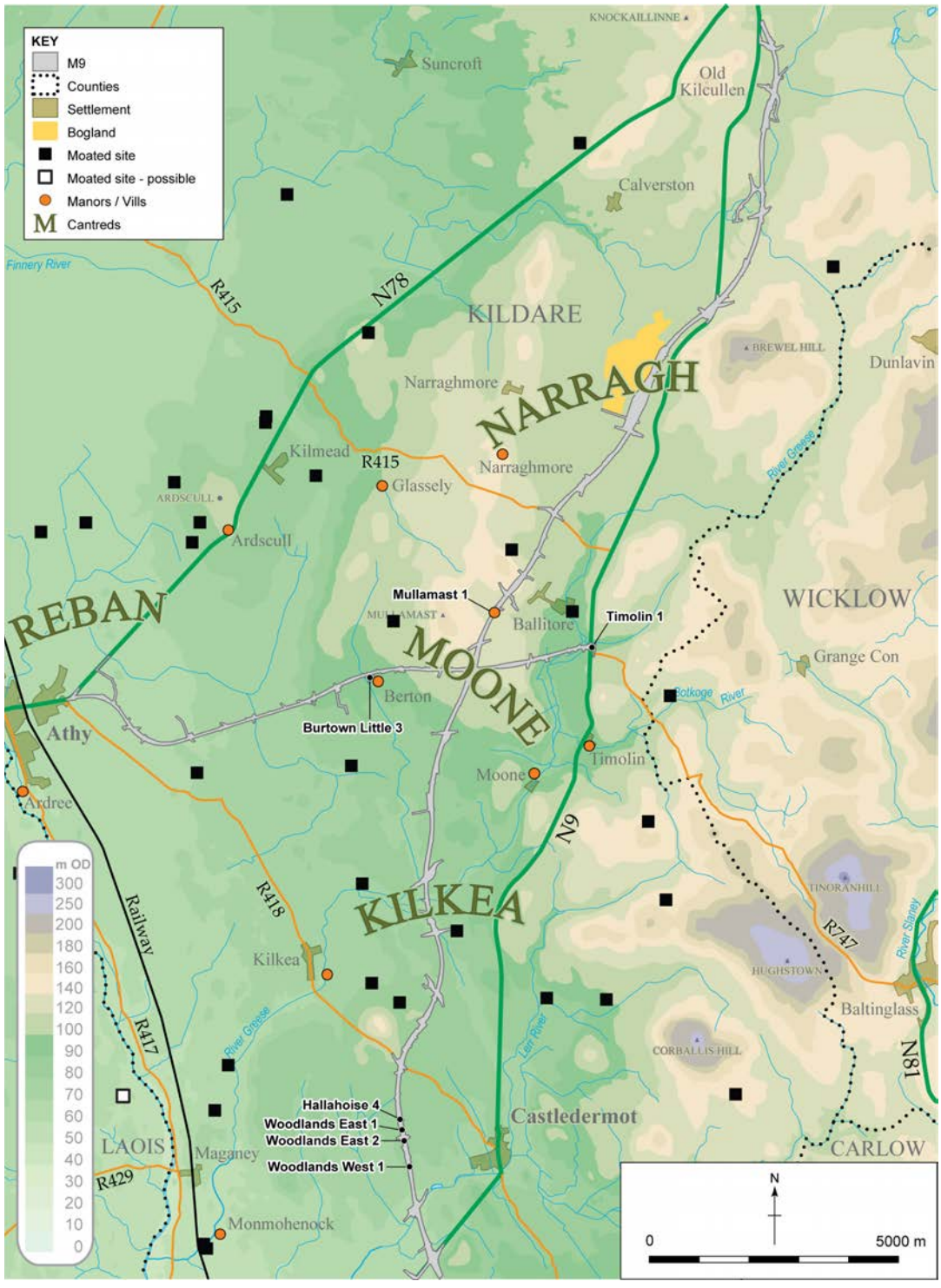
The M9 motorway traverses what was once part of the Kingdom of Laigin (Leinster), a region where politics and religion profoundly influenced the landscape in the early medieval era (Smyth 1982). While most of the motorway runs through the historical territory of Laigin Tuathgabair, its southern section extends into an ancient boundary region called Gabair that separated Laigin Tuathgabair from Laigin Desgabair. The exact location of this frontier fluctuated over time but was generally focused on the area where the Slaney and Barrow rivers come closest together, and it generally aligns with the modern border between counties Kildare and Carlow. According to Smyth (1982, 16), this was an 'uneasy frontier' during the early medieval period between the major political dynasties of the Uí Dúnlainge in the north and the Uí Cennselaig in the south.

Christianity was established in Ireland and Leinster during the fifth century AD (Charles-Edwards 2000). According to the Annals of Ulster, in AD 431 Palladius was sent by Pope Celestine as the first bishop to the Irish (Ó Riain 2011, 524). St Patrick, who is traditionally credited with establishing the Church in Ireland, reputedly began his mission to Ireland in AD 432. The earliest written Irish document is his Confessio;

Chapter title image A carved figure from the Moone High Cross (by Hannah Sims).



Illus. 4.1 Sites along the M9 with early medieval activity.



Illus. 4.2 Sites along the M9 with late medieval activity.

however, much of what we know about Patrick's time comes from later sources, particularly his seventh-century biographers Muirchú and Tíreachán. Some annalistic entries provide additional information, such as other missionaries, including Usaille (Auxillius) and Iserninus, who are significant to our study area (ibid., 524–31). According to Patrick's seventh-century biography, he ordained and installed Mac Táil and Iserninus at Oldkilcullen, and Usaille (Auxilius) at Killashee (ibid., 423–4, 528). The location of these sites is significant, with Oldkilcullen (Cell Cuilind) near Dún Ailinne, the reputed capital of Leinster (Illus. 4.1) and Killashee near Naas, or Nás na Rí, the place of the kings.

St Brigid, who would become Ireland's premier female patron saint, also played a fundamental role in the region's Christianisation (Kissane 2017). While historical details of her life remain elusive, scholars place her lifetime between AD 450 and 550. Her most significant achievement was the establishment of Kildare's double monastery—an innovative religious settlement that housed both male and female religious communities under her leadership as abbess. While some scholars have noted potential connections between her name and the pre-Christian goddess Brigantia, she appears to have been a genuine historical figure who served as Kildare's first abbess, laying the foundation for what would become one of Ireland's most important ecclesiastical centres (ibid., 81–93). A well at Kilcullenbridge is variously attributed to her or St Moling (Fitzgerald 1901, 317; Jackson 1979–80); however, most of the sites in the county that are associated with her are in the centre or north and not adjacent to the scheme (Giacometti & Boazman 2023). The Irish saints associated with holy wells near the scheme include St Patrick, St Moling and St Columbkille.

The peoples of medieval Leinster liked to maintain that all free Leinstermen were descended from a common prehistoric ancestor (Smyth 1982, 13–16). This tradition likely reveals more about how they chose to portray their ancestry than it does about actual prehistoric genealogical realities. Relations may have been invented based on geographical proximities or to provide justification for conquests. During the early medieval period, the landscape around the scheme area was dominated by two major lineages: the Uí Dúnlainge and Uí Cennselaig. Both dynasties claimed descent from Bressal Bélach, a King of Leinster who died in 435, and reportedly emerged from the Mag Ailbe region located in what is now south Kildare and north Carlow (ibid.).

The route passes several important archaeological sites and complexes of relevance to the period of conversion to Christianity and the subsequent earlier medieval period (Illus. 4.1). To the north there is Dún Ailinne, the aforementioned ancient capital of Leinster, and Old Kilcullen, one of Leinster's earliest fifth-century church foundations. The central section of the new M9 passes by Mullamast (Maistiu), a centre of royal authority and ceremonial inauguration, and Moone, site of a Columban monastery and its high cross. Another inauguration site known as *Forrach Pátric*, formerly *Bile maicc Cruaich*, existed at Narraghmore; this probable early medieval monastic site is in the south of the townland of that name and some of the findings on this project are of relevance (see Narraghmore 1 below; also Chapter 7).

For most of the latter half of the early medieval period—from AD 737 to 1042—the Uí Dúnlainge controlled Leinster's

kingship (MacCotter 2008, 178–9). They expanded their territory by defeating the Uí Gabla Roíreann, whose name survives in Mullaghreelan hill near Ballyvass, and they absorbed the lands of the Uí Chormaic Loisc around Castledermot and Athy. This consolidated territory became known alternatively as the Kingdom of Iarthar Liphi or the Kingdom of Uí Muiredaig (ibid.).

Near the southern section, Castledermot or *Dísert Diarmada* represents an intersection of religious and political power in early medieval Ireland (Greene 2020). Founded as a hermitage in the late eighth/early ninth century by Diarmuid, the site would have required patronage from the dominant Uí Dúnlainge dynasty who controlled the region. Diarmuid's royal Ulster lineage—as grandson of King Aodh Rón (d. AD 735)—and his association with the *céili Dé* reform movement may have influenced this patronage (Ó Riain 2011, 262–3). The settlement gained further prominence after the Battle of Ballaghmoon in AD 908, where the High King of Ireland and King of Leinster defeated the Bishop-King of Munster. The burial of Bishop-King Cormac Mac Cuilennáin at Castledermot, and his subsequent veneration as a miracle-working saint, added to the site's significance (Radner 1978, 152–63). The positioning of these sites along natural routeways appears significant in their development. The Barrow corridor was one of the main routes connecting the Liffey plain with the southern coast. Similarly, Castledermot's location near *Belach Mugna* (Ballaghmoon), a pass connecting north and south Leinster, may have contributed to its growth from a hermitage into an ecclesiastical centre. The archaeological monuments at Castledermot include a round tower, high cross, and medieval town defences.

The early medieval period also witnessed Viking activity in the region, with documented raids on Castledermot in AD 842 and Old Kilcullen in 936 and 944 (Smyth, 1982). However, while some incursions aligned with the traditional image of Viking raiders seeking plunder, the reality was more complex. The Viking settlements of Dublin and Waterford gradually underwent Christianisation and their interactions with local communities evolved to encompass trade and permanent settlement. This led to a significant cultural interchange and hybridisation between Norse and Irish populations (Gleeson & McLaughlin 2021). These interactions transformed the regional dynamics, creating new networks of trade and cultural exchange that would influence the area's development through the early medieval period.

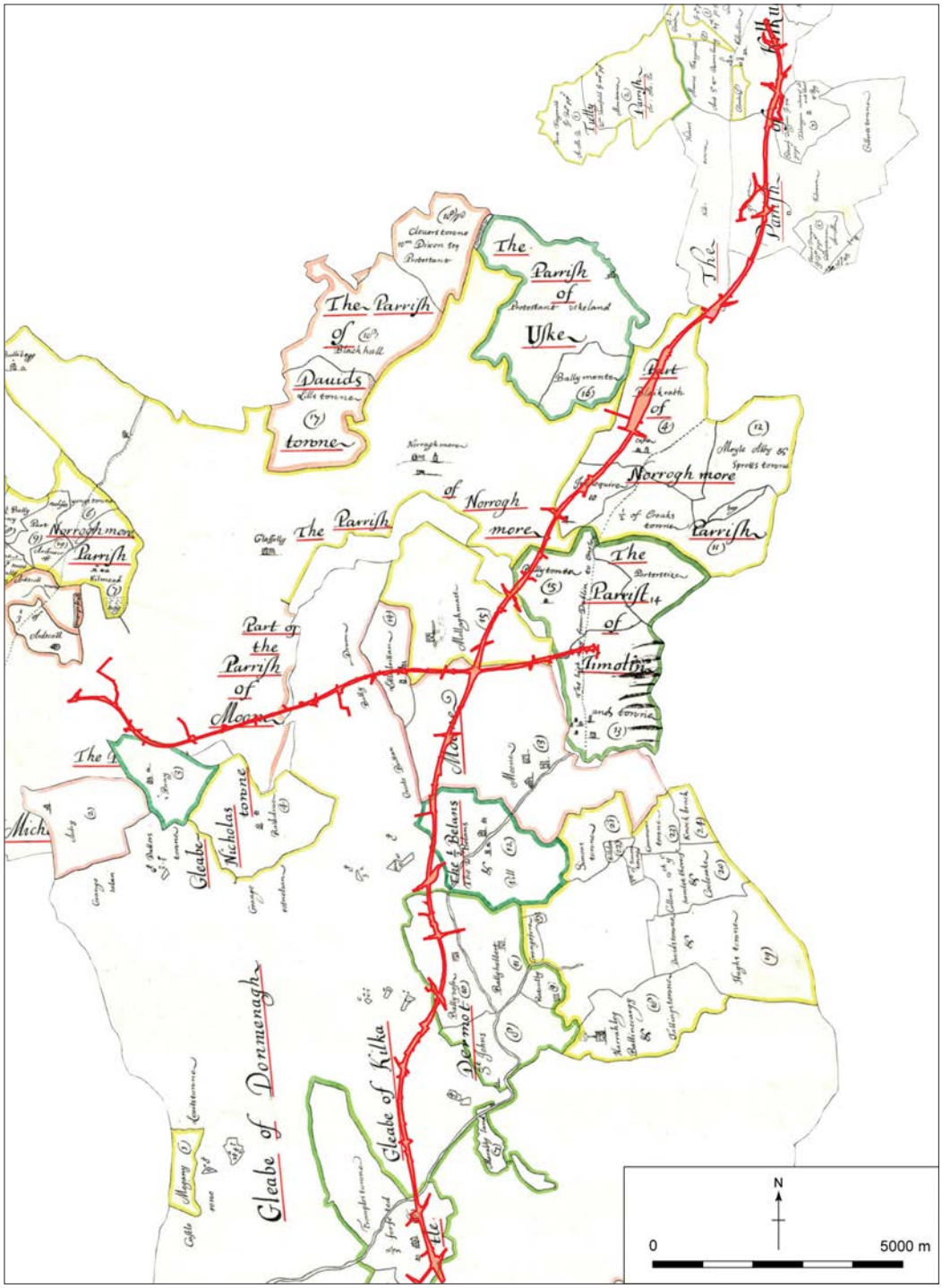
Later medieval archaeological and historical context

A crucial dynastic connection emerged around 1152 when Mór Uí Thuathail, who was raised in south Kildare, married Diarmait Mac Murchada, the King of Leinster who would later facilitate the Norman arrival in Ireland (Otway-Ruthven 1959, 175–82). Their daughter Aoife's subsequent marriage to Richard fitz Gilbert de Clare (Strongbow), the Norman adventurer, would prove pivotal in cementing the Anglo-Norman presence in Ireland. This marriage alliance was formalised at Waterford in 1170, bringing with it Strongbow's claim to the kingdom of Leinster through his wife's inheritance (Flanagan 2005, 442–3). Strongbow's claim was the forerunner of the Anglo-Norman conquest at the end of the 12th century and through it the political and territorial landscape of this region was transformed. Following the

Norman arrival, the southern part of the region was incorporated into the cantred of Omurthi, encompassing much of southern Kildare and portions of Wicklow and Carlow (MacCotter 2008, 177–8). At the time of the Norman arrival, the O'Tooles—who traced their lineage to the Uí Muiredaig, a major sept of the Uí Dúnlainge—held significant power in the area, bearing titles as both kings and chieftains of Omurthi (Orpen 2005, 22, 58). The Norman administration divided the central and northern regions of the territory that now forms the road scheme area into four cantreds: Kilkea, Moone, Narragh, and Reban (Otway-Ruthven 1959; Illus. 4.2, 4.3). These administrative units were aligned along the River Barrow to the west, in what is now the N9/M9 corridor. The Normans established a strategic network of defensive structures, with moated sites particularly dense in Reban cantred near Athy and throughout Narragh (ibid.; O'Keeffe 1992, 59). Key manorial centres were positioned at Ardscull, Narraghmore, and Kilmead. The distribution of settlements reflects a carefully planned defensive system (Illus. 4.2). Manor centres were established at strategic points controlling major routes and waterways, especially around Athy's approaches. This systematic arrangement of sites served both to monitor regional movement and to secure agricultural territories. The Normans skilfully incorporated natural features into their defensive strategy. They utilised elevated positions at Brewel Hill and Hughstown, while the River Greese and its tributaries provided natural cantred boundaries. Their preference for well-drained agricultural land is also evident in the avoidance of bogland areas for major settlements.

The consolidation of Norman control led to significant changes in land ownership and administration. The territory was reorganised into manors, with new systems of agriculture and land management introduced (Empey 1982, 329–30). These architectural features, along with the establishment of new towns and religious houses, physically manifested the transformation of the region from Gaelic lordship to Anglo-Norman territory (Barry 1987, 45–7). The political backdrop, proximity to Dublin, and good quality land ensured that Kildare soon became a lynchpin of the new Anglo-Norman colony. A Seneschal (Administrator) of Kildare—Sir Walter l'Enfent the elder—was appointed in the late 12th century, and the county was shired not long afterwards, with a Sheriff of Kildare first mentioned in 1224 (Otway-Ruthven 1959, 185–8).

Anglo-Norman colonisation did not just bring change in the form of new rulers and administration, it also brought significant economic change associated with the establishment of a feudal system of administration and the manorial complex (MacCotter 2008, 31, 252–3). An influx of English and Welsh settlers into the colony also brought significant population change, particularly in urban settings. Nevertheless, their arrival did not herald wholesale population replacement, and significant numbers of native Irish also remained, albeit initially often in subservient roles (Foley 2013, 15). In the context of south Kildare, there is even evidence that the Ó Thuathails may have still held some sway into the 13th century, when there is a reference to Féilim Ó Thuathail as the Lord of Uí Muiredaig (O'Byrne 2006, 147). However, their influence was greatly reduced, and while the initial status of some of the lower-order Gaelic Irish in the colony may have improved slightly through time, that of their former leaders would continue to decline under the overlordship of the new arrivals.



Illus. 4.3 The M9 overlaid on extracts from the 17th-century Down Survey barony maps (https://downsurvey.tchpc.tcd.ie/downsurveymaps.php#bm=Killeah+and+Moone&c=Kildare; https://downsurvey.tchpc.tcd.ie/downsurveymaps.php#bm=Noragh+and+Rabane&c=Kildare)

As the Anglo-Norman colony developed, the area gained particular importance due to its strategic location along the major north–south route of the Barrow corridor. Two settlements became especially significant: Castledermot and Athy. Castledermot, which already had a pre-Norman ecclesiastical proto-town (discussed above), saw the establishment of a borough. The settlement received a murage grant in 1295 for town wall construction, highlighting its importance as an urban centre (Greene 2020, 65–7). Athy, situated at a strategic location on the River Barrow (its name *Baile Áth í* meaning 'the ford of Ae'), was established by the de St Michael family, Barons of Narragh and Reban, in the 13th century (Field 1980, 26; Hill et al. 2016, 20–4). A castle or 'hall house' was built there, and the town was eventually walled for defence (Bradley et al. 1986, 71).

The complexity of land ownership in 13th-century Kildare was notable, with estates frequently passing through the female line (Bolger 2017, 22). Richard fitz Gilbert de Clare's sole heir was his daughter Isabel, whose husband William Marshal became Lord of Leinster. When Marshal died without male heirs, Leinster was divided between his five daughters, with Kildare split between Sybil (wife of William de Ferrers) and Eva (wife of William de Braose). Similarly, the de Ridelesford estates were split between Walter de Ridelesford's descendants, Christiana de Marisco and Emelina de Longspree. While the Anglo-Norman colony in south Kildare enjoyed relative stability during much of the 1200s, the situation deteriorated from the late 13th century onward. The 14th century brought multiple challenges: the Bruce Invasion, famine, the Black Death, and the 'Gaelic Revival'. Edward Bruce's Scots army plundered the region in 1315–16, winning a significant victory at the Battle of Skerries/Ardscull. The O'Moores repeatedly attacked Athy (in 1308, 1370 and 1374), while the MacMurroughs targeted Castledermot (in 1405 and 1427) (Hill et al. 2016, 23; Greene 2020, 66). It wasn't until the rise of the Fitzgerald Earls of Kildare, during the late 15th century, that stability returned to the region (Ellis 1998, 80–1).

After the Anglo-Norman conquest, a borough was established at Old Kilcullen around the early medieval church site near the north end of the scheme (Bradley et al. 1986). The borough received a royal market charter in 1403, but was destroyed by native Irish in 1456, leading to Roland FitzEustace building a castle at the site for protection. FitzEustace obtained a murage grant in 1478 to fund the construction of defensive walls. According to Archdall writing in 1781, the town once had seven gates, though only one remained by that time (ibid.). The borough appears to have declined in the 16th–17th centuries. A bridge spanning the Liffey was erected at Kilcullenbridge in 1319, followed by the construction of a nearby castle in 1486 (Thomas 1992). Though the bridge crossing is depicted on the Down Survey map of 1654, no traces of the medieval structure remain today. The emergence of Kilcullenbridge appears to have played a role in Old Kilcullen's diminishing prominence. Stokes (1899) notes that historical documents often confuse Old Kilcullen and Kilcullenbridge, as exemplified by the 1606 Fair grant to William Eustace. Thomas (1992) argues that some references to town walls traditionally associated with Old Kilcullen may actually pertain to Kilcullenbridge. The New Abbey Franciscan friary was established by Roland FitzEustace in 1486 (Fenton 1940–1; Gwynn & Hadcock 1970). After its dissolution in 1539, the friary remained standing until

1782, when it was torn down to make way for a new chapel. This was subsequently replaced in 1872 by the present-day ruined Catholic church.

The archaeology

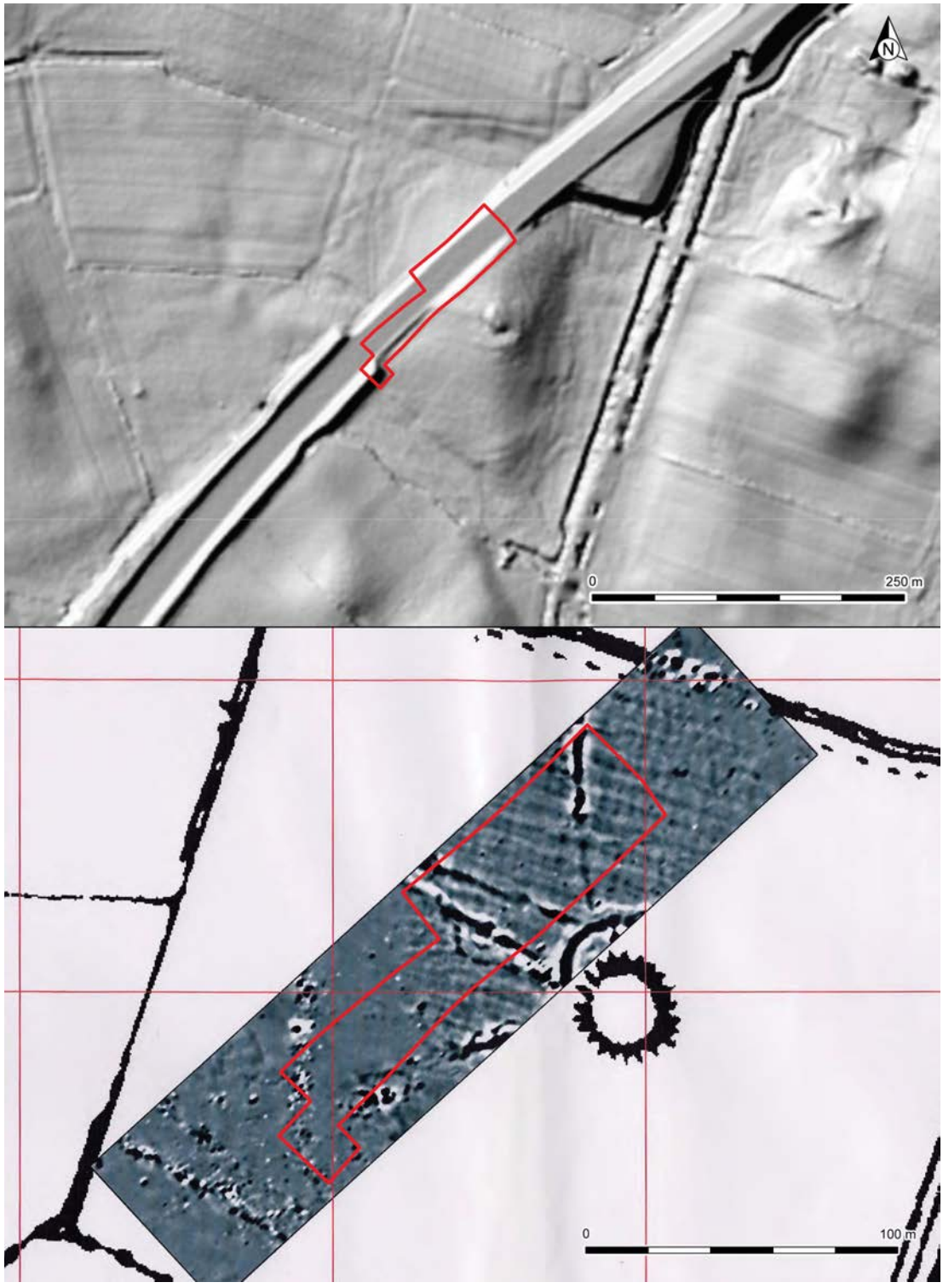
A wide variety of archaeological features was identified during the investigations along the route of the M9 motorway which encompassed the whole of the medieval period (Illus. 4.1, 4.2). These ranged in scale from the isolated early medieval kiln which constituted Mullamast 2, to the extensive remains of the manorial village and settlement at Mullamast 1 (Bolger 2017). Although not discovered as part of the current excavations, results from two other excavations close to the motorway route are also worthy of note. The realignment of the R417 road between Athy and Carlow at Ardreigh in the early 2000s (Excavation Licence No 00E0156) uncovered some extraordinary medieval evidence in the shape of one of the most significant collections of medieval human skeletons ever found in Ireland. A total of 1,259 individuals were interred around what was likely an early church site, established sometime between the seventh and ninth centuries AD, and where a medieval village flourished from the 12th century onwards (Moloney et al. 2016). In 1999, realignment works on the N9 at Ballitore revealed evidence for what is interpreted as an Anglo-Norman hilltop enclosure, defined by a ditch that was traced for at least 70 m within the area of excavation (Excavation Licence No. 99E0202). Within the enclosure were the heavily disturbed foundation trenches of two buildings (Opie 2009, 171–3). Taken in conjunction with the findings from this scheme, they highlight the extraordinarily rich medieval archaeology that typifies this part of Ireland.

Settlement

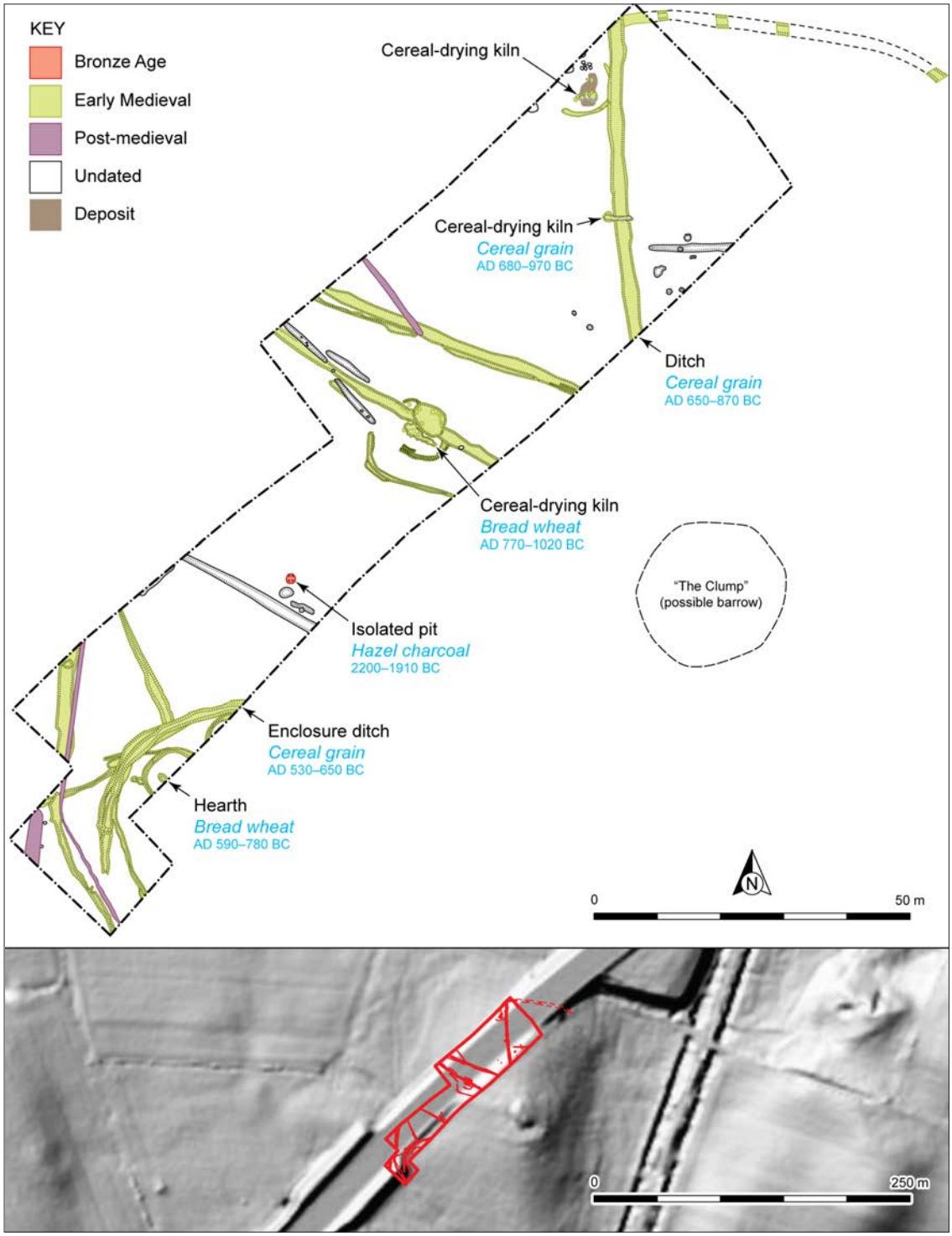
The archaeological evidence for settlement in mid and south Kildare is evident from the distribution of known ringforts and ecclesiastical centres (Illus. 4.1). The M9 has significantly added to this with enclosures of early medieval date discovered at Narraghmore 1 and Ballyvass 7, and elsewhere along the alignment. The major later medieval settlements survive in modern towns such as Castledermot, Athy, and Kilcullen, and the sites of several manors and mottes are also known (Otway-Ruthven 1959; Illus. 4.2, 4.3). In addition to this there are many 'Grange' and other placename elements that provide evidence of later medieval settlements (Illus. 4.2). Settlements of medieval date discovered include enclosures at Timolin 1, Hallahoise 4 and Woodlands West 1, and at the deserted medieval village at Mullamast 1. Since Timolin 1 is detailed in Chapter 2 and Mullamast 1 is in Bolger's (2017) separate monograph, they are not further described here.

Narraghmore 1

At Narraghmore 1, situated just north-east of where the River Greese turns southward along the western slopes of Mullamast Hill, the western portion of a ringfort or rath-like enclosure measuring approximately 40 m in diameter was partially uncovered (Illus. 4.4, 4.5). Geophysical survey (Barlett 2002) carried out at this location had identified an enclosure surrounding a mound—believed to be a barrow—adjacent to the scheme and



Illus. 4.4 Narraghmore 1 site extent with LiDAR and geophysical survey.



Illus. 4.5 Narraghmore 1, isolated Early Bronze Age pit and small early medieval settlement with a cereal-processing complex.

locally known as the burial place of rebels who died in the 1798 rebellion (Conroy 2015). The enclosure surrounding the site of the barrow was avoided by the scheme, but the geophysical results are still of interest to understanding the wider site and much of what was revealed in the excavation can now be discerned in the survey results.

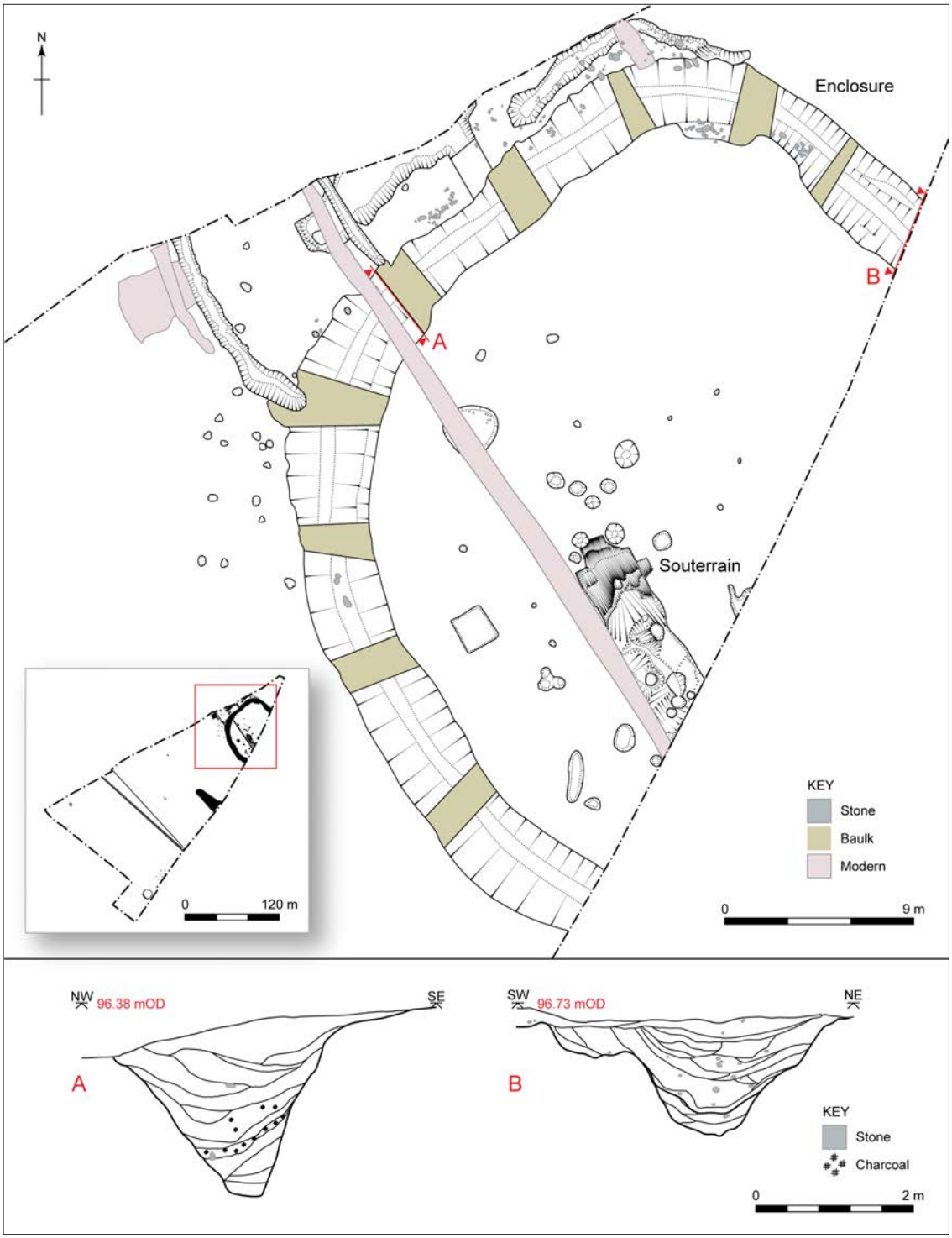
The excavated enclosure ditch at Narraghmore was 1.35 m wide and an average of 0.46 m deep. A radiocarbon date on a cereal grain from its fill provided a date range of AD 530–650 (Illus. 4.5). Inside the enclosure, the edges of two probable foundation slots for circular structures were identified. Within one of these structures, a hearth contained a cereal grain dated to AD 590–780. North-west of the enclosure, at distances of between 50 m and 100 m, three cereal-drying kilns were discovered. Two of these kilns were dated: one to AD 680–970 and another to AD 770–1020 (see further discussion under agriculture below). Several linear ditches, which did not correspond to any features shown on historic maps, also crossed the site. These ditches are also visible on the geophysical survey results (Illus. 4.4) and appear to radiate out from the (unexcavated) enclosure surrounding the mound. A cereal grain recovered from the basal fill of a north–south ditch near the north-western end of the site was dated to AD 650–870 and a grain from a kiln cutting it returned a date of AD 680–970, suggesting that the ditch had silted up and the kiln was dug through it all between the late seventh and late 10th century.

One undated large curvilinear ditch in the south-west of the site looked like it might enclose the site of the enclosure and adjacent barrow. Now with the benefit of LiDAR we can see that it does enclose a c. 300 m north–south and 190 m east–west area around the entire hill, with the barrow on its apex (Illus. 4.4). This is a significant monument in a townland with the name of a historically recorded inauguration place, Forrach Pátric, formerly *Bile maicc Cruaich*. The site of an early church about 1.3 km WNW in Narraghmore Demesne is believed by some to be *Forrach Patric* (Fitzgerald 1912, 242). However, this enclosed hill with multi-period archaeological remains crowned by a significant barrow is arguably more likely to be its precursor *Bile maicc Cruaich*.

Ballyvass 7

An early medieval enclosure—most likely a ringfort or rath—with an internal souterrain, was perched atop a gravel ridge, c. 2.5 km north-west of Castledermot at Ballyvass 7 (Illus. 4.1). The site's commanding position would have served both practical and symbolic purposes, enhancing its defensive capabilities while proclaiming the status of its inhabitants to all who passed below (Illus. 4.6, 4.7). While the enclosure was early medieval, human activity in this landscape began significantly earlier; a round barrow containing a Late Iron Age cremation burial lay some 100 m to the south-west.

Ringforts and other early medieval enclosures served diverse purposes in early medieval Ireland, and their archaeological traces reflect this complexity (Stout 1997, 32–5; Fitzpatrick 2009; O'Sullivan et al. 2014; O'Sullivan et al. 2017). While many excavated sites have revealed substantial internal structures—likely houses, storage buildings, and animal shelters—others appear strikingly empty. Some archaeologists initially interpreted these seemingly vacant ringforts as simple cattle enclosures, known in Irish as bódún. However, current scholarly consensus suggests a simpler explanation:



Illus. 4.6 Plan and sections of enclosure at Ballyvass 7.

Illus. 4.7 Aerial view of Ballyvass 7 under excavation, looking ENE (photo: Airshots).

the buildings within these 'empty' ringforts were constructed in ways that left no lasting archaeological signature (Edwards 1990, 22–7; O'Sullivan & Nicholl 2011, 65). Absence of evidence is not necessarily evidence of absence in archaeological contexts. The circular enclosure at Ballyvass 7 had an external diameter of approximately 39 m, defined by a substantial ditch that was 2.2 m deep and 4.5 m wide. No internal bank survived, though the absence of features within 2 m of the ditch's inner edge suggested its former presence. Radiocarbon dating of material from the ditch's lowest fills suggests the settlement's primary period of occupation was between AD 660 and 810 (Beta-243988). Environmental analysis of monolith samples retrieved from its fills indicate that the surrounding landscape during the medieval period included wet-woodland pasture and oak forest.

The souterrain was located in the south-west corner of the enclosure. It was earth-cut, rectangular, and orientated NW–SE. The structure measured about 3.5 m wide, 3.6 m deep, was exposed for around 11 m and the sides were almost vertical. It extended beyond the south-east excavation boundary, and stratigraphic analysis revealed at least three distinct phases of activity within its fills. Vertical discoloration marks preserved on the internal sides of the souterrain. suggest that the structure featured plank-lined walls and, most probably, a

wooden plank ceiling. A cereal-drying kiln constructed after the souterrain fell out of use yielded a radiocarbon date of AD 690–890 (SUERC-29024), indicating the souterrain dates to the ninth century AD or earlier. The word souterrain has French origins, combining sous (under) and terrain (ground), while in Irish sources and historical maps, these structures are referred to as *uamh* (Irish for cave). They are frequently found in association with settlement contexts, particularly ringforts, and evidence from excavated examples suggests most date to between AD 750 and 1250 (Clinton 2001, 70–91). Clinton (ibid., 33) recorded approximately 3,000–3,500 souterrains in 2001, and the Irish Sites and Monuments Record now documents 4,849 examples, only nine of which are in Kildare. This distribution pattern likely reflects the visibility of remains, which is influenced by both local geological conditions and the consequent construction methods employed. Where stable clay or soft rock existed, tunnelling was the preferred method, while in areas dominated by earth, builders adopted the open trench approach. Those quarried from rock are often still accessible and easily found while those that were tunnelled are often located after partial collapse. Those that are earth-cut, as most in Kildare would have had to be, tend to be fully backfilled and are less easily found; normally this happens only under archaeological excavation. The purpose of these man-made underground passages and chambers remains debatable, though Clinton (ibid., 16, 39) suggests they primarily served either as refuges or storage facilities. The Ballyvass 7 souterrain, given the discovery of substantial quantities of animal bone and various artefacts including a possible wall hook, a weaving tool, whetstone, knives, and a bone comb, appears to support the storage interpretation. The wall hook is particularly significant, potentially indicating that the timber walls were fitted with hooks for lighting or hanging produce that required the specific environmental conditions.

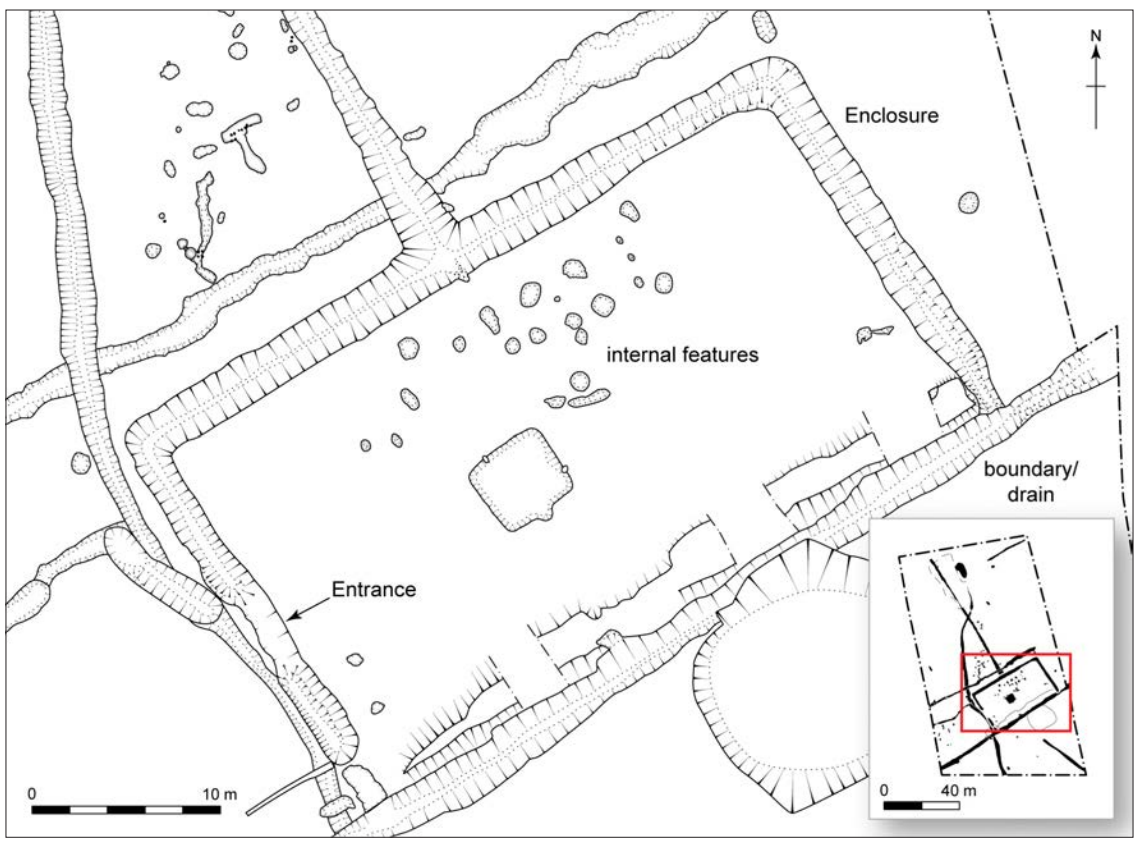
The other features within the enclosure were concentrated in the south-west corner, clustered around the souterrain. The surrounding pits and post-holes showed no definitive patterns; however, a cluster near the souterrain's northern end may be traces of a house. Two notably large pits—one circular and one square—positioned just inside where the enclosure's bank likely stood, probably functioned as storage areas. The archaeological features at Ballyvass 7 contained substantial quantities of charcoal, cereal grains, and faunal remains, offering evidence of both agricultural practices and household activities. The cereal grains were mostly oats and hulled barley but also included rye, spelt wheat, and bread/club wheat. The faunal assemblage was predominantly composed of cattle, sheep/goat, and pig bones. Significant quantities of cat, fish, and mouse remains were also identified, along with smaller representations of horse, dog, hare, rabbit, bird, and vole specimens. The artefact assemblage (Illus. 4.8) reflects various domestic activities through utilitarian items such as knives, alongside textile production tools including a weaving tablet and bone needle. Personal grooming items were represented by a bone comb. Several prestigious copper-alloy artefacts, notably an eighth- or ninth-century decorative terminal mount from a drinking horn, a brooch-pin, and fragments of an ornate bucket, suggest that the inhabitants may have been of a high status.

Illus. 4.8 Artefacts recovered from the souterrain at Ballyvass 7, including two knives (E2996:368:001-004, E2996:368:005), a weaving tool (E2996:123:001), whetstone (E2996:650:004), bone comb (E2996:689:004), a terminal mount (E2996:300:001) from a drinking horn, and a brooch-pin (E2996:150:001).

Hallahoise 4

At Hallahoise 4, excavations revealed a distinctive settlement enclosure of 12th–14th-century AD date which demonstrates the transformative impact of Anglo-Norman colonisation on settlement architecture and material culture. While the site contained earlier medieval field boundaries and drainage ditches dating to the seventh and 10th centuries, this sub-rectangular enclosure marked the first evidence of permanent settlement at the site. Measuring 40 m by 25 m, it was defined by a modest ditch 2.4 m wide and 1 m deep, with a 4.5 m-wide causewayed entrance through its south-western side (Illus. 4.9, 4.10). An internal bank survived to 1.2 m high where it merged with the south-eastern townland boundary.

The interior revealed no definitive building outlines, though several features suggest structural activity. A large square pit (4.5 m wide, 0.4 m deep) lay just west of centre, aligned with the entrance. Its intensely scorched base and fill, containing burnt clay and metalworking slag but notably no hammerscale, suggests metalworking activity, though evidence was insufficient to confirm its use as a forge (see metalworking below). Hazel charcoal from this feature yielded a date of AD 1020–1230 (SUERC-25855), indicating it was associated with the earlier phase of the enclosure's



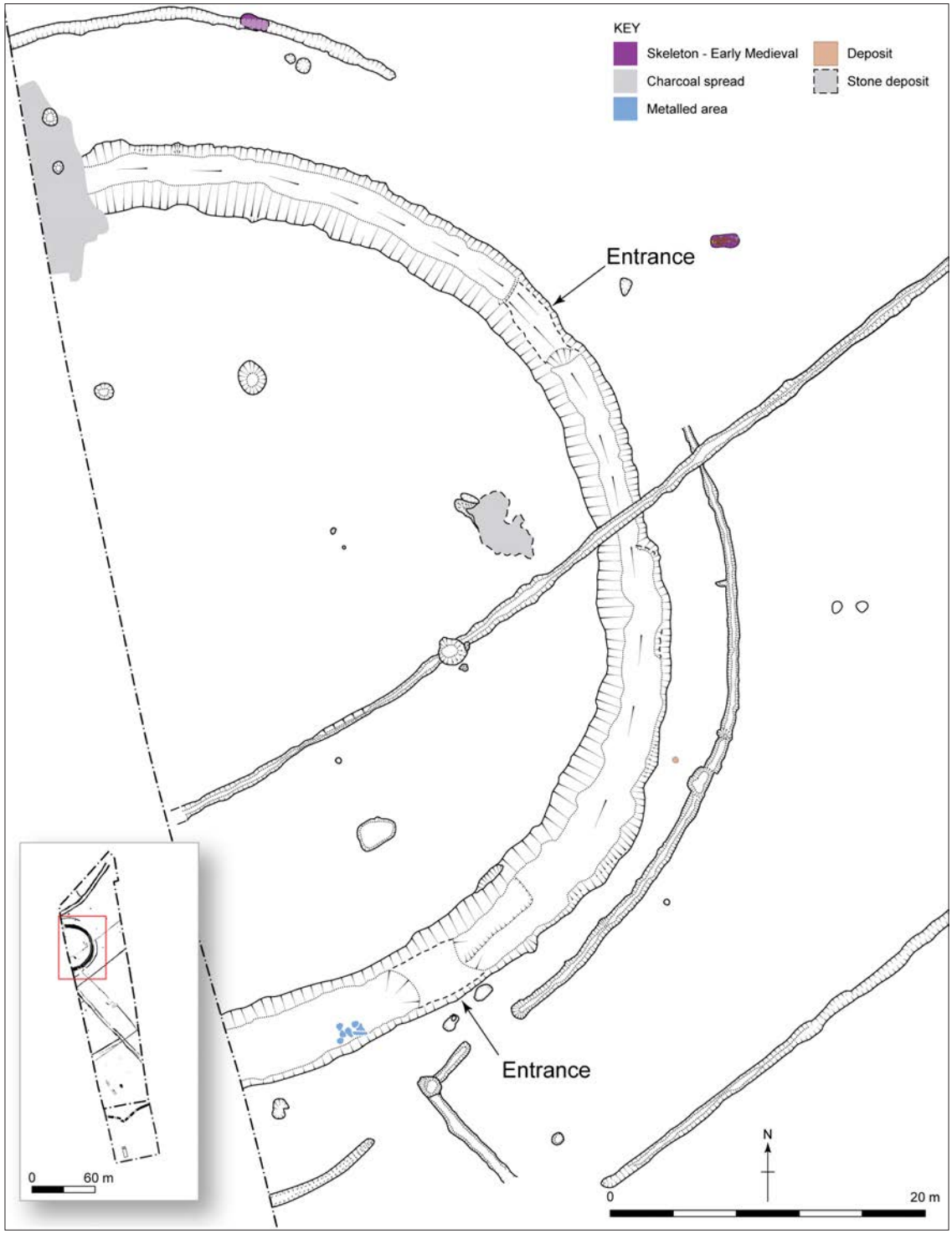
Illus. 4.9 Plan of enclosure at Hallahoise 4.

Illus. 4.10 Aerial view of Hallahoise 4 under excavation, looking SSW (photo: Airshots).

occupation. A cluster of pits and post-holes along the north-western side might indicate a building location, with their proximity to the northern ditch suggesting a minimal bank in this area.

The Anglo-Norman colonisation is further reflected in significant changes to material culture, most notably in the introduction of pottery—a type of material largely absent from earlier settlements in the area. At Hallahoise, ceramics were distributed throughout the ditch fills, with concentrations near the entrance suggesting organised waste disposal practices. The assemblage comprised at least six vessels, including late 12th–14th-century Leinster cooking ware jars and a late 12th–13th-century Dublin-type cooking ware pot with trumpet handle and jugs. This ceramic collection parallels assemblages from other contemporary settlements in south Leinster, such as the moated site at Carrowreagh, Co. Wexford (Tierney & Johnston 2009b).

The site's characteristics distinguish it from typical moated sites of the colonisation period. Its ditch was less substantial than most contemporaneous examples (Tierney & Johnston 2009b; Fegan 2009), though comparable to Ballinvinny South, Co. Cork (Cotter 2013, 258–64). Like Attyflin in Co. Limerick (Eogan 2009), it showed no evidence of being water-filled. Ballinvinny and Attyflin share features with Hallahoise: smaller-scale enclosure ditches, causewayed



Illus. 4.11 Plan of enclosure at Woodlands West 1.

entrances, and irregular plans. Cotter (2013, 264) suggested such characteristics at Ballinvinny indicated a concern with basic security rather than serious defensive requirements, perhaps against wild animals and cattle raids, while also defining the settlement and farmyard. He proposed possible native Irish occupation (ibid.). Eogan (2009) suggested Attyflin might be a settlement of free Gaelic tenants who maintained some social status while engaging with new manorial economic systems.

Woodlands West 1

At Woodlands West 1, the eastern portion of a circular enclosure identified as an Anglo-Norman ringwork was discovered on a low hillock with panoramic views (Illus. 4.11, 4.12). A ringwork is the site of a manorial castle which consists of circular or oval areas defined by earthen banks and fosses, which would have surrounded a building constructed of timber or clay and wood (O'Conor 1998, 18). Some researchers (O'Keeffe 1998) have questioned whether they were ever present in significant numbers in Ireland.

The Woodlands West 1 site revealed multiple occupation phases from the Neolithic through to early medieval periods. The main Anglo-Norman enclosure was a substantial ditch, 4.5 m wide and 1.2 m deep, enclosing a 50 m diameter area, with 12th–

Illus. 4.12 Aerial view of Woodlands West 1 under excavation, looking south (photo: Airshots).

14th-century pottery found throughout its fills. A smaller outer ditch also encircled the hillock; this feature remains undated, as does a burial which was inserted into it. While no bank for the inner enclosure survived, a gap in the placement of internal features suggested its former presence. The entrance to the enclosure changed over time likely following modifications to the ditch, from an original entrance in the north-west to a later causeway in the south. A second burial was located further to the south and dated to the early medieval period (ninth–11th century). A similar date came from a cereal-drying kiln at the centre of the site, and a circular pit c. 30 m south of the enclosure produced a Late Iron Age/early medieval date.

The material culture from the site reveals significant evidence of domestic occupation and craft activities, while also indicating engagement with wider colonial economic networks. The artefact assemblage combines utilitarian items like iron knives, two arrowheads, and a possible horseshoe nail, with more specialised craft evidence in the form of worked bone. Notable among these are two decorated motif pieces—bone fragments with carved ornamentation. The term 'motif piece' refers to a variety of bone fragments with generally randomly carved fields of ornamentation (MacGregor et al. 1999). One piece displays sophisticated interlace decoration, while the other, with its zig-zag design, appears to be a trial piece (Illus. 4.13).

The ceramic assemblage is particularly informative, comprising local and other Irish wares (Leinster cooking ware, Dublin-type ware including finewares and Kildare-type ware) alongside imported Saintonge pottery from south-western France, all from the 12th–14th century. Though represented by just one jug, the presence of Saintonge ware

Illus. 4.13 Worked bone motif pieces from Woodlands West 1.

is significant. At the major rural settlement of Mullamast, this imported ware constituted only 0.01% of an assemblage of nearly 10,000 sherds (Bolger 2017, 42). This access to high-status imported goods, combined with the local pottery types represented by cooking jars and jugs, suggests inhabitants who were well integrated into both local and international trade networks characteristic of the Anglo-Norman colonial economy. Evidence of metalworking was also identified, though this activity post-dated the enclosure's remodelling. The faunal remains, including cattle, sheep/goat, pig, horse, dog, cat, fox, red deer, and various bird species such as chicken, thrush, goshawk, goose, crow, swan, duck or mallard, and eagle, reflected a diverse diet and hunting activities.

The evidence from Woodlands West 1 provides an important counterpoint to

O'Keeffe's (1998) broader criticisms of ringwork identification in Ireland. While O'Keeffe rightly warns against over-classification of earthwork enclosures as Anglo-Norman ringworks without sufficient evidence, Woodlands West demonstrates how careful archaeological investigation can reveal legitimate examples. The site's defensive character and Anglo-Norman date are supported by a substantial material assemblage, and evidence of high-status activities. The absence of clear building foundations, which O'Keeffe might cite as problematic, actually aligns with established patterns from well-documented Anglo-Norman timber castles like Hen Domen, Montgomery, where sophisticated structures left minimal subsurface traces (Higham & Barker 2000). It is also notable that at the medieval village in Mullamast 1, despite the clearly laid out plots, buildings were also difficult to identify (Bolger 2017, 66–9). Buildings of wood, turf, and those that use stone post pads are particularly susceptible to agricultural erasure, yet their previous existence is suggested by the site's rich material culture. Thus, while O'Keeffe's call for rigorous standards in ringwork identification remains valid, Woodlands West 1 illustrates how detailed archaeological evidence can support such classifications when properly contextualised within contemporary Anglo-Norman building traditions.

Farming and subsistence

Archaeological evidence for medieval subsistence practices was identified on sites along the length of the route, demonstrating a mixed farming economy supplemented by hunting. This included infrastructure for crop processing in the form of cereal-drying kilns, alongside substantial faunal remains representing both domesticated livestock and wild species. The discovery of an exceptionally well-preserved tread trap provides particular insight into hunting practices that complemented agricultural and pastoral activities.

Land division

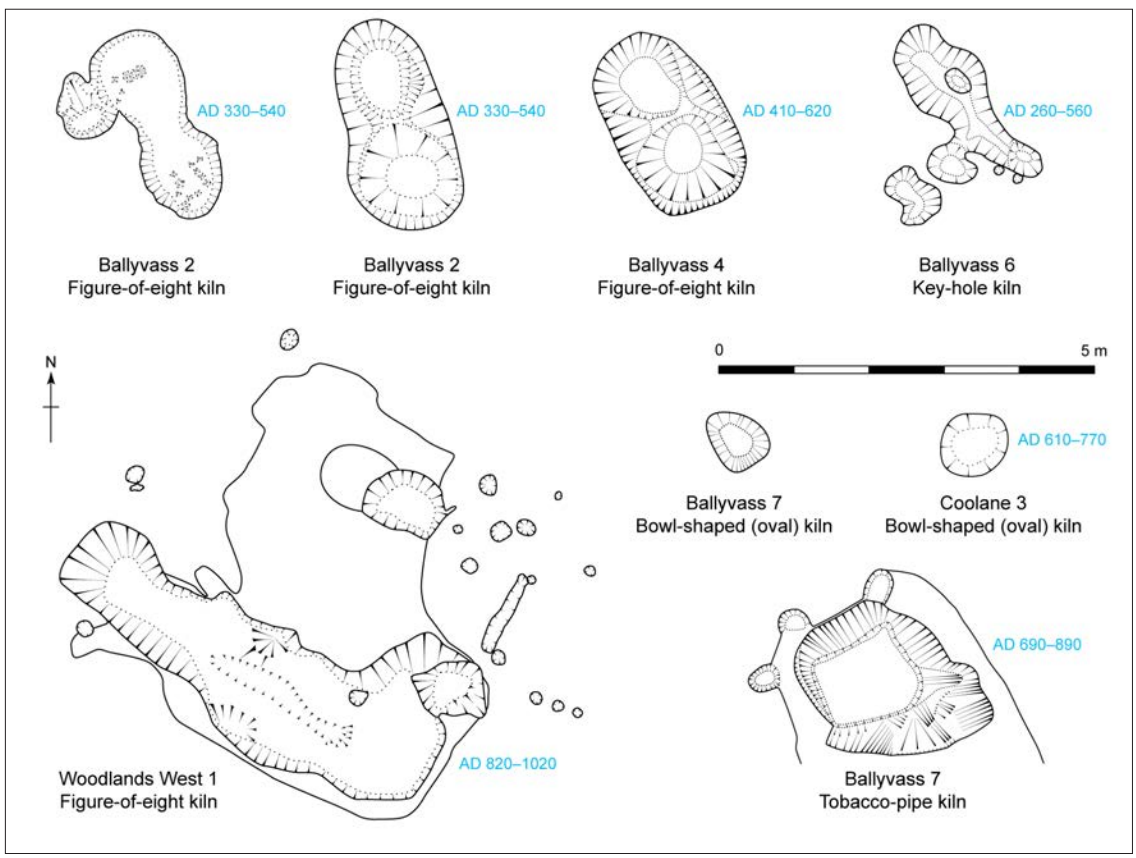
The organisation and division of the medieval landscape in this part of Kildare can be traced through archaeological evidence for boundary systems revealed on the M9 route. Excavations uncovered networks of shallow ditches, likely accompanied by low banks, with particularly extensive systems identified at Hallahoise 4 and Woodlands East 1 (Illus. 4.14). Some of these boundaries originated in the early medieval period, as evidenced by a radiocarbon date of AD 690–970 (SUERC-25701), but continued in use into the 12th–13th centuries, as indicated by pottery from their upper fills. The Anglo-Norman colonisation introduced significant landscape reorganisation, including the widespread introduction of rectangular enclosures that reflected the imposition of new feudal economic and political structures. However, this reorganisation often incorporated pre-existing boundaries rather than completely erasing them. This practice aligns with broader patterns identified by MacCotter (2008) which illustrate how Anglo-Norman colonisers frequently adapted existing political and territorial boundaries while implementing their new feudal order. An example of this integration is visible at Hallahoise 4, where the enclosure's southern boundary was incorporated into a townland division that persists today.

Illus. 4.14 Land divisions at Woodlands East 1 and Hallahoise 4.

Cereal processing

Cereal-drying kilns have been in use in Ireland since the prehistoric period (Monk & Kelleher 2005, 77; Chapter 5). As part of crop cultivation, it was essential to reduce the moisture content of harvested grains before storage; this made them less susceptible to mould, fungal and insect attack, as well as hardening the grain prior to the threshing and milling processes (ibid.). Kilns are generally defined by their shape, namely oval or sub-oval shaped, keyhole-shaped, tobacco-pipe-shaped, L-shaped, figure-of-eight-shaped and dumbbell-shaped (O'Sullivan & Downey 2019), but they all operate on a variation of the same technological process. A fire-pit or firing area is located to one end of the kiln and a drying chamber is located at the other. Both the fire-pit and the drying chamber are linked together by a flue. When a fire is lit, hot air flows from the fire-pit along the flue into the drying chamber. Cereal grains are spread within the drying chamber and the heat generated from the fire rises to pass through the cereal grains, causing them to dry. A reconstruction image of this process is available in Bolger et al. (2015, 154). Factors which affect the efficiency of the drying process include the length and shape of the flue between the fire-pit and the drying chamber, the direction of the wind and the air temperature (Monk & Kelleher 2005, 101–4).

The scheme revealed 35 cereal-drying



Illus. 4.15 Selection of plans of cereal-drying kilns.

Illus. 4.16 Ballyvass 2 figure-of-eight kiln, looking north.

kilns of various forms: bowl-shaped, figure-of-eight, key-hole-shaped, oval, and tobacco-pipe-shaped (Illus. 4.15, 4.16). Radiocarbon dating was conducted on 23 of these, with one additional example having a reliable *terminus ante quem* (Table 4.1). Most dated kilns belonged to the early medieval period or had dates spanning the Late Iron Age into the early medieval period, while only three kilns yielded later medieval dates.

The six oval or bowl-shaped kilns were located on separate sites all within 3 km of each other just south of where the road crossed the River Greese. Four of these were dated, and returned dates concentrated between the Late Iron Age and the earlier half of the early medieval period (second to eighth centuries AD). The 12 figure-of-eight kilns were predominantly dated to the earlier part of the early medieval period, with some potentially being as early as the Late Iron Age, which previous excavations have shown can be the case (Dowling 2014). A classic example of these earlier figure-of-eight kilns was excavated at Ballyvass 2 (Illus. 4.16). Four figure-of-eight kilns also dated to the latter half of the early medieval period, indicating the continued use of this form in the region. The tobacco-pipe-shaped kiln at Ballyvass 7 was also early medieval in date and was built into the rear of a bank, suggesting the location may have been chosen to facilitate this particular form. The 10 keyhole-shaped kilns ranged from the Late Iron Age–early medieval tradition to the late medieval period, potentially as late as the 17th century. This morphological group displayed considerable variety in form, which corresponds to their chronological range. Two of these kilns returned dates ranging from the Late Iron Age to the early medieval period.

Analysis of environmental samples from the kilns on the M9 provides direct evidence for both agricultural practices and crop selection that had already been established by the early medieval period (Chapter 5). Hulled barley and oats dominated the assemblage recovered from kilns, establishing these as the primary cultivated crops processed in these structures. Arable weeds that thrive in disturbed, nutrient-rich soils created by intensive cultivation were also present. This seems to suggest deliberate fertilisation practices, as well as a shift toward more intensive farming methods and a more managed and intensively cultivated landscape.

An exceptionally rare assemblage of carbonised linen fragments was recovered from the tobacco-pipe-shaped cereal-drying kiln at Ballyvass 7. The kiln was constructed

Table 4.1—Cereal-drying kilns: forms and dating evidence

Site name	Form of kiln	Dating evidence
Narraghmore 1 (a)	Keyhole	Cut by a ditch with fill dated to AD 650–870 (SUERC-25399), cut by a kiln dated to AD 680–970 (SUERC-25400)
Narraghmore 1 (b)	Keyhole	AD 680–970 (SUERC-25400) and cut by a ditch the basal fill of which produced a date of AD 650–870 (SUERC-25399)
Narraghmore 1 (c)	Keyhole	AD 770–1020 (SUERC-25398)
Baronsland 6	Figure-of-eight (also described as linear)	AD 770–980 (SUERC-25283)
Moone 1 (a)	Sub-oval	AD 130–380 (SUERC-25313)
Moone 1 (b)	Figure-of-eight	AD 340–580 (SUERC-25456)
Moone 1 (c)	Sub-oval	—
Mullamast 1 (a)	Keyhole	AD 1290–1440 (SUERC-25428)
Mullamast 1 (b)	Keyhole	—
Mullamast 2	Keyhole	AD 240–540 (SUERC-25444)
Mullamast 3 (a)	Figure-of-eight	AD 340–590 (SUERC-25459)
Mullamast 3 (b)	Figure-of-eight	—
Mullamast 10	Figure-of-eight	AD 250–550 (SUERC-25484)
Timolin 1	Keyhole	AD 1170–1390 (SUERC-25862)
Belan 3 (a)	Bowl-shaped (also described as truncated)	AD 420–640 (SUERC-25397)
Belan 3 (b)	Bowl-shaped (also described as truncated)	AD 590–670 (SUERC-25275)
Belan 3 (c)	Figure-of-eight	AD 780–908 (SUERC-25281)
Belan 3 (d)	Figure-of-eight	AD 720–950 (SUERC-25272)
Belan 4	Figure-of-eight	—
Burtown Big 1	Keyhole	—
Burtown Little 3	Keyhole	AD 1480–1960 (SUERC-25910)
Foxhill 2	Figure-of-eight	AD 260–540 (SUERC-27162)
Ballyvass 6	Keyhole	AD 260–560 (SUERC-25415)
Coolane 3	Bowl-shaped (oval)	AD 610–770 (SUERC-26386)
Ballyvass 4	Figure-of-eight	AD 410–620 (SUERC-25457)
Ballyvass 2	Figure-of-eight	AD 330–540 (SUERC-26387)
Ballyvass 2	Figure-of-eight	AD 330–540 (SUERC-26390)
Woodlands West 1	Figure-of-eight (also described as sub-circular)	AD 820–1020 (SUERC-26392)
Ballyvass 7	Tobacco-pipe	AD 690–890 (SUERC-29024)
Ballyvass 7	Bowl-shaped (oval)	—

by cutting into the backfilled remains of a souterrain and bank in a medieval enclosure and the textile remains were preserved in the basal fill of the kiln. Detailed analysis revealed two distinct varieties: a ribbed tabby weave cloth and a finer 'veil-like' tabby weave cloth (Illus. 4.17). Their discovery within a cereal-drying kiln strongly suggests they were associated with cereal processing, and they may represent the remains of grain transport sacks. Early Irish law texts from the seventh and eighth centuries describe dried grain being transported in bags called bolc, which were perhaps made of leather (Kelly 1997, 244–5). This same source notes that St Ciaran carried oats in such a bag. While these texts seem to reference leather bags, the Ballyvass evidence suggests that linen was also used for this purpose. Alternatively, the linen fragments may have been used in the winnowing process, where chaff was separated from grain using air currents. Ethnographic accounts (Evans 1957, 213) document wheat being winnowed using a sheepskin tray called a wight and then poured onto a ground cloth. Another possible explanation is that they served as drying screens, positioned to support grain within the kiln's drying chamber.

Illus. 4.17 Fragments of carbonised linen recovered from the Ballyvass 7 kiln *in situ* and following post-excavation conservation.

Animal husbandry

Evidence for animal husbandry was identified in the form of animal bones retrieved from deposits associated with waste disposal. The occurrence of animal bone on the sites in the study area follows the general trend from most excavated domestic medieval sites in Ireland, with cattle being the most numerous species present followed—in descending order of prevalence—by sheep/goat, pig and horse (McCormick & Murray 2007). Four principal sites provided evidence for animal husbandry: the enclosure sites at Ballyvass 7, Woodlands West 1 and Hallahoise 4, and a series of medieval wells which were infilled with domestic waste at Hallahoise 1 (Illus. 4.1, 4.2).

During the early medieval period, the local economy relied heavily on livestock farming. Cattle and sheep/goats were the primary animals, used for multiple purposes including meat production, milk, wool, hides, and—in the case of cattle--labour. Pigs were valued for their pork and lard, while horses were primarily used as work animals and for riding rather than for food. The pattern of livestock use changed over time; cattle dominated in earlier periods, while sheep/goat numbers increased during the 10th–11th centuries,

particularly at sites like Ballyvass 7 and Hallahoise 4.

At Ballyvass 7, the cattle management strategy showed considerable complexity. Of 19 cattle which were aged as part of the osteological analysis, seven were killed as calves (likely to optimise milk production) while most were slaughtered between 18 and 42 months, which is the prime age for beef. Some were kept into older age for milk production and labour. The presence of complete carcasses indicates that slaughter, butchery, and consumption all took place on site.

At Hallahoise 1, while cattle remained the dominant species across most features of the site, one notable exception was found in a well that contained the single largest assemblage of faunal remains—322 animal bones—from excavations along the route of the road. In this well, which was radiocarbon dated to AD 690–900 (SUERC-25295), sheep/goat bones dominated, followed by pig bones, with cattle bones being minimally represented. The presence of mainly head and limb bones suggests that, while slaughter took place locally, the prime meat cuts were transported elsewhere for consumption.

As already mentioned, it was evident at Ballyvass 7 and the Hallahoise sites that sheep/goat became more important in the economy of the area by the 10th and 11th centuries. According to McCormick and Murray (2007, 116), the intensification of sheep husbandry is related to a decrease in the status of cattle and possibly also linked to the rise of craft-working, or trade, during the later stages of the early medieval period. The change does not represent a dramatic shift in the livestock economy, but it does signal a reduction in the importance of cattle during the 10th–11th centuries (ibid., 106). At this time sheep and goat were almost as important as cattle in this part of Kildare. Their importance is also linked to craft-working, because they were a source of raw materials and associated products such as wool and goat horns. Therefore, as seen with cattle, sheep and goat were bred for mixed husbandry. While meat was taken from younger animals, the large number of older individuals noted in the assemblage indicates that they were being used to supply milk for secondary dairy products such as cheese and butter, for example.

The largest later medieval animal bone assemblage on the scheme was found at the enclosed farmstead at Woodlands West 1. The site followed the typical pattern seen at other Irish sites of this period, with cattle bones being most numerous, followed by sheep/goat, pig, horse, dog, and cat. The cattle at Woodlands West 1 measured between 102 cm and 120 cm at the shoulder. The bones show clear evidence of butchery, and certain parts of the animals are notably absent from the assemblage, particularly the lower leg bones which typically remain attached to hides during butchery. These patterns suggest cattle were raised for multiple purposes; the butchery marks indicate meat consumption and trade, the missing leg bones point to leather working and craft activities (which were becoming more prevalent during the later medieval period), while other evidence suggests the animals were also used for milk production and as working animals. The high proportion of cattle bones at Woodlands West 1 likely reflects the growing importance of dairy production in medieval Ireland. As Denham (2007, 276) observes, 'It appears that in medieval Ireland, the requirements of the dairy market supersede those of the beef market'. This represents a significant shift from earlier trends; McCormick and Murray (2007, 116) had noted a decline

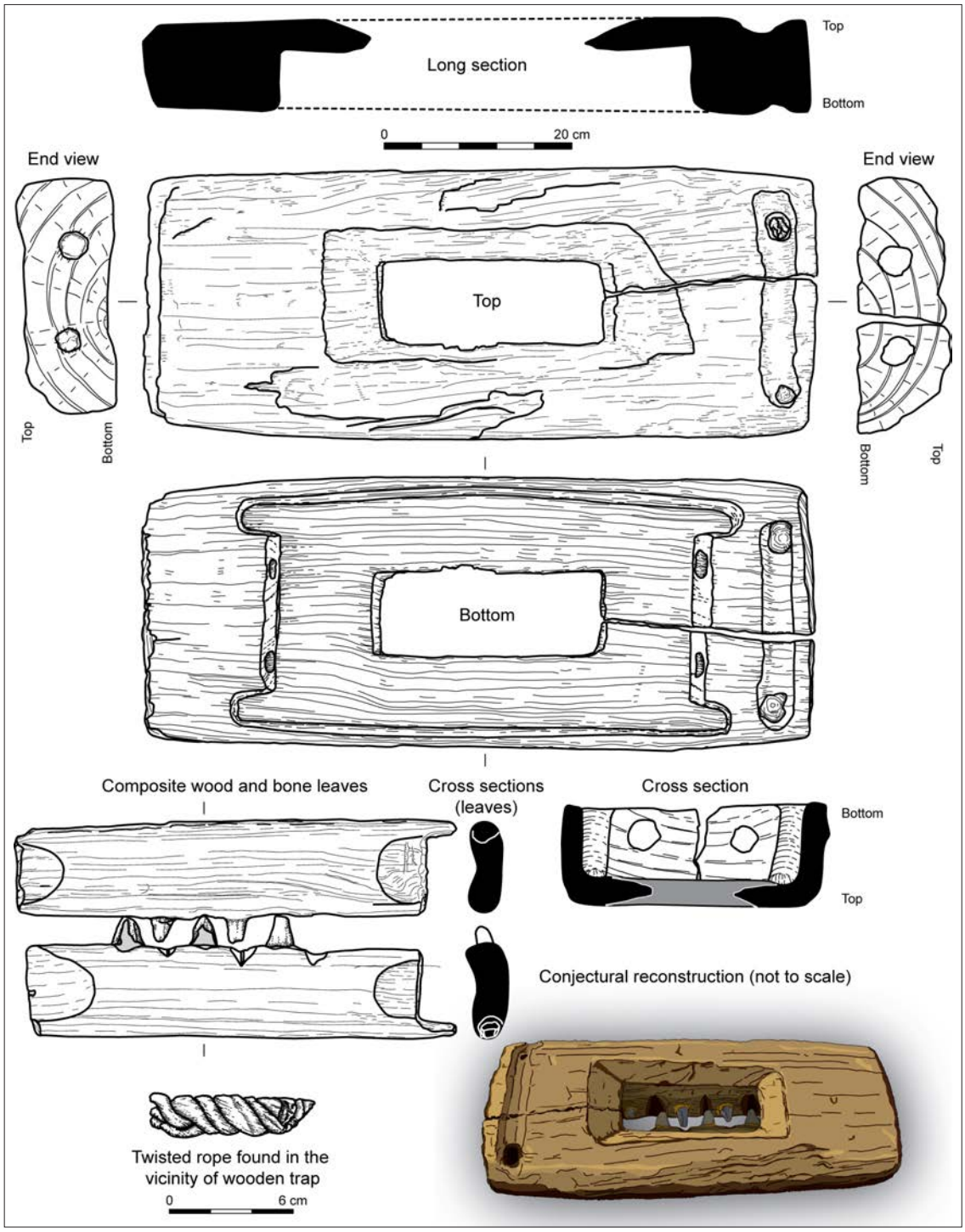
in cattle relative to sheep during the 10th and 11th centuries, but the archaeological evidence from Woodland West 1 shows this trend reversed during the later medieval period. The pig bones from Woodlands West 1 make up approximately 14–18% of the animal bone assemblage, a proportion similar to other rural sites of the later medieval period in Ireland (Denham 2007, 147–51). The evidence suggests these pigs were bred and reared primarily for their meat and lard, with butchery marks indicating on-site slaughter and consumption. However, the notable absence of lower limb bones from the Woodlands West 1 assemblage suggests some form of organised meat processing and trade. This pattern, also seen in the cattle remains, points to a systematic removal of certain cuts of meat or animal parts for trade or use elsewhere. Such evidence for meat trade fits into the broader economic picture of later medieval Ireland, where rural settlements like Woodlands West 1 were likely integrated into local market networks supplying meat products to nearby towns and settlements.

The largest concentration of horse remains was found at Hallahoise 4. Here, horses had estimated heights of 121 cm to 141 cm when measured at the shoulder, well within the typical size range for medieval Irish horses. About 10 km away, the contemporary village site at Mullamast 1 was identified as a potential horse breeding centre (Bolger 2017, 93–8), with the horse bones recovered suggesting most animals living beyond six years of age and measuring between 128 cm and 120 cm at the shoulder. These measurements suggest the horses were likely pre-Norman native Irish breeds, similar in size to modern Connemara ponies. This type was known as the Irish 'hobby' horse, which had a significant military connection through its association with 'hobelars'—mounted light cavalry fighters of the late 13th and early 14th centuries (Lydon 1954, 53; Denham 2007, 283). The compact but sturdy build of these smaller horses made them well suited for the quick, mobile warfare tactics employed by hobelars, who required mounts that were agile and could navigate difficult terrain while carrying armed riders. While these horses were bred and raised at sites like Mullamast, they were likely traded at the major medieval towns of Castledermot and Athy in the region.

Hunting

The animal bones recovered from most of the sites indicate that many people in early and later medieval south Kildare supplemented their diet through hunting. While historical sources tell us that hunting was often an elite activity with restricted access to certain areas and species, archaeological evidence provides direct insight into actual hunting practices. By examining animal remains across different settlement types, archaeologists can understand how these hunting restrictions were both followed and potentially violated.

As mentioned in Chapter 3, spectacular direct evidence for hunting was recovered from Prumpelstown Lower 5, in the form of an exceptionally well-preserved tread trap set in an early medieval brushwood trackway on the edge of a river. This complex trap was constructed from a single block of oak (Illus. 4.18, 4.19). A rectangular recess cut through the centre housed a pair of oak leaves with bone teeth or tines set into them, three per leaf. These were staggered to almost mesh with each other as the two pieces closed together. A radiocarbon date of AD 660–810 (SUERC-29031) was obtained from this artefact, suggesting its contemporaneity with the trackway. Tread traps are well-



Illus. 4.18 Illustration and conjectural reconstruction of the tread trap from Prumpelstown Lower 5 (by Sara Nylund).

Illus. 4.19 The moment of discovery of the Prumpelstown Lower 5 medieval tread trap.

documented artefacts, with 23 known in Ireland, two in Britain, and at least 40 from southern Scandinavia and Central Europe (Stephens 1996). The Irish examples are concentrated mainly in the north and west, occurring individually except for a group of nine traps from Larkhill, Co. Fermanagh (Allingham 1896). The Prumpelstown Lower trap is the first bivalvular, or two-movable-part, trap discovered in Britain or Ireland, and the first trap found in this region with teeth inserted in the valve edges. While wooden teeth are known from European examples, no other tread trap is known to have bone teeth. The mechanism and purpose of tread traps have been studied through both experimental archaeology and ethnographic research. Experiments using models (Graham-Smith 1923; Stephens 1996) and studies in Poland and Russia (Moszynski 1929) suggest they were set in ground pits to trap the legs of passing animals. While most tread traps are oblong with channels and pegs to hold flexible wood springs, the Prumpelstown Lower 5 trap was distinctively short and rectangular without channels. In bivalvular traps, two springs were used with the valves forced open and held apart by a tripping board (Stephens 1996). The Prumpelstown trap had two horizontal holes bored into either end, likely for hazel rod springs. Two additional holes through the trap's body contained a withy tie, possibly for repair or anchoring purposes.

Ethnographic research shows tread traps in Europe were predominantly used for deer hunting (Stephens 1996) and red deer bones were the only wild animal remains found in the floodplain deposits at Prumpelstown Lower 5. Early medieval Irish carvings at Clonmacnoise (Munro & Gillespie 1919, 162–5) and Banagher (Soderberg 2004, 167–83) depict deer caught by hind legs in apparent tread traps (Illus. 7.1). Early medieval written sources reference a clár toll, pierced board, associated with cuitheach, deer-pits, which were sometimes water-filled, possibly to disguise traps near watering holes (Kelly 1997, 272–81). These traps span a broad chronological range. Scandinavian examples have been dated to the Middle Bronze Age and Iron Age, while a trap from Drummacaladdery, Co. Donegal, dates to the Late Bronze Age (Mitchell 1945, 16). More recent findings include a Scottish example dated to AD 530–680 (Sheridan 2005, 21) and a Larkhill trap from the mid-sixth century AD (Stephens 1996, 62).

While the tread trap provided direct evidence of large-animal hunting in the early medieval period, bird remains from across multiple sites indicate fowling—the hunting of birds—throughout the

medieval period. The early medieval bird assemblage from Ballyvass 7 contained 32 specimens, including ground feeding birds, or galliformes, that could represent either domestic fowl or game birds such as capercaillie, black grouse, or pheasant. While pheasant is generally thought to have been introduced during the Norman period, or shortly after, it was present in Britain from the Roman period (Poole 2010). The Ballyvass assemblage also included crane, goose, and one specimen of passeriformes (songbirds).

The medieval assemblages from sites along the road contained similar species to earlier periods but with some significant additions. At Woodland West 1, remains included those of deer, fox, hare, rabbits, domestic fowl or game birds, and notably, goshawk and eagle bones. The medieval period at Ballyvass 7 yielded evidence of rabbit, hare, and deer. Rabbits are particularly significant as a Norman introduction, arriving in Ireland no earlier than the early 13th century (Beglane 2015). Initially, they were managed in artificial enclosures called 'coneygarths', with ownership restricted to elites until the mid-14th century when it expanded to include the gentry classes. While feral colonies eventually developed and were hunted, rabbits retained a specific social significance. They held special importance in religious contexts, symbolising meekness in medieval iconography, and played a notable role in monastic and ecclesiastical diets. Their foetal and newborn young were even permitted as food during religious fast days. The recovery of goshawk and eagle bones at Woodlands West 1 provides evidence for the practice of falconry, a sport favoured by medieval elites. The cultural importance of falconry in medieval Ireland is extensively documented through various contemporary sources (DoTCAGSM 2021). Its significance is reflected in medieval architecture, such as the AD 1400 fresco at Abbeyknockmoy, Co. Galway, depicting three kings with falcons. Literary sources include J Derricke's (1581) descriptions of Irish hunting birds, while artistic evidence spans paintings, carvings, stained glass, and tapestries. The practice was so deeply embedded in medieval Irish society that it influenced administration—Cromwellian maps recorded hawk nesting sites, and landowners sometimes accepted young hawks as rent payment. Falconry's popularity around Dublin grew so substantial that, by 1641, authorities had to establish a seven-mile exclusion zone around the city.

Religion and the dead

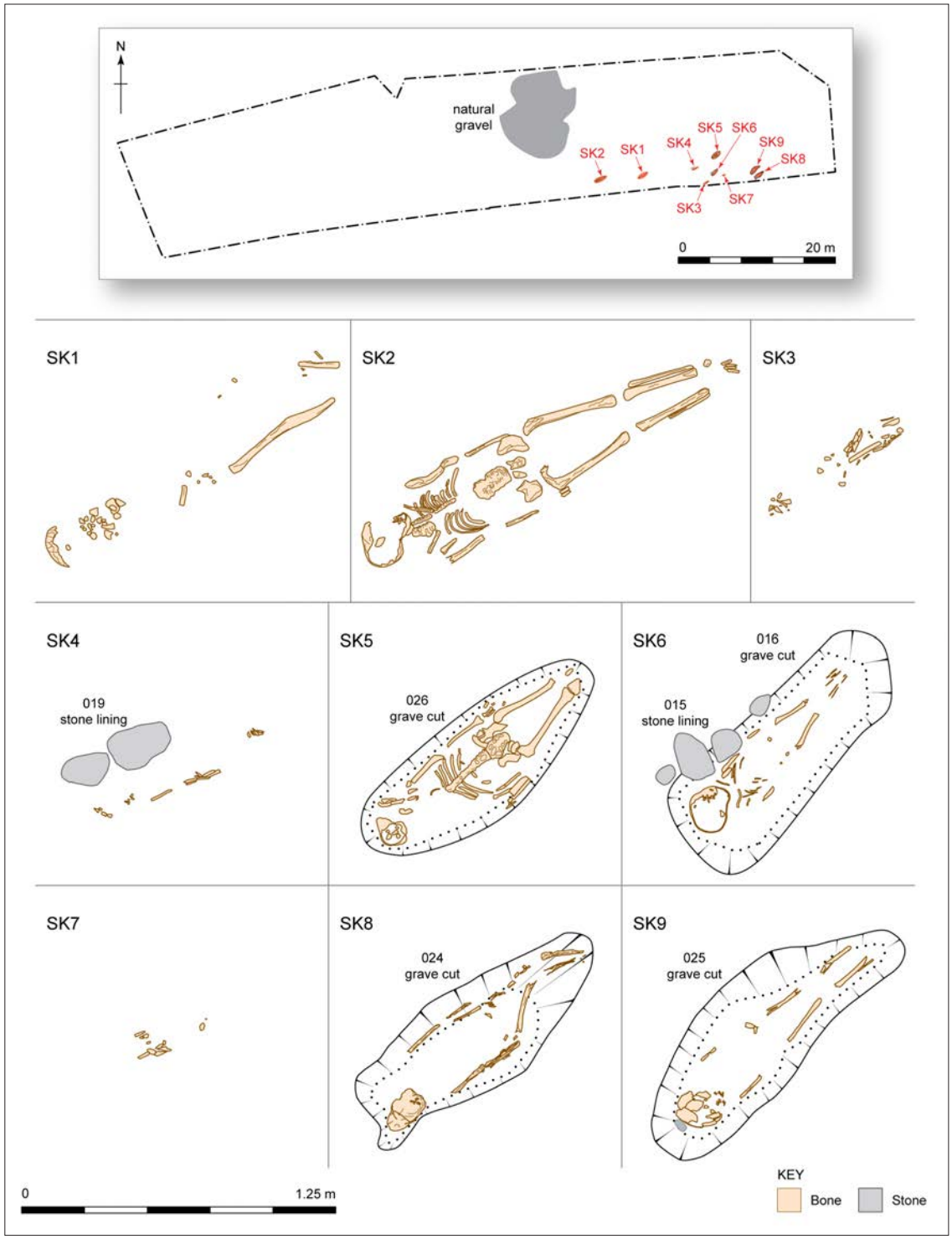
Few archaeological discoveries connect us as intimately with the past as human remains. The bones of medieval individuals from this area offer uniquely personal insights into the lives of those who once traversed its fields and roads. During this period, Christian doctrine mandated burial in consecrated ground adjacent to churches. These designated cemeteries remained in continuous use for centuries, their locations well documented and deliberately avoided during the construction of roads and other thoroughfares. This makes the discovery of medieval burials outside of known ecclesiastical sites particularly noteworthy. Human remains of medieval date were discovered at five sites. The largest assemblage came from Ballyvass 1, where there were nine inhumations. This location's significance is enhanced by its proximity to Mullaghreelan, recorded in early medieval sources as the royal settlement of Roíriu—a site of such importance that a ninth-century princess from there married into the Uí Dúnlainge dynasty (Smyth 1982, 82). Two

burials were excavated at Woodlands West 1, and a single burial was identified at Woodlands East 2. The four burials from Prumpelstown Lower 5 were detailed previously (Table 3.1, Chapter 3). Burial in the cemetery at Moone 5 may also date to the early medieval period (Chapter 2).

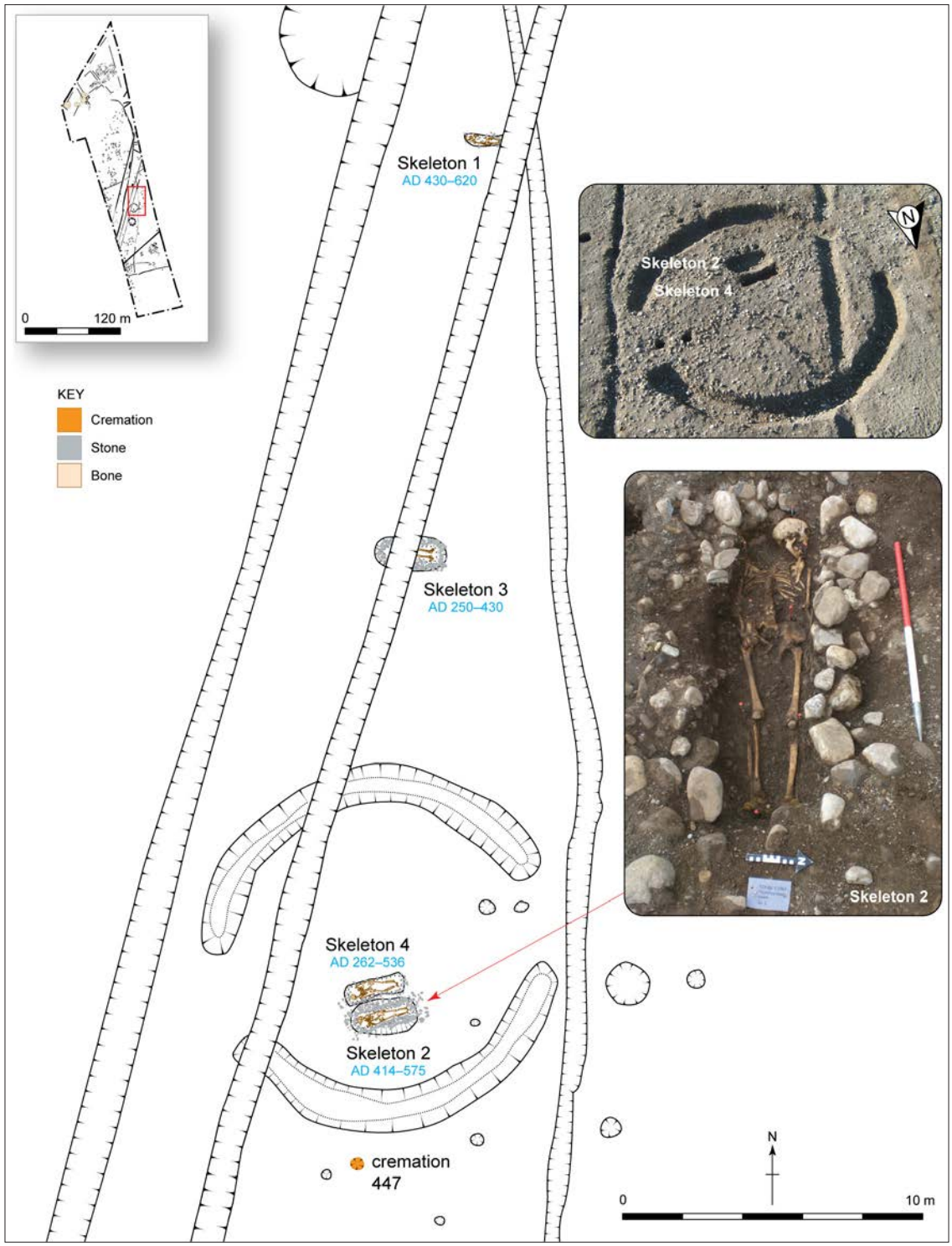
At Ballyvass 1, excavations revealed nine burials arranged in a roughly east–west line along the southern edge of the excavation area (Illus. 4.20). This number aligns with O'Brien's (2020, 58) findings regarding typical burial numbers in secular early medieval cemeteries, though the arrangement suggests the cemetery likely extended beyond the investigated area. The burials date from the fifth to seventh centuries AD, spanning the period when Christianity was becoming established in Leinster, and corresponding to the historical sources which record Iserninus' evangelical activities in the middle Barrow valley during the fifth century (Mac Shamhráin 2009). While the SW–NE orientation of the burials aligns with Christian practice, O'Brien (2020, 57) reminds us that 'extended supine inhumation cannot automatically be assumed to represent Christian burial'. The burials did appear constrained, and the upper arms were in some cases pressed close to the bodies, but they were not very well preserved, and it was not possible to be certain if they had been wrapped in shrouds, a practice characteristic of the tradition. The cemetery population included three children aged between seven and 13 years, with the remaining adults all over 35 years old at death. Among the adult burials, despite poor preservation from soil conditions and plough damage, three were identified as female and two as male. The cemetery's size and composition suggest it served a local rural community, a characteristic feature of the early medieval period as documented by O'Brien (ibid., 49–102) in her study of early medieval burial practices. Several recorded enclosure sites in the immediate vicinity could represent the settlements of the buried individuals. The cemetery's use appears to have ended before the close of the seventh century, perhaps reflecting changing burial practices as Christian influence grew stronger in the region.

The Prumpelstown Lower 5 site demonstrates a deliberate pattern of reusing ancient burial monuments for early medieval interments (Illus. 4.21). This placement of early medieval burials within and around prehistoric monuments suggests a conscious choice to connect with these ancestral sites, a practice Hawkes (2021, 42) has argued indicates that 'older monuments played an important role as sacred places because of their antiquity and mythological associations'. The wider Prumpelstown Lower landscape shows this pattern of intentional engagement with prehistoric features, reflecting how early medieval communities incorporated ancient monuments into their burial practices.

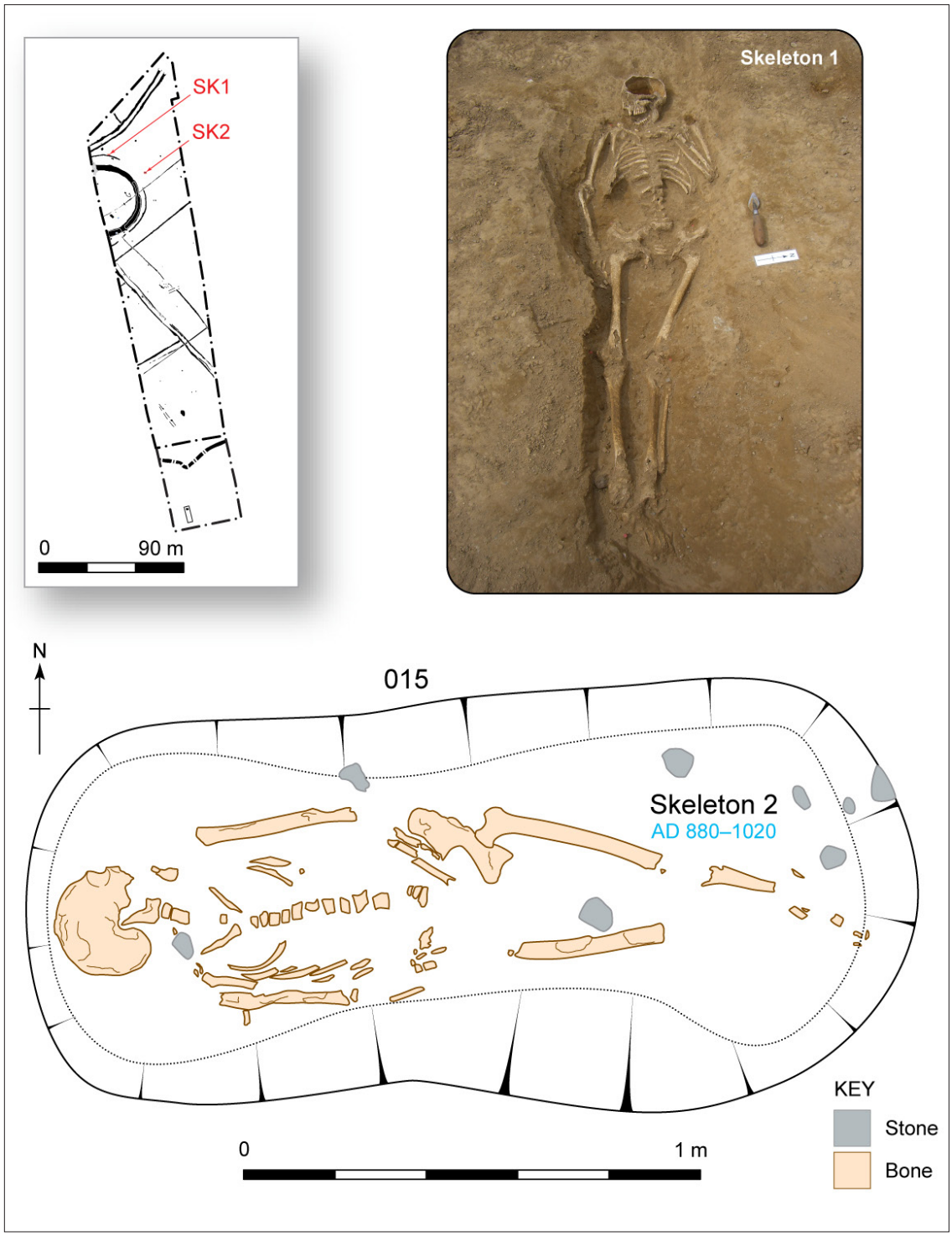
At Woodlands West 1 two inhumations were identified (Illus. 4.22). One (SK1) was inserted into the broken line of the outer enclosure and the other (SK2) was located just outside of it. The external burial (SK2) returned a radiocarbon date of AD 880–1020 (SUERC-25266). It contained the remains of an adult male aged over 45 years, in an extended supine position. The grave was unlined and orientated west–east. The second burial (SK1) was recovered from the top fill of the outer enclosure ditch. Neither the ditch (which surrounded the Anglo-Norman ringwork) nor the burial were dated. This burial was also in a supine position, but this time followed the WNW–ESE orientation



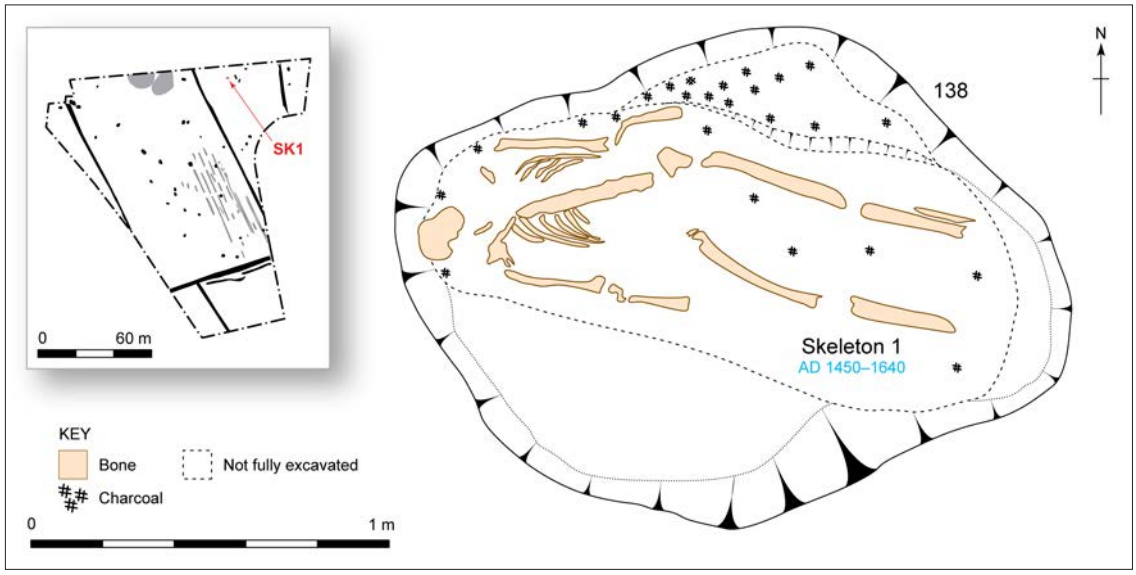
Illus. 4.20 Medieval burials at Ballyvass 1.



Illus. 4.21 Medieval burials at Prumpelstown Lower 5.



Illus. 4.22 Medieval burials at Woodlands West 1.



Illus. 4.23 Medieval burials at Woodlands East 2.

of the ditch segment where it was located. It seems most likely that this burial was also early medieval and had been interred after the ditch had fallen out of use. Isolated burials in the earlier part of the early medieval period were relatively common and O'Brien (2020, 64) argues that they were 'respected, valued, cherished, or perhaps even distinguished'.

The final medieval—and only later medieval—burial was identified at Woodlands East 2 (Illus. 4.23). It was radiocarbon dated to AD 1450–1640 (SUERC-25265) and comprised the remains of an adult aged 35–45 years at time of death. The skeleton was in an extended and supine position aligned west–east. The grave cut was oval and slightly too short for the inhumation which was 'bent' to fit the grave. Burial outside of a cemetery at this late date is unusual; this coupled with the short pit may suggest an expedient burial.

Metalworking

Significant evidence of medieval metalworking was discovered on the route of the road, both in the form of charcoal production and direct evidence of smithing and smelting (Illus. 4.24).

Charcoal production

The production of charcoal requires the partial combustion of wood in an oxygen-restricted environment to prevent complete burning. Medieval Irish charcoal makers employed a technique involving pits, over which wood was systematically arranged and then covered with earth to regulate oxygen flow during the smouldering process. Wren and Price (2011) provide a detailed illustration of this methodology. Charcoal was particularly valued for its heat-generating properties in metalworking operations. While it may have served other heat-intensive crafts like glassworking,

Illus. 4.24 Group of metalworking pits at Woodlands East 1, looking north.

its primary demand came from metal production, being essential for both smelting and forging processes.

Archaeological investigations along the road scheme revealed several charcoal-production sites. Most locations contained isolated or small clusters of pits. However, excavations in Woodlands East townland revealed evidence of large-scale production; 78 charcoal pits were discovered at Woodlands East 1, and 21 at Woodlands East 2 (Illus. 4.25). The presence of ironworking evidence at Woodlands East 1, combined with the proximity of Woodlands East 2 (approximately 20 m south), suggests a likely connection between these charcoal-production sites and metalworking activities.

The charcoal-production pits identified at Woodlands East 1 ranged from sub-rectangular to sub-oval in shape, from 0.88–2.92 m in length, and from 0.55–1.32 m in width. The recovered charcoal samples indicated the use of dryland woodland species, including oak, hazel, holly, and pomaceous fruitwoods, with oak predominating as the exclusive species in 70% of the analysed samples. Kenny (2010) notes that oak charcoal's capacity to achieve temperatures above 1000°C made it particularly valuable for ironworking operations. The site's chronology, established through radiocarbon dating, spans AD

Illus. 4.25 Plan showing density of charcoal production pits at Woodlands East 1 and Woodlands East 2.

Illus. 4.26 Post-excavation view of a charcoal production pit at Woodlands East 2 with fire-reddened edges, looking north.

980–1160 (SUERC-25304) to AD 1490–1670 (SUERC-25302), while the presence of Dublin-type coarse ware pottery dating to the late 12th to early 13th century provides additional temporal context. This evidence points to sustained charcoal-production activities extending from the late early medieval period through the later medieval era.

The charcoal-production pits at Woodlands East 2 were dated to the 12th and 13th centuries AD through associated pottery. Oak was once again the predominant wood species. The pits were mostly rectangular or sub-rectangular in plan, but a few were oval. The pits were an average of 1.6 m long, 1.08 m wide, and 0.22 m deep. Environmental analysis of material from three pits yielded evidence of wild plant species, including small-grained grass seeds, mustard seed, a single bud, and fumitory seed. These botanical remains suggest the presence of turf roofing constructed over the pits.

The archaeological evidence from Woodlands East 1 and Woodlands East 2 shows continuous charcoal production from the later early medieval into the late medieval period (Illus. 4.25, 4.26). The dominance of oak charcoal indicates local oak woodland, with production sites established in newly felled clearings to minimise timber transport.

By the 12th century, this charcoal likely fuelled local ironworking at both Hallahoise 4 and Woodlands East 1 (see below), demonstrating how these rural communities efficiently managed woodland resources for metalworking.

Metalworking

Medieval metalworking evidence emerged at two adjacent sites: Hallahoise 4 and Woodlands East 1. At Hallahoise 4, slag fragments appeared in secondary contexts including the large square pit at the centre of the site, rubbish pits and filled ditches, as well as in three furnace linings. Radiocarbon dates from two of these linings—AD 1020–1220 (SUERC-25439) and AD 1020–1230 (SUERC-25855)—evidenced metalworking activity at the site from the early to the later medieval periods. Analysis showed that 39% of slag from the site was related to iron-smithing, with the remainder undiagnostic. While smithing was confirmed, its precise nature (primary or secondary) remained unclear; the absence of hammerscale suggests off-site smithing, likely at neighbouring Woodlands East 1 where hammerscale was found.

A large square pit centrally positioned within the enclosure at Hallahoise 4 may be the remains of a sunken-floored building that served as a forge. Sunken-floored structures found at Lowpark in County Mayo (Gillespie 2007) and Shankill in County Roscommon (Ó Maoldúin 2024) also contained metalworking debris and were interpreted as forges. Other contemporaneous forges, like the ninth to 10th-century rectangular building at Ballyellin, Co. Wexford (McLoughlin & Kelly 2019), share this rectangular form.

Woodlands East 1 provided definitive smithing evidence—dated to AD 900–1150 (SUERC-25303)—from 31 pits arranged in two clusters. Analysis confirmed iron-smelting, though evidence for iron-smithing dominated. Unscorched pits at the site suggest either the dumping of smithing hearth remains, or (more likely, given the presence of recovered hammerscale) elevated smithing activities.

Early medieval society was highly stratified, with skilled craft workers such as blacksmiths (*gobae*) enjoying an elevated social standing (Kelly 2016, 62–3). The provision and maintenance of farm equipment, domestic vessels and weapons essential to the local population ensured their status. The blacksmith was regarded as one of the wisest people in the community and the forge was central to social networking and communication (Ó hÓgáin 1990, 389). Early Irish laws describe blacksmiths as being individuals with high social standing who often worked under the patronage of local secular or ecclesiastical authorities (O'Sullivan et al. 2008, 215), and it is evident that they were sometimes thought to possess supernatural powers (Kelly 2016, 62–3).

Trade and economy

The M9 follows the Barrow corridor, a major north–south trade artery through Kildare. This route intersected with the 'Carlow Corridor' in the south, an ancient thoroughfare connecting Ardscull Motte to New Ross (Doran 2008). The strategic importance of this location mirrors patterns seen elsewhere in medieval Ireland, where key transport routes facilitated both local and long-distance trade (Curtin 2019). The convergence of these routes, combined with proximity to the urban and ecclesiastical centre at Castledermot, would have

created favourable conditions for economic development. Just as port towns like Dublin and New Ross acted as nodes in wider medieval trading networks, Castledermot's urban community would have generated significant demand for rural produce from the surrounding area, fostering an active local trading network. Material evidence for this economic activity includes a silver long cross penny of Edward I or Edward II (1279–1327) recovered from Woodlands West 1. The presence of this coin, along with ceramic evidence, reflects the integration of this area into the broader economic networks that characterised Anglo-Norman Ireland, where both local and long-distance trade played crucial roles in regional development.

The Ballyvass 7 drinking horn terminal mount (E2996:300:001) represents significant material evidence for elite drinking customs in early medieval Ireland (Illus. 4.27). Despite early historical sources indicating widespread use of prestigious imported auroch horns (*coirn buaball*) among the Gaelic aristocracy, archaeological finds to support these sources are rare in Ireland. Found in a souterrain fill dated to AD 770–980 (Beta-243989), the Ballyvass mount is one of only about 20 known examples (Grey 2016). Most surviving specimens have been discovered in Scandinavian burial contexts, with a single example from Tongeren, Belgium (Ó Ríordáin 1949, 66–7; Ryan 2002). The chronology of these high-status objects is supported by the Ballyvass dating, which aligns with other securely dated comparable

Illus. 4.27 Artist's visualisation showing the Ballyvass drinking horn terminal (by Sara Nylund).

Irish examples like the Moynagh Lough terminal mount, which has a *terminus post quem* of AD 748 (Bradley 1991, 15).

The later medieval pottery evidence points to both internal Irish trade networks and international connections, reflecting documented patterns, where port towns facilitated both local and international ceramic exchange. Most of the pottery assemblage recovered from the excavations at Woodlands West 1 comprised locally produced wares—Kildare-type and Leinster cooking ware—while the presence of Dublin-type wares suggests trading links with the capital, a pattern consistent with the established medieval trading networks within Anglo-Norman Ireland (Curtin 2019). The excavations at Mullamast 1 provided stronger evidence for this regional trading route to Dublin (Bolger 2017, 98), with Dublin-type wares comprising 30% of the pottery assemblage found during excavations there.

Ten sherds from Woodlands West 1 were classified as Saintonge green glazed pottery, dating to the 13th–14th centuries and associated with the Bordeaux wine trade (Clarke 1983, 19; Deroeux & Dufournier 1991). This limited but significant presence of imported wares aligns with Curtin's (2019) findings about the role of international trade in maintaining Anglo-Norman cultural connections, though the small assemblage size should be considered when drawing conclusions. The contrast with Mullamast 1 is notable: out of nearly 10,000 sherds recovered from this site, only a single sherd of Saintonge ware was identified (Bolger 2017, 42, 98) suggesting varying levels of access to international trade networks even for generally contemporary Anglo-Norman settlements within the same region.

Discussion

The archaeological evidence along the M9 corridor illustrates the profound and continuous changes that reshaped southern Kildare throughout the medieval period. From the fifth-century arrival of Christianity through the political dominance of the Uí Dúnlainge dynasty and, ultimately, the 12th-century Anglo-Norman colonisation, the landscape was repeatedly transformed by shifting religious, political, and economic forces.

The burial evidence at sites like Moone reflects changing burial practices which arrived around the same time as Christianity, with extended inhumations of infants in rectangular graves replacing earlier crouched burials. However, as O'Brien (2020, 57) reminds us 'extended supine inhumation cannot automatically be assumed to represent Christian burial'. The extended SW–NE aligned burials found at Ballyvass 1 also follow the newly adopted burial rites but again it is difficult to be certain of religious influence. At Prumpelstown Lower 5 a cremation that was deposited into the bog was dated to between the fourth and sixth centuries AD, and later inhumations on that site certainly suggested that communities maintained meaningful connections to ancestral landscapes even as they embraced Christian practices.

The subsequent centuries saw the rise and consolidation of Uí Dúnlainge political power, evidenced in the construction of high-status ringforts like Ballyvass 7, complete with its souterrain and prestigious items like the drinking horn terminal. The extensive network of cereal-drying kilns across the landscape points to intensifying agricultural

production likely supporting both a growing population and ecclesiastical centres like Dísert Diarmada. The sophistication of hunting practices, demonstrated by the Prumpelstown Lower 5 tread trap, also reflects the complex resource exploitation strategies of these established Gaelic communities.

Anglo-Norman colonisation brought another wave of transformation to this already dynamic landscape. The shift to rectangular enclosed farmsteads at sites like Hallahoise 4 and the construction of the Woodlands West ringwork represent the imposition of new systems of land management and social organisation. The introduction of pottery, including imports from Dublin and France, marks the integration of rural settlements into wider economic networks, while the evidence for falconry and rabbit hunting demonstrates the arrival and assimilation of new aristocratic customs. The faunal evidence reveals shifting patterns of animal husbandry and diet throughout the medieval period. Early medieval assemblages from sites like Ballyvass 7 show sophisticated cattle management strategies, with evidence for both dairying and meat production, alongside significant numbers of sheep/goat and pig remains. The increase in sheep/goat bones by the 10th–11th centuries, particularly evident in the Hallahoise 1 well deposits, suggests a growing emphasis on wool production. This trend reversed following the Anglo-Norman arrival, with sites like Woodlands West 1 showing a return to cattle dominance, likely reflecting the growing importance of centralised dairy production under manorial organisation. The systematic absence of certain skeletal elements, particularly lower leg bones, points to organised butchery practices and hide processing. The presence of horse remains at both Hallahoise 4 and Mullamast suggests specialised breeding of the Irish 'hobby' horse, important for both agricultural work and military purposes. Wild species in the assemblages—from red deer in the early medieval period to the later appearance of rabbit—reflect changing hunting practices and new species introduced under Norman influence. The organisation of craft production shows similar evolution throughout the period. The extensive evidence for ironworking and systematic charcoal production at Woodlands East suggests increasingly regulated industrial activity, likely supporting the expanding economic needs of settlements as they grew from ecclesiastical centres into Anglo-Norman market towns. Yet throughout these transformations, communities demonstrated remarkable adaptability. The continued use of established field systems at Hallahoise 4 into the 12th–13th centuries, alongside evidence that Gaelic families like the Ó Thuathails maintained regional influence, suggests complex processes of accommodation and resistance rather than simple replacement of one system with another.

The M9 evidence thus documents a medieval landscape in constant flux, shaped by successive waves of religious, political, and economic change. From Christian missionaries to Gaelic dynasties to Norman lords, each group left its mark on south Kildare's physical and social landscape. This archaeological signature of continuous transformation provides tangible evidence for the complex historical processes that repeatedly reshaped medieval Ireland.

Chapter 5

A Journey Through Time: Landscape Changes along the M9 Route

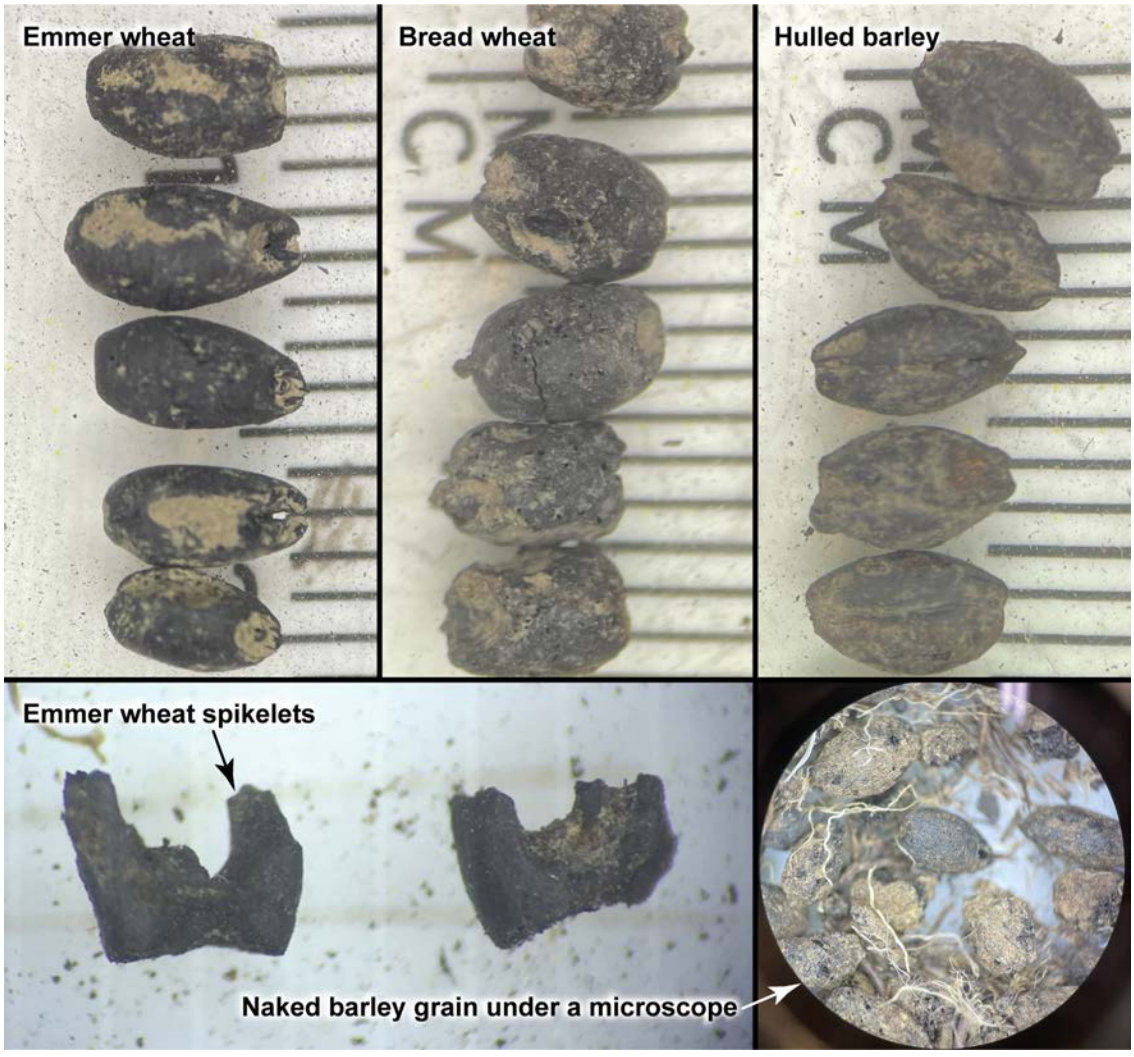
By Scott Timpany

A Journey Through Time: Landscape Changes along the M9 Route

Preserved environmental materials—in the form of charred plant remains such as cereal grains, seeds, fruits, weed seeds, and nutshell fragments (Illus. 5.1)—recovered during archaeological excavations reflect the varieties of crops that people of the past planted and prioritised, the cultivation strategies they used, the wild foods they gathered, and the animals and livestock that they hunted or kept. Taken together, this information can show how the landscape, and human activities within that landscape, changed over time. This chapter examines material from the 73 sites along the M9 which produced such evidence. The weed species, in particular, help us to understand the different arable cultivation strategies used by past communities. Fifty-six sites produced charred plant remains with most information coming from assessments of this material. These provide comment on abundance, variety and preservation of the remains, while full analysis with identification and quantification of all plant remains took place for only 16 sites. Charcoal fragments, which are the charred remains of wood used for fuel and construction, were recovered from all 73 sites. These fragments have been largely used as material for radiocarbon dating, during which individual fragments were identified to tree type. Only four sites underwent detailed charcoal analysis, which revealed information about both the range of trees used for fuel and the characteristics of the woodland where the wood was sourced. Eight sites contained waterlogged plant remains, including seeds, buds, nuts, and fruits, preserved in anaerobic conditions such as peats and silts, where lack of oxygen stops the degradation of the materials. Of these eight, three underwent full analysis. Waterlogged wood was found at 12 sites, preserved in the same oxygen-free conditions as the plant remains, typically as parts of trackways and troughs associated with burnt mound activity. This wood often showed evidence of tool marks, including axe cuts. Animal bone analysis was conducted on remains from 38 sites, identifying remains to at least broad categories and in some cases to specific species with details about their age at death, etc. This includes bones from domesticated and wild animals, providing evidence of both livestock farming and hunting practices over time. While these strands of environmental archaeology primarily inform us about activities at individual sites, broader information about off-site activities and wider vegetation changes comes from pollen analysis. This analysis—which involves studying microscopic pollen grains and spores preserved in oxygen-free sediments—was undertaken at two sites on the route of the M9.

The chronology for all environmental

Chapter title image Wheat (by Hannah Sims).



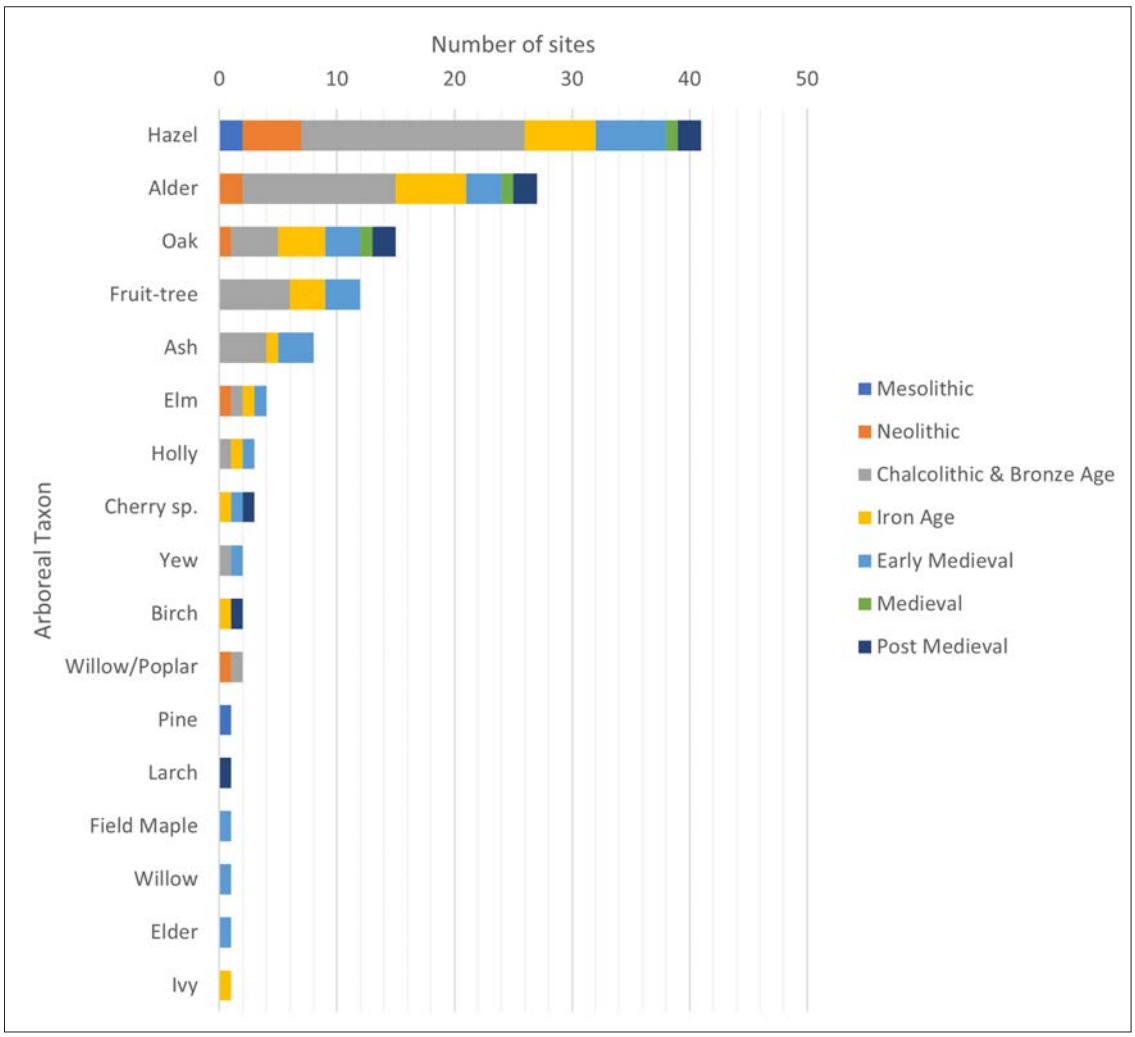
Illus. 5.1 Examples of emmer wheat, bread wheat and barley.

evidence discussed in this chapter comes from radiocarbon dating of materials from sites excavated within the footprint of the new road. These dates are especially valuable when they come directly from material remains that can be functionally tied to the farming practices, like charred cereal grains or animal bones. Multiple specialists contributed to the analysis of the environmental remains and information presented here. Complete details of all the assessments and analyses can be found in the final excavation report, available in the TII Digital Heritage Collection at https://repository.dri.ie/catalog/v9807h80j.

The Mesolithic period: the landscape of the first settlers

Environmental archaeological evidence for the Mesolithic landscape of the route of the M9 is restricted to small numbers of charcoal fragments identified during material selected for radiocarbon dating and hazelnut shell

fragments recorded in the assessment of charred plant remains samples. These scant plant remains reflect the scant archaeological evidence, which is largely restricted to pit features (Chapter 3). Pollen investigations provide information for one area of the M9 route at Prumpelstown Lower 5. Here a 0.92 m monolith tin sample was taken for pollen analysis through a series of anaerobic riparian floodplain sediments of peat, clay, and silt to investigate how the landscape had changed over time. The basal peat from this sequence returned a radiocarbon date of 8880–8690 BC (Beta-2378602) indicating peat formation began in the Early Mesolithic. Pollen results pertaining to the Mesolithic landscape show a largely open wet grassland landscape with areas of alder (*Alnus glutinosa*) and willow (*Salix* sp.) scrub in the floodplain environment, while oak-hazel (*Quercus-Corylus*) woodland—which also included elm (*Ulmus* sp.), holly (*Ilex aquifolium*), cherry (*Prunus* sp.), and probably birch (*Betula* sp.) and pine (*Pinus* sp.)—was present above



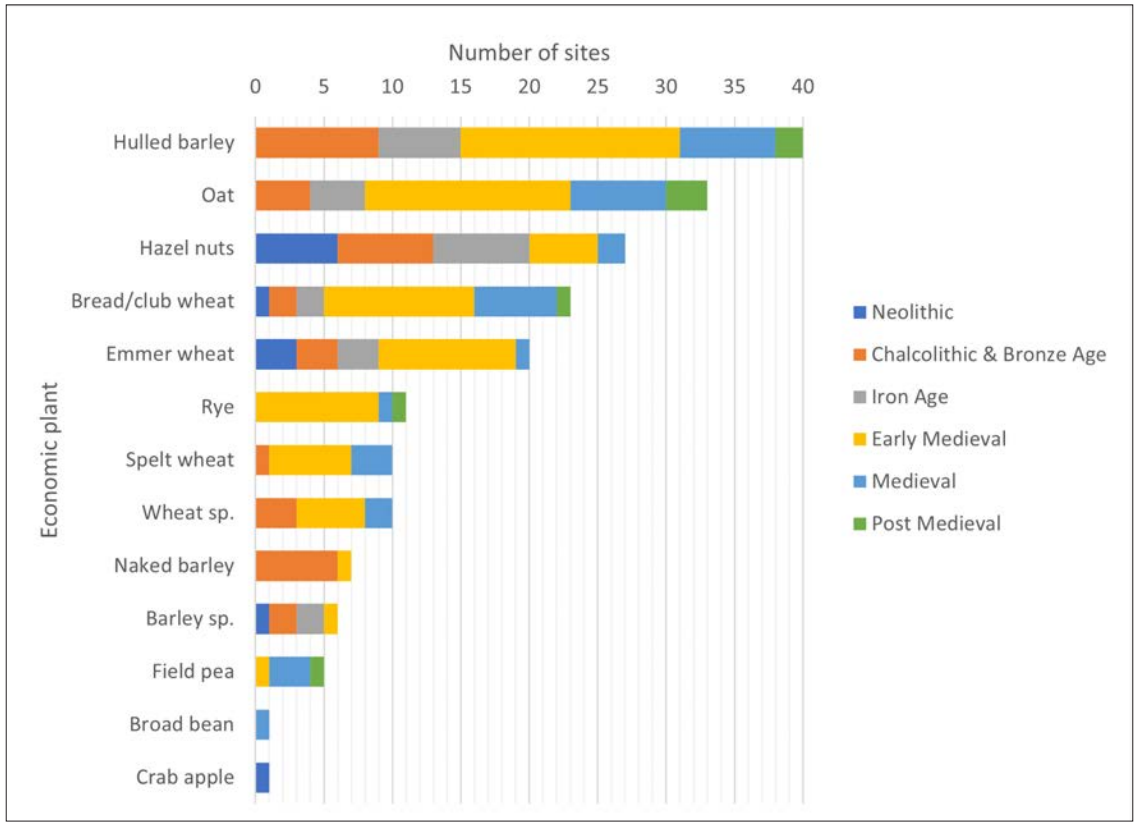
Illus. 5.2 Charcoal/wood identifications from sites along the M9.

or beyond the river valley. Pollen evidence from Prumpelstown Lower 5 indicates hazel was growing within an oak-hazel woodland during the Mesolithic, while alder was present across riparian areas. This vegetation pattern is supported by Zvelebil et al.'s (1996, 35) pollen work in the Athy Basin, Co. Carlow, which found similar woodland composition across the region.

The presence of hazel and pine as woodland components during the Mesolithic period is indicated in the charcoal identifications from the route of the M9 (Illus. 5.2), which shows the different tree taxa identified by period from both waterlogged wood and charcoal identifications. Fragments of hazel charcoal from pit fills, such as those at Woodlands West 2 and Prumpelstown Lower 5, may represent the remnants of small campfires and, as such, ephemeral evidence of the Mesolithic communities who inhabited this landscape. The importance of hazel as a wild food resource for these groups is well established (e.g. Regnell 2012; Bishop et al. 2014); along the M9 route, this is apparent through the recovery of charred hazelnut shell fragments dating to this period from sites such as Foxhill 1 and Ballymount 4. That these communities were having an impact on their landscape is signalled in the pollen record from Prumpelstown Lower 5, with reductions in oak pollen and rises in hazel pollen and microscopic charcoal fragments—recorded during pollen analysis—suggesting the felling of oak trees and potential burning within the woodland. The deliberate clearance of areas of woodland by Mesolithic communities in Ireland has been linked with the promotion of grazing plants to attract wild animals as part of a hunting strategy (Mighall et al. 2008, 625). The impact on woodland at Prumpelstown Lower 5 may have inadvertently promoted the growth of hazel (cf. Bishop, et al. 2015, 70), indicated by the rise in hazel pollen, suggesting people had some impact on the canopy structure. This type of detailed environmental analysis is providing greater clarity on how Mesolithic communities actively shaped woodland ecosystems in Ireland (Warren et al. 2014).

The Neolithic period: the landscape of the first farmers

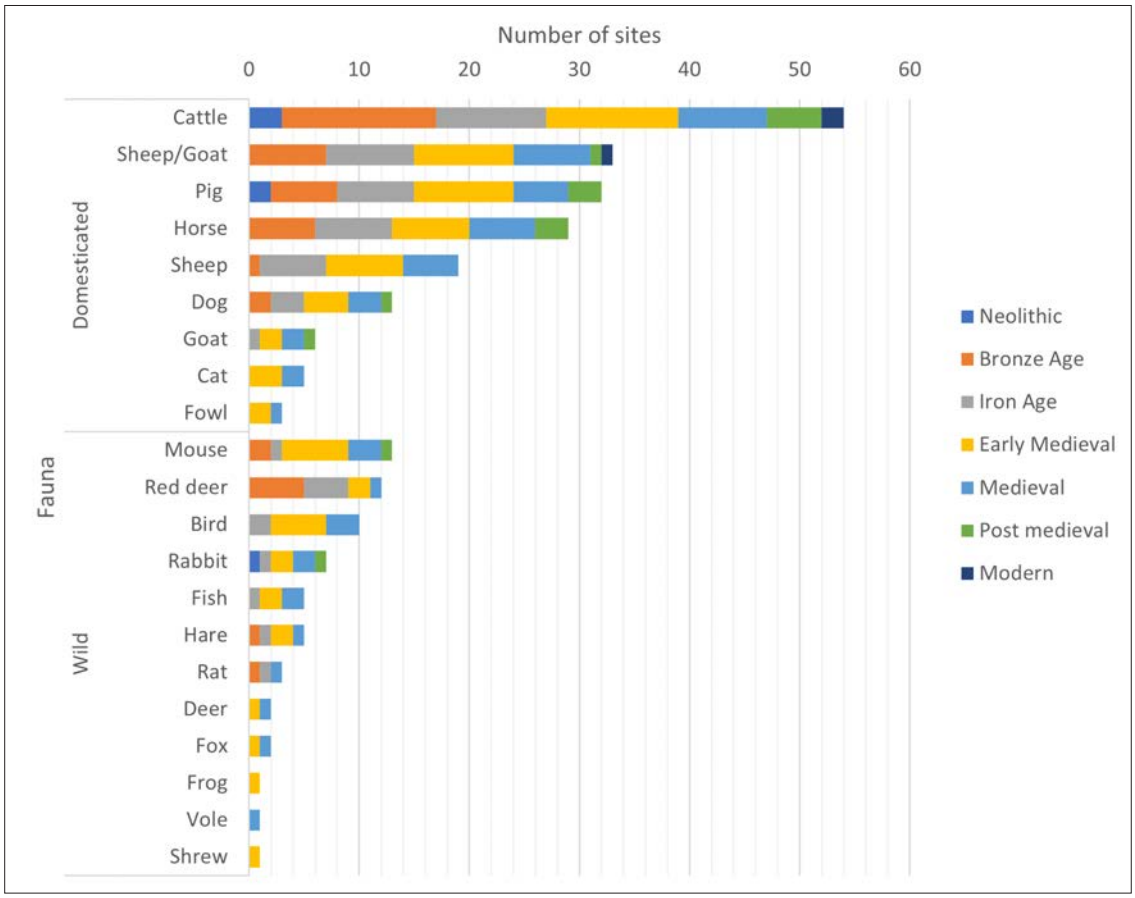
The first farming communities brought with them new patterns of life and new ways of interacting with the landscape, including the construction of more permanent settlements. This was seen on the route of the M9 at Woodlands West 2 where six potential structures dating to this period were discovered. They comprised two square-in-circle (timber circle) ceremonial arrangements and four rectangular four-post buildings (Chapter 3). The site produced little in the way of agricultural evidence with only a small quantity of animal bone recovered and no cereal grain from dated contexts. The types of cereals being grown by these early farming communities were only evidenced at a small number of sites along the M9 route (Illus. 5.3), such as Baronsland 2, 3 and 4, which produced cereal grain of emmer wheat (*Triticum dicoccum*) and Bray Upper 1, which produced cereal grain of bread/club wheat (*Triticum aestivo-compactum*) and barley (*Hordeum* sp.). The low volume of cereal grain recovered meant that none were directly dated; however, Neolithic dates were returned from associated charred nutshells and charcoal. Emmer wheat appears to have been an important cereal within this region and across Ireland where, together with einkorn wheat (*Triticum monococcum*) and barley, it formed one of the main crops grown



Illus. 5.3 Charred economic plants recovered from sites along the M9.

by Neolithic communities (McClatchie et al. 2014; 2016; Whitehouse et al. 2014). Emmer wheat was the main cultivar recovered at Russellstown and Corbally, with the latter also producing low numbers of barley grain and evidence of domestic cereal processing (Johnston 2001; O'Connell & O'Neill 2009, 88). The limited evidence for cultivation from the investigations along the scheme and in its environs is not unusual. Charred cereal grain assemblages from Neolithic sites across Ireland have been shown to be particularly impoverished in comparison to assemblages from Europe (McClatchie et al. 2014; 2016; 2022).

The foraging of wild foods continues to play a role in the Neolithic period, with hazelnut shell fragments identified from a greater number of sites than cereal grain, although this may also be due to the relative robustness of hazelnut shell in comparison to grain through the charring process (Bishop 2019). Charred nutshell from seven sites has been radiocarbon dated to the Neolithic period, with samples from Ballymount 5 producing a date range of 3800–3650 BC (SUERC-25327), and from Prumpelstown Lower 5 of 2620–2460 BC (SUERC-27190). The gathering of fruits by early farming communities, in addition to nuts, is evidenced by the presence of crab apple (*Malus sylvestris*) pips in material from Baronsland 3, indicating that the range of wild foods may have been significantly broader than was indicated by the charred plant remains assemblages. The gathering



Illus. 5.4 Identifiable faunal remains from sites along the M9.

and consumption of wild foods would have played an important role in the diet of Neolithic communities (Stevens & Fuller 2012, 710) and this has been indicated from other Neolithic sites across Ireland (McClatchie et al. 2014; 2016; 2022; McClatchie & Potito 2020).

As well as the introduction of cereals to Ireland, these first farming communities also introduced domestic livestock, and the recovery of faunal bone from sites across the M9 route adds to the corpus of knowledge of mixed farming activities undertaken by Neolithic communities. As was the case with cereal remains, Neolithic period faunal bone evidence was recovered at only a small number of sites, in this case Woodlands West 2, and Ballymount 5 and 6 (Illus. 5.4). The low recovery of animal bone may be due in part to poor preservation of bone in acidic soils, a common problem across Ireland (Whitehouse et al. 2014, 183) and one observed at other Neolithic sites outside of the M9 route, including at Corbally, Co. Kildare (Purcell 2002, 72). Analysis of the faunal bone from the three sites on the route of the M9 indicates that cattle (*Bos* sp.) and pig (*Sus domesticus*) were amongst the first livestock animals introduced to this region. Cattle, in particular, were important throughout Neolithic Europe (Winter-Schuh et al. 2018, 285) and may even have been

a representation of wealth or status (e.g. Bentley et al. 2015, 1205). Research on fat residues (lipids) from Neolithic carinated bowls has also shown that dairying would have been an important practice during the Neolithic period, with milk and milk products evidenced in bowls throughout this period (Smyth & Evershed 2015, 43). No evidence was found for sheep/goat (*Ovis/Capra*) bone in this period from the sites on the M9 route, though their introduction to Ireland took place during this period (e.g. McCormick 2009; McClatchie et al. 2022).

Despite evidence for the adoption of arable and pastoral farming in the form of charred cereal grain and faunal bone, there is limited knowledge about the transformative impact these activities were having on the landscape along the M9 route. Neolithic communities were resourcing woodland for building materials and fuels, as shown through the small amount of charcoal identifications and archaeological evidence for construction, such as post-holes and beam slots. The charcoal identifications from this period are for material chosen for radiocarbon dating and indicate the presence of hazel, oak, alder, elm and willow/poplar trees (Illus. 5.2). Some bias is acknowledged with this data; oak will be underrepresented in the corpus since non-oak trees are usually selected for radiocarbon dating (due to the long lives achieved by oak). The pollen record from Prumpelstown Lower 5 may extend into the Neolithic and later periods; however, uncertainty exists for this record due to the lack of radiocarbon dates on the sequence—meaning the chronological extent of this record is unknown. Pollen from the part of the record thought to relate to the Neolithic period does not seem to show any major impacts on the landscape and indicates the continued presence of open, wet woodland of alder, willow and probably ash along the floodplain, and a wet grassland floor layer, with oak-hazel dominated woodland growing on the drier terrace slopes with trees and shrubs such as elm, birch, pine, cherries, and holly within the stand composition. The pollen cores also provide evidence of wood fuel—present as charcoal—and suggest it was resourced from both dryland and wetland woodlands.

There is some evidence for agricultural activity in the pollen record from Prumpelstown Lower 5, with cereal-type pollen, and potential arable weeds such as nettles (*Urtica* sp.), buttercups (*Ranunculus* sp.), and daisies (*Asteraceae* sp.), together with the occurrence of coprophilous fungi in one section of the upper part of the sequence. However, due to the absence of a robust chronological framework for the core sequence, it is not known whether this reflects Neolithic or Bronze Age farming activity. In other pollen sequences from Ireland, their effects on their environment are clearer to see, such as in the mid-west and on the west coast where reductions in woodland to make way for agriculture have been evidenced (O'Connell & Molloy 2001; Caseldine et al. 2007; Kearney et al. 2022).

The Chalcolithic and Bronze Age: a funerary landscape

Most of the archaeological evidence for this period revealed along the route of the M9 relates to funeral activities, with inhumation cemeteries discovered at sites such as Moone 1, and cremation burials at sites including Burtown Little 2 (Chapter 2). Within this ceremonial landscape communities were also living and farming. This is demonstrated by the discoveries at Ballyvass 4, including a rare sub-rectangular structure radiocarbon

dated from hazel and alder charcoal to the Early Bronze Age around 2200–1980 BC (SUERC-25317) to 2140–1940 BC (SUERC-25321), and another possible structure dated to the Middle Bronze Age (oak charcoal returned a radiocarbon date of 1410–1210 BC (SUERC-27196)). Contemporaneous sub-circular structures were also found at Prumpelstown Lower 5 dated to 1360–1050 BC (SUERC-243986) from charred (indeterminate) material (Chapter 3) and at Mullamast 6 dated to 1530–1310 BC (SUERC-25434) from a grain of bread/club wheat (Chapter 2). Arable activities undertaken by these communities in this period are indicated by a significant rise in the number of sites producing charred cereal grains compared to the preceding Neolithic, with grain identified from 21 sites. Cereals have been radiocarbon dated to this period at four sites: Moone 6 (barley grain), Mullamast 6 (bread/club wheat), Ballyvass 2 (wheat, *Triticum* sp.), and Inchaquire 2 (naked barley, *Hordeum vulgare var nudum*), producing a Middle to Late Bronze Age date range of 1620–1410 BC (SUERC-25901) to 1020–800 BC (SUERC-25904). An increase in site numbers with faunal bone relating to livestock and wild animals is also observed for this period; 18 such sites were identified, including Moone 1, 4 and 5, Woodlands West 2, Ballymount 4 and 5, and Burtown Little 2, as well as sites where grain was recovered, such as Prumpelstown Lower 5.

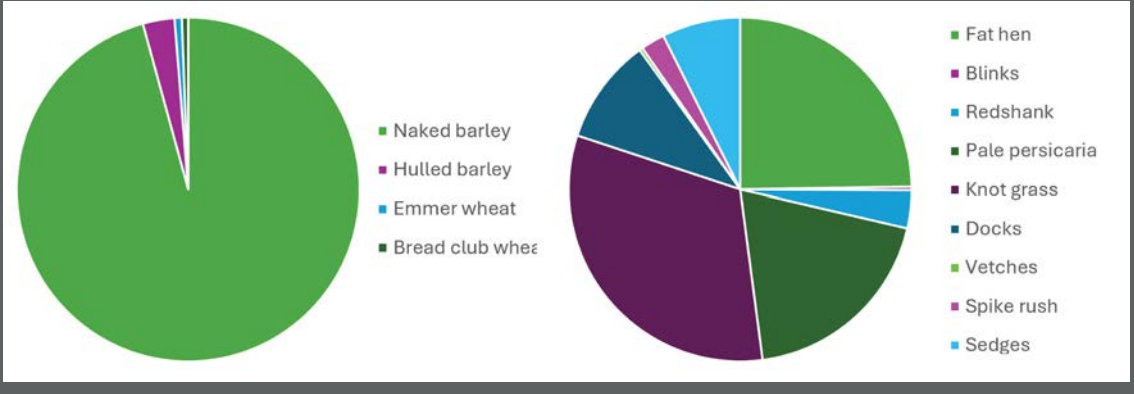
There is a more diverse assemblage of cereals for this period than the previous Neolithic (Illus. 5.3) with hulled barley (*Hordeum vulgare*), naked barley, emmer wheat, bread/club wheat, barley and wheat all identified. Barley appears to be the main cereal grown during the Chalcolithic and Bronze Age in both the hulled and naked form, with hulled barley identified from eight sites and naked barley from six sites. Oat (*Avena* sp.) and spelt wheat (*Triticum spelta*) have also been identified from assemblages dated to this period. Both of these cereals are often considered to have begun cultivation in later periods (McClatchie et al. 2015) and may represent intrusive grain which can be a feature when investigating early farming, with McClatchie et al. (2014, 209, 211) noting that oat grain identified in Irish Neolithic assemblages either originated from later material or was representative of the arable weed false oat (*Avena fatua*), rather than as a deliberately cultivated cereal. However, there is recent evidence that spelt wheat was being cultivated in central Europe during the Early Bronze Age (Lechterbeck & Kerig, 2024) and has been found in Late Bronze Age sites in the UK (e.g. Murphy 1982; 1988; Haston & Timpany 2024).

Case study—Mullamast 6

A Middle Bronze Age settlement with a sub-circular domestic structure, a burial and several pit features was discovered at Mullamast 6. Occupation of the site was radiocarbon dated to between 1630–1500 BC (SUERC-25435) and 1440–1190 BC (SUERC-25436) on the basis of hazel and fruitwood charcoal (Chapter 2). Analysis of the charred plant remains from pit, post-hole and hearth features revealed that a range of cereals was being cultivated. The assemblage mainly comprised naked barley, along with hulled barley, emmer wheat and bread/club wheat (Illus. 5.3); potentially intrusive grain—including oat, spelt wheat and rye—was also identified. The mix of cereals identified demonstrates that naked barley was the main cereal being grown; this is consistent with Bronze Age assemblages from other parts of Ireland (e.g. Timpany 2020; 2021). The presence of small quantities of wheat may indicate the cultivation of additional crops, although there is a possibility these grains may also be intrusive. Wheat is likely to have been a secondary crop to barley as has been suggested for other Bronze Age grain assemblages in Ireland (e.g. Johnston 2019).

Wild taxa from these features (Illus. 5.5) provide some insight into the challenges faced by Bronze Age farmers with several damp ground indicators recorded, such as sedges (*Carex* sp.), pale persicaria (*Persicaria lapithifolia*), and spike-rushes (*Eleocharis* sp.). These plants suggest fields could have had problematic drainage leading to pooling water or indicate that marginal ground such as floodplains was being used for agriculture (Jones 1984, 488). Probable arable weeds such as redshank (*Persicaria maculosa*), blinks (*Montia fontana*) and vetches (*Vicia* sp.) grow to heights of around 0.5 m and their presence in the assemblage indicates that crops were cut below this height during harvesting (cf. Hillman 1981).

That agricultural activities formed part of a mixed farming economy is demonstrated by the evidence for livestock, with animal bone recovered from 16 sites along the M9. Cattle bones were the most commonly found animal remains, appearing at 14 sites. Sheep/goat remains were found at seven sites, with sheep (*Ovis* sp.) specifically identified at one site (Illus. 5.4), while pig remains were recovered from six sites. Horse (*Equus* sp.) was found at six sites and appears to have been introduced to the region and Ireland during this period (McCormick et al. 2007, 86). Domesticated animals are not the only faunal remains identified. Remains of red deer (*Cervus elaphus*)—thought to have been introduced to Ireland in the preceding Neolithic period (Carden et al. 2012, 78)—were found at five sites; hare (*Lepus* sp.) remains were recovered at one site, demonstrating that Bronze Age communities also practised, and were adept at, hunting.



Illus. 5.5 Cereal and wild taxa identifications from Mullamast 6.

It has been argued that wild plants may have played less of a role in the diets of Bronze Age communities as opposed to Neolithic communities (e.g. Stevens & Fuller 2012); however, along the M9 route they appear to have still contributed to the Bronze Age diet. This is demonstrated by hazelnut shell fragments recovered from nine sites, two of which—Burtown Little 2 and Ballymount 4—were directly dated to this period. At these locations, the recovery of hazelnut shell indicates continued gathering from woodland resources alongside agricultural activities. These woodlands would also have been actively resourced for building materials and fuels, as indirectly evidenced by the number of burnt mound sites uncovered along the M9, with 17 such sites identified, most of which date to this period. While charcoal from these burnt mound sites was not analysed in sufficient quantities to identify specific fuel choices, the overall charcoal evidence from the Chalcolithic and Bronze Age periods (Illus. 5.2) points to a more diverse woodland than existed in the Neolithic period. This change might indicate that human activity was opening up previously dense woodland, creating conditions where light-loving trees like holly could thrive.

The Iron Age: a landscape of continuity

Iron Age archaeological discoveries along the M9 route, like those from the preceding Bronze Age, included funerary sites—both inhumations (e.g. Moone 5) and cremations (e.g. Mullamast 10 and Burtown Little 2) and the reuse of earlier monuments (e.g. Woodlands West 2). Other isolated features including pits, ditches and possible industrial sites such as the potential kiln feature at Moone 3 (Chapter 2) and an iron-smelting furnace at Woodlands West 2 (Chapter 3) were also discovered. Charred cereal grain and faunal bone from these sites show that a mixed farming economy continued into the Iron Age. Charred cereals were recovered from 10 sites along the route of the M9, including Moone 1, 4 and 5, Old Kilcullen 1 and Blackrath 1. Analysis of plant remains, including cereals, was undertaken at five sites: Woodlands West 1 and 2, Prumpelstown Lower 5, Mullamast 9 and Burtown Little 2. Emmer wheat from Mullamast 9 was directly dated to the Late Iron Age AD 0–240 (SUERC-25478). Faunal bone was analysed from 11 sites providing information on livestock and wild fauna.

Charred cereal grains from the Iron Age sites across the route of the M9 suggest that barley, wheat and oat were all being cultivated during this period (Illus. 5.3). Hulled barley was found at six sites and appears to have been the primary cereal crop. Oat was identified at four sites, while wheat varieties were less common—emmer wheat was found at three sites and bread/club wheat at two sites. This pattern suggests that wheat was less important to the Iron Age economy than barley and oats. This pattern aligns with Monk and Power's (2014, 41) study of Irish Iron Age cereal-drying kilns, which found that, while wheat was present in the kilns, barley was the predominant cereal in most cases. The continued gathering of wild foods by Iron Age communities is also indicated by the recovery of charred hazelnut shell fragments from seven sites (Illus. 5.3).

A diverse assemblage of faunal bone

was also recovered from Iron Age features across the scheme (Illus. 5.4). Cattle were the primary livestock during this period, found at 10 sites. Sheep/goat remains were found at eight sites, pig at seven sites, sheep specifically at six sites, and goat (*Caprid* sp.) at one site. Horse remains appeared at seven sites, suggesting their continued use for transport and work, while dog remains were found at three sites. Evidence of hunting and fishing comes from red deer remains at four sites, bird bones at two sites, and fish bones at one site. Some pig remains, such as those from Woodlands West 2, might also be from wild boar rather than domesticated pigs. These findings indicate the diverse food sources of Iron Age communities. Similar animal remains have been found elsewhere in the region, including at the Iron Age royal site of Dún Ailinne (Crabtree et al. 2012, 6). The Ballybannon 3 Iron Age enclosure in the Barrow valley south of Carlow also yielded cattle bones and red deer antler (Baker et al. 2015, 70).

Charcoal identifications for radiocarbon dating indicate that the woodland along the M9 route had become more open by the Iron Age, probably because of continued impact by communities on its structure from resourcing of wood for fuel and building materials. During the Iron Age, burnt mound sites like Moone 4 continued to rely on wood as fuel. The waterlogged wood remains found near a trough at this site reveal the rich diversity of Iron Age forests. The recovered materials included both roundwood stakes and planks crafted from a variety of tree species: alder, birch, hazel, ash, holly, fruitwood, cherry, oak, and elm. At the Moone 5 site, charcoal analysis from an ironworking furnace revealed the deliberate selection of wood for industrial purposes. Only oak was used in the furnace, specifically wood from oak trunks, indicating that these trees were intentionally felled to provide fuel for ironworking.

Early medieval and later medieval periods: an industrious landscape

Archaeological discoveries from the medieval period show substantial evidence for settlement along the M9 route. Sites included the enclosure at Narraghmore 1, the ringfort and souterrain at Ballyvass 7, the sub-rectangular enclosure at Hallahoise 4 (Chapter 4), and the deserted medieval village at Mullamast 1 (Bolger 2017). Industrial features included cereal-drying kilns (see below) and charcoal-production pits such as those at Woodlands East 1 and Woodlands East 2.

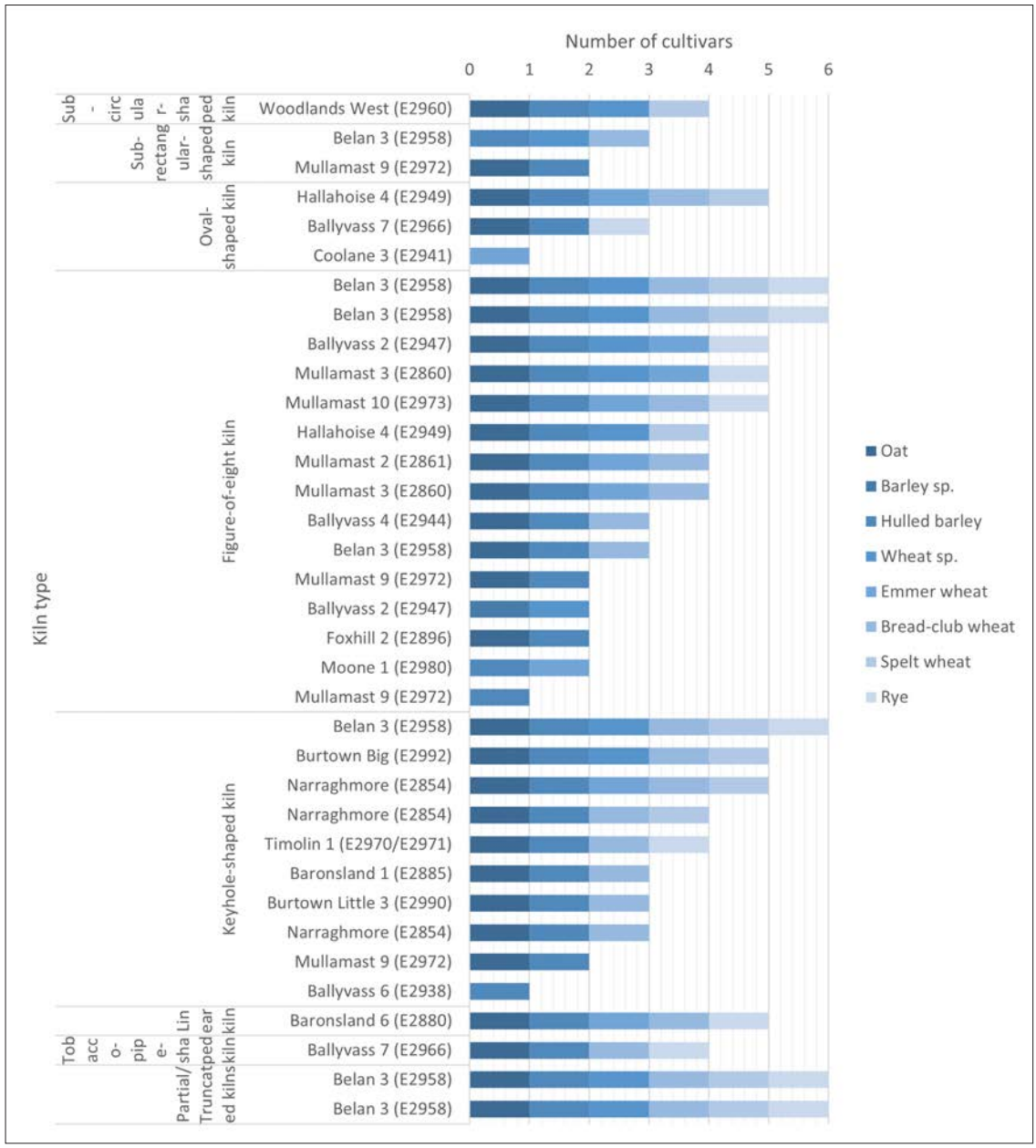
A sediment sequence (2 m) collected from within an enclosure ditch at Ballyvass 7 provides a second pollen record for the vicinity of the M9 and enables the reconstruction of a part of this medieval landscape. Animal bone from the basal fill of the ditch—radiocarbon dated to AD 660–810 (Beta-243988)—provides a start date for the pollen sequence. While no radiocarbon dates are available for the upper fill of the enclosure ditch, a relatively late medieval to post-medieval date is confirmed by the presence of pottery sherds of this period. The pollen sequence is likely to reflect a limited catchment of the local landscape around the enclosure ditch when it was open (Tipping et al. 2009, 145). When interpreting pollen sequences from ditches, several factors require careful consideration. The pollen record may be complicated by older pollen that has washed in from the ditch sides or more distant locations, human-introduced pollen such as that from discarded chaff,

and the ditch filling process itself, which likely occurred in multiple episodes rather than as a single continuous event (Innes & Haselgrove 2019, 404). Nevertheless, the pollen record from Ballyvass 7 suggests that the immediate area around the enclosure ditch was one of open, wet pastureland. The occurrence of coprophilous fungal spores indicates that livestock were grazing in the vicinity of the enclosure ditch. Cereal-type pollen was also recorded, signalling that arable activity also took place nearby and indicates that a mixed farming economy was practised by the communities who occupied the enclosure. This is supported by the faunal bone and charred plant records for the site. Farming activity appears to decline in the later medieval/post-medieval period when the final fills of the enclosure ditch were accumulating, with consequent reductions in cereal pollen, coprophilous fungi and microscopic charcoal all recorded; this may correlate with the abandonment of this site. That arable activity continued in the wider region is shown from the pollen study at Carbury Bog, Co. Kildare, some 38 km to the north-east. At this site, van Geel and Middeldorp (1988, 382) record an arable landscape from c. AD 1130 to the present day with high values of cereal pollen and other anthropogenic-associated taxa such as ribwort plantain, nettles, docks and sorrels.

The arable landscape identified around the enclosure ditch at Ballyvass 7 likely reflects the broader agricultural patterns along the M9 route during both early and later medieval periods. Evidence of farming activities comes from multiple sites. Charred cereals were found at 24 locations: 16 from the early medieval period, six from the later medieval period, and two sites containing evidence from both periods. Of these, detailed analysis was conducted at 13 sites—nine early medieval, three later medieval, and one site spanning both periods. Animal bone analysis from 20 sites further supports evidence of a mixed farming economy, with 10 sites dating to the early medieval period, eight to the later medieval period, and two sites containing remains from both periods.

The medieval periods along the route of the M9 yielded the highest quantity and variety of charred cereal grains (Illus. 5.3, 5.6). Hulled barley and oat dominated the agricultural landscape at this time. Hulled barley remains were found at 23 sites, with 16 dating to the early medieval period and seven to the later medieval period. Similarly, oat was discovered at 22 sites, 15 from the early medieval period and seven from the later medieval period. Wheat cultivation showed a marked increase compared to earlier periods. Bread/club wheat was found at 17 sites, with 11 from the early medieval period and six from the later medieval period. Emmer wheat appeared at 11 sites, predominantly in the early medieval period with just one site being of later medieval date. Spelt wheat was recovered from nine sites, six early medieval and three later medieval. Rye (*Secale cereale*) emerged as a new crop during the early medieval period, appearing at nine sites from this time and one site from the later medieval period.

Similar charred grain assemblages have been observed at sites outside of the M9 route; for example, an oat-dominated assemblage recovered from the early medieval site at Ballyburn Upper, Co. Kildare, also included hulled barley, bread/club wheat and spelt wheat (O'Neill 2010, 71). The findings from sites along the route of the M9 also align with broader patterns of medieval cereal cultivation across Ireland, as shown by McClatchie et al. (2015); their study shows that oat and hulled barley were the



Illus. 5.6 Cereals identified from cereal-drying kilns along the M9.

predominant crops during this period, with wheat appearing frequently but in smaller quantities, and rye being the least common of the cereals.

The cultivation of other crops was also in evidence; field pea (*Psium sativa*) was recorded at one early medieval site and, in a marked increase, at three later medieval sites (Illus. 5.4). Evidence for the cultivation of broad bean (*Vicia faba*) was rarer and only present on one later medieval site. Lyons (2015, 141–2) observes that records for

the cultivation of legumes in Ireland can be traced back to the eighth century AD, but that their survival in the archaeobotanical record is not common, so their finding along the M9 route is significant. One reason for their poor survival may have been their frequent use as part of pottage dishes for which they were ground into a flour (ibid., 142).

The importance of cereals to the early and later medieval economies is demonstrated by the high number of cereal-drying kilns recorded along the route of the M9. A total of 35 kilns were uncovered during archaeological investigations and provide physical evidence for a change in the scale of agriculture, away from subsistence and into trade and commodity (Monk & Power 2012, 38). A range of different kilns was uncovered with the main forms being oval-shaped, figure-of-eight-shaped, and keyhole-shaped (Illus. 5.7). Radiocarbon dates for the kilns indicate that they are mainly of early medieval date, with dates from kilns at Ballyvass 6 and Mullamast 6 stretching between the Late Iron Age and early medieval periods. Exceptions include the keyhole-shaped kilns at Burtown Big (later medieval) and Baronsland 1 (post-medieval). At Ballyvass 7, the waterlogged sediments preserved a linen mesh within the inner structure of a tobacco-pipe-shaped kiln (Illus. 5.8). When linen was used as a mesh, it would have supported grain inside the kiln during the drying process (Doyle 2009).

In some locations multiple kilns were discovered; two figure-of-eight-shaped examples were found at Ballyvass 4 which returned identical radiocarbon dates of AD 330–540 (SUERC-26390; SUERC-26387) from emmer wheat and hazel charcoal. The recovery of burnt clay fragments from one of these kilns may reflect its accidental destruction, something that has been highlighted as an issue for kilns with short flue lengths (Monk & Kelleher 2005, 102). Cereal-drying kilns can be an excellent repository of plant remains preserved through charring, either through exposure to heat in the kiln for a prolonged period, such as through falling through the mesh, or through accidental burning of the kiln itself. This was particularly evident at Ballyvass 4, where abundant quantities of wheat (largely bread/club wheat and spelt wheat) were recovered from one of the kilns (a single fill from the deposits within the drying chamber contained >800 grains per litre). The large quantity of cereal grain still present in the kiln suggests a possible conflagration event during use causing the kiln (and the grain) to be abandoned. Only a small quantity of grain (mainly wheat species and hulled barley) was recovered from the second figure-of-eight kiln at Ballyvass 4, suggesting it had been cleaned out regularly before its abandonment.

The charred cereal grain recovered from these kilns reflects the variety of crops cultivated during the early medieval and medieval periods (Illus. 5.3, 5.6). Hulled barley and oats were the main cultivars recovered from kilns, with hulled barley present in 33 kiln assemblages (one kiln also containing barley sp.) and oat in 29 kiln assemblages. Bread/club wheat was present in 21 kiln assemblages, indicating wheat was also a significant part of the agricultural economy. This is further demonstrated by the presence of spelt wheat in 11 kilns, emmer wheat in 10 kilns and unidentified wheat species in 12 kilns (Illus. 5.6). Rye was also identified in 12 kilns. The identified cereal grains suggest that the kilns were regularly used for drying more than one cereal type, with some kilns containing up to five

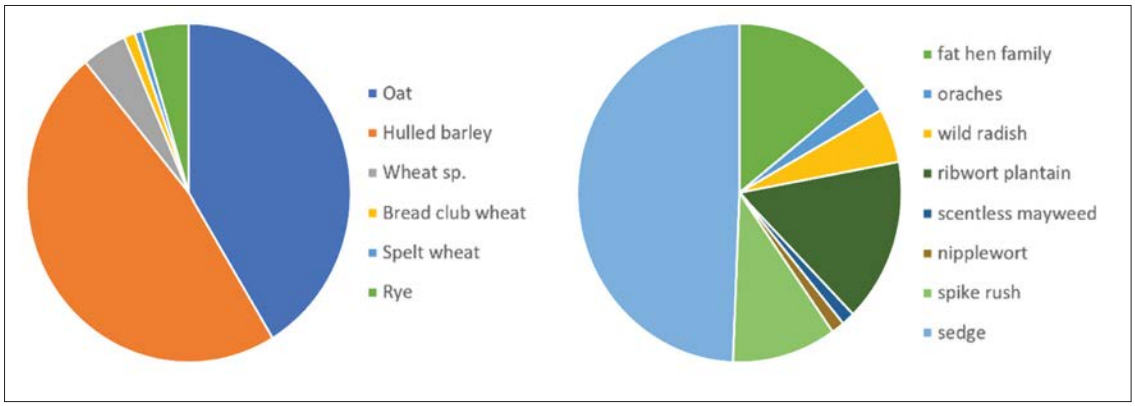
Illus. 5.7 Examples of kiln types discovered on the M9.

Illus. 5.8 Post-excavation view of the 'tobacco-pipe-shaped' kiln, cut into the fill of a souterrain, at Ballyvass 7, facing west, with close-ups of the burnt textile and grain found *in situ* at its base.

different varieties of grain. This diversity of cereals, along with the evidence for legumes, suggests early and later medieval farmers may have been cultivating maslin crops (mixed grain plantings). By growing multiple cereal types for each harvest, these communities implemented an effective risk management strategy—if one crop produced a poor yield due to disease or adverse weather, others could compensate, providing food security and agricultural resilience.

Early medieval food and farming

At Belan 3, multiple early medieval cereal-drying kilns, in a range of styles, were discovered during excavation, dating from AD 420–640 (SUERC-25397) to AD 780–990 (SUERC-25277), and these included sub-rectangular, figure-of-eight, and keyhole-shaped examples. Analysis of the charred plant remains from the Belan 3 kilns demonstrated the range of cereals cultivated during the early medieval period for this part of County Kildare (Illus. 5.9), with the quantities of these grains changing through the lifetime of the kilns. The assemblage identified from a figure-of-eight kiln (063) was dated to AD 770–970 (SUERC-25273) from an emmer wheat grain; however, given that no emmer wheat was identified during analysis this is likely a misidentification. The grain assemblage from the kiln reflects the broad trend of the kilns from Belan 3 with oat and hulled barley identified as the main cereals being cultivated with smaller quantities of wheat species—bread/club wheat, spelt wheat and rye.



Illus. 5.9 Cereal and wild taxa identifications from figure-of-eight kiln (063) Belan 3.

The wild taxa from the kiln include a small number of arable weeds such as wild radish (*Raphanus raphinistrum*), nipplewort (*Lapsana communis*), fat hen, ribwort plantain, and scentless mayweed (*Tripleurospermum inodorum*), that would be familiar to farmers today (Watson & Moore 1962, 155–4). Plant height data for these agricultural weeds suggests cereals may have been cut low to the ground, as plants such as scentless mayweed and ribwort plantain often grow to <0.5 m tall. This harvesting method likely involved the use of a sickle or hook, tools commonly used in Ireland until the late 19th century (Bell & Watson 2008, 182). The arable weeds identified from the kiln are predominantly annuals, which Hillman (1981, 145) has observed may indicate the use of tillage methods, and particularly the use of ploughs (e.g. coulter plough), which are believed to have been introduced around the 10th century AD (Brady 1992; Kelly 1997, 470–1). The practice of tilling was likely to have been used to control weeds on areas of cultivated land and is particularly good at removing perennial weeds, thus leaving the annuals to make up most of the seed bank left in the soil (Watson & Moore 1962, 150). Sedges comprise most of the wild taxa within the kiln and, together with spike rush, indicate damp and wet ground. Alternatively, the nutlets of these plants may have originated from the construction materials used to build the kiln.

Livestock farming likely held equal importance to cereal cultivation throughout these periods, with the abundant faunal remains demonstrating the continuation of a mixed farming economy. Cattle were the predominant species identified (Illus. 5.4), followed by sheep/goat and pigs. Horse remains appeared frequently, with smaller numbers of dog, cat (*Felis catus*) and fowl. The latter may represent chicken (*Gallus gallus*), introduced to Western Europe during the Iron Age (Poole 2010, 156), though they only became common in Irish zooarchaeological assemblages during the later medieval period (McCormack & Murray 2017, 208). Cattle were central to the early medieval economy (McCormick 2008, 211), with analysis from sites like Ballyvass 7 indicating their importance beyond meat production; they were also valued for leather and as draft animals alongside horses. Several wild species were identified (Illus. 5.4) including red deer, hare, birds, fish (including herring), mouse (*Mus musculus*) and frog (*Anura* sp.), likely representing hunting and fishing activities that supplemented medieval diets. Dried

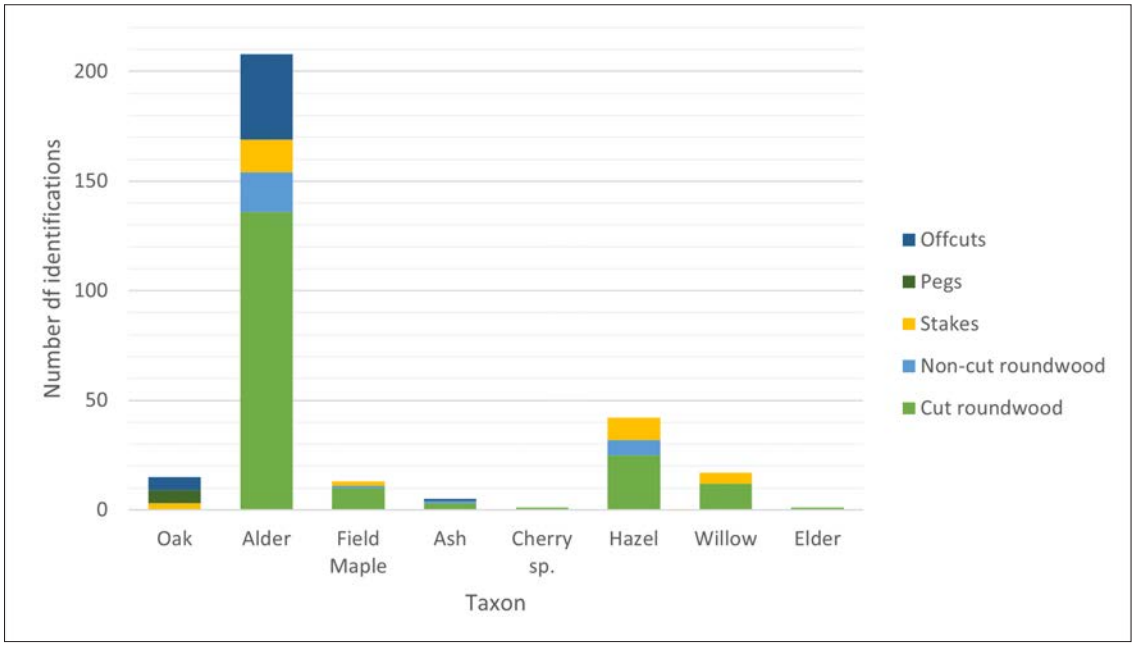
fish may have been imported from coastal areas, reflecting the significance of sea fishing during this period, with herring being a key export (McAlister 2016, 653). The discovery of a well-preserved oak tread trap set within a brushwood trackway at Prumpelstown Lower 5 (Chapter 4) provides valuable insight into contemporary hunting practices.

Charcoal production and woodland composition

Together with farming, there is evidence for activity of a more industrious nature in the form of charcoal-production pits to supply fuel for metalworking at Hallahoise 4 and Woodlands East 1—the latter containing multiple such pits. Archaeological evidence of iron slag from these sites suggests production of charcoal for iron-smelting and iron-smithing (Chapter 4). Charcoal analysis from the fills of these production pits found oak to be the main tree type represented at both sites. Ring curvature (cf. Marguerie & Hunot 2007, 1421) observed on these fragments suggested the felling of oak trees to procure the wood used in producing the charcoal and that all elements of the felled trees were utilised from trunk to twig. A small number of other tree types were also recorded with hazel, holly, and fruit tree identified at Woodlands East 1, while holly was the only other tree type recorded at Hallahoise 4 and suggests occasional addition of other woodland components into the production pits.

The continued presence of woodland in the early and later medieval periods is also indicated in the pollen record from the enclosure ditch at Ballyvass 7, which shows probable oak pasture woodland with a likely hazel understory and wetter areas with stands of alder and willow woodland. The continued existence of tracts of woodland is also signalled in the charcoal identifications undertaken largely for radiocarbon dating (Illus. 5.2), together with the analysed assemblages from the charcoal-production pits. Charcoal provides complementary information to pollen and shows the presence of oak and hazel reflecting the oak-hazel woodland in the pollen, with fruit tree, elm, and holly likely to be part of this woodland whereas alder and ash may reflect elements of the wet woodland. Remains of other trees such as lime (*Tilia* sp.) and hawthorn (*Crataegus* sp.) have also been discovered in the waterlogged plant remains assemblages from medieval well deposits such as those at Hallahoise 2.

Identification of preserved waterlogged wood components of the early medieval brushwood trackway associated with the tread trap at Prumpelstown Lower 5 provides insight into the composition and exploitation of the woodland that surrounded it. A total of 311 trackway elements were analysed; these comprised 185 cut roundwoods, 27 roundwoods with no cut marks present, 35 stakes, six pegs, and 46 offcuts. The identifications from the trackway are shown in Illus. 5.10 and indicate that most of the elements within the trackway were made from alder, suggesting the resourcing of nearby alder carr, which may also have included willow and ash. That some trees were resourced from dryland woodland is indicated by the inclusion of oak, hazel, field maple (*Acer campestre*), cherry species, and elder (*Sambucus nigra*). This may have been a similar open oak-hazel woodland pasture as suggested from the pollen record at Ballyvass 7. The resourcing of woodland for timbers to construct the brushwood platform appears to have been more opportunistic than managed, with age-diameter analysis undertaken on



Illus. 5.10 Wood identifications from the brushwood trackway at Prumpelstown Lower 5.

the roundwood elements showing no clear correspondence between age or diameter and no pattern for timber selection. Several roundwoods were also found to be slow grown suggesting they were cut from mature trees rather than coppiced or pollard elements.

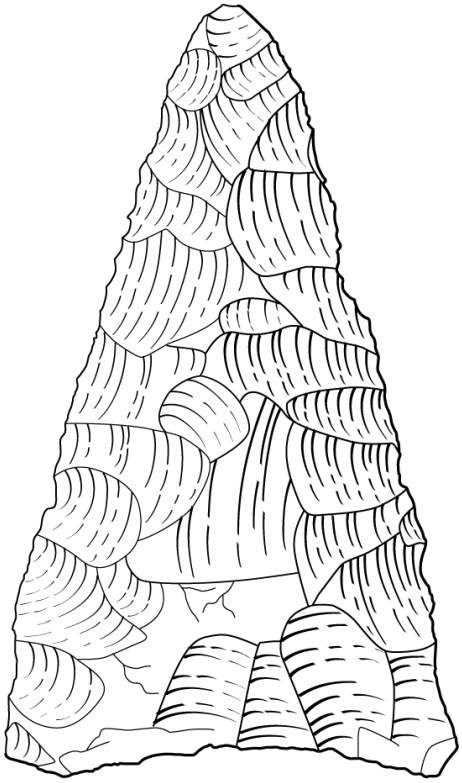
Summary

This chapter brings together results from the different environmental archaeological investigations from the excavations along the M9 route. The level of analyses varied across different techniques, with much of the charcoal and charred plant remains' evidence coming from assessment rather than analysis data, compared to the more detailed analysis from faunal bone, waterlogged wood and pollen studies. The environmental work undertaken by the different specialists who worked on these materials has revealed important information on how the landscape of the M9 has changed from the Mesolithic to the later medieval period, and the lifeways and activities of the people who lived along this route over the last 9,000 years. Pollen information from wetland areas and ditch fills has shown the changing nature of woodland over time but also that areas of wet alder carr woodland have probably existed along parts of the M9 route from the Mesolithic onwards. This shows that people have continually resourced these woodlands for fuels and in the medieval period even for materials to construct trackways to provide access to wetland areas and even to camouflage traps for deer. Oak-hazel woodland also appears to have been present throughout the timeframe of these studies. As with the alder woodlands, it has been a continuous source of timber for construction and fuel in the prehistoric periods, being targeted for timbers for charcoal production to fuel metalworking industries in the later prehistoric and medieval periods. Agriculture

has been an important part of this landscape since the Neolithic period with a probable increase in cereal cultivation witnessed in the Bronze Age, through to more intensive agriculture for wealth and trade in the early and later medieval periods observed through the multiple cereal-drying kilns and their rich grain assemblages. Barley has been identified as the main cereal cultivated along the route of the M9 in various varieties since the Neolithic period, with wheats an important, potential secondary crop, and increases in oat and rye observed from the early medieval period. Cattle were the most important livestock identified from the Neolithic and are particularly evidenced in the Bronze Age. Sheep/goat and pig were also frequently identified from sites along the M9 route, with pigs observed from the Neolithic period. Zooarchaeological and archaeobotanical evidence has also demonstrated the contribution of wild flora and fauna to the diet of communities from the Mesolithic onwards with the continuous presence of economic foods such as hazelnuts, and the frequent identification of red deer. The datasets produced by these studies offer valuable insights into the earlier communities of the M9 area, as well as contributing to our wider understanding of farming, woodland interaction and the role of wild resources through time.

Chapter 6

Site Summaries



edited by Colm Moloney
and Ros Ó Maoldúin

Site Summaries

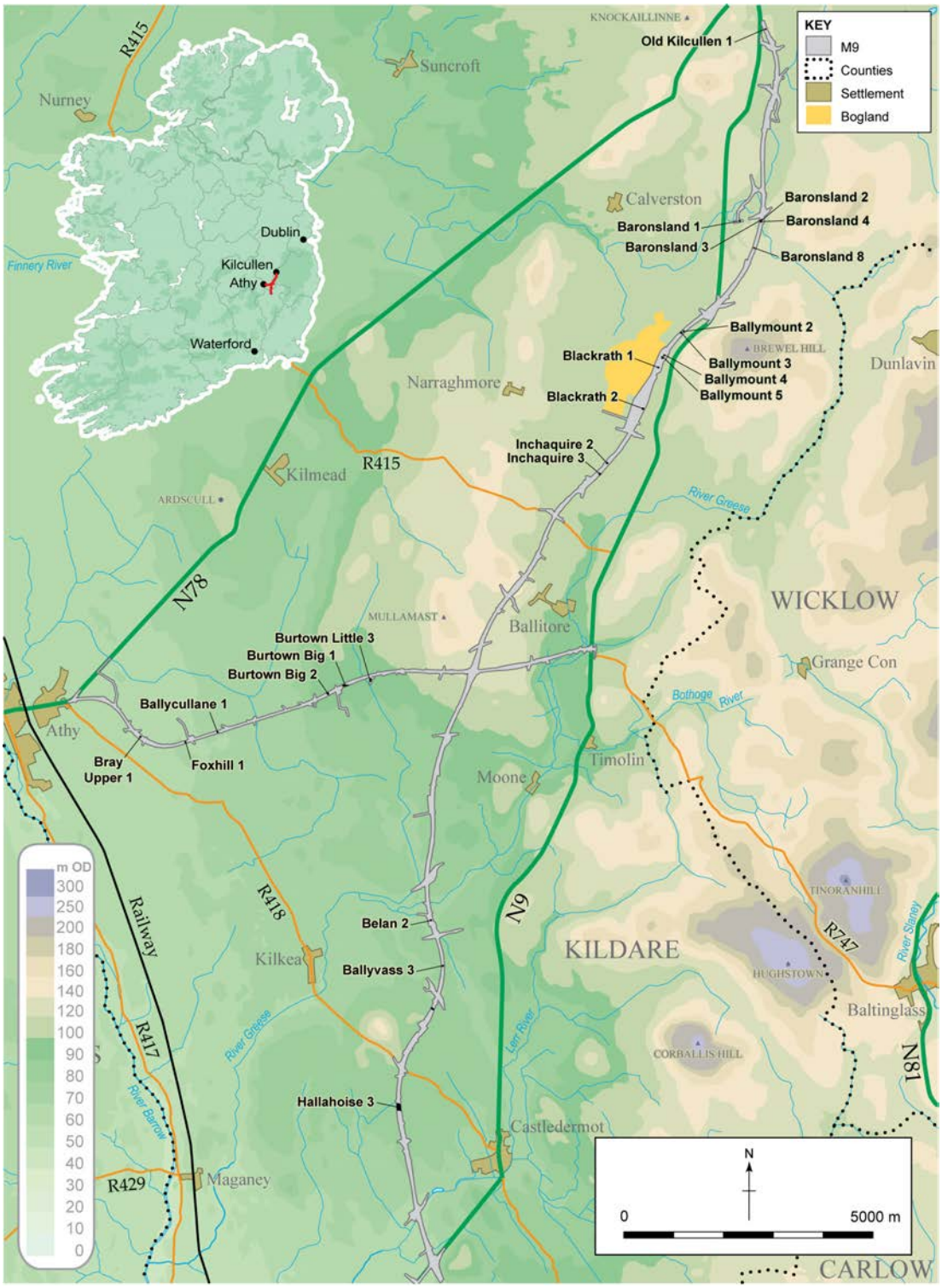
Introduction

This chapter includes summaries of all sites that have not been substantially addressed in previous chapters. It details the results of 23 excavations (Illus. 6.1). As with previously mentioned sites, the full reports for all of these sites can be found on the DRI (https://repository.dri.ie/catalog/v6936m966). The sites include remains of all periods (Table 6.1) and are described from north to south by townland.

Table 6.1—Archaeological periods on excavated sites included in Chapter 6

Site Name	Reg. no.	Mesolithic	Neolithic	Bronze Age	Iron Age	Early Medieval	Later Medieval	Post-Med/Modern
Old Kilcullen 1	E2890			■				
Baronsland 1	E2885							■
Baronsland 2	E2884		■					■
Baronsland 3	E2883		■					■
Baronsland 4	E2882		■					■
Baronsland 8	E2878			■				■
Ballymount 2	E2876			■	■		■	■
Ballymount 3	E2875		■					
Ballymount 4	E2874	■		■				■
Ballymount 5	E2873	■	■	■			■	■
Blackrath 1	E2871			■	■			■
Blackrath 2	E2870			■				■
Inchaquire 2	E2868			■				
Inchaquire 3	E2867			■				■
Burtown Little 3	E2990						■	■
Burtown Big 1	E2992			■			■	■
Burtown Big 2	E2994				■			
Ballycullane 1	E2983					■	■	
Foxhill 1	E2985	■		■				
Bray Upper 1	E2991		■			■	■	
Belan 2	E2953		■	■				
Ballyvass 3	E2946					■		
Hallahoise 3	E2948				■			

Chapter title image Chert arrowhead from Ballymount 5 (by Hannah Sims).

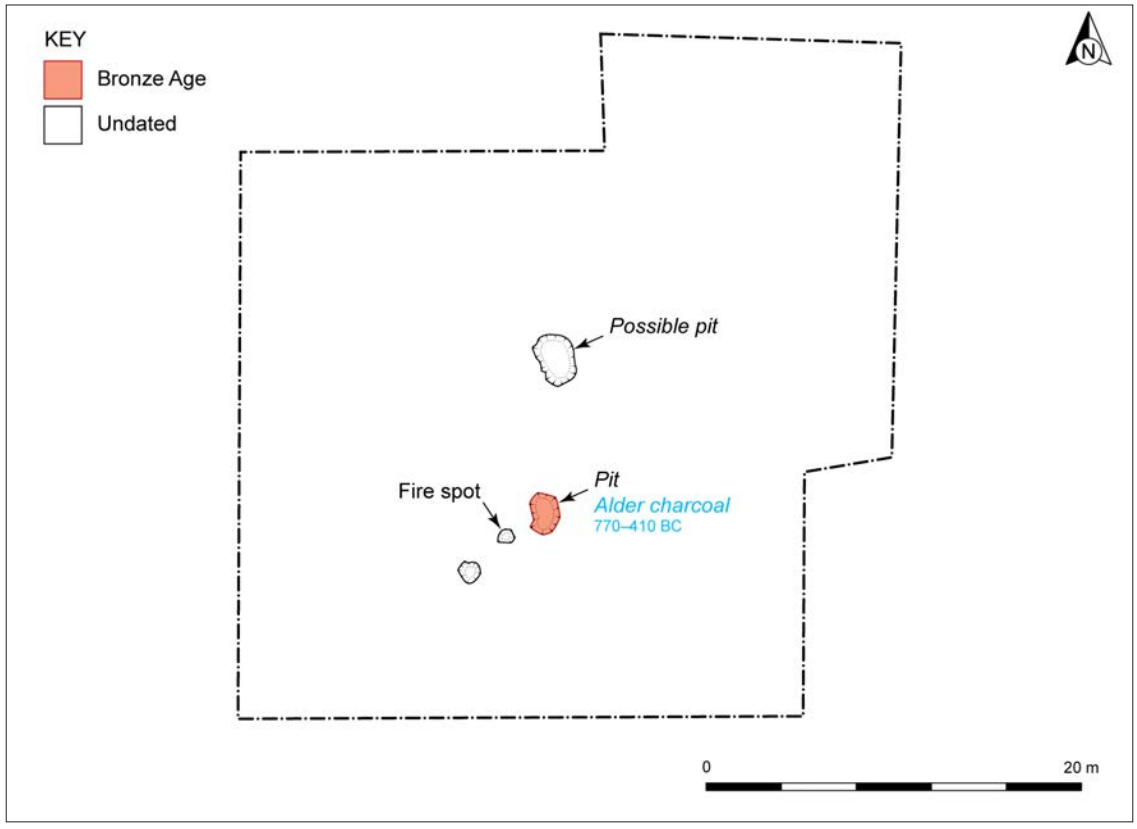


Illus. 6.1 Map showing location of sites summarised in Chapter 6, excavated along the M9.

Old Kilcullen 1: Late Bronze Age/ Early Iron Age pit and associated features[2]

This site was located toward the northern side of a large rectangular field, on the summit of a gentle gradient that sloped downhill to the south. This field was previously subdivided into two, as seen on the First Edition 6-inch Ordnance Survey map (1839). The evidence recovered indicated that this site was the location of a pit and a possible pit dating to the Late Bronze Age/Early Iron Age period, as well as an undated fire-spot and feature of unknown archaeological significance.

The pit was situated towards the centre of the site (Illus. 6.2). It had an irregular shape in plan and measured 1.1 m long by 0.7 m wide by 0.1 m deep. Its fill was rich in alder charcoal and contained frequent heat-affected pebbles, a small quantity of hulled barley grain and seeds of pale persicaria, sedge and goosefoot. The possible pit was located approximately 3 m to the north and was also irregular in plan. It measured approximately 1.35 m in length, 0.9 m in width and 0.1 m in depth and its fill contained alder charcoal and heat-affected stones, as well as occasional mustard seeds.



Illus. 6.2 Old Kilcullen 1, Late Bronze Age/Early Iron Age pit.

2 Old Kilcullen 1, County Kildare; ITM 683555, 707704; elevation 122 m OD; Excavation Reg. No. E2890; Ministerial Directions A021/103; Excavation Director: Lydia Cagney

Located to the south-west of the main pit was a feature that showed clear evidence of *in situ* burning, possibly representing a fire-spot. It was irregular in plan, measuring 0.5 m in diameter by 0.05 m deep, and was overlain by a charcoal-rich deposit. The final feature on site, situated to the south-west of the possible fire-spot, measured 0.6 m in length, 0.55 m in width and 0.05 m in depth. Its fill contained frequent flecks of oak charcoal and stones within the soil matrix.

Two lithic artefacts were recovered from the excavation. The pit yielded an inner indeterminate flint flake, while an inner flint flake that may have resulted from the edge trimming of artefacts or blanks was recovered from the charcoal-rich deposit overlying the fire-spot. Both artefacts were technologically undiagnostic.

A single radiocarbon date was obtained for the main pit excavated at Old Kilcullen 1. A sample of alder charcoal from this feature returned a date range of 770–410 BC (SEURC-25448), placing the activity in the Late Bronze Age/Early Iron Age period. Alder charcoal was also recovered from the possible pit and may indicate that the two features were contemporary. Oak charcoal recovered from the fire-spot and the feature of unknown significance may indicate that a second, undated phase of activity took place at the site.

The presence of charred grain and probable arable weed seeds within the palaeoenvironmental assemblage from Old Kilcullen 1 suggests that some agricultural activity was taking place in the area during the Late Bronze Age/Early Iron Age, although their inclusion within the features is likely the result of accidental transfer rather than intentional deposition. The identification of alder charcoal within the assemblage suggests fuel was collected from a wetland woodland source, while the oak charcoal would have been resourced from dryland woodland.

The archaeological site at Old Kilcullen, located at the northernmost point of the M9, lies near two significant historical locations: the early medieval ecclesiastical site of Old Kilcullen and the late prehistoric 'royal site' of Dún Ailinne. Although only limited archaeological remains were found, likely representing one or a few brief periods of activity, their dating to the Late Bronze Age/Iron Age is noteworthy. These finds predate the main ceremonial activities that occurred at Dún Ailinne (Johnston & Wailes 2007) and provide valuable insights into how the surrounding landscape was used during the Late Bronze Age.

Baronsland 1: Post-medieval cereal-drying kiln, pits and linear features[3]

This site was in an area of flat pastureland surrounded by undulating low range hills. It was situated adjacent to the townland boundary between Baronsland and Kilgowan, with a disused corn mill located approximately 500 m to the north-west. The evidence recovered indicated that this site was the location of a small-scale, cereal-processing complex during the post-medieval period.

The excavation revealed the presence of a cereal-drying kiln, two pits, two ditches and a field boundary (Illus. 6.3). The cereal-drying kiln was keyhole-shaped in plan and had a total length of 1.7 m (north–south). The heavily oxidised fire-pit was located at

3 Baronsland 1, County Kildare; ITM 683030, 703851; elevation 114 m OD; Excavation Reg. No. E2885; Ministerial Directions A021/098; Excavation Director: Liam Hackett

Illus. 6.3 Baronsland 1, post-medieval cereal-processing complex.

the northern end of the feature. It was sub-circular in plan, with a diameter of 0.85 m and a depth of 0.5 m. The southern drying chamber measured 0.9 m long by 0.7 m wide by 0.3 m deep and was sub-rectangular in plan. Four fills were identified within the kiln, with the lower two containing varying quantities of charcoal, charred cereal grain and wild taxa. Radiocarbon dating placed the use of this kiln in the post-medieval to modern period. While this is quite a late date, there are examples of such kilns continuing in use into the twentieth century, mostly in association with horizontal-wheeled mills (Rynne 2006, 198). The nearby horizontal-wheeled mill at Kilgowan may, therefore, have been directly associated with the kiln at Baronsland 1. A shallow pit was located approximately 1 m to the north of the kiln, partially beyond the northern edge of the excavation limits. Its visible extent was oblong in plan, measuring 1.9 m long (east–west), 0.56 m wide and 0.25 m deep. These features were truncated by a linear ditch, which had a visible length of 4.85 m (NNW–SSE), a width of 1.6 m and a depth of 0.3 m. This was itself truncated by a rectangular pit, which measured 2.45 m long by 0.75 m wide by 0.19 m deep.

A second linear ditch was identified running in a NNW–SSE direction along the eastern boundary of the site. This measured

9.8 m long, 2.4 m wide and averaged 0.75 m deep and was truncated by a field boundary at its southern extent. The field boundary was orientated in an east–west direction and had maximum dimensions of 9.3 m by 0.9 m in plan by 0.4 m deep. Both the ditches and the field boundary extended beyond the excavation limits.

Four sherds of industrially produced post-medieval pottery and a fragment of clay tobacco-pipe stem were recovered during the excavation.

A sample of charred bread wheat from the cereal-drying kiln at Baronsland 1 was submitted for radiocarbon dating. This produced a date range of AD 1640–1960 (SUERC-26265), placing the use of the kiln in the post-medieval to modern period. This date range is supported by the recovered artefact assemblage.

The palaeoenvironmental assemblage from Baronsland 1 contained a significant amount of charred cereal grain dominated by oat and hulled barley, with lesser quantities of possible bread wheat and indeterminate cereals. A small number of wild taxa common in cultivated land were also present, including achenes of the knotgrass family and wild radish (Clapham et al. 1962; Stace 1997). The presence of field pea in the assemblage, although possibly accidental, may indicate that this species was being cultivated at the site.

The discovery of a cereal-drying kiln at Baronsland 1 demonstrates that traditional grain processing methods continued to be used in this region into the post-medieval period. The kiln contained evidence of both cereal grains and field peas, providing important insights into the farming practices and crop diversity of this era.

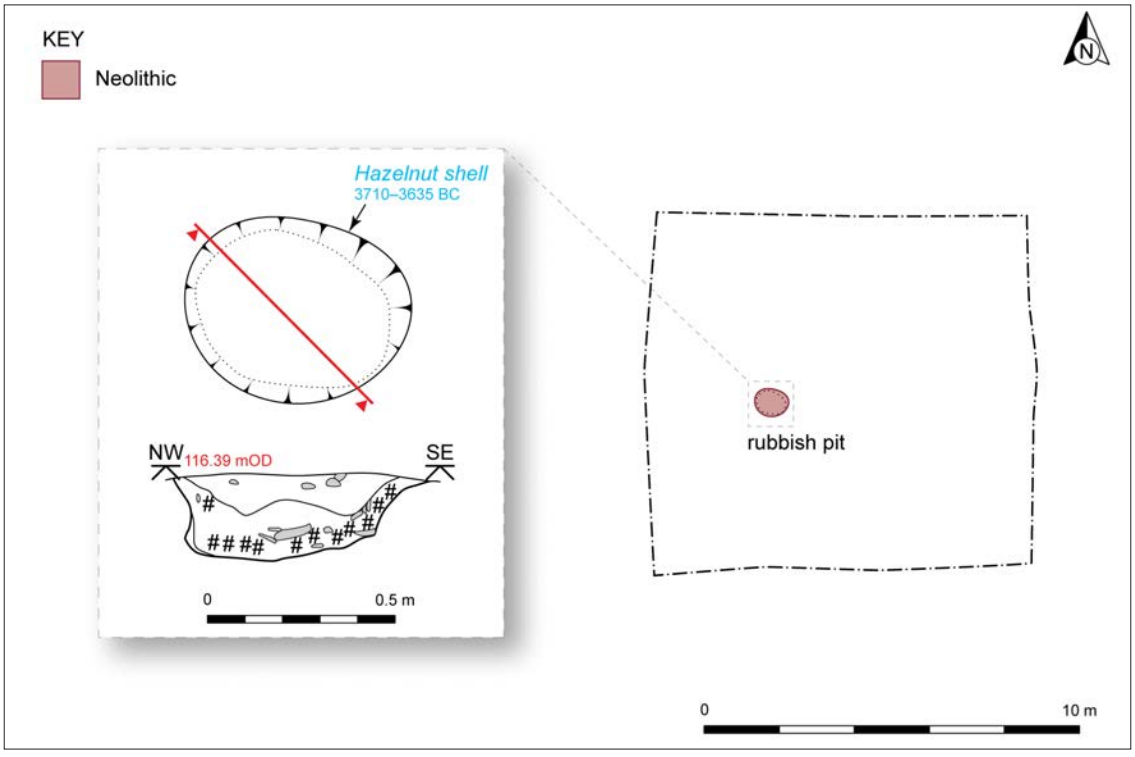
Baronsland 2: Early Neolithic pit, carinated pottery and lithics[4]

This site was located towards the eastern boundary of a large sub-rectangular pasture field running parallel to the existing R448 road and north of Brewel Hill. The field was situated on the low-lying south-eastern slope of a drumlin. A large quarry site was located to the north-east, while an active quarry pit was located to the immediate south-west. The western field boundary functioned as the townland boundary between Baronsland and Kilgowan and the eastern field boundary defined the boundary between Baronsland and Killinane. The evidence recovered indicated that this site was the location of a rubbish pit during the Early Neolithic period.

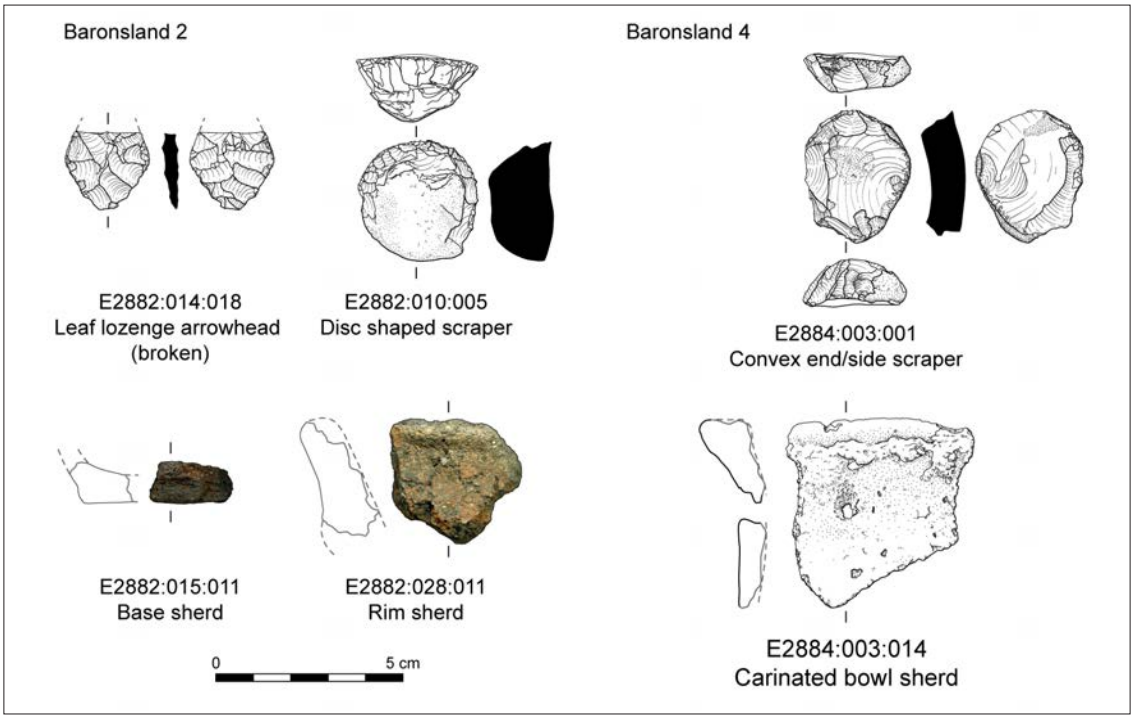
The excavation revealed an isolated pit (Illus. 6.4). This feature was oval in plan, measuring 0.95 m in length, 0.76 m in width and 0.25 m in depth. Two episodes of use were identified for this feature. There was little evidence as to the initial function of the pit; however, the earliest deposit seemed to have been overlain with a layer of redeposited natural soil. The second phase of activity reflected the deposition of waste material followed by the deliberate sealing of the feature. The waste material itself was charcoal rich, containing a total of 26 lithics and 56 sherds of pottery; moderate amounts of charred hazelnut shell and cereal grain were also recovered.

The ceramic material retrieved from the pit consisted of 56 sherds of Early Neolithic pottery, from which a minimum of two vessels could be identified (Illus. 6.5). The first vessel was a modified carinated bowl type, which reflected the emergent regional styles. Two sherds from this vessel displayed

4 Baronsland 2, County Kildare; ITM 683481, 703882; elevation 116 m OD; Excavation Reg. No. E2884; Ministerial Directions A021/097; Excavation Director: Emer Dennehy



Illus. 6.4 Baronsland 2, Early Neolithic rubbish pit.



Illus. 6.5 Artefacts from Baronsland 2 and 4 (by Sara Nylund).

wipe marks, and traces of carbonised residue were also identified. Evidence of an attempt to repair the vessel was present on a single sherd. The second vessel identified was a carinated bowl pottery type; it consisted of 48 sherds of pottery and may not have been locally made.

The lithic assemblage was mainly composed of quartz by-products of an undiagnostic nature; however, two flint finds, which have been classified as a possible utilised flake and a convex end/side scraper, were also recovered (Illus. 6.5). Scrapers are one of the most common artefacts recovered on archaeological sites, and convex end scrapers are frequently found in Irish Neolithic contexts.

Radiocarbon dating of charred hazelnut shell from the second phase of the pit returned a date range of 3710–3635 BC (SUERC-25322), placing it in the Early Neolithic period. This date is supported by the recovered pottery and lithic assemblage.

The palaeoenvironmental assemblage from Baronsland 2 contained high concentrations of unidentifiable cereal grain with low concentrations of emmer wheat, a cereal that has been cultivated in Ireland since the Neolithic (Monk, 1985). Significant quantities of charred hazelnut shell were also recovered from the pit. Hazelnuts were an important part of the prehistoric diet and occur frequently on prehistoric sites (McComb & Simpson 1999).

The single pit discovered at Baronsland 2 holds exceptional importance due to its Neolithic date and contents. The pit contained carinated pottery, one of the earliest pottery types known in Britain and Ireland. What makes this pottery find particularly noteworthy is evidence that it had been repaired in antiquity. While broken pottery was typically discarded, examples of repaired Neolithic pottery from Ireland and elsewhere have been documented before (Vindrola-Padrós & Vilde 2024). Since the raw materials for making pottery were readily available, the effort to repair these vessels suggests either a scarcity of pottery-making skills or that these specific vessels held special cultural significance.

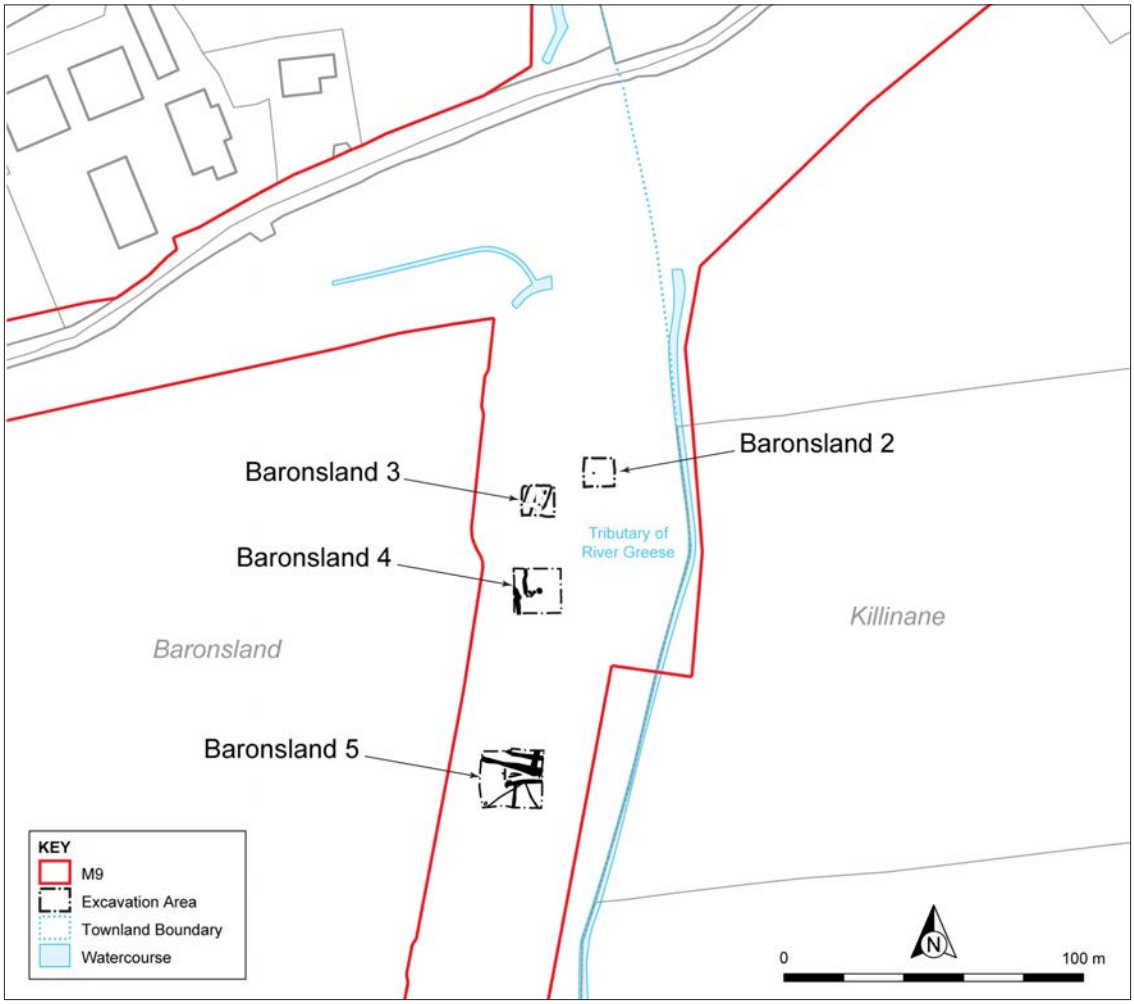
Additionally, the plants found in the pit provide valuable evidence about both the diet of the Neolithic inhabitants and the environmental conditions of the time.

The Early Neolithic findings at Baronsland 2, together with similar pits discovered at Baronsland 3 and 4 (below), form an important concentration of Early Neolithic material (Illus. 6.6). While these findings might represent sporadic use of the area, they are more likely to indicate peripheral activities associated with a settlement in the vicinity. Their date places them in the Early Neolithic I–II, the latter part of which is the period during which large rectangular Neolithic houses were current (McLaughlin et al. 2016, 125). In McLaughlin et al. (ibid.) Early Neolithic I is defined as pre-3720/3680 cal BC and Early Neolithic II as 3720/3680–3640/3620 cal BC. Several examples of large rectangular Neolithic houses have been found at Corbally in County Kildare (Purcell 2002; Smyth 2011).

Baronsland 3: Early Neolithic pits, pottery and lithics[5]

This site was located towards the eastern boundary of a large sub-rectangular pasture field running parallel to the existing R448 road and north of Brewel Hill. The field was

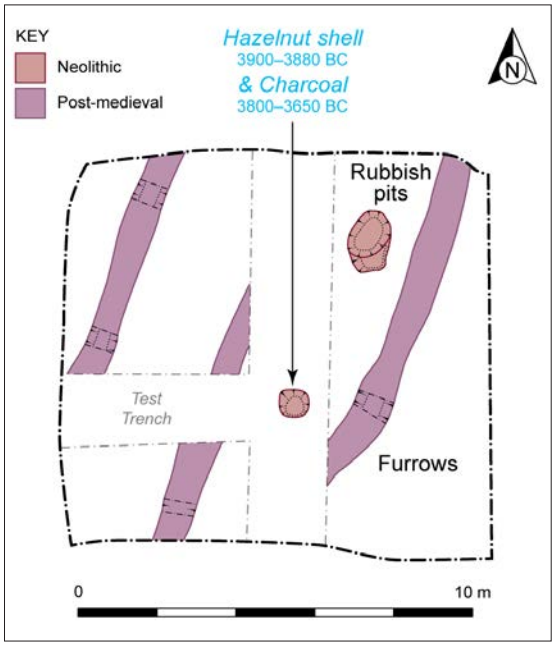
5 Baronsland 3, County Kildare; ITM 683460, 703873; elevation 117 m OD; Excavation Reg. No. E2883; Ministerial Directions A021/096; Excavation Director: Emer Dennehy



Illus. 6.6 The location of Baronsland 2.

situated on the low-lying south-eastern slope of a drumlin. A large quarry site was located to the north-east, while an active quarry pit was located to the immediate south-west. The western field boundary functioned as the townland boundary between Baronsland and Kilgowan and the eastern field boundary defined the boundary between Baronsland and Killinane. The evidence recovered indicated that this site was the location of three Early Neolithic rubbish pits. Post-medieval agricultural activity was also identified in the form of three plough furrows.

The excavation revealed two phases of activity (Illus. 6.7). The earliest phase was represented by three rubbish pits that were situated towards the centre and north-east of the excavation area. The central rubbish pit was sub-circular in plan, measuring 0.7 m (north–south) by 0.67 m by 0.28 m deep. Its fills contained varying quantities of charcoal, charred hazelnut shell and cereal grain, as well as two sherds of undiagnostic prehistoric pottery and two lithic artefacts. The second rubbish pit measured 1.57 m in



Illus. 6.7 Baronsland 3, Early Neolithic rubbish pits and post-medieval agricultural activity.

length (NNE–SSW), 0.9 m in width and 0.5 m in depth and was sub-oval in plan. Its basal fill contained charcoal, which was confined to the western and southern sides of the pit, while the upper fill included gravel confined to the western corner; this potentially represented the surviving remnants of a deposit of backfilled material. The northern side of this feature had been recut by a third pit. This had a circular shape in plan with an average diameter of 1.1 m and a depth of 0.41 m. Varying quantities of charcoal and charred hazelnut shell were also recovered from the fills of this feature.

The second phase of activity was represented by the remains of three linear plough furrows. These were orientated in a NE–SW direction with average dimensions of 7.7 m long, 0.8 m wide and 0.08 m deep. Three sherds of 18th- to 19th-century pottery were retrieved from the fills of these features.

Two fragments of highly fragmented and abraded coarse ware pottery were recovered from one of the rubbish pits excavated at Baronsland 3. There was no observable decoration or surface treatment and no evidence of use in the form of sooting, residue, use-wear or repairs. Due to the highly fragmented nature of these sherds, it was not possible to refine their dating beyond the broad scope of 'prehistoric'. Five sherds of 18th- to 19th-century earthenware pottery were also recovered.

Two pieces of flint debitage were recovered from the excavation. Both artefacts were classified as undiagnostic, although one did exhibit unintentional thermal damage. Due to the poor and fragmented nature of the lithics, it was not possible to identify the stage of lithic manufacture from which they were derived.

One radiocarbon date was obtained from willow or poplar charcoal from the central rubbish pit, (SUERC-25316) and 3900–3650 BC (SUERC-25316) respectively, placing the activity firmly in the Early Neolithic period.

The cereal grain assemblage from Baronsland 3 contained high concentrations of unidentifiable cereal grain along with low quantities of emmer wheat, a grain cultivated in Ireland since the Neolithic (Monk, 1986). The recovery of crab apple seeds, as well as occasional charred hazelnut shell, indicates that the wild resources of the local environment were being exploited alongside the cultivation of cereals.

The Early Neolithic remains at Baronsland 3, combined with those from Baronsland 2 and 4, create a significant concentration of archaeological material (Illus. 6.6). The radiocarbon dating from Baronsland 3, with its earliest dates falling squarely within Early Neolithic I period, indicates that activity in this cluster originated during this phase.

Baronsland 4: Early Neolithic hearths and pits[6]

This site was located towards the mid-eastern side of a large sub-rectangular pasture field running parallel to the R448 road and north of Brewel Hill. The field was situated on the low-lying south-eastern slope of a drumlin. An active quarry was located to the immediate south-west, while a disused quarry site was located to the north-east. The western field boundary functioned as the townland boundary between Baronsland and Kilgowan and the eastern field boundary defined the boundary between Baronsland and Killinane. The excavation revealed two main phases of activity (Illus. 6.8): hearths, rubbish pits and post-holes dating to the Early Neolithic period, and post-medieval agricultural activity.

The earliest identified phase of activity dated to the Early Neolithic period and was represented by six pits, three post-holes and two hearths arranged in an east–west line over approximately 6 m. The hearths varied from sub-circular to oval in plan, with average dimensions of 0.61 m in length, 0.5 m in width and 0.17 m in depth; they contained charcoal and charred hazelnut shell within their fills, as well as several lithic artefacts and a small grinding stone. Two of the pits contained significant amounts of cultural material. The pits ranged in size from 0.7–1.81 m long, 0.56–1.42 m wide and 0.18–0.41 m deep, were sub-circular to oval in shape, and contained varying quantities of charcoal, charred cereal grain, charred hazelnut shell, burnt bone, sherds of prehistoric pottery, numerous lithic artefacts and ground stone objects, including a fragment of a polished stone axe, a possible grinding stone and a pestle. The three post-holes were oval to sub-circular in plan, measuring between 0.16 m and 0.27 m in length, 0.13 m and 0.17 m in width and 0.1 m to 0.21 m in depth. A single sherd of undiagnostic prehistoric pottery was recovered from one of these.

Post-medieval agricultural features were also recorded at Baronsland 4 and included two north–south orientated drainage ditches. These were slightly curvilinear in plan, with average dimensions of 7.85 m by 1.09 m by 0.22 m deep.

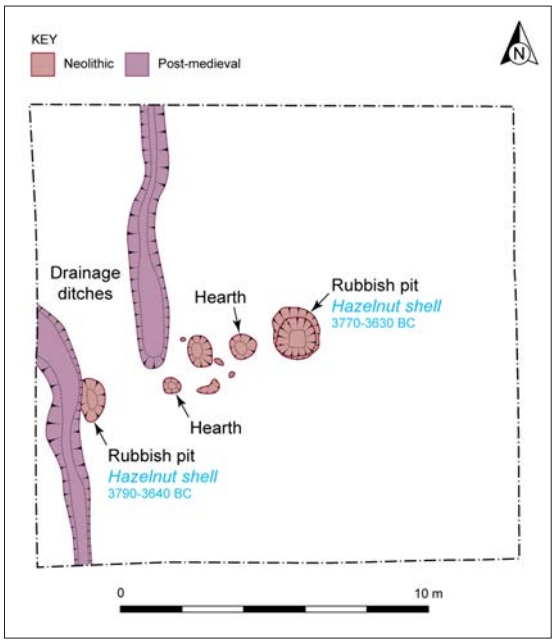
A total of 62 sherds of prehistoric pottery were recovered from the features excavated at Baronsland 4. There are at least two Neolithic carinated bowls within the assemblage.

Seventy-one knapped lithics were recovered during the excavation. These were sorted into five categories: retouched artefacts, flakes showing visible signs of use, debitage (waste material from stone tool production), cores, and natural stone fragments. The collection consists mainly of knapping debris from primary tool production, but included retouched artefacts and flakes utilised as tools.

Radiocarbon dates were obtained for the two rubbish pits excavated on this site. These returned date ranges of 3790–3640 BC (SUERC-25702) and 3770–3630 BC (SUERC-25703), indicating an Early Neolithic date for the first phase of activity at the site. These dates are supported by the recovered artefact assemblage.

The cereal grain assemblage contained significant concentrations of charred hazelnut shell and unidentifiable cereal grain, along with a lesser quantity of emmer wheat—a cereal cultivated in Ireland since the Neolithic (Monk 1986). Ribwort plantain

6 Baronsland 4, County Kildare; ITM 683460, 703843; elevation 118 m OD; Excavation Reg. No. E2882; Ministerial Directions A021/095; Excavation Director: Emer Dennehy



Illus. 6.8 Baronsland 4, Early Neolithic rubbish pits and hearths and post-medieval agricultural activity.

was also present within the assemblage but as this species is a common weed of cultivated ground it may have been incorporated as a contaminant with the cereal grain.

Baronsland 4 contained the densest concentration of Early Neolithic remains within the Baronsland cluster (see Baronsland 2 and 3 above). Although these remains weren't substantial enough to suggest a permanent settlement, they likely indicate the presence of a temporary structure and an area that saw repeated activity over time.

Baronsland 8: Early Bronze Age settlement[7]

This site was in the north-west corner of a large sub-rectangular pasture field, which was situated on the low-lying south-eastern slope of a drumlin. It commanded extensive views of the surrounding terrain, particularly of Brewel Hill to the south and south-east. A large quarry was located to the immediate north-east of the site. The evidence recovered indicated that this site was the location of a settlement that included at least two structures during the Early Bronze Age.

The excavation revealed two phases of activity (Illus. 6.9). The earliest activity, which dated to the Early Bronze Age, was represented by two structures, a hearth and its associated windbreak. The second phase related to post-medieval agricultural practices. In addition to these phases, many features at the site remained undated; however, they were interpreted as being associated with the Early Bronze Age activity.

A sub-oval hearth, which measured 2 m in length, 1.5 m in width and 0.24 m in depth, was located towards the central eastern side of the excavation area. This feature displayed evidence of *in situ* burning and contained inclusions of charcoal, indeterminate cereal grain, nutshell, burnt mammal bone and oxidised clay, as well as four lithic artefacts. Three stake-holes truncated the base of this feature. These ranged from circular to oval in plan, with average dimensions of 0.1 m by 0.08 m by 0.05 m deep. A further four stake-holes and a post-hole surrounded the hearth cut. The post-hole was sub-circular in plan, measuring 0.56 m in length, 0.32 m in width and 0.2 m in depth. The stake-holes varied from 0.09 m to 0.13 m in diameter and 0.09 m to 0.16 m in depth and were mainly circular in plan. Numerous post-holes and stake-holes were identified to the north-east, east and south-east of the hearth. These seemed to form a rudimentary

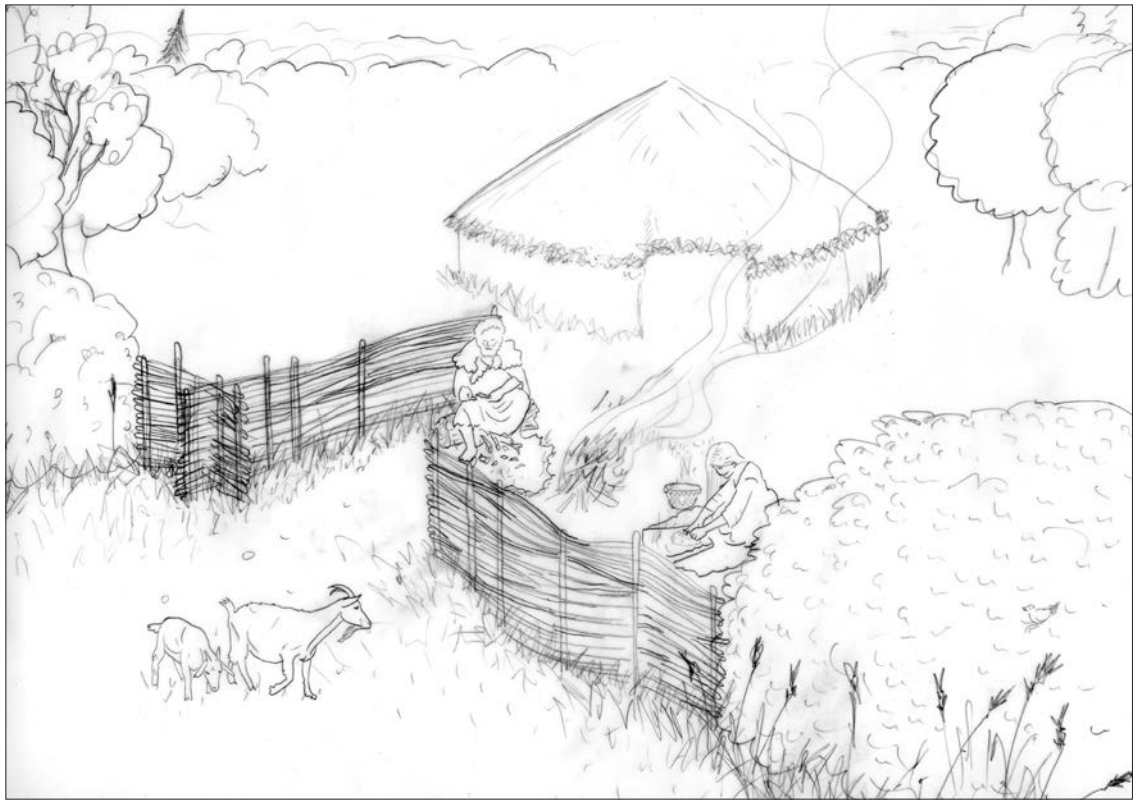
7 Baronsland 8, County Kildare; ITM 683318, 703309; elevation 125 m OD; Excavation Reg. No. E2878; Ministerial Directions A021/091; Excavation Director: Emer Dennehy

Illus. 6.9 Baronsland 8, Early Bronze Age settlement.

L-shaped alignment, with the longest axis orientated in a north–south direction and measuring approximately 6.2 m in length. At its southern end, the alignment turned approximately 90° to the west and extended for a further 3 m. The north–south orientated alignment comprised 22 stake-holes and two post-holes. These were generally circular or sub-circular in plan, with average dimensions of 0.11 m in diameter and 0.15 m deep. The east–west alignment comprised three stake-holes and two post-holes, which were 0.22 m in diameter and 0.12 m deep on average and circular to oval in plan. The alignment was interpreted as the remains of some form of fencing or windbreak, associated with the hearth. Two pits were also identified in this concentration. These ranged from oval to sub-oval in plan and were 0.46 m to 1.1 m long, 0.3 m to 0.56 m wide and 0.06 m to 0.24 m deep. Their fills contained charcoal, hazelnut shell, gravel and stone inclusions, as well as a sherd of Bronze Age pottery and a cortex backed flake.

Approximately 3 m to the south-west of the hearth were the remains of a structure represented by a semi-circular slot trench. This had an external diameter of 7.3 m and was 0.42 m wide and 0.33 m deep. Several features were situated within the confines of this structure. These are thought to represent internal supports and included five oval to sub-circular shaped post-holes, which measured 0.49 m by 0.32 m by 0.18 m deep on average, and two oval to sub-circular stake-holes, which averaged 0.11 m in diameter and 0.12 m in depth. The defining slot trench was truncated on its western side by a large figure-of-eight-shaped post-hole, which measured 1.8 m long by 0.7 m wide by 0.44 m deep. This post-hole was likely contemporary with a second structure located to the east of the first. This survived as a semi-circular slot trench, measuring approximately 4.5 m in diameter (north–south), 0.41 m in width and 0.22 m in depth. A possible continuation of this slot trench, which was identified 2.2 m to the west, measured 0.64 m by 0.25 m by 0.3 m deep and was truncated to the north-west by two oval post-holes. A small number of stake-holes and a post-hole were identified in the interior of this structure. They did not form any discernible pattern but may represent the remains of internal supports. They varied from circular to oval in plan, with average dimensions of 0.11 m by 0.1 m by 0.14 m deep. The two structures at Baronsland 8—although both Early Bronze Age in date—were not contemporaneous and possibly indicate a gradual settlement shift, possibly over several generations, from one structure to the second. Parallels for this behaviour have been noted at previously excavated sites, including the Early Bronze Age settlement at Moynagh Lough, Co. Meath (Doody 2000).

Most features excavated across the site remain undated; however, it is presumed that they were related to the Early Bronze Age structures. A concentration of features identified in the north-east corner of the site possibly represented the remains of a fence line. This comprised a 3 m long, NW–SE orientated line of 10 stake-holes that ranged from circular to oval, with average dimensions of 0.13 m by 0.11 m by 0.11 m deep. The remaining features were spread throughout the excavation area and included 14 post-holes, eight stake-holes, nine pits and a hearth. The post-holes were mainly circular to oval in plan, measuring 0.38 m by 0.27 m by 0.25 m deep on average. The stake-holes measured between 0.08 m and 0.28 m in diameter and 0.09 m and 0.24 m in depth and were all circular to sub-circular



Illus. 6.10 Visualisation sketch of Early Bronze Age settlement at Baronsland, Co. Kildare (by Jonathan Millar).

in plan. The pits were mainly oval in plan, with average dimensions of 0.84 m long, 0.54 m wide and 0.22 m deep and the hearth measured 0.88 m in length, 0.58 m in width and 0.08 m in depth and was oval in plan.

Three linear plough furrows were also identified in the north of the site, truncating the earlier fence line. These measured between 3.89 m and 11.2 m long, 0.38 m and 0.66 m wide and 0.08 m and 0.11 m deep.

A total of six sherds of prehistoric pottery, representing three vessels, were recovered from several of the pits and post-holes at Baronsland 8. Most were unidentifiable, but the fabric could be broadly attributed to the Bronze Age. The occurrence of carbonised residue on two of the vessels suggests that they were used in a domestic context.

Nineteen lithic artefacts were retrieved during the excavation. The assemblage included retouched artefacts, debitage pieces and blanks with evidence of use-wear damage, suggesting that the activities were focused on primary technology, such as the detachment of blanks for further modification.

Three radiocarbon dates were obtained for the hearth, which was possibly associated with the first structure, and a post-hole and slot trench associated with the second structure. The returned date ranges of 2140–1870 BC (SUERC-25445), 1960–1690 BC (SUERC-25447) and 1980–1690 BC (SUERC-25446) respectively indicated continual use of the site throughout the Early Bronze Age. These dates are supported by the

recovered artefact assemblage.

The palaeoenvironmental assemblage revealed very low concentrations of unidentifiable cereal grain. This lack of archaeobotanical material may indicate poor preservation conditions at the site or alternately that significant reworking of deposits had occurred.

The archaeological remains at Baronsland 8 appear to represent a small single-dwelling settlement (Illus. 6.10), potentially with an initial building subsequently replaced by a second building of Early Bronze Age date. There are very few discernible building footprints from the preceding Chalcolithic (Carlin 2018, 92) and it is during that period, that the first since those from the Early Neolithic appear. There are still relatively few (Ginn & Plunkett 2020, 47) making this a significant find.

Ballymount 2: Multi-period activity[8]

This site was located on the south-east-facing side of a hill situated 200 m north-west of the original N9 Waterford to Dublin Road. Narraghmore Bog, which has been partially reclaimed and afforested, was located to the west of the site. The evidence recovered indicated that this site was the location of multi-period activity from at least the Bronze Age to the post-medieval period.

The excavation revealed four phases (Illus. 6.11). The first phase has been attributed to pre-Iron Age activity, although this date range could not be refined further based on the information recovered. The second phase dated to the Iron Age period, while the third phase was possibly early medieval in date. The fourth phase of activity was represented by post-medieval agricultural activity.

The earliest phase of activity at Ballymount 2 was represented by three pits situated in the northern part of site. These ranged from sub-circular to sub-oval in plan and had average dimensions of 0.98 m by 0.74 m by 0.25 m deep. Their fills contained varying quantities of charcoal, animal bone, undiagnostic pottery crumbs and lithic artefacts, including the upper portion of a shale stone axe.

Although no radiocarbon dates were attained for any of the features in Phase 1, they stratigraphically all predate the Iron Age features of Phase 2. This *terminus ante quem* for the Phase 1 activities is supported by the recovery of the stone axe, as these artefact types have long been considered characteristic of the Neolithic period in Ireland (4000–2500 BC); however, they are known to have been in use from the Early Mesolithic (Little et al. 2017).

The westernmost Phase 1 pit was truncated on its north-east side by a pit attributed to Phase 2. This measured 1.42 m long, 1.41 m wide and 0.58 m deep and was sub-oval in plan. It contained the remains of a complete cow skeleton, along with Middle/Late Bronze Age pottery, a fragment of a broken glass bead, a small fragment of possibly worked bone, and two heavily corroded fragments of metal. The easternmost Phase 1 pit had also been truncated by Phase 2 activity on its western side. This was represented by an irregularly shaped pit, which measured 2.4 m in length, 1.65 m in width and 0.78 m in depth. It contained inclusions of charcoal, animal bone and three fragments of human occipital bone, as well as flint debitage and undiagnostic prehistoric pottery. The recovery of human remains in conjunction with animal bone

8 Ballymount 2, County Kildare; ITM 681909, 701645; elevation 117 m OD; Excavation Reg. No. E2876; Ministerial Directions A021/089; Excavation Director: Gillian McCarthy

from this pit suggests the possibility of ritual activity taking place at the site.

A small possible slag pit furnace, which represented the third phase of activity at the site, was located in the eastern part of the excavation area. It was sub-circular in plan and measured 0.50 m in diameter and 0.3 m in depth. There was no evidence of burning *in situ* within the pit, although its fill contained frequent inclusions of charcoal and slag. The absence of *in situ* burning may be considered unusual for furnaces; however, certain furnace constructions such as slag pit furnaces did not necessarily leave any evidence of high temperatures other than the slag itself.

The final phase of activity at Ballymount 2 was characterised by three post-medieval agricultural ditches. Two of these ditches were identified as field boundaries recorded on the First Edition 6-inch Ordnance Survey map (1839), while the third possibly represented a drainage feature. They were all orientated in a NW–SE direction, with average dimensions of 1.9 m wide and 0.54 m deep.

An isolated post-hole was also excavated at the site; however, no evidence as to the date of this feature was uncovered during the course of the excavation. It was circular in plan, measuring 0.22 m in diameter and 0.15 m in depth.

The stone axe fragment, which was in poor condition, was made of a fine argillaceous raw material identified as a mid-greenish/brownish grey shale (O'Keeffe 2009). Shale and mudstone specimens are among the most common examples of axes retrieved in Ireland. In relation to chronology, it has been noted that a preference for mudstone and shale stone axes occurred during the Later Mesolithic.

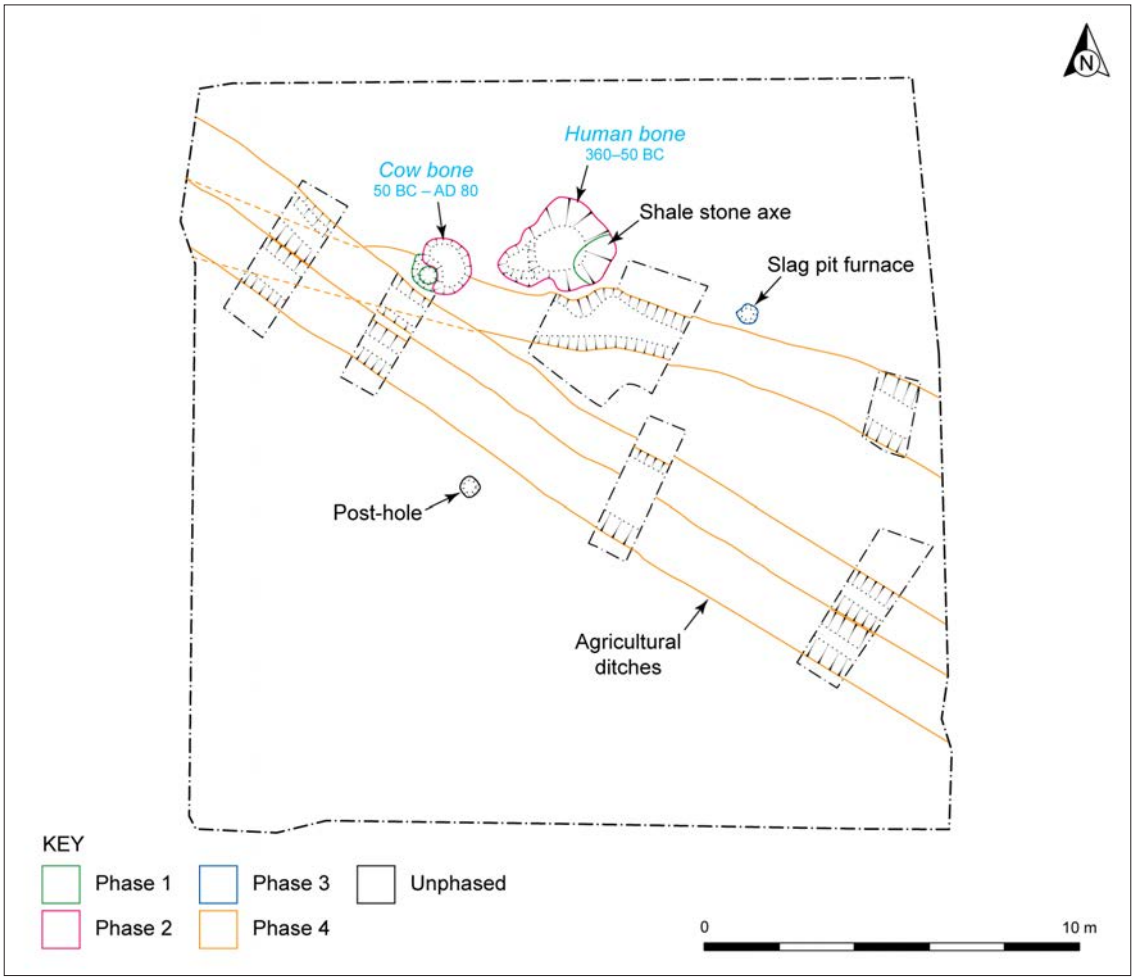
The recovered lithic artefacts can be classified as unworked flint knapping by-products or debitage. These exhibited very few diagnostic attributes that could be associated with distinctive stages of lithic manufacture. No chronological framework could be provided based on the assemblage. From a broad perspective the bipolar reduction technique has been recurrent in later prehistoric assemblages since the Middle Neolithic onwards (O'Hare 2005; Woodman et al. 2006); however, it has also been identified in earlier Mesolithic contexts (Peterson 1990) and its use is related to the quality, size and availability of raw material.

A total of three sherds, three fragments and seven crumbs of prehistoric pottery were recovered from the excavation of Ballymount 2. The three sherds represented the remains of a single plain and poorly made Middle to Late Bronze Age domestic vessel. The vessel type for the recovered fragments and crumbs could not be determined beyond it being prehistoric in date.

The remains of just less than one half of a glass bead fragment were also retrieved. The bead may have originally been yellow or white in colour and is decorated with a series of evenly spaced blue dots. The dots are not raised, which would suggest that the decoration was applied when the glass was still molten. Glass beads are relatively common in the archaeological record from the Iron Age into the early medieval period.

Two radiocarbon dates were returned for the Phase 2 features at Ballymount 2. These returned date ranges of 360–50 BC (SUERC-26402) and 50 BC–AD 80 (SUERC-25294), indicating broadly contemporaneous Iron Age activity.

The fragments of human occipital bone from Phase 2 belonged to an adult aged between 18 and 34 years at time of death. Osteological analysis revealed the presence



Illus. 6.11 Ballymount 2, multi-phase site spanning the Bronze Age to the post-medieval period.

of a small perforation, approximately 5 mm in diameter, at the point where the three fragments refitted. Given the uniformity of the perforation, it is unlikely that the skull was pierced by a projectile, such as an arrowhead; it may, therefore, be the result of cranial trepanation, whereby a hole is cut or scraped into the human skull in order to treat health problems.

The faunal assemblage from Ballymount 2 included the remains of cattle, sheep, goat, pig and horse and was representative of waste material from both slaughter and consumption. The remains of three calf skeletons, aged between three weeks and five months, were also identified in conjunction with the human remains. These may represent veal consumption, vellum production or the disposal of deceased calves at the site. However, high proportions of calf bones have previously been found in the Iron Age ritual site of Dún Ailinne, Co. Kildare (Crabtree 2002, 64), supporting the theory that ritual activity was taking place at Ballymount 2. The complete cattle skeleton was probably an ox that had been decapitated and skinned before all its remains were buried together in the Phase 2 pit. While

this animal may have been a diseased or perished specimen, in the context of the human remains and calf bones found at the same site, the ox skeleton could represent the ritual deposition of a sacrificed animal.

A moderate quantity of metallurgical waste material, indicative of the bloomery process and weighing 5756 g, was recovered from the site during excavation. Most of the identifiable material was the result of iron smelting, with a small quantity of hammerscale indicating that some smithing was also taking place. Slag pit furnace technology is believed to have originated in northern Europe during the Iron Age and was spread by mass migrations in the fifth and sixth centuries. These features were common in Anglo-Saxon England, and it is likely that the technology was gradually introduced to Ireland from the seventh century onwards. The iron ore for such a process would be expected to have been sourced locally and the adjacent Narraghmore Bog was perhaps the source for the bog ore used at Ballymount. All the charcoal retrieved from this feature was discovered to be oak. This would have enabled the highest temperature possible to be achieved during smelting, and the exclusion of all other potential wood fuels shows a deliberate and selective exploitation of this wood by those undertaking this process.

The remains found at Ballymount 2 span a period from the pre-Iron Age, with activity represented by pits containing a shale axe, through to the post-medieval represented by agricultural ditches. The most compelling evidence comes from the Iron Age phase (360 BC–AD 80), where two pits contained an intriguing assemblage of ritual deposits—human cranial fragments showing possible trepanation, multiple calf burials, and a complete decapitated ox skeleton. The combination of these carefully placed remains suggests deliberate ritual activity, with parallels at the ceremonial site of Dún Ailinne. The subsequent phase is marked by evidence of metalworking, with a slag pit furnace demonstrating sophisticated practices through the exclusive use of oak charcoal for optimal smelting temperatures. The site's location near Narraghmore Bog, a likely source of iron ore, was strategically important for this industrial activity. The final phase shows the land's transition to agricultural use, marked by field boundaries visible on the 1839 Ordnance Survey map.

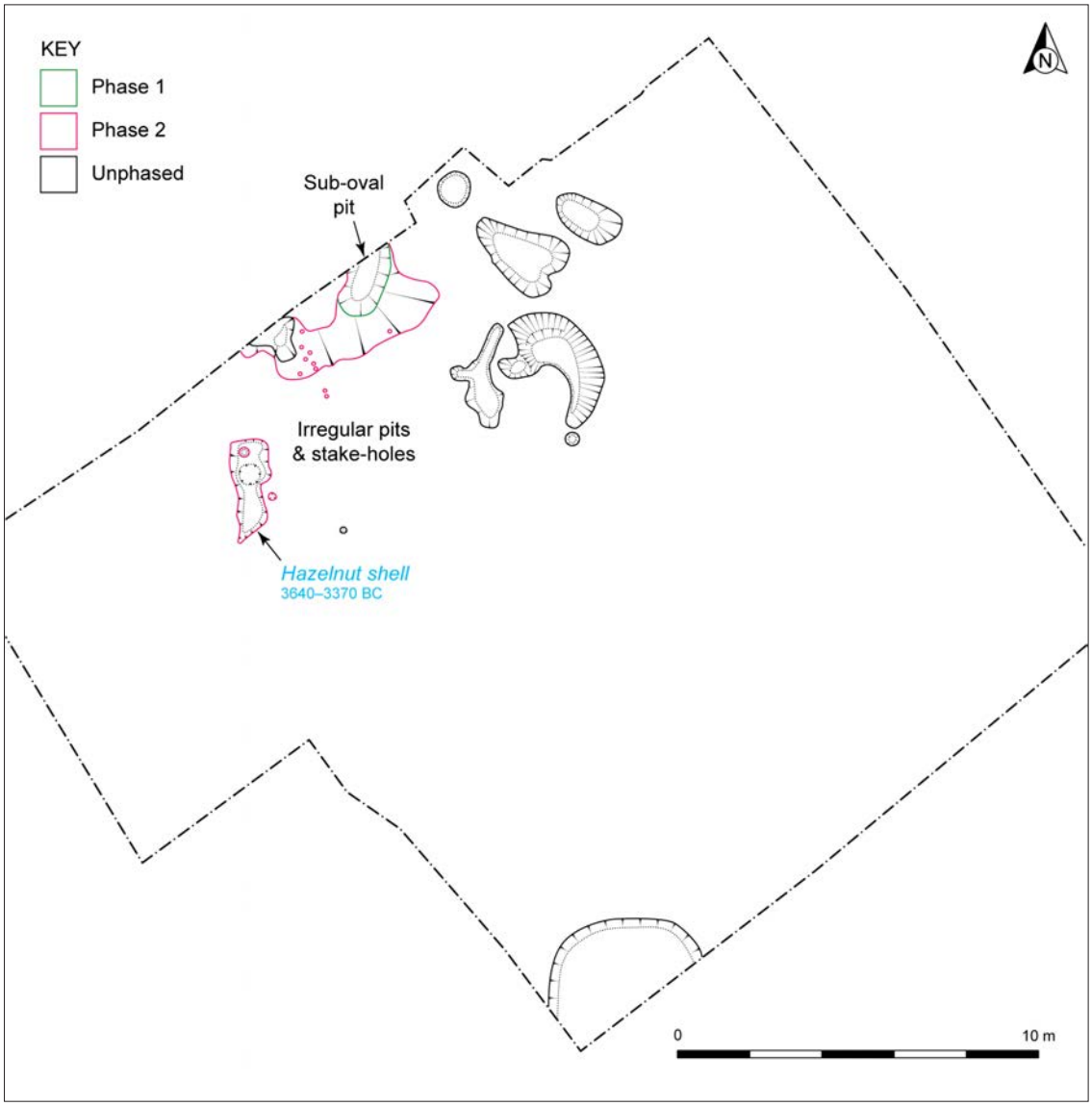
Ballymount 3: Pits, post-holes and stake-holes[9]

This site was located on the western side of a gravel ridge that overlooked Narraghmore Bog to the west, with the N9 located to the east. The surrounding area was used for tillage and the field within which the site was located had recently been harvested. The evidence recovered indicated that this site was the location of numerous pits, post-holes and stake-holes of indeterminate function during the prehistoric period.

The excavation revealed two phases of activity dating to the prehistoric period (Illus. 6.12). In addition to these phases, many features at the site remain undated.

The earliest activity at the site was represented by a sub-oval pit, which measured 2.1 m in length by 1.08 m in width (NW–SE) and 1.08 m in depth. This was located against the north-west edge of the excavation, extending beyond the site's limits. Its fills contained inclusions of charcoal and pebbles, as well as a fragment of

9 Ballymount 3, County Kildare; ITM 681857, 701617; elevation 115 m OD; Excavation Reg. No. E2875; Ministerial Directions A021/088; Excavation Director: Gillian McCarthy



Illus. 6.12 Ballymount 3, prehistoric activity.

flint debitage.

Truncating the Phase 1 feature was a large, irregularly shaped pit. This had visible dimensions of 5.4 m (NE–SW) by 3 m by 0.22 m deep, extending beyond the excavation limits to the north-west. Eight stake-holes truncated the base of this pit, with seven forming a cluster in the south-western corner and the eighth truncating the eastern side. These stake-holes were all sub-circular in plan, with average dimensions of 0.06 m by 0.05 m by 0.12 m deep. The fill of the pit contained inclusions of pebbles, charcoal, a single sherd from a Middle Neolithic Impressed Ware globular bowl and 39 lithic artefacts. Two additional contemporaneous

stake-holes were located directly to the south of the pit. These measured 0.06 m–0.08 m long, 0.04 m–0.07 m wide and 0.12 m–0.16 m deep and were sub-circular in plan.

A second irregular pit was located to the south-west. This measured 1.5 m in length (north–south), 1.3 m in width and 0.8 m in depth and contained charcoal and charred hazelnut shell, along with three sherds from Middle Neolithic Impressed Ware globular bowls and 42 lithics. To the east of this pit was a sub-circular post-hole, which had maximum dimensions of 0.33 m by 0.25 m by 0.19 m deep. Its fill was sterile, containing no inclusions or artefacts.

The majority of features at Ballymount 3 remain undated, including four post-holes and five pits. The post-holes were all sub-circular in plan, measuring 0.45 m by 0.43 m by 0.13 m deep on average; the pits were sub-oval to irregular in shape with average dimensions of 2.81 m long, 1.17 m wide and 0.42 m deep.

Four pottery sherds, representing two to three Middle Neolithic Impressed Ware globular bowls, were recovered from the excavation at Ballymount 3. The fragmented nature of the pottery and the presence of burnt material on the inner surfaces of two of the sherds indicate that this is domestic debris.

A total of 95 lithic artefacts were retrieved from various contexts across the site. The assemblage was dominated by debitage pieces, followed by retouched artefacts, utilised blanks and a small percentage of cores. The nature of the debitage identified indicates that primary technology was dominant, with the exception of a small percentage of by-products that can be associated with the secondary modification of blanks. The technique used to produce these examples is associated with later prehistoric assemblages, commonly from the Middle Neolithic or Bronze Age.

A radiocarbon date was obtained for a sample of charred hazelnut shell from a Phase 2 pit. This returned a radiocarbon determination of 3640–3370 BC (SUERC-25293), placing this activity firmly in the Middle Neolithic period. This date range provides a *terminus ante quem* for the Phase 1 activities.

The palaeoenvironmental assemblage revealed very low concentrations of heavily fragmented and abraded charcoal. This suggests that the material was *ex situ*, representing secondary deposition possibly by natural action such as wind or rain-wash. Carbonised hazelnut shell was also recovered from several features. Hazel produces good firewood, and the nuts may have become charred casually as a by-product of fuel use. The relatively high concentrations, however, imply a more deliberate exploitation as a food source, as hazelnuts were an important part of the prehistoric diet (McComb & Simpson 1999).

Ballymount 3 revealed activity dating to the Middle Neolithic 3640–3370 BC (SUERC-25293) for Phase 2, with earlier activity in Phase 1. The assemblage included Middle Neolithic Impressed Ware pottery and lithic artefacts, indicating domestic activity (McLaughlin et al. 2016). This settlement evidence aligns with broader patterns seen across Ireland, where development-led excavations have revealed numerous previously unknown prehistoric sites (Cooney et al. 2011). The palaeoenvironmental evidence, including charred hazelnut shells, suggests deliberate exploitation of woodland resources for both fuel and food. Of particular interest is how this site contributes to our understanding of Middle Neolithic settlement patterns, a period that has

traditionally been viewed primarily through its monumental architecture rather than domestic evidence (Smyth 2014).

Ballymount 4: Multi-period[10]

This site was located on the western slope of a gravel ridge that overlooked Narraghmore Bog to the west, with the N9 road located to the east. The surrounding land was used as pasture with reclaimed land from the bog to the west of the site. The evidence recovered indicated that this site was the location of multi-period activity including Mesolithic, Bronze Age and post-medieval.

The excavation revealed four phases of activity (Illus. 6.13). The Phase 1 activities spanned the Mesolithic period through to the Early Bronze Age; Phase 2 was Middle Bronze Age in date; Phase 3 dated to the Late Bronze Age, while Phase 4 was associated with post-medieval activity. A small number of undated features were also excavated across the site.

The earliest identified phase of activity at Ballymount 4 was represented by a total of 13 pits and the possible remains of a trackway which were sealed beneath a layer of peat which is believed to have developed in the Early Bronze Age. A radiocarbon date indicating this activity began in the transition between the Early and Late Mesolithic was returned from a pit which also contained a microlithic form of chert blade. This was one of the earliest dates returned from the entire scheme (6390–6230 BC (SUERC-25291)). The pits were situated throughout the excavation area and were mainly sub-circular to sub-oval in plan, with average dimensions of 1.93 m by 1.21 m by 0.26 m deep. The majority contained varying quantities of charcoal, charred hazelnut shell, unidentifiable burnt animal bone, pebbles and stones within their fills. A chert blade, seven pieces of flint debitage and three utilised flint flakes were also recovered from several of the features. Towards the western part of the site were the remains of what is tentatively interpreted as a possible trackway. This feature consisted of several east–west orientated pieces of oak, which were in a poor state of preservation. This trackway measured 4.8 m long by 0.98 m wide by 0.1 m thick.

Covering the lower areas of the site to the north and west and overlying the trackway and several of the pits was a thick layer of naturally formed peat, measuring 0.8 m in depth. This contained a small quantity of unidentifiable animal bone, as well as a possible quartzite smoother.

Features attributed to the second phase of activity at Ballymount 4 which is dated to the Middle Bronze Age, included a trough, two small burnt spreads, a stone-lined pit and a pitfall trap. The rectangular trough, measuring 3.15 m in length (WNW–ESE) by 1.8 m by 0.56 m deep, was situated in the south-western part of the site. The possible charred remains of a timber lining were identified around the base and sides of the cut and inclusions of heat-affected stone, holly and hazel charcoal and unidentifiable animal bone were recovered from its fills. A burnt spread, which extended over an area measuring 6.6 m long by 3.4 m wide by 0.08 m deep, was situated to the south-west of the trough; it consisted of heat-affected stone and charcoal within a matrix of clayey silt. A second burnt spread was situated to the north of the trough. This deposit had a sub-rectangular shape in plan and covered an area measuring 3.6 m in length (east–west), 3.3 m

10 Ballymount 4, County Kildare; ITM 681536, 701166; elevation 105 m OD; Excavation Reg. No. E2874; Ministerial Directions A021/087; Excavation Director: Gillian McCarthy

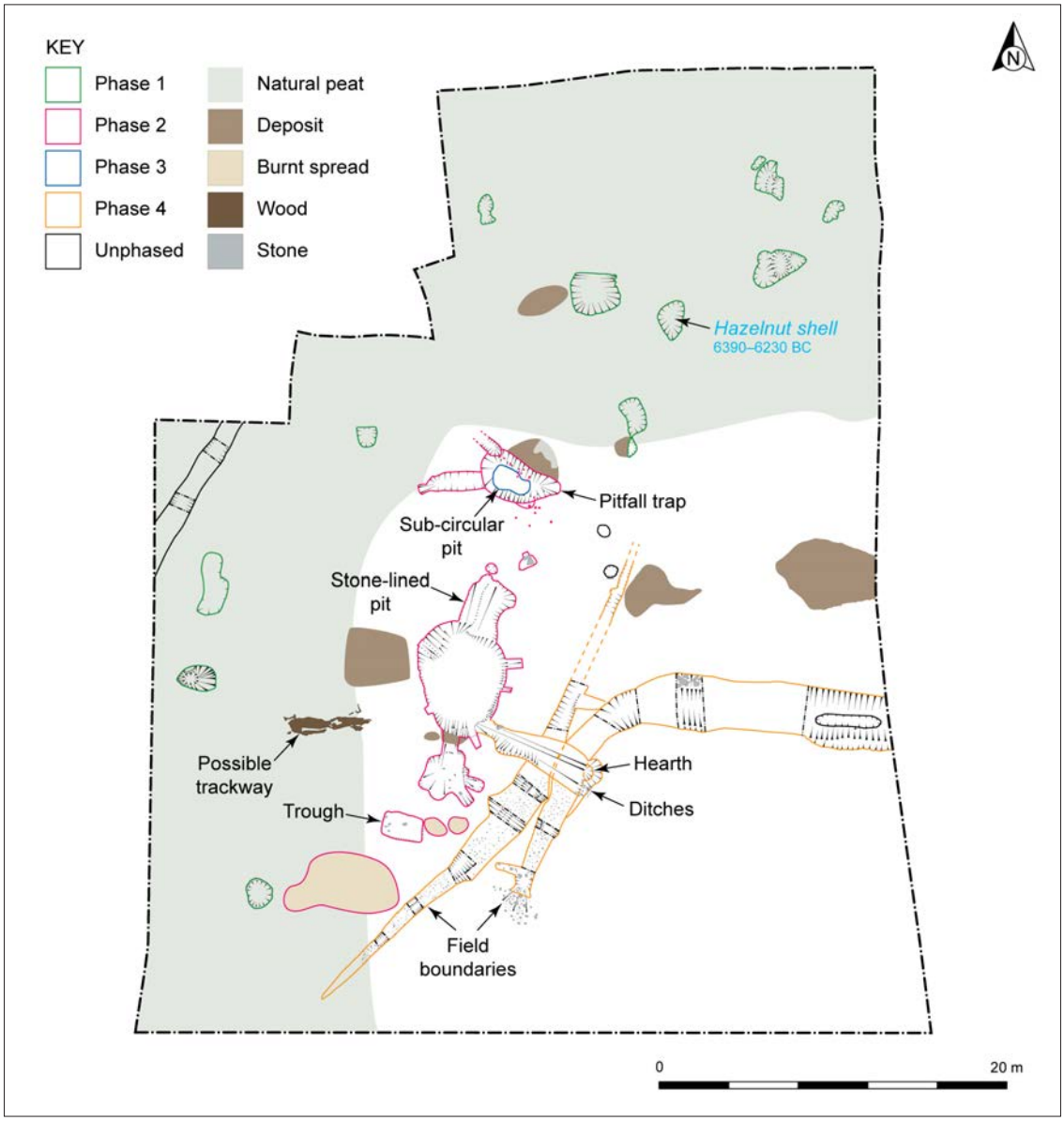
in width and 0.21 m in depth. It contained a small quantity of animal bone within its soil matrix. A further two deposits were situated to the east of the trough. These measured 1.2 m in length, 0.6 m to 0.9 m in width and 0.15 m in depth and comprised silty clay with charcoal and stone inclusions.

A sub-circular-shaped stone-lined pit, which had a shallow, sub-rectangular-shaped feature projecting from its NNE side, was situated towards the centre of the site. The pit measured 6.4 m in length (north–south), 5.2 m in width and 0.5 m in depth, while the projection measured 3 m (NNE–SSW) by 2.35 m. The stone lining consisted of 11 stones of which nine were *in situ*; they measured 0.78 m by 0.48 m by 0.24 m thick on average and seemed to have been laid in sequence starting at the southern end of the feature. The pit's fills contained varying amounts of animal bone, charcoal, charred hazelnut shell and stone inclusions, as well as a fragment of flint debitage. A further four pits were attributed to the Phase 2 activities. These varied from circular to irregular in plan and measured 1.7 m long, 0.78 m wide and 0.26 m deep on average. They contained small quantities of charcoal, unidentified animal bone, stone and flint debitage within their fills.

To the north of the stone-lined pit was a kidney-shaped pitfall trap, which measured 4.6 m long (NW–SE) by 2.8 m wide by 0.9 m deep. Truncating the south-west-facing slope of this feature on the northern side were 14 stake-holes. These all had an approximate upward angle of 30–40°, orientated towards the centre of the pit. They were mainly circular in plan, with average dimensions of 0.04 m in diameter by 0.2 m in depth. The fills of the trap contained varying amounts of animal bone and heat-affected stones, as well as three pieces of poorly preserved wood planking. The west and north-west sides of the pitfall trap adjoined two short, linear channels, which drained into the bog. These measured 3.7 m (east–west) by 1.2 m by 0.2 m deep and 0.38 m (NW–SE) by 0.35 m by 0.15 m deep. They contained unidentifiable animal bone fragments and stone inclusions and possibly functioned as drainage features. A further eight stake-holes were located on the southern side of the pitfall trap. These did not seem to form a definite pattern and their relationship to the trap remains unclear. They had average dimensions of 0.06 m by 0.05 m by 0.25 m deep and were mainly sub-circular in plan.

Truncating the centre of the pitfall trap was a sub-circular pit, which measured 2.6 m long (WNW–ESE), 1.55 m wide and 0.45 m deep. The fills of this feature contained a high percentage of heat-affected stones and charcoal, as well as a fragment of charred hazelnut shell and small quantities of animal bone.

A number of features across the site represented post-medieval agricultural activities, including two field boundaries, several ditches and a hearth. The field boundaries, located in the north-west and eastern parts of the site, were both depicted on the First Edition 6-inch Ordnance Survey map (1839) of the area. They were orientated NE–SW and east–west respectively, measuring between 5 m and 25 m in length, 1.1 m and 3.3 m in width and 0.26 m and 0.95 m in depth. Their fills were relatively sterile, with only a few fragments of animal bone recovered. The ditches were mainly linear in plan, orientated on either an east–west or NE–SW axis. They measured 8.64 m by 1 m by 0.26 m deep on average and contained inclusions of animal bone and charcoal, as well as a metal awl/punch, an iron nail, two pieces of flint debitage and a possible piece of mudstone debitage.



Illus. 6.13 Ballymount 4, multi-phase site including Mesolithic, Bronze Age and post-medieval activity

The hearth was sub-oval in plan, measuring 0.55 m long by 0.43 m wide by 0.1 m deep. It contained moderate amounts of charcoal within its fill and displayed evidence of burning *in situ* in the form of oxidised natural subsoil.

Two pits at Ballymount 4 could not be definitely assigned to a specific period. These were both sub-circular in plan measuring 0.65–0.75 m in length, 0.25–0.54 m in width and 0.14–0.27 m in depth. Their fills contained small quantities of charcoal, charred hazelnut shell and animal bone.

One possible awl/punch was recovered from the basal fill of a Phase 4 ditch. Awls and punches had relatively similar

functions and were used for bone, wood, metal and leather working (Ottaway 1992, 552). They had a prolonged period of use in the archaeological record throughout the medieval period, with awls continuing in use into the post-medieval period.

Twenty-nine knapped finds were recovered from numerous features excavated at Ballymount 4. The assemblage is dominated by flint (86%), followed by chert, quartz and possible mudstone examples. Only two formal artefacts, a flint scraper and a chert blade, were identified, with the rest of the assemblage categorised as utilised artefacts, debitage, cores or natural chunks. The assemblage was technologically and typologically undiagnostic making a chronological and functional interpretation difficult.

A total of five radiocarbon dates were obtained for three of the pits and the trough excavated at Ballymount 4. These returned radiocarbon dates indicating activity in the Mesolithic (7000–4000 BC), the Middle Bronze Age (1500–1000 BC) and the Late Bronze Age (1000–600 BC) periods.

A limited palaeoenvironmental assemblage was recovered from the excavation at Ballymount 4. The lack of material hindered the interpretation of the activities being carried out beyond indicating the use of wood for fuel and the possible use of hazelnuts as a food source.

Analysis of the faunal assemblage indicated that cattle were the dominant species at Ballymount 4, followed by horse, pig, sheep/goat, dog and red deer. None of the bones displayed signs of pathology or butchery marks; however, the recovered elements (i.e. head, trunk and limbs) suggest that slaughter, as well as primary and secondary butchery was occurring at the site. Those bones pertaining to red deer were identified as antler fragments, which possibly indicate that craft-working was also taking place on site.

The Ballymount 4 site demonstrates intermittent human activity at the same location over several millennia. The archaeological evidence shows distinct phases of activity: Mesolithic (around 6390–6230 BC), Middle Bronze Age (1500–1000 BC), Late Bronze Age (1000–600 BC), and post-medieval.

The site's attractiveness for repeated use likely stemmed from its strategic position on a gravel ridge overlooking Narraghmore Bog. Each period shows different uses of the space—from Early Mesolithic pit features and a possible trackway to the sophisticated Middle Bronze Age pitfall trap with its angled stake-holes, and finally post-medieval agricultural activities.

The faunal assemblage and various features suggest the location served different purposes over time—from hunting and resource gathering to farming activities. This pattern of sporadic return to a favourable location is quite typical of prehistoric land use, where communities would utilise different areas of the landscape according to their needs rather than maintaining permanent settlements.

Ballymount 5: Multi-period settlement, ritual and agricultural activity[11]

This site was located just below the crest of a north–south orientated ridge that overlooked Narraghmore Bog to the west, with the N9 road located to the east. The

11 Ballymount 5, County Kildare; ITM 681498, 701106; elevation 109 m OD; Excavation Reg. No. E2873; Ministerial Directions A021/086; Excavation Director: Gillian McCarthy

surrounding land was in use as pasture with land reclaimed from the bog located to the west of the site.

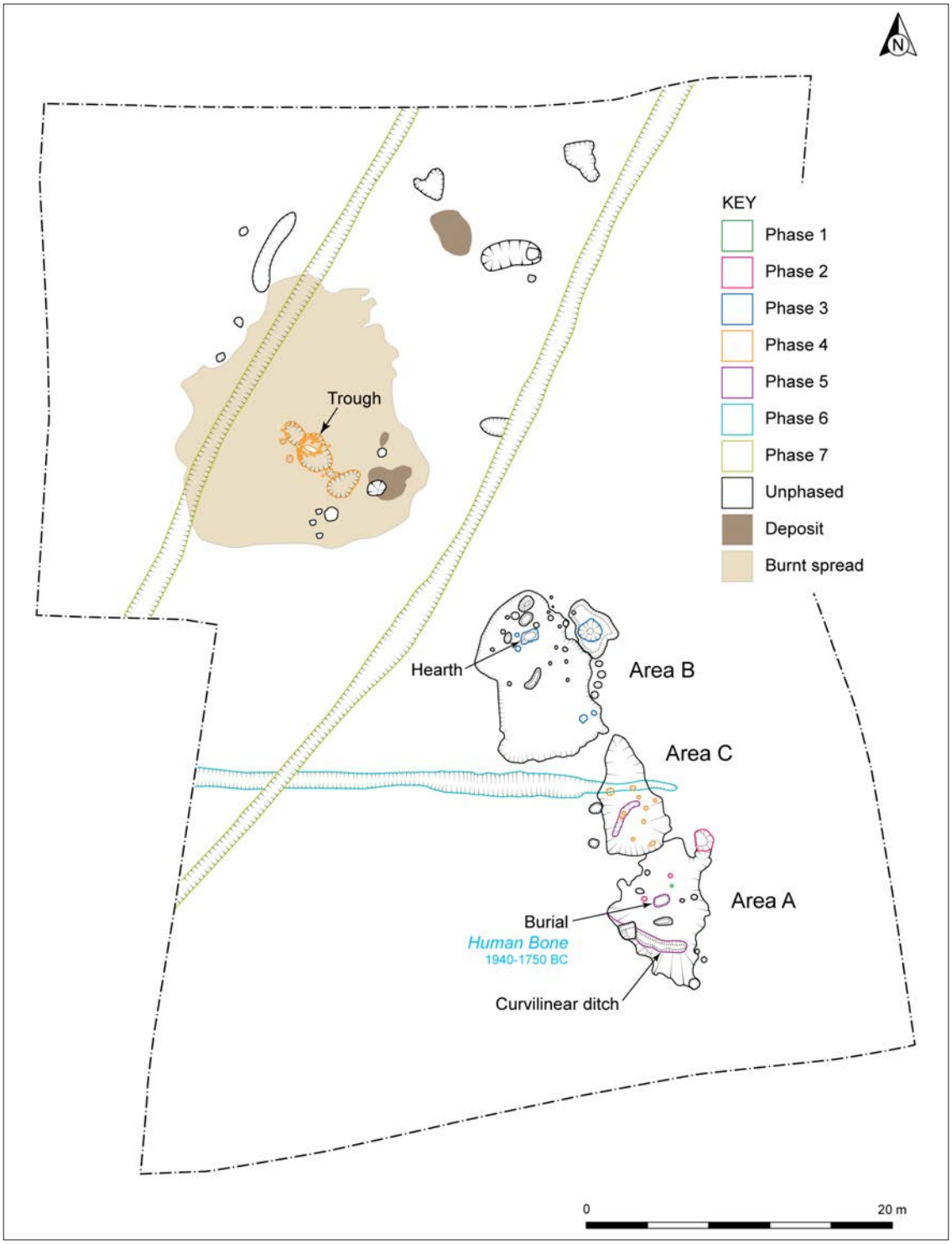
The excavation revealed seven phases of activity reflecting episodes of human activity in the Mesolithic, Neolithic and Bronze Age covering over 4,000 years (Illus. 6.14). Several natural depressions/hollows in the subsoil allowed for localised preservation of prehistoric stratigraphy with three discrete areas of survival (Areas A, B and C). The earliest archaeology in these locations is believed to represent temporary settlement dating to the Mesolithic and Neolithic. Early Bronze Age archaeology was represented by a burnt mound and a spread of associated features. The latest prehistoric archaeology comprised a crouched inhumation of Middle Bronze Age date. The remaining archaeology dated to the medieval and later periods and relates to probably agricultural activity.

The earliest activity at Ballymount 3 was identified within the southernmost area (A), which contained a total of six deposits and a single stake-hole that related to Mesolithic activity. This activity was largely contained within a depression in the subsoil which measured 9.7 m by 6.7 m by 0.55 m deep and was irregular in plan. The deposits contained within this depression varied greatly in consistency but mainly comprised clayey or sandy silts. They contained inclusions of charcoal, charred hazelnut shell and lithic material and measured 2.3 m in length, 1.4 m in width and 0.29 m in depth on average. The stake-hole was circular in plan, measuring 0.1 m in diameter and 0.2 m in depth; it contained flecks of charcoal within its soil matrix.

Overlying the Mesolithic activity within Area A were a series of deposits, two pits and a post-hole that dated to the Early Neolithic period. The deposits varied between sandy silts and silty sands with charcoal and animal bone inclusions; a small lithic assemblage was also retrieved. The deposits had average dimensions of 1.9 m long, 1.37 m wide and 0.21 m deep. The pits ranged from sub-circular to oval in plan and measured 0.52–1.3 m in length, 0.46–1 m in width and 0.17–0.65 m in depth; they contained inclusions of charcoal and lithics within their fills. The post-hole measured 0.25 m in diameter and 0.09 m in depth and was circular; its fill also contained flecks of charcoal.

Further Early Neolithic archaeology was identified approximately 11 m to the north-west of Area A preserved in a second depression in the subsoil (Area B). The depression forming Area B had an irregular, sub-oval shape in plan, measuring 11.5 m in length, 8.8 m in width and 0.6 m in depth. The earliest deposits within this depression comprised silty to clayey sands, with average measurements of 2.08 m wide and 0.2 m deep. They contained inclusions of charcoal, charred hazelnut shell, animal bone, prehistoric pottery (Early Neolithic carinated bowl) and lithic artefacts. Several pits, post-holes and stake-holes also truncated these deposits. The stake-holes were circular to sub-circular in plan, measuring 0.06–0.13 m in length, 0.06–0.12 m in width and 0.04–0.07 m in depth; they contained charcoal inclusions within their fills. The post-holes varied between circular and sub-oval and measured 0.4 m by 0.28 m by 0.15 m deep on average; their fills contained varying quantities of charcoal, charred cereal grain and lithic artefacts. The pit measured 1.03 m long by 0.84 m wide by 0.25 m deep and was sub-oval in shape; its fill also contained inclusions of charcoal, charred hazelnut shell and lithic artefacts.

Activity within Area B continued into the Middle Neolithic and was represented by a



Illus. 6.14 Ballymount 5, multi-phase site including Mesolithic, Neolithic, Bronze Age, late medieval and post-medieval activity.

hearth, a stake-hole, a pit, three post-holes and several deposits. The hearth was sub-rectangular in plan, with evidence of *in situ* burning identified throughout the cut. It measured 0.93 m in length, 0.8 m in width and 0.2 m in depth and contained inclusions of charcoal, unidentified burnt bone, heat-affected stones and lithic artefacts. The stake-hole was circular in plan, measuring 0.1 m in diameter and 0.14 m in depth, while the pit measured 1.43 m long, 1.42 m wide and 0.9 m deep and was sub-circular in plan; both features contained charcoal within their soil matrices. The post-holes were mainly sub-oval in shape, with average dimensions of 0.44 m by 0.35 m by 0.15 m deep; their fills contained inclusions of charcoal and lithic artefacts. The deposits attributed to this phase of activity were mainly composed of silts and clays, measuring 3.85 m in length, 1.35 m in width and 0.23 m in depth on average. Their fills contained varying quantities of charcoal, charred hazelnut shell, animal bone fragments, heat-affected stone, prehistoric pottery (Middle Neolithic Impressed Ware bowl/Middle Neolithic Impressed Ware globular bowl) sherds and lithic artefacts.

A third discrete area of archaeology (Area C) was identified in a further depression in the subsoil between Area A and Area B. The depression forming Area C was irregular in plan, measuring 7.8 m by 4.3 m by 0.5 m deep. It contained evidence of probable temporary settlement in the form of a series of deposits, pits, post-holes and stake-holes, as well as a hearth and a linear feature; these dated to the Early Bronze Age. The deposits mainly comprised silty or clayey sands with inclusions of charcoal, animal bone, lithic artefacts and prehistoric pottery (Early Bronze Age vase); they had average dimensions of 2.32 m long by 1.43 wide m by 0.16 m deep. The pits varied from circular to sub-oval in plan and measured 1.19 m in length, 0.94 m in width and 0.18 m in depth on average; they contained charcoal and numerous lithic artefacts within their fills. The stake-holes averaged 0.14 m by 0.12 m by 0.09 m deep and varied from circular to sub-circular in shape; flecks of charcoal were noted within some of their fills. The post-holes varied between circular and sub-oval in plan and measured 0.36–0.7 m long, 0.35–0.63 m wide and 0.07–0.4 m deep; they contained varying quantities of charcoal, charred cereal grain, heat-affected stone, prehistoric pottery sherds and lithic artefacts within their soil matrices. The sub-oval hearth contained inclusions of charcoal and measured 1.2 m in length, 0.8 m in width and 0.35 m in depth. The linear feature measured 3 m by 1.3 m by 0.4 m deep and contained charcoal and sherds of prehistoric pottery.

In addition to the archaeology recorded in Areas A–C, there was evidence for burnt mound activity in the north-west corner of the site. One of the earliest features associated with this activity was a sub-circular trough, which measured 3.9 m long, 1.9 m wide and 0.85 m deep. The base and sides of this feature were truncated by a total of two post-holes and 44 stake-holes. The post-holes were both sub-oval in plan, measuring 0.26–0.9 m in length, 0.15–0.3 m in width and 0.15–0.27 m in depth; they contained charcoal inclusions within the soil matrices. The stake-holes were mainly sub-circular in plan, with average dimensions of 0.05 m in diameter and 0.16 m in depth; they also contained inclusions of charcoal. Overlying these features were the fills of the trough, which contained varying amounts of charcoal, animal bone fragments and heat-affected stone. Immediately surrounding the trough were an additional four stake-holes,

a single pit and a post-hole. The presence of these features suggests that there may have been a superstructure covering or surrounding the trough. The stake-holes were mainly sub-circular in plan, measuring 0.06 m in length, 0.05 m in width and 0.15 m in depth on average. The sub-circular pit measured 0.33 m long by 0.32 m wide by 0.08 m deep and the post-hole was sub-circular in shape and measured 0.36 m by 0.32 m by 0.19 m deep. The fills of these features all contained inclusions of charcoal.

Features associated with the burnt mound activity included four pits and three stake-holes. The pits averaged 1.24 m long, 0.92 m wide and 0.34 m deep and were circular to sub-oval in plan; they contained charcoal, animal bone fragments and heat-affected stones. The stake-holes were all sub-circular in plan, measuring on average 0.12 m by 0.1 m by 0.12 m deep, with inclusions of charcoal.

The entire complex was sealed by a layer of heat-shattered stone (the burnt mound). This had an irregular shape in plan and measured 18 m in length (north–south), 16 m in width and 0.25 m in depth. It consisted of several deposits, mainly of sandy silt composition, with frequent inclusions of charcoal and heat-affected stones.

Truncating the centre of Area A was a Middle Bronze Age burial radiocarbon dated to 1940–1750 BC (SUERC-24992). The grave cut for this burial was oval in plan, measuring 1 m in length (east–west), 0.65 m in width and 0.8 m in depth; it contained a crouched inhumation, aligned east–west. The remains were in a very poor state of preservation, with only the skull and the long bones of the limbs surviving. Analysis indicated that the individual was aged between 35 and 45 years old at time of death but it was not possible to determine sex due to the poor preservation of the bones. Grave goods associated with this burial included sherds of prehistoric pottery (a decorated Bronze Age bipartite vessel) and several lithic artefacts including a convex flint scraper; animal bone fragments were also recovered from the backfilled grave deposit.

Also truncating Area A was a short curvilinear ditch, which measured 5.2 m (NW–SE) by 0.59 m by 0.28 m deep. Its fills contained inclusions of charcoal. This linear feature appeared to link up with another short curvilinear ditch to form a possible ring around the burial. This second ditch measured 2.18 m long (NE–SW), 0.21 m wide and 0.06 m deep and contained charcoal and a single lithic artefact within its fill.

Extended in an east–west direction across the centre of the site and truncating Area C were the remains of a linear ditch; this measured 31 m in length, 1.5 m in width and 0.32 m in depth. It contained several lithic artefacts and sherds of pottery that dated to the late medieval period.

The final phase of activity at Ballymount 5 was represented by post-medieval agricultural features, including drainage ditches and a trackway. The drainage ditches measured 26.21 m long, 0.98 m wide and 0.25 m deep on average; they contained archaeologically sterile fills. The trackway was identified approximately 33 m to the north of Ballymount 5. It comprised layers of stone, gravel and timber, which overlay two basal deposits of peat. Several artefacts were recovered from the construction layers, including fragments of a clay tobacco-pipe, a horseshoe and various metal objects.

Many features at the site could not be attributed to any specific phase of activity; they therefore remain undated. These included eight post-holes, which ranged from circular to sub-circular in plan, with average

dimensions of 0.37 m by 0.35 m by 0.26 m deep; 14 circular to irregularly shaped pits, measuring 1.28 m long, 0.89 m wide and 0.28 m deep on average; and three circular stake-holes, with average dimensions of 0.05 m in diameter and 0.07 m in depth. The fills of these features all contained flecks of charcoal, with the post-holes also including a small assemblage of lithics and the pits containing charred cereal grain, wood fragments and lithic material.

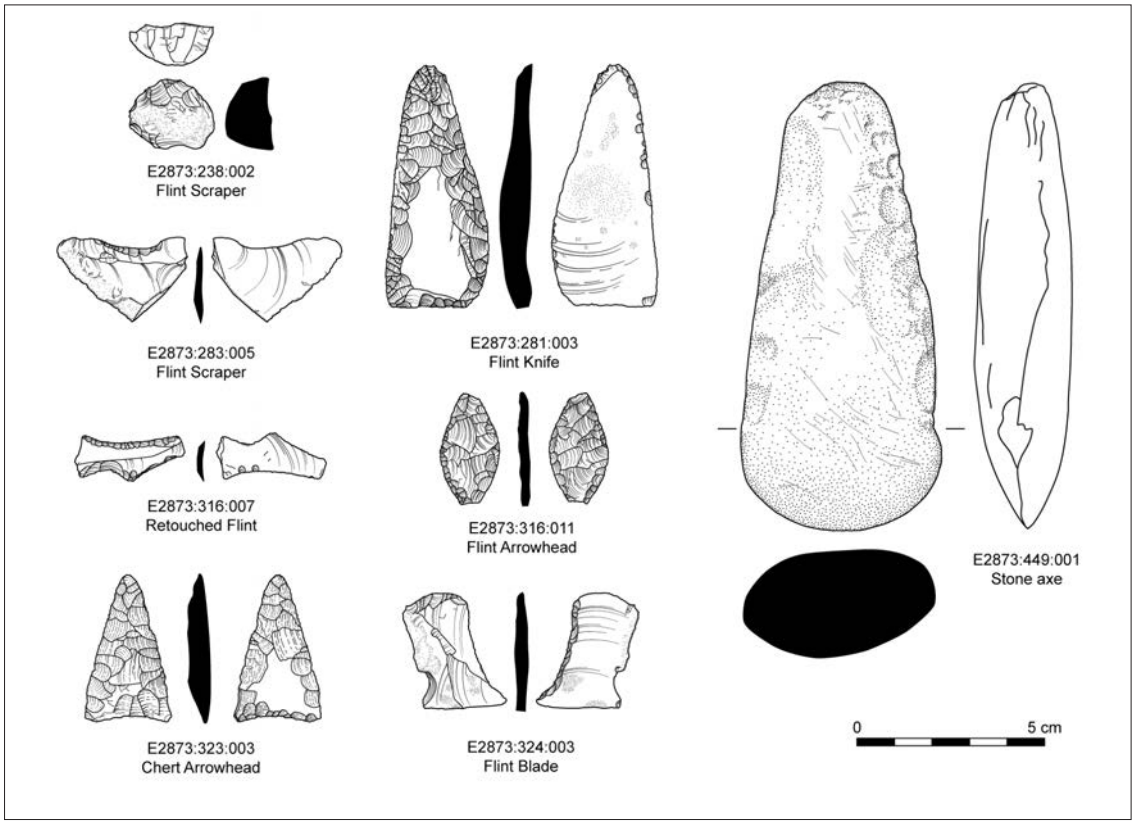
The artefact assemblage comprised pottery, lithics and ground stone objects (Illus. 6.15, 6.16). The pottery included 34 sherds, 19 fragments and 32 crumbs of prehistoric pottery. These represented several vessels including an Early Neolithic carinated bowl; two Middle Neolithic Impressed Ware globular bowls; a Middle Neolithic Impressed Ware hemispherical bowl; two Early Bronze Age bipartite bowls; and five Early Bronze Age vase urns. The assemblage indicates prolonged, if somewhat episodic occupation at the site, spanning approximately 2,500 years. Six sherds of medieval pottery were also recovered from Ballymount 5. The sherds were all from the same vessel, a wheel-thrown glazed jug, dating broadly to the 13th century. A total of 347 knapped lithics were retrieved from the site, including retouched artefacts—such as scrapers, knives, blades, projectile heads and rough outs—utilised blanks, debitage, cores, and natural chunks. From a general point of view, it is apparent that the lithic working at the site was focused on the secondary stages of manufacture, with several standardised forms also being resharpened or possibly replaced. The majority dated from the Early Neolithic to Early Bronze Age period; however, a possible core rejuvenation blade-like flake may represent a Late Mesolithic component at the site. The ground stone assemblage consisted of six artefacts: a hammerstone, a possible polishing stone, an abrader or grinder, a possible weight, a stone adze/axe and an ornamental bead, possibly manufactured from serpentine.

A total of five radiocarbon dates were obtained from Depressions A and B, the crouched inhumation burial, a pit and a post-hole excavated at Ballymount 5. These indicated occupation of the site during the Early Mesolithic period (7000–5500 BC), the Neolithic period (4000–2400 BC) and the Early Bronze Age (2400–1500 BC). The recovery of pottery sherds dating to the late medieval period also indicated activity at the site during historic times.

The concentrations and volumes of palaeoenvironmental material were very low, given the multiple phases of occupancy and use at the site. While the presence of charred plant material—including charcoal, hazelnut shell and cereal grain—indicates that conflagration events were occurring on or in the vicinity of the site, the low concentrations preclude any meaningful discussion of the economic and domestic activities taking place.

A single inhumation burial was excavated at Ballymount 5. The individual represented an older middle adult of unknown sex, who was interred within a pit grave in a crouched position. The stature and sex of the individual could not be determined, as less than 25% of the expected remains were present and in very poor condition. Their oral health was, however, noted to be poor, with several carious lesions recorded throughout the dental arcade.

The preservation of the animal bone from Ballymount 5 was particularly poor; no signs of gnawing, pathology or butchery were noted on any of the remains. Most of the bones were unidentifiable to species,

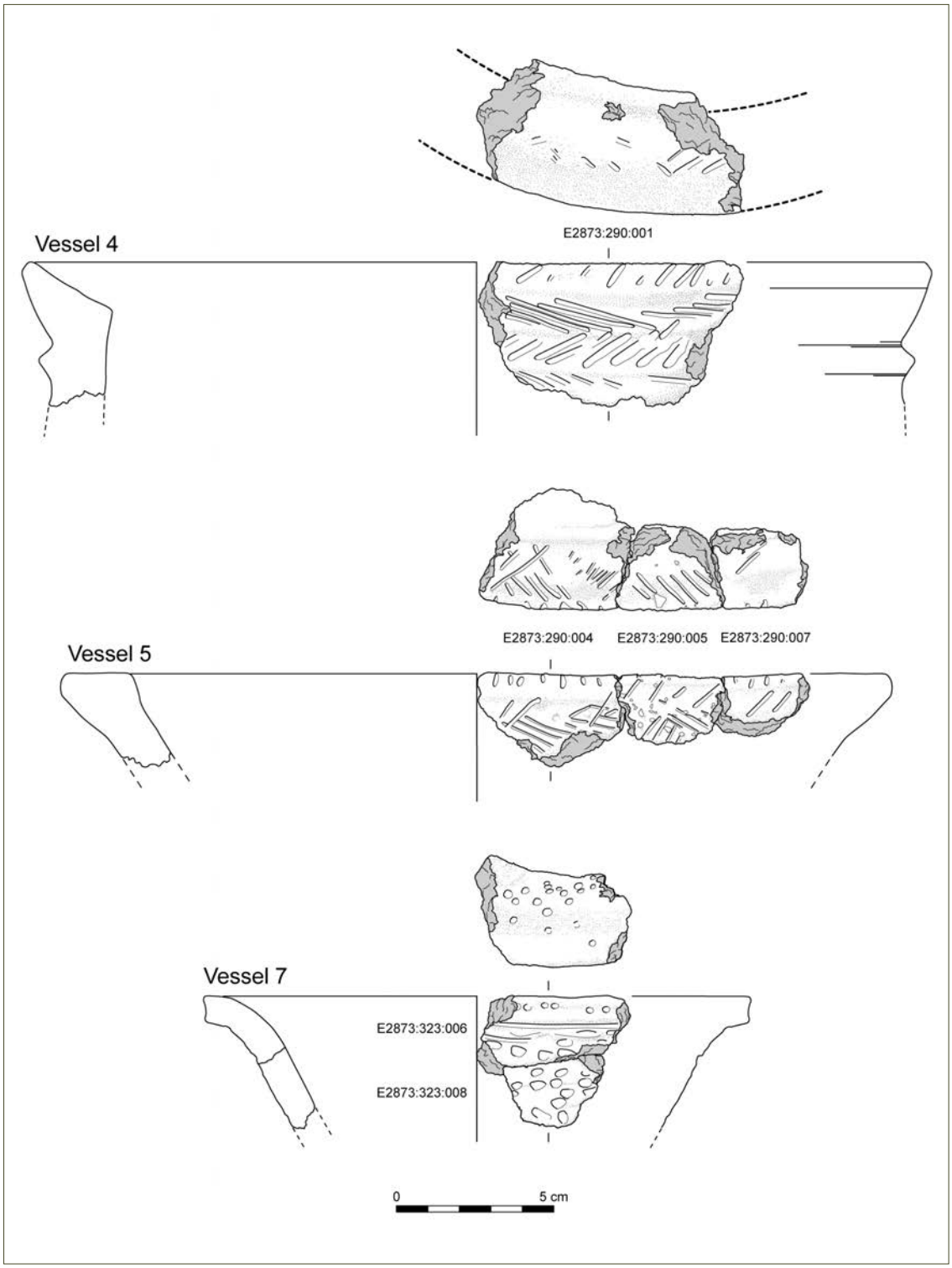


Illus. 6.15 Stone artefacts from Ballymount 5 (by Hannah Sims & Sara Nylund).

although a small quantity of cattle bone was recorded from features associated with the Neolithic activity. Cattle remains have been recovered on Neolithic ritual sites in Ireland on several occasions, although there is a relative dearth of domestic material from the period (McCormick & Murray 2007, 21–3).

The wood taxa recovered from Ballymount 5 suggested a local landscape comprising oak woodland, with a hazel understory and marginally occurring blackthorn. The preservation of the wood indicated prolonged erosive conditions and any evidence of woodworking that may have been present has now been erased.

The earliest Mesolithic occupation was likely temporary, such as a short-term camp, evidenced by the modest collection of features in Area A. The presence of charred hazelnut shells suggests seasonal foraging, typical of Mesolithic hunter-gatherer behaviour. The possible core rejuvenation blade-like flake indicates stone tool maintenance occurred on site. The site saw more intensive use during the Early to Middle Neolithic (4000–2400 BC) period, with distinct activity areas suggesting repeated occupation. The presence of carinated bowls and Impressed Ware indicates domestic activity, while the cattle remains align with wider patterns of Neolithic farming communities in Ireland. The combination of post-holes, hearths, and domestic debris suggests temporary settlement structures were built, though their exact form remains unclear.



Illus. 6.16 Pottery from Ballymount 5 (by Hannah Sims).

A significant shift in site use is evident during the Early Bronze Age (2400-1500 BC), marked by the construction of a substantial burnt mound complex. The elaborate trough structure, with its numerous stake-holes suggests a covering or superstructure, possibly for cooking or other communal activities. The vase urns found from this period suggest ceremonial or ritual activities may have occurred alongside practical uses. The Middle Bronze Age crouched inhumation, accompanied by a bipartite vessel and surrounded by a possible ring-ditch, represents a shift toward ritual use of the landscape. The poor dental health of the interred individual provides a rare glimpse into Bronze Age living conditions. After a significant chronological gap, the site was repurposed for agricultural use during the medieval period (13th century onwards), as evidenced by the linear ditch and glazed jug fragments. The final post-medieval phase shows continued agricultural use, with the addition of more formal infrastructure including drainage systems and a constructed trackway, reflecting the intensification of farming practices in the area. The site's long sequence of occupation reveals how this location repeatedly attracted human activity over millennia, though the nature of that activity changed dramatically—from temporary hunter-gatherer camps, through Neolithic and Bronze Age settlement and ritual use, to eventual farming of agricultural land.

Blackrath 1: Multi-period[12]

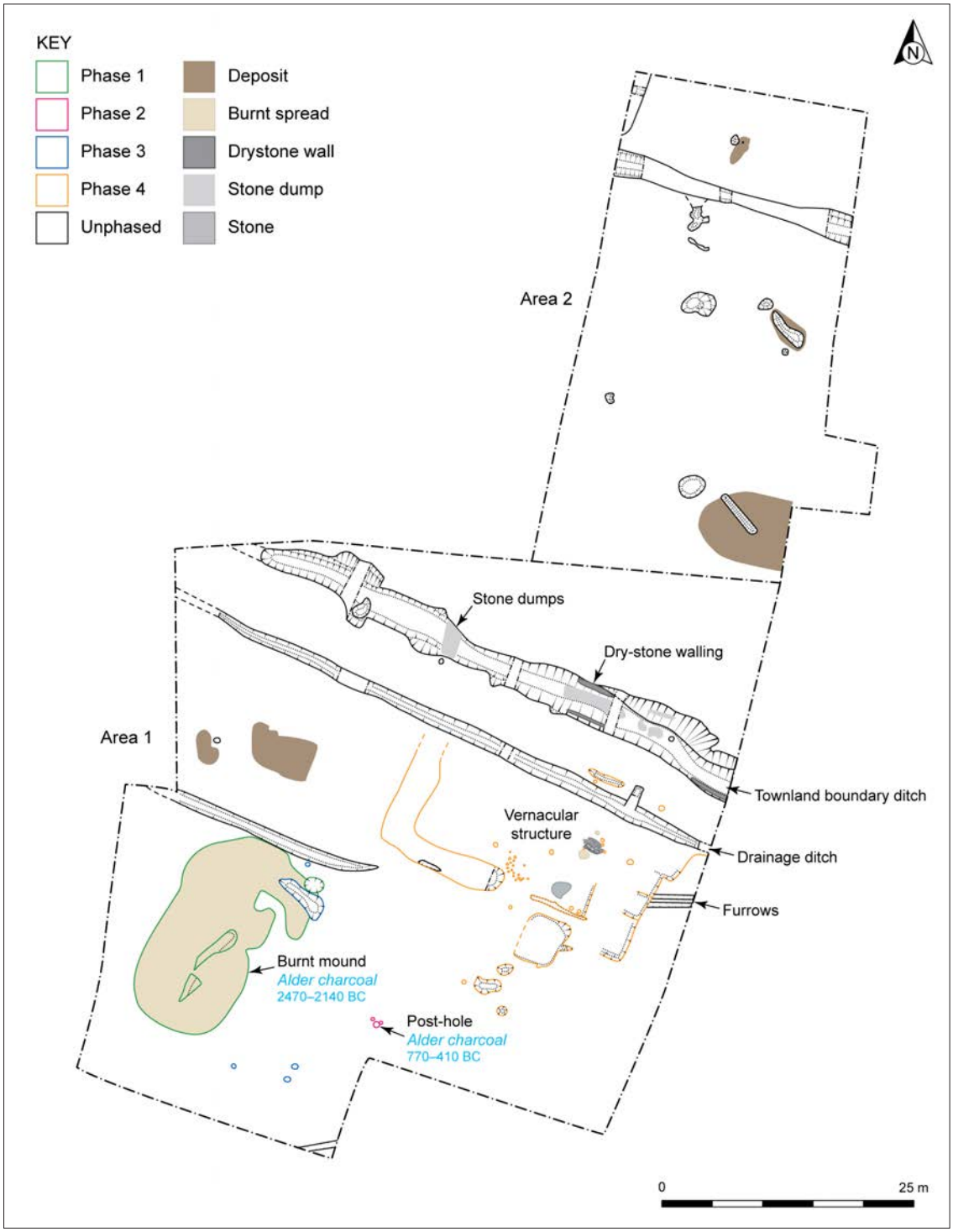
This site was located to the west of the N9 on a level area between the base of a gravel ridge and Narraghmore Bog. The townland boundary between Ballymount and Blackrath traversed the site, with Ballymount situated to the north and Blackrath to the south. This boundary was also a parish boundary between the parishes of Usk (north) and Narraghmore (south). The evidence recovered indicated that this site was the location of burnt mound activity during the Early Bronze Age. Subsequent Early Iron Age and post-medieval settlement were also identified at the site. A post-medieval ditch was noted aligned on the boundary between the townlands of Blackrath and Ballymount.

The excavation revealed four phases of activity in two areas (Areas 1 and 2) (Illus. 6.17).

Phase 1 activity at the site was identified in Area 1 and was represented by an Early Bronze Age burnt mound and its associated components. The earliest features were two pits situated in the south-west corner of the site. These features ranged from sub-oval to sub-rectangular in plan and measured between 2.45 m and 4 m in length (NW–SE), 1.55 m and 2 m in width and 0.3 m and 0.38 m in depth. They contained a series of relatively sterile fills. Directly over both pits was a spread of peat with inclusions of alder charcoal, which measured approximately 12.5 m long (NW–SE) by 8.5 m wide by 0.2 m thick. This was situated beneath the main burnt mound, which measured approximately 12.5 m (NW–SE) by 6.5–8.4 m by 0.25 m deep and comprised peat with moderate inclusions of heat-affected stone. Truncating the burnt mound to the north-east was a sub-circular pit. This measured 0.92 m in length (east–west), 0.9 m in width and 0.18 m in depth, containing archaeologically sterile fills.

The second phase of activity at Blackrath 1 dated to the Early Iron Age and comprised

12 Blackrath 1, County Kildare; ITM 681421, 700930; elevation 106 m OD; Excavation Reg. No. E2871; Ministerial Directions A021/084; Excavation Director: Gillian McCarthy



Illus. 6.17 Blackrath 1, Early Bronze Age burnt mound with Early Iron Age and post-medieval settlement.

a post-hole and two stake-holes situated in the south of Area 1. The post-hole was sub-circular in plan, measuring 0.26 m in length (north–south), 0.2 m in width and 0.35 m in depth. Its fills contained inclusions of possible *in situ* packing stones and alder charcoal. The stake-holes ranged from sub-circular to sub-oval in plan and measured 0.1 m by 0.08 m by 0.25 m deep on average. Small quantities of animal bone and a single grain of charred barley were recovered from their fills.

Phase 3 at Blackrath 1 was represented by numerous features that were broadly prehistoric in date; these were all situated within Area 2. They included two pits, which varied from sub-circular to sub-oval in plan and measured 1.08–1.2 m long, 1.08–0.62 m wide and 0.13–0.23 m deep; a sub-oval shaped post-hole, with measurements of 0.24 m by 0.18 m by 0.18 m deep; and a linear feature, measuring 1.5 m in length, 0.8 m in width and 0.18 m in depth. The fills of these features all contained lithic artefacts.

The fourth phase of activity dated to the post-medieval period and comprised both domestic and agricultural activity. The domestic activity was represented by the remains of a vernacular structure in the eastern part of Area 1; this is present on the First Edition 6-inch Ordnance Survey map (1839). It comprised three foundation trenches, a cobbled floor surface and several interior post-holes and stake-holes. The foundation trenches were linear to L-shaped in plan, measuring 2.5–6 m in length, 0.35–0.6 m in width and 0.1–0.2 m in depth. A large L-shaped ditch, which was aligned with the house's southernmost foundation trench, may also have formed a boundary to the property; this measured 14.2 m long by 2 m wide by 0.67 m deep. The cobbled floor surface was identified in the east of the structure; it measured 2.6 m in length, 2 m in width and 0.05 m in depth. The seven post-holes were mainly sub-circular in plan, with average dimensions of 0.35 m by 0.3 m by 0.22 m deep, while the stake-holes were situated in a cluster that seemed to form two semi-circular arcs; however, a function could not be determined. The outer arc comprised 10 stake-holes and measured approximately 4.25 m long. These varied from sub-circular to sub-oval in plan, with average dimensions of 0.11 m long, 0.07 m wide and 0.22 m deep. The inner arc comprised one post-hole and seven stake-holes. This arc was situated less than 0.75 m to the north-east of the outer arc, with a similar length of 4.7 m. The post-hole was sub-oval in plan, measuring 0.13 m in length, 0.1 m in width and 0.39 m in depth; the stake-holes measured 0.09 m by 0.07 by 0.17 m deep on average and varied from sub-circular to sub-oval in plan. An isolated stake-hole was situated towards the centre of these arcs and is presumed contemporary. This feature was sub-circular in plan, measuring 0.13 m long, 0.09 m wide and 0.16 m deep. The fills of these features were all archaeologically sterile.

Excavated throughout the remainder of the site were four post-holes, four pits, two field boundaries and numerous drainage ditches. The post-holes were all sub-circular in plan, with average dimensions of 0.29 m by 0.25 m by 0.23 m deep; their fills included several animal bone fragments and an iron object. The pits measured 1.73 m long, 1.62 m wide and 0.3 m deep on average and varied between sub-circular and sub-rectangular in plan. The fills of these features were archaeologically sterile. A boundary ditch traversed the site in a NW–SE direction. The line of this ditch coincided with the boundary between the townlands of Blackrath and Ballymount which also forms

the border between the parishes of Usk and Narraghmore. It extended beyond the limits of excavation in both directions but within the site it measured approximately 36.5 m long, up to 3.1 m wide and 0.92 m deep. Its fills contained an iron nail and a fragment of a stone axe. The second field boundary measured 23.71 m in length (NW–SE), 2.6 m in width and 0.8 m in depth and contained a single lithic artefact within its fill. The drainage ditches measured 12.38 m by 1 m by 0.48 m deep on average and were all linear in plan, with inclusions of animal bone, post-medieval pottery, glass shards and iron objects.

Several features excavated within Areas 1 and 2 could not be attributed to a specific phase of activity; they therefore remain undated. Within Area 1 these included two pits and two post-holes. The pits were sub-circular to sub-rectangular in plan, measuring 0.35–3.5 m in length, 0.3–2 m in width and 0.21–0.27 m in depth; their fills contained flecks of charcoal within the soil matrices. The post-holes measured 0.19 m long, 015 m wide and 0.21 m deep on average and were sub-circular to sub-oval in plan; their fills were archaeologically sterile. Undated features within Area 2 comprised six pits. These were mainly sub-circular in plan, with average dimensions of 2.19 m in length, 1.45 m in width and 0.23 m in depth; inclusions of charcoal and animal bone fragments were recovered from several of their fills.

The artefact assemblage included lithics, ground stone and metal objects, and pottery (Illus. 6.18). A total of 29 lithic finds were recovered. The assemblage was dominated by flint artefacts and included debitage, cores and retouched artefacts such as concave/hollow scrapers. It mainly comprised knapping by-products, mostly indicating the use of the bipolar technique. A stone axe, made of an igneous, mid-grey phaneritic rock, was recovered from within the townland boundary that extended across the excavation area. The dating of stone axes is rather problematic, as they are present from the Early Mesolithic well into the Bronze Age; however, based on comparative analysis, it is suggested that the Blackrath 1 example is Neolithic/Bronze Age in date. A military button was recovered from the surface of the cobbled area, associated with the vernacular structure. Analysis of this artefact indicated that it was an 'other ranks' brass button of the 92nd Regiment of Foot—indicated by the '92' located centrally on the button face within a single line circle. The reverse of the button bears the maker's details 'Firmin & Sons 153 Strand London'. It dates from between 1855 and 1871. A possible knife blade fragment, an iron nail and three miscellaneous objects were also recovered during the excavation. A total of 39 sherds of post-medieval pottery were retrieved including 17th-century North Devon ware; 18th–19th-century black-glazed ware, red-glazed earthenware and unglazed red earthenware; and 19th-century pearlware, transfer-printed ware, shell-edged ware, mochaware and moulded chinaware.

Two radiocarbon dates were obtained for the burnt mound and one of the post-holes excavated at Blackrath 1. These produced Early Bronze Age (2470–2140 BC (SUERC–25406)) and Early Iron Age (770–410 BC (SUERC–25407)) date ranges respectively.

Most samples taken during the excavation of Blackrath 1 were found to be archaeologically sterile; however, small concentrations of very fragmented and abraded wood charcoal, as well as a single charred cereal grain identified as a type of barley, were recorded. Unfortunately, the

low volume and poor preservation of the palaeoenvironmental material precluded any meaningful discussion regarding the activities being carried out at the site.

A total of 779 bone fragments were analysed from the site, with identified specimens including cattle, horse and pig; medium mammal bones—most likely sheep or pig—were also recorded in the assemblage. None of the bones displayed evidence of burning and no signs of gnawing or pathology were identified.

The multi-period activity at Blackrath 1 reveals a complex pattern of landscape use spanning the Early Bronze Age to the post-medieval period. The earliest phase, an Early Bronze Age burnt mound (2470–2140 BC), represents a well-documented site type, while the subsequent Early Iron Age features (770–410 BC) suggest small-scale—perhaps temporary—habitation activity. The lithic assemblage, dominated by bipolar technique products, and the Neolithic/Bronze Age stone axe found in the townland boundary, point to earlier prehistoric activity in the area. The site's most substantial remains date to the post-medieval period, including a vernacular structure documented on the 1839 Ordnance Survey map. The presence of a military button from the 92nd Regiment of Foot (1855–1871) and diverse pottery assemblage spanning the 17th–19th centuries provide insights into the later occupation. Particularly significant is the preservation of the townland boundary between Blackrath and Ballymount, which also served as the parish boundary between Usk and Narraghmore, demonstrating the

Illus. 6.18 Artefacts from Blackrath 1.

long-term persistence of territorial divisions in the Irish landscape.

Blackrath 2: Cremation burials[13]

This site was in pastureland at the south-eastern edge of Narraghmore Bog approximately 350 m east of the N9. The excavation revealed two phases of activity dating to the Middle to Late Bronze Age and the post-medieval period (Illus. 6.19). Several features were undated and could not be assigned to a specific phase.

The earliest identified activity was represented by two cremation burials. The first, situated towards the centre of the site, was contained within a sub-circular pit that measured 0.34 m in length, 0.28 m in width and 0.29 m in depth. Charcoal and charred hazelnut shell were recovered from the fill of this feature, along with approximately 199.7 g of cremated human bone. The individual represented could not be assigned a biological age at death, beyond the attribution of adult. There were also no sexually dimorphic elements that could be used to determine sex, although cortical measurements of the maximum parietal thickness fell within the probable female range.

The second burial was situated in the west of the site and was contained within a circular pit that measured 0.35 m in diameter and 0.23 m in depth. The fills within this feature also contained charcoal, charred hazelnut shell, charred cereal grain and flint debitage, as well as 23.7 g of cremated human bone representing a token cremation burial. Unfortunately, the sex and age at death of this individual could not be determined.

The second phase of activity comprised numerous agricultural plough furrows. These were all linear in plan, measuring 25 m in length (WNW–ESE), 0.5 m in width and between 0.05 m and 0.14 m in depth. They were on average approximately 2 m apart and contained archaeologically sterile fills.

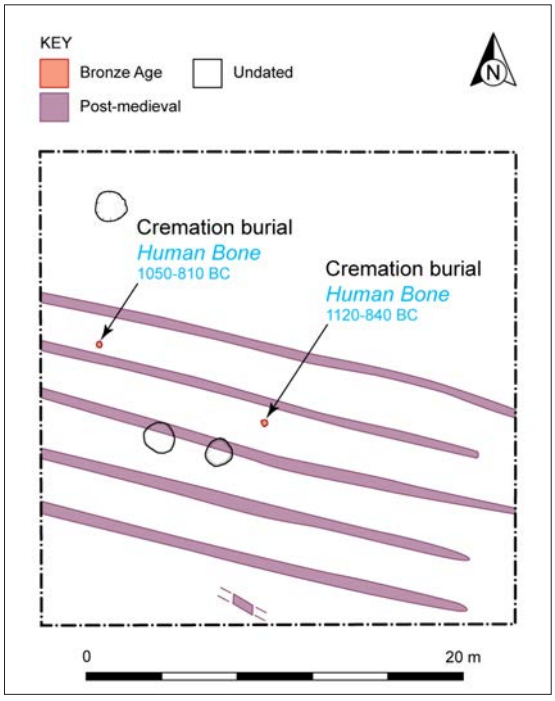
Three pits excavated at Blackrath 2 could not be assigned to a specific phase of activity and therefore remain undated. These were all circular in plan, with average dimensions of 1.55 m in diameter and 0.35 m in depth. Their fills contained varying inclusions of charcoal, unburnt animal bone and heat-affected stones.

A total of 13 lithic artefacts were retrieved from the token cremation burial at Blackrath 2. All these finds were fractured and in very poor condition due to thermal alteration, possibly because of being placed directly onto the pyre. They could also be refitted to form a single, naturally backed flint flake that was obtained using the bipolar technique. This technique dates from the Middle/Late Neolithic through to the Late Bronze Age (O'Hare 2005; Woodman et al. 2006).

Radiocarbon dates were obtained for the two cremation burials excavated at Blackrath 2. These returned broadly contemporaneous dates that place the funerary activity in the Middle to Late Bronze Age. The two dates returned for the cremations were 1120–840 BC (SUERC-25366) and 1050–810 BC (SUERC-25367).

The funerary activity from Blackrath 2 was represented by an unenclosed flat cremation cemetery containing one cremation pit burial and a possible 'token' burial. The remains, which were certainly fresh at the time of cremation, appear to have been expertly cremated. There is also evidence

13 Blackrath 2, County Kildare; ITM 681093, 700093; elevation 107 m OD; Excavation Reg. No. E2870; Ministerial Directions A021/083; Excavation Director: Gillian McCarthy



Illus. 6.19 Blackrath 2, Bronze Age cremation cemetery.

of meticulous collection of the bones. In addition, the under-representation of several skeletal elements and of general skeletal weights indicates that portions of the body and/or cremated remains were specially selected for utilisation in some other manner.

Charred cereal grain was recovered from several features across the site, including the fill of a cremation pit. The recovery of cultivated plant remains from cremation contexts is relatively rare, and so the significant volume of grain recovered is interesting. Hazelnuts were also retrieved from the two cremation burials and while these occur frequently on prehistoric sites (McComb & Simpson 1999), they are ordinarily seen as waste fragments from consumption. Their deposition alongside the charred cereal grain within the burial may, therefore, indicate that these remains represent a form of grave good.

The Middle to Late Bronze Age cremation cemetery at Blackrath 2 presents two distinct partial cremation deposits from 1120–810 BC. Both burials represent incomplete remains—one containing 199.7 g and a smaller token deposit of 23.7 g, both well below the expected weight for a complete adult cremation. This selective deposition of remains suggests deliberate choices in how much material was interred. The careful cremation process and meticulous bone collection, combined with the purposeful inclusion of charred cereal grain and hazelnuts (unusual in cremation contexts), points to highly ritualised mortuary practices. The thermally altered nature of the flint flake found in the token burial suggests it was also gathered with the material from the pyre. While later agricultural activity impacted the site, these burials provide evidence of Bronze Age funerary customs where partial cremation deposits were deemed appropriate, with the remaining cremated material potentially serving other ceremonial purposes elsewhere.

Inchaquire 2: Late Bronze Age pits[14]

This site was located within a large rectangular field, with the surrounding area used for both tillage and pasture. The remains included eight pits of Late Bronze Age date (Illus. 6.20). Two pits containing artefacts were interpreted by the excavator as rubbish pits and the other six pits as of uncertain function. The pits interpreted as waste pits varied from sub-circular to sub-oval in plan, measuring 1.48–2.06 m in length, 1.33–1.35 m in width and 0.25–0.32 m in depth; they

14 Inchaquire 2, County Kildare; ITM 680371, 699005; elevation 104 m OD; Excavation Reg. No. E2868; Ministerial Directions A021/081; Excavation Director: Gillian McCarthy

contained inclusions of charcoal and heat-affected stones within their fills. The other pits were mainly sub-circular in plan, with average dimensions of 1 m by 0.88 m by 0.24 m deep. Their fills contained varying quantities of charcoal, wild taxa seeds, charred cereal grain, ash, unidentified animal bone and heat-affected stones.

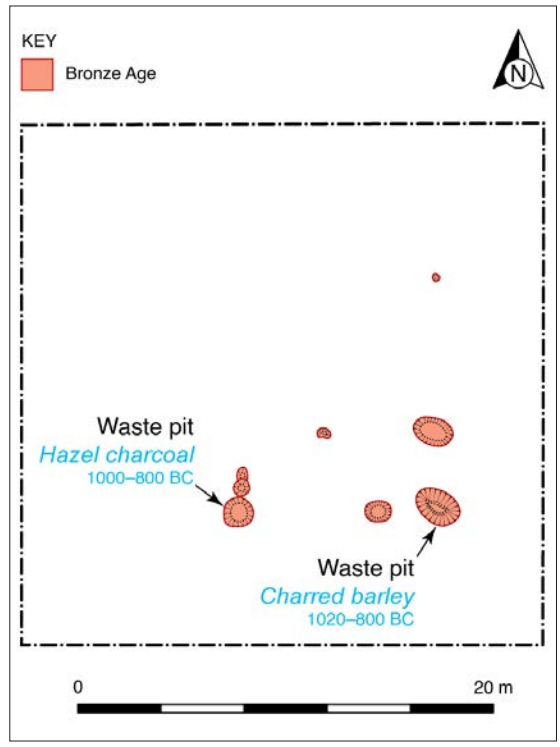
Two ground stone undecorated spindle whorls were recovered from the site during the excavation. The dating of spindle whorls is difficult; however, examples are known from Middle Bronze Age contexts in Ireland, although they are also very common on early medieval settlements (O'Brien 2009a; 2009b).

Excavations at Inchaquire 2 produced a single chert artefact. This was classified as debitage and appears to be a secondary technology by-product derived from the shaping, thinning and edge trimming of blanks; however, no chronological framework could be deduced for this artefact.

Radiocarbon dates were obtained for two of the pits excavated at Inchaquire 2. These produced contemporaneous date ranges that placed the activity at the site in the Late Bronze Age (1000–800 BC). These were 1000—800 BC (SUERC-25905) and 1020—800 BC (SUERC-25904).

The palaeoenvironmental assemblage from Inchaquire 2 was relatively limited, with only charcoal, a single grain of naked barley and dock and fat hen seeds recovered. Based on these remains, all that could be said was that conflagration events were occurring in the vicinity of the site and that both wild and cultivated seeds were included in these conflagrations, at least on a small scale.

The excavation revealed eight pits dating to 1000–800 BC: two interpreted as waste pits and six others of uncertain function. Those interpreted as waste pits were larger



Illus. 6.20 Inchaquire 2, Late Bronze Age domestic waste pits.

and all pits contained charcoal and heat-affected stones, with some also yielding animal bones, cereal grains, and wild plant seeds.

The artefact assemblage included two undecorated stone spindle whorls and a single piece of chert debitage. While the spindle whorls are difficult to date conclusively, similar examples are known from both Bronze Age and early medieval Irish contexts.

Environmental analysis indicated burning activities occurred nearby, with evidence of both cultivated crops (naked barley) and wild plants (dock and fat hen) being burned. The presence of these materials, along with the spindle whorls, suggests the site was likely used for domestic activities during the Late Bronze Age period.

Inchaquire 3: Multi-period[15]

This site was located within a relatively flat field on the gentle north-east-facing slope of a small hillock that overlooked Narraghmore Bog to the north. The surrounding land was used for both tillage and pasture. The evidence recovered indicated that this site was the location of burnt mound activity during the Early Bronze Age, with subsequent funerary activity taking place in the Middle Bronze Age; post-medieval agricultural practices were also evident on site.

The excavation revealed three phases of activity that dated to the Early Bronze Age, the Middle Bronze Age and the post-medieval period (Illus. 6.21).

The earliest identified phase at Inchaquire 3 included three troughs, a well and numerous stake-holes beneath a relatively large burnt mound.

The most centralised trough was sub-circular in plan, measuring 1.45 m (north–south) by 1.44 m by 0.52 m deep. Truncating the base of this feature on the south-eastern side were four stake-holes. These were all sub-circular in plan, with average dimensions of 0.03 m in diameter and 0.05 m in depth; their fills contained occasional inclusions of charcoal. Covering these stake-holes were the fills of the trough, which contained inclusions of charcoal and heat-affected stone. To the north of this feature was a second sub-circular trough, which measured 2.8 m long (east–west), 2.2 m wide and 0.32 m deep. This contained a series of deposits that also included charcoal and heat-affected stone. The third trough was located directly to the north-west and was sub-oval in plan. It measured 1.56 m in length (NE–SW), 1.2 m in width and 0.32 m in depth and contained three fills with inclusions of charcoal and heat-affected stone. A single sub-circular stake-hole—measuring 0.09 m by 0.06 m by 0.15 m deep—was located to the north-west of this trough. The fill of this feature was archaeologically sterile; however, its proximity to the trough suggests that it may have been contemporary.

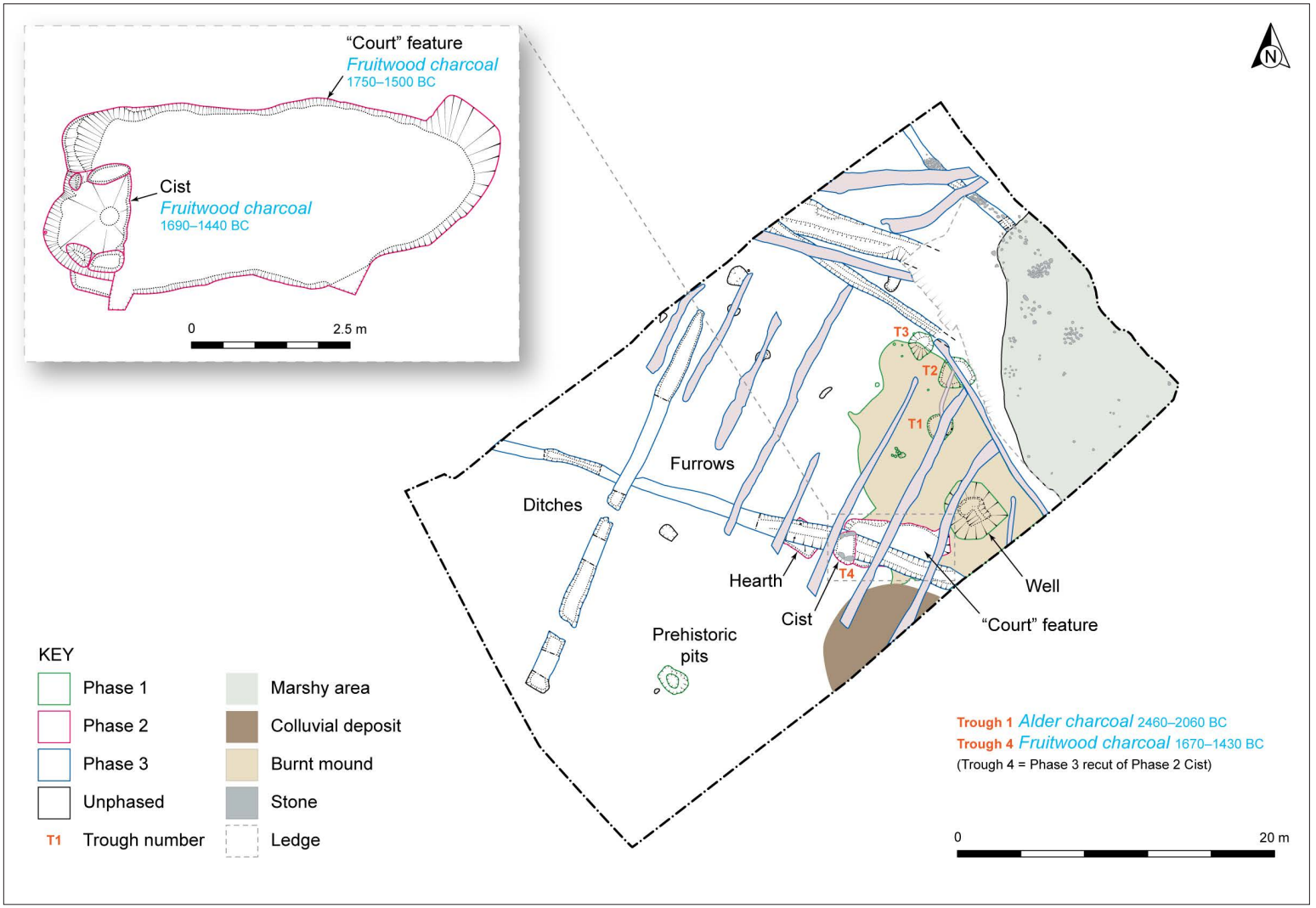
The well was situated beneath the south-eastern extent of the burnt mound. It was oval in plan, 1.75 m long (east–west), 1.5 m wide and 0.45 m deep. Its fills contained varying quantities of decayed wood, preserved because of the waterlogged conditions, charcoal and animal bone.

Two clusters of stake-holes were also visible beneath the burnt mound; however, no discernible pattern was identified. The westernmost cluster comprised six circular to sub-circular stake-holes. These had average dimensions of 0.15 m by 0.13 m by 0.12 m deep, with the majority containing archaeologically sterile fills. The second cluster was recorded to the north and contained five stake-holes. These were mainly circular in plan, measuring 0.10 m in diameter and 0.15 m deep on average. Again, the majority were archaeologically sterile; however, occasional inclusions of charcoal were noted in one.

The overlying burnt mound comprised two deposits. Combined, these were approximately 14 m long (NW–SE) by 12.4 m in plan and 0.21 m deep. They consisted of silty clays with inclusions of charcoal and heat-affected stone; 10 fragments of animal bone were also recovered from these layers.

Located in the south-west corner of the site was a large sub-circular pit, which measured 2.2 m long (NE–SW), 2.25 m

15 Inchaquire 3, County Kildare; ITM 680215, 698781; height 101 m OD; Excavation Reg. No. E2867; Ministerial Directions A021/080; Excavation Director: Gillian McCarthy



Illus. 6.21 Inchaquire 3, multi-phase site with an Early Bronze Age burnt mound, Middle Bronze Age funerary activity and post-medieval agricultural features.

wide and 0.34 m deep. Unidentified animal bone fragments, as well as two pieces of debitage, two handstone objects and a grinder/handstone, were recovered from the fill of this feature. At its centre, this pit was truncated by a smaller sub-circular-shaped pit. This measured 1.5 m in length (NW–SE), 0.75 m in width and 0.15 m in depth and contained inclusions of charcoal, six sherds of prehistoric pottery and a small assemblage of lithic and ground stone artefacts. Located immediately to the south-west was a sub-circular post-hole, which measured 0.16 m by 0.13 m by 0.25 m deep; its fills contained occasional inclusions of charcoal.

The second phase of activity at the site dated to the Middle Bronze Age and was represented by a stone-lined cist and an associated pit. The pit truncated the southern extent of the burnt mound and was sub-oval in plan, measuring 7.25 m in length (east–west), 3 m in width and 0.51 m in depth; its fills contained varying quantities of charcoal and charred cereal grain, as well as flint debitage. This pit seemed to function as an open 'court' at the front of the stone-lined cist, which truncated its western end. The cist itself was D-shaped in plan, measuring 1.5 m long (north–south), 1.2 m wide and 0.7 m deep (Illus. 6.22). Eight stones constituted the stone lining within this feature, while fragments of cremated bone and charcoal were recovered from its fills. The cist was later recut by a sub-rectangular trough, which removed most of its fills. This measured 3 m (east–west) by 2 m by 0.7 m deep and contained moderate amounts of charcoal, ash, animal bone, charred cereal grain and wild taxa within its fills; flint debitage was also recovered.

Post-medieval and modern agricultural features represented the third and final phase of activity at Inchaquire 3. These included five linear ditches, which measured 18.35 m long, 1.26 m wide and 0.36 m deep on average and contained inclusions of charcoal, charred cereal grain and animal bone. There was also a linear drain, measuring 10 m in length, (east–west), 0.4 m in width and 1 m in depth and containing small-sized stones and shards from a modern glass bottle. Thirteen plough furrows, the majority of which were orientated in a NE–SW direction, had average widths of 0.7 m and average depths of 0.12 m.

Several features excavated at the site could not be attributed to any specific phase of activity and therefore remain undated. These included five pits and a hearth. The pits were mainly sub-circular in plan, with average dimensions of 0.82 m long, 0.63 m wide and 0.22 m deep; they contained occasional inclusions of charcoal. The hearth was sub-rectangular in plan, with evidence of *in situ* burning in the form of oxidised subsoil noted throughout the cut. It measured 2.2 m (east–west) by 1.2 m by 0.3 m deep and was truncated in its base by two stake-holes. These were circular and sub-circular in plan and were 0.05–0.07 m in diameter and 0.07–0.08 m in depth; they contained inclusions of charcoal within their soil matrices. The overlying fill of the hearth contained occasional fragments of charcoal, charred cereal grain and oxidised clay.

The artefact assemblage included pottery, lithics and ground stone objects (Illus. 6.23). The pottery comprised six sherds and one fragment of prehistoric pottery representing a small, tub-shaped Early to Middle Bronze Age domestic vessel. This has a worn chevron panel immediately beneath the rim and a patchy blackened accretion on the internal surface, indicating that it had been used in a domestic context. A total of 33 lithics were recovered during the excavation, including five retouched artefacts—of which three

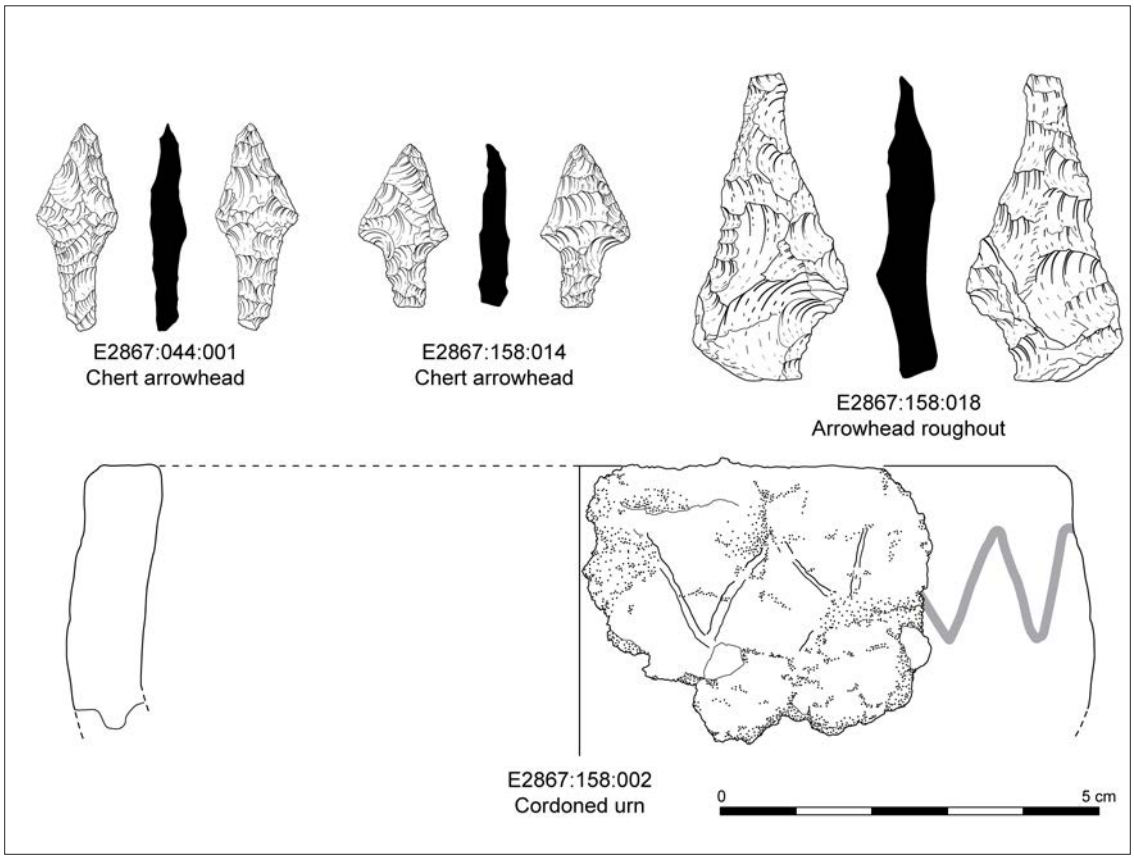
Illus. 6.22 Inchaquire 3, view of possible cist and court area looking west.

were projectile heads usually associated with Early Bronze Age contexts (O'Hare 2005). Two fragments with retouched edges, a single natural edge with use-damage, and 24 pieces of debitage—including blanks and secondary technology by-products—were also recovered. Eight ground stone objects were also retrieved, all of which could be classified as processing tools.

Four radiocarbon dates were obtained for two of the troughs and the cist. These produced Early to Middle Bronze Age date ranges (2200–1500 BC and 1500–1000 BC respectively) including 1670–1430 BC (SUERC-25841), 1750–1500 BC (SUERC-25842), 1690–1440 BC (SUERC-25844) and 2460–2060 BC (SUERC-25843).

The cist burial contained very little bone, prohibiting any detailed analysis of the remains. Due to the black and white colour of the bone, however, it could be inferred that the remains were not completely oxidised. The position of this grave on dry, slightly elevated ground is typical for an Irish Bronze Age cist burial (Ó Baoill & Murphy 2000).

A small assemblage of cereal grain was recovered from the environmental samples taken at Inchaquire 3. In many cases, the grain was too badly damaged to retain the characteristics needed for definitive identification. However, of those that could be identified to species, naked barley was the most predominant; emmer wheat, bread



Illus. 6.23 Inchaquire 3, selection of artefacts (by Sara Nylund).

wheat and hulled barley were also noted in the assemblage.

A total of 1,327 bone fragments were analysed from Inchaquire 3. Most of the identified specimens derived from domestic species, with cattle being the most dominant, followed by sheep/goat, pig, horse and red deer. None of the bones showed signs of gnawing or pathology.

The Inchaquire 3 site represents a multi-period occupation spanning the Early Bronze Age through to the post-medieval period. The most significant activity occurred during the Bronze Age, with the site transitioning from burnt mound to funerary use.

The Early Bronze Age phase featured a burnt mound complex with three troughs, a well, and multiple stake-hole clusters. The recovery of domestic pottery with chevron decoration and processing tools suggests household activities occurred alongside the hot-stone (pyrolithic) technology typical of these sites.

A notable shift in site use occurred in the Middle Bronze Age when a stone-lined cist burial was inserted into the earlier burnt mound. The cist was accompanied by a large pit that could have served as a court area. This repurposing of an industrial site for funerary activity is interesting, as it may indicate a deliberate connection to an ancestral place. However, another possible interpretation is that this was a stone-lined trough and part of an arrangement

of interconnected troughs, as has been recognised elsewhere and recently classified as Type 2 or 8/9 (Hawkes 2018, 111–14).

The material culture recovered, including projectile heads and domestic pottery, aligns well with the radiocarbon dates spanning 2460–1430 BC. Environmental evidence indicates agricultural activity through the presence of various cereal grains, while the faunal assemblage shows a reliance on domestic livestock, particularly cattle.

The site's later post-medieval features, consisting of field ditches and plough furrows, demonstrate the area's eventual transition to agricultural land.

This sequence of occupation provides valuable insights into how Bronze Age communities in Ireland repurposed and reimagined spaces over time.

Burtown Little 3: Lime and cereal-drying kilns[16]

This site was located in level, arable land immediately west of the R747 road between Ballitore and Athy. The evidence recovered indicated that this site was the location of a lime kiln and cereal-drying kiln of late medieval date, with subsequent activity relating to land division occurring during the post-medieval period.

The excavation revealed two main phases of activity dating to the late medieval and post-medieval periods (Illus. 6.24).

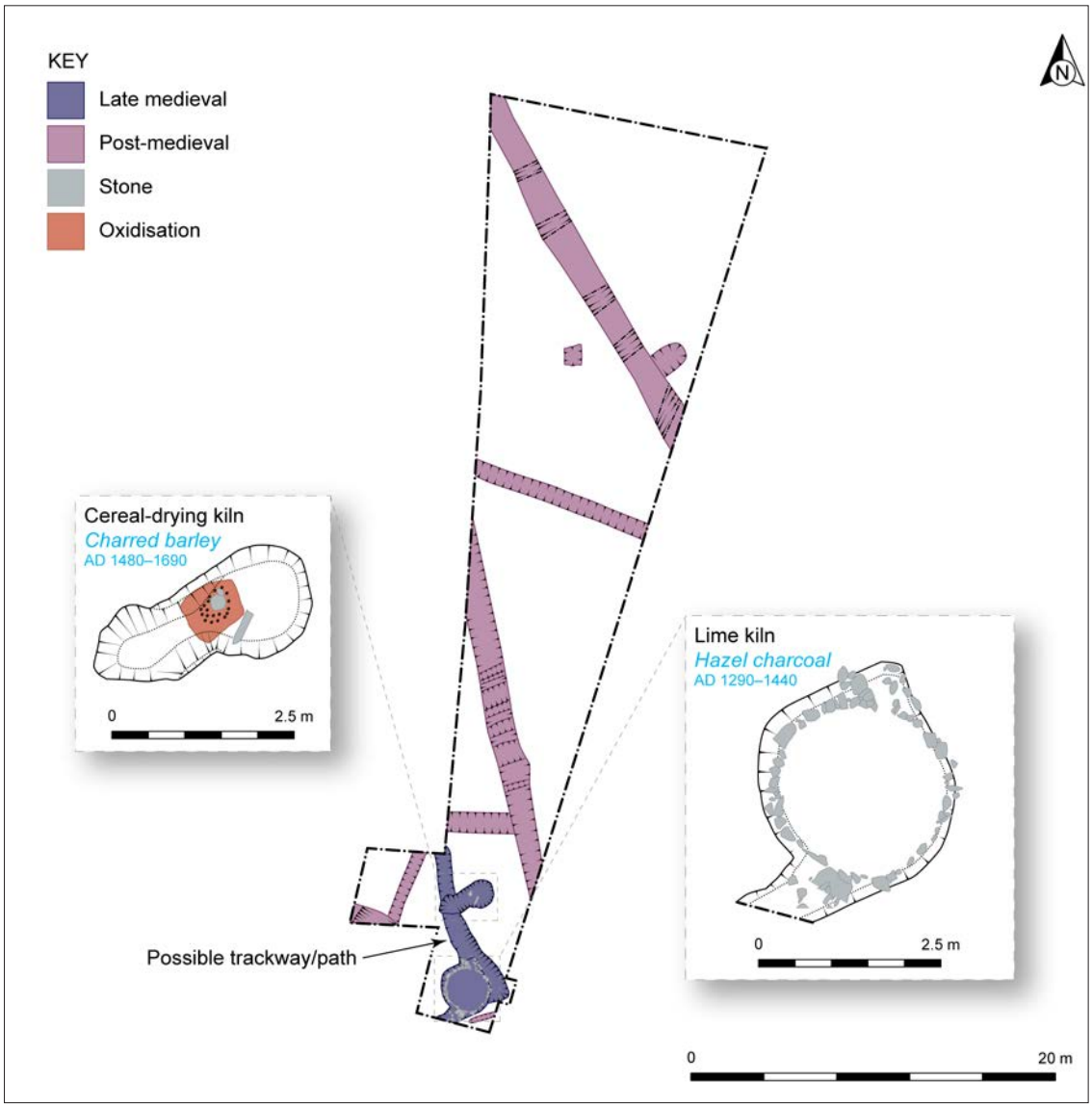
The Phase 1 activities at Burtown Little 3 were represented by a lime kiln with an associated trackway/path, and a cereal-drying kiln. The earliest identified feature was the oval lime kiln. This measured 3.8 m (WNW–ESE) by 2.6 m by 0.7 m deep and was situated in the southern corner of the site. It was lined with squared stone blocks, coursed and bonded with mortar, with two opposing flues located in the east and west walls. Its fills contained varying quantities of charcoal, lime, heat-affected stone, mollusc shell and animal bone, as well as numerous sherds of late medieval pottery. Lime kilns were used for processing lime to produce mortar and for use as a fertilizer; they are one of the most numerous and widely distributed industrial monuments in the Irish landscape (Rynne 2006, 156–7).

A possible trackway/path was identified running north from the kiln. This consisted of a linear cut recorded for a length of 6 m to the edge of the excavated area, with a width of 1.1 m and a depth of 0.38 m. Its fill contained numerous sherds of late medieval pottery, as well as an abundance of charred cereal grain; however, the latter was likely intrusive as a cereal-drying kiln was identified truncating the trackway/path at its centre.

The cereal-drying kiln was keyhole-shaped in plan, with maximum dimensions of 3.12 m long (east–west), 1.5 m wide and 0.39 m deep. The drying bowl was situated at the eastern end of this feature and was connected to the western fire-spot via a short flue. A possible *ex situ* baffle stone was recorded at the junction of the flue and drying bowl, while frequent inclusions of charcoal, heat-affected clay, animal bone and cereal grain were recovered from the fills. The grain assemblage was dominated by hulled barley, with significant amounts of bread/club wheat and oat also recorded. A small number of artefacts were also recovered, including a flat burnt stone and a copper-alloy strap end.

Numerous linear features were identified crossing the site. These are believed to

16 Burtown Little 3, County Kildare; ITM 675628, 694657; elevation 92 m OD; Excavation Reg. No. E2990; Ministerial Directions A021/185; Excavation Director: Caitríona Gleeson



Illus. 6.24 Burtown Little 3, late medieval lime kiln and cereal-drying kiln with post-medieval land-division.

form part of a complex of field/property boundaries that would have extended across the local landscape. They had average dimensions of 16 m long by 1.34 m wide by 0.41 m deep and contained various inclusions, such as charcoal, animal bone, snail shell, heat-affected stone, medieval pottery and iron nails.

A total of 28 sherds of medieval pottery were retrieved from the excavation. The assemblage included Leinster cooking ware, Dublin-type ware and Kildare-type wares and dates broadly to the 13th century, although a few sherds could have come on site from the end of the 12th century.

One copper-alloy object, identified as a possible mount or strap end, was recovered from Burtown Little 3 (Illus. 6.25). Mounts

Illus. 6.25 Burtown Little 3, copper-alloy strap end (E2990:015:001).

were used during the medieval period on a variety of items such as leather straps, textiles and horse trappings (Egan & Pritchard 2002, 162), while strap-ends, as the name suggests, were attached to the ends of straps such as girdles, belts, spur leathers and shoe straps (ibid., 126–7).

Two radiocarbon dates were obtained for the lime kiln and cereal-drying kiln at Burtown Little 3. These returned late medieval date ranges of AD 1290–1440 (SUERC-25911) and AD 1480–1960 (SUERC-25910) respectively.

A large quantity of cereal grain was recovered from the site. This assemblage was dominated by the grains of hulled barley, with substantial amounts of oat and bread/club wheat. The dominance of barley within kiln assemblages is usually related to kilns of an early medieval date, with a switch to oat occurring in the later medieval period (Monk 1991). Thus, this kiln provided a possibly unique grain assemblage, which will be of interest to other archaeobotanical kiln studies (Ruderals such as common fumitory, docks and members of the pea family were also recovered from the kiln. These plants are commonly found on cultivated ground (Clapham et al. 1962; Stace 1997) and are likely to have been gathered with the cereals during harvesting.

A total of 636 bone fragments were analysed from the site. The assemblage included all of the principle domestic animals—e.g. cattle, sheep, goat, pig, horse, dog and cat—as well as a single unidentified fish vertebrate. The proportion of animals not likely to have been included in the diet, such as horse, dog and cat, is relatively high; therefore, the sample probably represents a mixture of domestic waste and more specialised waste relating to the disposal of inedible animal carcasses or skinning.

The excavation at Burtown Little 3 revealed both a lime and a cereal-drying kiln, followed by post-medieval land division activity. The lime kiln, which likely produced mortar and/or fertilizer, was well-constructed with stone blocks and two flues. The cereal-drying kiln, keyhole-shaped in design, showed evidence of processing primarily hulled barley, along with wheat and oat—an unusual grain composition for its period, as oat typically dominated in late

medieval kilns. The site's material culture included 13th-century pottery (Leinster cooking ware, Dublin-type, and Kildare-type wares) and a copper-alloy strap end used for leather goods or horse equipment. Radiocarbon dating placed the lime kiln's use between AD 1290 and AD 1440 and the cereal kiln's between AD 1480 and AD 1690. The faunal remains suggest a mixed-use site, combining both food waste and specialised disposal of animals that were typically not eaten, possibly related to skinning activities.

Burtown Big 1: Multi-period activity[17]

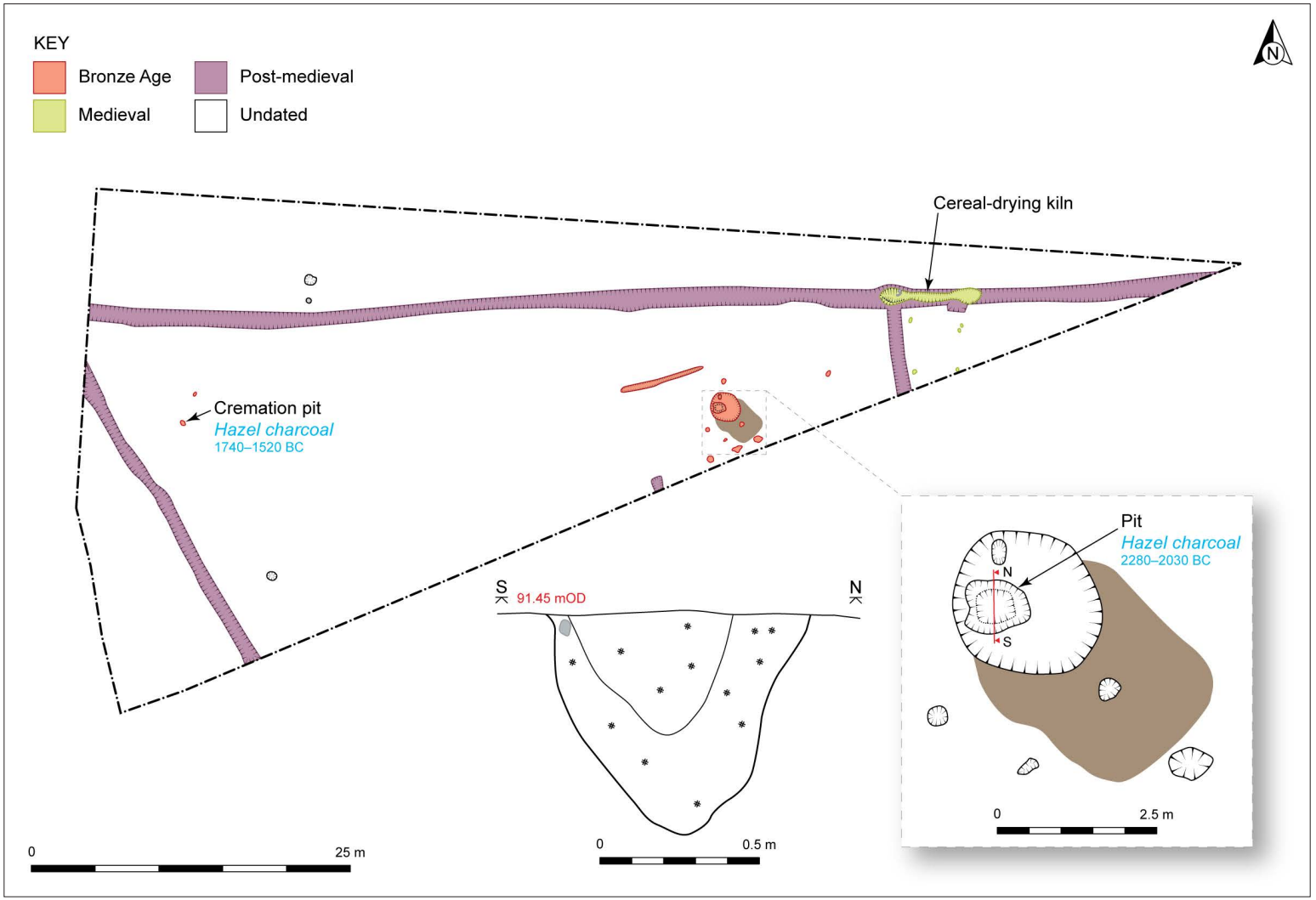
This site was located 6 km west of the River Barrow and overlooked the surrounding landscape of the Barrow Valley to the south-west. It was situated towards the western end of a large sub-rectangular field used primarily for crop cultivation. The eastern field boundary defined the boundary between the townlands of Burtown Big and Burtown Little, while the southern field boundary defined that between Burtown Big and Irishtown. The evidence recovered indicated that this site was the location of possible ritual activity during the Early Bronze Age, with cereal processing being carried out during the medieval period. Post-medieval agricultural features were also identified on the site.

The excavation revealed three phases of activity (Illus. 6.26). Phase 1 dated to the Early Bronze Age and seemed to be associated with possible ritual activity. Phase 2 was represented by small-scale agricultural activity, which possibly dated to the medieval period, while Phase 3 was associated with post-medieval agricultural practices. A small number of features at the site could not be assigned to any of the identified phases and therefore remain undated.

The Phase 1 activity was represented by numerous pits, post-holes and stake-holes identified throughout the area of excavation which had no identifiable form that could be interpreted as a structure. One of the main features of interest associated with this phase was a possible cremation pit, situated at the western end of the site. This feature was sub-oval in plan, measuring 0.44 m in length (NW–SE), 0.34 m in width and 0.11 m in depth. Its fills contained a significant quantity of hazel charcoal as well as 320 fragments of unidentifiable burnt bone. Two intercutting pits situated towards the central part of the site also produced evidence of possible funerary activity. The earliest was sub-oval in plan, measuring 0.82 m in length (east–west), 0.75 m in width and 0.7 m in depth. Its fills contained varying quantities of charcoal, as well as two lithic artefacts and eight sherds of pottery from an Early Bronze Age encrusted urn. Truncating this was a second, irregularly shaped pit that measured 2.14 m long (NW–SE), 1 m wide and 0.3 m deep. It also contained inclusions of charcoal, three lithic finds and 18 sherds of Early Bronze Age pottery within its fills.

The remaining features attributed to Phase 1 contained little environmental or artefactual evidence that would aid in establishing their function. They included six post-holes, which were mainly oval in plan with average dimensions of 0.43 m by 0.26 m by 0.23 m deep; four oval to sub-circular pits, measuring 0.54 m long, 0.34 m wide and 0.11 m deep on average; a circular stake-hole with dimensions of 0.11 m by 0.11 m by 0.2 m deep; and a linear feature that measured 6.72

17 Burtown Big 1, County Kildare; ITM 675101, 694540; elevation 91 m OD; Excavation Reg. No. E2992; Ministerial Directions A021/187; Excavation Director: Lydia Cagney



Illus. 6.26 Burtown Big 1, multi-phase site with ritual Bronze Age activity, medieval cereal processing and post-medieval agricultural features.

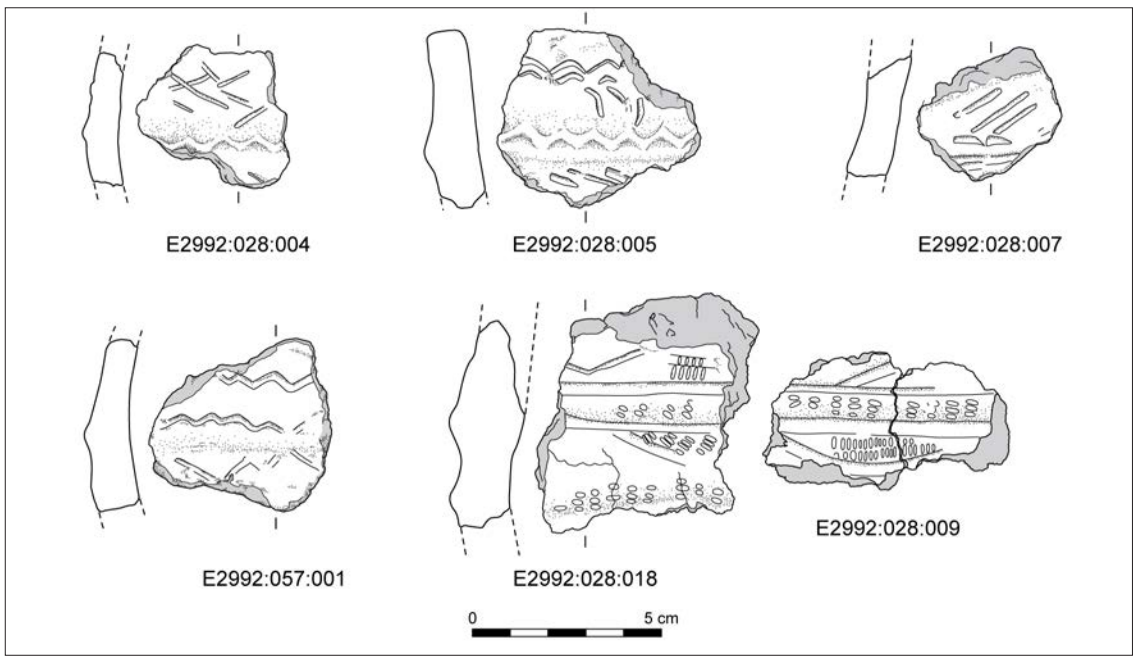
m in length (ENE–WSW) 0.46 m in width and 0.2 m in depth.

The second phase of activity at Burtown Big 1 was represented by a cereal-drying kiln and its associated components, including four post-holes and a pit. The cereal-drying kiln was keyhole-shaped in plan, measuring 7.7 m in length (east–west), 1.38 m in width and 0.34 m in depth. It contained a total of seven fills, each with varying quantities of charcoal and burnt animal bone, as well as several *in situ* baffle stones situated at the junction of the fire-spot and the flue. The associated post-holes, which may have formed a windbreak, varied from circular to sub-circular in plan and measured 0.3 m long by 0.26 m wide by 0.18 m deep on average. The pit measured 0.35 m in length, 0.28 m in width and 0.13 m in depth and was sub-circular in plan. These features contained small amounts of charcoal within their soil matrices.

Phase 3 was represented by what seemed to be the terminus of a linear feature, which extended beyond the excavation limits in the south of the site. It measured 1 m in length, 0.75 m in width and 0.2 m in depth and contained sherds of modern pottery within its fill. A further three linear features which also continued beyond the excavation area are also suggested to be associated with the Phase 3 activities, possibly representing field boundaries and drainage ditches. These measured between 8.5 m and 87.5 m in length, 0.85 m and 1.6 m in width and 0.3 m and 0.67 m in depth.

Three pits at the site could not be assigned to a specific phase of activity and therefore remain undated. They varied from circular to oval in plan and had average dimensions of 0.54 m by 0.51 m by 0.21 m deep.

The excavation of Burtown Big 1 produced a prehistoric pottery assemblage comprising 26 sherds, 18 fragments and 159 crumbs (Illus. 6.27). These represented a bowl food vessel and an encrusted urn of Early Bronze



Illus. 6.27 Pottery from Burtown Big 1 (by Sara Nylund).

Age date. Both vessels had been disturbed but appear to represent successive deposition within intercutting features. This is of particular interest, as these vessel types have not previously been recorded in such close association. Neither vessel retained evidence of sooting, suggesting that they were not used for domestic purposes, and while there is a strong possibility that they were associated with burial activity, there does not appear to have been any associated evidence for human remains. This may be a result of later disturbance; however, it is also possible that the vessels represent non-funerary votive deposits.

A total of seven lithic artefacts were recovered during the excavation of Burtown Big 1. The assemblage was dominated by flint, with two examples of chert identified. The finds can be classified as formally retouched artefacts—including a fragmented convex side scraper and two minimally retouched flakes—and debitage or knapping by-products. From a technological point of view, the assemblage appears to be dominated by platform technology products—usually associated with earlier prehistoric lithic assemblages—rather than bipolar pieces, which are particularly dominant in Bronze Age assemblages.

Two radiocarbon dates were obtained for the possible cremation pit and one of the pits containing prehistoric pottery. These returned date ranges of 2280–2030 BC (SUERC-26397) and 1740–1520 BC (SUERC-26396) respectively, indicating that Phase 1 occupation of the site occurred during the Early Bronze Age. Based on feature morphology, the Phase 2 activity has been dated to the medieval period, while Phase 3 represents post-medieval agricultural activity.

The preservation of charred plant remains from Burtown Big 1 was generally good and the species identified included oat, straight and twisted hulled barley, bread/club wheat and spelt wheat. A small quantity of wild taxa, such as sedge nutlets and seeds of the goosefoot family, were also recovered. Several of the Phase 1 features were found to contain small amounts of charred grain; however, the identification of some of these as oat and hulled barley would suggest that they were a contaminant from later activity. The Phase 2 features were dominated by barley and oat, with wheat present in much smaller quantities. There were also significant quantities of sedge nutlets recovered from the cereal-drying kiln, which would suggest that turf was used either as fuel or for roofing.

A total of 446 animal bones were recovered from the site. The assemblage consisted of both burnt and unburnt fragments belonging to cattle, horse, sheep/goat, mouse and unidentified species; none of the bone showed signs of gnawing, pathology or butchery. Unfortunately, the small size of the assemblage precluded any meaningful discussion of animal husbandry at Burtown Big 1.

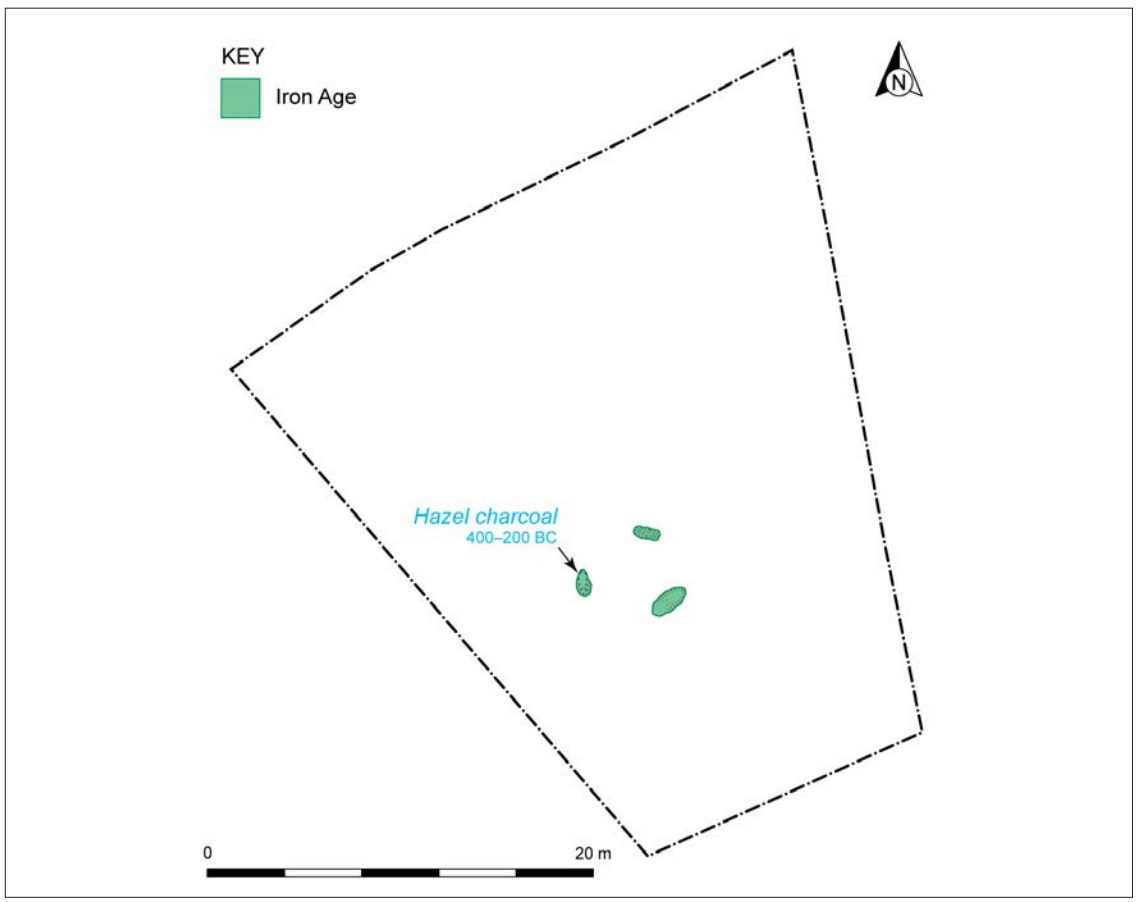
The excavation at Burtown Big 1 revealed a multi-period site with three distinct phases of activity spanning the millennia from the Early Bronze Age to the post-medieval period. The earliest phase (2280–1520 BC) showed evidence of ritual activity, featuring a cremation pit and two intercutting pits containing significant pottery finds—notably a bowl food vessel and an encrusted urn. These vessels' unusual close association and lack of sooting suggests non-domestic, possibly votive use. The lithic assemblage, dominated by platform technology rather than typical Bronze Age bipolar pieces, included formal

tools like a convex side scraper and knapping debris. While few in number, these artefacts suggest earlier prehistoric technological traditions. The medieval phase centred around a substantial cereal-drying kiln (7.7 m long) with associated windbreak post-holes. The environmental evidence showed processing of barley, oat, and wheat, with sedge nutlets indicating turf use for fuel or roofing. The final phase consisted of post-medieval agricultural features including field boundaries and drainage ditches. The faunal assemblage, though limited, included cattle, horse, sheep/goat, and mouse remains, while the presence of both burnt and unburnt bone suggests varied depositional practices across the site's long period of use.

Burtown Big 2: Iron Age pits[18]

This site was in a large, relatively flat, sub-rectangular field that was under pasture at the time of excavation. The evidence recovered indicated that this site was the location of three pits of uncertain function during the Iron Age (Illus. 6.28). The westernmost pit was sub-oval in plan, measuring 1.35 m long (north–south),

Illus. 6.28 Burtown Big 2, Iron Age pits.



18 Burtown Big 2, County Kildare; ITM 674768, 694382; elevation 89 m OD; Excavation Reg. No. E2994; Ministerial Directions A021/162 and A026/189; Excavation Director: Lydia Cagney

0.76 m wide and 0.24 m deep. Its fill contained frequent hazel charcoal and 0.4 g of unidentified burnt bone within a silty clay matrix. To the north-east of this feature was an oval pit, 1.36 m long (ENE–WSW), 0.62 m wide and 0.27 m deep. This contained charcoal and 0.6 g of unidentified burnt bone within its fills. The final pit was situated approximately 2.5 m to the south. It measured 2.11 m (NE–SW) by 1 m by 0.38 m deep and was oval in plan. It also contained charcoal within its fills.

Two lithic artefacts were recovered from the pits excavated at Burtown Big 2. The finds were small (less than 20 mm in length), heavily fractured, unworked and could only be categorised as undiagnostic debitage—waste material.

A single radiocarbon date was obtained from hazel charcoal recovered from the westernmost pit. This returned a date range of 400–200 BC (SUERC-25455), placing the activity represented firmly in the Iron Age.

All three pits contained significant quantities of charcoal, while two of the pits also contained small quantities of burnt bone. As there was no observable evidence for *in situ* burning encountered during excavation of the pits, it seems likely, given the size of the charcoal fragments, that the fills represent deliberately discarded material.

Three burnt bone samples, weighing 1 g in total, were recovered from two of the pits excavated at Burtown Big 2. Due to the small quantity and size of the remains they could not be definitively identified as animal or human, thus they may represent either token burials or domestic waste. Token burials—cremations that have been described as consisting of small, minute or token quantities (Cooney & Grogan 1999, 129)—have been excavated at numerous sites across the country, with an Iron Age example recorded at Burtown Little 2, approximately 1 km to the ENE. If the remains represent animal bone, then they are likely indicative of domestic waste. In general, Iron Age faunal remains are elusive (McCormick & Murray 2007, 24); however, some Iron Age sites from the Kildare/Carlow area have produced large quantities of animal bone, such as those at Moone 1, Moone 4 and Moone 5 situated approximately 2 km to the ENE of Burtown Big 2.

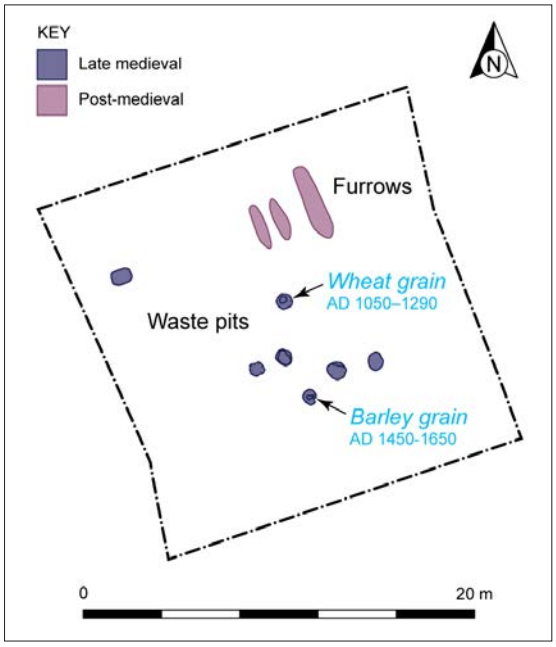
The three pits excavated at Burtown Big 2 represent an intriguing Iron Age site, radiocarbon dated to 400–200 BC. The presence of charcoal and burnt bone, without evidence of *in situ* burning, suggests these were deliberately filled deposits rather than functional features. The small quantity of burnt bone presents an interpretative challenge—it could represent either token burial practices, which were known in Iron Age Ireland and were found at Burtown Little 2 (1 km away), or domestic waste disposal.

Ballycullane 1: Domestic waste pits[19]

This site was in a large sub-rectangular field, which was under cultivation at the time of excavation. The evidence recovered indicated that this site was the location of domestic waste pits during the late medieval period and subsequent late or post-medieval agricultural activity (Illus. 6.29).

The late medieval activity at Ballycullane 1 was represented by a total of seven pits. These were mainly sub-rectangular in plan, with average dimensions of 0.86 m by 0.74 m by 0.23 m deep. Their fills contained a

19 Ballycullane 1, County Kildare; ITM 672551, 693615; elevation 69 m OD; Excavation Reg. No. E2983; Ministerial Directions A021/178; Excavation Director: Lydia Cagney



Illus. 6.29 Ballycullane 1, late medieval domestic waste pits.

variety of inclusions—such as charcoal, charred cereal grain, wild taxa, burnt bone and slag—the combination of which suggests that these features were used for the disposal of domestic waste.

The second, post-medieval, phase of activity at the site was represented by three parallel NNW–SSE running cultivation furrows. These were an average of 0.51 m wide and 0.3 m deep and contained archaeologically sterile fills.

Radiocarbon dates were returned for two of the pits excavated at Ballycullane 1. These produced date ranges of AD 1050–1290 (SUERC-25902) and AD 1450–1650 (SUERC-25903), placing the represented activity in the late medieval period.

A small assemblage of poorly preserved cereal grain was recovered from the site. Species identified included oat and hulled barley, along with indeterminate cereal grains that were too fragmentary to identify to family or species. A single grain of bread wheat and wild taxa in the form of sedges were also identified. The combined presence of charred plant remains and charcoal could indicate that there were domestic activities such as cooking occurring at the site.

A total of 278 bone fragments were analysed from the site, with identified species including cattle and sheep/goat. None of the bone recovered showed signs of pathology, gnawing or butchery, although some were clearly burnt. The identified species represent domestic animals that are commonly found on sites dating to the medieval period (Denham 2007, 189).

A moderate quantity of metallurgical waste was also recovered from the site. This assemblage had a total weight of 284 g and comprised undiagnostic slag fragments. Other than indicating that iron metallurgy took place somewhere in the vicinity of the site, little can be concluded from the remains, particularly as none of the excavated features appeared to have functioned as metallurgical hearths or furnaces.

The excavated features at Ballycullane 1 provide evidence of a late medieval domestic waste disposal area that was later impacted by post-medieval agricultural activity. The seven sub-rectangular pits contained a diverse assemblage of materials including charred cereals (primarily oat and barley), animal bones (cattle and sheep/goat), and metallurgical waste, painting a picture of typical medieval domestic activities. The presence of burnt bone and charred grains, combined with the slag fragments, suggests this area served multiple household functions including food preparation and potentially small-scale metalworking in the vicinity. The radiocarbon dates spanning AD 1050–1650 firmly place these activities in the late medieval period, while the later

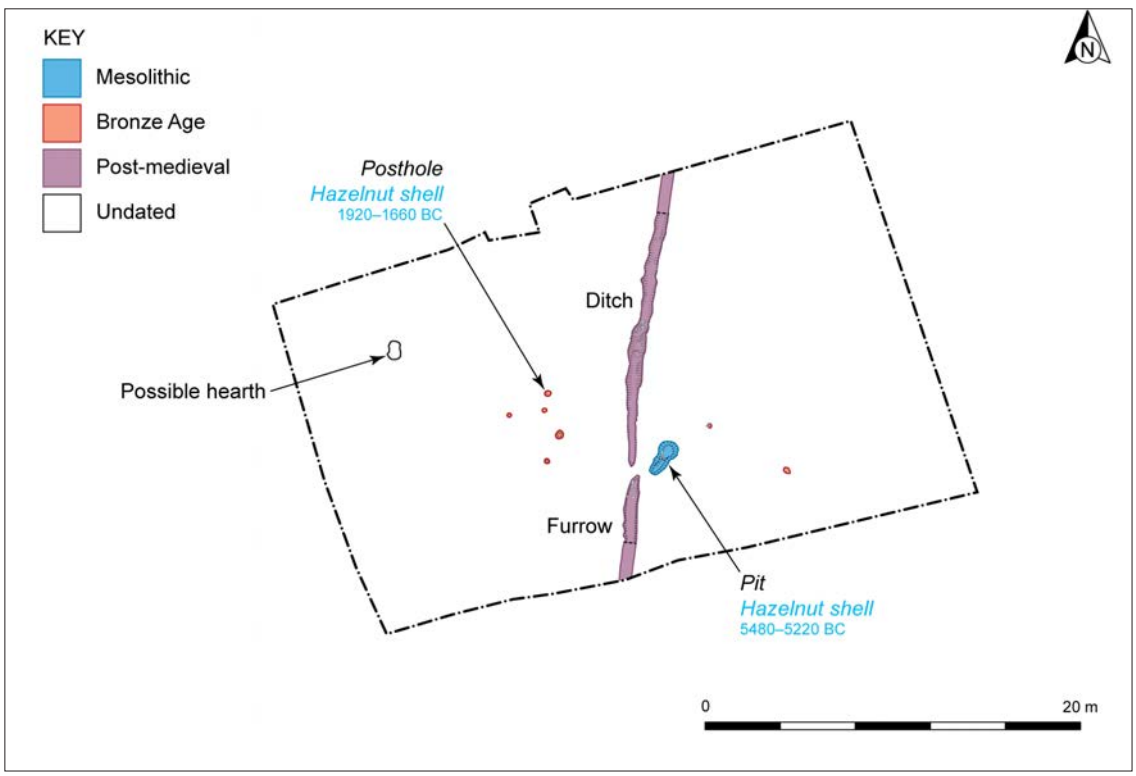
cultivation furrows demonstrate the site's transition to agricultural use. The relatively modest size of the pits and mixed nature of their contents align with what would be expected from a medieval household's waste management practices.

Foxhill 1: Multi-period activity[20]

This site was located in a large, relatively flat, sub-rectangular field which was under pasture at the time of excavation. The evidence recovered indicated that this site was the location of multi-period activity including remains of Late Mesolithic, Early Bronze Age and post-medieval date (Illus. 6.30). One feature excavated at the site could not be associated with any of these periods and remains undated.

The earliest phase of activity was represented by a large pit situated centrally within the southern part of the site. It was keyhole-shaped in plan, measuring 1.95 m in length (NE–SW) by 0.8 m in width by 0.57 m in depth. Its fills contained varying quantities of charcoal, charred hazelnut shell, unidentified cereal grain and a very small quantity of unidentified burnt bone; however, there was no conclusive evidence to suggest the function of this pit. Its size and shape resembled a medieval keyhole-shaped cereal-drying kiln (Monk & Kelleher 2005), although factors such as the dating evidence, the absence of a clear-cut edge,

Illus. 6.30 Foxhill 1, multi-phase site encompassing domestic activity from the Late Mesolithic and Early Bronze Age.



20 Ballycullane 1, County Kildare; ITM 672551, 693615; elevation 69 m OD; Excavation Reg. No. E2983; Ministerial Directions A021/178; Excavation Director: Lydia Cagney

oxidation or burning *in situ* preclude such an interpretation.

The second phase of activity at Foxhill 1 was represented by seven post-holes. These were all similar in size and shape and may have formed part of a structure, although no identifiable pattern or arrangement was identified. They were mainly oval to sub-oval in plan, with average dimensions of 0.33 m by 0.27 m by 0.21 m deep. They contained inclusions of charcoal, charred hazelnut shell, charred cereal grain, burnt bone and sherds of Early Bronze Age pottery within their soil matrices. Interpretation of such a random distribution of post-holes is difficult, although it is possible that some form of domestic structure was represented.

The final phase of activity at the site was represented by a linear ditch and an agricultural furrow. The ditch entered the site from its northern edge and ran for approximately 16 m in a southerly direction before it terminated. It measured 0.92 m wide and 0.47 m deep and contained an archaeologically sterile fill. The agricultural furrow shared a similar orientation to the ditch, entering the site from its southern edge and running in a northerly direction for approximately 6 m before terminating. It measured 0.7 m wide and 0.15 m deep and contained a sterile fill.

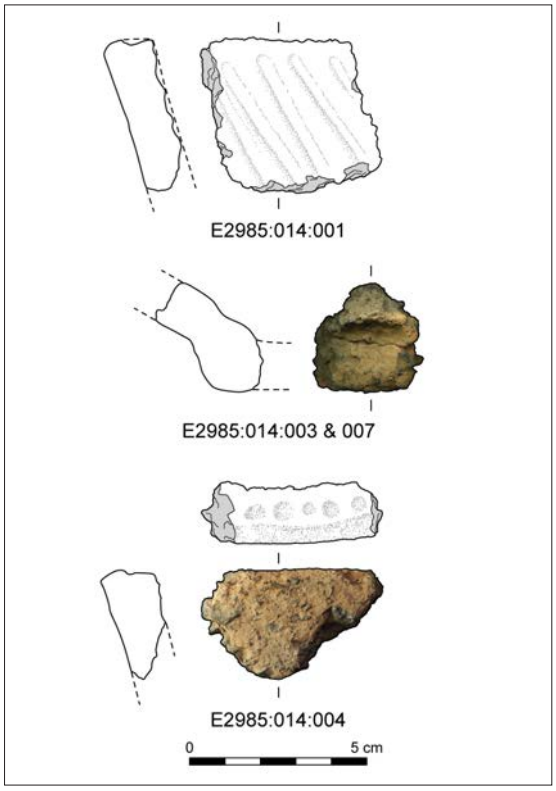
A possible hearth, situated in the north-west corner of the site, could not be assigned to a specific phase of activity. This feature was sub-oval in plan, with evidence for *in situ* burning around the sides and base of the cut. It was 1 m long (north–south), 0.74 m wide, 0.14 m deep and contained frequent charcoal and occasional burnt clay inclusions within its fills.

The site produced seven sherds, three fragments and 50 crumbs of prehistoric pottery representing a single vase urn of Early Bronze Age date (Illus. 6.31). The pottery represents domestic debris and is in a much worn and fragmentary condition. Decoration on the bevel was recorded as an oblique row of closely set, probably bird bone, impressions, while the neck is covered by a panel of closely spaced oblique scored lines.

Two radiocarbon dates were returned for the large pit and one of the post-holes excavated at Foxhill 1. These placed the activity at the site in the Late Mesolithic (5500–4000 BC) and the Early Bronze Age (2200–1500 BC). The Late Mesolithic radiocarbon date was 5480–5220 BC (SUERC-25450) and the Early Bronze Age date was 1920–1660 BC (SUERC-25449). The latter date was supported by the recovery of Early Bronze Age pottery sherds.

A small assemblage of palaeoenvironmental remains was recovered from the features excavated at Foxhill 1. Charred hazelnut shell and charcoal from the Phase 1 pit were interpreted as representing remnants of food debris and campfire waste. The Phase 2 assemblage indicated that the area was used for food preparation, with the debris from this activity finding its way into the post-holes.

The excavation revealed three distinct phases of human activity spanning several millennia, from the Late Mesolithic to the post-medieval period. The earliest phase (5480–5220 BC) featured a distinctive keyhole-shaped pit containing food remains, though its exact function remains unclear. The Early Bronze Age occupation (1920–1660 BC) is evidenced by seven post-holes and decorated pottery fragments from a vase urn, suggesting domestic activity. While the post-holes likely formed some kind of structure, the lack of a clear pattern makes interpretation challenging. The final phase shows agricultural land use through a ditch



Illus. 6.31 Early Bronze Age pottery from Foxhill 1 (by Hannah Sims).

and furrow system. Interestingly, an undated hearth with evidence of *in situ* burning was also discovered but couldn't be linked to any specific period of occupation. The site demonstrates remarkable continuity of human activity in the area, with evidence of both temporary occupation (Mesolithic food debris) and more permanent settlement (Bronze Age structures) before ultimately transitioning to agricultural use.

Bray Upper 1: Possible Late Neolithic structure[21]

This site was located in a small, relatively flat, rectangular field that was under pasture at the time of excavation. The evidence recovered indicated that this site was the location of a possible structure during the Late Neolithic and a pit of early/high medieval date (Illus. 6.32). There were also a small number of features that could not be confidently ascribed to any phase of activity; these remain undated.

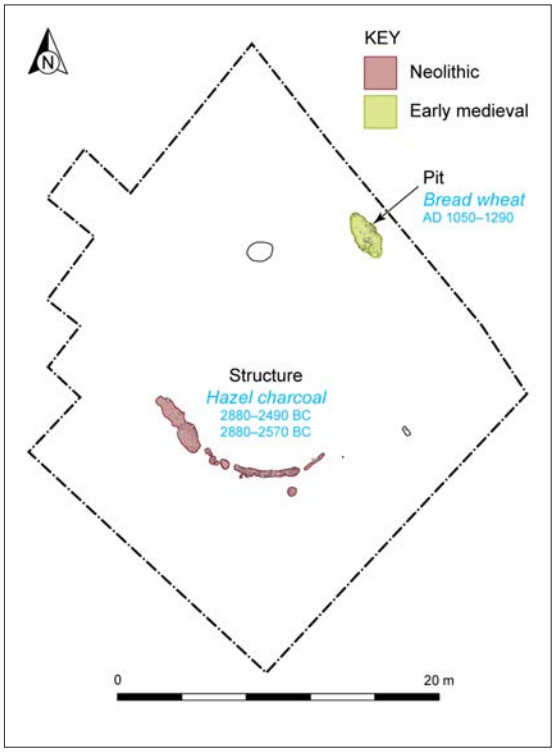
The earliest identified activity at the site was represented by two slot trenches and numerous post-holes, pits and stake-holes. These seemed to form a curvilinear arrangement that possibly represented the remnants of a structure in the south of the site.

The slot trenches formed the southern and south-eastern part of this structure. They measured 4.2 m (east–west) by 0.5 m by 0.3 m deep and 1.1 m (NE–SW) by 0.28 m by 0.21 m deep respectively and were curvilinear in plan. Truncating the base of these features was a series of seven post-holes and two stake-holes. The post-holes were mainly sub-circular in plan, measuring 0.33 m in length, 0.25 m in width and 0.31 m in depth on average; the stake-holes varied from circular to oval, with average dimensions of 0.11 m by 0.07 m by 0.1 m deep.

The south-western side of the structure was represented by a further three stake-holes, two post-holes and three pits. The pits measured 0.75–2.9 m long, 0.54–1.16 m wide and 0.32–0.43 m deep and were mainly sub-oval in plan; the post-holes varied from sub-circular to oval and measured 0.53 m in length, 0.47 m in width and 0.13 m in depth on average, while the stake-holes had average dimensions of 0.24 m by 0.19 m by 0.12 m deep and varied from circular to sub-oval in plan.

The fills of the features comprising this

21 Bray Upper 1, County Kildare; ITM 671006, 693522; elevation 65 m OD; Excavation Reg. No. E2991; Ministerial Directions A021/180; Excavation Director: Lydia Cagney



Illus. 6.32 Bray Upper 1, Late Neolithic structure.

possible structure varied greatly in colour and composition; however, most contained small quantities of palaeoenvironmental material, such as charcoal, grains of bread/club wheat, barley and unidentified cereals, goosefoot seeds and sedge nutlets. Numerous lithic artefacts and sherds of Grooved Ware pottery were also retrieved.

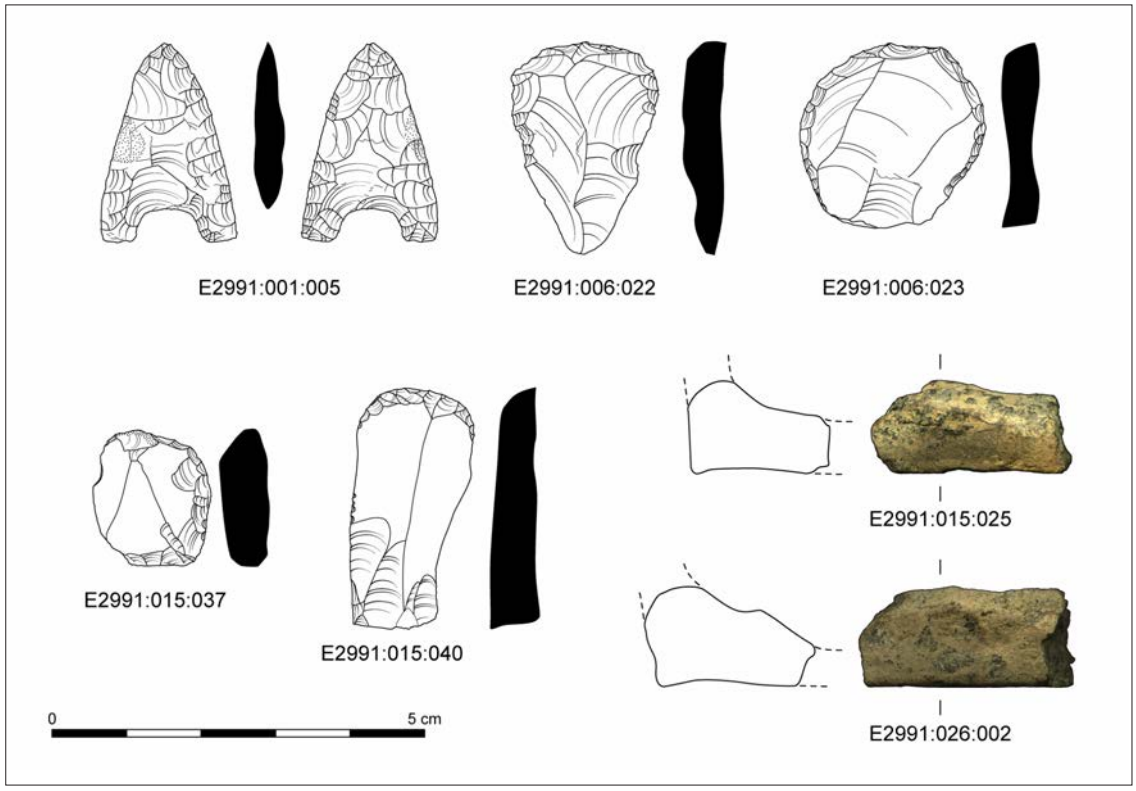
An additional four features were identified directly to the south of the possible structure, suggesting that they were contemporary with it. These possibly functioned as extra supports for the structure and comprised two post-holes and two circular stake-holes. The post-holes were circular to oval in plan, measuring 0.25–0.55 m in length, 0.18–0.55 m in width and 0.16–0.5 m in depth, while the stake-holes measured between 0.07 m and 0.1 m in diameter and 0.1 m and 0.2 m in depth. Their fills contained varying quantities of charcoal, unidentified cereal grains, goosefoot seeds, sedge nutlets and lithic artefacts.

A single feature represented the second phase of activity at Bray Upper 1. This pit was situated in the north-east corner of site and was oval in plan. It measured 3.1 m in length (NW–SE), 1.48 m in width and 0.29 m in depth and contained charcoal, a grain of bread/club wheat, a sedge nutlet and a goosefoot seed within its fills. This probably represented an isolated pit, potentially used for disposal of waste material.

A further three features were excavated at the site; however, it was not possible to assign these to any phase of activity. They included two oval to sub-oval-shaped pits, which measured 0.46–1.6 m in length, 0.31–1.25 m in width and 0.23–0.3 m in depth, and an oval post-hole, measuring 0.38 m by 0.2 m by 0.26 m deep. Their fills contained very occasional inclusions of charcoal and goosefoot seeds, as well as several lithic artefacts.

The artefact assemblage included pottery and lithics (Illus. 6.33). The pottery assemblage comprises 18 sherds and four crumbs from a single Late Neolithic Grooved Ware vessel. The pottery appears to represent domestic debris associated with the structure. Prior to this project, Grooved Ware had not previously been reported from County Kildare and it has rarely been found in domestic contexts. Alongside the Grooved Ware found at the timber circles and square-in-circles at the Lerr Valley site (Chapter 3), it is an important discovery at both a regional and national level.

A total of 368 lithic finds were recovered during the excavation of this site. Most of this assemblage was categorised as knapping by-products, with a small number of retouched formal artefacts. From a



Illus. 6.33 Lithics and pottery from Bray Upper 1 (by Hannah Sims & Sara Nylund).

technological point of view, it was dominated by the bipolar technique, with only isolated examples being considered the result of single platform technology. Bipolar technique becomes increasingly frequent from the Middle Neolithic through to the Late Bronze Age (O'Hare 2005), while platform reduction is mostly associated with earlier prehistoric assemblages (Woodman 1987).

Radiocarbon dates were obtained for three features at Bray Upper 1, including a slot trench and pit from the structure and one of the pits situated in the northern part of the site. These features returned date ranges of 2880–2490 BC (SUERC-25909), 2880–2570 BC (SUERC-25469) and AD 1050–1290 (SUERC-25470) respectively, indicating a somewhat sporadic occupation of the site during the Late Neolithic and early/high medieval periods.

A small amount of cereal grain and wild taxa—including hulled barley, bread/club wheat, sedge nutlets and goosefoot seeds—was recovered from the prehistoric features excavated at Bray Upper 1. The low quantities present suggest accidental rather than deliberate deposition and it is likely that the source of the charred plant remains (e.g. the processing area) was some distance from the excavated features.

The excavation at Bray Upper 1 revealed a significant Late Neolithic occupation, primarily represented by a curvilinear structure, alongside limited early medieval activity. The most notable aspect is the discovery of Grooved Ware pottery, previously unreported in County Kildare and rarely found in domestic contexts (although

more was also found on this project: Chapter 3). The structure's architecture, combining slot trenches with post-holes and stake-holes, suggests a sophisticated building technique. The lithic assemblage, dominated by bipolar knapping technique rather than platform reduction, aligns with technological trends of the Late Neolithic period. This, combined with the radiocarbon date (2880–2490 BC), provides strong chronological consistency. The presence of cereals, including bread/club wheat and barley, hints at agricultural activity, though the small quantities suggest the processing area was likely located elsewhere. The site's importance lies not just in its structural remains, but in how it enriches our understanding of Late Neolithic domestic settlement in Ireland, particularly through the rare combination of structural evidence with Grooved Ware pottery in what appears to be a domestic context.

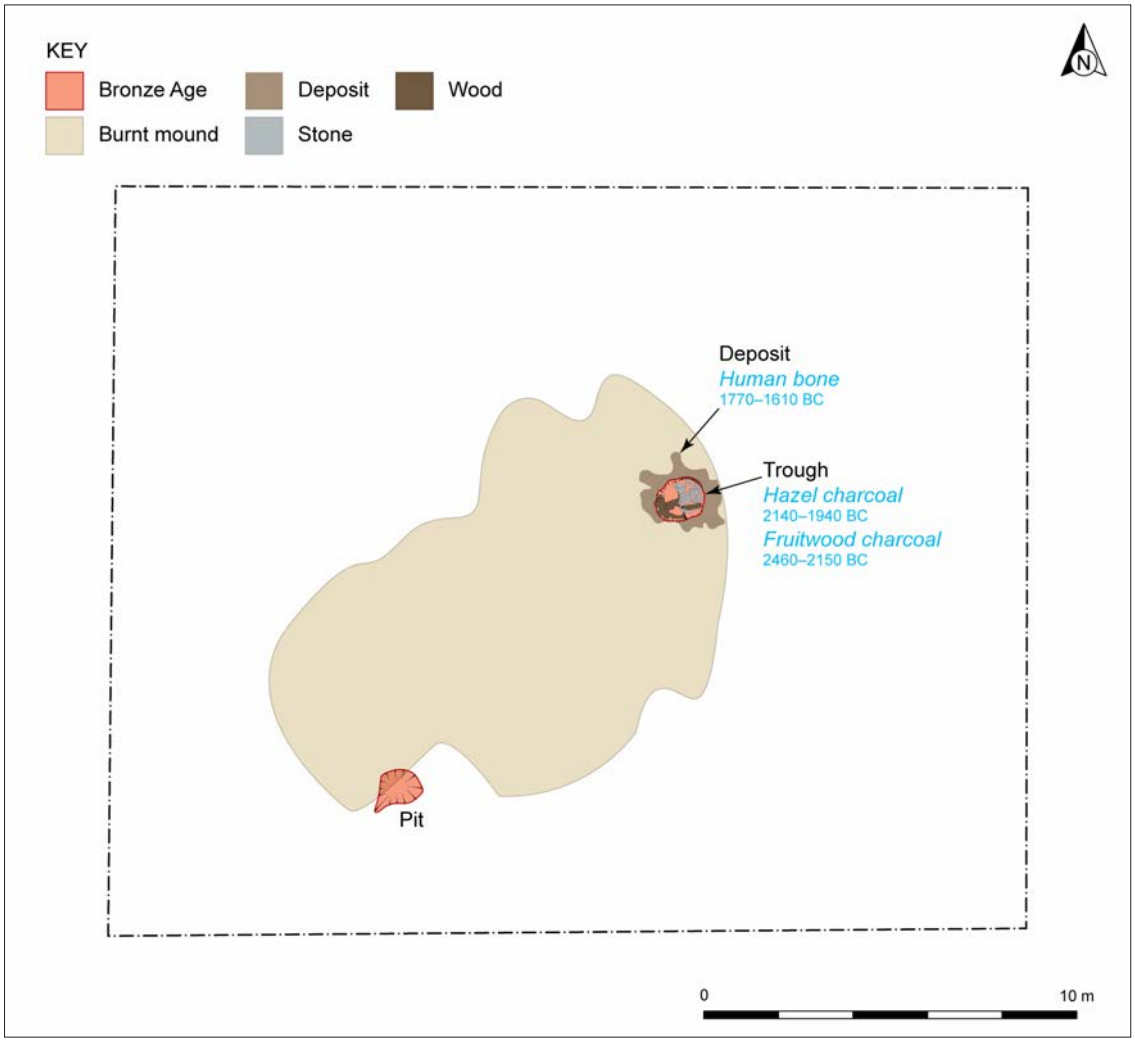
Belan 2: Early Bronze Age burnt mound and human remains[22]

This site was in a well-drained but seasonally waterlogged area, within the flood plain of a stream that flowed into the River Greese 500 m to the north. Archaeological excavations revealed an Early Bronze Age burnt mound with an associated trough and pit. These features were dug into a peaty deposit that overlay alluvial clays. Disarticulated human bones of Early and Middle Bronze Age date were also discovered.

The excavation revealed the remains of an amorphous and thin spread of burnt mound material (13.4 m by 8 m by 0.05 m) within a natural depression (Illus. 6.34). This deposit comprised charcoal-rich silt and heat-shattered stone and contained a heat-affected flint scraper and a piece of chert debitage. It partially overlay a pit and sealed a trough.

The trough was sub-oval shaped (1.54 m by 1.15 m by 0.37 m deep) with concave sides and a flat base. It was filled with various deposits of sandy material as well as charcoal-rich fills containing heat-affected stone indicative of multiple episodes of use. A large, poorly preserved, wooden plank (0.81 m by 0.22 m in plan and 0.2 m deep) which probably represents the remains of a timber-lined base was found at the bottom of the trough (Illus. 6.35). Due to the poor preservation of the timbers from the trough, it was not possible to undertake species or worked wood analysis. Hazel charcoal from one of the secondary fills produced a radiocarbon date of 2140–1940 BC (SUERC-25341). An upper deposit of charcoal-rich black silt with large heat-affected stones contained unburnt mammal bones from sheep or goats and the remains of two poorly preserved timbers, one of which had been heavily charred. Fruitwood charcoal retrieved from underneath the timbers returned a radiocarbon date of 2460–2150 BC (SUERC-25337). The larger than average stones in this deposit suggest that it probably represents the final episode of use for this trough, and it is likely that the timbers were discarded at this stage. Later, an intrusive localised deposit was cut into the top of the trough. This contained a piece of lithic debitage, and fragments from an unburnt human skull, as well as unburnt bone from sheep or goat and burnt bone from a hare. An Early Bronze Age radiocarbon date of 1770–1610 BC (SUERC-25251) was obtained from one of the skull fragments. These seem to represent a deliberate symbolic deposit or votive offering. This activity can be seen

22 Belan 2, County Kildare; ITM 676838, 689838; elevation 77 m OD; Excavation Reg. No. E2953; Ministerial Directions A021/148; Excavation Director: Red Tobin



Illus. 6.34 Belan 2, Early Bronze Age burnt mound and trough.

as part of the wider practice of deposition of significant objects in wetland contexts during the Bronze Age (Cooney & Grogan 1999, 146–7; Grogan et al. 2007, 95).

Two human tibiae, a right femur and a left humerus were also discovered in the topsoil to the east of the burnt spread. One of these bones produced a radiocarbon date of 2470–2200 BC (SUERC-25252), thereby indicating that this is not from the same individual as the skull bones in the top of the trough. The occurrence of these bones within topsoil suggests that they may represent part of an inhumation burial that has been disturbed from its original location through agricultural activity. Only a small number of inhumation burials of this date are known from Ireland (Carlin 2011).

The discovery of human remains from a burnt mound site is highly significant. Human bone has been found in association with 16 other burnt mounds in Ireland (Hawkes 2018, 184), but only very few of these have been interpreted as deliberate

Illus. 6.35 Belan 2, mid-excavation view of trough (006) showing charred timber, facing north-east.

deposits.

Three lithics were recovered during the excavation. A convex scraper and a piece of debitage came from the spread of burnt mound material and another piece of debitage was found in the intrusive deposit cut into the top of the trough.

Four radiocarbon dates were obtained from two charcoal samples from the fills of the trough, the human skull fragments and the uncontexted human bone. The main usage of the trough occurred at the end of the Chalcolithic (2450–2200 BC). The deposition of the skull fragments represents an episode of reuse which occurs at least 300 years later. It is unknown whether this deposit was cut through the overlying burnt mound or if it was sealed beneath it. The latter would suggest that the mound was formed by cumulative activity conducted over the duration of the Early Bronze Age.

Unburnt disarticulated skull fragments, two human tibiae, a right femur and a left humerus from at least two individuals were recovered during the excavation. The skull bones were in poor condition, while the long bones were moderately well preserved. As a result, little osteological interpretative information could be obtained from these bones.

A total of 103 bone specimens were retrieved from the excavation of the burnt mound. Most of the bone was unidentifiable, and the only identified species were sheep/

goat and hare. Animal bone is only rarely recovered from burnt mound sites and cattle are generally the species most frequently found. Thus, the exclusive presence of sheep/goat and hare seems unusual (Tourunen 2008). Hares have been found in Bronze Age burial contexts such as Glencurran Cave, Co. Clare (Dowd 2009, 96–8) and may have had a special symbolic significance.

Excavations at Belan 2 revealed an Early Bronze Age burnt mound, trough, and human remains. The site's most remarkable aspect is the presence of human remains. The discovery included disarticulated bones from at least two individuals, dated to different periods (2470–2200 BC and 1770–1610 BC), suggesting multiple phases of activity. The site's chronology and composition provide valuable insights into Bronze Age practices. The main trough usage dates to the Chalcolithic (2450–2200 BC), with evidence of multiple use episodes. The later deliberate placement of human skull fragments in the trough (1770–1610 BC) suggests ritual significance, perhaps fitting into the broader pattern of Bronze Age wetland depositions in Ireland. The faunal remains found at the site are unusual for a burnt mound, containing only sheep/goat and hare bones rather than the more commonly found cattle remains. The presence of hare bones is particularly interesting given their documented occurrence in other Bronze Age ritual contexts. This site contributes significantly to our understanding of Early Bronze Age ritual practices and the complex nature of burnt mound sites, which may have served multiple purposes beyond their presumed primary function.

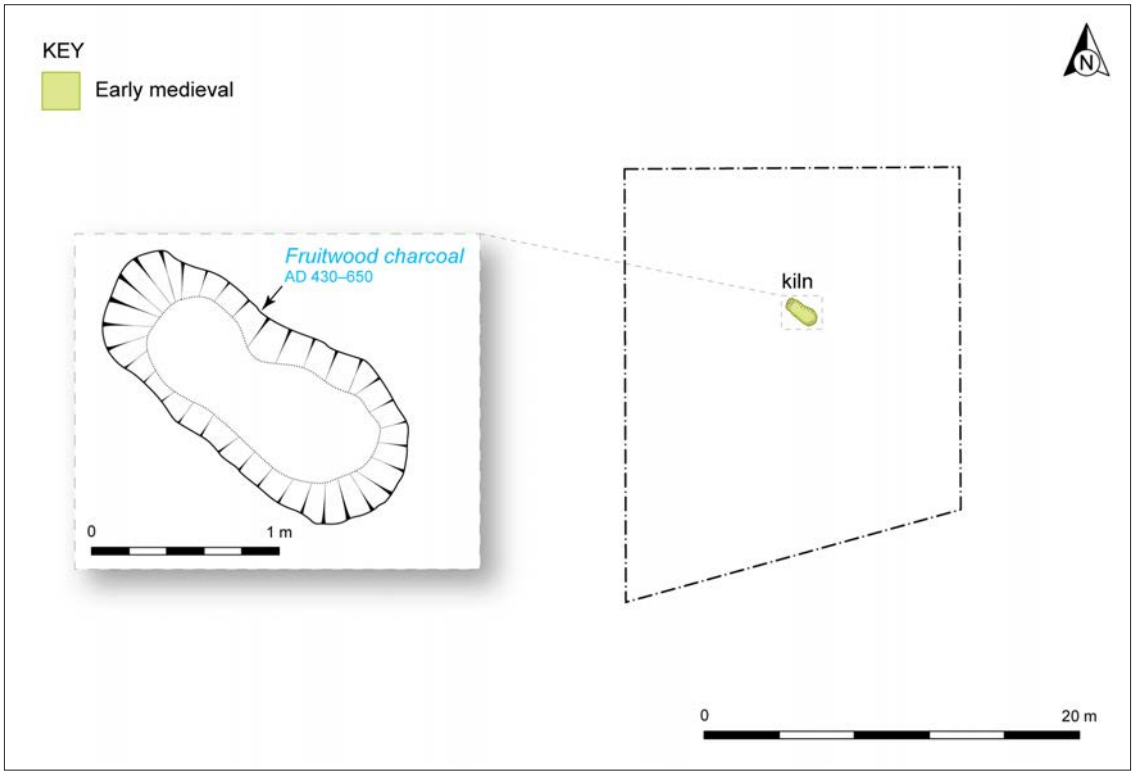
Ballyvass 3: Early medieval pit/ possible charcoal-production kiln[23]

This site was found sealed beneath a cover of hill-wash material on an east-facing slope. The excavation revealed a sub-rectangular pit (1.85 m by 0.75 m by 0.1 m) with a heat-scorched base (Illus. 6.36). This contained multiple deposits of heat-scorched soils with varying amounts of charcoal and burnt clay. Fruitwood charcoal from a secondary fill produced a radiocarbon date of AD 430–650 (SUERC-25440). The shape of the pit and the evidence for *in situ* burning suggests that this may have been a charcoal-production kiln (Chapter 4). These are often found as isolated features, presumably near to where the wood was sourced.

A burnt flint flake was found in the pit. Radiocarbon dating of this feature places it firmly in the early medieval period (AD 430–650 SUERC 25440). The Pomoideae charcoal indicates the exploitation of dry woodland fringes as a fuel source.

The pit discovered at Ballyvass 3 likely served for charcoal production in the early medieval period. Charcoal was an essential resource for various craft activities, particularly in metalworking where substantial quantities were needed for both smelting and smithing. While oak charcoal was preferred for metalworking due to its excellent thermal properties and widespread availability, dense fruitwood from the Pomoideae family was also sometimes utilised. A flint flake recovered from the pit appears to be an older, prehistoric artefact unrelated to the charcoal-production activities.

23 Ballyvass 3, County Kildare; ITM 677076, 688925; elevation 82 m OD; Excavation Reg. No. E2946; Ministerial Directions A021/134; Excavation Director: Red Tobin



Illus. 6.36 Ballyvass 3, early medieval charcoal-production kiln.

Hallahoise 3: Late Iron Age pit[24]

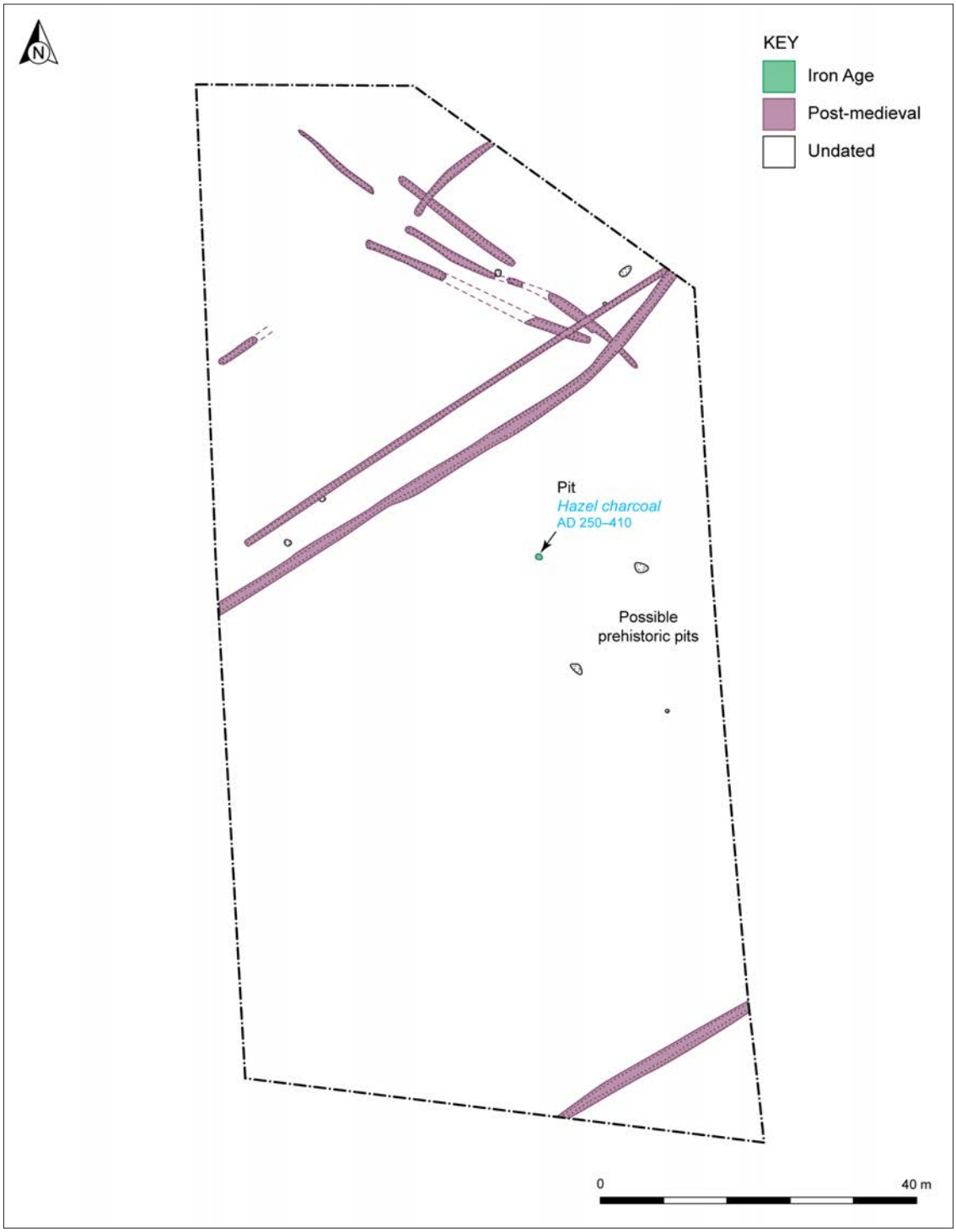
This site was located on gently undulating pastureland to the north and west of the River Lerr and to the east and south of the River Greese. Excavations revealed an Iron Age pit and evidence for post-medieval agricultural activity.

The excavation revealed a loose cluster of four pits (Illus. 6.37). One of these was a sub-circular pit (0.69 m by 0.61 m by 0.17 m) filled by two deposits, one of which contained burnt bone (species unidentifiable) and large fragments of oak and hazel charcoal. The latter produced a radiocarbon date of AD 250–410 (SUERC-25342). While it may be speculated that the other pits may be of similar date, there is no evidence to substantiate this or to indicate their function.

A complex of post-medieval plough furrows was found criss-crossing the site. Excavation of these produced a small range of artefacts. These included post-medieval pottery, clay pipe fragments, a piece of glass and a residual sherd of medieval pottery identified as Leinster cooking ware. Two post-medieval field boundaries were also excavated.

A residual sherd of Leinster cooking ware, dating from the later 12th to the mid-14th century, was recovered from a furrow.

24 Hallahoise 3, County Kildare; ITM 676191, 686092; elevation not recorded; Excavation Reg. No. E2948; Ministerial Directions A021/140; Excavation Director: Lisa Doyle



Illus. 6.37 Hallahoise 3, Late Iron Age pit.

Fragments of post-medieval clay pipe, glass and ceramic were also recovered from these furrows.

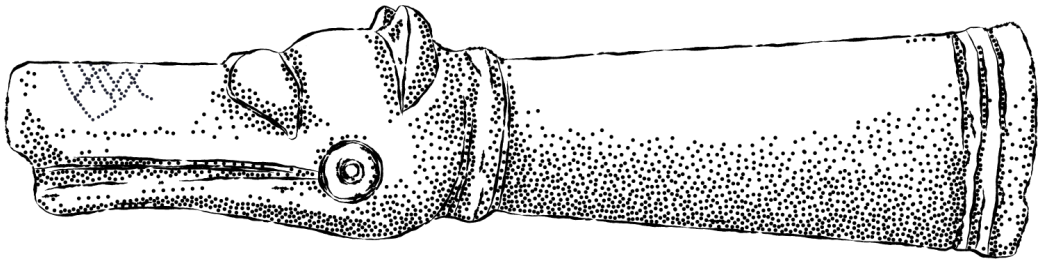
A Late Iron Age radiocarbon date was returned from a pit (AD 250–410 (SUERC-25342)). The morphology and artefactual contents of the furrows indicate that these date to the post-medieval period.

The Hallahoise 3 site reflects broader patterns seen in Late Iron Age Ireland, particularly during the period from AD 250–410 when there was a significant increase in settlement and activity evidence across the country. The dated pit falls within what Becker (2009) identifies as the 'Developed Iron Age' and aligns with patterns documented by the LIARI Project showing expanding settlement evidence across Leinster and north Munster during this period (Dowling 2014).

The pit's contents of burnt bone and charcoal align with wider evidence for ritual deposition practices during this period. While the isolated nature of the pit presents interpretive challenges, this is not unusual—many Late Iron Age features appear as seemingly isolated elements in the landscape. The site's location between two rivers fits within documented patterns of Late Iron Age settlement preferences, where communities often chose locations with access to multiple resources. While reflecting the broader challenges of interpreting isolated features from this period, it contributes to our growing understanding of how Iron Age communities used and shaped the landscape.

Chapter 7

Landscapes with Legacy



By Ros Ó Maoldúin, Colm Moloney, Patricia Long and James Eogan

Landscapes with Legacy

The archaeological investigations along the route of the M9 motorway revealed a complex palimpsest of human activity spanning eight millennia, from the Early Mesolithic to the medieval period. These discoveries provide an opportunity to examine how successive communities inhabited, modified and understood this landscape, while also offering insights into broader patterns of continuity and change in this region from prehistoric to recent times.

The evidence from the excavations shows that the agricultural potential of south Kildare's landscape was one of the reasons for ongoing and/or repeated settlement. The environmental data indicates that from the Neolithic onwards, communities successfully farmed this diverse landscape, both for arable and pastoral agriculture. The oak-hazel woodland provided timber and fuel and the wet alder carr along watercourses offered ecological niches to be exploited. Barley was the dominant crop in the Neolithic to medieval periods, supplemented by wheat and later oats and rye. Cattle were consistently the main animal represented in faunal assemblages, but they were often accompanied by sheep/goat, pig and horses, which first appeared in the Bronze Age and became more common in the medieval period. There was evidence for wild hunted species among the animal bone assemblages too, including deer, hare and birds; this hunting often took place adjacent to wetlands and was most dramatically evidenced in the form of a trap and wooden spear, both found on the Lerr Valley site (Chapter 3). The tread trap is particularly significant for providing an example of a uniquely well-preserved bivalve tread trap (Illus. 4.18, 4.19) of a type depicted on the Banagher high cross, from Offaly (Illus. 7.1).

The relative suitability of different portions of land for these types of farming and hunting resources would have provided communities with opportunities and constraints; however, the distribution and character of archaeological sites suggest that environmental determinism alone cannot explain settlement patterns. Communities would have made active choices about which locations to occupy and how to use them, choices that were informed by social and cultural factors, as much as by environmental and economic ones. This is particularly evident in the recurring significance of certain places in the landscape, such as at the royal sites of Dún Ailinne and Mullamast, and along the River Lerr. The remains found in the Mullamast Study Area especially exemplify this phenomenon, where a complex ritual landscape developed on and around Mullamast Hill, a significant landmark from the Middle Neolithic onwards, eventually emerging as the early medieval royal site of Maistiu, on which the

Chapter title image The terminal mount for a drinking horn from Ballyvass 7 (by Hannah Sims).

Illus. 7.1 Detail of a carving on the shaft of a high cross from Banagher, Co. Offaly, depicting a deer with its front right leg caught in a rectangular trap. Image reproduced courtesy of the National Museum of Ireland and the Discovery Programme.

beautifully decorated stone that can be seen in the National Museum of Ireland, reputedly once stood (Illus. 7.2). Many thousands of people and/or cattle appear to have rubbed off this stone, and warriors or even kings may have drawn their swords across its surface (Newman 2009). The commanding views from Mullamast Hill, of the Wicklow Mountains to the east, may have contributed to its initial selection as a ceremonial focus, but its continued importance was likely a result of choices made for social reasons as much as environmental ones.

One of the most striking patterns to emerge from the excavation evidence was the persistent role of monuments and ancestral places in structuring later activity. At sites like Moone 1, the deliberate placement of Early Bronze Age burials adjacent to a Middle Neolithic ring-ditch demonstrates how past monuments were actively employed in subsequent ritual practices. This pattern of reuse was particularly evident in burial contexts, where communities across multiple periods chose to bury their dead beside or even inside earlier funerary monuments. The Iron Age cemetery at Moone 5, with its changing burial practices from crouched to west–east oriented burials, illustrates how established sacred spaces accommodated changing cultural practices.

The legitimising power of ancestral monuments appears to have been a consistent theme throughout the periods represented, and not just at so-called royal sites like Maistiu. During the Iron Age, the recutting of older ring-ditches and placement of new burials within them—at the Lerr Valley site—suggests deliberate attempts to establish connections, whether real or constructed, with past communities. This practice continued into the early medieval period, when both extended inhumations and cremations were placed in and around ancient monuments. The parallel use of these contrasting burial rites at the same

Illus. 7.2 The pillar stone from Mullamast (Maistiu) Hill. Image reproduced courtesy of the National Museum of Ireland and the Discovery Programme.

locations during the crucial period of Christian conversion also demonstrates how communities could maintain connections to ancestral practices while adopting new ones. The degree to which this and other sites from this project site feature in Elizabeth O'Brien's (2020) recent book on burial in Late Iron Age and early medieval Ireland underscores their significance.

This pattern of monument reuse and reference extended beyond purely ritual contexts. The evidence from medieval settlement sites suggests that the presence of earlier monuments influenced the positioning of later occupation, perhaps reflecting attempts to legitimise land ownership through visible connections to the past. The continued use of established field systems at Hallahoise 4 into the Anglo-Norman period demonstrates how deeply embedded these spatial relationships could become.

The evidence from the M9 route also illuminates changing patterns of landscape organisation and resource exploitation over time. The Early Bronze Age remains suggest an intensification of both ritual and domestic activity, with the use of burnt mounds suggesting new forms of communal activity. The Middle and Late Bronze Age remains suggest an expansion of settlement and more structured approaches to burial, potentially reflecting more formalised concepts of territory and inheritance. The Iron Age evidence included specialised craft production, particularly metalworking, that was often spatially associated with ritual monuments in ways that suggest symbolic significance was attached to these activities.

The medieval period saw further transformations in how the landscape was organised and exploited. The proliferation of cereal-drying kilns points to intensified agricultural production, while evidence for specialised activities like charcoal production and ironworking at sites like Woodlands East suggests increasingly regulated organisation. Anglo-Norman colonisation brought new systems of land management, reflected in the shift to rectangular enclosed farmsteads, yet the evidence suggests that this was a process of adaptation rather than wholesale replacement.

Water featured prominently throughout the scheme, both as a practical resource and as a focus for ritual activity. Rivers such as the Greese and Lerr, and wetlands such as at Ballymount, appear to have served as both connecting routes and boundary zones, with evidence for structured deposition of both

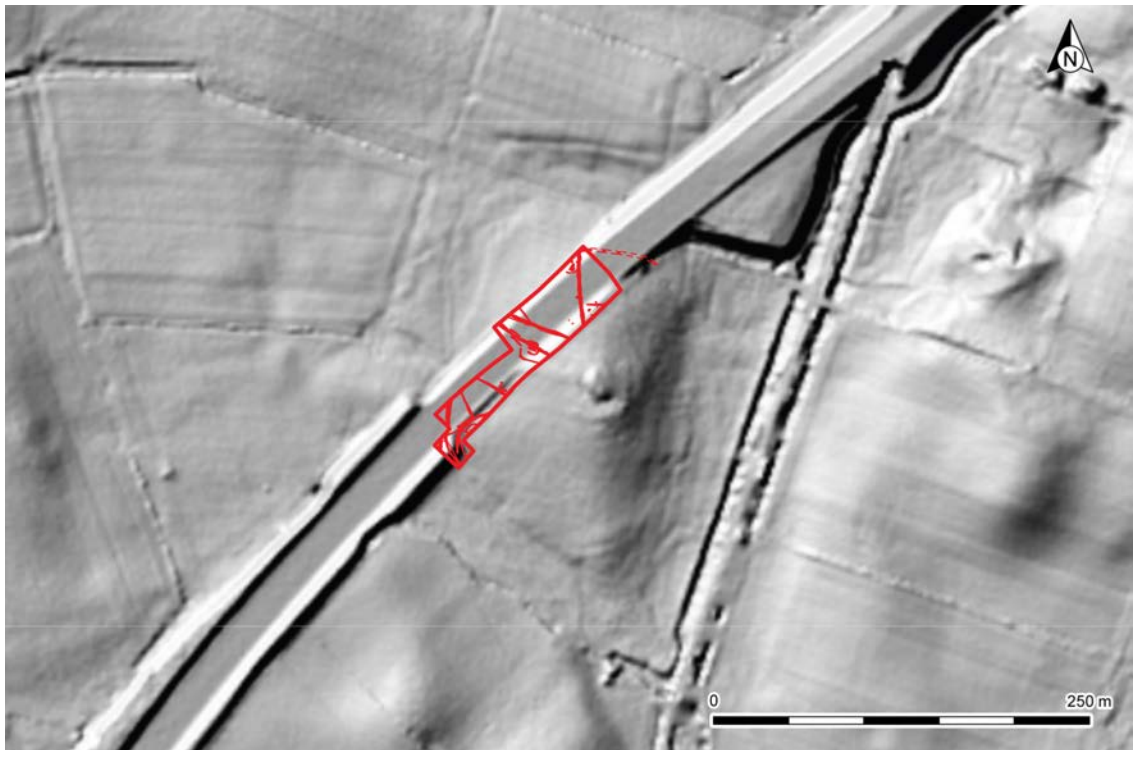
mundane and prestigious objects in watery contexts. The persistence of these practices from prehistory into the medieval period suggests long-term continuity in how such landscape features were understood and utilised. The Lerr Valley site (Chapter 3) with its important timber square-in-circle structures, whether domestic or ritual, Bronze Age and Iron Age ring-ditches, and wetland depositions and burials extending into the medieval period, exemplifies the central and yet potentially boundary- like aspect of rivers. There was a definite contrast between the activity on the opposite banks of the river during certain periods, yet the river was also the focus of activity.

The evidence for long-distance connections and exchange networks demonstrates that, despite its inland location, this region was never isolated. From as early as the Mesolithic, communities were engaged in networks of exchange through which they accessed exotic materials and new ideas. From the introduction of agriculture and novel forms of material culture in the Neolithic, to the use of widespread shared pottery styles during the Chalcolithic and Bronze Age, to the presence of imported items like glass beads in Iron Age contexts, and later medieval pottery from Dublin and France, it is evident that the communities living here could access networks along which ideas and goods were exchanged and traded.

The M9 excavations have also provided important evidence for technological and social change. The gradual adoption of new burial practices in the Late Iron Age/early medieval transition period, with extended inhumations appearing alongside traditional cremations, provides insights into how these communities negotiated major cultural transformations. Similarly, the evidence for continuing Gaelic influence alongside Anglo-Norman innovations in the medieval period demonstrates the complexity of colonial processes.

The excavations revealed not just the physical remains of past activities, but also an ongoing dialogue between people and place that created and maintained meaningful landscapes. Understanding these relationships helps us better appreciate both the particular history of this region and broader patterns in how communities create and maintain connections to the places they inhabit. As modern development continues to transform these landscapes, the archaeological record revealed through these investigations provides crucial insights into their deep human history and the complex processes that have shaped them.

Archaeological methodologies have evolved significantly since the completion of the M9 excavations. While geophysical surveys were conducted during the project's early stages, larger-scale surveys have now become standard practice before any intrusive archaeological work begins, helping to guide excavation strategies. The archaeological geophysical survey conducted for the M9 was innovative for its time, proving particularly valuable in identifying and avoiding some of the features associated with the Narraghmore barrow or 'clump' and ensuring that the area adjacent to it—Narraghmore 1—was the subject of full excavation (Illus. 7.3). Another significant advancement has been the widespread use of LiDAR (airborne laser scanning) technology and improved access to data. Access to TII LiDAR data along the M9 route enabled a fresh analysis of Narraghmore 1 during the preparation of this book. This revealed that the hill where the site is located is surrounded by a substantial enclosure measuring approximately 300 m north–south



Illus. 7.3 Narraghmore 1 on LiDAR.

Illus. 7.4 The Mullamast spear and its replica.

by 190 m east–west. This discovery suggests the area could potentially be *Forrach Pátric*, formerly known as *Bile maicc Cruaich*—an early medieval ceremonial and inauguration site. This finding demonstrates the value of re-examining previously investigated areas using newly available technology.

Archaeological artefacts can also be brought to life through recreation and replication, as exemplified by the Bronze Age spearhead reconstruction from Mullamast (Illus. 7.4; Moloney & Hackett 2012). This hands-on approach provides invaluable insights into ancient materials and manufacturing techniques while also serving as an engaging educational tool.

The M9 Kilcullen to Carlow motorway was constructed in a region with many significant archaeological and historical remains. Great care was taken with the design of the road to minimise the impact

of construction on known sites of cultural heritage significance. The systematic pre-construction archaeological investigation of the route uncovered significant 'new' archaeological remains at many locations. The book's title evokes the idea that the results of the excavations enable contemporary communities in south Kildare and further afield to trace and understand the connections between these 'new' sites and the well-known upstanding monuments. It also seeks to awaken the idea that the communities whose traces were uncovered were made up of people not so different from us who lived in this same landscape. Perhaps most significantly, the M9 evidence reveals how successive communities maintained meaningful connections to their landscapes while adapting them to meet changing needs and beliefs. The persistent reuse of monuments and spaces suggests that people remained aware of and engaged with the physical traces of past occupation, even as they reinterpreted them according to their own cultural frameworks. This complex interplay between continuity and change, between environmental constraints and human agency, between practical needs and cultural meanings, has shaped the archaeological record of south Kildare over millennia.

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This latest title in the TII Heritage series presents the results of archaeological investigations along the Kildare section of the M9 Kilcullen to Carlow road scheme. The human legacy in the landscape of south Kildare has a lineage that spans almost 9,000 years. New discoveries include evidence of hunter-gatherer stone tool making, ritual and funerary activity dating from the Late Neolithic through the Bronze Age and Iron Age and into the early medieval period and evidence for settlement which spans thousands of years. Fossil pollen evidence, charcoal and other charred plant remains, including food crops, document changing human subsistence strategies and interactions with the environment over time.

Colm Moloney is a graduate of University College Cork and received a Masters degree from the University of Leicester. He founded Rubicon Archaeology Ltd and has managed archaeological projects in Ireland, the UK and Germany, including excavations along the route of the M9.

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Ros Ó Maoldúin is a graduate of the University of Bradford and received a PhD from the University of Galway for his research on the Irish Chalcolithic and Bronze Age. He has directed archaeological fieldschools and research excavations, and managed pre-development archaeological projects. Ros is Head of Publications at Rubicon Archaeology Ltd but is currently on leave to undertake excavations on behalf of the Office of the Director of Authorised Intervention at Tuam.

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